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VWR INTERNATIONAL

LABORATORY CATALOGUE

2015

RL Slaughter
For All Your Laboratory Needs

APPARATUS | INSTRUMENTS
EQUIPMENT | CONSUMABLES

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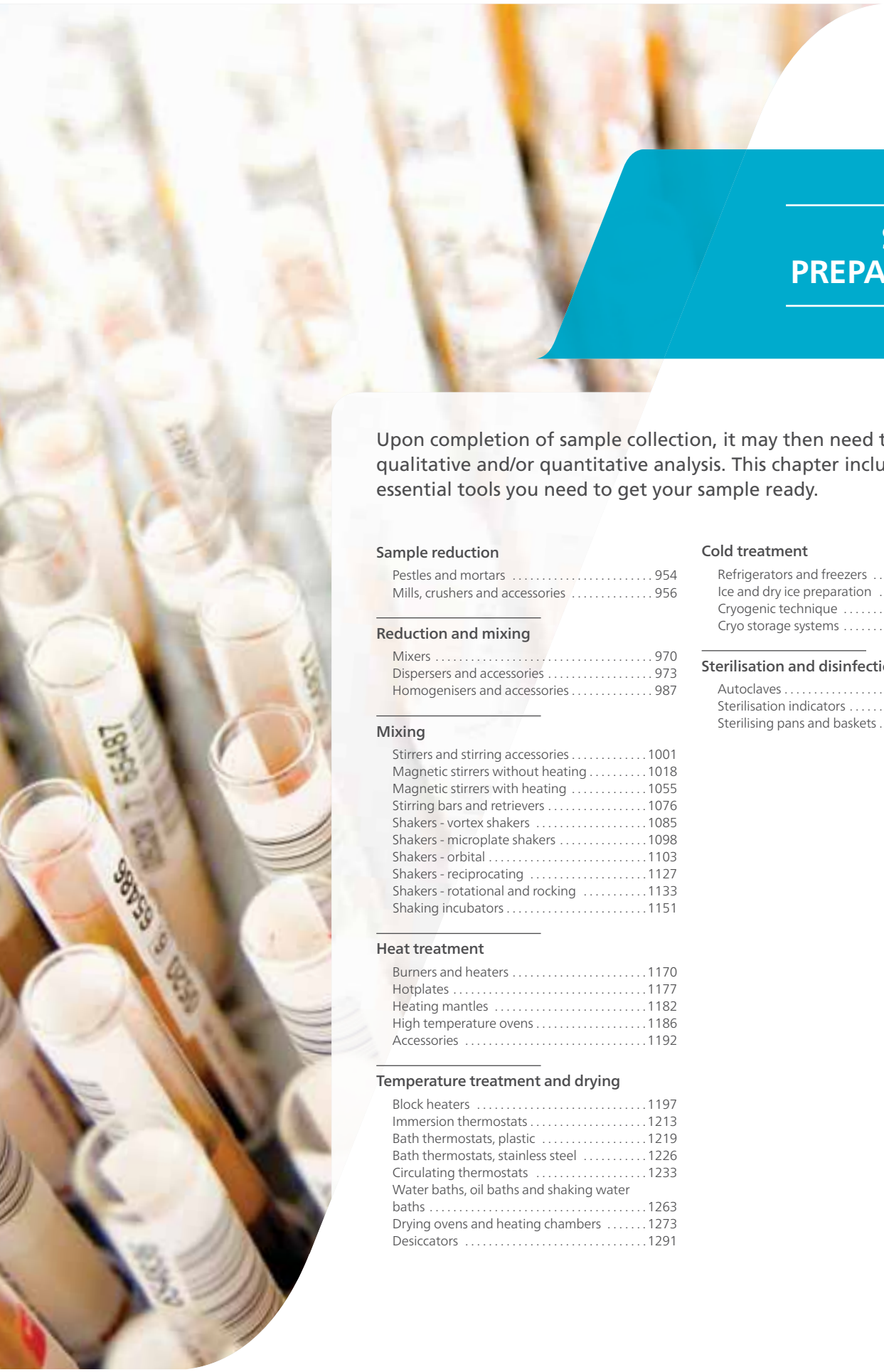
These symbols indicate important product features:

- Explosion proof
- RS232 interface
- Ethernet interface
- Autoclavable
- Sterile
- Accessories required to use the product
- Requires specialist installation
- Item is heavy and difficult to transport
- Product requires chemicals or reagents
- Documentation available on request
- USB connection
- Selected for you

IVD — CE marking conform with IVD MDD 98/79 EC for In-vitro Diagnostics

2 year warranty, 3 year warranty, 4 year warranty, 5 year warranty — Warranty

IP 21, IP 31, IP 55, IP64, IP65, IP66, IP67, IP68 — IP Classification



SAMPLE PREPARATION

Upon completion of sample collection, it may then need to undergo qualitative and/or quantitative analysis. This chapter includes all the essential tools you need to get your sample ready.

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Mortars with pestles, deep form

Agate

High quality with flawless grinding surface.

Capacity (ml)	Ø (mm)	Ø int. (mm)	Depth (mm)	Pk	Cat. No.
25	60	50	20	1	**410-1000**
40	70	55	25	1	**410-1001**
65	80	65	30	1	**410-1002**
100	90	70	33	1	**410-1003**
125	100	80	33	1	**410-1004**
160	110	90	40	1	**410-1005**
210	120	100	42	1	**410-1006**
250	130	110	45	1	**410-1007**

Mortars with pestles, low form

Agate

High quality with flawless grinding surface.

Capacity (ml)	Ø (mm)	Ø int. (mm)	Pk	Cat. No.
10	50	40	1	**410-1008**
24	75	60	1	**410-1009**
50	100	80	1	**410-1010**
100	125	105	1	**410-1011**
200	150	125	1	**410-1012**

Pestles

Agate

High quality with flawless grinding surface.

Length (mm)	Pk	Cat. No.
50	1	**410-1013**
65	1	**410-1014**
75	1	**410-1015**
85	1	**410-1016**
100	1	**410-1017**
125	1	**410-1018**
150	1	**410-1019**

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Mortars, without pestles
Haldenwanger

Porcelain

With lip. Choice of glazed or unglazed grinding surface. Manufactured to DIN 12906.

Ordering information: Pestle must be ordered separately.

Capacity (ml)	Height (mm)	Ø int. (mm)	Pk	Cat. No.
Glazed				
70	40	63	1	**410-9121**
650	70	150	1	**410-9124**
1000	80	180	1	**410-9125**
Unglazed				
20	32	50	1	**410-9326**
70	40	63	1	**410-9111**
75	45	70	1	**410-9328**
100	50	80	1	**410-9110**
170	55	90	1	**410-9112**
250	63	115	1	**410-9327**
400	65	125	1	**410-9113**
650	70	150	1	**410-9114**
1000	80	180	1	**410-9115**
2400	100	250	1	**410-9116**
6000	140	330	1	**410-0024**

Pestles
Haldenwanger

Porcelain

Glazed handle, unglazed grinding surface. Manufactured to DIN 12906.

Head Ø (mm)	Length (mm)	For	Pk	Cat. No.
Unglazed				
24	115	410-9326	1	**410-9131**
28	125	410-9121, 410-9111	1	**410-9128**
30	135	410-9328	1	**410-9132**
36	150	410-9110	1	**410-9133**
42	175	410-9112	1	**410-9134**
45	180	410-9327	1	**410-9324**
48	185	410-9113	1	**410-9323**
55	210	410-9124, 410-9114	1	**410-9135**
60	215	410-9125, 410-9115	1	**410-0073**
74	250	410-9116	1	**410-9136**
85	280	410-0024	1	**410-0027**

Mortars with pestles, glass

Borosilicate glass

Glazed inside.

Capacity (ml)	Height (mm)	Ø (mm)	Pk	Cat. No.
100	60	80	1	**410-0061**
215	75	100	1	**410-0059**
840	110	150	1	**410-0060**

Mixer mill, Star Beater

A ball mill for disintregration of small sample volumes that can also be used to shake/mix microtubes and microplates. Wide range of applications in different scientific fields from geology to biotechnology.

- Easy to use - simple knob and keypad to control frequency and timer
- Easy to maintain - brushless DC motor
- Large range of grinding jars and tube holders to suit the sample requirements

Model	Star Beater
Max. sample volume (ml)	2×50
Vibrational frequency (Hz)	3 - 30
Speed display	LED
Grinding time setting (min)	5 seconds to 60 minutes
Power consumption (W)	200 VA
W×D×H (mm)	365×405×225
Weight (kg)	42

Description	Pk	Cat. No.
Mixer mill, Star Beater		
Star Beater	1	**412-0167**
Accessories		
Tube holder, PTFE for reaction vials, 12×0,2 ml tubes on each arm	1	**412-0181**
Tube holder, PTFE for reaction vials, 12×2 ml tubes on each arm	2	**412-0182**
Tube holder, PTFE for reaction vials, 6×2 ml tubes on each arm	2	**412-0183**
Tube holder, PTFE for reaction vials, 6×2 ml tubes (screw cap) on each arm	2	**412-0184**
Holder, PTFE, for up to 3 microplates or 1 deep well plates on each arm	2	**412-0185**
Set of spanners	1 SET	**412-0180**

Material	Nominal volume (ml)	Max. feed size (mm)	Pk	Cat. No.
Grinding jars				
Stainless steel	1,5	1	2	**412-0168**
Stainless steel	5	2	2	**412-0169**
Stainless steel	10	4	2	**412-0170**
Stainless steel	25	6	2	**412-0171**
Stainless steel	35	6	2	**412-0172**
Stainless steel	50	8	2	**412-0173**
Hardened steel	1,5	1	2	**412-0174**
Hardened steel	5	2	2	**412-0175**
Hardened steel	10	4	2	**412-0176**
Hardened steel	25	6	2	**412-0177**
Hardened steel	35	6	2	**412-0178**
Hardened steel	50	8	2	**412-0179**

Material	Ø (mm)	Pk	Cat. No.
Grinding balls			
Stainless steel	5	1	**412-0190**
Stainless steel	10	1	**412-0191**
Stainless steel	12	1	**412-0192**
Stainless steel	25	2	**412-0193**
Hardened steel	5	1	**412-0186**
Hardened steel	10	1	**412-0187**
Hardened steel	12	1	**412-0188**
Hardened steel	25	2	**412-0189**

Mill, Tube Mill control
IKA

The Tube Mill control is a highly versatile small batch mill with disposable grinding chambers thereby eliminating the possibility of cross-contamination and the effort of cleaning.

The grinding chamber and cover are made of a transparent material so grinding tests can be observed at any time. The mill can be used for hard (Mohs hardness up to 5), dry and brittle materials. It is especially suitable for grinding seeds, such as corn and wheat. The Tube Mill control can also be used to process moist, fatty, elastic and fibrous samples by introducing dry ice directly into the grinding chamber. During development of the mill, particular emphasis was placed on security. The mill will only start when the hood is closed. When the grinding chamber is not inserted properly or not closed properly, the drive unit will display an error message and the drive will not start. During operation, the grinding chamber cannot be opened. The drive and the grinding chambers are secured with a labyrinth seal. No dust can escape from the chamber or penetrate the drive.

- Easy and quiet operation with touch keypad to access various operating modes
- Programmable and storable test conditions delivers reproducible test results
- USB interface for control and documentation of all the parameters
- Interval operation available 5 - 60 seconds
- Stainless steel cutter/beater
- Adjustable safety speed and time
- Dust proof sealed housing

Ordering information: Please contact VWR for information on alternative grinding chambers.

Model	Tube Mill control
Max. size of feed granules (mm)	10
Usable volume (ml)	40
Speed range (min^{-1})	5000 - 25000
Circumferential speed (m/s)	65
Speed display	OLED, multilingual
Grinding chamber material	PP
Grinding time setting (min)	5 seconds to 3 minutes
Motor rating input/output (W)	100/80
W×D×H (mm)	180×300×170
Weight (kg)	2,7

Description	Pk	Cat. No.
Tube Mill control with UK-plug	1	**412-0204**

Description	Pk	Cat. No.
Accessories		
MT 40 disposable grinding chamber, usable volume 40 ml, pack of 10	10	**412-1002**

Analytical mill, A 11 basic
IKA

This batch mill performs two different types of grinding; impact grinding of hard, brittle or non-elastic materials by means of the high-grade stainless steel beater, which can be used for samples with a Mohs hardness of up to six. The A 11 also provides cutting grinding, ideal for pulverising soft, fibrous materials with an optional cutting blade.

- Two different types of grinding; impact and cutting
- Damp and gelatinous materials can be pulverised by adding water
- ETFE and reinforced glass fibre grinding chamber can be used with liquid nitrogen (for embrittlement of grinding materials)

IP protection class according to DIN EN 60529: IP 43

Delivery information: Supplied with impact grinding beater and 80 ml grinding chamber, without cutting blade. A variety of accessories are available, please order required accessories separately.

Max. size of feed granules (mm)	10
Usable volume (ml)	80
Speed (min^{-1})	28000 fixed
Circumferential speed (m/s)	53
Duty cycle on/off (min)	1/10
Overload protection	Yes
Motor rating input/output (W)	300/160
W×D×H (mm)	85×85×240

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Weight (kg)	1,5

Description	Pk	Cat. No.
A 11 basic analytical mill, UK-plug	1	432-0027

Description	For	Pk	Cat. No.
Accessories			
Spare 80 ml grinding chamber	Low temperature applications (-200 °C). ETFE and reinforced glass-fibre with stainless steel inlet, has good chemical resistance	1	412-0001
250 ml grinding chamber	Use with double beater 431-2113. Polycarbonate with stainless steel inlet. Not suitable for use with liquid nitrogen	1	412-1112
Cutting blade A11.2	Pulverising soft fibrous materials	1	412-1101
Beater A11.3	Pulverising substances with a Mohs hardness of up to 9	1	412-1102
Spare beater A11.1	Pulverising substances with a Mohs hardness of up to 6	1	412-1100
Double beater	Use up to Mohs hardness 3. Can only be used with 250 ml grinding chamber	1	431-2113
Funnel, A 11.7	Use with liquid nitrogen, prevents splashing when pouring	1	431-2114

Universal mill, M 20
IKA

This batch mill with stainless steel chamber is suitable for dry grinding of hard and brittle substances.

- Two grinding chambers can be operated alternately using just one drive
- Double walled grinding chamber can be water-cooled via two hose adapters
- Easy to clean, removable chamber

IP protection class according to DIN EN 60529: IP 21

Delivery information: Supplied with M21 cutting blade. A variety of accessories are available, please order required accessories separately.

Max. size of feed granules (mm)	6 - 7
Usable volume (ml)	250
Speed (min^{-1})	20000 fixed
Circumferential speed (m/s)	72
Duty cycle on/off with cooling (min)	7/10
Overload protection	Current limitation
Motor rating input/output (W)	440/225
W×D×H (mm)	170×170×350
Weight (kg)	6,6

Description	Pk	Cat. No.
M 20 universal mill, UK-plug	1	412-1103

Description	For	Pk	Cat. No.
Accessories			
Spare cutter M 21, stainless steel	Crushing substances with a Mohs hardness of up to 5	1	412-1163
Hard metal cutter M 22	Crushing substances with a Mohs hardness of up to 9	1	412-1164
Star-shaped cutter M 23	Crushing substances e.g. paper, vegetation, plastics and material with a low specific weight	1	412-1172
Spare grinding chamber, M 20.1	Second chamber can be cleaned and filled while other is being processed	1	412-1191

Microfine grinder, MF 10 basic

IKA

Continuously operating universal grinder with powerful drive. When using the grinding heads, the processed material passes through an interchangeable stainless steel sieve. The ground material can be collected using a vessel with NS 29 standard ground joint.

- Easy to clean stainless steel working surface
- Choice of two different heads that can be used with the drive
- Heads are easily interchanged

IP protection class according to DIN EN 60529: IP 22

Ordering information: Supplied without grinding heads or sieves, please order required accessories separately.

Max. size of feed granules (mm)	15 (cutting)* 10 (impact)*
Speed range (min^{-1})	3000 to 6500
Circumferential speed (m/s)	22,5 (cutting) 31,4 (impact)
Duty cycle on/off (min)	120/30*
Overload protection	Yes
Motor rating input/output (W)	1000/500
W×D×H (mm)	320×300×380
Weight (kg)	9,7

Description	Pk	Cat. No.
MF 10 basic microfine mill, UK-plug	1	**412-1128**

Description	Type	For	Pk	Cat. No.
Grinding heads				
Cutting grinding head	MF 10.1	Crushing fibrous substances e.g. paper, vegetation, plastics and material with a low specific weight. Maximum 15 mm granules	1	**412-1131**
Impact grinding head	MF 10.2	Crushing hard brittle materials e.g. minerals or building materials up to Mohs hardness 6. Maximum 10 mm granules	1	**412-1132**

Type	Material	Mesh size (mm)	Pk	Cat. No.
Sieves				
Sieve MF 0.25	Stainless steel	0,25	1	**412-1137**
Sieve MF 0.5	Stainless steel	0,50	1	**412-1133**
Sieve MF 1.0	Stainless steel	1,00	1	**412-1136**
Sieve MF 2.0	Stainless steel	2,00	1	**412-1138**
Sieve MF 3.0	Stainless steel	3,00	1	**412-1135**

* Depending on the material

Laboratory grinding mills, POLYMIX® System PX-MFC 90 D

Kinematica

Grinding mill with powerful motor, which is suitable for all laboratory dry milling applications. Milling chamber with attached funnel and rotary slide for sample feed, can be used with interchangeable hammer or blade grinding attachments, and sieves with mesh sizes from 0,2 up to 6 mm. Chamber parts in contact with the sample are made from hardened stainless steel, the anodised aluminium base frame has an integrated handle. The ground material can be collected using vessels with NS 29/32 standard connections (holding clip necessary) or receiving tubes.

- Powerful motor provides speeds up to 6000 min^{-1} with low noise emissions (less than 70 dB(A) at 6000 min^{-1} without load) due to brushless 3 phase AC motor
- Milling chamber can be equipped with hammer grinding or blade grinding attachment (second milling chamber not required)
- Integrated speed controller with LED display shows speed and status messages
- Integrated overheating, overload and blocking protection means motor shuts down if overload conditions arise, ensuring the motor is protected
- Safety switch for automatic switch-off, and energy saving automatic standby mode

IP protection class according to DIN EN 60529: IP 20

EMC according to IEC/EN 61000-6-2 &-6-3

Safety according to IEC/EN 61010-2-51

Ordering information: Supplied with either hammer grinding or blade grinding attachment, please select the required accessory, includes sample rack and one set of 12 receiving tubes.

Model	PX-PFC 90 D
Final fineness (mm)	<0,2
Mesh size (mm)	0,2 to 6
Max. size of feed granules (mm)	~12
Batch size/feeding quantity (ml)	300
Speed range (min^{-1})	50 to 6000
Speed display	LED
Motor rating input/output (W)	1000/600
W×D×H (mm)	251×325×480
Weight (kg)	12

Description	Pk	Cat. No.
PX-MFC 90 D mill with milling chamber, hammer grinding attachment, 2,0 mm sieve and tool set, UK-plug	1	**412-0510**
PX-MFC 90 D mill with milling chamber, blade grinding attachment, 2,0 mm sieve and tool set, UK-plug	1	**412-0511**

Description	Mesh size (mm)	Pk	Cat. No.
Sieves for POLYMIX® system PX-MFC 90 D			
Insert sieve, Stainless steel 1.4034	0,20	1	**412-0502**
	0,50	1	**412-0503**
	0,80	1	**412-0504**
	1,00	1	**412-0505**
	1,50	1	**412-0500**
	2,00	1	**412-0501**
	3,00	1	**412-0506**
	4,00	1	**412-0507**
	5,00	1	**412-0508**
	6,00	1	**412-0509**

Description	For	Pk	Cat. No.
Accessories			
Hammer grinding attachment	Processing dried, non-fatty, hard and brittle samples, e.g. cereals, corn, beans, nuts, bones and stone	1	**412-0512**
Blade grinding attachment	Processing dried, non-fatty, stringy and ductile samples, e.g. wood, roots, fruit, meat, paper, resins and synthetic materials	1	**412-0513**
Stodger	Active feeding of stringy materials via the hopper	1	**412-0514**

Ultra-centrifugal mill, ZM 200

Retsch

The ZM 200 is a powerful ultra-centrifugal mill for both demanding grinding tasks and efficient routine work. ZM 200 reduces the size of soft to medium-hard and fibrous materials. Ideal for rapid yet gentle preparation of analytical samples of materials such as chemicals, drugs, spices, coal, synthetic resins, plastics, pharmaceutical raw materials and finished products, plant constituents and surfactant determination in washing powders. For grinding larger amounts the use of a paper filter bag or a cyclone with 3 or 5 litre collecting receptacle is recommended. The sample is then cooled by the airstream and discharged more rapidly from the grinding chamber via the passage receptacle.

- Ground material is collected in the cassette, which ensures easy and loss-free material removal and avoids cross contamination
- Versatile mill with wide speed range; speed can be individually selected from 6000 to 18 000 min^{-1}
- Increased throughput due to optimally matched frequency converter and three phase motor
- Two step grinding ensures gentle but fast processing without altering sample characteristics
- Parameters are set via a graphics display and one button operation, electronic safety and diagnosis system reduce operating errors

IP protection class according to DIN EN 60529: IP 20

Ordering information: Please order push-fit rotor and ring sieve separately. Other sizes and types of sieves and push-fit rotors are available on request. Please contact VWR for ordering information on alternative cassettes and cyclones.

Delivery information: Supplied with standard 900 ml cassette.

* Depending on feed material

Model	ZM 200
Final fineness (µm)	Down to 40*
Max. size of feed granules (mm)	10
Sample volume (nominal volume)	Up to 300 ml with standard cassette (900 ml) Up to 20 ml with mini cassette (50 ml) Up to 1000 ml with paper filter bag (3000 ml) Up to 230 / 450 / 2500 / 4500 ml with cyclone (250 / 500 / 3000 / 5000 ml)
Motor speed 50 Hz	6000 to 18 000, freely selectable
Circumferential speed (m/s)	31 - 93
Drive	3 phase motor with frequency converter and motor brake
Motor rating input (W)	1300
W×D×H (mm)	410×365×515
Weight (kg)	38

Description	Pk	Cat. No.
ZM 200 mill	1	**412-0060**

Description	For	Pk	Cat. No.
Push-fit rotors for ZM 200			
6 tooth stainless steel push-fit rotor	Coarse, bulky, fibrous goods such as feed pellets, hay, straw	1	**412-2431**
12 tooth stainless steel push-fit rotor	Medium-coarse goods such as wheat, oats, corn, tablets, powder coatings and plastics	1	**412-2432**
24 tooth stainless steel push-fit rotor	Fine goods such as chemicals, coal and sugar	1	**412-2433**
12 tooth titanium push-fit rotor	Grinding without heavy metal contamination	1	**412-2945**
Accessories			
DR100 vibratory feeder kit, complete with attachment, 75/40 mm push fit feed chute length 250 mm, hopper, stand and data cable	-	1	**412-1006**
Conversion kit including 8 teeth push-fit rotor, labyrinth disk, cassette 50 ml	Grinding small quantities	1	**412-2933**
Cyclone with filter bag, with collecting receptacle, 3 litres	Grinding larger volumes	1	**412-0076**
Cyclone with filter bag, with collecting receptacle 5 litres	Grinding larger volumes	1	**412-0233**
Casette pan with titanium-niobium coating 900 ml	-	1	**412-2937**
Gasket for cassette lid	-	1	**412-2935**
Paper filter bags with passage receptacle and filter holder	-	1	**412-2934**

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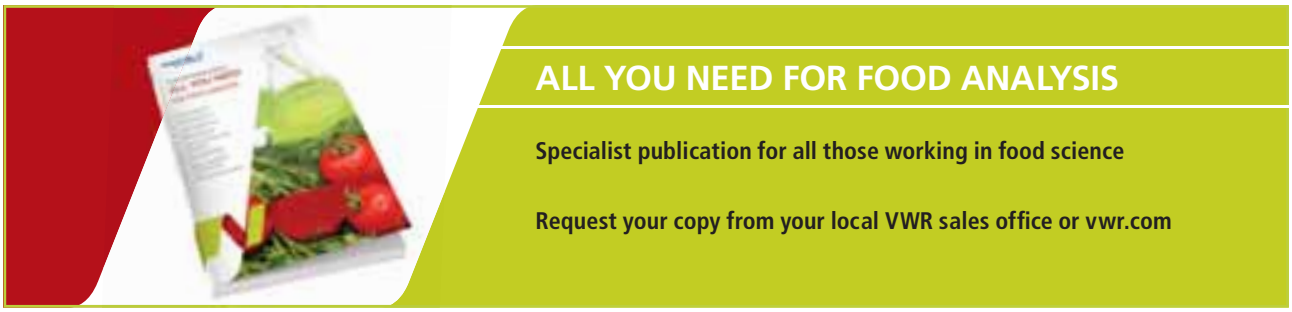
Description	Mesh size (mm)	Pk	Cat. No.
Stainless steel sieves for ZM 200			
Ring sieve, trapezoid holes	0,08	1	412-0021
	0,12	1	412-0022
	0,20	1	412-0023
	0,25	1	412-0024
	0,50	1	412-0025
	0,75	1	412-0026
	1,00	1	412-0027
	1,50	1	412-0028
	2,00	1	412-0029
	3,00	1	412-0030
	4,00	1	412-0031
	5,00	1	412-0032
	6,00	1	412-0033
Ring sieve, trapezoid holes, with strengthened edges, recommended for heavy-duty usage	0,08	1	412-2944
	0,12	1	412-2149
	0,20	1	412-2150
	0,25	1	412-2943
	0,50	1	412-2168
	0,75	1	412-2169
	1,00	1	412-2942
	1,50	1	412-2170
	2,00	1	412-2171
	3,00	1	412-2172
	4,00	1	412-2173
	5,00	1	412-2174
	6,00	1	412-2175
Titanium ring sieves for ZM 200			
Ring sieve, trapezoid holes, with reinforced rim	0,08	1	412-2143
	0,12	1	412-2144
	0,20	1	412-2145
	0,25	1	412-2941
	0,50	1	412-2940
	0,75	1	412-2146
	1,00	1	412-2939
	1,50	1	412-2147
	2,00	1	412-2148
Distance sieves for ZM 200			
Distance sieve, trapezoid holes	0,08	1	412-2136
	0,12	1	412-2137
	0,20	1	412-2138
	0,25	1	412-2139
	0,50	1	412-2140
	0,75	1	412-2141
	1,00	1	412-2938
	1,50	1	412-2142
	2,00	1	412-1005
Distance sieve, round holes	4,00	1	412-1003
Distance sieve, square holes, for pre-grinding	10,00	1	412-1004



Mixer mill, CryoMill

Retsch

The CryoMill has been specially designed for cryogenic grinding and it is ideal for plastics, temperature sensitive materials or samples with volatile components. Applications include cell disruption, cryogenic, wet and dry grinding of hard, medium hard, soft, brittle, elastic or fibrous materials. The grinding jar is continually cooled with liquid nitrogen at -196 °C from the integrated cooling system before and during the grinding process. The sample is embrittled and any volatile components are preserved. The grinding parameters can be stored, which helps to simplify routine tasks. LED display shows the current operation status, e.g. cooling and/or grinding. The size reduction principle is the same as that of the MM 400. With a vibrational frequency of up to 25 Hz, the CryoMill grinds most materials very effectively in a few minutes. The sample is mainly ground by impact but also by friction which allows for substantially finer grind sizes compared to other cryogenic mills. The CryoMill is equipped with one grinding station for grinding jar volumes of 25 ml, 35 ml and 50 ml. Another option is the use of an adapter which holds a 5 ml grinding jar**.

- Final fineness down to approx. 5 µm by impact and friction
- Fast, efficient cryogenic grinding at -196 °C, the integrated cooling system and with optional autofill means no manual cooling is needed
- Highly reproducible grinding results
- Programmable cooling and grinding cycles and digital parameter setting
- Can also be operated without cooling, making it suitable for a vast range of applications

Ordering information: The autofill system and the grinding jars and grinding balls need to be ordered separately.

* Depending on feed material and instrument configuration/settings

Model	CryoMill
Final fineness (µm)	~5 µm*
Material feed size (mm)	Up to 8*
Max. sample volume (ml)	20
Vibrational frequency (Hz)	3 - 25 Hz (180 - 1500 min^{-1})
Grinding stations	1
Grinding time setting (min)	Digital, 30 s - 99 min
Power supply	100 - 240 V, 50 - 60 Hz
W×D×H (mm)	385×570×370
Weight (kg)	46

Description	Pk	Cat. No.
CryoMill		
CryoMill	1	**412-0232**
Accessories		
Autofill with LN_2 container and safety valve, 50 litres	1	**412-0196**
Adapter** for use with 2/4 grinding jars, 5 ml stainless steel	1	**412-0131**

Material	Nominal volume (ml)	Pk	Cat. No.
Grinding jars			
Hardened steel	5**	1	**412-0221**
Hardened steel	25	1	**412-0224**
Hardened steel	35	1	**412-0223**
Hardened steel	50	1	**412-0222**
PTFE	25	1	**412-0229**
Stainless steel	5**	1	**412-0129**
Stainless steel	10	1	**412-0225**
Stainless steel	25	1	**412-0228**
Stainless steel	35	1	**412-0227**
Stainless steel	50	1	**412-0226**
Zirconium oxide	25	1	**412-0230**

Material	Ø (mm)	Pk	Cat. No.
Grinding balls			
Hardened steel	5	1	**412-3131**
	7	1	**412-3132**
	10	1	**412-2864**
	12	1	**412-3135**
	12	1	**412-3135**
	15	1	**412-2926**
Stainless steel	5	1	**412-3141**
	7	1	**412-3142**
	10	1	**412-2865**
	12	1	**412-3145**
	15	1	**412-2927**
	20	1	**412-0036**
	25	1	**412-2916**
PTFE	10	1	**412-3174**
	12	1	**412-3175**
	15	1	**412-2930**

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Material	Ø (mm)	Pk	Cat. No.
Grinding balls			
PTFE	20	1	**412-3176**
Zirconium oxide	10	1	**412-0039**
	12	1	**412-0040**
	15	1	**412-2929**
Zirconium oxide	10	1	**412-0039**
	12	1	**412-0040**

** Adapter required for use of 2 or 4 grinding jars, 5 ml nominal volume

Mixer mills, MM 200 and MM 400
Retsch

These simple to use laboratory mills have been developed for grinding and homogenising small amounts of sample. They are suitable for size reduction of hard and brittle samples as well as for soft, elastic and fibrous materials, disruption of biological cells and DNA/RNA recovery. The MM 400 can also be used for wet and cryogenic grinding. The grinding time is very short and the sample is hardly warmed at all. Application areas include mineralogy, chemical and environmental research as well as pharmaceutical sample analysis and biotechnology. Cell disruption can be achieved in reaction vials using specially designed adapters. The mills can also mix and homogenise powders and suspensions in less than a minute.

- Two grinding stations can process two samples simultaneously
- Digital setting of grinding time and vibration intensity ensures reproducible results
- Nine parameter combinations can be stored
- Screw top grinding jars (up to 50 ml, MM 400 only) allow safe wet and cryogenic grinding without loss of material
- Self-locking clamping device and self-centering for grinding jars makes use simple and safe (MM 400)

IP Protection Class according to DIN EN 60529: IP 30

* Depending on feed material and instrument configuration/settings

Ordering information: Ordering information: Grinding jars and grinding balls are available in a wide selection of sizes and materials, these need to be ordered separately.

Model	MM 200	MM 400
Final fineness (µm)	<10*	<5*
Material feed size (mm)	Up to 6*	Up to 8*
Max. sample volume (ml)	2×10*	2×20*
Vibrational frequency (Hz)	3 - 25	3 - 30
Power supply	100 - 240 V 50/60 Hz	
W×D×H (mm)	371×461×266	
Weight (kg)	~25	~26

Description	Pk	Cat. No.
Mixer mills, MM 200 and MM 400		
MM 200	1	**412-2177**
MM 400	1	**412-2176**
Accessories		
Adapter rack PTFE for 5 reaction vials, 1,5 and 2,0 ml	1	**412-0093**
Adapter rack PTFE for 10 reaction vials, 0,2 ml	1	**412-0094**
Adapter rack PTFE for 10 reaction vials, 1,5 and 2,0 ml (MM 400 only)	1	**412-0095**
Cryo kit for cooling the grinding jars with liquid nitrogen	1	**412-0092**

Grinding Jars for MM 200 and MM 400
Retsch

A wide range of jars is available both in terms of size and choice of material.
The jars for the MM 200 have a push-fit lid, whereas the jars for the MM 400 have a screw cap lid.
All grinding jars with screw top lids up to 10 ml and also the 25 ml stainless steel jar (412-0014) can be used with the MM 200.

Material	Nominal volume (ml)	Useful volume (ml) (sample*)	Max. feed size (mm)	Recommended ball charge (pcs)	Pk	Cat. No.
Grinding jars for MM 200						
Agate	5	0.5-2.0	2	Ø 7 mm: 1-2	1	**412-3062**
Agate	10	2-4	4	Ø 9/10 mm: 1-2, Ø 12 mm: 1-2	1	**412-3063**
Hardened steel	25	4-10	6	Ø 15 mm: 1	1	**412-3034**
PTFE	10	2-4	4	Ø 9/10 mm: 1-2, Ø 12 mm: 1-2	1	**412-0165**
PTFE	25	4-10	6	Ø 15 mm: 1	1	**412-3074**
Stainless steel	1,5	0.2-0.5	1	Ø 5 mm: 1-2	1	**412-3041**
Stainless steel	5	0.5-2.0	2	Ø 7 mm: 1-2	1	**412-3042**
Stainless steel	10	2-4	4	Ø 9/10 mm: 1-2, Ø 12 mm: 1-2	1	**412-3043**
Stainless steel	25	4-10	6	Ø 15 mm: 1	1	**412-3044**
Tungsten carbide	5	0.5-2.0	2	Ø 7 mm: 1-2	1	**412-3052**
Tungsten carbide	10	2-4	4	Ø 9/10 mm: 1-2, Ø 12 mm: 1-2	1	**412-3053**
Zirconium oxide	10	2-4	4	Ø 9/10 mm: 1-2, Ø 12 mm: 1-2	1	**412-0007**
Zirconium oxide	25	4-10	6	Ø 15 mm: 1	1	**412-3004**
Grinding jars for MM 400						
Agate	5	0.5-2.0	2	Ø 7 mm: 1-2	1	**412-2114**
Agate	10	2-4	4	Ø 9/10 mm: 1-2, Ø 12 mm: 1-2	1	**412-2118**
Hardened steel	25	4-10	6	Ø 15 mm: 1	1	**412-2124**
PTFE	25	4-10	6	Ø 15 mm: 1	1	**412-2125**
Stainless steel	1,5	0.2-0.5	1	Ø 5 mm: 1-2	1	**412-2112**
Stainless steel	5	0.5-2.0	2	Ø 7 mm: 1-2	1	**412-2113**
Stainless steel	10	2-4	4	Ø 9/10 mm: 1-2, Ø 12 mm: 1-2	1	**412-2116**
Stainless steel	25	4-10	6	Ø 15 mm: 1	1	**412-0014**
Stainless steel	35	6-15	6	Ø 20 mm: 1	1	**412-2127**
Stainless steel	50	8-20	8	Ø 25 mm: 1	1	**412-2128**
Tungsten carbide	10	2-4	4	Ø 9/10 mm: 1-2, Ø 12 mm: 1-2	1	**412-2117**
Tungsten carbide	25	4-10	6	Ø 15 mm: 1	1	**412-2123**
Zirconium oxide	10	2-4	4	Ø 9/10 mm: 1-2, Ø 12 mm: 1-2	1	**412-2115**
Zirconium oxide	25	4-10	6	Ø 15 mm: 1	1	**412-2119**
Zirconium oxide	35	6-15	6	Ø 20 mm: 1	1	**412-2126**

* Typically a jar filling should consist of 1/3 sample and 1/3 ball charge

Grinding balls

Material	Ø (mm)	Pk	Cat. No.
Glass	0,10 - 0,25	0,5 kg	**412-0067**
	0,25 - 0,50	0,5 kg	**412-0068**
	0,50 - 0,75	0,5 kg	**412-0069**
	0,75 - 1,00	0,5 kg	**412-2917**
Agate	5	1	**412-2912**
	7	1	**412-2913**
	9/10	1	**412-2914**
	10	1	**412-0079**
	12	1	**412-2915**
Hardened steel	5	1	**412-3131**
	7	1	**412-3132**
	9	1	**412-3133**
	10	1	**412-2864**
	12	1	**412-3135**

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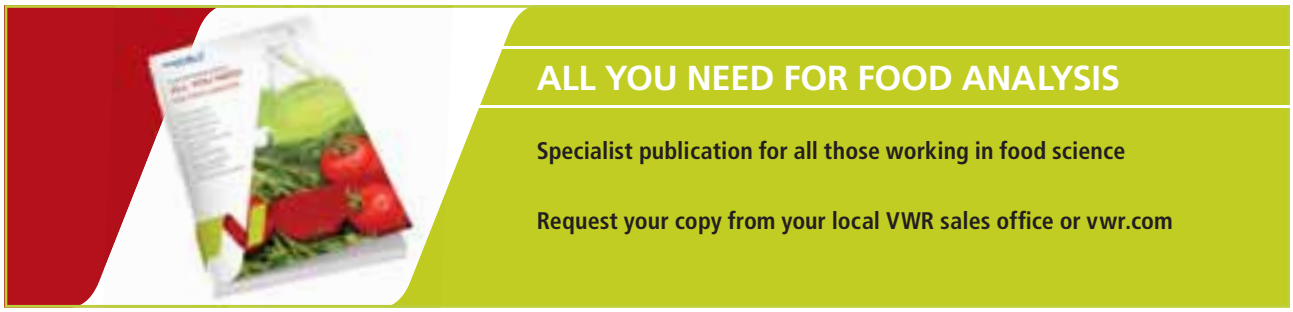
Material	Ø (mm)	Pk	Cat. No.
Hardened steel	15	1	412-2926
Stainless steel	3	200	412-2918
	5	200	412-0070
	5	1	412-3141
	7	1	412-3142
	9	1	412-3143
	10	1	412-2865
	12	1	412-3145
	15	1	412-2927
	20	1	412-0036
	25	1	412-2916
PTFE	10	1	412-3174
	12	1	412-3175
	15	1	412-2930
	20	1	412-3176
Tungsten carbide	3	200	412-0071
	5	1	412-3151
	7	1	412-3152
	9	1	412-3153
	10	1	412-2866
	12	1	412-3155
	15	1	412-2928
Zirconium oxide	12	1	412-0040
	15	1	412-2929
	20	1	412-0038
Stainless steel	3	200	412-2918
	5	200	412-0070
	5	1	412-3141
	7	1	412-3142
	9	1	412-3143
	10	1	412-2865
	12	1	412-3145
	15	1	412-2927
	20	1	412-0036
	25	1	412-2916
PTFE	10	1	412-3174
	12	1	412-3175
	15	1	412-2930
	20	1	412-3176
Tungsten carbide	3	200	412-0071
	5	1	412-3151
	7	1	412-3152
	9	1	412-3153
	10	1	412-2866
	12	1	412-3155
	15	1	412-2928
Zirconium oxide	12	1	412-0040
	15	1	412-2929



Planetary ball mills, PM 100, PM 100 CM, PM 200 and PM 400

Retsch

Planetary mills pulverise and mix soft, medium-hard to extremely hard, brittle and fibrous materials quickly without loss. Examples of applications include minerals, ores, chemicals, ceramics, soils, household and industrial waste and sample preparation for spectral analysis. These mills are suitable for long term trials and continuous use and are used for dry and wet grinding in all industry sectors, where a high degree of reproducibility, fineness, purity and speed is required. The excellent performance is achieved by the high centrifugal forces and very high pulverisation energy generated by the planetary mill design. The control system allows the operator to control speed, grinding time, direction reversal and interval times. The mills also meet all the technical requirements for colloidal grinding and have the energy input necessary for mechanical alloying processes. Safety features include automatic safety self-test and a noise protected and ventilated chamber. A backup memory in the event of power failure ensures storage of remaining grinding time. Grinding sets are available in six different materials that allow sample preparation without contamination.

Three bench top models are available with either a single grinding station (PM 100, PM 100 CM) with jar capacity up to 500 ml, or with two smaller capacity grinding stations up to a total of 250 ml (2×125 ml - PM 200). The PM 100 CM has a speed ratio of 1:-1, size reduction is effected by pressure and friction, rather than by impact, which means it is gentler on the material. The PM 400 is a robust compact floor model on castors with 4 grinding stations for grinding jars with a nominal volume of 12 to 500 ml. This allows for high sample throughput with excellent reproducibility, fineness and purity.

- Simultaneous processing of 1, 2 or 4 samples
- Extremely high fineness down to the submicron range
- Single button operation with graphics display and programmable start time
- Reproducible results due to digital parameter setting, 10 combinations of grinding parameters can be stored
- Automatic ventilation of grinding chamber for cooling grinding jars

IP Protection Class according to DIN EN 60529: IP 30

Ordering information: Grinding jars and grinding balls need to be ordered separately.

* Depending on feed material

Model	PM 100	PM 100 CM	PM 200	PM 400
Final fineness (µm)	<1*			
Max. size of feed granules (mm)	up to 10	up to 10*	up to 4	up to 10*
Batch/sample volume (ml)	max 1×220 or max 2×20		max 2×50*	max 4×220 or 8×20*
Speed (sun wheel) (min^{-1})	100 - 650			30 - 400
Speed ratio	1:-2	1:-1	1:-2	
For colloidal grinding (µm)	<0,1*			
Grinding jar volumes (ml)	12 - 500		12 - 125	12 - 500
Grinding stations	1		2	2/4
Motor rating input (W)	1250			2200
W×D×H (mm)	630×415×468			836×780×1220
Weight (kg)	~80	~86	~720	~290

Description	Pk	Cat. No.
Planetary ball mills		
PM 100	1	**412-0042**
PM 100 CM	1	**412-2953**
PM 200	1	**412-0043**
PM 400 (240 V for UK market)	1	**412-0231**
Accessories		
Adapter for stacking 50 ml comfort grinding jars in hardened steel or stainless steel in the PM 100 and PM 400	1	**412-2739**

Material	Ø (mm)	Pk	Cat. No.
Grinding balls			
Agate	10	1	**412-0079**
	20	1	**412-0080**
	30	1	**412-0081**
	40	1	**412-0082**
Sintered aluminium oxide	5	1	**412-3121**
	10	1	**412-2947**
	20	1	**412-2872**
	30	1	**412-2882**
	40	1	**412-2892**
Hardened steel	10	1	**412-2864**
	20	1	**412-2907**
	30	1	**412-2884**

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Material	Ø (mm)	Pk	Cat. No.
Grinding balls			
Hardened steel	40	1	**412-2894**
Stainless steel	10	1	**412-2865**
	20	1	**412-0036**
	30	1	**412-2885**
	40	1	**412-2895**
Tungsten carbide	10	1	**412-2866**
	20	1	**412-0037**
	30	1	**412-2886**
	40	1	**412-2896**
Zirconium oxide	5	200	**412-0166**
	10	1	**412-0039**
	20	1	**412-0038**
	30	1	**412-2900**
	40	1	**412-2908**
Stainless steel	10	1	**412-2865**
	20	1	**412-0036**
	30	1	**412-2885**
	40	1	**412-2895**
Tungsten carbide	10	1	**412-2866**
	20	1	**412-0037**
	30	1	**412-2886**
	40	1	**412-2896**
Zirconium oxide	5	200	**412-0166**
	10	1	**412-0039**
	20	1	**412-0038**
	30	1	**412-2900**

Material	Nominal volume (ml)	Useful volume (ml) (sample and balls)	For	Max. feed size (mm)	Recommended ball charge (pcs)	Pk	Cat. No.
Grinding Jars 'comfort' for PM 100, PM 100CM, PM 200 and PM 400							
Agate	50	5-20	PM 100, PM 200, PM 400	<3	Ø 10: 10; Ø 20: 3	1	**412-2737**
	80	10-35	PM 100, PM 200, PM 400	<4	Ø 10: 20; Ø 20: 5	1	**412-2946**
	125	15-50	PM 100, PM 200, PM 400	<4	Ø 10: 25; Ø 20: 6	1	**412-2767**
	250	25-120	PM 100, PM 400	<6	Ø 10: 50; Ø 20: 12; Ø 30: 5	1	**412-2903**
	500	75-220	PM 100, PM 400	<10	Ø 10: 100; Ø 20: 20; Ø 30: 8; Ø 40: 4	1	**412-2905**
Sintered aluminium oxide	50	5-20	PM 100, PM 200, PM 400	<3	Ø 10: 10; Ø 20: 3	1	**412-0086**
	125	15-50	PM 100, PM 200, PM 400	<4	Ø 10: 25; Ø 20: 6	1	**412-2762**
	250	25-120	PM 100, PM 400	<6	Ø 10: 50; Ø 20: 12; Ø 30: 5	1	**412-2742**
	500	75-220	PM 100, PM 400	<10	Ø 10: 100; Ø 20: 20; Ø 30: 8; Ø 40: 4	1	**412-2752**
Hardened steel	50	5-20	PM 100, PM 200, PM 400	<3	Ø 10: 10; Ø 20: 3	1	**412-0085**
	125	15-50	PM 100, PM 200, PM 400	<4	Ø 10: 25; Ø 20: 6	1	**412-2764**
	250	25-120	PM 100, PM 400	<6	Ø 10: 50; Ø 20: 12; Ø 30: 5	1	**412-0163**
	500	75-220	PM 100, PM 400	<10	Ø 10: 100; Ø 20: 20; Ø 30: 8; Ø 40: 4	1	**412-0164**
Stainless steel	12	<5	PM 100, PM 200, PM 400	<1	Ø 10: 5	1	**412-0083**
	25	<10	PM 100, PM 200, PM 400	<1	Ø 10: 8	1	**412-0084**
	50	5-20	PM 100, PM 200, PM 400	<3	Ø 10: 10; Ø 20: 3	1	**412-2735**
	125	15-50	PM 100, PM 200, PM 400	<4	Ø 10: 25; Ø 20: 6	1	**412-2765**
	250	25-120	PM 100, PM 400	<6	Ø 10: 50; Ø 20: 12; Ø 30: 5	1	**412-0008**
	500	75-220	PM 100, PM 400	<10	Ø 10: 100; Ø 20: 20; Ø 30: 8; Ø 40: 4	1	**412-0009**
Tungsten carbide	50	5-20	PM 100, PM 200, PM 400	<3	Ø 10: 10; Ø 20: 3	1	**412-2736**
	125	15-50	PM 100, PM 200, PM 400	<4	Ø 10: 25; Ø 20: 6	1	**412-2766**

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Material	Nominal volume (ml)	Useful volume (ml) (sample and balls)	For	Max. feed size (mm)	Recommended ball charge (pcs)	Pk	Cat. No.
Grinding Jars 'comfort' for PM 100, PM 100CM, PM 200 and PM 400							
Tungsten carbide	250	25-120	PM 100, PM 400	<6	Ø 10: 50; Ø 20: 12; Ø 30: 5	1	**412-2904**
Zirconium oxide	50	5-20	PM 100, PM 200, PM 400	<3	Ø 10: 10; Ø 20: 3	1	**412-0087**
	125	15-50	PM 100, PM 200, PM 400	<4	Ø 10: 25; Ø 20: 6	1	**412-0162**
	250	25-120	PM 100, PM 400	<6	Ø 10: 50; Ø 20: 12; Ø 30: 5	1	**412-2902**
	500	75-220	PM 100, PM 400	<10	Ø 10: 100; Ø 20: 20; Ø 30: 8; Ø 40: 4	1	**412-2906**
Zirconium oxide	50	5-20	PM 100, PM 200, PM 400	<3	Ø 10: 10; Ø 20: 3	1	**412-0087**
	125	15-50	PM 100, PM 200, PM 400	<4	Ø 10: 25; Ø 20: 6	1	**412-0162**
	250	25-120	PM 100, PM 400	<6	Ø 10: 50; Ø 20: 12; Ø 30: 5	1	**412-2902**

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Laboratory mixer, Sterilmixer 12

The Sterilmixer 12 is a bladed blender for solid or semi-solid sample preparation, it is ideal for processing infected items or for aseptic work in a sterile environment. The mixer is designed for high speed mixing, emulsion and disintegration of liquids, fluid suspensions or semi-solid substances. The unit has interchangeable leakproof containers and all parts that come into contact with samples can be sterilised by steam or autoclave.

- Speed is easy to control by means of buttons on the front control panel
- 12 different speeds from 12 500 to 18 000 min^{-1} in increments of 500 min^{-1}
- Pulse function
- Easy to dismantle, clean and sterilise
- Various optional container sizes from 125 to 3000 ml in stainless steel, glass or plastic to cover all laboratory needs, including autoclavable containers are available

Delivery information: Supplied with stainless steel asymetrical blades, base plate fixing system, sealing ring, 1250 ml glass container and plastic cover. Requires 220 V power supply. Other containers and accessories are available. Accessories must be ordered separately.

Description	Revolutions (min^{-1})	Pk	Cat. No.
Sterilmixer 12	12500 - 18000*	1	**710-0883**

Description	Pk	Cat. No.
Containers and blades for Sterilmixer 12		
Autoclavable Neomini sealing ring for blades	2	**710-0905**
Autoclavable, stainless steel container, capacity 1250 ml, with plastic (non autoclavable) cover	1	**710-0897**
Blostev 12, base plate fixing system, non autoclavable	1	**710-0901**
Conti-Glass container with cover, capacity 1250 ml	1	**710-0898**
Johnny sealing ring for blades, autoclavable, for use with Steri-Blostev 12 base fixing plate	1	**710-0953**
Steri-Blostev 12 base plate fixing system, autoclavable, for use with Johnny sealing ring	1	**710-0952**
Triplex stainless steel blades	1	**710-0900**

* in 500 min^{-1} increments

Knife mill, MICROTRON® MB 550
Kinematica

The MICROTRON® MB 550 is specially designed for mixing, dispersing, homogenising, emulsifying and size reduction of cuttable materials.

For analytical and research laboratories.

- Positioning of attachment on the drive by magnetic contact
- Earthed, double safety isolated, radio screened
- A safety system prevents inadvertent start up and potential personal injuries
- Electronic speed control

IP protection class according to DIN EN 60529: IP 20

Ordering information: Drive unit supplied without attachments.

Dimensions Ø×H without attachment (mm)	190×245
Power consumption (W)	550
Speed display	Scale 0 - 8
Speed range (min^{-1})	600 - 14000, infinitely variable, soft start
Weight (kg)	4,4
Working volume (ml)	125, 250, 500 or 1000

Description	Pk	Cat. No.
Drive unit MICROTRON® MB 550	1	**431-9351**

Description	Pk	Cat. No.
Accessories		
Mixing attachment 125 ml, glass beaker	1	**431-9352**
Mixing attachment 250 ml, glass beaker	1	**431-9353**
Mixing attachment 500 ml, glass beaker	1	**431-9354**
Mixing attachment 1000 ml, glass beaker	1	**431-9355**
Safety cover for beaker 125 ml	1	**431-9356**
Safety cover for beaker 250 ml	1	**431-9357**
Safety cover for beaker 500 ml	1	**431-9358**
Safety cover for beaker 1000 ml	1	**431-9359**

Laboratory mixer, MICROTRON® MB 800
Kinematica

The MICROTRON ® MB 800 is designed for mixing, dispersing, homogenising, emulsifying and crushing of foodstuffs, pigments and a variety of other similar types of products. Two stainless steel processing vessels with volumes of 2000 ml and 4000 ml are available as optional accessories. The mixer can only be used with a properly positioned safety lid. This prevents inadvertent start-up and maximises safety. The unit has a chromium-plated zinc die-cast motor base and stainless steel cutting blade.

- Powerful drive unit with a high-temperature-resistant collector motor with fan
- Continuously adjustable speed
- Electronic speed control and soft start

Ordering information: Mixer supplied without attachments, stainless steel processing vessels with volumes of 2000 and 4000 ml must be ordered separately.

Dimensions Ø×H without attachment (mm)	190×245
Power consumption (W)	800
Speed display	Scale 0 - 8
Speed range (min^{-1})	500 - 17000
Weight (kg)	5,3
Working volume (ml)	2000 - 4000

Description	Pk	Cat. No.
Drive unit MICROTRON® MB 800	1	**431-0198**

Description	Pk	Cat. No.
Accessories		
Stainless steel mixing attachment, 2000 ml, includes cutting head and safety lid	1	**431-0199**
Stainless steel mixing attachment, 4000 ml, includes cutting head and safety lid	1	**431-0200**

Laboratory mixers
Waring

Reliable devices with powerful motors. For thorough mixing, dispersion and emulsification. Special cutter heads and high speed operation make these laboratory mixers suitable for many applications. Two basic devices with capacities of 1 or 2 l and a variety of stainless steel, heat resistant glass or PC beakers are available.

Delivery information: Supplied with motor, cutter head, beaker and lid.

Description	Capacity (l)	Revolutions (min^{-1})	W×D×H (mm)	Pk	Cat. No.
Blender without container, fixed speed	1	20000	180×210×350	1	**431-0103**
Blender with glass container, fixed speed	1	22000	180×210×350	1	**431-0071**
Blender with stainless steel container, fixed speed	1	22000	180×210×350	1	**431-0104**
Blender with glass container, 2 speed with timer	1	18000/22000	180×210×350	1	**431-9112**
Blender with stainless steel container, 2 speed with timer	1	18000/22000	180×210×350	1	**431-9113**
Blender without container, 2 speed	1	18000/22000	180×210×350	1	**431-9333**
Blender with glass container, 2 speed	1	18000/22000	180×210×350	1	**431-9110**
Blender with stainless steel container, 2 speed	1	18000/22000	180×210×350	1	**431-9111**
Blender with polycarbonate container, 2 speed	2	19000/23000	203×178×419	1	**431-9210**

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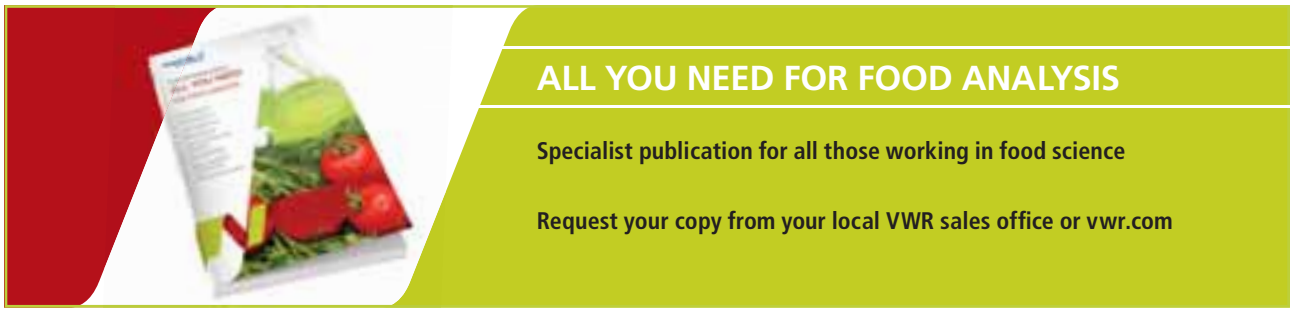
Description	Capacity (l)	Revolutions (min^{-1})	W×D×H (mm)	Pk	Cat. No.
Blender with stainless steel container, 2 speed	2	19000/23000	203×178×419	1	**431-9211**
Blender with glass container, variable speed	1	0 - 20000	180×210×350	1	**431-0106**
Blender with stainless steel container, variable speed	1	0 - 20000	180×210×350	1	**431-0107**

Accessories for laboratory mixers
Waring

Description	Capacity (ml)	For unit	Pk	Cat. No.
Blending assembly for 1 l beaker	-	1 l	1	**431-9141**
Lid for 1 l glass beaker	-	1 l	1	**431-9122**
Spare PVC lid for mini container 431-9131	-	1 l	1	**857-1403**
Spare PVC lid for mini container 431-9132	-	1 l	1	**431-0068**
Spare PVC lid for mini container 431-9133	-	1 l	1	**857-1405**
Blending assembly for mini beaker 500 ml	-	1 l	1	**431-9142**
Glass beaker, with blending assembly, without lid	1000	1 l	1	**431-9121**
Lid for stainless steel beaker without steam vent	-	1 l	1	**431-9224**
Blending assembly for 4 l beaker	-	4 l	1	**431-9341**
Adapter for use with 1 l beaker or mini-beaker	-	4 l	1	**431-9331**
Adapter for use with 1 l beaker or mini-beaker	-	2 l	1	**431-9231**
Lid for stainless steel beaker with steam vent	-	2 l	1	**431-9223**
Glass beaker, with plastic lid	1000	1 l	1	**857-1513**
Stainless steel beaker, with blending assembly and lid	1000	1 l	1	**431-9123**
PC beaker, with PC lid and blending assembly	2000	2 l	1	**431-9221**
Stainless steel beaker, with blending assembly and lid	4000	4 l	1	**431-9322**
Stainless steel beaker, with PC lid and blending assembly	4000	4 l	1	**431-9323**
Glass mini-beaker, with blending assembly	500	1 l	1	**WARIE8470**
Stainless steel mini-beaker, with cutter and lid	12 - 37	1 l	1	**431-9131**
Stainless steel mini-beaker, with cutter and lid	37 - 110	1 l	1	**431-9132**
Stainless steel mini-beaker, with blending assembly and lid	50 - 250	1 l	1	**431-9133**
Mini-pulveriser for dry cutting (of e.g. tablets)	10 - 75	1 l	1	**431-9134**
Container with stainless steel lid and blending assembly	1000	1 l	1	**431-0108**



Homogeniser, VDI 12

Handheld or stand model, volume range 0,1 to 100 ml

An ergonomic, lightweight, handheld homogeniser which is easy to handle. Ideal for RNA protein assays, DNA and RNA blot analysis, PCR work, wastewater extractions, tissue decomposition and suspensions. High shear homogenisation reduces sample process times 10-fold compared to conventional mixers.

- Motor accepts VWR dispersing elements as well as those from selected other manufacturers*
- Overload protection means motor shuts down if overload conditions arise, ensuring the motor is protected
- Quick release coupling enables dispersing elements to be changed quickly and easily

IP protection class according to DIN EN 60529: IP 30

Ordering information: Supplied without dispersing elements, please order required accessories separately.

Model	VDI 12
Volume H_2O (ml)	0,1 - 100
Max. viscosity (mPas)	5000
Speed range (min^{-1})	8000 - 30000
Speed display	Scale
Motor rating (W)	125
W×D×H (mm)	46×57×201
Weight (kg)	0,4

Description	Pk	Cat. No.
VDI 12 homogeniser, UK-plug	1	**431-0124**

Description	Type	For	Stator/rotor Ø (mm)	Volume (ml)	Pk	Cat. No.
Stainless steel rotor/stators						
Dispersing element S12N-5S	Sawtooth	VDI 12	6 / 3,5	0,1 - 5	1	**431-0110**
Dispersing element S12N-7S	Sawtooth	VDI 12	8 / 6,1	0,3 - 10	1	**431-0111**
Dispersing element S12N-12S	Sawtooth	VDI 12	12 / 8,5	2 - 250	1	**431-0112**
Accessories						
Bosshead clamp					1	**442-2043**
Plate stand, 242×355 mm, rod 10 mm Ø with height 370 mm. Max. load: 0,7 kg					1	**431-1006**

* For details of dispersing elements please contact VWR.

Homogeniser, T 18 digital ULTRA-TURRAX®
IKA

Stand model, volume range 1 to 1500 ml

The T 18 digital drive unit offers a wide speed range from 500 – 25 000 min^{-1} that enables users to work at high circumferential speeds even with small rotor diameters. A broad choice of dispersing elements guarantees a wide range of applications.

- Digital speed display
- Electronic speed control and overload protection
- Stainless steel dispersing elements can be cleaned quickly and easily
- Plastic disposable dispersing elements are available in two sizes
- Error code display

IP protection class according to DIN EN 60529: IP 20

Delivery information: Drive unit supplied without stand and dispersing elements, please order required dispersing unit and accessories separately.
The package consists of the T 18 digital ULTRA-TURRAX® drive unit and the S 18 N - 19 G dispersing element.

Model	T 18 digital
Volume H_2O (ml)	1 - 1500
Max. viscosity (mPas)	5000
Speed range (min^{-1})	500 - 25000
Speed stability (%)	1
Motor rating input/output (W)	500/300
Display	LED
Sound level (dB(A))	75
W×D×H (mm)	87×106×271
Weight (kg)	2,5

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Description	Pk	Cat. No.
T 18 digital ULTRA-TURRAX®, drive unit only		
T 18 digital ULTRA-TURRAX® homogeniser, UK-plug	1	**431-0186**
T 18 digital ULTRA-TURRAX® package		
T 18 digital ULTRA-TURRAX® homogeniser package, UK-plug	1	**431-0190**

Homogeniser, T 25 digital ULTRA-TURRAX®

IKA

Stand model, volume range 1 to 2000 ml

The T 25 homogeniser is ideal for applications such as homogenising wastewater samples, for the use in laboratory reactors, dispersion tasks under vacuum/pressure and sample preparation in medical diagnostics.

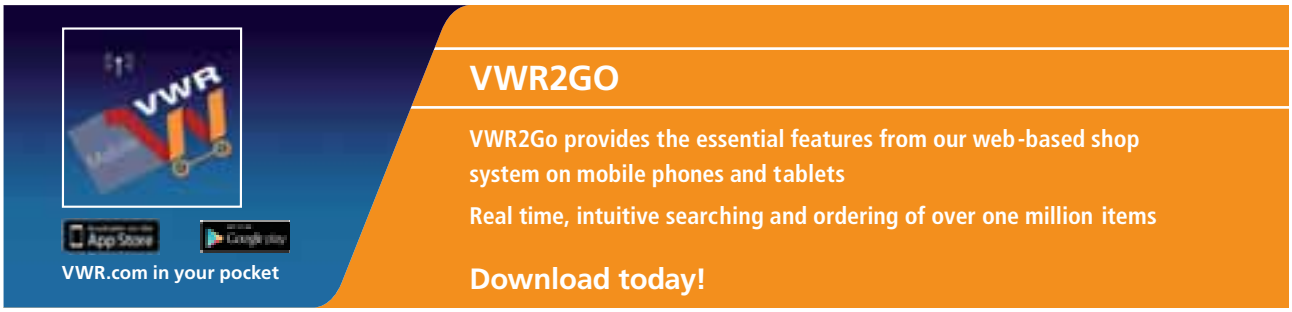
- Digital display for precise monitoring of set and actual speeds
- Wide selection of dispersing tools to suit your application
- Established rotor/stator configurations give consistent results
- Motor protection against overload

IP protection class according to DIN EN 60529: IP 20

Ordering information: Dispersing elements and accessories have to be ordered separately.

Model	T 25 digital
Volume H_2O (ml)	1 - 2000
Max. viscosity (mPas)	5000
Viscosity range (mPas)	0 - 5000
Speed range (min^{-1})	500 - 25000
Speed display	Digital
Speed stability (%)	1
Motor rating input/output (W)	800/500
Display	LED
Sound level (dB(A))	75
W×D×H (mm)	87×106×271
Weight (kg)	2,5

Description	Pk	Cat. No.
T 25 digital ULTRA-TURRAX® homogeniser, UK-plug	1	**431-0177**



Homogeniser, T 50 digital ULTRA-TURRAX®
IKA

Stand model, volume range 250 to 30 000 ml

Reproducible operation due to constant speed, even with changes in viscosities.

- Digital display for precise monitoring of set and actual speeds
- Wide selection of dispersing tools to suit your application
- Motor protected against overload
- Smooth start
- Error code display

Optional shaft 431-2961 enables the T 50 basic to be used as a high-speed stirrer.

IP protection class according to DIN EN 60529: IP 20

Ordering information: Dispersing elements and accessories must be ordered separately.

Model	T 50 digital
Volume H_2O (ml)	250 - 30000
Max. viscosity (mPas)	5000
Speed range (min^{-1})	500 - 10000
Speed stability (%)	1
Speed adjustment	Stepless
Motor rating input/output (W)	1100/700
Display	LED
Sound level (dB(A))	72
W×D×H (mm)	115×139×355
Weight (kg)	5,76

Description	Pk	Cat. No.
T 50 digital ULTRA-TURRAX® homogeniser, UK-plug	1	**431-0181**

Description	Pk	Cat. No.
Accessories		
Disperser R 1402, Ø 42 mm	1	**441-2993**
Propeller R 1405, Ø 45 mm	1	**441-2991**
H-Stand, 460×420 mm, rod 34 mm Ø with height 1010 mm	1	**431-9114**
High-speed stirring shaft R 50	1	**431-2961**
Bosshead clamp, 34 mm Ø stand, 16 mm Ø extension arm	1	**431-2907**

Dispersing elements for homogenisers
IKA

S 10 N - 10 G

S 25 KV - 25 G

S 50 N - G 45 M

Type N

Materials in contact with medium are PTFE and stainless steel AISI 316L, suitable for solvents and abrasive substances, can be sterilised by all methods, max. temperature 180 °C.

Type NK

Materials in contact with medium are PTFE and stainless steel AISI 316L, suitable for solvents and abrasive substances, can be sterilised by chemical methods, max. temperature 120 °C.

Type KV

Materials in contact with medium are FFPM/SIC and stainless steel AISI 316L, suitable for vacuum down to 1 mbar, pressure up to 6 bar and for solvents, can be sterilised by chemical methods, max. temperature 220 °C.

Type	For	Speed (m/s)	Stator/rotor Ø (mm)	Length (mm)	Volume (ml)	Pk	Cat. No.
S 10 N - 5 G	T 10 basic	6	5 / 3,8	92	0,5 - 10	1	**442-0300**
S 10 N - 8 G	T 10 basic	9,6	8 / 6,1	115	1 - 50	1	**442-0310**
S 10 N - 10 G	T 10 basic	11,9	10 / 7,6	115	1 - 100	1	**442-0312**
S 18 N - 10 G	T 18 basic	9,4	10,0 / 7,5	108	1 - 100	1	**431-2602**

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Type	For	Speed (m/s)	Stator/rotor Ø (mm)	Length (mm)	Volume (ml)	Pk	Cat. No.
S 18 N - 19 G	T 18 basic	15,9	19,0 / 12,7	204	10 - 1500	1	**431-2603**
S 25 N - 8 G	T 25 digital	7,7	8,0 / 6,1	108	1 - 50	1	**431-2451**
S 25 N - 10 G	T 25 digital	9,4	10,0 / 7,5	105	1 - 100	1	**431-2452**
S 25 N - 18 G	T 25 digital	15,9	18,0 / 12,7	194	10 - 1500	1	**431-2453**
S 25 N - 25 G	T 25 digital	21,4	25,0 / 17,0	194	50 - 2000	1	**431-2456**
S 25 N - 25 F	T 25 digital	22,6	25,0 / 18,0	194	100 - 2000	1	**431-2459**
S 25 NK - 19 G	T 25 digital	15,9	19,0 / 12,7	194	25 - 1500	1	**431-2211**
S 25 KV -18 G	T 25 digital	15,9	18,0 / 12,7	270	10 - 1500	1	**431-2455**
S 25 KV - 25 G	T 25 digital	21,4	25,0 / 17,0	270	50 - 2000	1	**431-2458**
S 25 KV - 25 F	T 25 digital	22,6	25,0 / 18,0	270	100 - 2000	1	**431-2461**
S 50 N - G 45 G	T 50 basic	18,8	45,0 / 36,0	300	0,5 - 20 000	1	**431-2560**
S 50 N - G 45 F	T 50 basic	20,9	45,0 / 40,0	290	0,25 - 10 000	1	**431-2569**
S 50 N - G 45 M	T 50 basic	21,2	45,0 / 40,5	290	0,5 - 15 000	1	**431-2563**

More dispersing elements are available on request. Please contact VWR for details.

Disposable dispersing elements, for T 10 basic, T 18 basic and T 25 digital

IKA

S25D-14G-KS

S18D-10G-KS

S18D-14G-KS

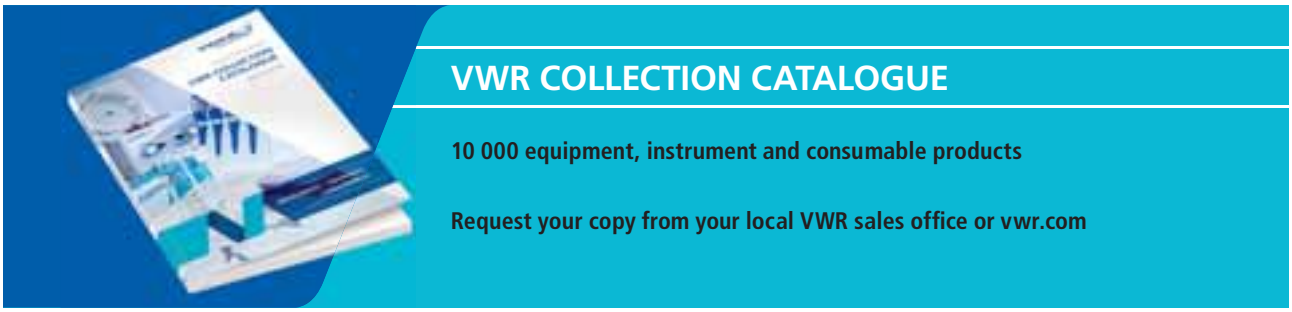
Disposable, plastic dispersing elements are ideal for applications where cross-contamination cannot be tolerated. Dispersing elements can be thrown away after a single use, or can be re-used several times in applications where this is allowed, with careful cleaning and/or autoclaving. They are ideal for homogenising tissue samples, and particularly suitable for PCR analysis.

- Easy to use and autoclavable (maximum 5 times, no warranty assumed)
- Plastic materials used approved by FDA
- Robust plastic material can be used for media heated up to 100 °C
- Tools can be easily disassembled

Delivery information: Supplied with 1 disposable tube.

Model	S10D-7G-KS-110	S10D-7G-KS-65	S18D-10G-KS
Circumferential speed at 30 000 rpm (m/s)	7.5		8.5
Materials in contact with medium	Polycarbonate (PC), Polysulphone (PSU)		Polycarbonate (PC), Polyetheretherketone (PEEK)
Max. immersion depth (mm)	90	45	85
Max. temperature (°C)	100		
Min. immersion depth (mm)	20		15
Rotor Ø (mm)	4.8		6.75
Shaft length (mm)	110	65	150
Stator Ø (mm)	7		10
Suitable for dispersing instrument	T 10 basic		T 18 basic
Working Range (ml)	1 - 40	1 - 20	10 - 100

Description	For	Speed (m/s)	Stator/rotor Ø (mm)	Length (mm)	Volume (ml)	Pk	Cat. No.
S10D-7G-KS-110	T 10 basic	7,5	7 / 4,8	110	1 - 40	24	**431-0201**
S10D-7G-KS-65	T 10 basic	7,5	7 / 4,8	65	1 - 20	24	**431-0202**
S25D-14G-KS	T 25 digital	12	14 / 9,5	150	10 - 500	12	**431-0217**
S25D-10G-KS	T 25 digital	8,5	10 / 6,75	150	10 - 100	12	**431-0216**
S18D-14G-KS	T 18 basic	12	14 / 9,5	150	10 - 500	12	**431-0218**
S18D-10G-KS	T 18 basic	8,5	10 / 6,75	150	10 - 100	12	**431-0016**



Homogenisers, T 65 basic and T 65 digital ULTRA-TURRAX®

IKA

Stand model, volume range 2 to 50 litres

- Designed for pilot plant applications with 3 phase supply
- Electronic speed control and overload protection
- 3 dispersing tools (rotor/stator configurations) for a wide variety of applications and final fineness
- Plug-in connectors facilitate changeover of dispersing tools
- Reproducible operations due to constant speed even with changes in viscosities
- Stainless steel dispersing elements for use under vacuum and pressure

IP protection class according to DIN EN 60529: IP 54

Ordering information: Dispersing elements and accessories must be ordered separately.

Delivery information: Cables and plugs not supplied.
Packages include the appropriate T 65 drive unit and T 653 telescopic stand and S 65 KG-HH-G 65 G dispersing tool.

Model	T 65 basic ULTRA-TURRAX®	T 65 digital ULTRA-TURRAX®
Volume H_2O (ml)	2000 - 50000	
Max. viscosity (mPas)	5000	
Viscosity range (mPas)	<5000	
Speed range (min^{-1})	7200 fixed	1000 - 9500
Speed adjustment	fixed	stepless
Motor rating input/output (W)	1800/1500	2600/2200
Display	-	LED
Sound level (dB(A))	75 without dispersing element	
W×D×H (mm)	185×400×450	300×400×390
Weight (kg)	26	29

Description	Pk	Cat. No.
ULTRA TURRAX® drive units only		
T 65 basic ULTRA-TURRAX® homogeniser, 3-phase 400 V, 50 Hz	1	**431-1008**
T 65 digital ULTRA-TURRAX® homogeniser, 3-phase 400 V, 50 Hz	1	**431-1009**
ULTRA TURRAX® packages		
T 65 basic ULTRA-TURRAX® homogeniser package	1	**431-1010**
T 65 digital ULTRA-TURRAX® homogeniser package	1	**431-1011**

Type	Stator/rotor Ø (mm)	Volume (l)	Pk	Cat. No.
Dispersing tools for T 65				
S 65 KG-HH-G 65 G	65/58	2 - 50	1	**431-0046**
S 65 KG-HH-G 65 M	65/58	2 - 40	1	**431-0047**
S 65 KG-HH-G 65 F	65/58	2 - 30	1	**431-0048**

Description	Pk	Cat. No.
Accessories		
Telescopic stand T 653, base 460x530 mm, rod 480 mm Ø, height 1200 mm, stroke 500 - 1000 mm	1	**441-2353**

Homogenisers, Polytron® PT 1200 E and PT 1300 D
Kinematica

PT 1200 E

Handheld, volume range 0,1 to 250 ml

For dispersing, homogenising, extractions, cell disruption, mixing, emulsifying, suspending.

- Fast coupling for quick change of the dispersing aggregates
- PT 1300 D can be controlled remotely by a PC with KIN software and connection via USB or RS232

IP Protection Class according to DIN EN 60529: IP 20

Delivery information: Drive unit with low voltage power supply. Dispersing elements and accessories must be ordered separately.

Model	Polytron® PT 1200 E (economic)	Polytron® PT 1300 D (digital)
Volume H_2O (ml)	0,1 - 250	
Speed range (min^{-1})	0 - 25000	7000 - 30000
Speed display	No	Digital
Motor rating (W)	100	
W×D×H (mm)	44x55x220	40×45×210
Weight (kg)	0.44	0,6

Description	Pk	Cat. No.
PT 1200 E homogeniser, UK-plug	1	**431-0138**
PT 1300 D homogeniser, UK-plug	1	**431-0136**

Description	Pk	Cat. No.
Accessories		
HS 1200 E - holder for PT 1200 E and dispersing tools	1	**431-0062**
ST-P13/320 - plate stand for PT 1200 E including special drive holder	1	**431-0207**
ST-P12/600 - plate stand with special drive extension for PT 1300 D	1	**431-1272**

Homogeniser, POLYTRON®, PT 2500 E
Kinematica

Stand model, volume range 0,05 to 2500 ml

For dispersing, homogenising, extractions, cell disruption, mixing, emulsifying and suspending. This model replaces the PT 1600 E and the PT 2100 incorporating the best aspects of both models.

- Quick release coupling system for the dispersing elements (type E)
- Integrated electronic speed regulation/stabilisation with control knob and large LED speed indicator
- Speed remains constant even when the viscosity changes
- Soft start - progressive speed increase

IP protection class according to DIN EN 60529: IP 20

Ordering information: Supplied without stand and dispersing elements, please order required accessories separately.

Model	PT 2500 E
Volume H_2O (ml)	0,05 - 2500
Speed range (min^{-1})	500 - 30000
Motor rating (W)	500
Display	LED
Sound level (dB(A))	66 at 25000 min^{-1} 75 at 30000 min^{-1}
W×D×H (mm)	76×157×236
Weight (kg)	1,8

Description	Pk	Cat. No.
PT 2500 E, UK-plug	1	**431-1270**

Description	Pk	Cat. No.
Accessories		
Plate stand, ST-P11/600	1	**431-1303**
Plate stand, ST-P20/600 (2 rod design)	1	**431-0147**
Vessel holder with bosshead for ST-P11/600	1	**431-1455**
Vessel holder for H stand (431-1451) and ST-P20/600	1	**431-1453**
Safety positioning ring for ST-P11/600	1	**431-1304**
Safety positioning ring for H stand (431-1451) and ST-P20/600	1	**432-0303**

Homogenisers, POLYTRON® system PT 10-35 GT
Kinematica

Stand model, volume range 0,1 to 10 000 ml

Bench-top homogeniser with powerful motor and space-saving slimline design, which is easy to handle. Ideal for any dispersing and homogenising task. Interchangeable drive extensions mean different types of stand can be used.

- Audible error signals and low noise emissions (~82 dB(A) at 30 000 min^{-1})
- Integrated digital speed controller with closed loop maintains constant speed independent of load changes, simple control knob for speed setting
- Integrated overheating, overload and blocking protection means motor shuts down if overload conditions arise, ensuring the motor is protected
- Supplied with extension for stands with sockets with Ø 13 mm
- Quick coupling enables dispersing elements from 5 up to 36 mm Ø to be changed quickly and easily

IP protection class according to DIN EN 60529: IP 20

EMC according to: IEC/EN 61000-6-2 & -6-3

Safety according to: IEC/EN 61010-2-51

Ordering information: Supplied without stand and dispersing elements, please order required accessories separately. Aggregates/dispersing elements from POLYTRON® SYSTEM PT 3100 can be used, as well as aggregates from previous PT 10-35 (PT-K) using the adapter listed below.

Model	PT 10-35 GT
Volume H_2O (ml)	0,1 - 10000
Speed range (min^{-1})	500 - 30000
Speed display	Digital
Speed stability (%)	<1% (FS)
Motor rating (W)	1200
W×D×H (mm)	95×210×247
Weight (kg)	3,2

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Description	Pk	Cat. No.
PT-MR 10-35 GT homogeniser, UK-plug	1	**431-1255**

Description	Pk	Cat. No.
Accessories		
PT-DA / PTA adapter	1	**432-0301**
H-stand, anodised for PT 2100	1	**431-1451**
Standard type plate stand	1	**432-0302**
Vessel holder for H stand (431-1451) and ST-P20/600	1	**431-1453**
Vessel holder for stand 432-0302	1	**431-0019**
Safety positioning ring for H stand (431-1451) and ST-P20/600	1	**432-0303**
Safety positioning ring for stand 432-0302	1	**431-1256**

Homogeniser, POLYTRON® system PT 3100 D
Kinematica

Stand model, digital, volume range 0,1 ml to 10 litres

Powerful unit for a wide range of dispersing and homogenising applications in the laboratory using the rotor/stator principle. Remote operation can be achieved with PC control using the supplied software and selection of the AUTO–mode.

- Safe quick-coupling mechanism for rapid change of the dispersing aggregates
- Intelligent control for a constant speed independent of load changes
- Soft-start, overload protection and speed stabilisation
- Three operation modes; STANDARD-, TIMER- and AUTO-Mode
- LCD and keypad for improved digital user interface to set and view a wide range of process parameters

IP protection class according to DIN EN 60529: IP 20. Safety according to EN/IEC 61010

Ordering information: Drive unit supplied with PC software and connecting cable to PC. Dispersing aggregates and stands must be ordered separately.

Model	POLYTRON® PT 3100 D
Volume H_2O (ml)	0,1 - 10000
Speed range (min^{-1})	500 - 30000
Speed display	Digital
Motor rating (W)	800 output / 1200 input
Sound level (dB(A))	73 at 30000 66 at 25000
Weight (kg)	3,9

Description	Pk	Cat. No.
PT MR-3100 D, UK-plug, 230V	1	**431-0141**

Description	Pk	Cat. No.
Accessories		
H-stand, anodised	1	**431-1240**

Homogeniser, POLYTRON®, PT 4000
Kinematica

Stand model, volume range 0,01 to 2500 ml

The PT 4000 will provide high dispersing tool tip speeds due to the motor speed of up to 40 000 rpm. This high tip speed will provide small droplet or particle sizes for already proven applications and provides a means to produce nano particles. The motor, which is a brushless, wear-free (3-phase) high-frequency motor, has a low noise level at maximum speed making it ideal for use in a crowded laboratory environment.

- Aggregate tip speeds up to 40 m/s produce the finest particles possible
- Soft start prevents splashing of homogenate from sample vessel
- Thermal fuse for overload protection.
- Speed remains constant even when solution viscosity changes
- Aggregate replacement using one-handed quick release coupling

Ordering information: Dispersing tools/aggregates, vessels and stands must be ordered separately.

Model	PT 4000
Volume H_2O (ml)	0,1 - 2500
Speed range (min^{-1})	0 - 40000
Speed display	LED
Speed adjustment	Integrated frequency inverter, speed stabilisation, thermal overload protection

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Motor rating (W)	500
Sound level (dB(A))	<70 at 40000 min^{-1}
W×D×H (mm)	327×114×196,5
Weight (kg)	7,5

Description	Pk	Cat. No.
Drive unit with frequency controller		
PT 4000 with control unit, UK-plug	1	**431-0204**

Description	Stator/rotor Ø (mm)	Volume (ml)	Pk	Cat. No.
Dispersing elements (aggregates) for POLYTRON® PT 4000				
PT-DA 4005/2EC	3 / 5,6	0,1 - 5	1	**431-0195**
PT-DA 4007/2EC	5 / 7,8	0,3 - 10	1	**431-0196**
Dispersing elements (aggregates) for POLYTRON® PT models				
PT-DA 12/2 EC-E123	12 / 9	2 - 250	1	**431-0058**
Accessories				
Plate stand, ST-P11/600			1	**431-1303**
Plate stand, ST-P20/600 (2 rod design)			1	**431-0147**
Vessel holder for H stand (431-1451) and ST-P20/600			1	**431-1453**

Homogeniser, POLYTRON®, PT 6100 D
Kinematica

Stand model, volume range 0,1 ml to 30 litres

The powerful PT 6100D was designed to deliver exactly reproducible homognising conditions for volumes up to 30 litres with the option to select and vary speed and time of operation, whilst monitoring the temperature. The unit can be controlled via the membrane keypad or from a PC using KIN software via an RS232 interface.

- More than 30 dispersing tools/aggregates with different geometries, designs, sizes and materials are available for selection
- High tip speed, up to 32 m/s, for efficient particle size reduction
- Safe quick-coupling mechanism for rapid change of the easy to clean dispersing aggregates
- Intelligent control for a constant speed independent of load changes
- Soft-start, overload protection and speed stabilisation
- Three operation modes; STANDARD-, TIMER- and AUTO-Mode
- LCD and keypad for improved digital user interface to set and view a wide range of process parameters

IP protection class according to DIN EN 60529: IP 20. Safety according to IEC/EN 61010-2-51

Ordering information: Drive unit supplied with PC software and connecting cable to PC. Dispersing tools/aggregates and stands must be ordered separately.

Model	PT 6100 D
Volume H_2O (ml)	0,1 - 30000
Speed range (min^{-1})	Max. 26500
Speed display	User interface with LCD and keypad
Speed adjustment	Integrated digital speed controller
Motor rating input/output (W)	1700/1200
Display	LCD, backlit
Sound level (dB(A))	82 at 26500 min^{-1}
W×D×H (mm)	360×164×313
Weight (kg)	7,4

Description	Pk	Cat. No.
PT 6100 D, UK-plug	1	**431-0219**

Description	Pk	Cat. No.
Accessories for homogenisers, POLYTRON® system PT 6100 D		
Telescopic stand and lifting column, electric motor drive, ST-P14/590+500	1	**431-0197**

Dispersing elements (aggregates) for POLYTRON® PT models

Kinematica

Designation:

EC - EasyClean version for the simplest cleaning or sterilisation (Standard)
T foam - inhibiting version
G - with mechanical seal for pressure and vacuum
M - with knife rotor for the pre-cutting
W - generator for fibrous, stringy material
Z - generator for tablets, grains, hard and brittle material
BIA/BAA - flash mixer BIOTRONA for the fastest solving and mixing
DI - dissolver disk for fast mixing and homogenising highly viscous product
/2 - rotor/stator with 1 tooth row each
/4 - rotor/stator with 2 teeth rows each
/6 - rotor/stator with 3 teeth rows each

Other dispersing aggregates available on request.

Overview of dispersing aggregates with rotor/stator diameter from 30 mm (screwed on) for POLYTRON® PT 6100 and PT 3100 D and PT 10-35 GT dispersers

Standard shaft length = 250 mm, customised length available on request.

Types/combinations available:

Basic Model	Max.tip speed (m/s)	Evaluation										
		Rotor/stator versions			Shaft tube versions			Rotor/stator special heads				
		2	4	6	EC	T	G	M	W	Z	BIA	DI
PT-DA 30/...	32	x	x		x	x	x	x	x	x		
PT-DA 36/...	34	x			x	x			x		x	
PT-DA 6040/...	36	x			x	x		x	x			
PT-DA 6045/...	40	x		x	x	x	x	x	x		x	
PT-DA 6050/...	44	x		x	x	x	x	x	x			
PT-DA 6060/...	50	x			x	x	x	x	x			
PT-DI 6053	47				x	x						x

Description	For unit	Speed (m/s)	Stator/rotor Ø (mm)	Length (mm)	Volume (ml)	Pk	Cat. No.
PT-DA 03/2 EC-E050	PT 2500 E	3,45	3,5/2,2	74	0,05 - 2	1	**431-0142**
PT-DA 05/2EC-B078	PT 10-35 GT / PT 3100 D / PT 6100	4,0	5,5 / 3	110	0,1 - 5	1	**431-1230**
PT-DA 05/2 EC-E085	PT 1200 E / PT 2500 E	3,9	5,6 / 3,9	80	0,1 - 5	1	**431-0051**
PT-DA 07/2EC-B101	PT 10-35 GT / PT 3100 D / PT 6100	6,5	7,5 / 5	110	0,3 - 10	1	**431-1231**
PT-DA 07/2SYN-E082	PT 1200E / PT 2500 E	6,5	7,8 / 5	82	0,3 - 10	25	**431-0053**
PT-DA 07/2 EC-E107	PT 2500 E /PT 1200 E	6,5	7,8 / 5	107	0,3 - 10	1	**431-0054**
PT-DA 12/2EC-B154	PT 10-35 GT / PT 3100 D / PT 6100	12,0	12 / 9	170	2 - 250	1	**431-0056**
PT-DA 12/2 EC-E123	PT 1200 E / PT 2500 E	11,8	12 / 9	115	2 - 250	1	**431-0058**
PT-DA 20/2EC-B193	PT 10-35 GT / PT 3100 D / PT 6100	21	20 / 15	230	10 - 2000	1	**431-0060**
PT-DA 20/2MEC-B193	PT 10-35 GT / PT 3100 D / PT 6100	21	20 / 15	230	10 - 2000	1	**431-0206**
PT-DA 30/2EC-B250	PT 10-35 GT / PT 3100 D / PT 6100	36,0	30 / 23	250	100 - 3000	1	**431-1226**
PT-DA 30/4EC-B250	PT 10-35 GT / PT 3100 D / PT 6100	32,0	30 / 26	250	100 - 2500	1	**431-0061**
PT-DA 36/2WEC-B250	PT 10-35 GT / PT 3100 D / PT 6100	34,0	36 / 26	250	200 - 4000	1	**431-1267**
PT-DA 6040/2EC	PT 6100	36,0	40 / 32	250	200 - 5000	1	**431-1134**
PT-DA 6045/6 EC	PT 6100	40,0	45 / 38	250	200 - 4000	1	**431-1262**
PT-DA 6050/2 EC	PT 6100	44,0	50 / 41	250	300 - 10000	1	**431-1263**
PT-DA 6050/2 WEC	PT 6100	44,0	50 / 41	250	300 - 10000	1	**431-1234**
PT-DA 6060/2 EC	PT 6100	50,0	60 / 50	250	1000 - 30000	1	**431-1264**
PT-DA 36/BEC-B250 (BIOTRONA)	PT 10-35 GT / PT 3100 D / PT 6100	34,0	36 / 26	250	500 - 800	1	**431-1229**
PT-DA 45/BEC-B250 (BIOTRONA)	PT 6100	40,0	45 / 38	250	1000 - 15 000	1	**431-1265**

Disperser system, ULTRA-TURRAX® Tube Drive
IKA

Tube Drive

Tube Drive Workstation

Tube Drive (side view)

Universal disposable disperser system with disposable sample tubes that can be hermetically sealed. Provides protection and security from infectious sample materials, toxic substances or substances with strong odours. Ideal for use in medical, pathology, toxicology, pharmaceutical, immunology, veterinary, clinical, food and cosmetics applications. Units are easy and quick to use, enable standardised working, are suitable for individual use or for use in series and feature an anti locking function.

- Disperse, stir and grind using a single drive unit
- Protects users from hazardous samples and increases safety due to low voltage (24 V)
- Hygienic and clean without any possible cross-contamination
- Disposable sample tubes can be hermetically sealed
- Closed sample system in chemically resistant plastic

IP protection class according to DIN EN 60529: IP 20

Ordering information: ULTRA-TURRAX® Tube Drive is supplied with removable hook for removing the rotor/stator unit, but without tubes, please order required accessories separately.

Model	Tube Drive
Volume H_2O (ml)	2 - 20 (20 ml tube) 15 - 50 (50 ml tube)
Speed range (min^{-1})	300 - 6000
Motor rating input/output (W)	20/17
Time display	Digital
Timer	1 - 59 sec. (300 - 6000 min^{-1}) 1 - 29 min. (300 - 4000 min^{-1})
W×D×H (mm)	100×160×40
Weight (kg)	0,75

Description	Pk	Cat. No.
ULTRA-TURRAX® Tube Drive, UK-plug	1	**431-2898**

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Disperser system, ULTRA-TURRAX® Tube Drive control (UTTD control)

IKA

Universal dispersing, stirring, homogenising and grinding system with hermetically sealable disposable sample tubes. The UTTD control provides protection and security for infectious sample materials, toxic substances and high odour substances all under defined conditions of time, energy and volume.

Ideal for use in medical, pathology, toxicology, pharmaceutical, immunology, veterinary, clinical, food and cosmetics applications. The sample containers (tubes) are easily attached to the drive unit with a simple twist lock coupling. Simple and precise multilingual menu navigation thanks to the OLED display that prompts the user to set the desired speed and duration. An acoustic signal indicates completion of experiment. The tests are programmable (from a library of saved sample conditions), reproducible and there is no cross-contamination between the samples.

- Digital display for all functions including actual speed and target speed
- USB interface for control and documentation
- Adjustable reverse operation and Turbo button for short time intensive mixing, homogenising or grinding
- A range of disposable sample tubes 20 ml and 50 ml including versions that are gamma sterilised and also tubes with piercable membrane closures
- Hygienic and clean operation without any possible cross-contamination
- Collecting tray for protection against any possible leaking liquids

IP protection class according to DIN EN 60529: IP 20

Delivery information: ULTRA-TURRAX® Tube Drive is supplied with EU/UK/CH power supply, removable hook for removing the rotor stator unit, but without tubes, please order required accessories separately. Workstation includes 1x ULTRA-TURRAX® Tube Drive control, disposable tube: ST-20, DT-20, and 2×BMT-20G/S and hook for removing the rotor stator unit.

Model	UTTD control
Volume H_2O (ml)	2 - 15 (20 ml tube) 15 - 50 (50 ml tube)
Max. viscosity (mPas)	5000
Speed range (min^{-1})	400 - 8000
Speed stability (%)	3
Speed adjustment	Reversible; increments of 10 min^{-1} (rpm)
Motor rating input/output (W)	20/17
Time display	digital
Timer	10 s - 30 min (infinitely adjustable)
Display	OLED for time and speed
Sound level (dB(A))	50 (drive only)
W×D×H (mm)	122×178×54
Weight (kg)	1

Description	Pk	Cat. No.
ULTRA-TURRAX® Tube Drive control	1	**431-0172**
ULTRA-TURRAX® Tube Drive control Workstation	1	**412-0161**

Disposable tubes for ULTRA-TURRAX® Tube Drive and ULTRA-TURRAX® Tube Drive control

IKA

BMT-20-G

DT-50

ST-20

ST-20 and ST-50 tubes comprise of tube, stirring device and closure.

- Ideal for mixing, stirring and extractions
- Suitable for preparation of soil sample suspensions and solubility testing for pharmaceuticals
- Volume 20 and 50 ml tubes

DT-20 and DT-50 tubes comprise of tube, dispersion device and closure.

- Ideal for dispersion, homogenisation, suspensions
- Suitable for use in pharmacokinetics, metabolism studies and diagnosis
- Volume 20 and 50 ml tubes

BMT-20-G and BMT-50-G ball-mill tubes comprise of tube, ball (G=glass) and closure.

- Ideal for dry milling of dry and brittle samples (e.g. kaolin, gypsum, coloured pigments, tablets)
- Suitable for cell maceration and processing of materials mixed with fluids
- Volume 20 and 50 ml tubes

Ordering information: Other tubes are available, including sterile versions (denoted as gamma) and tubes with pierceable membrane (M) closures for dosing and sampling.

Description	Pk	Cat. No.
ST-20, tube with stirring device	25	**431-2892**
ST-20-M-gamma, tube with stirring device	20	**531-0477**
DT-20, tube with rotor/stator element	25	**431-0135**
DT-20-M-gamma, tube with rotor/stator element	20	**531-0478**
BMT-20-G tube for milling with glass balls	25	**431-2893**
BMT-20-S, tube for milling with stainless steel balls	25	**531-0469**
BMT-20-S-M-gamma, tube for milling with stainless steel balls	20	**531-0479**
ST-50, tube with stirring device	10	**531-0480**
ST-50-M, tube with stirring device	10	**531-0484**
ST-50-M-gamma, tube with stirring device	10	**531-0491**
DT-50, tube with rotor/stator element	10	**531-0481**
DT-50-M, tube with rotor/stator element	10	**531-0485**
DT-50-M-gamma, tube with rotor/stator element	10	**531-0492**
BMT-50-G, tube for milling with glass balls	10	**531-0483**
BMT-50-S, tube for milling with stainless steel balls	10	**531-0482**
BMT-50-G-M, tube for milling with glass balls	10	**531-0487**
BMT-50-S-M, tube for milling with stainless steel balls	10	**531-0486**
BMT-50-S-M-gamma, tube for milling with stainless steel balls	10	**531-0493**

Description	Pk	Cat. No.
Accessories		
TC-20-M, closure for 20 ml tubes with pierceable membrane	25	**531-0496**
TC-50, closure for 50 ml tubes	10	**431-0164**
TC-50-M, closure for 50 ml tubes with pierceable membrane	10	**431-0165**

Homogenisers, Precellys® 24 and Precellys® 24-Dual

Precellys® 24

The Precellys® 24 is a bench top unit dedicated to grinding, lysis and homogenisation of biological samples. It is a fast and efficient solution for extracting DNA, RNA or proteins. Ideal for use with animal or vegetable tissues and microorganisms, the high speed and specific motion allows the grinding of difficult samples such as bones, hair, corn, spores etc. The unit features an easy cleaning system with direct access to the sample holder and is compatible with normal cleaning solutions.

- Up to 24×2 ml sample tubes can be processed simultaneously; homogenisation is carried out in few seconds
- Flexible, only need to adapt protocols and grinding kits (glass, ceramic, metal beads) for hard or soft tissue
- High quality and reliable; specifically designed for use in an L3 laboratory under high throughput conditions - 50 to 100 runs per day
- Cross-contamination free with disposable sample tubes
- Optimal temperature process with the optional Cryolys® temperature controller

Delivery information: Supplied with sample kit (2 tubes of each type of grinding kit), indented plate, toric joint, spare toric joint and power cord with either EU- and UK-plug.

Precellys®24-Dual

This model extends the Precellys® technology to include 0.5 ml and 7 ml lysing tubes, whilst delivering all the other features of the Precellys®24.

- Application flexibility 1 mg to 5 g
- Choice of up to 6×7 ml or 12×2 ml tubes with simple change of indented plate

Complies with FCC Part 15

Delivery information: Supplied with sample kit (2 tubes of each type of grinding kit), 2 indented plates, toric joint, spare toric joint and power cords with either EU- and UK-plug.

Cryolys® cooling option

The Cryolys® is a patented cooling option that keeps temperature at approx. 4 °C during homogenisation using either liquid nitrogen or solid CO_2. It allows extraction of stable RNA and native-state proteins. Cryolys® is compatible with Precellys®24 and Precellys®24-Dual and Precellys® Evolution.

- Get higher yield, quality and functionality
- Prevent enzymes from becoming active
- Retain 100% active proteins

Requires a compressed air supply.

Model	Precellys®24	Precellys® 24-Dual
No. of tubes	24×2 ml	6×7 ml or 12×2 ml
Speed range (min^{-1})	5000 - 6800 in increments of 100	5000 - 6500 in increments of 100
Motor rating (W)	1000	
Time display	Backlit 2 line LCD	
Timer	5 - 90 s (in 5 second increments) option of 1 to 3 cycles	
W×D×H (mm)	375×290×370	
Weight (kg)	29,8	

Description	Pk	Cat. No.
Precellys®24, 100 - 230 V, 50 - 60 Hz	1	**432-3750**
Precellys® 24-Dual, 100 - 230 V, 50 - 60 Hz	1	**432-3757**

Description	For	Pk	Cat. No.
Cryolys®			
Cryolys® cooling option, UK-plug		1	**432-0178**
Grinding kits			
Precellys® homogenising kit CK14, 1,4 mm ceramic beads, 50 preparations in 0,5 ml tubes	Soft tissues	1 KIT	**432-3760**
Precellys® homogenising kit CK14, 1,4 mm ceramic beads, 50 preparations in 2 ml tubes	Soft tissues	1 KIT	**432-3751**
Precellys® homogenising kit CKMIX, mixture of ceramic (zirconium oxide) beads, 50 preparations in 2 ml tubes	Soft tissues	1 KIT	**431-0170**
Precellys® homogenising kit CK28, 2,8 mm ceramic beads, 50 preparations in 2 ml tubes	Hard tissues	1 KIT	**432-3752**
Precellys® homogenising kit CK28, 2,8 mm ceramic beads, 50 preparations in 2 ml reinforced tubes	Hard tissues	1 KIT	**432-0141**
Precellys® grinding kit MK28, 2,8 mm steel beads, 50 preparations in 2 ml tubes	Hard tissues	1 KIT	**432-3753**
Precellys® grinding kit MK28, 2,8 mm steel beads, 50 preparations in 2 ml reinforced tubes	Hard tissues	1 KIT	**432-0142**
Precellys® homogenising kit CK28, ceramic beads, 50 preparations in 7 ml tubes	Hard tissues	1 KIT	**432-0160**
Precellys® lysing kit VK01, 0,1 mm glass beads, 50 preparations in 2 ml tubes	Microorganisms	1 KIT	**432-3754**
Precellys® lysing kit VK05, 0,5 mm glass beads, 50 preparations in 2 ml tubes	Microorganisms	1 KIT	**432-3755**
Precellys® lysing kit VK01/VK05, mix of glass beads, 50 preparations in 7 ml tubes	Microorganisms	1 KIT	**432-0144**
Precellys® homogenising kit CK01, 0,1 mm ceramic beads, 50 preparations in 7 ml tubes	Microorganisms	1 KIT	**432-0145**
Precellys® lysing kit VK05, 0,5 mm glass beads, 50 preparations in 0,5 ml tubes	Tough microorganisms	1 KIT	**432-3761**
Precellys® grinding kit SK38, a mix of glass and ceramic beads, 50 preparations in 2 ml tubes	Soil	1 KIT	**432-0140**
Precellys® grinding kit CK14/VK01, mix of ceramic beads, 50 preparations in 7 ml tubes	Soil	1 KIT	**432-0143**

Disposable pestles, microtubes and cordless motor for pellet mixing

PBTP

Pestles and microtubes manufactured from polybutylene terephthalate in a Class 10 000, ISO Class 7, M5.5 cleanroom. Designed for homogenising cells and plant tissue or for re-suspending protein and DNA pellets. An optional battery-powered motor can be used with the pestles and microtubes. Pestles are 75 mm in length.

- DNase-, RNase- and pyrogen-free
- Grooved grip makes pestle handle easy to turn without slipping, even when wearing gloves
- Lightweight motor reduces hand fatigue
- Motor's high speed vortexing action completely homogenises cell tissue or pellets within seconds

Delivery information: Pestles and microtubes are individually wrapped. Optional motor is supplied with a pestle adapter and two AA batteries.

Description	Capacity (ml)	Pk	Cat. No.
Pestle	1,5	100	**431-0094**
Pestle	0,5	100	**431-0095**
Microtube	1,5	100	**431-0096**
Microtube	0,5	100	**431-0097**
Pestle and microtube	1,5	100	**431-0098**
Pestle and microtube	0,5	100	**431-0099**

Description	Pk	Cat. No.
Accessories		
Pestle motor	1	**431-0100**
Replacement pestle adapter	1	**431-0101**

Tissue grinders, Potter-Elvehjem type

Borosilicate glass tube, PTFE pestle with stainless steel shaft

Tissue grinders are used for controlled reduction of particle size and homogenisation of a variety of substances, especially biological material. The shearing forces generated by the movement of the rotating plunger in a precision bore tube cause size reduction, determining factors include clearance between the pestle head and tube, speed of rotation and viscosity of medium.

Grinding chamber clearance: 0.15 - 0.25 mm

Diameter of stainless steel shaft is 6.5 mm

Capacity (ml)	Ø ext.×length (mm)	Total length (mm)	Pk	Cat. No.
Glass vessel				
2	8×120	120	1	**432-0200**
5	12×135	135	1	**432-0201**
10	15×150	150	1	**432-0202**
15	19×155	155	1	**432-0203**
30	25×175	175	1	**432-0204**
50	32×195	195	1	**432-0205**
Plain plunger				
2		230	1	**432-0206**
5		235	1	**432-0207**
10		270	1	**432-0208**
15		270	1	**432-0209**
30		270	1	**432-0210**
50		270	1	**432-0211**
Plunger with serrated tip				
2		230	1	**432-0212**
5		235	1	**432-0213**
10		270	1	**432-0214**
15		270	1	**432-0215**
30		270	1	**432-0216**
50		270	1	**432-0217**

Tissue grinders, Potter-Elvehjem type
Wheaton

Mortar in borosilicate glass, PTFE pestle with stainless steel rod

Serrated PTFE pestle disperses homogenate into mortar cylinder more efficiently. Precisely constructed with completely interchangeable parts.

- Clearance between pestle and tube is 0.1 to 0.15 mm
- Stainless steel rod Ø 6.3 mm
- Can be autoclaved

Wheaton 33 low extractable borosilicate glass (meets ASTM Type I Class A and USP Type I standards).

Capacity (ml)	Ø ext.×length (mm)	Total length (mm)	Pk	Cat. No.
Mortars with pestles				
2	11×45	203	2	**432-5011**
5	13×66	219	2	**432-5013**
10	16×74	219	2	**432-5015**
15	19×84	219	2	**432-5017**
30	24×118	266	2	**432-5019**
55	30×130	266	2	**432-5021**

Description	Pk	Cat. No.
Spare parts		
Mortar cylinder only, 2 ml	2	**432-5031**
Mortar cylinder only, 5 ml	2	**432-5034**
Mortar cylinder only, 10 ml	2	**432-5037**
Mortar cylinder only, 15 ml	2	**432-5040**
Mortar cylinder only, 30 ml	2	**432-5043**
Mortar cylinder only, 55 ml	2	**432-5046**
Serrated pestle only, 2 ml	2	**432-5010**
Serrated pestle only, 5 ml	2	**432-5012**
Serrated pestle only, 10 ml	2	**432-5014**
Serrated pestle only, 15 ml	2	**432-5016**
Serrated pestle only, 30 ml	2	**432-5018**
Serrated pestle only, 55 ml	2	**432-5020**

Tissue grinders, Dounce type
Wheaton

Borosilicate glass

Designed to retain a high percentage of cell nuclei and mitochondria in soft tissues. In operation, the pestle ball is encircled in liquid which avoids heat build up. Friction is reduced and there is reduced heat accumulation.

- Mortar has large reservoir and pouring lip

Wheaton 33 low extractable borosilicate glass (meets ASTM Type I Class A and USP Type I standards).

Delivery information: Each mortar is supplied with a 'loose' pestle (0,114 mm ±0,025 mm), and a 'tight' pestle (0,05 mm ±0,025 mm).

Capacity (ml)	Ø ext.×length (mm)	Total length (mm)	Pk	Cat. No.
1	11×48	125	2	**432-1270**
7	13×82	175	2	**432-1271**
15	22×94	210	2	**432-1272**
40	32×140	285	2	**432-1273**

Tissue grinders, Dounce type
Wheaton

Stainless steel

Wheaton Dura-Grind® stainless steel Dounce tissue grinders provide a rugged alternative to glass Dounce tissue grinders. Smooth pestle action requires less effort than glass tissue grinders. Precision machined No. 316 stainless steel to low tolerance of 0,0124 mm.

- Mortar has flat bottom to stand upright
- Single pestle and mortar are supplied as a matched set
- Not autoclavable

Weight: 0.9 kg

Capacity (ml)	Ø ext.×length (mm)	Total length (mm)	Pk	Cat. No.
7	12,5×114	171	1	**432-5005**
15	15,5×114	171	1	**432-5006**
40	25,5×114	171	1	**432-5007**

Homogeniser, Dounce type

Designed primarily for cellular work where the nucleus remains intact after homogenisation.

- All-glass construction
- Two pestles are supplied with each complete unit
- Large clearance pestle is used for the initial sample reduction
- Small clearance pestle is used to form the final homogenate
- Replacement components are available and completely interchangeable

Capacity (ml)	Pk	Cat. No.
Complete unit		
2	1	**432-0250**
7	1	**432-0251**
15	1	**432-0252**
40	1	**432-0253**
Tube only		
2	1	**432-0262**
7	1	**432-0263**
15	1	**432-0264**
40	1	**432-0265**
Pestle with small clearance		
2	1	**432-0258**
7	1	**432-0259**
15	1	**432-0260**
40	1	**432-0261**
Pestle with large clearance		
2	1	**432-0254**
7	1	**432-0255**
15	1	**432-0256**
40	1	**432-0257**

Tissue grinders, Tenbroeck type
Wheaton

Borosilicate glass

Tissue grinders with interchangeable precision pestles and tubes for tissues such as liver, intestines, and heart.

- Hollow handle permits packing with ice
- Expanded reservoir and pouring lip
- Clearance between pestle and tube 0,1 - 0,15 mm

Wheaton 33 low extractable borosilicate glass (meets ASTM Type I Class A and USP Type I standards).

Capacity (ml)	Ø ext.×length (mm)	Total length (mm)	Pk	Cat. No.
1	11×48	140	2	**432-1275**
2	11×50	140	2	**432-1276**
7	16×82	190	2	**432-1277**
15	22×94	250	2	**432-5000**
40	32×140	320	2	**432-5001**

Tissue grinders, conical
Wheaton

Borosilicate glass

Handheld homogeniser with conical surface, which allows initial size reduction, followed by passage through the cylindrical section for the final homogenisation step. Grinding efficiency is improved and less time is required as compared to the Tenbroeck and Potter-Elvehjem designs. Recommended for heart and lung tissues, as well for skin and plant tissues.

- Clearance between pestle and tube is 0.1 to 0.15 mm

Wheaton 33 low extractable borosilicate glass (meets ASTM Type I Class A and USP Type I standards).

Capacity (ml)	Ø ext.×length (mm)	Total length (mm)	Pk	Cat. No.
1	11×49	130	1	**432-1285**
3	11×86	220	1	**432-1286**
5	13×93	220	1	**432-1287**
15	18×114	240	1	**432-1288**

Description	Pk	Cat. No.
Spare parts		
Pestle only, 1 ml	2	**432-5048**
Mortar cylinder only, 1 ml	2	**432-5049**
Pestle only, 3 ml	2	**432-5050**
Mortar cylinder only, 3 ml	2	**432-5051**
Pestle only, 5 ml	2	**432-5052**
Mortar cylinder only, 5 ml	2	**432-5053**
Pestle only, 15 ml	2	**432-5054**
Mortar cylinder only, 15 ml	2	**432-5055**

Cell disruptors, Sonifier®
Branson

These ultrasonic cell disruptors/homogenisers are versatile laboratory units suitable for a broad range of liquid processing applications such as biological cell or tissue disruption/homogenisation, extraction, emulsification, reaction acceleration, dispersion, fine mixing and degassing.

- Analogue models have adjustable power output to meet each application's requirements and energy pulsing to minimise heating of sensitive samples
- Digital models offer multiple mode operation: Continuous, pulsed, timed and temperature end point
- Digital parameter settings with automatic range validity auditing and set up menus in 5 languages
- Automatic end-of-cycle shut-off using limited parameters and 20 convenient user-programmable presets
- Digital models have a 10 hour timer, LCD display and an RS232C interface

Each model consists of a power supply, a converter and a mechanical probe or horn. The S-450A and S-450D models have the choice of either a 12,7 mm or 19 mm horn, the larger horn is for use with maximum sample size of 500 ml. A large range of accessories available, please order these separately.
Safety Note: Never use a probe with replacement tip with low surface tension liquids.

Model	S-250A	S-450A	S-250D	S-450D
Power display	Analogue		Digital	
Frequency (kHz)	20			
Max. output power (W)	200	400	200	400
Sample volume	1 - 250 ml	1 - 500 ml	1 - 250 ml	1 - 500 ml
Timer	0 - 15 min		0 - 9 h 59 min 59 sec	
Programmable	No		Yes	
Printer interface				
RS232 serial port				
Includes	12,7 mm horn	12,7 or 19 mm horn	12,7 mm horn	12,7 or 19 mm horn

Description	Horn	Pk	Cat. No.
S-250A ultrasonic cell disruptor	½" (12,7 mm)	1	**142-3701**
S-450A ultrasonic cell disruptor	½" (12,7 mm)	1	**142-3702**
S-450A ultrasonic cell disruptor	¾" (19,0 mm)	1	**142-3703**
S-250D ultrasonic cell disruptor	½" (12,7 mm)	1	**432-4502**
S-450D ultrasonic cell disruptor	½" (12,7 mm)	1	**432-4503**
S-450D ultrasonic cell disruptor	¾" (19,0 mm)	1	**432-4504**

Description	Pk	Cat. No.
Accessories		
Soundproof box, with converter mounting	1	**142-3760**
102 converter	1	**142-3782**
Spanner for converter, J-J/4 to 3" diameter	1	**432-0172**

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Description	Pk	Cat. No.
Accessories		
Sealed atmosphere chamber, stainless steel, 3 - 10 ml	1	**432-4546**
Sealed atmosphere chamber, stainless steel, 6 - 15 ml	1	**432-4547**
Sealed atmosphere chamber, stainless steel, 25 - 50 ml	1	**432-4548**
Sealed atmosphere chamber, stainless steel, 3 - 10 ml cool	1	**432-4549**
Sealed atmosphere chamber, stainless steel, 6 - 15 ml cool	1	**432-4550**
Sealed atmosphere chamber, stainless steel, 25 - 50 ml cool	1	**432-4551**
Cup horn, high intensity, cooling jacket	1	**142-3743**
Cup horn, transparent plastic housing Ø 76.2 mm	1	**432-4557**
Tissue disrupter, cooling jacket	1	**432-4552**
Flow through disrupter horn	1	**432-4558**
Disruptor horn, Ø 13 mm	1	**142-3731**
Exponential horn, 13 mm	1	**432-4511**
Interchangeable tips, for 13 mm horn, flat, tapped	1	**142-3751**
Tapered microtip 3.2 mm for 13 mm horn	1	**142-3746**
Tapered microtip 4.8 mm for 13 mm horn	1	**142-3747**
Tapered microtip 6.3 mm for 13 mm horn	1	**142-3748**
Double stepped 3.2 mm microtip only	1	**432-4568**
Microtip 2-step 3.2 mm with coupler assembly	1	**142-3749**
Temperature probe with tapered microtip for digital models	1	**142-3761**
Titanium extender, 13 mm, solid	1	**432-4533**
Spanner for 13 mm tip	1	**432-4591**
Disrupter horn, high gain, 19 mm, tapped	1	**432-4505**
Horn, high gain, 19 mm, solid	1	**432-4506**
Interchangeable flat tip 19 mm for 19 mm horn	1	**432-4519**
Extender, 19 mm, tapped	1	**432-4534**
Extender, 19 mm, solid	1	**432-4535**
Disrupter horn, high gain, 25 mm solid	1	**142-3742**

Ultrasonic liquid processors, programmable, Q500 and Q700

A range of programmable ultrasonic processors with applications including cell lysis, nanoparticle dispersion, creating emulsions and general homogenisation. Pulses with 20 KHz frequency over a range of 500 W to 700 W depending on the model.

Q500

- Programmable operation by setting time and amplitude
- Pulse mode prevents heat build up in temperature sensitive samples
- Digital amplitude/intensity control
- Real time energy monitoring

Q700

The Q700 introduces some additional features designed to ensure reproducibility of results and flexibility of operation.

- Full amplitude control 1 - 100% for identifying optimum settings for efficient sample processing
- Programmability to run multiple programs in sequence
- Auto-tuning to maintain electrical efficiency with changes in load and temperature
- Touch screen interface offers intuitive control

Delivery information: Sonicator package includes generator, converter, power cable, converter cable, wrench set and 1/2" diameter probe.

Safety note: Never use a probe with a replacement tip with low surface tension liquids. Use a solid probe instead.

Tip diameter	Processing volume
1/16" (1,6 mm)	0,2 - 5 ml
1/8" (3,2 mm)	1 - 15 ml
1/4" (6,4 mm)	10 - 50 ml
1/2" (12,7 mm)	20 - 250 ml
3/4" (19,1 mm)	100 - 500 ml
1" (25,4 mm)	500 - 1000 ml

Model	Q500	Q700
Frequency (kHz)	20	
Max. output power (W)	500	700
Interval time (s)	1 second to 1 minute	1 second to 24 hours
Timer	Up to 10 hours	Up to 72 hours
Programmable	Time and amplitude	10 memories plus sequencing
W×D×H (mm)	203×387×216	

Description	Pk	Cat. No.
Q500 sonicator with standard 1/2" diameter probe with replaceable tip	1	**432-0233**
Q500A sonicator without probe	1	**432-0234**
Q700 sonicator with standard 1/2" diameter probe with replaceable tip	1	**432-0237**
Q700A sonicator without probe	1	**432-0238**

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Description	For	Pk	Cat. No.
Probes and horns for Qsonica sonicators			
1" (25,4 mm) probe with solid tip for processing volume 500 - 1000 ml	Q500/Q700	1	**432-0188**
1" (25,4 mm) probe with replaceable tip for processing volume 500 - 1000 ml	Q500/Q700	1	**432-0189**
3/4" (19,1 mm) probe with solid tip for processing volume 100 - 500 ml	Q500/Q700	1	**432-0187**
3/4" (19,1 mm) probe with replaceable tip for processing volume 100 - 500 ml	Q500/Q700	1	**432-0186**
1/2" (12,7 mm) probe with solid tip for processing volume 20 - 250 ml	Q500/Q700	1	**432-0190**
1/2" (12,7 mm) probe with replaceable tip for processing volume 20 - 250 ml	Q500/Q700	1	**432-0191**
Booster horn for use with 3/4" and 1" probes providing a gain ratio of 2:1	Q500/Q700	1	**432-0185**
Microtip probes 1/16" (1,6 mm) for processing volume 0,2 - 5 ml	Q500/Q700	1	**432-0199**
Microtip probes 1/8" (3,2 mm) for processing volume 1 - 15 ml	Q500/Q700	1	**432-0218**
Microtip probes 1/4" (6,4 mm) for processing volume 10 - 50 ml	Q500/Q700	1	**432-0219**
Tips for Qsonica sonicators			
Replacement tip 1/2" (12,7 mm)	Q500/Q700	1	**432-0196**
Replacement tip 3/4" (19,1 mm)	Q500/Q700	1	**432-0197**
Replacement tip 1" (25,4 mm)	Q500/Q700	1	**432-0198**
Accessories			
Replacement converter	Q500/Q700	1	**432-0227**
Replacement cable converter, 1,83 m	Q500/Q700	1	**432-0229**
Replacement cable converter, 3,05 m	Q500/Q700	1	**432-0230**
Coupler for use with stepped microtip horns	Q500/Q700	1	**432-0220**
Temperature probe	Q700	1	**432-0183**
Flexible thermocouple	Q700	1	**432-0184**
Sound abating enclosure to reduce noise by approx. 20 dB(A), 343×330×775 mm (W×D×H)	Q500/Q700	1	**432-0195**
Footswitch for hands free operation	Q500	1	**432-0179**
Footswitch for hands free operation	Q700	1	**432-0228**
Stand with clamp, 1/2" diameter rod	Q500/Q700	1	**432-0225**
Spanner (replacement)	Q500/Q700	1	**432-0181**
Wrench set (2 spanners, 1 with open end)	Q500/Q700	1	**432-0182**

Ultrasonic processors for small scale samples, Q55 and Q125

Q55

The Q55 sonicator is a compact and effective ultrasonic processor ideal for standard cell disruption and other small volume applications.

- Small footprint - save valuable bench space
- Thumb switch or continuous operation
- Simple controls

Q125

A digital programmable sonicator which is effective for standard cell disruption, DNA/RNA shearing, homogenisation and many other applications. The Q125 is ideal for small samples and for customers that do not plan to scale up to larger volumes in the future.

- Programmable operation by setting time and amplitude
- Pulse mode prevents heat build up in temperature sensitive samples
- Digital amplitude/intensity control
- Real time energy monitoring

Delivery information: Sonicator package includes generator, converter, power cable, converter cable, wrench set and 1/8" diameter probe.

Tip diameter	Processing volume
5/64" (2 mm)	200 µl - 5 ml
1/8" (3,2 mm)	500 µl - 15 ml
1/4" (6,4 mm)	10 - 50 ml

Model	Q55	Q125
Frequency (kHz)	20	
Max. output power (W)	55	125
Interval time (s)	-	1 second to 1 minute
Timer		Up to 10 hours
Programmable		Time and amplitude
W×D×H (mm)	203×190×146	203×350×146

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Description	Pk	Cat. No.
Q55 sonicator with standard 1/8" diameter probe	1	**432-0235**
Q55A sonicator without probe	1	**432-0236**
Q125 sonicator with standard 1/8" diameter probe	1	**432-0231**
Q125A sonicator without probe	1	**432-0232**

Description	For	Pk	Cat. No.
Probes and horns for Qsonica sonicators			
5/64" (2 mm) probe, stepped, for processing volume 200 µl - 5 ml	Q55/Q125	1	**432-0222**
1/8" (3,2 mm) probe, stepped, for processing volume 500 µl - 15 ml	Q55/Q125	1	**432-0221**
1/4" (6,4 mm) probe with solid tip for processing volume 10 - 50 ml	Q55/Q125	1	**432-0223**
Accessories			
Sound abating enclosure with converter holder, 305×305×508 mm (W×D×H)	Q55/Q125	1	**432-0194**
Stand with clamp for holding converter	Q55/Q125	1	**432-0226**
Spanner with open end use with for microtip and 12 mm tips	Q55/Q125	1	**432-0180**

Ultrasonic processors, Vibra-Cell™ VCX 130 and VCX 130PB

Low volume applications*

The Vibra-Cell™ is a technologically advanced, high-intensity ultrasonic processor. It can safely process a wide variety of organic and inorganic materials in applications such as cell disruption, sample preparation, homogenisation, disaggregation and sonochemical reactions. The system can vary the power output and constantly monitor both power (Watts) and energy (Joules). The VCX 130 model has the additional features of 10 hour timer, independent on-off pulser and ability to program some set and run parameters.

- Automatic tuning eliminates need for constant adjustment
- Automatic amplitude compensation ensures uniform tip excursion regardless of load conditions
- Highly efficient converters are designed for heavy duty operation, no ancillary cooling required
- Piezoelectric converter, Type PZT (Lead Zirconium Titanate) crystals
- Titanium alloy (TI-6AL-4V) probes

Safety note: Never use a probe with a replacement tip with low surface tension liquids. Use a solid probe instead.

Ordering information: For accessories for the Vibra-Cell™ processors please see separate entry 'Probes and accessories for Vibra-Cell™ ultrasonic processors'.
* Other volumes can be processed using optional replacement probes.

Delivery information: Supplied complete with 1,5 m cable from converter, standard 3 or 6 mm probe, tool kit and manual.

Model	VCX 130PB	VCX 130
Power display	Digital (Watts and Joules)	
Frequency (kHz)	20	
Max. output power (W)	130	
Sample volume	250 µl to 10 ml*	10 to 50 ml*
Interval time (s)	Manual - with thumb activated pulser	1 - 59 (independent pulser)
Timer	-	0 - 10 hrs
Probe	Length: 138 mm Tip diameter 3 mm	Length: 108 mm Tip diameter 6 mm
Method storage	-	Up to 10 procedures
W×D×H (mm)	Ø 32×146 (converter) 250×320×115 (power supply)	
Weight (kg)	0,34 (converter) 3 (power supply)	

Description	Pk	Cat. No.
VCX130PB, low volume ultrasonic processor	1	**432-0136**
VCX130, low volume ultrasonic processor	1	**432-0135**

Ultrasonic processors, Vibra-Cell™, VC 505 and VC 750

High volume applications*

The Vibra-Cell™ is a microprocessor controlled, high-intensity ultrasonic processor. It can safely process a wide variety of organic and inorganic materials in applications such as cell disruption, sample preparation, homogenisation, disaggregation and sonochemical reactions. The system can vary the power output and constantly monitor both power (Watts) and energy (Joules). The microprocessor control with real time display gives digital accuracy and reproducible control of set and run parameters.

- Automatic tuning eliminates need for constant adjustment
- Automatic amplitude compensation ensures uniform tip excursion regardless of load conditions
- Highly efficient converters are designed for heavy duty operation, no ancillary cooling required
- Sealed, piezoelectric converter, Type PZT (Lead Zirconium Titanate) crystals
- Titanium alloy (TI-6AL-4V) probes

Sample volumes* from 250 µl to 1 litre on a batch basis and up to 20 litres/hour on a flow-through basis depending on choice of optional replacement probes.
Safety note: Never use a probe with a replacement tip with low surface tension liquids. Use a solid probe instead.

Ordering information: For accessories and probes for the Vibra-Cell™ processors please see separate entry 'Probes and accessories for Vibra-Cell™ ultrasonic processors'.

Delivery information: Supplied complete with 1.5 m cable from converter, standard 13 mm probe, tool kit and manual.

Model	VC 505	VC 750
Power display	Digital (Watts and Joules)	
Frequency (kHz)	20	
Max. output power (W)	500	750
Sample volume	10 ml to 250 ml with standard probe*	
Interval time (s)	1 - 59 (independent on/off pulser)	
Timer	1 sec - 10 hrs	
Probe	Length: 136 mm Tip diameter 13 mm	
W×D×H (mm)	Ø 63.5×183 (converter) 190×340×235 (power supply)	
Weight (kg)	0.9 (converter) 6.8 (power supply)	0,9 (converter) 6,8 (power supply)

Description	Pk	Cat. No.
VC 505 Vibra-Cell™, ultrasonic processor	1	**432-0133**
VC 750 Vibra-Cell™, ultrasonic processor	1	**432-0134**

Ultrasonic processors, Vibra-Cell™ VCX 500, VCX 750, VCX 850 and VCX 1500

VCX 500/750

VCX 850

VCX 1500

High and low volume applications*

The Vibra-Cell™ is a technologically advanced, high-intensity ultrasonic processor. It can safely process a wide variety of organic and inorganic materials in applications such as cell disruption, sample preparation, homogenisation, disaggregation and sonochemical reactions. The system can vary the power output and constantly monitor both power (Watts) and energy (Joules). The microprocessor control with real time display gives digital accuracy and reproducible control of set and run parameters. The multi-functional, graphic, colour touch screen display of the VCX 850 provides the user with all the process data at a glance.

The VCX models below include features for storage of up to 10 procedures and also Energy Set point where the ultrasonics are terminated when a preset desired amount of energy has been dispensed. In addition, there is an integrated temperature controller that automaticaly switches the processor off, if the sample reaches a preset limit (requires the optional temperature probe Cat No 432-0129 - see entry for 'Probes and accessories for Vibra-Cell™ ultrasonic processors').

- Automatic tuning eliminates need for constant adjustment

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- Automatic amplitude compensation ensures uniform tip excursion regardless of load conditions
- Integrated temperature controller with user defined temperature limits precludes harmful overheating
- Sealed, piezoelectric converter, Type PZT (Lead Zirconium Titanate) crystals
- Titanium alloy (TI-6AL-4V) probes

* **Sample volumes** for VCX 500, VCX 750 and VCX 850; from 250 µl to 1 litre on a batch basis and up to 20 litres/hour on a flow-through basis depending on choice of optional replacement probes.
For VCX 1500; up to 20 litres when used with a solid probe, Ø 25 mm, length 508 mm (please ask VWR for details) and a mechanical mixer or stirrer.

Safety note: Never use a probe with a replacement tip with low surface tension liquids. Use a solid probe instead.

** Optional probe required 432-0129

Ordering information: For accessories for the Vibra-Cell™ processors please see separate entry 'Probes and accessories for Vibra-Cell™ ultrasonic processors'.

Delivery information: Supplied complete with 1,8 m cable from converter, standard 13 mm probe (VCX 500, VCX 750 and VCX 850) or 25 mm (VCX 1500), tool kit and manual.

Model	VCX 500	VCX 750	VCX 850	VCX 1500
Power display	Digital (Watts and Joules)		Graphic display includes energy, power, amplitude, pulse time, process time, temperature	Digital (Watts and Joules)
Frequency (kHz)	20			
Max. output power (W)	500	750	850	1500
Sample volume	10 ml to 250 ml with standard probe*			4000 ml with standard probe*
Interval time (s)	1 - 59 (independent on/off pulser)			
Timer	1 sec - 10 hrs		0 sec - 72 hrs	1 sec - 10 hrs
Probe	Length: 136 mm Tip diameter 13 mm			Length: 254 mm Tip diameter 25 mm
Method storage	Up to 10 procedures			
Temperature control range (°C)	1 - 100 **			1 - 100**
W×D×H (mm)	Ø 63,5×183 (converter) 190×340×235 (power supply)			Ø 76,2×158,7 (converter) 380×458×177 (power supply)
Weight (kg)	0,9 (converter) 6,8 (power supply)			0,9 (converter) 9,5 (power supply)

Description	Pk	Cat. No.
VCX 500 Vibra-Cell™, ultrasonic processor	1	**432-0137**
VCX 750 Vibra-Cell™, ultrasonic processor	1	**432-0138**
VCX 850 Vibra-Cell™, ultrasonic processor	1	**432-0270**
VCX 1500 Vibra-Cell™, ultrasonic processor	1	**432-0139**

Probes and accessories for Vibra-Cell™ ultrasonic processors

432-0121

432-0123

432-0125

A wide range of probes for a variety of applications is available, including stepped and tapered microtips and also probes for processing in microplates.

- Multi-element probes for deep well microplates
- Cuphorns for non invasive sonication of samples
- Continouous flow cells for dispersing and homogenising large volumes of low viscosity samples where extended exposure to ultrasonics is not desirable
- Footswitch for hands-free operation
- Sound abating enclosures - reduce noise and act as a containment facility

Probes for processing in microplates

The multi-element probes are specifically designed for processing up to 96 deep well plates as well as 1,5/2,0 ml microtubes and 10 ml test tubes. Although originally designed for genomic and proteomic applications, these probes can also be used for cell and tissue fractionation, toxicity studies, sample preparations, ELISAs, enzymology, protein purification for RNA, DNA, PCR labelling, hybridisation, receptor binding studies, preparation of liposomes, micro emulsions, extractions, desegregation and dissolution. Unlike ultrasonic baths, or microplate horns, the probes deliver the intensity directly into the sample, not through the microplate walls and unlike single probes with grooved protrusions, these composite probes act as mechanical amplifiers. These 20 kHz multi-element probes consist of a coupler and multiple 3 mm replaceable stepped microtips, spaced 18 mm apart. The complete assembly is approximately 260 mm long.

The probes can be mounted onto a heavy duty laboratory stand or incorporated into an automated X - Y positioning system to satisfy high throughput requirements.

Ordering information: For details of the full range of acccesories including full wave probes, high gain probes, full wave extenders plus accessories for model

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VCX 1500, please contact your local VWR office.

Description	Pk	Cat. No.
Probes and accessories for the VC 505, VC 750, VCX 500, VCX 750 and VCX 850		
13 mm solid probe, 10 - 250 ml	1	**432-0106**
13 mm probe with replaceable tip, 10 - 250 ml*	1	**432-0107**
19 mm solid probe, 25 - 500 ml	1	**432-0103**
19 mm probe with replacement tip*	1	**432-0102**
25 mm solid probe, 50 - 1000 ml	1	**432-0104**
25 mm probe with replaceable tip, 50–1000 ml*	1	**432-0105**
Tapered microtip, 3 mm, (1 - 10 ml)	1	**432-0112**
Tapered microtip, 5 mm, (3 - 15 ml)	1	**432-0113**
Tapered microtip, 6 mm, (5 - 25 ml)	1	**432-0114**
Replacement tips, 13 mm	1	**432-0267**
Replacement tips, 19 mm, set of 5	5	**432-0268**
Replacement tips, 25 mm, set of 5	5	**432-0110**
Extender, 19 mm diameter, 127 mm long	1	**432-0111**
Extender, 25 mm diameter, 127 mm long	1	**432-0119**
Coupler for 3 mm stepped microtip	1	**432-0115**
Stepped microtip, 3 mm, (250 µl - 10 ml). Requires coupler for use	1	**432-0127**
Cup horn, 63 mm, with microtube holders and splash shield	1	**432-0117**
Flow cell assembly, medium volume	1	**432-0269**
Sound abating enclosure; support rod and laboratory clamp included	1	**432-0121**
20 kHz, four-element probe, consists of aluminium coupler and 4 stepped microtips (250 µl - 10 ml). For use with 500 W processors	1	**432-0123**
20 kHz, twenty four-element probe, consists of aluminium coupler and 24 stepped microtips (250 µl - 10 ml). For use with 750 and 850 W processors (VCX 750 and VCX 850 only)	1	**432-0125**
Replacement stepped microtip, 3 mm, (250 µl - 10 ml) for four and 24 element probes	1	**432-0126**
VCX temperature probe (for VCX 500, VCX 750 and VCX 850 models only)	1	**432-0129**
Footswitch with cable and plug**	1	**432-0128**
Lightweight laboratory clamp	1	**432-0130**
Heavy duty multi-element probe support assembly with two support rods and a specially designed clamp	1	**432-0132**
Probes and accessories for the VCX 130 and VCX 130PB		
Stepped microtip, 2 mm, (150 µl - 5 ml)	1	**432-0116**
6 mm, solid probe, (10 - 50 ml)	1	**432-0118**
13 mm, solid probe, (50 - 150 ml)	1	**432-0124**
Sound abating enclosure, support rod and laboratory clamp included	1	**432-0122**
Lightweight laboratory clamp	1	**432-0131**

***Safety Note**: Never use a probe with replacement tip with low surface tension liquids (e.g. solvents). Use a solid probe instead.
** Can also be used with the VCX130 and VCX130PB

Laboratory blender, LB 400

For sample volumes of 50 - 400 ml

Compact and easy to use blender, efficiently blends solid or liquid samples in any sterile bags (plain or filter bags).

- Optimum extraction of microorganisms
- Samples are prepared quickly, ready for analysis, eliminating difficult cleaning steps
- Stainless steel door opens fully, allowing stainless steel blending chamber to be cleaned easily
- Safe and hygienic - minimum risk of infection, no risk of cross-contamination
- Lifetime resistant shock absorbers

Model	LB400
Paddle speed (min^{-1})	240, fixed speed: 8 strokes/second
Timer	30, 60, 90, 120, 150, 180, 210 seconds or continuous operation
Max./min. temperature (°C)	40/5
Power (W)	Max. 300
W×D×H (mm)	390×260×280
Weight (kg)	15

Description	Pk	Cat. No.
LB 400 lab blender	1	**710-0632**

Description	Pk	Cat. No.
Accessories		
Drip tray for lab blender LB 400	1	**710-0633**
Bag holder for 10×400 ml bags	1	**710-0634**
Automatic straw pipette SP100 for 1:10 dilutions, autoclavable	1	**710-1021**
Straw pipettes	1.000	**612-1675**

Laboratory blender, Star-Blender™ Digital

Sample volumes from 80 to 400 ml

Microbiological and pathogenic samples can be treated without risk to the operator or environment, by blending solid and semi-solid samples in sealed bags, eliminating bioaerosol production.

- Digital display to for easy setting of speed and time
- Two reciprocating paddles
- Polished AISI 304 stainless steel external and internal surfaces
- Window in front door for observation of bagged samples during homogenisation
- Tilting closure with removable front door to make operation and cleaning easier

Model	Star-Blender™
Motor speed (min^{-1})	180 - 320
Timer	Up to 10 hours, or continuous
Power (W)	180
W×D×H (mm)	250×410×220
Weight (kg)	15

Description	Pk	Cat. No.
Star-Blender™ Digital, UK-plug	1 SET	**710-1045**

Description	Pk	Cat. No.
Accessories		
Automatic straw pipette SP100 for 1:10 dilutions, autoclavable	1	**710-1021**
Bag holder for 10×400 ml bags	1	**710-0634**
Straw pipettes	1.000	**612-1675**

Blender bags

Multiple choice of PE bags from 80 ml to 3500 ml capacity

Fits all conventional lab blenders, adapted to all samples.

- Bags filters are mainly dedicated to fibrous samples
- Bags with full filter for pasty samples
- Plain bags for standard uses
- No risk of cross-contamination

Absence of heavy material: Raw material is compliant with the EC/94/62 directive.
Food contact: Raw material is compliant with regulation EC N°1935/2004
Based on ISO 11137: Sterilisation of health care products $SAL10^{-3}$

Description	Capacity (ml)	W×L (mm)	Packed	Pk	Cat. No.
Plain bags	80	105×150	60 bags of 25	1.500	**129-0732**
Plain bags	400	300×190	20 bags of 25	500	**129-0728**
Plain bags	400	300×190	10 bags of 50	500	**129-0729**
Bags with lateral filter	400	300×190	10 bags of 50	500	**129-0733**
Bags with full page filter	400	300×190	10 bags of 50	500	**129-0734**
Bags with lateral filter	400	300×190	60 bags of 25	1.500	**129-0730**
Plain bags	3500	380×510	20 bags of 25	500	**129-0731**

Laboratory blender, Stomacher® 400 Circulator
Seward

For sample volumes from 80 ml to 400 ml

Stomacher® lab blenders offer fast reliable blending and homogenisation of a broad range of laboratory samples. The Stomacher® machines work by the action of twin reciprocating paddles on the sample contained inside a sterile plastic bag.

The paddle action of the Stomacher® 400 Circulator is designed to maximise the extraction of microorganisms from food samples. The paddles produce crushing, washing and circulation of the sample in the bag and out-perform rectangular paddle models across a broad range of food sample types and textures. In food microbiology, if the organisms are not extracted from the sample into suspension then any subsequent attempt to culture or detect their presence is compromised.

- Extended 5 year warranty
- Safe containment of sample in sterile plastic bag prevents cross-contamination
- Improved organism recovery
- Hands-free auto-run
- Countdown of processing time
- Programmable paddle speed and time setting

Delivery information: Supplied as a complete kit including Stomacher 400 Circulator with 1000 bags, maintenance kit, and two power leads suitable for EU and UK.

Description	Pk	Cat. No.
Stomacher® 400 Circulator kit	1	**432-0161**

Laboratory blenders, Stomacher® 3500
Seward

Sample volumes from 400 ml to 3500 ml

Stomacher® lab blenders offer fast reliable blending and homogenisation of a broad range of laboratory samples. The Stomacher® machines work by the action of twin reciprocating paddles on the sample contained inside a sterile plastic bag.

- Versatile and efficient blending and homogenisation of laboratory samples
- Safe containment of sample in sterile plastic bag prevents cross-contamination
- Machines do not need to be cleaned and sterilised between samples
- No temperature increase

The Stomacher® 3500 machines are designed to blend large volumes. There are different models for different applications:

- Standard version: Jumbo
- Water testing version: Biowasher, designed for Cryptosporidium and Giardia testing
- Bioreactor model: Thermo, with integral heater element, specifically designed for Trichinella testing

Stomacher® 3500 Jumbo

The Jumbo Stomacher® has a range of applications in the food industry, where sample sizes greater than standard protocols demand a larger capacity and in the pharmaceutical industry for blending powdery samples.

Stomacher® 3500 "Water" Biowasher

The Water Stomacher® has a larger door capacity than the Jumbo and allows the processing of large samples which can not be compressed, such as water filters, operating theatre gowns or surgical dressings. All of the sample and washing solution is retained inside the bag for further analysis.

Stomacher® 3500 "Thermo" Bioreactor

The Thermo Stomacher® is designed to blend and heat the sample simultaneously. Inside the door there is a thermostatically controlled heating panel, which can raise the temperature inside the bag from room temperature to 50 °C in 1 °C increments. The Thermo is primarily used in Trichinella testing in pork production, but has a range of other applications as a pilot fermentation plant or where an enzyme/acid digestion of a material is required.

Delivery information: Units are supplied complete with two plugs, EU and UK.

Model	Stomacher® 3500
Paddle speed (min^{-1})	75 - 180 in steps of 5
Timer	0 - 99 min 59 s
W×D×H (mm)	470×450×470
Weight (kg)	42

Description	Pk	Cat. No.
Stomacher® 3500 Jumbo	1	**432-3130**
Stomacher® 3500 Water	1	**432-0058**
Stomacher® 3500 Thermo	1	**432-0059**

Lab blender bags, Stomacher®
Seward

Stomacher® bags are all manufactured from virgin polymer granule extruded into a tube. The only seal is at the base. All bags are batch tested and in-process monitored during manufacturing on Stomacher® machines. Bags are tested against a wide range of parameters that include open-ability, transparency, and flexibility as well as dimensions and performance. Stomacher® bags come in a range of formats to suit all applications.

- Manufactured from high-grade, food quality polythene
- Minimum 65 µm film thickness provides high impact strength
- Gamma irradiated at 25 to 50 kGy to guarantee sterility. Individual irradiation batch certificates are available on request
- Bags are batch traceable to 10 packs and pharmaceutical QC standard sampling protocols are applied in manufacturing
- Stomacher® bags are packed in durable white plastic sachets, with printing to show the contents and which end should be opened to maintain the sterility of the contents on the laboratory bench

Standard bags

Standard bags are available in two sizes: 400 and 3500 ml. The 400 ml bags are produced in Circulator format with round bottom seals and Classic format with square bottom seals. The 400 ml bags are available in two different packaging formats, plastic carry packs or cardboard boxes, the latter are packed in either sachets of 5 or 50 bags.

Strainer bags

Strainer bags are standard bags with a strainer bag suspended inside. The strainer is a full width bag and has a pore size microbiologically guaranteed to allow the free movement of organisms through it and to eliminate the risk of pore blockage, which will occur in finer mesh filters. The strainer bags reduce pipette blockage and also protect the bag film from gritty samples. Available in 400 ml Classic and Circulator formats.

Closure bags

Closure bags have a simple wire closure attached to the open end of the bag. These bags can be used for sample collection. In food testing the closure bag can be used to pre-enrich samples for pathogen testing by sealing the bag and placing it in the incubator after Stomaching. Available in 400 ml Classic and Circulator formats.

Simplettes®

Simplettes are inexpensive pipette tips for use with Stomacher® 400 bags. They are the right length to reach down to the bottom of the bag to recover the sample for inoculating Petri dishes and broths.

- Manufactured from polythene
- Gamma irradiated sterile

Racks and openers for Stomacher® bags

Stomacher® bags racks and bag openers assist the operator in handling their samples on the bench.

- Strong clear plastic racks - easy to maintain and clean
- Bag openers to assist the operator in loading samples and pipetting homogenate

Ordering information: Details of the full range of Seward bags and bag accessories are available on request.

Description	Capacity (ml)	W×L (mm)	Packed	Pk	Cat. No.
Stomacher® 400 Classic bags					
Classic bag with closure	80 - 400	177x305	250 in 25 sachets of 10	250	**432-3123**
Classic bag with filter, stainer bag	80 - 400	177×305	200 in 20 sachets of 10	200	**432-3119**
Classic standard bag in plastic carry pack	80 - 400	177×305	1000 in sachet of 50	1.000	**432-0266**
Classic standard bag	80 - 400	177×305	500 in 10 sachets of 50	500	**432-3126**
Stomacher® 400 Circulator bags					
Stomacher bag with closure	80 - 400	177×305	250 in 25 sachets of 10	250	**432-3125**
Stomacher bag with filter, stainer bag	80 - 400	177×305	200 in 20 sachets of 10	200	**432-3124**
Stomacher standard bag	80 - 400	177×305	500 in 10 sachets of 50	500	**432-3121**
Stomacher® 3500 bags					
Stomacher standard bag	400 - 3500	380×510	250 in 5 sachets of 50	50	**432-3131**

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Description	Capacity (ml)	W×L (mm)	Packed	Pk	Cat. No.
Stomacher® 80 Biomaster bags					
Biomaster mico bag	250 µl - 80	60×185	50	50	**432-0057**
Biomaster mico bag	5 - 80	105×155	200 (sachet of 10)	200	**432-0273**
Standard Biomaster bag	5 - 80	105×155	2000 (sachet of 50)	2.000	**432-0017**
Biomaster strainer bag with closure	5 - 80	105×155	200 (sachet of 10)	200	**432-0272**
Biomaster bag with closure	5 - 80	105×155	200 (sachet of 10)	200	**432-0271**
Biomaster strainer double bag	5 - 80	135×180	200 (sachet of 10)	200	**432-3118**

Description	Pk	Cat. No.
Simplettes® for Stomacher® bags 400		
Simplettes® standard (177 mm)	2.000	**432-0024**
Openers for Stomacher® bags		
Stomacher® 400 bag opener	1	**431-0132**
Stomacher® 80 bag opener	1	**432-3115**
Stomacher® 400 bag clips	200	**432-3116**
Stomacher® 80 bag rack, 10 place	1	**432-3151**
Stomacher® 400 bag rack one place	1	**432-3150**
Stomacher® 3500 bag rack three place	1	**432-3153**
Stomacher® 400 bag rack 10 place	1	**432-3152**

Blender bags

High grade polymer mixture, ideal for any food laboratory sample blenders.

• With write-on panel to allow for easy identification of samples, useful for barcoding

Sterilisation by 15 - 40 kGy

Description	Thickness (µm)	W×L (mm)	Packed	Pk	Cat. No.
Grade Lab 80 blender bags for model 80	65	100×150	40 sachets of 50 bags	2.000	**432-0000**
Grade Lab 400 blender bags for model 400	50	180×300	50 sachets of 50 bags	2.500	**432-0499**
Grade Lab 400 blender bags for model 400	65	180×300	10 sachets of 50 bags	500	**432-0001**
Grade Lab 400 blender bags for model 400, curved bottom	65	180×300	10 sachets of 50 bags	500	**432-0002**
Grade Lab 400 blender bags for model 400, with inner filter bag	65	180×300	20 sachets of 10 bags	200	**432-0003**
Grade Lab 400 blender bags for model 400, with inner filter bag, curved bottom	65	180×300	20 sachets of 10 bags	200	**432-0004**
Grade Lab 3500 blender bags for model 3500	70	380×500	5 sachets of 50 bags	250	**432-0005**

Overhead stirrer, VOS 14

This quiet, economical overhead stirrer is suitable for simple laboratory mixing, applications such as processing media with substantial temporary viscosity changes. Ideal for stirring substances with low to medium viscosities. Electronically controlled closed loop feedback to the motor to maintain constant speed, even when viscosity changes. The shaft accommodates stirring elements with shafts up to 8 mm in diameter.

- Gearless, direct drive motor
- Infinitely adjustable speed control
- Easy to operate
- Analogue speed display, overload protection

IP protection class according to DIN EN 60529: IP 20

Delivery information: Supplied with chuck key and extension arm. Accessories must be ordered separately. Plate stand 431-2901 has slip resistant foil coating, a 16 mm diameter supporting rod and supports up to 5 kg. Please see www.vwr.com for details of accessories.

Model	VOS 14
Max. stirring capacity H_2O (l)	8
Max. torque at chuck (Ncm)	
Max. viscosity (mPas)	10000
Power - motor input/output (W)	28,5/17
Shaft Ø (mm)	0,5 - 8
Speed range (min^{-1})	100 - 2000
Weight (kg)	2
W×D×H (mm)	70×176×197

Description	Pk	Cat. No.
VOS 14 overhead stirrer, UK-plug	1	**441-0026**

Description	Pk	Cat. No.
Accessories		
Stirring shaft protector	1	**441-2999**
Bosshead clamp, 6 - 16 mm Ø stand, 6 - 16 mm Ø extension arm	1	**431-2923**
Plate stand, 200×316 mm, rod 16 mm Ø with height 800 mm	1	**431-2901**

Electronic overhead stirrers, VOS 40 digital and VOS 60 control

Laboratory stirrers which are ideal for simple stirring tasks, suitable for quantities up to 25 l (VOS 40 digital), or for intensive stirring tasks for quantities up to 40 l (VOS 60 control). Due to microprocessor controlled technology, the stirrers automatically adjust the speed within the speed range of 0/30 - 2000 min^{-1}. Safety circuits ensure automatic cut off in anti-stall or overload conditions. The actual shaft speed and preset speed are constantly monitored and variations are adjusted automatically. This guarantees a constant speed even with changes in sample viscosities. Stirrers have a slim casing and provide quiet operation.

- Digital speed display
- Infinitely adjustable speed
- Push-through agitator shafts
- Overload protection and units can be operated for short-term periods in overload conditions
- Error code display

The VOS 60 control model features a removable wireless controller and a digital, multilingual TFT display. This stirrer is equipped with a RS232 and a USB interface to control and document all parameters. An integrated torque trend display enables measurement of viscosity changes.

- Programmable functions
- Integrated temperature measurement
- Interval operation, timer and lock function
- Adjustable safety circuit

IP protection class according to DIN EN 60529: IP 40

Ordering information: Supplied without accessories, a wide range of accessories are available to order separately.

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Model	VOS 40 digital	VOS 60 control
Chuck range (mm)	0,5 - 10	
Max. stirring capacity H_2O (l)	25	40
Max. torque at chuck (Ncm)	40	60
Max. viscosity (mPas)	40000	50000
Power - motor input/output (W)	112/87	168/131
Speed range (min^{-1})	0/30 - 2000	
Weight (kg)	4,4	4,7
W×D×H (mm)	86×208×248	86×230×267

Description	Pk	Cat. No.
VOS 40 digital overhead stirrer, UK-plug	1	**441-0303**
VOS 60 control overhead stirrer, UK-plug	1	**441-0306**

Description	Pk	Cat. No.
Accessories		
H-Stand, 460×420 mm, rod 34 mm Ø with height 1010 mm	1	**431-9114**
Pneumatic telescopic stand, 460×420 mm, rod 34 mm Ø with height 620 - 1010 mm	1	**431-2912**
Stirring shaft protector	1	**441-2999**
Bosshead clamp, 6 - 16 mm Ø stand, 6 - 16 mm Ø extension arm	1	**431-2923**
Spare stainless steel sensor for use with ETS-D5	1	**442-0252**
Glass coated sensor for use with ETS-D5 and VT-5 contact thermometers	1	**442-0316**
Extension cable, separates casing from the sensor, avoiding damage from vapours released by the medium	1	**620-8104**
Strap clamp for securing vessels, stand Ø 25 - 36 mm, vessel Ø 40 - 300 mm	1	**431-2944**
Plate stand, 200×316 mm, rod 16 mm Ø with height 800 mm	1	**431-2901**
Keyless chuck	1	**441-0343**
Temperature sensor, coated	1	**441-0344**

Electronic overhead stirrers, EUROSTAR 20 digital, EUROSTAR 20 high speed digital and EUROSTAR 40 digital

IKA

Laboratory stirrers designed for simple stirring tasks for quantities up to 15 or 25 l (EUROSTAR 20 digital and EUROSTAR 40 digital), or for intensive stirring tasks for quantities up to 20 l (EUROSTAR 20 high speed digital). Units automatically adjust the speed through microprocessor controlled technology within the speed range of 0/30 - 2000 min^{-1} (or 0/150 – 6000 for the high speed model). Safety circuits ensure automatic cut off in anti-stall or overload conditions. The actual shaft speed and preset speed are constantly monitored and variations are adjusted automatically. This guarantees a constant speed even with changes in sample viscosities.

- Digital speed display
- Infinitely adjustable speed
- Push-through agitator shafts
- Overload protection and units can be operated for short term periods in overload conditions
- Slim casing and quiet operation
- Error code display

IP protection class according to DIN EN 60529: IP 40

Ordering information: Supplied without accessories, a wide range of accessories are available to order separately.

Model	EUROSTAR 20 digital	EUROSTAR 20 high speed digital	EUROSTAR 40 digital
Chuck range (mm)	0,5 - 10	Fixed	0,5 - 10
Max. stirring capacity H_2O (l)	15	20	25
Max. torque at chuck (Ncm)	20		40
Max. viscosity (mPas)	10000		30000
Power - motor input/output (W)	56/44	171/133	112/87
Speed range (min^{-1})	0/30 - 2000	0/150 - 6000	0/30 - 2000
Weight (kg)	4,4	5,3	4,4
W×D×H (mm)	86×208×248	86×208×325	86×208×248

Description	Pk	Cat. No.
EUROSTAR 20 digital overhead stirrer, UK-plug	1	**441-0332**
EUROSTAR 20 high speed digital overhead stirrer, UK-plug	1	**441-0314**
EUROSTAR 40 digital overhead stirrer, UK-plug	1	**441-0106**

Electronic overhead stirrers, EUROSTAR 60 digital, EUROSTAR 60 control, EUROSTAR 100 digital and EUROSTAR 100 control

IKA

Powerful laboratory stirrers for quantities up to 40 or 100 l (H_2O). Units automatically adjust the speed through microprocessor controlled technology within the speed range of 0/30 - 2000 min^{-1} (EUROSTAR 60 models) or 0/30 - 1300 min^{-1} (EUROSTAR 100 models). Safety circuits ensure automatic cut off in anti-stall or overload conditions. The actual shaft speed and preset speed are constantly monitored and variations are adjusted automatically. This guarantees a constant speed even with changes in sample viscosities.

- Digital speed display
- Infinitely adjustable speed
- Push through agitator shafts
- Overload protection and units can be operated for short term periods in overload conditions
- Slim casing and quiet operation
- Error code display

Control models feature a removable wireless controller and a digital TFT display. They are equipped with a RS232 and a USB interface to control and document all parameters. An integrated torque trend display enables measurement of viscosity changes.

- Multilingual TFT display
- Programmable functions
- Integrated temperature measurement
- Interval operation, timer and lock function
- Adjustable safety circuit

IP protection class according to DIN EN 60529: IP 40

Ordering information: Supplied without accessories, a wide range of accessories are available to order separately.

Model	EUROSTAR 60 digital	EUROSTAR 60 control	EUROSTAR 100 digital	EUROSTAR 100 control
Chuck range (mm)	0,5 - 10			
Max. stirring capacity H_2O (l)	40		100	
Max. torque at chuck (Ncm)	60			
Max. viscosity (mPas)	50000		70000	
Power - motor input/output (W)	168/131		174/142	
Speed range (min^{-1})	0/30 - 2000		0/30 - 1300	
Weight (kg)	4,4	4,7	4,4	4,7
W×D×H (mm)	86×208×248	86×230×267	86×208×248	86×230×267

Description	Pk	Cat. No.
EUROSTAR 60 digital overhead stirrer, UK-plug	1	**441-0327**
EUROSTAR 60 control overhead stirrer, UK-plug	1	**441-0324**
EUROSTAR 100 digital overhead stirrer, UK-plug	1	**441-0321**
EUROSTAR 100 control overhead stirrer, UK-plug	1	**441-0311**

Electronic overhead stirrers, EUROSTAR 200 digital, EUROSTAR 200 control, EUROSTAR 200 P4 control

IKA

EUROSTAR 200 control

EUROSTAR 200 digital

Extremely powerful laboratory stirrers for highly viscous applications and intensive mixing of quantities up to 100 l (H_2O). Units automatically adjust the speed through microprocessor controlled technology within the speed range of speed range of 6 - 2000 min^{-1} or 4 - 530 min^{-1} (P4 models), all models have two speed ranges. Safety circuits ensure automatic cut off in anti-stall or overload conditions. The actual shaft speed and preset speed are constantly monitored and variations are adjusted automatically. This guarantees a constant speed even with changes in sample viscosities.

- Digital speed display
- Infinitely adjustable speed
- Push through agitator shafts
- Overload protection and units can be operated for short term periods in overload conditions
- Slim casing and quiet operation
- Error code display

Control models feature a removable wireless controller and a digital TFT display. They are equipped with a RS232 and a USB interface to control and document all parameters. An integrated torque trend display enables measurement of viscosity changes.

- Multilingual TFT display
- Programmable functions
- Integrated temperature measurement
- Interval operation, timer and lock function
- Adjustable safety circuit

IP protection class according to DIN EN 60529: IP 40

Ordering information: Supplied without accessories, a wide range of accessories are available to order separately.

Model	EUROSTAR 200 digital	EUROSTAR 200 control	EUROSTAR 200 P4 control
Chuck range (mm)	0,5 - 10		
Max. stirring capacity H_2O (l)	100		
Max. torque at chuck (Ncm)	200		660
Max. viscosity (mPas)	100000		150000
Power - motor input/output (W)	121/99		
Speed range I (min^{-1})	6 - 400		4 - 108
Speed range II (min^{-1})	30 - 2000		16 - 530
Weight (kg)	4,6	4,9	5,8
W×D×H (mm)	91×209×274	91×231×274	91×230×379

Description	Pk	Cat. No.
EUROSTAR 200 digital overhead stirrer, UK-plug	1	**441-0139**
EUROSTAR 200 control overhead stirrer, UK-plug	1	**441-0308**
EUROSTAR 200 P4 control overhead stirrer, UK-plug	1	**441-0318**

Electronic overhead stirrers, RZR 2051 control and RZR 2052 control
Heidolph

Overhead stirrers with single speed gear designed for power, reliability and continuous use, ideal for mixing highly viscous media. Provide constant speed over the entire range even under changing viscosities and in overload mode. Changes in viscosity can be monitored via the LED display. Digital speed, torque settings and monitoring. The shaft accommodates stirring elements with shafts up to 10 mm in diameter.

- Overheating protection with self reset and overload protection
- Overload mode with 200% power reserve for limited time
- Torque calibration button sets torque at zero prior to the process
- Digital speed and torque display for reproducible results and RS232C interface
- Smooth start prevents media spillages and enhances safety

IP protection class according to DIN EN 60529: IP 40

Delivery information: Supplied with chuck key and extension arm. Accessories must be ordered separately. RZR 2052 control complete package includes: Electronic overhead stirrer RZR 2052 control, propeller type stirrer tool with pitched blade, universal stand and clamp.

Model	RZR 2051 control	RZR 2052 control
Max. stirring capacity H_2O (l)	40	100
Max. torque (overload mode) (Ncm)	20 (40)	90 (180)
Max. viscosity (mPas)	10000	40000
Power - motor input/output (W)	80/50	140/100
Shaft Ø (mm)	0,5 - 10	
Speed range (min^{-1})	50 - 2000	30 - 1000
Weight (kg)	2,8	3,7
W×D×H (mm)	72×176×206	82×176×211

Description	Pk	Cat. No.
RZR 2051 control and RZR 2052 control		
RZR 2051 control overhead stirrer, UK-plug	1	**441-1111**
RZR 2052 control overhead stirrer, UK-plug	1	**441-1110**
RZR 2052 control complete package		
RZR 2052 control complete package, UK-plug	1 SET	**441-1312**

Electronic overhead stirrers, RZR 2102 control and RZR 2102 control Z
Heidolph

Overhead stirrers with two speed gears designed for power, reliability and continuous use, ideal for mixing highly viscous media. Provide constant speed over the entire range even under changing viscosities and in overload mode. Changes in viscosity can be monitored via the LED display. Digital speed, torque settings and monitoring. The most powerful stirrer, the RZR 2102 control Z has flanged planet gear (gear ratio 4:1). The shaft accommodates stirring elements with shafts up to 10 mm in diameter.

- Overheating protection with self reset and overload protection
- Overload mode with 200% power reserve for limited time
- Torque calibration button sets torque at zero prior to the process
- Digital speed and torque display for reproducible results and RS232C interface
- Smooth start prevents media spillages and enhances safety

IP protection class according to DIN EN 60529: IP 40

Delivery information: Supplied with chuck key and extension arm. Accessories must be ordered separately.

Model	RZR 2102 control	RZR 2102 control Z
Max. stirring capacity H_2O (l)	100	
Max. torque (overload mode) (Ncm)	200 (400)	700 (800)
Max. viscosity (mPas)	100000	350000
Power - motor input/output (W)	140/100	
Shaft Ø (mm)	0,5 - 10	
Speed range I (min^{-1})	12 - 400	4 - 108
Speed range II (min^{-1})	60 - 2000	17 - 540
Weight (kg)	3,7	4,7
W×D×H (mm)	82×176×211	82×176×292

Description	Pk	Cat. No.
RZR 2102 control overhead stirrer, UK-plug	1	**441-1112**
RZR 2102 control Z overhead stirrer, UK-plug	1	**441-1315**

Electronic overhead stirrers
VELP Scientifica

Range of overhead stirrers with electronic adjustment that are equipped with advanced safety systems.

ES compact overhead stirrer for simple medium and low speed liquid stirring applications (max1000 mPas). Suitable for stirring up to 15 l, with speed adjustment ranging between 50 and 1300 min^{-1}. Safety system to prevent instrument overheating.

LS overhead stirrer for stirring medium-low viscosity liquids (max 10 000 mPas). Suitable for volumes up to 25 l, with speed adjustment ranging from 50 to 2000 min^{-1}. The unit can be operated continuously.

PW powerful overhead stirrer for stirring high viscosity liquids (max 100 000 mPas). Suitable for volumes up to 70 l, with speed adjustment ranging from 20 to 1200 min^{-1}. The unit can be operated continuously.

DLS overhead stirrer for stirring medium-viscosity liquids (max 25 000 mPas). Speed preselection from 50 to 2000 min^{-1}. Safety system protects unit from overloads in case the motor malfunctions or jams.

LH and **DLH** models are characterised by strong rotation torque that allows liquids with high viscosity (max 50 000 mPas) to be used. Speed preselection from 50 to 2000 min^{-1}. Safety system protects unit from overloads in case the motor malfunctions or jams.

- Compact, easy to use ergonomic design, units are lightweight, reliable and quiet
- Progressive start-up prevents liquid from coming out of the vessel
- Microprocessor controlled motor means constant speed, even when the viscosity of the liquid changes (except ES models)
- Model BS, PW, DLS, LH and DLH have safety chuck without key, which helps ensure safe use
- DLS and DLH models have two digital displays showing both actual and set speeds simultaneously

Ordering information: Supplied without stirring tools, which must be ordered separately.

Model	PW	LS	ES	DLS	LH	DLH
Max. torque at chuck (Ncm)	15	40		80		120
Max. viscosity (mPas)	1000	25000		50000		100000
Speed range (min^{-1})	50 - 1300	50 - 2000				20 - 1200
Weight (kg)	2,9	2,3	1,3	2,5	2,9	3,0
W×D×H (mm)	80×196×230	80×196×215	80×200×160	80×196×215	80×196×230	

Description	Pk	Cat. No.
PW overhead stirrer	1	**441-0345**
LS overhead stirrer	1	**441-0346**
ES overhead stirrer	1	**441-0347**
DLS digital overhead stirrer	1	**441-0348**
LH overhead stirrer	1	**441-0349**
DLH digital overhead stirrer	1	**441-0350**

Description	Pk	Cat. No.
Accessories and stirring tools for ES, PW, BS, DLS, LH and DLH stirrers		
Support stand	1	**441-0108**
Bosshead clamp	1	**441-0109**
Clamp	1	**441-0110**
Stirrer with 2 floating blades, creates axial flow, for stirring in narrow neck containers	1	**441-0119**
Stirrer with folding blade, creates axial flow, for stirring in narrow neck containers	1	**441-0115**
Fixed blade stirrer, creates axial flow, for use at medium/high speed, stirring light solids	1	**441-0126**
Propellor stirrer, creates axial flow, for use at medium/high speed, stirring light solids	1	**441-0116**
Paddle stirrer, creates tangential flow, for use at medium/low speed	1	**441-0125**
Turbine type stirrer, creates radial flow, for use at medium/high speed to dissolve particles	1	**441-0117**
Turbo stirrer, creates axial flow, for use at medium/high speed, stirring light solids	1	**441-0120**
Anchor stirrer, creates tangential flow, for use at medium/low speed	1	**441-0118**

Mechanical overhead stirrer, RW 20 digital
IKA

Robust, slimline, ergonomic design with digital display.

- With constant power-drive
- Two speed ranges for universal use from 60 to 2000 min^{-1}
- Push-through agitator shafts (only when stationary)

IP protection class according to DIN EN 60529: IP 20

Delivery information: Supplied with chuck key and extension arm. Accessories must be ordered separately.

Model	RW 20 digital
Chuck range (mm)	0,5 - 10
Max. stirring capacity H_2O (l)	20
Max. torque at chuck (Ncm) per 100 (min^{-1})	150
Max. viscosity (mPas)	10000
Power - motor input/output (W)	70/35
Speed range I (min^{-1})	60 - 500
Speed range II (min^{-1})	240 - 2000
Weight (kg)	3,1
W×D×H (mm)	88×212×294

Description	Pk	Cat. No.
RW 20 digital overhead stirrer, UK-plug	1	**441-2908**

Mechanical overhead stirrer, RW 28 digital
IKA

Powerful, mechanically controlled laboratory stirrer, designed for highly viscous applications for quantities up to 80 l. Units have a robust, ergonomic design with constant power drive, suitable for intensive mixing for use in laboratories and pilot plants. The stirrer is equipped with protection to avoid overheating the motor by means of a self-locking temperature limiter. Additionally, to secure bowls, a stirring shaft protector and clamping fixture are optionally available.

- Digital speed display
- Infinitely adjustable speed in two speed ranges
- Push through agitator shafts
- Overload protection and error code display
- Quiet operation

IP protection class according to DIN EN 60529: IP 40

Ordering information: Accessories must be ordered separately.

Model	RW 28 digital
Chuck range (mm)	1 - 10
Max. stirring capacity H_2O (l)	80
Max. torque (Ncm)	900
Max. viscosity (mPas)	50000
Power - motor input/output (W)	220/90
Speed range I (min^{-1})	60 - 400
Speed range II (min^{-1})	240 - 1400
Weight (kg)	7,5
W×D×H (mm)	123×252×364

Description	Pk	Cat. No.
RW 28 digital overhead stirrer, UK-plug	1	**441-0330**

Mechanical overhead stirrer, RW 47 digital
IKA

Extremely powerful, mechanically controlled laboratory stirrer designed for highly viscous applications for quantities up to 200 l. Unit has a robust, ergonomic design with constant power drive, suitable for intensive mixing for use in laboratories and pilot plants. The stirrer is equipped with protection to avoid overheating of the motor by means of self-locking temperature limiter. Additionally, to secure bowls, an optional stirring shaft protector and clamping fixture are available.

- Digital speed display
- Infinitely adjustable speed in two speed ranges
- Push through agitator shafts
- Overload protection and error code display
- Quiet operation

IP protection class according to DIN EN 60529: IP 54

Ordering information: RW 47 digital is supplied without a plug as it is designed for use with a 400 V, 3 phase power supply, heavy duty telescopic stand 431-2912 is recommended as an optional accessory. Stirring shafts must be ordered separately.

Chuck range (mm)	3 - 16
Max. stirring capacity H_2O (l)	200
Max. torque (Ncm)	3000
Max. viscosity (mPas)	100000
Power - motor input/output (W)	513/370
Speed range I (min^{-1})	57 - 275
Speed range II (min^{-1})	275 - 1300
Weight (kg)	16
W×D×H (mm)	145×358×465

Description	Pk	Cat. No.
RW 47 digital overhead stirrer, without plug	1	**441-0316**

Description	Pk	Cat. No.
Accessories		
Pneumatic telescopic stand, 460×420 mm, rod 34 mm Ø with height 620 - 1010 mm	1	**431-2912**
Stirring shaft protector	1	**441-2999**
Bosshead clamp, 34 mm Ø stand, 16 mm Ø extension arm	1	**431-2907**

Mechanical overhead stirrers, RZR 2020, RZR 2021 and RZR 2041
Heidolph

Overhead stirrers for general laboratory use, the units are designed for continuous use and have large control dials and convenient analogue speed settings. The shaft accommodates stirring elements with shafts up to 10 mm in diameter.

- Overheating protection with self reset
- Two speed ranges for universal use from 40 to 2000 min^{-1}
- RZR 2021 and RZR 2041 have digital speed display for reproducible results

IP protection class according to DIN EN 60529: IP 40

Delivery information: Supplied with chuck key and extension arm. Accessories must be ordered separately. RZR 2020 complete package includes: Mechanical overhead stirrer RZR 2020, propeller type stirrer tool with pitched blade, universal stand and clamp.

Model	RZR 2020	RZR 2021	RZR 2041
Max. stirring capacity H_2O (l)	25		40
Max. torque (Ncm)	400		520
Max. viscosity (mPas)	60000		100000
Power - motor input/output (W)	50/27		70/37
Shaft Ø (mm)	0,5 - 10		
Speed range I (min^{-1})	40 - 400		
Speed range II (min^{-1})	200 - 2000		
Weight (kg)	3,0		3,3
W×D×H (mm)	82×176×206		82×176×211

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Description	Pk	Cat. No.
RZR 2020, RZR 2021 and RZR 2041		
RZR 2020 overhead stirrer, UK-plug	1	**441-1113**
RZR 2021 overhead stirrer, UK-plug	1	**441-1114**
RZR 2041 overhead stirrer, UK-plug	1	**441-1313**
RZR 2020 complete package		
RZR 2020 complete package, UK-plug	1 SET	**441-1311**

Mixing system, VISCO JET® for overhead stirrers
Heidolph

VISCO JET® homogenises low and high viscosity liquids in vessels by creating dynamic flow conditions by means of the so called cone principle. Turbulent flows are created at the taper end by acceleration, displacement and retardation. These flows advance through the stirred medium and result in the new dynamic mixing motion.

- Only one system for nearly every mixing task
- No air intake, foaming or heating
- Careful and gentle mixing
- Short mixing periods
- Less power consumption through low mixing speed

Description	Material	Ø (mm)	For Ø (mm)	Shaft - Ø (mm)	Revolutions	Pk	Cat. No.
VISCO JET® 60 mm	Stainless steel	60	80 - 150	10	200 - 800	1	**441-0012**
VISCO JET® 80 mm	Stainless steel	80	115 - 200	10	200 - 700	1	**441-0013**
VISCO JET® 80 mm	POM	80	115 - 200	10	200 - 700	1	**441-0014**
VISCO JET® 120 mm	Stainless steel	120	170 - 300	10	120 - 500	1	**441-0015**
VISCO JET® 120 mm	POM	120	170 - 300	10	120 - 500	1	**441-0016**

Stirring shafts

PTFE

For use with stirring blades. Chemically inert. The smooth surface reduces contamination and makes cleaning easier. It also prevents the agitation vessels from being scratched.

- Very good chemical resistance
- Temperature resistant from –200 to +280 °C

Ordering information: Stirring blades must be ordered separately.

Length (mm)	Ø (mm)	Pk	Cat. No.
300	8	1	**441-0253**
400	8	1	**441-0254**
500	8	1	**441-0255**
650	10	1	**441-0256**
750	10	1	**441-0257**
1000	10	1	**441-0258**
650	12	1	**441-0259**
750	12	1	**441-0260**
1000	12	1	**441-0261**

Stirrer blades with plain ends

PTFE

Blades fit PTFE stirring shaft; hole diameter 6,5 mm, 3,2 mm thick. Inert and non scratch. The smooth surface prevents contamination and makes cleaning easier.

- Very good chemical resistance
- Temperature resistant from –200 to +280 °C

Width (mm)	Height (mm)	Type	Pk	Cat. No.
65	25	Stirrer blade, plain ends	1	**441-0248**
75	25	Stirrer blade, plain ends	1	**441-0249**
105	25	Stirrer blade, plain ends	1	**441-0250**
125	25	Stirrer blade, plain ends	1	**441-0251**
150	25	Stirrer blade, plain ends	1	**441-0252**

Overhead stirrer tools, 3-bladed stirrers

IKA

Made from stainless steel, except 441-2125, which is PTFE coated. Stirrers draw the material to be mixed from the top of the vessel to the bottom. Minimal shearing forces.

- Ideal for stirring liquids at medium to high speeds

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Stainless steel						
Three blade stirrer	45	8	350	2000	1	**441-2911**
Three blade stirrer	55	8	350	2000	1	**441-2912**
Three blade stirrer	140	10	550	800	1	**441-2913**
Three blade stirrer	140	10	800	400	1	**441-2914**
PTFE coated						
Three blade stirrer (PTFE)	75	8	350	800	1	**441-2125**

Overhead stirrer tools, propeller-type impellers
Heidolph

Made from stainless steel.

- For suspensions and homogenisation
- Ideal for stirring liquids with medium to high viscosity
- Create axial flow

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Stem length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Propeller stirrer, three-bladed, ringed	33	8	400	400	2000	1	**441-1230**
Propeller stirrer, three-bladed, ringed	45	8	400	400	2000	1	**441-1231**
Propeller stirrer, three-bladed	58	8	400	400	2000	1	**441-1229**
Propeller stirrer, three-bladed, ringed	66	8	400	400	2000	1	**441-1232**

Overhead stirrer tools, 4-bladed stirrers
IKA

Made from stainless steel. Stirrers draw the material to be mixed from the top of the vessel to the bottom. Local shearing forces.

- For medium to high speed range
- Ideal for stirring liquids with low to medium viscosity
- Create axial flow in the vessel

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Four blade stirrer	50	8	350	2000	1	**441-2901**
Four blade stirrer	100	8	540	800	1	**441-2903**
Four blade stirrer	150	13	800	600	1	**441-2904**

Overhead stirrer tools, 4-bladed stirrers
Brand

PP propeller, PE coated coated steel core shaft.

- PP propeller minimises scratching if the stirrer inadvertently hits the vessel wall
- Good operating characteristics due to steel core shaft
- Robust design

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Pk	Cat. No.
Four blade stirrer	45	6	380	1	**441-9519**

Overhead stirrer tools, turbine stirrers
IKA

Made from stainless steel. Stirrers draw the material to be mixed from above. Minimal shearing forces.

- Ideal for stirring liquids at medium to high speeds
- Create axial flow

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Turbine stirrer	30	8	350	2000	1	**441-2921**
Turbine stirrer	50	8	350	2000	1	**441-2922**
Turbine stirrer	70	10	400	800	1	**441-2923**

Overhead stirrer tools, turbine-type impellers
Heidolph

Made from stainless steel.

- For gassing liquids
- Ideal for stirring liquids with medium to high viscosity
- Create radial flow

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Turbine stirrer	29	8	400	2000	1	**441-1227**
Turbine stirrer	50	8	400	2000	1	**441-1228**

Overhead stirrer tools, anchor stirrers
IKA

Made from stainless steel. Ensures minimum deposits on vessel walls, and even distribution of high mineral content in liquids, ideal for mixing polymer reactions. High shearing forces at edges.

- Ideal for stirring liquids at low speeds
- Suitable for stirring liquids with medium to high viscosity
- Create tangential flow

Description	Stirrer - Ø (mm)	Length (mm)	Shaft - Ø (mm)	Shaft length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Anchor stirrer	45	350	8	350	1000	1	**441-2931**
Anchor stirrer	90	350	8	350	1000	1	**441-2932**
Anchor stirrer	150	550	10	550	800	1	**441-2934**

Overhead stirrer tools, anchor stirrers
BOLA

PTFE stirrers

These stirrer tools have a PTFE coated stainless steel shaft, and the u-shaped stirrer blade is made entirely of PTFE. Ideal for mixing viscous liquids. Strong, tangential flow with shear rate in the margin area, little sediment on the wall of the vessel.

- Excellent chemical resistance
- Temperature resistant from –200 to +250 °C

PTFE blades

Solid PTFE stirrer blades with set of PTFE/PEEK clamp screws, ideal for mixing viscous liquids. Strong, tangential flow with shear rate in the margin area, little sediment on the wall of the vessel.

- Conform to FDA requirements
- Excellent chemical resistance
- Temperature resistant from –200 to +250 °C

Delivery information: A spanner is included with the blades for easy assembly.

Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	For rod Ø (mm)	Height (mm)	Width (mm)	Pk	Cat. No.
Stirrers							
60	8	350		40	60	1	**441-2933**
100	8	600		60	100	1	**441-0078**
80	10	450		50	80	1	**441-0079**
100	10	600		60	100	1	**441-0083**
Blades							
			8	40	60	1	**441-0077**
			8	60	100	1	**441-0085**
			10	50	80	1	**441-0075**
			10	60	100	1	**441-0086**

Overhead stirrer tools, paddle stirrers
IKA

Made from stainless steel. Gentle stirring with minimal turbulence.

- Ideal for stirring liquids at low to medium speeds
- Create tangential flow

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Paddle stirrer	70	8	550	800	1	**441-2942**
Paddle stirrer	150	10	550	800	1	**441-2943**
Paddle stirrer	150	13	800	600	1	**441-2944**

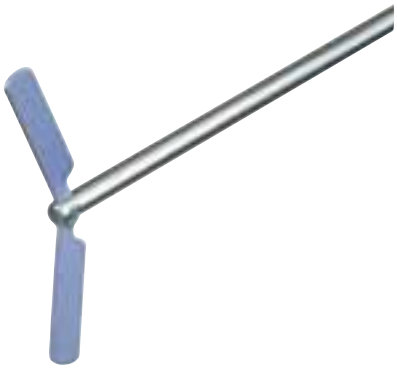
Overhead stirrer tools, centrifugal stirrers
IKA

Made from stainless steel. Two blades which open with increasing speed.

- For stirring in round vessels with narrow necks
- Ideal for stirring liquids at medium to high speeds
- Create axial flow

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Stem length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Centrifugal stirrer	60/15	8	350	350	2000	1	**441-2961**
Centrifugal stirrer	100/24	8	550	550	800	1	**441-2962**

Overhead stirrer tools, propeller, centrifugal and paddle-type impellers
Heidolph



Made from stainless steel.

- For medium speed range
- Ideal for stirring liquids with low to medium viscosity

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Stem length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Propeller stirrer, four-bladed, vertical	50	8	400	400	2000	1	**441-1223**
Propeller stirrer, two-bladed, vertical	50	8	400	400	2000	1	**441-1224**
Centrifugal stirrer, with flexible blades	60	8	400	400	1000	1	**441-1222**
Paddle stirrer, three holes	70	8	450	450	1000	1	**441-1225**
Centrifugal stirrer, with two flexible blades	90	8	400	400	1000	1	**441-1226**

Overhead stirrer tools, dissolver stirrers
IKA

Made from stainless steel. Stirrers draw the material to be mixed from the top and the bottom. High turbulence and high shearing forces.

- Ideal for stirring liquids at medium to high speeds
- Create radial flow

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Dissolver stirrer	42	8	350	2000	1	**441-2954**
Dissolver stirrer	80	8	350	2000	1	**441-2951**
Dissolver stirrer	100	10	350	1000	1	**441-2953**

Overhead stirrer shafts

PTFE, with encapsulated steel reinforced drive shaft. Chemically inert. The smooth surface reduces contamination and makes cleaning easier.

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- Non scratch, prevents agitation vessels from being damaged
- Temperature resistant from –200 to +280 °C

Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Pk	Cat. No.
Anchor stirrers				
80	6,0	400	1	**441-9571**
80	6,0	500	1	**441-9572**
140	9,5	550	1	**441-9575**
100	9,5	550	1	**441-9573**
140	9,5	650	1	**441-9576**
100	9,5	650	1	**441-9574**
Centrifugal stirrers				
40	6,0	400	1	**441-9521**
50	6,0	500	1	**441-9522**
70	9,5	550	1	**441-9523**
70	9,5	650	1	**441-9524**
Screw propellers				
40	6,0	400	1	**441-9530**
50	6,0	500	1	**441-9532**
60	9,5	550	1	**441-9533**
60	9,5	650	1	**441-9534**

KPG stirrers with lateral blade

Lenz

DURAN®, borosilicate glass

With PTFE paddle and paddle safety securing screw. 10 mm shaft Ø. The length of the ground and polished bearing surface for the shaft Ø is 160 mm.

For container (ml)	Joint (NS)	Shaft - Ø (mm)	Shaft length (mm)	Blade L×W (mm)	Pk	Cat. No.
100	29/32	10	310	50×18	1	**441-1000**
250 - 500	29/32	10	310	68×24	1	**441-9683**
1000	29/32	10	390	75×24	1	**441-1001**
2000 - 3000	29/32	10	390	75×24	1	**441-9682**
2000 - 3000	45/40	16	460	75×24	1	**441-1002**
4000 - 5000	29/32	10	480	125×24	1	**441-9679**
4000 - 5000	45/40	16	520	125×35	1	**441-1003**
6000	45/40	16	560	125×35	1	**441-1004**
10000	45/40	16	620	125×35	1	**441-1005**

Stirring rods

Solid PTFE

- Inert and will not scratch, can be used up to 280 °C

Material	Length (mm)	Ø (mm)	Pk	Cat. No.
PTFE	150	8	5	**442-4539**
PTFE	250	8	5	**442-4541**
PTFE	300	8	5	**442-4542**

Stirring rods

PTFE with steel core

- Inert and will not scratch, can be used up to 280 °C

Material	Length (mm)	Ø (mm)	Pk	Cat. No.
PTFE/steel	100	6	5	**442-4537**
PTFE/steel	100	8	5	**442-4538**
PTFE/steel	150	6	5	**442-4543**
PTFE/steel	200	6	5	**442-4544**
PTFE/steel	200	8	5	**442-4540**
PTFE/steel	250	6	5	**442-4545**
PTFE/steel	300	6	5	**442-4546**
PTFE/steel	350	6	5	**442-4547**
PTFE/steel	400	6	5	**442-4548**

Stirring rods, Nalgene®
Thermo Scientific

Stirring rod with flattened ends forming flat paddle 16×16 mm at one end and triangular paddle at the other end.

- Good chemical resistance
- Autoclavable

Description	Material	Length (mm)	Ø (mm)	Pk	Cat. No.
Stirring rods, PP	PP	248	6,4	12	**231-0074**

Stirring rods
Kartell

White, one-piece rod with flattened ends which form two small spatulas.

- Dimensions of spatulas (W×H) 15×12 and 12×9 mm

Material	Length (mm)	Ø (mm)	Pk	Cat. No.
PP	244	6	10	**442-4160**

Stirring rods
Brand

AR-Glas®.

- Glass tube is fused and sealed at both ends

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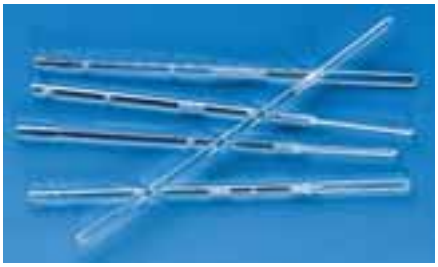
Description	Material	Length (mm)	Ø (mm)	Pk	Cat. No.
Fused and sealed at both ends	AR-GLAS®	200	5	50	**441-0145**
Fused and sealed at both ends	AR-GLAS®	200	6	50	**441-0146**
Fused and sealed at both ends	AR-GLAS®	250	6	50	**441-0147**
Fused and sealed at both ends	AR-GLAS®	250	8	50	**441-0148**
Fused and sealed at both ends	AR-GLAS®	300	8	50	**441-0149**

Disposable stirring spatulas
Brand



Description	Material	Length (mm)	Ø (mm)	Pk	Cat. No.
Disposable polystyrene spatulas/ stirring rods	PS	120	3	500	**441-0217**

Disposable spatulas
Kartell

For various laboratory uses.

- Ideal as stirring rods for use in cuvettes

Description	Material	Length (mm)	Ø (mm)	Pk	Cat. No.
Disposable polystyrene spatulas/ stirring rods	PS	90	3	100	**441-0099**

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Magnetic stirrers, Slow Speed series

The Standard and Advanced Slow Speed stirrers are designed for growth of suspension and microcarrier cell cultures. Slow Speed stirrers work with cell culture flasks and other vessels designed for slow magnetic stirring. Ideal for use in cold rooms, incubators, or CO_2 incubators (–10 to +40 °C, maximum 80% relative humidity, non condensing environment). The low profile design means that it takes up minimal space and easily fits into fume hoods and most incubators. The spill-resistant housing channels fluids away from internal components and the cast iron base offers durability and added stability. 10 litre model features a glass filled nylon top plate, which has an easy to clean, reflective white surface. The 2 litre models has a durable aluminium top plate that will not crack or chip. Maximum vessel diameter is 150 mm (2 l model) or 250 mm (10 l model).

- Microprocessor control: Precisely regulates speed through the entire range; stirring function, with continuous duty motor and magnet, maintains set speed even under changing load or viscosity
- Adjustment knob: Basic speed control knob with dial markings from 1 to 10 (Standard series)
- LED display: Touch pad controls with easy to read, independent LED displays for speed and time; speed is adjustable in 1 rpm increments
- Timer (Advanced series) will display elapsed time (1 s to 160 hr) or, when programmed to user defined limit, will shut off unit and an audible alarm sounded when time reaches zero
- Speed ramping feature: Slowly increases speed for improved safety and enhanced coupling; avoids splashing, improves spin bar control and provides excellent low speed control; efficient drive motor eliminates heat transfer to sample

Delivery information: Supplied with a 234 cm detachable, 3-wire cord and plug.

Model	Standard Slow Speed 1	Advanced Slow Speed 1	Advanced Slow Speed
Max. stirring capacity H_2O (l)	2		10
Plate dimensions (mm)	178×178		279×318
Plate material	Aluminium		Glass filled nylon
Power input (W)	14		
Speed range (min^{-1})	1 - 150		
Weight (kg)	4,0		6,6
W×D×H (mm)	216×307×102		279×432×102

Description	Pk	Cat. No.
Standard Slow Speed stirrer 1, 2 l, UK plug	1	**444-7122**
Advanced Slow Speed stirrer 1, 2 l, UK plug	1	**444-7125**
Advanced Slow Speed stirrer, 10 l, UK plug	1	**444-7128**

Magnetic stirrer, lab disc

Extremely flat and compact magnetic stirrer with no moving parts. Reverses direction of rotation every 30 seconds to ensure optimum mixing.

- Selectable reversible rotation direction
- Wear-free drive
- Set-up plate and casing made of chemically resistant materials
- Slip-proof, safe stand

IP protection class according to DIN EN 60529: IP 65

Delivery information: Supplied with two beakers (150 ml) and three magnetic stirring bars (10 mm, 20 mm, 30 mm).

Model	lab disc
Max. stirring capacity H_2O (ml)	800
Plate dimensions (mm)	Ø 100
Plate material	Polyester
Rating input/output (W)	5/3
Speed range (min^{-1})	15 - 1500
Weight (kg)	0,3
W×D×H (mm)	117×180×12

Description	Pk	Cat. No.
Magnetic stirrer, lab disc, EU/CH/UK-plug	1	**442-0883**

Electronic overhead stirrers, EUROSTAR 60 digital, EUROSTAR 60 control, EUROSTAR 100 digital and EUROSTAR 100 control

IKA

Powerful laboratory stirrers for quantities up to 40 or 100 l (H_2O). Units automatically adjust the speed through microprocessor controlled technology within the speed range of 0/30 - 2000 min^{-1} (EUROSTAR 60 models) or 0/30 - 1300 min^{-1} (EUROSTAR 100 models). Safety circuits ensure automatic cut off in anti-stall or overload conditions. The actual shaft speed and preset speed are constantly monitored and variations are adjusted automatically. This guarantees a constant speed even with changes in sample viscosities.

- Digital speed display
- Infinitely adjustable speed
- Push through agitator shafts
- Overload protection and units can be operated for short term periods in overload conditions
- Slim casing and quiet operation
- Error code display

Control models feature a removable wireless controller and a digital TFT display. They are equipped with a RS232 and a USB interface to control and document all parameters. An integrated torque trend display enables measurement of viscosity changes.

- Multilingual TFT display
- Programmable functions
- Integrated temperature measurement
- Interval operation, timer and lock function
- Adjustable safety circuit

IP protection class according to DIN EN 60529: IP 40

Ordering information: Supplied without accessories, a wide range of accessories are available to order separately.

Model	EUROSTAR 60 digital	EUROSTAR 60 control	EUROSTAR 100 digital	EUROSTAR 100 control
Chuck range (mm)	0,5 - 10			
Max. stirring capacity H_2O (l)	40		100	
Max. torque at chuck (Ncm)	60			
Max. viscosity (mPas)	50000		70000	
Power - motor input/output (W)	168/131		174/142	
Speed range (min^{-1})	0/30 - 2000		0/30 - 1300	
Weight (kg)	4,4	4,7	4,4	4,7
W×D×H (mm)	86×208×248	86×230×267	86×208×248	86×230×267

Description	Pk	Cat. No.
EUROSTAR 60 digital overhead stirrer, UK-plug	1	**441-0327**
EUROSTAR 60 control overhead stirrer, UK-plug	1	**441-0324**
EUROSTAR 100 digital overhead stirrer, UK-plug	1	**441-0321**
EUROSTAR 100 control overhead stirrer, UK-plug	1	**441-0311**

Electronic overhead stirrers, EUROSTAR 200 digital, EUROSTAR 200 control, EUROSTAR 200 P4 control

IKA

EUROSTAR 200 control

EUROSTAR 200 digital

Extremely powerful laboratory stirrers for highly viscous applications and intensive mixing of quantities up to 100 l (H_2O). Units automatically adjust the speed through microprocessor controlled technology within the speed range of speed range of 6 - 2000 min^{-1} or 4 - 530 min^{-1} (P4 models), all models have two speed ranges. Safety circuits ensure automatic cut off in anti-stall or overload conditions. The actual shaft speed and preset speed are constantly monitored and variations are adjusted automatically. This guarantees a constant speed even with changes in sample viscosities.

- Digital speed display
- Infinitely adjustable speed
- Push through agitator shafts
- Overload protection and units can be operated for short term periods in overload conditions
- Slim casing and quiet operation
- Error code display

Control models feature a removable wireless controller and a digital TFT display. They are equipped with a RS232 and a USB interface to control and document all parameters. An integrated torque trend display enables measurement of viscosity changes.

- Multilingual TFT display
- Programmable functions
- Integrated temperature measurement
- Interval operation, timer and lock function
- Adjustable safety circuit

IP protection class according to DIN EN 60529: IP 40

Ordering information: Supplied without accessories, a wide range of accessories are available to order separately.

Model	EUROSTAR 200 digital	EUROSTAR 200 control	EUROSTAR 200 P4 control
Chuck range (mm)	0,5 - 10		
Max. stirring capacity H_2O (l)	100		
Max. torque at chuck (Ncm)	200		660
Max. viscosity (mPas)	100000		150000
Power - motor input/output (W)	121/99		
Speed range I (min^{-1})	6 - 400		4 - 108
Speed range II (min^{-1})	30 - 2000		16 - 530
Weight (kg)	4,6	4,9	5,8
W×D×H (mm)	91×209×274	91×231×274	91×230×379

Description	Pk	Cat. No.
EUROSTAR 200 digital overhead stirrer, UK-plug	1	**441-0139**
EUROSTAR 200 control overhead stirrer, UK-plug	1	**441-0308**
EUROSTAR 200 P4 control overhead stirrer, UK-plug	1	**441-0318**

Electronic overhead stirrers, RZR 2051 control and RZR 2052 control
Heidolph

Overhead stirrers with single speed gear designed for power, reliability and continuous use, ideal for mixing highly viscous media. Provide constant speed over the entire range even under changing viscosities and in overload mode. Changes in viscosity can be monitored via the LED display. Digital speed, torque settings and monitoring. The shaft accommodates stirring elements with shafts up to 10 mm in diameter.

- Overheating protection with self reset and overload protection
- Overload mode with 200% power reserve for limited time
- Torque calibration button sets torque at zero prior to the process
- Digital speed and torque display for reproducible results and RS232C interface
- Smooth start prevents media spillages and enhances safety

IP protection class according to DIN EN 60529: IP 40

Delivery information: Supplied with chuck key and extension arm. Accessories must be ordered separately. RZR 2052 control complete package includes: Electronic overhead stirrer RZR 2052 control, propeller type stirrer tool with pitched blade, universal stand and clamp.

Model	RZR 2051 control	RZR 2052 control
Max. stirring capacity H_2O (l)	40	100
Max. torque (overload mode) (Ncm)	20 (40)	90 (180)
Max. viscosity (mPas)	10000	40000
Power - motor input/output (W)	80/50	140/100
Shaft Ø (mm)	0,5 - 10	
Speed range (min^{-1})	50 - 2000	30 - 1000
Weight (kg)	2,8	3,7
W×D×H (mm)	72×176×206	82×176×211

Description	Pk	Cat. No.
RZR 2051 control and RZR 2052 control		
RZR 2051 control overhead stirrer, UK-plug	1	**441-1111**
RZR 2052 control overhead stirrer, UK-plug	1	**441-1110**
RZR 2052 control complete package		
RZR 2052 control complete package, UK-plug	1 SET	**441-1312**

Electronic overhead stirrers, RZR 2102 control and RZR 2102 control Z
Heidolph

Overhead stirrers with two speed gears designed for power, reliability and continuous use, ideal for mixing highly viscous media. Provide constant speed over the entire range even under changing viscosities and in overload mode. Changes in viscosity can be monitored via the LED display. Digital speed, torque settings and monitoring. The most powerful stirrer, the RZR 2102 control Z has flanged planet gear (gear ratio 4:1). The shaft accommodates stirring elements with shafts up to 10 mm in diameter.

- Overheating protection with self reset and overload protection
- Overload mode with 200% power reserve for limited time
- Torque calibration button sets torque at zero prior to the process
- Digital speed and torque display for reproducible results and RS232C interface
- Smooth start prevents media spillages and enhances safety

IP protection class according to DIN EN 60529: IP 40

Delivery information: Supplied with chuck key and extension arm. Accessories must be ordered separately.

Model	RZR 2102 control	RZR 2102 control Z
Max. stirring capacity H_2O (l)	100	
Max. torque (overload mode) (Ncm)	200 (400)	700 (800)
Max. viscosity (mPas)	100000	350000
Power - motor input/output (W)	140/100	
Shaft Ø (mm)	0,5 - 10	
Speed range I (min^{-1})	12 - 400	4 - 108
Speed range II (min^{-1})	60 - 2000	17 - 540
Weight (kg)	3,7	4,7
W×D×H (mm)	82×176×211	82×176×292

Description	Pk	Cat. No.
RZR 2102 control overhead stirrer, UK-plug	1	**441-1112**
RZR 2102 control Z overhead stirrer, UK-plug	1	**441-1315**

Electronic overhead stirrers
VELP Scientifica

Range of overhead stirrers with electronic adjustment that are equipped with advanced safety systems.

ES compact overhead stirrer for simple medium and low speed liquid stirring applications (max1000 mPas). Suitable for stirring up to 15 l, with speed adjustment ranging between 50 and 1300 min^{-1}. Safety system to prevent instrument overheating.

LS overhead stirrer for stirring medium-low viscosity liquids (max 10 000 mPas). Suitable for volumes up to 25 l, with speed adjustment ranging from 50 to 2000 min^{-1}. The unit can be operated continuously.

PW powerful overhead stirrer for stirring high viscosity liquids (max 100 000 mPas). Suitable for volumes up to 70 l, with speed adjustment ranging from 20 to 1200 min^{-1}. The unit can be operated continuously.

DLS overhead stirrer for stirring medium-viscosity liquids (max 25 000 mPas). Speed preselection from 50 to 2000 min^{-1}. Safety system protects unit from overloads in case the motor malfunctions or jams.

LH and **DLH** models are characterised by strong rotation torque that allows liquids with high viscosity (max 50 000 mPas) to be used. Speed preselection from 50 to 2000 min^{-1}. Safety system protects unit from overloads in case the motor malfunctions or jams.

- Compact, easy to use ergonomic design, units are lightweight, reliable and quiet
- Progressive start-up prevents liquid from coming out of the vessel
- Microprocessor controlled motor means constant speed, even when the viscosity of the liquid changes (except ES models)
- Model BS, PW, DLS, LH and DLH have safety chuck without key, which helps ensure safe use
- DLS and DLH models have two digital displays showing both actual and set speeds simultaneously

Ordering information: Supplied without stirring tools, which must be ordered separately.

Model	PW	LS	ES	DLS	LH	DLH
Max. torque at chuck (Ncm)	15	40		80		120
Max. viscosity (mPas)	1000	25000		50000		100000
Speed range (min^{-1})	50 - 1300	50 - 2000				20 - 1200
Weight (kg)	2,9	2,3	1,3	2,5	2,9	3,0
W×D×H (mm)	80×196×230	80×196×215	80×200×160	80×196×215	80×196×230	

Description	Pk	Cat. No.
PW overhead stirrer	1	**441-0345**
LS overhead stirrer	1	**441-0346**
ES overhead stirrer	1	**441-0347**
DLS digital overhead stirrer	1	**441-0348**
LH overhead stirrer	1	**441-0349**
DLH digital overhead stirrer	1	**441-0350**

Description	Pk	Cat. No.
Accessories and stirring tools for ES, PW, BS, DLS, LH and DLH stirrers		
Support stand	1	**441-0108**
Bosshead clamp	1	**441-0109**
Clamp	1	**441-0110**
Stirrer with 2 floating blades, creates axial flow, for stirring in narrow neck containers	1	**441-0119**
Stirrer with folding blade, creates axial flow, for stirring in narrow neck containers	1	**441-0115**
Fixed blade stirrer, creates axial flow, for use at medium/high speed, stirring light solids	1	**441-0126**
Propellor stirrer, creates axial flow, for use at medium/high speed, stirring light solids	1	**441-0116**
Paddle stirrer, creates tangential flow, for use at medium/low speed	1	**441-0125**
Turbine type stirrer, creates radial flow, for use at medium/high speed to dissolve particles	1	**441-0117**
Turbo stirrer, creates axial flow, for use at medium/high speed, stirring light solids	1	**441-0120**
Anchor stirrer, creates tangential flow, for use at medium/low speed	1	**441-0118**

Mechanical overhead stirrer, RW 20 digital
IKA

Robust, slimline, ergonomic design with digital display.

- With constant power-drive
- Two speed ranges for universal use from 60 to 2000 min^{-1}
- Push-through agitator shafts (only when stationary)

IP protection class according to DIN EN 60529: IP 20

Delivery information: Supplied with chuck key and extension arm. Accessories must be ordered separately.

Model	RW 20 digital
Chuck range (mm)	0,5 - 10
Max. stirring capacity H_2O (l)	20
Max. torque at chuck (Ncm) per 100 (min^{-1})	150
Max. viscosity (mPas)	10000
Power - motor input/output (W)	70/35
Speed range I (min^{-1})	60 - 500
Speed range II (min^{-1})	240 - 2000
Weight (kg)	3,1
W×D×H (mm)	88×212×294

Description	Pk	Cat. No.
RW 20 digital overhead stirrer, UK-plug	1	**441-2908**

Mechanical overhead stirrer, RW 28 digital
IKA

Powerful, mechanically controlled laboratory stirrer, designed for highly viscous applications for quantities up to 80 l. Units have a robust, ergonomic design with constant power drive, suitable for intensive mixing for use in laboratories and pilot plants. The stirrer is equipped with protection to avoid overheating the motor by means of a self-locking temperature limiter. Additionally, to secure bowls, a stirring shaft protector and clamping fixture are optionally available.

- Digital speed display
- Infinitely adjustable speed in two speed ranges
- Push through agitator shafts
- Overload protection and error code display
- Quiet operation

IP protection class according to DIN EN 60529: IP 40

Ordering information: Accessories must be ordered separately.

Model	RW 28 digital
Chuck range (mm)	1 - 10
Max. stirring capacity H_2O (l)	80
Max. torque (Ncm)	900
Max. viscosity (mPas)	50000
Power - motor input/output (W)	220/90
Speed range I (min^{-1})	60 - 400
Speed range II (min^{-1})	240 - 1400
Weight (kg)	7,5
W×D×H (mm)	123×252×364

Description	Pk	Cat. No.
RW 28 digital overhead stirrer, UK-plug	1	**441-0330**

Mechanical overhead stirrer, RW 47 digital
IKA

Extremely powerful, mechanically controlled laboratory stirrer designed for highly viscous applications for quantities up to 200 l. Unit has a robust, ergonomic design with constant power drive, suitable for intensive mixing for use in laboratories and pilot plants. The stirrer is equipped with protection to avoid overheating of the motor by means of self-locking temperature limiter. Additionally, to secure bowls, an optional stirring shaft protector and clamping fixture are available.

- Digital speed display
- Infinitely adjustable speed in two speed ranges
- Push through agitator shafts
- Overload protection and error code display
- Quiet operation

IP protection class according to DIN EN 60529: IP 54

Ordering information: RW 47 digital is supplied without a plug as it is designed for use with a 400 V, 3 phase power supply, heavy duty telescopic stand 431-2912 is recommended as an optional accessory. Stirring shafts must be ordered separately.

Chuck range (mm)	3 - 16
Max. stirring capacity H_2O (l)	200
Max. torque (Ncm)	3000
Max. viscosity (mPas)	100000
Power - motor input/output (W)	513/370
Speed range I (min^{-1})	57 - 275
Speed range II (min^{-1})	275 - 1300
Weight (kg)	16
W×D×H (mm)	145×358×465

Description	Pk	Cat. No.
RW 47 digital overhead stirrer, without plug	1	**441-0316**

Description	Pk	Cat. No.
Accessories		
Pneumatic telescopic stand, 460×420 mm, rod 34 mm Ø with height 620 - 1010 mm	1	**431-2912**
Stirring shaft protector	1	**441-2999**
Bosshead clamp, 34 mm Ø stand, 16 mm Ø extension arm	1	**431-2907**

Mechanical overhead stirrers, RZR 2020, RZR 2021 and RZR 2041
Heidolph

Overhead stirrers for general laboratory use, the units are designed for continuous use and have large control dials and convenient analogue speed settings. The shaft accommodates stirring elements with shafts up to 10 mm in diameter.

- Overheating protection with self reset
- Two speed ranges for universal use from 40 to 2000 min^{-1}
- RZR 2021 and RZR 2041 have digital speed display for reproducible results

IP protection class according to DIN EN 60529: IP 40

Delivery information: Supplied with chuck key and extension arm. Accessories must be ordered separately. RZR 2020 complete package includes: Mechanical overhead stirrer RZR 2020, propeller type stirrer tool with pitched blade, universal stand and clamp.

Model	RZR 2020	RZR 2021	RZR 2041
Max. stirring capacity H_2O (l)	25		40
Max. torque (Ncm)	400		520
Max. viscosity (mPas)	60000		100000
Power - motor input/output (W)	50/27		70/37
Shaft Ø (mm)	0,5 - 10		
Speed range I (min^{-1})	40 - 400		
Speed range II (min^{-1})	200 - 2000		
Weight (kg)	3,0		3,3
W×D×H (mm)	82×176×206		82×176×211

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Description	Pk	Cat. No.
RZR 2020, RZR 2021 and RZR 2041		
RZR 2020 overhead stirrer, UK-plug	1	**441-1113**
RZR 2021 overhead stirrer, UK-plug	1	**441-1114**
RZR 2041 overhead stirrer, UK-plug	1	**441-1313**
RZR 2020 complete package		
RZR 2020 complete package, UK-plug	1 SET	**441-1311**

Mixing system, VISCO JET® for overhead stirrers
Heidolph

VISCO JET® homogenises low and high viscosity liquids in vessels by creating dynamic flow conditions by means of the so called cone principle. Turbulent flows are created at the taper end by acceleration, displacement and retardation. These flows advance through the stirred medium and result in the new dynamic mixing motion.

- Only one system for nearly every mixing task
- No air intake, foaming or heating
- Careful and gentle mixing
- Short mixing periods
- Less power consumption through low mixing speed

Description	Material	Ø (mm)	For Ø (mm)	Shaft - Ø (mm)	Revolutions	Pk	Cat. No.
VISCO JET® 60 mm	Stainless steel	60	80 - 150	10	200 - 800	1	**441-0012**
VISCO JET® 80 mm	Stainless steel	80	115 - 200	10	200 - 700	1	**441-0013**
VISCO JET® 80 mm	POM	80	115 - 200	10	200 - 700	1	**441-0014**
VISCO JET® 120 mm	Stainless steel	120	170 - 300	10	120 - 500	1	**441-0015**
VISCO JET® 120 mm	POM	120	170 - 300	10	120 - 500	1	**441-0016**

Stirring shafts

PTFE

For use with stirring blades. Chemically inert. The smooth surface reduces contamination and makes cleaning easier. It also prevents the agitation vessels from being scratched.

- Very good chemical resistance
- Temperature resistant from –200 to +280 °C

Ordering information: Stirring blades must be ordered separately.

Length (mm)	Ø (mm)	Pk	Cat. No.
300	8	1	**441-0253**
400	8	1	**441-0254**
500	8	1	**441-0255**
650	10	1	**441-0256**
750	10	1	**441-0257**
1000	10	1	**441-0258**
650	12	1	**441-0259**
750	12	1	**441-0260**
1000	12	1	**441-0261**

Stirrer blades with plain ends

PTFE

Blades fit PTFE stirring shaft; hole diameter 6,5 mm, 3,2 mm thick. Inert and non scratch. The smooth surface prevents contamination and makes cleaning easier.

- Very good chemical resistance
- Temperature resistant from –200 to +280 °C

Width (mm)	Height (mm)	Type	Pk	Cat. No.
65	25	Stirrer blade, plain ends	1	**441-0248**
75	25	Stirrer blade, plain ends	1	**441-0249**
105	25	Stirrer blade, plain ends	1	**441-0250**
125	25	Stirrer blade, plain ends	1	**441-0251**
150	25	Stirrer blade, plain ends	1	**441-0252**

Overhead stirrer tools, 3-bladed stirrers

IKA

Made from stainless steel, except 441-2125, which is PTFE coated. Stirrers draw the material to be mixed from the top of the vessel to the bottom. Minimal shearing forces.

- Ideal for stirring liquids at medium to high speeds

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Stainless steel						
Three blade stirrer	45	8	350	2000	1	**441-2911**
Three blade stirrer	55	8	350	2000	1	**441-2912**
Three blade stirrer	140	10	550	800	1	**441-2913**
Three blade stirrer	140	10	800	400	1	**441-2914**
PTFE coated						
Three blade stirrer (PTFE)	75	8	350	800	1	**441-2125**

Overhead stirrer tools, propeller-type impellers
Heidolph

Made from stainless steel.

- For suspensions and homogenisation
- Ideal for stirring liquids with medium to high viscosity
- Create axial flow

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Stem length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Propeller stirrer, three-bladed, ringed	33	8	400	400	2000	1	**441-1230**
Propeller stirrer, three-bladed, ringed	45	8	400	400	2000	1	**441-1231**
Propeller stirrer, three-bladed	58	8	400	400	2000	1	**441-1229**
Propeller stirrer, three-bladed, ringed	66	8	400	400	2000	1	**441-1232**

Overhead stirrer tools, 4-bladed stirrers
IKA

Made from stainless steel. Stirrers draw the material to be mixed from the top of the vessel to the bottom. Local shearing forces.

- For medium to high speed range
- Ideal for stirring liquids with low to medium viscosity
- Create axial flow in the vessel

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Four blade stirrer	50	8	350	2000	1	**441-2901**
Four blade stirrer	100	8	540	800	1	**441-2903**
Four blade stirrer	150	13	800	600	1	**441-2904**

Overhead stirrer tools, 4-bladed stirrers
Brand

PP propeller, PE coated coated steel core shaft.

- PP propeller minimises scratching if the stirrer inadvertently hits the vessel wall
- Good operating characteristics due to steel core shaft
- Robust design

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Pk	Cat. No.
Four blade stirrer	45	6	380	1	**441-9519**

Overhead stirrer tools, turbine stirrers
IKA

Made from stainless steel. Stirrers draw the material to be mixed from above. Minimal shearing forces.

- Ideal for stirring liquids at medium to high speeds
- Create axial flow

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Turbine stirrer	30	8	350	2000	1	**441-2921**
Turbine stirrer	50	8	350	2000	1	**441-2922**
Turbine stirrer	70	10	400	800	1	**441-2923**

Overhead stirrer tools, turbine-type impellers
Heidolph

Made from stainless steel.

- For gassing liquids
- Ideal for stirring liquids with medium to high viscosity
- Create radial flow

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Turbine stirrer	29	8	400	2000	1	**441-1227**
Turbine stirrer	50	8	400	2000	1	**441-1228**

Overhead stirrer tools, anchor stirrers
IKA

Made from stainless steel. Ensures minimum deposits on vessel walls, and even distribution of high mineral content in liquids, ideal for mixing polymer reactions. High shearing forces at edges.

- Ideal for stirring liquids at low speeds
- Suitable for stirring liquids with medium to high viscosity
- Create tangential flow

Description	Stirrer - Ø (mm)	Length (mm)	Shaft - Ø (mm)	Shaft length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Anchor stirrer	45	350	8	350	1000	1	**441-2931**
Anchor stirrer	90	350	8	350	1000	1	**441-2932**
Anchor stirrer	150	550	10	550	800	1	**441-2934**

Overhead stirrer tools, anchor stirrers
BOLA

PTFE stirrers

These stirrer tools have a PTFE coated stainless steel shaft, and the u-shaped stirrer blade is made entirely of PTFE. Ideal for mixing viscous liquids. Strong, tangential flow with shear rate in the margin area, little sediment on the wall of the vessel.

- Excellent chemical resistance
- Temperature resistant from –200 to +250 °C

PTFE blades

Solid PTFE stirrer blades with set of PTFE/PEEK clamp screws, ideal for mixing viscous liquids. Strong, tangential flow with shear rate in the margin area, little sediment on the wall of the vessel.

- Conform to FDA requirements
- Excellent chemical resistance
- Temperature resistant from –200 to +250 °C

Delivery information: A spanner is included with the blades for easy assembly.

Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	For rod Ø (mm)	Height (mm)	Width (mm)	Pk	Cat. No.
Stirrers							
60	8	350		40	60	1	**441-2933**
100	8	600		60	100	1	**441-0078**
80	10	450		50	80	1	**441-0079**
100	10	600		60	100	1	**441-0083**
Blades							
			8	40	60	1	**441-0077**
			8	60	100	1	**441-0085**
			10	50	80	1	**441-0075**
			10	60	100	1	**441-0086**

Overhead stirrer tools, paddle stirrers
IKA

Made from stainless steel. Gentle stirring with minimal turbulence.

- Ideal for stirring liquids at low to medium speeds
- Create tangential flow

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Paddle stirrer	70	8	550	800	1	**441-2942**
Paddle stirrer	150	10	550	800	1	**441-2943**
Paddle stirrer	150	13	800	600	1	**441-2944**

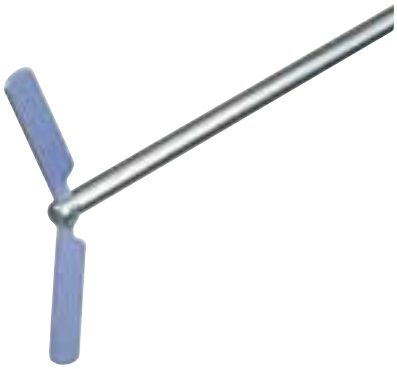
Overhead stirrer tools, centrifugal stirrers
IKA

Made from stainless steel. Two blades which open with increasing speed.

- For stirring in round vessels with narrow necks
- Ideal for stirring liquids at medium to high speeds
- Create axial flow

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Stem length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Centrifugal stirrer	60/15	8	350	350	2000	1	**441-2961**
Centrifugal stirrer	100/24	8	550	550	800	1	**441-2962**

Overhead stirrer tools, propeller, centrifugal and paddle-type impellers
Heidolph



Made from stainless steel.

- For medium speed range
- Ideal for stirring liquids with low to medium viscosity

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Stem length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Propeller stirrer, four-bladed, vertical	50	8	400	400	2000	1	**441-1223**
Propeller stirrer, two-bladed, vertical	50	8	400	400	2000	1	**441-1224**
Centrifugal stirrer, with flexible blades	60	8	400	400	1000	1	**441-1222**
Paddle stirrer, three holes	70	8	450	450	1000	1	**441-1225**
Centrifugal stirrer, with two flexible blades	90	8	400	400	1000	1	**441-1226**

Overhead stirrer tools, dissolver stirrers
IKA

Made from stainless steel. Stirrers draw the material to be mixed from the top and the bottom. High turbulence and high shearing forces.

- Ideal for stirring liquids at medium to high speeds
- Create radial flow

Description	Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Max. revolutions (min^{-1})	Pk	Cat. No.
Dissolver stirrer	42	8	350	2000	1	**441-2954**
Dissolver stirrer	80	8	350	2000	1	**441-2951**
Dissolver stirrer	100	10	350	1000	1	**441-2953**

Overhead stirrer shafts

PTFE, with encapsulated steel reinforced drive shaft. Chemically inert. The smooth surface reduces contamination and makes cleaning easier.

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- Non scratch, prevents agitation vessels from being damaged
- Temperature resistant from –200 to +280 °C

Stirrer - Ø (mm)	Shaft - Ø (mm)	Shaft length (mm)	Pk	Cat. No.
Anchor stirrers				
80	6,0	400	1	**441-9571**
80	6,0	500	1	**441-9572**
140	9,5	550	1	**441-9575**
100	9,5	550	1	**441-9573**
140	9,5	650	1	**441-9576**
100	9,5	650	1	**441-9574**
Centrifugal stirrers				
40	6,0	400	1	**441-9521**
50	6,0	500	1	**441-9522**
70	9,5	550	1	**441-9523**
70	9,5	650	1	**441-9524**
Screw propellers				
40	6,0	400	1	**441-9530**
50	6,0	500	1	**441-9532**
60	9,5	550	1	**441-9533**
60	9,5	650	1	**441-9534**

KPG stirrers with lateral blade

Lenz

DURAN®, borosilicate glass

With PTFE paddle and paddle safety securing screw. 10 mm shaft Ø. The length of the ground and polished bearing surface for the shaft Ø is 160 mm.

For container (ml)	Joint (NS)	Shaft - Ø (mm)	Shaft length (mm)	Blade L×W (mm)	Pk	Cat. No.
100	29/32	10	310	50×18	1	**441-1000**
250 - 500	29/32	10	310	68×24	1	**441-9683**
1000	29/32	10	390	75×24	1	**441-1001**
2000 - 3000	29/32	10	390	75×24	1	**441-9682**
2000 - 3000	45/40	16	460	75×24	1	**441-1002**
4000 - 5000	29/32	10	480	125×24	1	**441-9679**
4000 - 5000	45/40	16	520	125×35	1	**441-1003**
6000	45/40	16	560	125×35	1	**441-1004**
10000	45/40	16	620	125×35	1	**441-1005**

Stirring rods

Solid PTFE

- Inert and will not scratch, can be used up to 280 °C

Material	Length (mm)	Ø (mm)	Pk	Cat. No.
PTFE	150	8	5	**442-4539**
PTFE	250	8	5	**442-4541**
PTFE	300	8	5	**442-4542**

Stirring rods

PTFE with steel core

- Inert and will not scratch, can be used up to 280 °C

Material	Length (mm)	Ø (mm)	Pk	Cat. No.
PTFE/steel	100	6	5	**442-4537**
PTFE/steel	100	8	5	**442-4538**
PTFE/steel	150	6	5	**442-4543**
PTFE/steel	200	6	5	**442-4544**
PTFE/steel	200	8	5	**442-4540**
PTFE/steel	250	6	5	**442-4545**
PTFE/steel	300	6	5	**442-4546**
PTFE/steel	350	6	5	**442-4547**
PTFE/steel	400	6	5	**442-4548**

Stirring rods, Nalgene®
Thermo Scientific

Stirring rod with flattened ends forming flat paddle 16×16 mm at one end and triangular paddle at the other end.

- Good chemical resistance
- Autoclavable

Description	Material	Length (mm)	Ø (mm)	Pk	Cat. No.
Stirring rods, PP	PP	248	6,4	12	**231-0074**

Stirring rods
Kartell

White, one-piece rod with flattened ends which form two small spatulas.

- Dimensions of spatulas (W×H) 15×12 and 12×9 mm

Material	Length (mm)	Ø (mm)	Pk	Cat. No.
PP	244	6	10	**442-4160**

Stirring rods
Brand

AR-Glas®.

- Glass tube is fused and sealed at both ends

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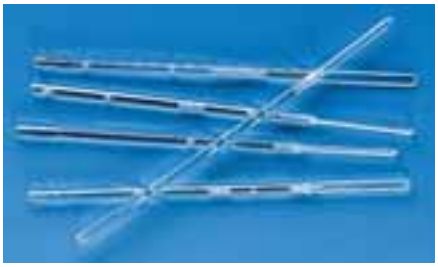
Description	Material	Length (mm)	Ø (mm)	Pk	Cat. No.
Fused and sealed at both ends	AR-GLAS®	200	5	50	**441-0145**
Fused and sealed at both ends	AR-GLAS®	200	6	50	**441-0146**
Fused and sealed at both ends	AR-GLAS®	250	6	50	**441-0147**
Fused and sealed at both ends	AR-GLAS®	250	8	50	**441-0148**
Fused and sealed at both ends	AR-GLAS®	300	8	50	**441-0149**

Disposable stirring spatulas
Brand



Description	Material	Length (mm)	Ø (mm)	Pk	Cat. No.
Disposable polystyrene spatulas/ stirring rods	PS	120	3	500	**441-0217**

Disposable spatulas
Kartell

For various laboratory uses.

- Ideal as stirring rods for use in cuvettes

Description	Material	Length (mm)	Ø (mm)	Pk	Cat. No.
Disposable polystyrene spatulas/ stirring rods	PS	90	3	100	**441-0099**

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Magnetic stirrers, Slow Speed series

The Standard and Advanced Slow Speed stirrers are designed for growth of suspension and microcarrier cell cultures. Slow Speed stirrers work with cell culture flasks and other vessels designed for slow magnetic stirring. Ideal for use in cold rooms, incubators, or CO_2 incubators (–10 to +40 °C, maximum 80% relative humidity, non condensing environment). The low profile design means that it takes up minimal space and easily fits into fume hoods and most incubators. The spill-resistant housing channels fluids away from internal components and the cast iron base offers durability and added stability. 10 litre model features a glass filled nylon top plate, which has an easy to clean, reflective white surface. The 2 litre models has a durable aluminium top plate that will not crack or chip. Maximum vessel diameter is 150 mm (2 l model) or 250 mm (10 l model).

- Microprocessor control: Precisely regulates speed through the entire range; stirring function, with continuous duty motor and magnet, maintains set speed even under changing load or viscosity
- Adjustment knob: Basic speed control knob with dial markings from 1 to 10 (Standard series)
- LED display: Touch pad controls with easy to read, independent LED displays for speed and time; speed is adjustable in 1 rpm increments
- Timer (Advanced series) will display elapsed time (1 s to 160 hr) or, when programmed to user defined limit, will shut off unit and an audible alarm sounded when time reaches zero
- Speed ramping feature: Slowly increases speed for improved safety and enhanced coupling; avoids splashing, improves spin bar control and provides excellent low speed control; efficient drive motor eliminates heat transfer to sample

Delivery information: Supplied with a 234 cm detachable, 3-wire cord and plug.

Model	Standard Slow Speed 1	Advanced Slow Speed 1	Advanced Slow Speed
Max. stirring capacity H_2O (l)	2		10
Plate dimensions (mm)	178×178		279×318
Plate material	Aluminium		Glass filled nylon
Power input (W)	14		
Speed range (min^{-1})	1 - 150		
Weight (kg)	4,0		6,6
W×D×H (mm)	216×307×102		279×432×102

Description	Pk	Cat. No.
Standard Slow Speed stirrer 1, 2 l, UK plug	1	**444-7122**
Advanced Slow Speed stirrer 1, 2 l, UK plug	1	**444-7125**
Advanced Slow Speed stirrer, 10 l, UK plug	1	**444-7128**

Magnetic stirrer, lab disc

Extremely flat and compact magnetic stirrer with no moving parts. Reverses direction of rotation every 30 seconds to ensure optimum mixing.

- Selectable reversible rotation direction
- Wear-free drive
- Set-up plate and casing made of chemically resistant materials
- Slip-proof, safe stand

IP protection class according to DIN EN 60529: IP 65

Delivery information: Supplied with two beakers (150 ml) and three magnetic stirring bars (10 mm, 20 mm, 30 mm).

Model	lab disc
Max. stirring capacity H_2O (ml)	800
Plate dimensions (mm)	Ø 100
Plate material	Polyester
Rating input/output (W)	5/3
Speed range (min^{-1})	15 - 1500
Weight (kg)	0,3
W×D×H (mm)	117×180×12

Description	Pk	Cat. No.
Magnetic stirrer, lab disc, EU/CH/UK-plug	1	**442-0883**

Magnetic stirrer with auto-start

Compact, powerful stirrer automatically starts when a beaker is placed on the corrosion resistant top plate. When the beaker is removed the stirring stops, but the setting remains unchanged for repeatable accuracy from batch to batch. The ±50 gram activation weight allows even small samples to be mixed automatically. Saves power, runs only as needed, and provides an extra measure of safety by automatically turning off when the sample is removed.

- Automatic start and stop
- Guaranteed repeatability
- Power saving

Max. stirring capacity H_2O (ml)	1000
Plate dimensions (mm)	Ø 114
Plate material	Aluminium
Speed range (min^{-1})	100 - 1200
Weight (kg)	2,0
Ø×H (mm)	165×137

Description	Pk	Cat. No.
Magnetic stirrer, UK-plug	1	**444-2857**

Magnetic stirrers, VS-C series

Compact stirrers with a chemically resistant ceramic top. The elevated control panel minimises contact with spills. With fitting for retort rod.

- Powerful motor
- Strong magnetic adhesion prevents stirring bar decoupling
- Microprocessor control sends feedback to the motor to maintain constant speed

IP protection class according to DIN EN 60529: IP 21

Model	VS-C4	VS-C7
Max. stirring capacity H_2O (l)	5	10
Plate dimensions (mm)	100×100	180×180
Plate material	Ceramic	
Power input/output (W)	15/1,5	
Speed range (min^{-1})	100 - 1500	
Weight (kg)	3	5
W×D×H (mm)	150×260×105	220×330×105

Description	Pk	Cat. No.
Magnetic stirrer, VS-C4, UK-plug	1	**442-0556**
Magnetic stirrer, VS-C7, UK-plug	1	**442-0557**

Description	Pk	Cat. No.
Accessories		
Support rod, stainless steel, length 450 mm, Ø 10 mm, for all stirrers with M10 thread	1	**442-2041**
Bosshead clamp	1	**442-2043**

Magnetic stirrers, Advanced series

VWR Advanced magnetic stirrers deliver accurate and repeatable results. These easy to use microprocessor controlled units have an analogue dial with rpm adjustment markings. Rear housing features an integral support rod holder with locking knob to accept the optional support rod and clamp kit. The low profile design takes up less space and fits into fume hoods. Spill resistant housing channels fluids away from internal components. Enhanced electronics regulates stirring - speed control is precise and stirring consistent at all speeds. Ramping feature slowly increases speed for improved safety and enhanced coupling, avoids splashing, improves spin bar control, and provides excellent low end speed control. Ceramic tops feature a chemically resistant, reflective white top plate surface that is easy to clean.

- Built-in support rod holder
- Microprocessor control with analogue dial
- Chemically resistant housing
- Ceramic top plate

Delivery information: Each unit is supplied complete with a PTFE coated magnetic stirring bar. Optional support rod kit (444-2844) is available, this includes 457 mm stainless steel support rod, thermometer/ temperature probe extension clamp, three-prong medium swivel clamp, and hook connector.

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Model	Advanced 100×100	Advanced 180×180	Advanced 250×250
Max. stirring capacity H_2O (ml)	600	2500	6000
Plate dimensions (mm)	100×100	180×180	250×250
Plate material	Ceramic		
Speed range (min^{-1})	60 - 1600		
Speed stability (%)	±2		
Weight (kg)	2,0	4,2	6
W×D×H (mm)	167×274×108	250×375×108	330×455×108

Description	Pk	Cat. No.
Advanced magnetic stirrer, 100×100, UK-plug	1	**444-0567**
Advanced magnetic stirrer, 180×180, UK-plug	1	**444-0570**
Advanced magnetic stirrer, 250×250, UK-plug	1	**444-0573**

Description	Pk	Cat. No.
Accessories		
Stirrer support rod clamping kit (rod, 2 clamps and hook connector)	1	**444-2844**

Magnetic stirrers, Professional series

VWR Professional magnetic stirrers are designed for applications that require exceptional accuracy, stability and repeatability. Stirring function, with continuous duty motor and powerful magnet, maintains set speed even under changing load or viscosity. Touch pad controls with easy to read, independent LED displays for speed, and time, allow the operator to view all settings at once. Rear housing features a built-in support rod holder with locking knob. Low profile design takes up less space and fits into fume hoods. Spill resistant housing channels fluids away from internal components. An audible alarm will sound when time reaches zero in timed mode. Microprocessor control with enhanced electronics regulates stirring - speed control is precise and stirring consistent at all speeds. Ramping feature slowly increases speed for improved safety and enhanced coupling. Avoids splashing, improves spin bar control and provides excellent low end speed control. The ceramic tops feature a chemically resistant, reflective white top plate surface that is easy to clean.

- Microprocessor control
- Separate digital displays for speed and time. Display will show last used settings, even after power has been turned off
- Chemically resistant housing
- Ceramic top plate

Delivery information: Each unit is supplied complete with a PTFE coated magnetic stirring bar.

Model	Professional 180×180	Professional 250×250
Max. stirring capacity H_2O (ml)	2500	6000
Plate dimensions (mm)	180×180	250×250
Plate material	Ceramic	
Speed display	Digital	
Speed range (min^{-1})	60 - 1600	
Speed stability (%)	±2	
Weight (kg)	4,2	6
W×D×H (mm)	250×375×108	330×455×108

Description	Pk	Cat. No.
Professional magnetic stirrer, 180×180, UK-plug	1	**444-0612**
Professional magnetic stirrer, 250×250, UK-plug	1	**444-0615**

Magnetic stirrer, Topolino
IKA

Mini magnetic stirrer with durable brushless motor for mixing small quantities.

- Continuously adjustable speed range
- Powerful magnets for strong magnetic coupling
- Can be used at 5 to 40 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 21

Model	Topolino
Max. stirring capacity H_2O (ml)	250
Plate dimensions (mm)	Ø 80

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Plate material	Polypropylene
Power input (W)	1,1
Speed range (min^{-1})	300 - 1800
Weight (g)	300
W×D×H (mm)	95×110×40

Description	Pk	Cat. No.
Magnetic stirrer, Topolino, UK-plug	1	**442-0739**

Magnetic stirrer, Mini MR standard IKAMAG®

IKA

Small magnetic stirrer with white plate, ideal for observing colour reactions.

- Infinitely variable speed
- Can be used at 5 to 40 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 42

Model	Mini MR standard IKAMAG®
Max. stirring capacity H_2O (ml)	1000
Plate dimensions (mm)	115×115
Plate material	Polyester
Rating input/output (W)	3/2
Speed range (min^{-1})	0 - 2500
Weight (kg)	0,25
W×D×H (mm)	114×127×37

Description	Pk	Cat. No.
Mini MR standard IKAMAG® magnetic stirrer, EU/CH/UK-plug	1	**442-0735**

Magnetic stirrer, lab disc white

IKA

Ultra-flat magnetic stirrers with magnetic coil technology. Top plate and casing are made of chemically resistant materials. Wear-free drive with no moving parts.

- Reverses direction of rotation every 30 seconds to ensure optimum mixing (selectable)
- Can be used at 5 to 40 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 65

Model	lab disc white
Max. stirring capacity H_2O (ml)	800
Plate dimensions (mm)	Ø 100
Plate material	Polyester
Rating input/output (W)	5/3
Speed range (min^{-1})	15 - 1500
Weight (kg)	0,3
W×D×H (mm)	117×180×12

Description	Pk	Cat. No.
Magnetic stirrer, lab disc white, EU/CH/UK-plug	1	**442-0737**

Magnetic stirrers, big squid IKAMAG® and color squid IKAMAG®
IKA

big squid

color squid

Magnetic stirrers with digital LED speed display and electronically controlled motor. Speed control is in steps of 50 min^{-1} for big squid, all units are made from recyclable materials.

- Very good chemical resistance due to glass top and synthetic bottom made from polyamide (big squid) and thermoplastic elastomer (color squid)
- Electronically controlled motor with infinitely variable speed (color squid)
- Can be used at 5 to 40 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 54
Other designs and colours are available, please contact your local VWR office for details.

Model	color squid	big squid
Max. stirring capacity H_2O (ml)	1000	1500
Plate dimensions (mm)	Ø 115	Ø 160
Plate material	Glass	
Power input/output (W)	3/2	
Speed range (min^{-1})	0 - 2500	
Weight (kg)	0,54	0,7
W×D×H (mm)	145×160×45	180×195×40

Description	Pk	Cat. No.
Magnetic stirrer, color squid white, EU/CH/UK-plug	1	**442-0696**
Magnetic stirrer, big squid white, EU/CH/UK-plug	1	**442-0701**

Magnetic stirrer, KMO 2 basic IKAMAG®
IKA

Small powerful magnetic stirrer with easy to clean stainless steel casing. Plate includes thread for optional support rod 442-2041.

- Infinitely variable speed
- Motor has optoelectronic speed control

IP protection class according to DIN EN 60529: IP 21

Model	KMO 2 basic IKAMAG®
Max. stirring capacity H_2O (l)	5
Plate dimensions (mm)	140×120
Plate material	Stainless steel
Rating input/output (W)	14/4
Speed range (min^{-1})	0 - 1100
Weight (kg)	1,4
W×D×H (mm)	140×200×75

Description	Pk	Cat. No.
KMO 2 basic IKAMAG® magnetic stirrer, UK-plug	1	**442-0590**

Magnetic stirrers, C-MAG MS series
IKA

Compact stirrers with a chemically resistant ceramic top. The elevated control panel minimises contact with spills.

- Powerful motor
- Strong magnetic adhesion prevents stirring bar decoupling
- Microprocessor control sends feedback to the motor to maintain constant speed

IP protection class according to DIN EN 60529: IP 21

Model	C-MAG MS 4	C-MAG MS 7	C-MAG MS 10
Max. stirring capacity H_2O (l)	5	10	15
Plate dimensions (mm)	100×100	180×180	260×260
Plate material	Ceramic	Ceramic	Ceramic
Power input/output (W)	15/1,5	15/1,5	15/1,5
Speed display	Scale	Scale	Scale
Speed range (min^{-1})	100 - 1500	100 - 1500	100 - 1500
Weight (kg)	3	5	6
W×D×H (mm)	150×260×105	220×330×105	300×415×105

Description	Pk	Cat. No.
C-MAG MS 4 magnetic stirrer, UK-plug	1	**442-0708**
C-MAG MS 7 magnetic stirrer, UK-plug	1	**442-0709**
C-MAG MS 10 magnetic stirrer, UK-plug	1	**442-0710**

Magnetic stirrer, Midi MR 1 digital IKAMAG®
IKA

Powerful high capacity magnetic stirrer with digital LED display.

- Infinitely variable speed
- Non-locking motor
- Continuous operation or timer mode from 0 to 56 min

IP Protection Class according to DIN EN 60529: IP 21

Model	Midi MR 1 digital IKAMAG®
Max. stirring capacity H_2O (l)	50
Plate dimensions (mm)	350×350
Plate material	Stainless steel
Rating input/output (W)	70/19
Speed range (min^{-1})	0 - 1000
Weight (kg)	9
W×D×H (mm)	360×430×110

Description	Pk	Cat. No.
Midi MR 1 digital IKAMAG® magnetic stirrer, UK-plug	1	**442-0901**

Magnetic stirrer, Maxi MR 1 digital IKAMAG®
IKA

Powerful high capacity magnetic stirrer with digital LED display.

- Infinitely variable speed
- Non-locking motor
- Continuous operation or timer mode from 0 to 56 min

IP Protection Class according to DIN EN 60529: IP 21

Model	Maxi MR 1 digital IKAMAG®
Max. stirring capacity H_2O (l)	150
Plate dimensions (mm)	500×500
Plate material	Stainless steel
Rating input/output (W)	80/35
Speed range (min^{-1})	0 - 600
Weight (kg)	16
W×D×H (mm)	505×585×110

Description	Pk	Cat. No.
Maxi MR 1 digital IKAMAG® magnetic stirrer, UK-plug	1	**442-0588**

Magnetic stirrers, Undergrad UC151 and US151
Stuart

Powerful magnets and motor give stirring speeds up to 2000 min^{-1} and is capable of mixing large volumes (up to 15 litres*). The compact shape takes up less bench space and makes storage easier. Both models have an integral fitting for a retort rod.

Model UC151 has a glass ceramic top which has excellent chemical resistance. The easy to clean, white surface ensures good visibility of colour changed, during titrations for example.

Model US151 has a robust stainless steel top plate that does not produce eddy currents like aluminium and so ensures a very powerful coupling and stirring action.

- Choice of top plate: Robust stainless steel or chemically resistant ceramic
- Powerful magnets for strong stirring action
- Compact, space saving unit, can be stored on its side to maximise storage space
- Designed with recess at the base for a retort stand to slide underneath unit, saves space and time when setting up

IP protection class according to DIN EN 60529: IP 32

Delivery information: Supplied complete with 2×25 mm PTFE coated magnetic stirring bars.

Model	Max. stirring capacity H_2O (l)	Plate dimensions (mm)	Plate material	Power input (W)	Speed range (min^{-1})	Weight (kg)	W×D×H (mm)
UC151	15*	150×150	Ceramic glass	50	100 - 2000	2,0	172×248×107
US151			Stainless steel				172×248×109

Description	Pk	Cat. No.
UC151 magnetic stirrer	1	**442-1021**
US151 magnetic stirrer	1	**442-1022**

Description	Pk	Cat. No.
Accessories		
Retort rod, (l×Ø) 600×12 mm	1	**442-0321**

* Based on water in a 20 litre glass bottom boiling flask.

Magnetic stirrer, heavy duty, SB301
Stuart

Large, powerful stirrer for use with vessels up to 30 litre capacity. Powerful magnetic drive with electronic feedback speed control, which accurately maintains the set speed.

- Robust construction with stainless steel top
- Powerful magnets for strong magnetic coupling
- BioCote® antimicrobial protection

IP protection class according to DIN EN 60529: IP 31

Delivery information: Supplied complete with PTFE coated magnetic stirring bar.

Model	SB301
Max. stirring capacity H_2O (l)	30
Plate dimensions (mm)	300×300
Plate material	Stainless steel
Power input (W)	50
Speed range (min^{-1})	100 - 600
Weight (kg)	5
W×D×H (mm)	328×369×103

Description	Pk	Cat. No.
SB301 magnetic stirrer	1	**442-0342**

Magnetic stirrer, MR Hei-Mix S
Heidolph

Magnetic stirrer with white top plate and analogue control dials for speed setting.

- Ideal for use with titrations
- Chemically resistant PVDF top plate and polyamide housing
- Electronic speed control without digital display

IP protection class according to DIN EN 60529: IP 21

Model	MR Hei-Mix S
Max. stirring capacity H_2O (ml)	5000
Plate dimensions (mm)	Ø 104
Plate material	PVDF
Power input (W)	7
Speed display	Analogue
Speed range (min^{-1})	0 - 2200
Weight (kg)	1,2
W×D×H (mm)	126×140×80

Description	Pk	Cat. No.
MR Hei-Mix S magnetic stirrer, UK-plug	1	**442-0305**

Magnetic stirrers, MR Hei-Mix L and MR Hei-Mix D
Heidolph

Magnetic stirrers with corrosion-resistant stainless steel (V2A) top plate and polyamide housing with analogue control dials for continuous speed setting. Recommended for use in cell biology laboratories.

- Enhanced heavy duty stirring magnet drives stirring bars with ease
- Even after extended operation there is only minor heat transfer to the top plate
- Hei-Mix D has electronic speed control with digital display

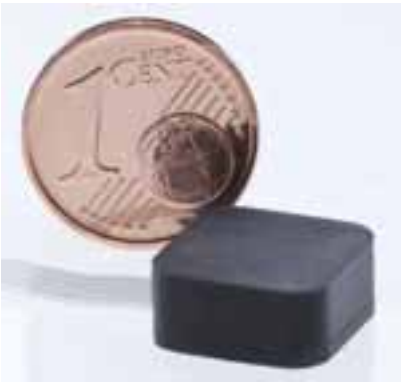
IP protection class according to DIN EN 60529: IP 32

Model	MR Hei-Mix L	MR Hei-Mix D
Max. stirring capacity H_2O (l)	20	
Plate dimensions (mm)	Ø 145	
Plate material	Stainless steel	
Power input (W)	20	
Speed display	-	Digital
Speed range (min^{-1})	100 - 1400	
Weight (kg)	2,6	
W×D×H (mm)	173×277×94	

Description	Pk	Cat. No.
MR Hei-Mix L magnetic stirrer, UK-plug	1	**442-0885**
MR Hei-Mix D magnetic stirrer, UK-plug	1	**442-1353**

Description	For	Pk	Cat. No.
Silicone protective cover	MR Hei-Mix D, MR Hei-Mix L, MR Hei-Tec, MR Hei-End	1	**441-1317**

Magnetic stirrer, cuvetteMIXdrive 1
2mag



MIXcontrol eco

This miniaturised stirrer for cuvettes is ideal for system integration e.g. in a spectrophotometer. The hermetically sealed stainless steel housing is water-, germ- and dust-proof. Operating temperatures up to 50 °C. M1.4 thread is integrated at the base.

- Maintenance- and wear-free inductive drive
- Jerk-free mixing
- Submersible in water and oil baths
- Suitable for use in CO_2 incubators

IP protection class: IP 68

MIXcontrol eco (external control unit must be ordered separately)

Control unit in plastic moulding for connecting one MIXdrive stirrer.

- SoftStart for reliable and safe acceleration of the stirring bar

IP protection class: IP 20

Plate dimensions (mm)	12,5×12,5
Plate material	PUR

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Power input (W)	10
Weight (kg)	0,1
W×D×H (mm)	12,5×12,5×6

Description	Pk	Cat. No.
cuvetteMIXdrive 1	1	**442-0812**

Description	Pk	Cat. No.
Control units		
MIXcontrol eco, EU, UK and CH-plugs	1	**442-0767**

Magnetic stirrer, FABdrive
2mag

Robust magnetic stirrer with fully encapsulated stainless steel housing, suitable for highly viscous media. Operating temperatures up to 50 °C.

- Very strong magnetic coupling by SmCo magnets, for magnetic power transmission over wide distances, for thick vessel bottoms or for double-coat vessels
- Ideal for integration into process engineering systems and industrial processing

IP protection class: IP 65

FABcontrol (external control unit must be ordered separately)

Stainless steel control unit for the connection of one stirring drive FABdrive.

- SoftStart for reliable and safe acceleration of the stirring bar
- QuickSet for setting of start and maximum speed
- QuickStop function against after-run and glass breakage
- Audible alarm if falls below set speed
- Storage of last working status when turning off
- Digital display for speed and SoftStart settings (variable 10 - 60 seconds) and actual speed

IP protection class: IP 20

Model	FABdrive
Max. stirring capacity H_2O (l)	1000
Plate dimensions (mm)	180×180
Plate material	Stainless steel
Power input (W)	-
Speed range (min^{-1})	80 - 990
Weight (kg)	9,0
W×D×H (mm)	180×180×75

Description	Pk	Cat. No.
FABdrive	1	**442-0824**

Description	Pk	Cat. No.
Control unit		
FABcontrol, UK-plug	1	**442-0842**
Accessories		
Asteroid 40 stirring bar, triangular, concave, PTFE, Ø 28 × 40 mm	1	**442-0815**
Extension cord for MAXdrive and FABdrive series, length 3 m	1	**442-0818**
Mobile stand for stirring drives MAXdrive and FABdrive and control units MAXcontrol and FABcontrol, for vessels and containers up to Ø 570 mm, load up to 250 kg	1	**442-0819**

Magnetic stirrers, MIXdrive series
2mag

MIXdrive 1 with MIXcontrol 20

MIXdrive 1 XS

MIXdrive 1 eco with MIXcontrol 20

The hermetically sealed stainless steel housing is water-, germ- and dust-proof. Operating temperatures for basic version up to 50 °C, for HT version up to 95 °C submerged in water baths, up to 200 °C in ovens. M4 thread is integrated in the stainless steel bottom plate (only for MIXdrive 1 XS basic version).

- Maintenance- and wear-free inductive drive
- Jerk-free mixing
- Submersible in water and oil baths
- Suitable for use in CO_2 incubators

IP protection class: IP 68

External control unit (must be ordered separately)

- SoftStart for reliable and safe acceleration of the stirring bar
- QuickSet for setting of start and maximum speed
- Storage of last working status when turning off
- Digital display for speed setting

IP protection class: IP 20

MIXcontrol 20

Stainless steel control unit for connecting one MIXdrive stirrer. Suitable only for MIXdrive 1 or 1 HT. Power setting in 4 steps (25/50/75/100%), not suitable for using MIXdrive in incubators.

MIXcontrol eco

Control unit in plastic moulding for connecting one MIXdrive stirrer. Without QuickSet, memory function and display.

Model	MIXdrive 1	MIXdrive 1 HT	MIXdrive 1 eco	MIXdrive 1 eco HT	MIXdrive 1 XS	MIXdrive 1 XS HT
Max. stirring capacity H_2O (ml)	10000		3000		1000	
Plate dimensions (mm)	180×180		120×120		48×48	
Plate material	Stainless steel					
Power input (W)	40		20		10	
Weight (kg)	3,3		1,5		0,25	
W×D×H (mm)	180×180×38		120×120×35		48×48×18	

Description	Pk	Cat. No.
MIXdrive 1 basic version	1	**442-0793**
MIXdrive 1 HT version	1	**442-0795**
MIXdrive 1 eco basic version	1	**442-0794**
MIXdrive 1 eco HT version	1	**442-0797**
MIXdrive 1 XS basic version	1	**442-0796**
MIXdrive 1 XS HT version	1	**442-0798**

Description	Pk	Cat. No.
Control units		
MIXcontrol eco, EU, UK and CH-plugs	1	**442-0767**
MIXcontrol 20, UK-plug	1	**442-0770**
Accessories		
Asteroid 40 stirring bar, triangular, concave, PTFE, Ø 28 × 40 mm	1	**442-0815**
Extension cord for MIXdrive series, length 3 m	1	**442-0816**
distriBOX 4, for synchronised operating of four stirring drives with one MIXcontrol 20 or MIXcontrol 40	1	**442-0821**
distriBOX 8, for synchronised operating of eight stirring drives with one MIXcontrol 20 or MIXcontrol 40	1	**442-0822**

Magnetic stirrers, MIX series
2mag

Ultra-flat magnetic stirrers with hermetically sealed stainless steel housing. Operating temperatures up to 50 °C.

- Jerk-free mixing
- SoftStart for reliable and safe acceleration of the stirring bar

IP protection class: IP 64

MIX 1

- Maintenance- and wear-free inductive drive
- Suitable for viscous media
- Four-step power settings of the stirrer: 25/50/75/100%
- QuickSet for setting of start and maximum speed
- Storage of last working status when turning off
- Digital display for speed and power settings

MIX 1 eco

- Suitable for aggressive media

Delivery information: Mix 1 eco supplied with small power unit with EU, UK and CH plug.

Model	MIX 1	MIX 1 eco
Max. stirring capacity H_2O (ml)	3000	
Plate dimensions (mm)	180×180	120×120
Plate material	Stainless steel	
Power input (W)	20	10
Speed range (min^{-1})	100 - 2000	120 - 1400
Weight (kg)	4,0	1,7
W×D×H (mm)	180×230×38	120×120×35

Description	Pk	Cat. No.
MIX 1, UK-plug	1	**442-0751**
MIX 1 eco	1	**442-0799**

Description	Pk	Cat. No.
Accessories		
Asteroid 40 stirring bar, triangular, concave, PTFE, Ø 28 × 40 mm	1	**442-0815**

Magnetic stirrer, MIX 1 XL
2mag

Robust magnetic stirrer with hermetically sealed stainless steel housing, suitable for highly viscous media. Adjustable interval times for automated restart after a maximum of 240 seconds. Operating temperatures up to 50 °C. Power setting in four steps.

Equipped as standard with mixWATCH ensuring a very high process safety, e.g. when using closed non-glass vessels or for unattended overnight operation. In case of the magnetic coupling's separation between the magnetic stirrer and the stirring bar during the acceleration phase, the magnetic stirrer will be stopped, the stirring bar centred and stirring resumed with SoftStart.

- Very strong magnetic coupling by SmCo magnets, for magnetic power transmission over extended distances, for thick vessel bottoms
- Adjustable SoftStart function for reliable and safe acceleration of the stirring bar (20/30/60/120 seconds)
- QuickSet for setting of start and maximum speed
- QuickStop function against after-run and glass breakage
- Storage of last working status when turning off
- Digital display for speed, power, SoftStart and interval settings

IP protection class: IP 64

Model	MIX 1 XL
Max. stirring capacity H_2O (ml)	500 - 40000
Plate dimensions (mm)	225×225
Plate material	Stainless steel
Power input (W)	20
Speed range (min^{-1})	60 - 2000
Weight (kg)	4,0
W×D×H (mm)	225×280×35

Description	Pk	Cat. No.
MIX 1 XL, UK-plug	1	**442-0805**

Description	Pk	Cat. No.
Accessories		
Asteroid 40 stirring bar, triangular, concave, PTFE, Ø 28 × 40 mm	1	**442-0815**

Magnetic stirrer, steriMIXdrive
2mag

Ultra-flat magnetic stirrer, suitable for highly viscous media. The hermetically sealed stainless steel housing is pressure and vacuum resistant. Operating temperatures up to 150 °C.

- Very strong magnetic coupling by SmCo magnets, for magnetic power transmission over wide distances or for thick vessel bottoms
- Suitable for operation in pressure, vacuum and steam e.g. in steam steriliser

IP protection class: IP 68

steriMIXcontrol (external control unit must be ordered separately)

Stainless steel, hermetically sealed control unit for the connection of one stirring drive steriMIXdrive. Adjustable interval times for automated restart after a maximum of 240 seconds.

This control unit is equipped as standard with mixWATCH ensuring very high process safety, e.g. when using closed non-glass vessels or for unattended overnight operation. In case of the magnetic coupling's separation between the magnetic stirrer and the stirring bar during the acceleration phase, the magnetic stirrer will be stopped, the stirring bar centred and started softly again.

- SoftStart for reliable and safe acceleration of the stirring bar
- QuickSet for setting of start and maximum speed
- QuickStop function against after-run and glass breakage
- Storage of last working status when turning off
- Digital display for speed and interval setting

IP protection class: IP 20

Max. stirring capacity H_2O (l)	1 - 40
Plate dimensions (mm)	140×140
Plate material	Stainless steel
Power input (W)	20
Weight (kg)	9,0
W×D×H (mm)	140×140×33

Description	Pk	Cat. No.
steriMIXdrive	1	**442-0813**

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Description	Pk	Cat. No.
Control units		
steriMIXcontrol, UK-plug	1	**442-0845**
Accessories		
Asteroid 40 stirring bar, triangular, concave, PTFE, Ø 28 × 40 mm	1	**442-0815**

Magnetic stirrer, atexMIXdrive
2mag

Ultra-flat, explosion protected stirrer. The hermetically sealed housing is water-, germ- and dust-proof. Operating temperatures up to 40 °C.

- Maintenance- and wear-free inductive drive
- Jerk-free mixing
- Submersible in water and oil baths
- Suitable for use in CO_2 incubator

IP protection class: IP 68

Certified according to ATEX II 2G Ex mb IIC T4

atexMIXcontrol cleanroom (external control unit must be ordered separately)

Aluminium, explosion protected control unit for connecting one stirring drive atexMIXdrive. Designed for use in explosion protected zones and cleanrooms. Power setting in four steps (25/50/75/100%).

- SoftStart for reliable and safe acceleration of the stirring bar
- QuickSet for setting of start and maximum speed
- Storage of last working status when turning off
- Digital display for speed and power setting

IP protection class: IP 65

Certified according to ATEX II 3G Ex nAC IIC T6. an

Max. stirring capacity H_2O (ml)	1 - 10000
Plate dimensions (mm)	180×180
Plate material	Stainless steel
Power input (W)	max. 20
Weight (kg)	3,5
W×D×H (mm)	180×180×38

Description	Pk	Cat. No.
atexMIXdrive	1	**442-0820**

Description	Pk	Cat. No.
Control units		
atexMIXcontrol cleanroom	1	**442-0846**
Accessories		
Asteroid 40 stirring bar, triangular, concave, PTFE, Ø 28 × 40 mm	1	**442-0815**

Magnetic stirrer, maxMIX
2mag

Robust magnetic stirrer with hermetically sealed stainless steel housing, suitable for highly viscous media. Operating temperatures up to 50 °C.

- Very strong magnetic coupling by SmCo magnets, for magnetic power transmission over wide distances, for thick vessel bottoms or for double-coat vessels
- SoftStart for reliable and safe acceleration of the stirring bar
- QuickSet for setting of start and maximum speed
- QuickStop function against after-run and glass breakage
- Storage of last working status when turning off
- Digital display for speed and SoftStart settings (variable 10 - 60 seconds)

IP protection class: IP 65

Model	maxMIX
Max. stirring capacity H_2O (l)	150
Plate dimensions (mm)	265×265
Plate material	Stainless steel
Power input (W)	40

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Speed range (min^{-1})	100 - 1200
Weight (kg)	9,3
W×D×H (mm)	265×320×68

Description	Pk	Cat. No.
maxMIX, UK-plug	1	**442-0811**

Description	Pk	Cat. No.
Accessories		
Asteroid 40 stirring bar, triangular, concave, PTFE, Ø 28 × 40 mm	1	**442-0815**

Magnetic stirrer, MAXdrive
2mag

Robust magnetic stirrer with hermetically sealed stainless steel housing, suitable for highly viscous media. Operating temperatures up to 50 °C.

- Very strong magnetic coupling by SmCo magnets, for magnetic power transmission over wide distances, for thick vessel bottoms or for double-coat vessels
- Ideal for integration into process engineering systems

IP protection class: IP 65

MAXcontrol (external control unit must be ordered separately)

Stainless steel control unit for the connection of one stirring drive MAXdrive.

- SoftStart for reliable and safe acceleration of the stirring bar
- QuickSet for setting of start and maximum speed
- QuickStop function against after-run and glass breakage
- Storage of last working status when turning off
- Digital display for speed and SoftStart settings (variable 10 - 60 seconds)

IP protection class: IP 20

Max. stirring capacity H_2O (l)	250
Plate dimensions (mm)	260×260
Plate material	Stainless steel
Power input (W)	-
Weight (kg)	9,0
W×D×H (mm)	260×260×68

Description	Pk	Cat. No.
MAXdrive	1	**442-0823**

Description	Pk	Cat. No.
Control units		
MAXcontrol, UK-plug	1	**442-0839**
Accessories		
Asteroid 40 stirring bar, triangular, concave, PTFE, Ø 28 × 40 mm	1	**442-0815**
Extension cord for MAXdrive and FABdrive series, length 3 m	1	**442-0818**
Mobile stand for stirring drives MAXdrive and FABdrive and control units MAXcontrol and FABcontrol, for vessels and containers up to Ø 570 mm, load up to 250 kg	1	**442-0819**

Magnetic stirrer, bioMIX 1
2mag

Ultra-flat stirring systems for careful mixing of cell cultures. Suitable for culture flasks with spinning propeller and spinning ball systems. The hermetically closed stainless steel housing is water-, dust- and germ-proof. Operating temperatures up to 50 °C.

- Jerk-free mixing
- SoftStart for reliable and safe acceleration of the stirring bar
- Ten step power settings 10 - 100%
- QuickSet for setting of start and maximum speed
- Storage of last working status when turning off
- Digital display for speed and power settings
- Suitable for viscous culture media

IP protection class: IP 64

Model	bioMIX 1

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Max. stirring capacity H_2O (ml)	5 - 5000
Plate dimensions (mm)	180×180
Plate material	Stainless steel
Power input (W)	6
Speed range (min^{-1})	5 - 250
Weight (kg)	4,0
W×D×H (mm)	180×230×38

Description	Pk	Cat. No.
bioMIX 1, UK-plug	1	**442-0836**

Magnetic stirrer, ESP
VELP Scientifica

Ultraflat magnetic stirrer without moving mechanical components.

- Microprocessor controlled adjustable stirring system
- Gentle start-up allows optimum progression of stirring speed
- Plate and housing made of chemically resistant materials

Max. stirring capacity H_2O (l)	5
Plate material	Technopolymer
Power input (W)	5
Speed range (min^{-1})	up to 1100
Weight (kg)	0,9
W×D×H (mm)	160×230×33

Description	Pk	Cat. No.
Magnetic stirrer, ESP, EU-plug	1	**VELPF206A0179**

Magnetic stirrer, AGE
VELP Scientifica

Magnetic stirrer with an epoxy painted metal structure that ensures a high resistance to chemical agents and high stirring power. Suitable for common laboratory stirring requirements.

- Speed regulation up to 1200 rpm
- Epoxy-coated tough steel casing
- Control panel is shielded from liquid spills
- Very high power for viscous liquids
- Pale surface for visualisation of particles and colour changes
- High-power driving magnet type ''PCM'' operated by a mono-phase motor for continuous operation

Model	AGE
Max. stirring capacity H_2O (l)	8
Plate material	Epoxy painted metal
Power input (W)	40
Speed range (min^{-1})	50 - 1200
Weight (kg)	1,8
W×D×H (mm)	171×190×75

Description	Pk	Cat. No.
Magnetic stirrer, AGE	1	**442-0930**

Magnetic stirrer, ATE
VELP Scientifica

High power magnetic stirrer with epoxy-coated tough steel casing suitable for medium to high volumes.

- Constant min^{-1}, even when the density of the stirred liquids change
- High-power driving magnet type "PCM" operated by a mono-phase motor for continuous operation
- Control panel is shielded from liquid spills

Model	ATE
Max. stirring capacity H_2O (l)	25
Plate material	Epoxy painted metal
Power input (W)	15
Speed range (min^{-1})	50 - 1200
Weight (kg)	3,7
W×D×H (mm)	250×285×120

Description	Pk	Cat. No.
Magnetic stirrer, ATE	1	**442-0931**

Multi-position magnetic stirrers, RO 5/10/15
IKA

Compact digital magnetic stirrers with 5, 10 or 15 stirring positions, designed for synchronous stirring and suitable for continuous operation. The wear-free magnetic coils provide noiseless and consistent stirring at all positions. Speed remains constant, even when load changes. The design allows easy cleaning and protects the equipment from liquid spills.

- Adjustable and reversible operation
- Error code display
- Easy operation with touch keypad
- Speed is adjustable in increments of 10 min^{-1}

IP protection class according to DIN EN 60529: IP 40

Delivery information: Supplied with a removable, transparent non-slip cover.

Model	RO 5	RO 10	RO 15
Max. stirring capacity H_2O (l)	0,4×5	0,4×10	0,4×15
Max. stirring capacity per stirrer H_2O (ml)	400		
No. of stirring positions	5; 90 mm between each	10; 90 mm between each	15; 90 mm between each
Plate dimensions (mm)	120×470	190×470	280×470
Plate material	Stainless steel		
Speed range (min^{-1})	0 - 1200		
Weight (kg)	3	5	7
W×D×H (mm)	120×570×60	190×570×60	280×570×60

Description	Pk	Cat. No.
RO 5 multi-position magnetic stirrer	1	**442-0919**
RO 10 multi-position magnetic stirrer	1	**442-0920**
RO 15 multi-position magnetic stirrer	1	**442-0921**

Multi-position magnetic stirrers, MIXdrive series
2mag

MIXdrive 15 with MIXcontrol 40

The hermetically sealed stainless steel housing is water-, germ- and dust-proof. Operating temperatures for basic version up to 50 °C, for high temperature (HT) version up to 95 °C submerged in water baths, up to 200 °C in ovens.

- Maintenance- and wear-free inductive drive
- 100% synchronised jerk-free mixing
- Submersible in water and oil baths
- Suitable for use in CO_2 incubator

IP protection class: IP 68

External control (unit must be ordered separately)

- SoftStart for reliable and safe acceleration of the stirring bar
- QuickSet for setting of start and maximum speed
- Storage of last working status when turning off
- Digital display for speed setting

IP protection class: IP 20

MIXcontrol 20

Stainless steel control unit for connecting one MIXdrive stirrer. Power setting in four steps.

MIXcontrol 40

Stainless steel control unit for connecting two MIXdrive stirrers. Power setting in ten steps.

MIXcontrol eco

Control unit in plastic moulding for connecting one MIXdrive stirrer. Without QuickSet, memory function and display.

Model	MIXdrive 6 basic	MIXdrive 15 basic	MIXdrive 60 basic	MIXdrive 6 HT	MIXdrive 15 HT	MIXdrive 60 NT
Max. stirring capacity per stirrer H_2O (ml)	3000		500	3000		500
No. of stirring positions	6; 130 mm between each	15; 65 mm between each	60; 32,5 between each	6; 130 mm between each	15; 65 mm between each	60; 32,5 between each
Plate dimensions (mm)	245×375					
Plate material	Stainless steel					

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Power input (W)	40					
Weight (kg)	9,5	8,9	9,7	9,5	8,9	9,7
W×D×H (mm)	245×375×38					

Description	Pk	Cat. No.
MIXdrive 6 basic version	1	**442-0783**
MIXdrive 15 basic version	1	**442-0784**
MIXdrive 60 basic version	1	**442-0785**
MIXdrive 6 HT version	1	**442-0786**
MIXdrive 15 HT version	1	**442-0787**
MIXdrive 60 HT version	1	**442-0788**

Description	Pk	Cat. No.
Control units		
MIXcontrol eco, EU, UK and CH-plugs	1	**442-0767**
MIXcontrol 20, UK-plug	1	**442-0770**
MIXcontrol 40, UK-plug	1	**442-0773**
Accessories		
Stainless steel bath, suitable for MIXdrive 6/15/60, fitting for immersion thermostats (heating/cooling)	1	**442-0814**
Asteroid 40 stirring bar, triangular, concave, PTFE, Ø 28 × 40 mm	1	**442-0815**
Extension cord for MIXdrive series, length 3 m	1	**442-0816**
distriBOX 4, for synchronised operating of four stirring drives with one MIXcontrol 20 or MIXcontrol 40	1	**442-0821**
distriBOX 8, for synchronised operating of eight stirring drives with one MIXcontrol 20 or MIXcontrol 40	1	**442-0822**

Multi-position magnetic stirrers, MIX series
2mag

Ultra-flat magnetic stirrers with hermetically sealed stainless steel housing. Operating temperatures up to 50 °C.

- Maintenance- and wear-free inductive drive
- 100% synchronised jerk-free mixing
- SoftStart for reliable and safe acceleration of the stirring bar
- Storage of last working status when turning off
- Digital display for speed settings

MIX 4 MS

- Four individually controlled stirring positions, synchronous speed mode for all positions
- Individual and independent speed setting for each stirring drive (Master-Slave-Technology)
- On/Off function

MIX 6 and MIX 15

- Four-step power settings of the stirrer: 25/50/75/100%
- QuickSet for setting of start and maximum speed
- Digital display for speed and power settings

IP protection class: IP 64

Model	MIX 4 MS	MIX 6	MIX 15	MIX 15 eco
Max. stirring capacity per stirrer H_2O (ml)	3000			1500
No. of stirring positions	4; 140 mm between each	6; 130 mm between each	15; 65 mm between each	
Plate dimensions (mm)	245×425			
Plate material	Stainless steel			
Power input (W)	28	20		10
Speed range (min^{-1})	100 - 2000			120 - 1200
Weight (kg)	8,9	8,8		
W×D×H (mm)	245×425×38			

Description	Pk	Cat. No.
MIX 4 MS, UK-plug	1	**442-0808**
MIX 6, UK-plug	1	**442-0754**
MIX 15, UK-plug	1	**442-0757**
MIX 15 eco, UK-plug	1	**442-0802**

Description	Pk	Cat. No.
Accessories		
Asteroid 40 stirring bar, triangular, concave, PTFE, Ø 28 × 40 mm	1	**442-0815**

Multi-position magnetic stirrers, Variomag Multipoint 6 & 15

Thermo Scientific

Multi-position magnetic stirrers for reliable, safe performance with pre-selectable power settings, which optimise stirring efficiency for different liquid volumes and minimise heat output. Stirrers have a large, easy to clean working surface and are ideal for a range of mixing tasks.

- Reproducible, wear-free low voltage operation and easy to use direct or remote control
- Digital display clearly shows set stirring speeds
- Memory function stores the most recently used settings, even when the device is unplugged for a long period of time
- Automatic start-up for safe acceleration of the magnetic stirrer
- Powerful magnetic couplings ensure precise, reproducible stirring performance for both general and specialist applications

IP protection class according to DIN EN 40050: IP 64

Model	Multipoint 15	Multipoint 6
Max. stirring capacity H_2O (l)	3×6	
Max. stirring capacity per stirrer H_2O (ml)	3000	
No. of stirring positions	15 (65 mm between each)	6 (130 mm between each)
Plate dimensions (mm)	240×420	
Plate material	Stainless steel	
Power input (W)	5 / 10 / 15 / 20 (4 levels)	
Speed range (min^{-1})	80 - 2000	
Weight (kg)	7,5	
W×D×H (mm)	240×420×35	

Description	W×D×H (mm)	Pk	Cat. No.
Magnetic stirrer Multipoint 15	240×420×35	1	**442-3226**
Magnetic stirrer Multipoint 6	240×420×35	1	**442-3225**

Magnetic stirrer, 3-position, SB161-3

Stuart

Multiple-position magnetic stirrer which easily accepts 3×20 litre beakers. Stainless steel top plate with electronically controlled stirring. Unlike aluminium, stainless steel does not produce eddy currents and so generates a very powerful coupling and stirring action.

- Three independently controlled stirring positions
- Powerful magnets for strong magnetic coupling
- BioCote® antimicrobial protection

IP protection class according to DIN EN 60529: IP 21

Delivery information: Supplied with 3×25 mm PTFE coated magnetic stirring bars.

Model	SB161-3
Max. stirring capacity H_2O (l)	15 at each position
No. of stirring positions	3
Plate dimensions (mm)	550×210
Plate material	Stainless steel
Power input (W)	150
Speed range (min^{-1})	100 - 1500
Weight (kg)	7
W×D×H (mm)	600×270×110

Description	W×D×H (mm)	Pk	Cat. No.
SB161-3 magnetic stirrer	600×270×110	1	**442-0331**

Multi-position magnetic stirrers, bioMIXdrive series

2mag

Stirring systems for careful mixing of cell cultures. Suitable for culture flasks with spinning propeller and spinning ball systems. The hermetically closed stainless steel housing is water-, germ- and dust-proof.

- Extremely slow with 100% jerk-free mixing
- Submersible in water baths
- Designed for long term operation in CO_2 incubators

IP protection class: IP 68

External control unit (must be ordered separately)

- SoftStart for reliable and safe acceleration of the stirring bar
- QuickSet for setting of start and maximum speed
- Storage of last working status when turning off
- Digital display for speed setting

IP protection class: IP 20

bioMIXcontrol and bioMIXcontrol S

Control units for connecting one bioMIXdrive 1, 2, 3 or 4 stirrers. Power setting in ten steps. bioMIXcontrol S is stackable.

bioMIXcontrol MS4

Control unit for connecting four bioMIXdrive 1 stirrers. Individual and independent speed setting for each connection.

Model	bioMIXdrive 1	bioMIXdrive 2	bioMIXdrive 3	bioMIXdrive 4
Max. stirring capacity per stirrer H_2O (ml)	5 - 5000			
No. of stirring positions	1	2; 140 mm between each	3; 140 mm between each	4; 140 mm between each
Plate dimensions (mm)	180×180	130×270	130×410	270×270
Plate material	Stainless steel			
Power input (W)	6	2×6	3×6	4×6
Weight (kg)	2,3	2,5	3,5	4,7
W×D×H (mm)	180×180×38	130×270×38	130×410×38	270×270×38

Model	bioMIXcontrol	bioMIXcontrol S	bioMIXcontrol MS4
Power input (W)	4 - 40 (10 steps)		6 (per connection)
Speed range (min^{-1})	5 - 250		
Weight (kg)	1,3	1,9	2,5
W×D×H (mm)	200×155×38	215×120×50	200×155×38

Description	Pk	Cat. No.
bioMIXdrive 1	1	**442-0789**
bioMIXdrive 2	1	**442-0790**
bioMIXdrive 3	1	**442-0791**
bioMIXdrive 4	1	**442-0792**

Description	Pk	Cat. No.
Control units		
bioMIXcontrol, UK-plug	1	**442-0776**
bioMIXcontrol S, UK-plug	1	**442-0779**
bioMIXcontrol MS4, UK-plug	1	**442-0782**

Description	Pk	Cat. No.
Accessories		
Extension cord for bioMIXdrive series, length 3 m	1	**442-0817**

Biological magnetic stirrer, multi-position, MCS-104S

442-0707

Multi-position magnetic stirrer designed for optimal suspension cell culture and the use of microcarriers. The system from Techne® consists of a stainless steel stirrer platform with locators for the glass culture vessels (not included). The design of the vessels, together with the bulb-ended stirrer, ensures that the cells are lifted into suspension at the lowest possible speeds. This gentle stirring action promotes high cell yields by preventing cell shearing. The soft start/stop ensures slow acceleration and deceleration of the stirrer, avoiding excessive turbulence in the culture media and eliminating cell damage. The interval stirring can be used during the attachment phase to further reduce agitation of the media or when culturing particularly fragile cells. The stirrers create virtually no heat so there is negligible heat transfer from the magnetic drive to the culture vessel, making the system suitable for use in incubators and cold rooms up to 40 °C and 95% relative humidity (non-condensing).

- Can accommodate up to four culture vessels simultaneously
- Cell damage is avoided with soft start/stop for slow acceleration or deceleration (20 seconds)
- Cell attachment and high yields promoted by interval setting option (6 s to 5 min on/2 min to 2 h off)

Culture vessels must be ordered separately. Other stirrer models accommodating different sizes and numbers of vessels are available. Culture vessels from 125 ml to 5 litres are available, please contact your local VWR office for details.

Model	MCS-104S
Max. stirring capacity per stirrer H_2O (ml)	500
No. of stirring positions	4
Plate dimensions (mm)	250×300
Plate material	Stainless steel
Power input (W)	<2
Speed range (min^{-1})	0 - 80
Speed stability (%)	±3 min^{-1}
Weight (kg)	4,1
W×D×H (mm)	250×365×90

Description	W×D×H (mm)	Pk	Cat. No.
MCS-104S four-position biological stirrer	250×365×90	1	**442-0707**

Capacity (ml)	Neck	Pk	Cat. No.
Culture vessels, Techne®			
250	Straight	1	**734-0882**
500	Straight	1	**734-0880**
1000	Straight	1	**734-0881**

Magnetic hotplate stirrer, VMS-A

- Fixed safety circuit (400 °C)
- Soft-start stirring motor

IP protection class according to DIN EN 60529: IP 21

Model	VMS-A
Heat output (W)	400
Max. stirring capacity H_2O (l)	10
Plate dimensions (mm)	Ø 125
Plate material	Stainless steel
Power input/output (W)	15/2
Speed range (min^{-1})	100 - 2000
Temperature range (°C)	Ambient to 320
Weight (kg)	2,4
W×D×H (mm)	168×220×105

Description	Pk	Cat. No.
VMS-A magnetic hotplate stirrer with stainless steel plate, UK-plug	1	**442-0186**

Magnetic hotplate stirrers, VMS Advanced series

VMS-C4 Advanced

VMS-C7 Advanced

VMS-C10 Advanced

Compact stirrers with a ceramic glass plate, providing excellent chemical resistance. Units feature digital error code display, a "hot" top indicator to warn users that surface is hot, a fixed safety circuit that shuts off the heater if temperature rises above 550 °C and there are three operating modes to choose from (standard, safe, adjustment protection). Stirrers have a speed display scale and optional capability to connect a PT1000 temperature sensor directly; when using this functionality control accuracy in the medium is ±0,5 °C.

- Exact temperature setting via digital potentiometer
- Simultaneous digital display of target and actual temperatures via LCD display
- Display of actual temperature value in medium with 0,1 °C resolution when using PT1000 temperature sensor
- Integrated contact thermometer VT-5 (all VT-5 functions incorporated in hotplate stirrer)
- Stirrer can be controlled using two microcontrollers

IP protection class according to DIN EN 60529: IP 21

Delivery information: Supplied with PT1000 probe. A wide range of optional accessories are available.

Model	VMS-C4 Advanced	VMS-C7 Advanced	VMS-C10 Advanced
Heat output (W)	250	1000	1500
Max. stirring capacity H_2O (l)	5	10	15
Plate dimensions (mm)	100×100	180×180	260×260
Plate material	Ceramic glass		
Power input/output (W)	15/1,5		
Speed range (min^{-1})	100 - 1500		
Temperature range (°C)	50...500		
Weight (kg)	3	5	6
W×D×H (mm)	150×260×105	215×330×105	300×415×105

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Description	Pk	Cat. No.
VMS-C4 Advanced magnetic hotplate stirrer, UK-plug	1	**442-0662**
VMS-C7 Advanced magnetic hotplate stirrer, UK-plug	1	**442-0665**
VMS-C10 Advanced magnetic hotplate stirrer, UK-plug	1	**442-0668**

Description	Pk	Cat. No.
Accessories		
Support rod, stainless steel, length 450 mm, Ø 10 mm, for all stirrers with M10 thread	1	**442-2041**
Bosshead clamp	1	**442-2043**
Extension cable, separates casing from the sensor, avoiding damage from vapours released by the medium	1	**620-8104**
Holding rod, for fastening ETS-D5 or VT-5 to the support rod	1	**431-2888**
Glass coated PT1000 probe	1	**442-0695**

Magnetic hotplate stirrers, Advanced series

VWR Advanced magnetic hotplate stirrers deliver accurate and repeatable results. Units are microprocessor controlled and have an easy to read LED display for set point temperature. The control panel features easy to use controls which allow users to dial in adjustments for temperature, the stirrer control dial has rpm adjustment markings. Rear housing features an integral support rod holder with locking knob to accept the optional support rod and clamp kit. The low profile design takes up less space and fits into fume hoods. Spill-resistant housing channels fluids away from internal components. Safety features include a "hot" symbol warning light which is illuminated when heat is turned on and remains on until top plate cools down. Stir protection if stirrer motor stops or fails, unit will automatically shut down the heater. Enhanced electronics regulate both heating and stirring and bring samples to temperature quickly and efficiently. Temperature measurement is controlled more accurately by using a resistance thermometer (RTD). Ramping feature slowly increases speed for improved safety and enhanced coupling, avoids splashing, improves spin bar control, and provides excellent low end speed control. Ceramic tops feature a chemically resistant, reflective white top plate surface that is easy to clean. Durable aluminium tops will not crack or chip, and provide a more even heating surface.

- Excellent temperature uniformity with consistent stirring at all speeds
- Microprocessor controlled with built-in memory allowing recall of last set temperature (even if unit has been turned off)
- Cool touch, chemically resistant housing
- LED display for temperature
- Choice of models with ceramic or aluminium top plates

Delivery information: Each unit is supplied complete with a PTFE coated magnetic stirring bar. Optional support rod kit is available which includes a 457 mm stainless steel support rod, thermometer/temperature probe extension clamp, three-prong medium swivel clamp, and hook connector.

Model	Aluminium top plate			Ceramic top plate		
Heat output (W)	400	1050	1600	400	1050	1600
Max. stirring capacity H_2O (ml)	600	2500	6000	600	2500	6000
Plate dimensions (mm)	100×100	180×180	250×250	100×100	180×180	250×250
Plate material	Aluminium			Ceramic		
Speed range (min^{-1})	60 - 1600					
Speed stability (%)	±2					
Temperature range (°C)	Ambient +5...400			Ambient +5...500		
Temperature stability (%)	±2*			±3*		
Weight (kg)	2,0	4,2	6	2,0	4,2	6
W×D×H (mm)	167×274×108	250×375×108	330×455×108	167×274×108	250×375×108	330×455×108

Description	Pk	Cat. No.
Models with aluminium top plates		
Magnetic hotplate stirrer, aluminium plate, 100×100 mm, UK-plug	1	**444-0597**
Magnetic hotplate stirrer, aluminium plate, 180×180 mm, UK-plug	1	**444-0603**
Magnetic hotplate stirrer, aluminium plate, 250×250 mm, UK-plug	1	**444-0609**
Models with ceramic top plates		
Magnetic hotplate stirrer, ceramic plate, 100×100 mm, UK-plug	1	**444-0594**
Magnetic hotplate stirrer, ceramic plate, 180×180 mm, UK-plug	1	**444-0600**
Magnetic hotplate stirrer, ceramic plate, 250×250 mm, UK-plug	1	**444-0606**

Description	For	Pk	Cat. No.
Accessories			
Stirrer support rod clamping kit (rod, 2 clamps and hook connector)	444-0566, 444-0567, 444-0568,444-0569, 444-0570, 444-0571, 444-0572, 444-0573, 444-0574, 444-0575, 444-0576, 444-0577, 444-0578, 444-0579, 444-0580, 444-0581, 444-0582, 444-0583, 444-0584, 444-0585, 444-0586, 444-0587, 444-0588, 444-0589, 444-0590, 444-0591, 444-0592, 444-0593, 444-0594, 444-0595, 444-0596, 444-0597, 444-0598, 444-0599, 444-0600, 444-0601, 444-0602, 444-0603, 444-0604, 444-0605, 444-0606, 444-0607, 444-0608, 444-0609, 444-0610	1	**444-2844**
Support plate for 100 mm stirrers and hotplate stirrers	444-0566, 444-0567, 444-0568,444-0575, 444-0576, 444-0577, 444-0578, 444-0579, 444-0580, 444-0593, 444-0594, 444-0595, 444-0596, 444-0597, 444-0598	1	**444-2851**

* Below 100 °C ±2 °C environmental and sample conditions permitting.

Magnetic hotplate stirrers, Professional series

VWR Professional hotplate stirrers are designed for applications that require exceptional accuracy, stability, and repeatability. Enhanced microprocessor control offers an external resistance thermometer (RTD) probe option that delivers superior temperature control of the sample. Stirring function, with continuous duty motor and powerful magnet, maintains set speed even under changing load or viscosity. Touch pad controls with easy to read, independent LED displays for temperature, speed, and time, allow operator to view all settings at once. Rear housing features a built-in support rod holder with locking knob that accepts the supplied probe kit. Low profile design takes up less space and fits into fume hoods. Spill resistant housing channels fluids away from internal components. A "hot" symbol warning light is illuminated when heat is turned on and remains on until top plate cools down. Stir protection; if stirrer motor stops or fails, unit will automatically shut down heater. Plate over-temperature limit ensures plate temperature will never exceed users programmed set temperature limit, allowing for control of sensitive flash points. An audible alarm will sound when time reaches zero or when unit reaches set point temperature in timed mode, and if the probe disengages from sample, unit will automatically shut off heater. Microprocessor control with enhanced electronics regulates both heating and stirring and brings samples to temperature quickly and efficiently. Ramping feature slowly increases speed for improved safety and enhanced coupling. Avoids splashing, improves spin bar control and provides excellent low end speed control. Ceramic tops feature a chemically resistant, reflective white top plate surface that is easy to clean. Durable aluminium tops will not crack or chip, and provide a more even heating surface.

- Excellent temperature uniformity with consistent stirring at all speeds
- Separate digital displays for temperature, speed, and time; show set and actual values. Display will show last used settings, even after power has been turned off
- Cool touch, chemically resistant housing
- Includes external RTD temperature probe kit
- Choice of models with ceramic or aluminium top plates

Delivery information: Each unit is supplied complete with a 203 mm stainless steel PT1000 temperature probe, a 457 mm stainless steel support rod, thermometer/temperature probe extension clamp, hook connector and a PTFE coated magnetic stirring bar.

Model	Aluminium top plate		Ceramic top plate	
Heat output (W)	1050	1600	1050	1600
Heated area (mm)	180×180	250×250	180×180	250×250
Max. stirring capacity H_2O (ml)	2500	6000	2500	6000
Plate dimensions (mm)	180×180	250×250	180×180	250×250
Plate material	Aluminium		Ceramic	
Speed range (min^{-1})	60 - 1600			
Speed stability (%)	±2			
Temperature range (°C)	Ambient +5...400		Ambient +5...500	
Temperature stability (%)	±1*			
Weight (kg)	4,2	6	4,2	6
W×D×H (mm)	250×375×108	330×455×108	250×375×108	330×455×108

Description	Pk	Cat. No.
Models with aluminium top plates		
Magnetic hotplate stirrer, aluminium plate, 180×180 mm, UK-plug	1	**444-0633**
Magnetic hotplate stirrer, aluminium plate, 250×250 mm, UK-plug	1	**444-0639**
Models with ceramic top plates		
Magnetic hotplate stirrer, ceramic plate, 180×180 mm, UK-plug	1	**444-0630**
Magnetic hotplate stirrer, ceramic plate, 250×250 mm, UK-plug	1	**444-0636**

Description	For	Pk	Cat. No.
Accessories			
Spare temperature probe, 200 mm, stainless steel	Professional series units	1	**444-0641**
Spare temperature probe, 200 mm, PTFE	Professional series units	1	**444-0642**
Spare temperature probe, 250 mm, stainless steel	Professional series units	1	**444-0643**
Spare temperature probe, 250 mm, PTFE	Professional series units	1	**444-0644**
Replacement probe kit, 200 mm, stainless steel	Professional series units	1	**444-0645**

* Below 100 °C ±2 °C environmental and sample conditions permitting. Caution: If you are using a probe accessory with a Professional unit, make sure you don't exceed a sample temperature of 250 °C, otherwise the probe tip might become damaged.

Electronic contact thermometer, VT-5

Ideal for accurate temperature control particularly with VWR hotplates and magnetic hotplate stirrers or other units with contact thermometer bushing according to DIN 12878, Class 2.

- Maintains the set temperature of the medium without overshooting
- Ensures precise temperature control even during unsupervised operation
- Clear, easy to read digital display shows actual temperature of the sample

IP protection class according to DIN EN 60529: IP 54

Control deviation (K)	±0.5
Measuring accuracy (K)	±0.2*
Measuring/control range (°C)	-50...+450
Resolution (K)	0.1
Sensor type	PT1000
Setting accuracy (K)	0.1
Weight (kg)	0.2
W×D×H (mm)	82×22×83 (without sensor)

Description	Pk	Cat. No.
VT-5 electronic contact thermometer with PT1000 probe	1	**442-0573**

* plus sensor tolerance PT1000

Magnetic hotplate stirrers, C-MAG HS series
IKA

C-MAG HS 10

C-MAG HS 4

C-MAG HS 7

Compact stirrers with a chemically resistant ceramic top. The elevated control panel minimises contact with spills and enables easy reading and adjustment of the temperature. Units feature a digital error code display, a "hot" top indicator to warn user that surface is hot and the strong magnetic adhesion prevents stirring bar decoupling.

- Microprocessor control sends feedback to the motor and hotplate to maintain constant speed and set temperature
- C-MAG HS 7 and C-MAG HS 10 can be used with a contact thermometer e.g. the ETS-D5, enabling precise temperature control
- Fixed safety circuit shuts off heater if temperature rises above 550 °C
- Digital display ensures accurate and repeatable temperature settings

IP protection class according to DIN EN 60529: IP 21

Model	C-MAG HS 4	C-MAG HS 7	C-MAG HS 10
Heat output (W)	250	1000	1500
Max. stirring capacity H_2O (l)	5	10	15
Plate dimensions (mm)	100×100	180×180	260×260
Plate material	Ceramic		
Power input/output (W)	15/1,5		
Speed range (min^{-1})	100 - 1500		
Temperature control accuracy with external sensor (via ETS-D5)	-	±0,5	
Temperature range (°C)	50...500		
Temperature setting accuracy (K)	±10		
Weight (kg)	3	5	6
W×D×H (mm)	150×260×105	220×330×105	300×415×105

Description	Pk	Cat. No.
C-MAG HS 4 magnetic hotplate stirrer, UK-plug	1	**442-0711**
C-MAG HS 7 magnetic hotplate stirrer, UK-plug	1	**442-0712**
C-MAG HS 10 magnetic hotplate stirrer, UK-plug	1	**442-0713**

Magnetic hotplate stirrers, C-MAG HS digital series
IKA

C-MAG HS 4 Digital

C-MAG HS 7 Digital

C-MAG HS 10 Digital

Compact digital magnetic stirrers with a chemically resistant ceramic top offer precise temperature control. The elevated control panel minimises contact with spills and enables easy reading and adjustment of the temperature. Units feature three operating modes: Standard, safe and adjustment protection. Stirrers have a digital error code display, a "hot" top indicator to warn user that surface is hot and the strong magnetic adhesion prevents stirring bar decoupling.

- Microprocessor control sends feedback to the motor and hotplate to maintain constant speed and set temperature
- LCD display shows both set and actual values for temperature
- PT1000 temperature sensor enables precise temperature control, control accuracy in medium is ±0,5 K and display of actual temperature value with 0,1 K resolution with sensor
- Fixed safety circuit shuts off heater if temperature rises above 550 °C

IP protection class according to DIN EN 60529: IP 21

Delivery information: Supplied with PT1000 temperature sensor.

Model	C-MAG HS 4 digital	C-MAG HS 7 digital	C-MAG HS 10 digital
Heat output (W)	250	1000	1500
Max. stirring capacity H_2O (l)	5	10	15
Plate dimensions (mm)	100×100	180×180	260×260
Power input/output (W)	15/1,5		
Speed range (min^{-1})	100 - 1500		
Temperature range (°C)	50...500		
Temperature setting accuracy (K)	±1		
Weight (kg)	3	5	6
W×D×H (mm)	150×260×105	215×330×105	300×415×105

Description	Pk	Cat. No.
C-MAG HS 4 digital magnetic hotplate stirrer, UK-plug	1	**442-0939**
C-MAG HS 7 digital magnetic hotplate stirrer, UK-plug	1	**442-0937**
C-MAG HS 10 digital magnetic hotplate stirrer, UK-plug	1	**442-0945**

Magnetic hotplate stirrers, RH basic and RH digital
IKA

Magnetic hotplate stirrers with stainless steel heating plate, white unit has an enamelled plate. All models are easy to operate and have adjustable safety temperature from 50 to 370 °C. High heat output of 600 watts and steel-copper compound hot plate ensures rapid heating. The RH digital model has bushing according to DIN 12878 for connecting an electronic contact thermometer, such as the ETS-D5. Highly accurate temperature control is possible with sensor placed directly in the medium.

- RH basic includes M 10 thread for a support rod
- Soft-start of the stirring motor for both models
- Strong magnetic field and wide speed range for volumes up to 15 litres
- RH digital has digital display of temperature and speed
- Error code display and touch keypad (RH digital)

IP protection class according to DIN EN 60529: IP 21

Model	RH basic	RH basic white	RH digital
Heat output (W)	600		
Max. stirring capacity H_2O (l)	15		
Plate dimensions (mm)	Ø 135		
Plate material	Stainless steel	Stainless steel, white coated	Stainless steel
Power input/output (W)	15/2		
Speed range (min^{-1})	50 - 2000		
Temperature range (°C)	50...320		

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Weight (kg)	2
W×D×H (mm)	160×246×90

Description	Pk	Cat. No.
RH basic models		
RH basic magnetic hotplate stirrer, UK-plug	1	**442-0987**
RH basic white magnetic hotplate stirrer, UK-plug	1	**442-1084**
RH digital models		
RH digital magnetic hotplate stirrer, UK-plug	1	**442-0990**

Magnetic hotplate stirrer, RH basic 2 IKAMAG®
IKA

Magnetic hotplate stirrer with stainless steel plate.

- Fixed safety circuit (400 °C)
- Soft-start stirring motor
- Can be used at 5 to 40 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 21

Model	RH basic 2
Heat output (W)	400
Max. stirring capacity H_2O (l)	10
Plate dimensions (mm)	Ø 125
Plate material	Stainless steel
Power input/output (W)	15/2
Speed range (min^{-1})	100 - 2000
Temperature range (°C)	Ambient...320
Weight (kg)	2,4
W×D×H (mm)	168×220×105

Description	Pk	Cat. No.
RH basic 2 magnetic hotplate stirrer, UK-plug	1	**442-0175**

Magnetic hotplate stirrer, RCT basic IKAMAG® safety control
IKA

Magnetic hotplate stirrer with polished aluminium alloy plate, suitable for unsupervised operation. Unit has been updated and now features a stronger motor for a higher range of speeds, integrated temperature control for faster heating of the medium and improved magnetic adhesion. The hotplate stirrer has a digital error code display and "hot" top warning safety feature. Units incorporate excellent safety features with improved heating control and are ideal for use with optional contact thermometers, e.g. ETS-D5 for precise temperature control.

- Adjustable safety circuit for heating plate temperature (50 to 360 °C)
- Digital LED display shows exact temperature and speed setting, even when switched off
- Safety temperature limit setting can be digitally displayed
- Can be used at 5 to 40 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 42

Delivery information: Supplied with PT1000 temperature sensor and protective cover. A wide range of accessories are available, please order these separately.

Control accuracy with ETS-D5	±0,5 K
Control accuracy with PT1000 sensor	±1 K
Heat output (W)	600
Max. stirring capacity H_2O (l)	20
Plate dimensions (mm)	Ø 135
Plate material	Aluminium alloy
Power input/output (W)	16/9
Speed range (min^{-1})	50 - 1500
Temperature range (°C)	Ambient...310
Weight (kg)	2,5
W×D×H (mm)	160×270×85

Description	Pk	Cat. No.
RCT basic IKAMAG® safety control magnetic hotplate stirrer, UK-plug	1	**442-2374**

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Description	Pk	Cat. No.
Packages		
RCT basic synthesis package 1: Package includes RCT basic magnetic hotplate stirrer with UK plug, support rod, boss head clamp, holding rod, square carrier without handle and blocks: 16×4 ml; 4×20 ml; 4×30 ml and 4×40 ml.	1	**442-1014**
RCT basic synthesis package 2: Package includes RCT basic magnetic hotplate stirrer with UK plug, support rod, boss head clamp, holding rod, 250 ml inlay flask without handle, 500 ml flask carrier and extension for working with bath attachment over Ø 180 mm.	1	**442-1017**

Description	Pk	Cat. No.
Accessories		
ETS-D5, electronic contact thermometer	1	**620-8108**

Magnetic hotplate stirrer, RCT classic IKAMAG® safety control with VT-5 contact thermometer

IKA

Magnetic hotplate stirrer with aluminium alloy plate, suitable for unsupervised operation. It features integrated temperature control, digital error code display and incorporates excellent safety features, such as a "hot" top indicator to prevent burns and digital display of the set safety temperature limit. With its improved heating control this magnetic hotplate stirrer is ideal for use with contact thermometers, for precise temperature control.

- Adjustable safety circuit for heating plate temperature (50 to 360 °C)
- Digital display shows exact temperature and speed setting, even when switched off
- Bushing according to DIN 12878 for connecting contact thermometer e.g. VT-5 (supplied free of charge)
- High magnetic adhesion prevents decoupling
- Can be used at 0 to 60 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 42 (RCT classic) and IP 54 (VT-5)

Delivery information: Supplied with VWR VT-5 contact thermometer and protective cover. A wide range of accessories are available, please order these separately.

Model	RCT classic IKAMAG® safety control
Control accuracy with VT-5	±0,5 K
Heat output (W)	600
Max. stirring capacity H_2O (l)	20
Plate dimensions (mm)	Ø 135
Plate material	Silumin
Power input/output (W)	16/9
Speed range (min^{-1})	50 - 1200
Temperature range (°C)	Ambient...300
Weight (kg)	2,45
W×D×H (mm)	160×270×85

Description	Pk	Cat. No.
RCT classic IKAMAG® safety control magnetic hotplate stirrer, UK-plug with VT-5 contact thermometer	1 SET	**442-0599**

Description	Pk	Cat. No.
Accessories		
VT-5 electronic contact thermometer with PT1000 probe	1	**442-0573**

Magnetic hotplate stirrer, RET basic IKAMAG® safety control

IKA

Magnetic hotplate stirrer with extremely fast heating times and integrated temperature control, suitable for unsupervised operation. Units have bushing according to DIN 12878 for connecting a contact thermometer, e.g. ETS-D5, enabling precise temperature control. Features include high magnetic adhesion, electronic speed control and digital error code display.

- Exact temperature and speed setting via digital display, even when switched off
- Safety temperature limit that has been set is displayed digitally
- Increased safety due to improved heat control technology, hot warning light helps to prevent burns
- Adjustable safety circuit of heating plate temperature (50 to 380 °C)
- Can be used at 5 to 40 °C (80% relative humidity)

IP Protection Class according to DIN EN 60529: IP 42

Ordering information: Supplied with PT1000 temperature sensor and silicone protective cover, accessories must be ordered separately.

Description	Pk	Cat. No.
Accessories		
ETS-D5, electronic contact thermometer	1	**620-8108**

Magnetic hotplate stirrers, RET control
IKA

RET control safety magnetic stirrers with heating and integrated balance which are suitable for unsupervised operation. Clear, multilingual TFT display makes it easy to set all parameters and the sealed casing ensures a long service life. Integrated temperature control feature enables connection of a temperature probe, placed directly in the medium, to control medium temperature with a high degree of precision. The stainless steel composite hot plate (white units have a chemically resistant enamelled plate), reaches a temperature of 340 °C, enabling rapid heating. RS232 and USB interface enables PC control of the magnetic stirrer and documentation of all test parameters. "Lock" function prevents inadvertent changes of speed and temperature settings. As a safety feature, a"hot" sign flashes when the unit is switched off but the heating surface is still hot. Unit has a DIN 12878 socket for connecting an electronic contact thermometer, for high precision temperature control and also features detached magnet detection and has a BNC socket for a pH electrode.

- Adjustable temperature control mode: Rapid heating and very accurate temperature control
- Dual sensor for simultaneous control of heat transfer fluid temperature and medium temperature
- Display of viscosity change trend and timer and countdown functions
- Several modes of operation are available including intermittent operation
- Safety circuit adjustable from 50 to 370 °C
- Exact temperature and speed adjustment by means of digital display; even when function switched off
- Digital display of the safety temperature limit and error code display for easy troubleshooting

IP protection class according to DIN EN 60529: IP 42

Delivery information: Supplied with PT100 temperature sensor, labworldsoft® software and transparent protective cover.

Model	RET control	RET control white
Control accuracy with sensor (K)	±0,2 (PT100)	
Heat output (W)	600	
Heated area (mm)	Ø 135	
Max. stirring capacity H_2O (l)	20	
Plate material	Stainless steel	Stainless steel, white coated
Power input/output (W)	16/9	
Speed range (min^{-1})	50 - 1700	
Temperature accuracy (hotplate) (K)	±0,1	
Temperature range (°C)	Ambient...340	
Weight (kg)	3	
W×D×H (mm)	160×270×85	

Description	Pk	Cat. No.
RET control model		
RET control magnetic hotplate stirrer, UK-plug	1	**442-1011**
RET control white model		
RET control white magnetic hotplate stirrer, UK-plug	1	**442-1008**

Reaction block systems for RH basic, RH digital, RCT basic, RET basic and RET control-visc magnetic hotplate stirrers
IKA

Reaction blocks allow syntheses to be carried out in round-bottomed flasks at temperatures up to 180 °C, avoiding the use of oil baths. The system ensures optimum heat transfer from the heating plate directly into the medium. Uniform mixing is also guaranteed since there is no interference to the magnetic field from the aluminium blocks. Reaction blocks range from 100 ml to 5000 ml in size, and inserts accommodating round bottom flasks from 10 ml to 3000 ml are available. Due to the wide range of interchangeable inserts, this system can be used for a range of different applications with the RCT, RET and RH magnetic hotplate stirrers.

- Perform safe and clean syntheses in round bottom flasks at temperatures up to 180 °C
- Uniform mixing

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- Thermal conduction is directly into the reaction blocks and is very precise
- PTFE coating prevents burning and helps ensure the system is safe to work with

Description	Pk	Cat. No.
100 ml flask heating blocks		
Flask carrier without handle, 100 ml	1	**442-0984**
Flask inlay, 10 ml	1	**442-0962**
Flask inlay, 25 ml	1	**442-0963**
Flask inlay, 50 ml	1	**442-0968**
500 ml flask heating blocks		
Flask carrier without handle, 500 ml	1	**442-0983**
Flask inlay, 100 ml	1	**442-0966**
Flask inlay, 250 ml	1	**442-0964**
1000 ml flask heating blocks		
Flask carrier without handle, 1000 ml	1	**442-0982**
Flask inlay, 500 ml	1	**442-0967**
2000 ml flask heating blocks		
Flask carrier without handle, 2000 ml	1	**442-0981**
Flask inlay, 1000 ml	1	**442-0965**
3000 ml flask heating blocks		
Flask carrier without handle, 3000 ml	1	**442-0980**
Flask inlay, 2000 ml	1	**442-0972**
5000 ml flask heating blocks		
Flask carrier without handle, 5000 ml	1	**442-0979**
Flask inlay, 3000 ml	1	**442-0971**
Square dry heating blocks		
Square carrier without handle	1	**442-0985**
Block, 16×4 ml	1	**442-0976**
Block, 16×8 ml	1	**442-0977**
Block, 9×16 ml	1	**442-0978**
Block, 4×20 ml	1	**442-0973**
Block, 4×30 ml	1	**442-0974**
Block, 4×40 ml	1	**442-0975**
Block, 100 ml	1	**442-0969**
Block, 250 ml	1	**442-0970**

Electronic contact thermometer, ETS-D5

IKA

Ensures perfect temperature control without overshooting the set temperature, even in the case of rapid heating. With optimised PID control and RESET function. Suitable for use with all magnetic stirrers with contact thermometer bushing according to DIN 12878, Class 2 (e.g. IKA®, Heidolph and Corning with adapter AD-C1).

- Three modes of operation guarantee optimum adjustment to the working method
- Operating mode A: Suitable for work with varying parameters (from -50 to +450 °C). Adjustable safety temperature
- Operating mode B: Suitable for series operation under uniform conditions
- Operating mode C: Suitable for unsupervised operation
- All values are taken from the memory. Ensures protection against inadvertent or improper adjustment

IP protection class according to DIN EN 60529: IP 54

Delivery information: Supplied with stainless steel sensor. A wide range of accessories are available; please order these separately.

Model	ETS-D5
Control deviation (K)	±0.5
Measuring accuracy (K)	±0.2*
Operating conditions (°C, % RH)	0 to 60 at max. 80%
Plug	6 pin DIN 45322
Power consumption (mA at 9V)	10

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Setting accuracy (K)	0.1
Supply voltage (VDC)	8-16
Temperature range (°C)	-50...+450
Temperature resolution (K)	0.1
Weight (kg)	0.2
W×D×H without sensor (mm)	82x22x83

Description	Pk	Cat. No.
ETS-D5, electronic contact thermometer	1	**620-8108**

Description	Pk	Cat. No.
Accessories		
Spare stainless steel sensor for use with ETS-D5	1	**442-0252**
Support rod, stainless steel, length 450 mm, Ø 10 mm, for all stirrers with M10 thread	1	**442-2041**
Bosshead clamp	1	**442-2043**
Glass coated sensor for use with ETS-D5 and VT-5 contact thermometers	1	**442-0316**
Extension cable, separates casing from the sensor, avoiding damage from vapours released by the medium	1	**620-8104**
Holding rod, for fastening ETS-D5 or VT-5 to the support rod	1	**431-2888**

* plus sensor tolerance PT1000 DIN IEC 751 class A

Magnetic hotplate stirrers, Undergrad UC152/D and US152/D
Stuart

Compact general purpose hotplate stirrers designed for safety and performance. The hotplate has an innovative LED temperature indicator scale and can also be used in conjunction with the SCT1 digital contact thermometer to accurately control sample temperature. Powerful magnets and motor give stirring speeds up to 2000 min^{-1} and unit is capable of mixing large volumes (up to 15 litres*). Both models have an integral fitting for a retort rod.

Model UC152/UC152D has a glass ceramic top which has excellent chemical resistance. The surface is easy to clean and the thermal properties allow very high plate temperatures while ensuring the edges stay cooler, reducing the chance of accidental burns. The white surface ensures good visibility of colour changes.

Model US152/US152D has a robust aluminium/silicon alloy top plate for excellent heat transmission. The top plate has a thin ceramic coating for added chemical resistance. A 700 W element gives rapid heating and ensures even temperature distribution across the whole surface of the plate.

- Choice of top plate: Robust coated aluminium or chemically resistant ceramic
- Flashing "hot" warning light whenever the plate temperature is above 50 °C, is mains independent so stays on even when the unit is unplugged
- Accurate temperature control with LED temperature indicator on UC152 & US152
- Digital display of hotplate temperature on UC152D & US152D
- Compact, space saving units, can be stored on their side to maximise storage space
- Designed with recess at the base for a retort stand to slide underneath unit, saves space and time when setting up

IP protection class according to DIN EN 60529: IP 32

Delivery information: Supplied complete with 2×25 mm PTFE coated magnetic stirring bars.

Model	UC152/D	US152/D
Heat output (W)	500	700
Heated area (mm)	120×120	150×150
Max. stirring capacity H_2O (l)	15*	
Plate dimensions (mm)	150×150	
Plate material	Ceramic glass	Aluminium/silicon alloy
Power (W)	550	750
Speed range (min^{-1})	100 - 2000	
Temperature range (°C)	Ambient to 450	Ambient to 325
Weight (kg)	2,9	
W×D×H (mm)	172×248×122	172×248×120

Description	Pk	Cat. No.
UC152 magnetic hotplate stirrer	1	**442-1023**
UC152D digital magnetic hotplate stirrer	1	**442-1075**
US152 magnetic hotplate stirrer	1	**442-1024**
US152D digital magnetic hotplate stirrer	1	**442-1076**

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Description	Pk	Cat. No.
Accessories		
SCT1 electronic temperature controller, 50 to 200 °C, resolution 1 °C, measuring accuracy ±0,5 °C, W×D×H: 90×75×123 mm	1	**442-0326**
Retort rod, (l×Ø) 600×12 mm	1	**442-0321**

* Based on water in a 20 litre glass bottom boiling flask.

Magnetic hotplate stirrers, digital, CD162 and SD162
Stuart

SD162

CD162

Magnetic hotplate stirrers with digital control of temperature and stirring speed and simultaneous display of set and actual temperature values. The PTFE coated detachable temperature probe (supplied) allows accurate control of liquid temperature up to 200 °C. The "hot" warning light will flash while the temperature of plate or liquid remains above 50 °C and will continue to operate even if the unit is turned off as long as it is still connected to the mains electricity supply. An independent safety circuit automatically sets to 20 °C above the set temperature and internal electronic components are protected against corrosion. Powerful magnets and motor give stirring speed up to 1300 min^{-1} and volumes up to 15 litres. Model SD162 has a robust aluminium/silicon alloy top plate which will withstand the knocks of everyday use. Model CD162 has a glass ceramic top which has excellent chemical and temperature resistance. With fitting for retort rod.

- Digital setting and control of both temperature and speed
- Choice of chemically resistant ceramic or robust aluminium top
- Safety features include "hot" warning light and independent safety circuit
- Includes temperature probe for accurate control of liquid temperature
- BioCote® antimicrobial protection

IP protection class according to DIN EN 60529: IP 21

Delivery information: Supplied complete with temperature probe for accurate control of liquid temperature and 2×25 mm PTFE coated magnetic stirring bars.

Model	CD162	SD162
Control accuracy with probe	±0,5 °C	
Heat output (W)	500	700
Heated area (mm)	120×120	160×160
Max. stirring capacity H_2O (l)	15	
Max. temperature of liquid, using probe (°C)	200	
Plate dimensions (mm)	160×160	
Plate material	Ceramic	Aluminium/silicon alloy
Power (W)	550	750
Speed range (min^{-1})	200 - 1300	
Temperature range (°C)	Ambient to 450	Ambient to 300
Weight (kg)	3,4	
W×D×H (mm)	190×300×110	

Description	Pk	Cat. No.
CD162 magnetic hotplate stirrer	1	**442-0307**
SD162 magnetic hotplate stirrer	1	**442-0306**

Magnetic hotplate stirrers, high capacity, CB302 and SB302
Stuart

SB302

CB302

The "hot" warning light will flash whenever the plate temperature is above 50 °C and will operate even when the hotplate is turned off if the unit is still connected to the mains. Powerful magnets and motor give stirring speed up to 1500 min^{-1} and volumes up to 15 litres. Model SB302 has a robust aluminium/silicon alloy top plate that will withstand the knocks of everyday use, the 600 W element and good heat transmission of this material gives rapid heating and ensures even temperature distribution across the whole of the plate. Model CB302 has an easy to clean glass ceramic top with excellent chemical and temperature resistance, which allows very high plate temperatures while ensuring the edges stay cooler, reducing the chance of accidental burns. With fitting for retort rod.

- Choice of chemically resistant ceramic or robust aluminium top
- Safety features include "hot" warning light and independent safety circuit
- BioCote® antimicrobial protection

IP protection class according to DIN EN 60529: IP 31

Delivery information: Supplied with 2×25 mm PTFE coated magnetic stirring bars.

Model	CB302	SB302
Heat output (W)	1200	600
Heated area (mm)	200×200	300×300
Heater power (W)	1250	650
Max. stirring capacity H_2O (l)	15	
Plate dimensions (mm)	300×300	
Plate material	Ceramic	Aluminium/silicon alloy
Speed range (min^{-1})	100 - 1500	
Temperature range (°C)	Ambient...450	Ambient...300
Weight (kg)	7	
W×D×H (mm)	300×365×105	

Description	Pk	Cat. No.
CB302 magnetic hotplate stirrer	1	**442-0334**
SB302 magnetic hotplate stirrer	1	**442-0333**

Magnetic hotplate stirrer, SLR
SI Analytics

SLR magnetic hotplate stirrers allow the user to select mixing speed from gentle to vigorous mixing and can be used for rapid heating up or controlled temperature applications.

- Large, clear LCD for better view and monitoring of the different functions
- Heating power: Max. 900 W (can be set in 24 increments)
- Can be used at 10 to 40 °C (85% relative humidity), in an incubator or cold room
- Temperature range with PT1000 sensor: 25 to 200 °C ±2 to 5 °C depending on liquid volume, heat capacity and ambient temperature; the display will inform the user at intervals of five seconds about the actual and set temperature values

IP protection class according to DIN EN 60529: IP 20

Model	SLR
Heat output (W)	900
Heated area (mm)	Ø 155
Max. stirring capacity H_2O (l)	20
Plate dimensions (mm)	235×235
Plate material	Ceramic
Speed range (min^{-1})	100 - 1100 in steps of 10
Temperature range (°C)	Max. 550
Weight (kg)	3,8
W×D×H (mm)	370×240×85

Description	Pk	Cat. No.
SLR magnetic hotplate stirrer	1	**442-0229**

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Description	Pk	Cat. No.
Accessories		
PT1000 temperature sensor, stainless steel, 1 m cable, 2×4 mm banana plug, Ø×L 4×170 mm	1	**442-0228**
Stand rod with M8 fixing nut, stainless steel, Ø×L 10×450 mm	1	**442-0230**
Temperature sensor holder, stainless steel	1	**442-0231**

Magnetic hotplate stirrer, MR Hei-Standard
Heidolph

Magnetic hotplate stirrer with electronic temperature control and analogue control dials for speed and temperature. Ceramic coated silumin plate provides excellent heat conduction and distribution, and is extremely resistant to scratches and chemicals. An independent safety circuit with separate circuit switches off the heating if the nominal hotplate temperature is exceeded by 25 °C. Electronic current limiting to protect the motor. TRIAC guarantees long service life.

- Extra safety control circuit and hotplate cut-out by two independent temperature sensors
- Connector for electronic temperature control (via optional PT1000 probe)
- Medium temperature range: Up to 250 °C, temperature control accuracy with optional PT1000 probe: ±1 °C

IP protection class according to DIN EN 60529: IP 32

Model	MR Hei-Standard
Heat output (W)	800
Max. stirring capacity H_2O (l)	20
Plate dimensions (mm)	Ø 145
Plate material	Kera-Disk®, ceramic coated Silumin (aluminium alloy)
Power consumption (W)	820
Speed accuracy (%)	±2
Speed range (min^{-1})	100 - 1400
Temperature accuracy (hotplate) (K)	±5
Temperature control accuracy with external sensor (via optional PT1000 probe) (K)	±1
Temperature range (°C)	20...300
Temperature setting accuracy (K)	±1
Weight (kg)	2,6
W×D×H (mm)	173×277×94

Description	Pk	Cat. No.
MR Hei-Standard		
MR Hei-Standard magnetic hotplate stirrer, UK-plug	1	**442-1356**

Description	For	Pk	Cat. No.
Accessories			
Silicone protective cover	MR Hei-Standard	1	**441-1318**

Magnetic hotplate stirrer, MR Hei-Tec
Heidolph

Magnetic hotplate stirrer with electronic temperature control and digital display for nominal speed and temperature. Ceramic coated silumin plate provides excellent heat conduction and distribution and is extremely resistant to scratches and chemicals. An independent safety circuit switches off the heating if the nominal hotplate temperature is exceeded by 25 °C. Electronic current limiting to protect the motor. TRIAC guarantees long service life.

- Digital display for speed and temperature
- Extra safety control circuit and hotplate cut-out by two independent temperature sensors
- Connector for electronic temperature control (via optional PT1000 probe)
- Medium temperature range: Up to 250 °C, temperature control accuracy with optional PT1000 probe: ±1 °C

IP protection class according to DIN EN 60529: IP 32

Model	MR Hei-Tec
Heat output (W)	800
Max. stirring capacity H_2O (l)	20
Plate dimensions (mm)	Ø 145
Plate material	Kera-Disk®, ceramic coated Silumin (aluminium alloy)
Power consumption (W)	820

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Speed accuracy (%)	±2
Speed range (min^{-1})	100 - 1400
Temperature accuracy (hotplate) (K)	±5
Temperature control accuracy with external sensor (via optional PT1000 probe) (K)	±1
Temperature range (°C)	20...300
Temperature setting accuracy (K)	±1
Weight (kg)	2,6
W×D×H (mm)	173×277×94

Description	Pk	Cat. No.
MR Hei-Tec magnetic hotplate stirrer, UK-plug	1	**442-1359**

Description	For	Pk	Cat. No.
Silicone protective cover	MR Hei-Mix D, MR Hei-Mix L, MR Hei-Tec, MR Hei-End	1	**441-1317**
PT1000 temperature sensor, stainless steel	MR Hei-End, MR Hei-Tec	1	**442-1341**
PT1000 temperature sensor, glass coated	MR Hei-End, MR Hei-Tec	1	**442-1342**

Magnetic hotplate stirrer, MR Hei-End
Heidolph

Magnetic hotplate stirrer with microprocessor control. Ceramic coated silumin plate provides excellent heat conduction and distribution and is extremely resistant to scratches and chemicals. An independent safety circuit switches off the heating if a user determined temperature difference (ΔT 10 to 25 °C) above set temperature is reached. No unintentional changes to temperature settings. Indicator on the display shows when unit is off and residual heat is higher than 50 °C. Optional medium temperature sensor uses two independent PT1000 sensors double checking each other. Electronic current limiting to protect the motor. TRIAC guarantees long service life.

- Microprocessor control and digital display for nominal and actual speed and temperature
- Extra safety control circuit and hotplate cut-out by two independent temperature sensors
- RS232 interface and connector for electronic temperature control (via optional PT1000 sensor)
- Medium temperature range: Up to 250 °C, temperature control accuracy with optional PT1000 sensor: ±0,2 °C

IP protection class according to DIN EN 60529: IP 32

Model	MR Hei-End
Control accuracy with PT1000 sensor	±0,2 °C
Heat output (W)	800
Max. stirring capacity H_2O (l)	20
Plate dimensions (mm)	Ø 145
Plate material	Kera-Disk®, ceramic coated Silumin (aluminium alloy)
Power consumption (W)	825
Speed accuracy (%)	±1
Speed range (min^{-1})	30 - 1400
Temperature control accuracy (hotplate) (K)	±5
Temperature range (°C)	20...300
Temperature setting accuracy (K)	±1
Weight (kg)	2,6
W×D×H (mm)	173×277×94

Description	Pk	Cat. No.
MR Hei-End magnetic stirrer hotplate, UK-plug	1	**442-1365**

Description	For	Pk	Cat. No.
Silicone protective cover	MR Hei-Mix D, MR Hei-Mix L, MR Hei-Tec, MR Hei-End	1	**441-1317**
PT1000 temperature sensor, stainless steel	MR Hei-End, MR Hei-Tec	1	**442-1341**
PT1000 temperature sensor, glass coated	MR Hei-End, MR Hei-Tec	1	**442-1342**

Magnetic hotplate stirrers, ARE and AREX
VELP Scientifica

Magnetic stirrers with coated aluminium alloy top plate that provides even heat distribution and good chemical resistance, widely used in research and development, industrial and university laboratories.

- Excellent resistance to chemicals
- Maximum temperature 370 °C
- Accepts up to 15 litre flasks (ARE) and 20 litres (AREX)
- Electronic speed regulation up to 1200 rpm
- High power PCM-type driving magnet
- AREX models maintain constant speed even when the viscosity changes
- Connection for optional Vertex contact thermometer to allow direct control of the sample temperature (AREX only)

IP Protection Class according to DIN EN 60529: IP 42

Model	ARE	AREX
Control accuracy with sensor	-	0,5
Heat output (W)	630	650
Heated area (mm)	Ø 155	
Max. stirring capacity H_2O (l)	15	20
Plate dimensions (mm)	Ø 155	
Plate material	Aluminium alloy	
Speed range (min^{-1})	<1200	
Temperature range (°C)	Ambient...370	
Weight (kg)	2,6	
W×D×H (mm)	165×280×115	

Description	Pk	Cat. No.
ARE magnetic hotplate stirrer	1	**442-0923**
AREX magnetic hotplate stirrer	1	**442-1088**

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Magnetic hotplate stirrers, digital, AREC and AREC.X
VELP Scientifica

AREC

Digital magnetic stirrers with white ceramic top plate that provides good chemical resistance, is easy to clean, and makes observing colour changes in titrations easy. The units feature a run off groove which provides protection from liquid spills and a hot plate warning is displayed while cooling to below 50 °C. The AREC.X can be supplied as packages with a choice of PT100 probe or VTF (+ support rod), VTF incorporates timer for unsupervised operation and increased productivity.

- Digital display shows the set temperature
- Electronic speed regulation up to 1500 min^{-1}
- Technopolymer casing resists chemicals, scratches and surface abrasions
- SpeedServo™ ensures constant speed even when the viscosity changes
- AREC.X models have high visibility LED temperature display

IP protection class according to DIN EN 60529: IP 42.

Model	AREC	AREC.X
Heat output (W)	800	
Heated area (mm)	180×180	
Max. stirring capacity H_2O (l)	15	
Plate dimensions (mm)	180×180	
Plate material	Ceramic	
Power consumption (W)	800	
Speed range (min^{-1})	<1500	
Temperature range (°C)	Ambient...550	
Weight (kg)	3,3	
W×D×H (mm)	203×344×94	

Description	Pk	Cat. No.
AREC magnetic hotplate stirrer	1	**442-1020**
AREC.X ceramic magnetic hotplate stirrer with connection for external VTF Vertex and PT100	1	**442-1085**

Description	Pk	Cat. No.
AREC.X packages		
AREC.X ceramic magnetic hotplate stirrer including external PT100 probe and support rod	1	**442-1086**
AREC.X ceramic magnetic hotplate stirrer including external VTF vertex digital thermoregulator and support rod	1	**442-1087**

Magnetic hotplate stirrers, AREX Digital and AREX Digital PRO
VELP Scientifica

Magnetic stirrers with ceramic coated aluminium alloy top plate that provides even heat distribution and excellent chemical resistance together with easy cleaning and scratch protection. The units are suitable for continuous operation, offer precise temperature control and stability of the plate and feature an elevated front panel with run-off groove, which protects against spills and leaks. The control panel is separated from the hotplate ensuring increased safety and durability. Easy to operate, temperature and speed are controlled via two knobs. Hot warning light will show whenever the plate temperature is above 50 °C.

- Maximum safety temperature limit can be set between 50 and 370 °C
- Digital display shows set stirring speed and set and actual temperature
- Models maintain constant speed even when the sample viscosity changes
- Both units supports AluBlocks™ or hemispheric bowls up to 1 litre, enabling different heating and stirring experiments to be carried out, with the hotplate stirrer becoming a personalised workstation

IP Protection Class according to DIN EN 60529: IP 42

Delivery information: AREX Digital is supplied with external PT100 probe (in ready to use solution) for direct control of liquid temperature up to 250 °C with accuracy of ±1,0 °C. AREX Digital PRO is supplied with VTF digital thermoregulator (in ready to use solution) with timer for unattended operation, for thermoregulation up to 300 °C with accuracy of ±0,5 °C.

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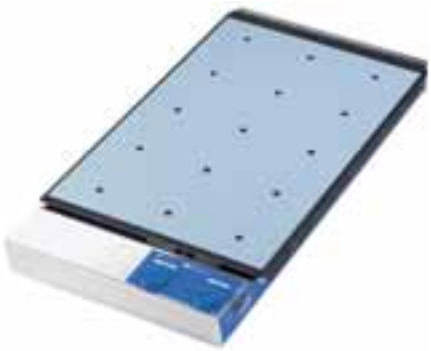
Model	AREX Digital	AREX Digital PRO
Max. stirring capacity H_2O (l)	20	
Plate dimensions (mm)	Ø 155	
Plate material	Ceramic coated aluminium	
Power consumption (W)	630	
Speed range (min^{-1}) - aluminium	<1500	
Temperature range (°C)	Ambient ...370	
Weight (kg)	2,6	2,7
W×D×H (mm)	165×280×115	

Description	Pk	Cat. No.
AREX Digital with PT100 probe	1	**442-0998**
AREX Digital PRO with VTF digital thermoregulator	1	**442-0999**

Description	For	Pk	Cat. No.
AluBlocks™ for ARE, AREX, T.ARE, ARED and AM4 Stirrers			
Base	for different AluBlocks™	1	**442-1077**
Orange AluBlock™, 4 positions	tubes with Øxh: 28×43 mm	1	**442-1078**
Green AluBlock™, 4 positions	tubes with Øxh: 28×30 mm	1	**442-1079**
Black AluBlock™, 4 positions	tubes with Øxh: 28×24 mm	1	**442-1080**
Red AluBlock™, 4 positions	tubes with Øxh: 21,6×31,7 mm	1	**442-1081**
Blue AluBlock™, 6 positions	tubes with Øxh: 17,8×26 mm	1	**442-1082**
Gold AluBlock™, 11 positions	tubes with Øxh: 15,2×20 mm	1	**442-1083**
Round bowl for heating 100 ml flasks	RC, RC2, ARE, AREX, AREC, T.ARE, ARED and AM4	1	**453-0144**
Round bowl for heating 250 ml flasks	RC, RC2, ARE, AREX, AREC, T.ARE, ARED and AM4	1	**453-0123**
Round bowl for heating 500 ml flasks	RC, RC2, ARE, AREX, AREC, T.ARE, ARED and AM4	1	**453-0122**
Round bowl for heating 1000 ml flasks	RC, RC2, ARE, AREX, AREC, T.ARE, ARED and AM4	1	**453-0124**

Multi-position magnetic hotplate stirrers, RT 5/10/15 power IKAMAG®
IKA

RT 10 power



RT 15 power

RT 5 power

High performance magnetic hotplate stirrers with 5, 10 or 15 stirring positions and integrated temperature control plate.

- Space-saving design
- Stirrers operate simultaneously
- Ideal for series experiments due to precise and consistent temperature distribution
- Can be used at 5 to 40 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 42

Model	RT 5 power	RT 10 power	RT 15 power
Deviation for individual stirring position (%)	5		
Heat output (W)	175	375	580
Max. stirring capacity H_2O (ml)	400 at each position		
No. of stirring positions	5; 90 mm between each	10; 90 mm between each	15; 90 mm between each
Plate dimensions (mm)	120×450	180×450	270×450
Power input/output (W)	7,2/1,8	14,4/3,6	21,6/5,4
Speed range (min^{-1})	0 - 1100		
Temperature consistency in the medium (K)	±2		
Temperature range (°C)	Ambient to max 120 °C (surface) or 70 °C (liquid)		
Weight (kg)	3	4,2	6
W×D×H (mm)	138×552×65	198×552×65	288×552×65

Description	Pk	Cat. No.
RT 5 power IKAMAG® magnetic hotplate stirrer, UK-plug	1	**442-2381**
RT 10 power IKAMAG® magnetic hotplate stirrer, UK-plug	1	**442-2385**
RT 15 power IKAMAG® magnetic hotplate stirrer, UK-plug	1	**442-2388**

Caution: Maximum media temperature (depending on the nature of the container) +70 °C.

Multi-position magnetic hotplate stirrers, RT 5/10/15
IKA

Multi-position digital magnetic hotplate stirrers with 5, 10 or 15 stirring positions, designed for synchronous heating and stirring, suitable for continuous operation. The wear-free magnetic coils provide noiseless and consistent stirring at all positions. Screening can be performed under reproducible conditions. The surface temperature is infinitely adjustable up to 120 °C, producing a maximum medium temperature of 70 °C (depending on type of vessel). Speed remains constant, even when load changes.

- Homogeneous temperature distribution across the heating plate
- Adjustable and reversible operation
- Eco-mode ensures stirring activities do not warm hotplate surface
- Error code display and easy operation via touch keypad
- Adjustable speed in increments of 10 min^{-1}

IP protection class according to DIN EN 60529: IP 40

Model	RT 5	RT 10	RT 15
Deviation for individual stirring position (%)	0		
Heat output (W)	175	375	580
Max. stirring capacity H_2O (ml)	400 at each position		
No. of stirring positions	5; 90 mm between each	10; 90 mm between each	15; 90 mm between each
Plate dimensions (mm)	110×495	180×495	270×495
Speed range (min^{-1})	0 - 1000		
Temperature range (°C)	Ambient to max 120 °C (surface) or 70 °C (liquid)		
Weight (kg)	4	7,5	10,5
W×D×H (mm)	120×610×60	190×610×60	280×610×60

Description	Pk	Cat. No.
RT 5 magnetic hotplate stirrer, UK-plug	1	**442-0954**
RT 10 magnetic hotplate stirrer, UK-plug	1	**442-0957**
RT 15 magnetic hotplate stirrer, UK-plug	1	**442-0960**

Magnetic hotplate stirrer, 3-position, SB162-3
Stuart

Multi-position magnetic hotplate stirrer which easily accepts 3×20 litre beakers. Stirrer is ideal for quality control applications where multiple samples require simultaneous heating and stirring under identical conditions. Robust aluminium/silicon alloy top plate provides very even plate temperature.

- Three independently controlled stirring/heating positions
- Separate "hot" warning lights for each plate which show when plate temperature is above 50 °C, even when unit is turned off
- Powerful magnets for strong magnetic coupling
- BioCote® antimicrobial protection

IP protection class according to DIN EN 60529: IP 21

Delivery information: Supplied complete with 3×25 mm PTFE coated magnetic stirring bars.

Model	SB162-3
Heat output (W)	3×700
Heated area (mm)	160×160
Max. stirring capacity H_2O (l)	15 at each position
No. of stirring positions	3
Plate dimensions (mm)	160×160
Power input/output (W)	2250
Speed range (min^{-1})	100 - 1500
Temperature range (°C)	Ambient...325
Weight (kg)	11
W×D×H (mm)	600×270×110

Description	Pk	Cat. No.
SB162-3 magnetic hotplate stirrer	1	**442-0332**

Multi-position magnetic hotplate stirrers
2mag

Stirring-heating plates have 6 or 15 powerful stirring positions. The units have a clear digital display for settings of stirrer speed, stirrer power and temperature of the integrated heater. The SoftStart procedure ensures reliable centering and safe acceleration of the stirring bar. The heating plate is made of aluminium alloy, PTFE coated for chemical resistance and easy cleaning.

- Maintenance- and wear-free inductive drive
- Stirrer has ten step power settings
- 100% synchronised, jerk-free stirring
- Independent over-temperature protection inside the heating plate

Delivery information: Supplied with 2mag heatMIXcontrol control unit with EU, UK or CH-plug and adjustable over-temperature limiter for the additional protection of the heating controller.

Model	15 positions
Max. stirring capacity H_2O (ml)	1000 at each position
No. of stirring positions	15; 65 mm between each
Plate dimensions (mm)	250×430
Speed range (min^{-1})	100 - 2000
Temperature range (°C)	Ambient to 200
Weight (kg)	±15
W×D×H (mm)	250×430×75

Description	Pk	Cat. No.
With 15 positions		
Magnetic hotplate stirrer, 15 positions, UK-plug	1	**442-0948**

Description	Pk	Cat. No.
Accessories		
Extension for control unit SafeControl, temperature sensor PT100 for direct control of media temperature	1	**442-0831**
Asteroid 40 stirring bar, triangular, concave, PTFE, Ø 28 × 40 mm	1	**442-0815**

Magnetic hotplate stirrer, multi-position, AM4

Multiple-position hot plate stirrer with four separately controlled stirring plates coated with aluminium alloy provides uniform heat distribution.

- AM4 has four independently controlled positions
- High power PCM-type driving magnet
- Control panel is IP 42 protected from liquid spills with run-off groove

IP protection class according to DIN EN 60529: IP 21

Model	AM4
Heat output (W)	2550
Heated area (mm)	4× Ø155
No. of stirring positions	4
Overall W×D×H (mm)	715×220×115
Plate dimensions (mm)	Ø 155
Speed range (min^{-1})	50 - 1200
Temperature range (°C)	370
Weight (kg)	8,3 kg

Description	Pk	Cat. No.
AM4 multi-position magnetic hotplate stirrer	1	**442-0932**

DrySyn® heating blocks
Asynt

The DrySyn heating block range is the alternative to oil baths and heating mantles. The systems offer clean, safe synthesis for single or multiple reactions.

- Compatible with any magnetic hotplate stirrer
- Safe and rapid temperature ramping to over 300 ºC
- Accommodates the full range of standard round bottomed flasks, compatible with multi neck flasks
- Low well design prevents cracking of glassware and increases reaction visibility
- Chemical and solvent resistant clear anodised finish
- Heat-resistant handles for safe and easy lifting

Description	Pk	Cat. No.
DrySyn® single-position heating blocks. For single reactions from 50 ml up to 5000 ml flasks		
DrySyn Classic, kit with 1000 ml base and four inserts for 50 ml, 100 ml, 250 ml and 500 ml flasks	1	**460-0124**
DrySyn Maxi, kit with 3000 ml base and insert for 2000 ml flasks	1	**442-0872**
DrySyn SuperMaxi, for 5000 ml flasks	1	**442-0851**
Accessories and options for DrySyn® Classic		
DrySyn Classic base for 1000 ml flasks	1	**442-0868**
DrySyn Classic 50 ml flask insert fits DrySyn Classic base	1	**442-0866**
DrySyn Classic 100 ml flask insert fits DrySyn Classic base	1	**442-0864**
DrySyn Classic 250 ml flask insert fits DrySyn Classic base	1	**442-0865**
DrySyn Classic 500 ml flask insert fits DrySyn Classic base	1	**442-0867**
DrySyn Classic pressure reactor adapter, fits pressure reactors of Ø 51 mm fits DrySyn Classic base	1	**442-0869**
DrySyn® multi-position heating blocks. For multiple reactions from 1 ml vials up to 500 ml flasks		
DrySyn Multi, kit with base plate and 3×25 ml, 3×50 ml, and 3×100 ml flask inserts	1	**460-0125**
DrySyn Multi-M, kit with base plate and 3×100 ml and 3×250 ml flask inserts	1	**460-0126**
DrySyn Multi-S, kit with base plate and 3×250 ml, and 3×500 ml flask inserts	1	**442-0856**
Accessories and options for DrySyn® multi-position heating blocks		
DrySyn Multi 5 ml flask inserts, compatible with all base plates	3	**442-0876**
DrySyn Multi 10 ml flask inserts, compatible with all base plates	3	**442-0873**
DrySyn Multi 25 ml flask inserts, compatible with all base plates	3	**442-0875**
DrySyn Multi 50 ml flask inserts, compatible with all base plates	3	**442-0877**
DrySyn Multi 100 ml flask inserts, compatible with all base plates	3	**442-0874**
DrySyn Multi starter kit, base plate and 1×25 ml, 1×50 ml and 1×100 ml flask inserts	1	**442-0878**
DrySyn Multi base plate	1	**442-0849**
DrySyn Multi three position clamp, for use with base 460-0125	1	**460-0132**
DrySyn Multi four position reaction vial inserts, for 16 mm vials	3	**460-0127**
DrySyn Multi four position reaction vial inserts, for 17,2 mm vials	3	**460-0128**
DrySyn Multi four position reaction vial inserts, for 20 mm vials	3	**460-0129**
DrySyn Multi four position reaction vial inserts, for 24,2 mm vials	3	**460-0130**
DrySyn Multi four position reaction vial inserts, for 25,5 mm vials	3	**460-0131**
DrySyn Multi four position reaction vial inserts, for custom made to fit other size vials. Minimum order 3× packs	3	**442-0850**
DrySyn Multi-M 250 ml flask inserts	3	**442-0852**
DrySyn Multi-M starter kit, base plate and 3×250 ml flask inserts	1	**442-0853**
DrySyn Multi-M base plate	1	**442-0854**
DrySyn Multi-M three position clamp	1	**460-0133**
DrySyn Multi-M super kit, base plate, with 12 flask inserts (3×50 ml, 3×100 ml and 3×250 ml)	1	**442-0855**
DrySyn Multi-S 500 ml flask inserts	3	**442-0857**
DrySyn Multi-S starter kit, base plate and 3×500 ml flask inserts	1	**442-0858**
DrySyn Multi-S base plate	1	**442-0859**
DrySyn Multi-S three position clamp	1	**442-0860**
DrySyn Multi Safety Lifting Handle, compatible with all DrySyn Multi units	1	**442-0863**

DrySyn® single- and multi-position cooling blocks, DrySyn COOL and Multi COOL

For controlled cooling of 25 ml to 1000 ml flasks without using jacketed reaction vessels. Units allow active temperature control from 150 °C to -30 °C (depending on circulator specification).

- Compatible with all standard laboratory circulator or chiller systems and any standard magnetic stirrer or overhead stirrer
- Compatible with standard laboratory round bottom flasks
- Precise temperature control of cooling block or flask contents (depending on circulator used)
- Unattended operation allows for overnight cooled reactions
- Possible to programme and control cooling/heating ramp rates (depending on circulator used)

Description	Pk	Cat. No.
DrySyn Multi COOL, kit with 1 base plate, 2 hose barb connectors, 3×25 ml, 3×50 ml , 3×100 ml flask inserts and flask seals	1	**442-0870**
DrySyn COOL, kit with 1 base plate, 2 hose barb connectors, 1×50 ml, 1×100 ml, 1×250 ml, 1×500 ml, 1×1000 ml flask inserts and flask seals	1	**442-0861**

Description	Pk	Cat. No.
DrySyn® single- and multi-position cooling blocks, DrySyn COOL and Multi COOL		
Adapters for DrySyn COOL and DrySyn Multi COOL, allows linking to M16 insulated hoses	2	**442-0862**

DrySyn® heating blocks, DrySyn® Vortex

For overhead stirring of three reactions using only one overhead stirrer.

- Can be used with all standard hotplate stirrers or as stand-alone
- Excellent stirring for viscous solutions
- Compatible with DrySyn Multi system inserts, accommodates 3×100 ml, 3×250 ml and 3×500 ml flasks
- Compatible with standard laboratory round bottom flasks

Description	Pk	Cat. No.
DrySyn Vortex, kit with 1 vortex overhead stirrer, 3 stirrers, 3 guides and 3×500 ml flask inserts	1	**442-0871**

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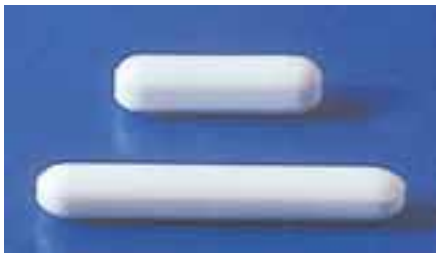
Magnetic stirring bars, micro



PTFE covered, strong Alnico V magnetic core. Round, smooth surface. For use in the smallest containers.

- Very good chemical resistance
- Temperature resistant, suitable for high and low temperature applications (–200 to +280 °C)

Length (mm)	Ø (mm)	Pk	Cat. No.
White			
2	2	10	442-0359
3	3	10	442-0360
5	2	10	442-0361
6	3	10	442-0362
7	2	10	442-0363
8	1,5	10	442-0364
8	3	5	442-0594
10	3	10	442-0365
13	3	10	442-0366
15	1,5	10	442-0367
20	3	10	442-0368
Blue			
2	2	10	442-0447
3	3	10	442-0450
5	2	10	442-0453
6	3	10	442-0456
7	2	10	442-0459
8	1,5	10	442-0462
8	3	5	442-0595
10	3	10	442-0465
13	3	10	442-0468
15	1,5	10	442-0471
Red			
2	2	10	442-0448
3	3	10	442-0451
5	2	10	442-0454
6	3	10	442-0457
7	2	10	442-0460
8	1,5	10	442-0463
8	3	5	442-0596
10	3	10	442-0466
13	3	10	442-0469
15	1,5	10	442-0472
Yellow			
2	2	10	442-0449
3	3	10	442-0452
5	2	10	442-0455
6	3	10	442-0458
7	2	10	442-0461
8	1,5	10	442-0464
8	3	5	442-0597
10	3	10	442-0467
13	3	10	442-0470
15	1,5	10	442-0473

Magnetic stirring bars, plain, economy

PTFE covered, strong Alnico V magnetic core. Smooth surface with rounded edges which enhance agitation effect even at low speeds. Inexpensive, high performance.

- Very good chemical resistance
- Temperature resistant, suitable for use at high and low temperatures (–200 to +280 °C)

Length (mm)	Ø (mm)	Pk	Cat. No.
12	3	10	442-0482
25	8	10	442-0483
40	8	5	442-0484
50	8	5	442-0485

Magnetic stirring bars, plain

PTFE covered, strong Alnico V magnetic core. Smooth surface with rounded edges that intensify the stirring effect, even at low speeds.

- Very good chemical resistance
- Temperature resistant, suitable for high and low temperature applications (–200 to +280 °C)

Length (mm)	Ø (mm)	Pk	Cat. No.
10	6	10	442-0262
13	8	10	442-0263
15	4,5	10	442-0264
20	6	10	442-0265
20	7	10	442-0266
25	6	10	442-0267
25	10	10	442-0268
30	7	10	442-0269
35	10	10	442-0270
40	8	5	442-0271
50	10	5	442-0272
57	27	5	442-0278
60	7	5	442-0273
65	13	5	442-0274
70	10	5	442-0275
75	13	5	442-0276
80	10	5	442-0277
108	27	5	442-0279
159	27	5	442-0280

Magnetic stirring bars, rectangular

PTFE covered, strong Alnico V magnetic core. Smooth surface. Very effective stirrer, especially at low speeds.

- Very good chemical resistance
- Temperature resistant, suitable for use at high and low temperatures (–200 to +280 °C)

Length (mm)	Height (mm)	Pk	Cat. No.
12	4	10	442-0486
25	5,5	10	442-0487
35	6	10	442-0488
50	7,5	5	442-0489

Magnetic stirring bars, cylindrical

PTFE covered, strong Alnico V magnetic core. Rounded, smooth surface.

- Very good chemical resistance
- Temperature resistant, suitable for use at high and low temperatures (–200 to +280 °C)

Length (mm)	Ø (mm)	Pk	Cat. No.
6	3	10	442-0259
8	3	10	442-4520
10	6	10	442-0295
12	4,5	10	442-4521
15	4,5	10	442-4522
20	6	10	442-4523
25	6	10	442-4524
30	6	5	442-4525
35	6	5	442-4530
40	8	5	442-4527
50	8	5	442-4528
60	10	5	442-4529
70	10	5	442-0260
80	10	5	442-0261

Magnetic stirring bars, cylindrical, with centre ring

PTFE covered, strong Alnico V magnetic core. Smooth surface. For containers with slightly uneven bases.

- Very good chemical resistance
- Temperature resistant, suitable for use at high and low temperatures (–200 to +280 °C)

Length (mm)	Ø (mm)	Pk	Cat. No.
8	3	10	442-4500
12	6	10	442-4501
15	4,5	10	442-4502
15	8	10	442-4503
20	6	10	442-4504
25	6	10	442-4505
25	10	10	442-4506
30	6	10	442-4507
35	6	10	442-4508
40	8	10	442-4509
45	8	10	442-4510
50	8	5	442-4511
57	24	1	442-0256
60	10	5	442-4512
70	10	5	442-4513
108	24	1	442-0257
159	24	1	442-0258

Magnetic stirring bars, cylindrical, with removable pivot ring

PTFE covered, strong Alnico V magnetic core. Smooth surface. For containers with slightly uneven bases.

- Very good chemical resistance
- Temperature resistant, suitable for use at high and low temperatures (–200 to +280 °C)

Length (mm)	Ø (mm)	Pk	Cat. No.
12	8	10	442-0369
25	8	10	442-0371
32	8	10	442-0373
38	8	10	442-0374
38	10	10	442-0375
42	10	5	442-0376
51	8	5	442-0378
51	10	5	442-0379
75	12	5	442-0381
102	16	1	442-0382
127	16	1	442-0383
150	19	1	442-0384

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Magnetic stirring bars, octagonal, with pivot ring

PTFE covered, strong Alnico V magnetic core. Smooth surface. For use in containers with bases that are slightly uneven or curved.

- Very good chemical resistance
- Temperature resistant, suitable for high and low temperature applications (–200 to +280 °C)

Length (mm)	Ø (mm)	Pk	Cat. No.
White			
13	3	10	442-0281
13	8	10	442-0282
13	10	10	442-0283
15	8	10	442-0284
22	8	10	442-0286
25	8	10	442-0345
25	10	10	442-0346
28	8	10	442-0347
38	8	10	442-0349
38	10	10	442-0350
41	8	5	442-0352
51	8	5	442-0354
51	10	5	442-0355
64	8	5	442-0356
64	10	5	442-0357
75	13	5	442-0358
Blue			
13	3	10	442-0423
13	8	10	442-0426
15	8	10	442-0429
22	8	10	442-0432
25	8	10	442-0435
38	8	10	442-0438
51	8	5	442-0441
75	13	5	442-0444
Red			
13	3	10	442-0424
13	8	10	442-0427
15	8	10	442-0430
22	8	10	442-0433
25	8	10	442-0436
38	8	10	442-0439
51	8	5	442-0442
75	13	5	442-0445
Yellow			
13	3	10	442-0425
13	8	10	442-0428
15	8	10	442-0431
22	8	10	442-0434
25	8	10	442-0437
38	8	10	442-0440
51	8	5	442-0443
75	13	5	442-0446

Magnetic stirring bars, oval

PTFE covered, Alnico V magnetic core. Smooth surface. Designed for use in round bottomed flasks.

- Very good chemical resistance
- Temperature resistant, suitable for high and low temperature applications (–200 to +280 °C)

Length (mm)	Ø (mm)	Pk	Cat. No.
10	5	10	442-0401
15	6	10	442-0402
20	10	10	442-0403
25	12	10	442-0404
30	16	10	442-0405
35	16	10	442-0406
40	20	5	442-0407
50	20	5	442-0408
64	20	5	442-0409
70	20	5	442-0410

Magnetic stirring bars, elliptical, rare earth

PTFE covered, rare earth magnetic core. The magnetic core is made from a combination of samarium and cobalt. The stirrers will continue to function at full strength for many years as the magnetism remains for longer. They are identified by an inert carbon black spot.

- Magnetic attraction is 1,5 to 2 times stronger than conventional stirrers
- Very good chemical resistance
- Temperature resistant, suitable for use at high and low temperatures (–200 to +280 °C)

Length (mm)	Ø (mm)	Pk	Cat. No.
10	6	10	**442-0503**
15	10	10	**442-0504**
25	14	10	**442-0505**
50	24	5	**442-0506**
70	28	5	**442-0507**

Magnetic stirring bars, triangular

PTFE covered, strong Alnico V magnetic core. Smooth surface. Particularly effective for dissolving solids and mixing sediments because of the scraper like action on the base of the container.

- High turbulence, even at low speeds
- Very good chemical resistance
- Temperature resistant, suitable for high and low temperature applications (–200 to +280 °C)

Length (mm)	Ø (mm)	Pk	Cat. No.
12	6	10	**442-0385**
20	8	10	**442-0386**
25	8	10	**442-0387**
35	9	10	**442-0388**
40	14	5	**442-0389**
50	12	5	**442-0390**
80	18	5	**442-0391**
110	36	1	**442-0392**
136	36	1	**442-0393**

Magnetic stirring bars, double ended

PTFE covered, strong Alnico V magnetic core. Smooth surface. Very good centring, small footprint and high turbulence even at low speeds. Disc diameter 20 mm, rod diameter 8 mm.

- Very good chemical resistance
- Temperature resistant, suitable for use at high and low temperatures (–200 to +280 °C)

Length (mm)	Ø (mm)	Pk	Cat. No.
White			
35	8	10	**442-0474**
55	8	5	**442-0478**
Blue			
35	8	10	**442-0475**
55	8	5	**442-0479**
Red			
35	8	10	**442-0476**
55	8	5	**442-0480**
Yellow			
35	8	10	**442-0477**
55	8	5	**442-0481**

Note: Coloured PTFE coatings are not as inert as pure PTFE.

Magnetic stirring bars, cross-shaped

PTFE covered, strong Alnico V magnetic core. Smooth surface. Stable rotating position for optimal stirring effect.

- Very good chemical resistance
- Temperature resistant, suitable for high and low temperature applications (–200 to +280 °C)

Height (mm)	Ø (mm)	Pk	Cat. No.
5	10	10	442-0394
8	20	10	442-0395
9	25	10	442-0396
10	30	10	442-0397
11	38	10	442-0398
15	50	10	442-0399
20	60	10	442-0400

Magnetic stirrers, with crosshead

PTFE covered, strong Alnico V magnetic core. Smooth surface. Particularly suitable for small stirring vessels, extremely effective stirring action.

- Very good chemical resistance
- Temperature resistant, suitable for high and low temperature applications (–200 to +280 °C)

Height (mm)	Ø (mm)	Pk	Cat. No.
With crosshead on one side			
8	10	10	442-0417
12	14	10	442-0418
13	17	10	442-0419
15	25	10	442-0420
17	40	10	442-0421
17	60	10	442-0422
With crosshead on both sides			
8	10	10	442-0411
10	14	10	442-0412
13	17	10	442-0413
14	40	5	442-0415
15	22	10	442-0414
15	60	5	442-0416

Magnetic stirring discs

PTFE covered, strong Alnico V magnetic core. The special shape with raised surface in the centre ensures very good agitation even at low speeds. Ideal for use in glass beakers.

- Very good chemical resistance
- Temperature resistant, suitable for use at high and low temperatures (–200 to +280 °C)

Length (mm)	Ø (mm)	Pk	Cat. No.
45	27	5	442-0490
62	37	5	442-0491
70	37	5	442-0492

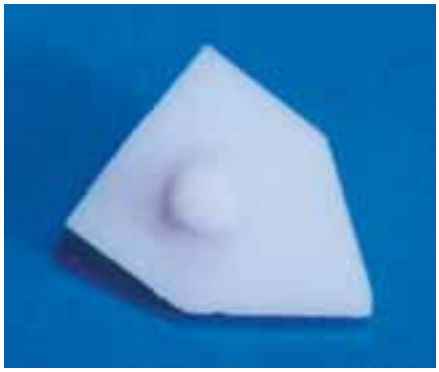
Magnetic stirrer for cuvettes

PTFE covered, strong Alnico V magnetic core. Designed for agitating in 10 mm standard cuvettes.

- Very good chemical resistance
- Temperature resistant, suitable for use at high and low temperatures (–200 to +280 °C)

Height (mm)	Ø (mm)	Pk	Cat. No.
6	9	10	**442-0502**

Magnetic wing stirrers, micro



PTFE covered, Alnico V magnetic core. Smooth surface. For stirring in test tubes, centrifuge tubes and micro vials. The wings can also be trimmed to size if needed.

- Very good chemical resistance
- Temperature resistant, suitable for use at high and low temperatures (–200 to +280 °C)

Height (mm)	Ø (mm)	Pk	Cat. No.
Triangular			
9	5,5	10	**442-0493**
11	8	10	**442-0494**
16	10	10	**442-0495**
Semicircular			
10	13	10	**442-0496**
20	13	10	**442-0497**

Magnetic stirring bars, glass-covered

Cylindrical, with Alnico V magnetic core.

- Poreless, track neutral, extremely smooth surface
- Very good chemical resistance

Length (mm)	Ø (mm)	Pk	Cat. No.
6	5	10	**442-0508**
12	5	10	**442-0509**
25	6	10	**442-0510**
45	8	5	**442-0511**
60	8	5	**442-0512**

Magnetic stirring bars, floating, Nalgene®
Thermo Scientific

Floating stirring bar with PTFE coated Alnico V magnet, which is slightly raised off the bottom of the vessel to minimise grinding effect on cells. Legs can be compressed to fit through small openings.

- Ideal for low speed stirring action in tissue culture applications
- Constant action at low speeds
- Autoclavable

Length (mm)	Ø (mm)	For	Pk	Cat. No.
28	54	250	1	**442-0218**
30	92	1000	1	**442-0220**
31	155	4000	1	**442-0222**

VWR COLLECTION

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Magnetic stirring bars, boxed sets

Set Octahedral 1, **PTFE** covered, 12 octagonal magnetic stirring rods with centre ring, in practical, transparent box.
Set includes two stirrers with each of following dimensions, L×Ø (mm): 13×8, 15×8, 25×10, 38×10, 51×10 and 64×10.

Set Cross-Shaped, **PTFE** covered, 5 cross-shaped magnetic stirring rods. in practical, transparent box.
Set includes one stirrer with each of following dimensions, L×Ø (mm): 10×10, 20×20, 25×25, 30×30, and 38×38.

Set Oval 1, **PTFE** covered, 12 oval magnetic stirring rods in practical, transparent box.
Set includes two stirrers with each of following dimensions, L×Ø (mm): 10×5, 15×6, 25×10, 30×10 and 35×13. Set also includes one stirrer with each of following dimensions, L×Ø (mm): 50×17 and 70×27.

Set Oval 2, **PTFE** covered, 13 oval magnetic stirring rods in practical, transparent box.
Set includes two stirrers with each of following dimensions, L×Ø (mm): 20×10, 25×12, 30×16, 35×16, 40×20, and 50×20. Set also includes one stirrer with following dimensions, L×Ø (mm): 70×20.

Set Coloured Micro, **PTFE** covered, 12 coloured micro magnetic stirring rods in practical, transparent box.
Set includes one stirrer in each colour (blue/red/yellow) with following dimensions L×Ø (mm): 8×1,5, 5×2, 7×2 and 10×3.

Set Coloured Standard, **PTFE** covered, 24 coloured octagonal magnetic stirring rods with centre ring in practical, transparent box.
Set includes one stirrer in each colour (blue/red/yellow) with following dimensions L×Ø (mm): 13×3, 13×8, 15×8, 22×8, 25×8, 38×8, 51×8 and 75×13.

Set Polygon 1, **PTFE** covered, 18 cylindrical magnetic stirring bars in practical, transparent box.
Set includes two stirrers with each of following dimensions, L×Ø (mm): 10×6, 15×4,5, 20×6, 25×6, 30×6, 40×8, 50×8, 60×10 and 70×10.

Set Polygon 2, PTFE covered, 18 cylindrical magnetic stirring bars in practical, transparent box.
Set includes two stirrers with each of following dimensions, L×Ø (mm): 10×6, 15×4,5, 20×6, 25×6, 30×6, 40×8, 50×8, 60×10 and 70×10.

Set Mix 1, **PTFE** covered, 22 cylindrical magnetic stirring bars, 16 with removable pivot ring, in practical, transparent box.
Set includes two stirrers with each of following dimensions, L×Ø (mm): 13×8, 13×10, 20×8, 25×8, 25×10, 38×8, 42×10, 51×8 and 51×10. Set also includes one stirrer with each of following dimensions, L×Ø (mm): 32×8, 32×10, 38×10 and 45×8.

Set Mix 2, **PTFE** covered. Set of 14 magnetic stirring bars: Four micro and 10 octagonal with centre ring, in practical, transparent box.
Set includes two stirrers with each of following dimensions, L×Ø (mm): 7×2, 10×3, 13×8,15×8, 25×10, 38×10 and 51×10.

Type	Pk	Cat. No.
Octahedral 1	1 SET	**442-0513**
Cross-Shaped	1 SET	**442-0522**
Oval 1	1 SET	**442-0514**
Oval 2	1 SET	**442-0517**
Coloured Micro	1 SET	**442-0516**
Coloured Standard	1 SET	**442-0518**
Polygon 1	1 SET	**442-0515**
Polygon 2	1 SET	**442-0519**
Mix 1	1 SET	**442-0520**
Mix 2	1 SET	**442-0521**

Magnetic stirring bar retrievers

PTFE covered, strong Alnico V magnetic core. For the removal of stirring magnets from vessels of all kinds.

- Very good chemical resistance
- Temperature resistant, suitable for use at high and low temperatures (–200 to +280 °C)

Length (mm)	Ø (mm)	Pk	Cat. No.
150	10	1	**442-0523**
250	10	1	**442-0524**
350	10	1	**442-0525**
450	10	1	**442-0526**

Magnetic stirring bar retrievers

PTFE covered, rare earth magnetic core. For the removal of stirring magnets from vessels of all kinds.

- Very good chemical resistance
- Temperature resistant, suitable for use at high and low temperatures (–200 to +280 °C)

Length (mm)	Ø (mm)	Pk	Cat. No.
150	10	1	**442-4549**
250	10	1	**442-4550**
350	10	1	**442-4551**
450	10	1	**442-4552**

Vortex mixer, lab dancer

Vortex mixer suitable for single small containers up to 30 mm in diameter, for example test tubes, centrifuge tubes and microtubes. The upper casing is PP and the test tube surface is made from inert TPU plastic; the bottom section is a coated, zinc die-casting.

- Small, compact and reliable
- Excellent mixing action

IP protection class according to DIN EN 60529: IP 40

Delivery information: Supplied with 12 V power pack set.

Model	lab dancer
Max. capacity (ml)	50
Motor input/output (W)	1,2/0,8
Orbital diameter (mm)	4,5
Shaking motion	Orbital
Speed range (min^{-1})	2800 fixed
Weight (kg)	0,55
Ø×H (mm)	100×70

Description	Pk	Cat. No.
Vortex mixer, lab dancer, EU/UK-plug	1	**444-0004**

Description	Pk	Cat. No.
Accessories		
Replacement rubber head	1	**444-0010**

Vortex mixer, VV3

Vortex mixer suitable for a range of different applications due to 3 interchangeable attachments and various inserts. Microtubes, microtitre plates, even 250 ml Erlenmeyer flasks can be attached by means of the specially designed strap. Attachments click securely onto the unit in any position. The unit is sturdy with coated, zinc die-casting.

- Small and compact design
- Wide speed range, infinitely adjustable
- Touch or continuous mode

IP protection class according to DIN EN 60529: IP 21

Delivery information: Supplied with standard attachment for test tubes or small beakers.

Model	VV3
Max. capacity (ml)	250
Motor input/output (W)	58/10
Orbital diameter (mm)	4
Shaking motion	Orbital
Speed range (min^{-1})	500 - 2500*
Weight (kg)	4,5
W×D×H (mm)	127×149×136

Description	Pk	Cat. No.
VV3 Vortex mixer, UK-plug	1	**444-0093**

Continued on next page

Continued from previous page

Description	For	Pk	Cat. No.
Accessories			
Flask attachment for Erlenmeyer or round bottom flasks, 100 up to 250 ml**	Continuous mode	1	**412-0107**
Attachment for single-handed operation, 88 mm round with rubber insert	Continuous or touch mode	1	**412-0100**
Universal attachment, 150 mm with rubber insert	Continuous mode	1	**412-0101**
Test tube attachment, for 18 reagent tubes, 10 mm**	Continuous mode	1	**412-0103**
Test tube attachment, for 12 reagent tubes, 12 mm**	Continuous mode	1	**412-0104**
Test tube attachment, for 8 reagent tubes, 16 mm**	Continuous mode	1	**412-0105**
Test tube attachment, for 8 reagent tubes, 20 mm**	Continuous mode	1	**412-0106**
Test tube attachment, for 54 microcentrifuge tubes, 1,5/2,0 ml**	Continuous mode	1	**412-0102**
Microtitre plate attachment for 1 standard microtitre plate**	Continuous mode	1	**441-0036**
Standard attachment for test tubes, or small beakers	Continuous or touch mode	1	**412-0099**

* Depending on attachment and loading
** Use in combination with 412-0101

Vortex mixers

Designed for vigorous, uniform vortexing action in a wide variety of applications with minimal vibration. Use with flasks, beakers, tubes and microtitre plates. Variable speed control allows low rpm start-up and gentle shaking of samples. Heavy base casting with corrosion resistant enamel finish; units will remain stable on the work bench. The Digital vortex mixer is ideal for applications that demand repeatable results. It features touch pad controls and LED displays for accurate speed and time results. Timer will display elapsed time or when programmed to a user-defined time limit, the unit will shut off when time reaches zero. Choose from two modes of operation; continuous mode when using accessory attachments or touch mode which activates mixing when depressing the cup head.

- Variable speed control
- Continuous or touch mode
- Digital model has microprocessor controls, LED display for speed and time
- Digital model has timer function

Delivery information: Supplied with a cup head for touch mixing tubes and small vessels and 76 mm head with cover for easy touch mixing of beakers and flasks. Other accessories must be ordered separately.

Model	Digital vortex mixer	Analogue vortex mixer
Motor input (W)	150	
Orbit (mm)	4,9	
Shaking motion	Orbital	
Speed range (min^{-1})	500 - 2500*	300 - 2500*
Weight (kg)	5	5,5
W×D×H (mm)	131×194×135	

Description	Pk	Cat. No.
Digital vortex mixer, UK-plug	1	**444-0203**
Analogue vortex mixer, UK-plug	1	**444-2791**

* Depending on attachment and loading. If foam inserts with the insert retainer are used, the maximum recommended speed is 900 min^{-1}.

Vortex mixer, pulsing

Powerful pulsing vortex action produces excellent cell disruption for glass bead procedures. The pulsing vortex mixer is capable of complete cell disruption of samples in only minutes. Unique pulsing action reduces heat generation while providing more effective mixing and disruption. System includes an easy to load holder for 12×1,5 ml or 2,0 ml microcentrifuge tubes. The microtube holder has a built-in cup head which allows the mixer to be used as a standard vortex mixer in touch mode. Microprocessor feedback control maintains set speed for strong, consistent mixing action. LED displays for both speed and time which provides better repeatability and accuracy.

- Glass bead cell disruption/homogenisation
- Continuous or touch modes
- Microprocessor controls
- LED display for speed and time

Delivery information: Supplied with an easy to load holder for 12×1,5 ml or 2,0 ml microcentrifuge tubes with a built-in cup head, a standard cup head and one of Ø 76 mm.

Model	Pulsing vortex mixer
Max. capacity	12 microcentrifuge tubes
Motor input (W)	150
Orbit (mm)	2,5
Speed range (min^{-1})	500 - 2500
Weight (kg)	5
W×D×H (mm)	131×194×135

Description	Pk	Cat. No.
Pulsing vortex mixer, UK-plug	1	**444-0205**

Accessories for VWR analogue, digital, and pulsing vortex shakers

Tube holder kit (444-7047)

Consists of:

- Insert retainer
- Tube holder for 24 tubes of 1,5/2,0 ml, 16 tubes of 0,5 ml, 8 tubes of 0,2 ml
- Tube holder for 10 tubes of Ø 9 mm, 8 tubes of Ø 13 mm
- Tube holder for 8 tubes of Ø 14 mm, 8 tubes of Ø 19 mm
- Tube holder for 8 tubes of Ø 25/29 mm, 5 tubes of Ø 20 mm
- 2 vessel harnesses (e.g. Erlenmeyer)
- Foam insert without holes

Attachment and foam inserts for microplates (444-0210)

- Set of 2 foam inserts for microplates (444-0219) and 1 insert retainer (444-7048)

Insert holder and foam inserts for microtubes (444-0209)

- Set of 2 foam inserts for microtubes (444-0218) and 1 insert retainer (444-7048)

Single tube holder (444-0217)

Fits all vortex shakers and holds tubes 64 to 114 mm length, minimum Ø 19 mm. Hands-free mixing. Simple assembly, no tools required.

- Holds 15 or 50 ml centrifuge tubes

Ampoule tube adapters (444-0212 and 444-0213)

With clamping devices for up to 4 vials or tubes. 2 sizes available.

- For vials/tubes 15 – 17 mm Ø
- For vials/tubes 10 – 17 mm Ø

Description	Pk	Cat. No.
Cup head and cup head cover complete, 76 mm Ø	1	**444-0208**
Microtube holder kit with retainer (detailed above)	1	**444-0209**
Microplate holder kit with retainer (detailed above)	1	**444-0210**
Foam insert, blank without holes*	2	**444-0211**
Ampoule tube adapters 15 - 17 mm Ø (detailed above)	1	**444-0212**
Ampoule tube adapters 10 - 17 mm Ø (detailed above)	1	**444-0213**
Holder for 12 x 1,5/2,0 microcentrifuge tubes (included with pulsating vortex mixer 444-0205)	1	**444-0214**
Tube holder for 0,5 ml microtubes for continuous operation, holds 24 tubes**	1	**444-0215**
Tube holder for 1,5/2,0 ml microtubes for continuous operation, holds 18 tubes**	1	**444-0216**
Single tube holder for 15 and 50 ml tubes, hands-free shaking, accommodates tube up to 15 cm long or adapter (444-0215 or 444-0216) for microtubes	1	**444-0217**
Foam insert for 48 x 0,25 - 2,0 ml microcentrifuge tubes, included in 444-0209*	2	**444-0218**
Foam insert microplate holder for 96 well plate or a deep well block, included in 444-0210*	2	**444-0219**

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Description	Pk	Cat. No.
Tube holder kit with retainer (detailed above)	1	**444-7047**
Insert retainer that holds the accessories (tubes, microplates, microtubes, etc) and the vessel harnesses	1	**444-7048**
Set of inserts to be used with insert retainer (444-7048) consists of: 1× foam insert without holes (444-0211), 1× foam insert to hold 9 - 13 mm tubes (444-7051), 1× foam insert to hold 14 - 19 mm tubes (444-7052), 1× foam insert to hold 20 - 29 mm tubes (444-7053)	1 SET	**444-7049**
Vessel harness for use with e.g. Erlenmeyer flasks*	2	**444-7050**
Foam insert for 9 – 13 mm Ø tubes (e.g. 5 ml culture tubes)*	1	**444-7051**
Foam insert for 14 – 19 mm Ø tubes (e.g. 15 ml centrifuge tubes)*	2	**444-7052**
Foam insert for 20 – 29 mm Ø tubes (e.g. 50 ml centrifuge tubes)*	2	**444-7053**
Cup head only, 76 mm Ø	1	**444-7058**
Head cover only for 444-7058, 76 mm Ø	1	**444-7059**
Small cup head	1	**444-7060**

* Can only be used with insert retainer 444-7048
** Can only be used with tube holder 444-0217

Vortex mixer

This vortex mixer combines state of the art electronics with design and comfort. Start the vortexing action by simply pressing down on the holder or platform. The heavy casing protects from splashes, while the round foot knobs ensure a secure positioning on the bench top and prevent "walking".

- 5 mm orbital vibration
- Option of intermittent or continuous operating modes
- Analogue speed setting dial for infinitely variable speeds

IP protection class according to DIN EN 60529: IP 22

Delivery information: Supplied with plate for 20 mm diameter test tubes. A large platform for flasks up to 50 ml is optionally available (see accessories).

Model	Vortex mixer
Max. capacity (ml)	50*
Motor input (W)	51
Orbit (mm)	5
Speed range (min^{-1})	0 - 2500
Weight (kg)	2,8
W×D×H (mm)	134×105×172

Description	Pk	Cat. No.
Vortex mixer, UK-plug	1	**444-1378**

Description	Pk	Cat. No.
Accessories		
Test tube holding device, holds one test tube securely during continuous shaking	1	**444-1388**
Large tray for 50 ml flasks, 62 mm Ø	1	**444-1383**
Replacement tray, small, 20 mm Ø	1	**444-1382**

* With optional accessories 444-1388 and 444-1383

Vortex mixer, VORTEX Genius 3
IKA

Vortex mixer with three interchangeable attachments and various inserts for different applications. Microcentrifuge tubes, microtitre plates, even round bottomed or 250 ml Erlenmeyer flasks can be attached by means of the specially designed strap. Attachments click securely onto the unit in any position. The unit is stable at high speeds and sturdy with coated, zinc die-casting.

- Compact design
- Wide speed range, infinitely adjustable
- Touch or continuous mode
- Can be used at 5 to 40 °C (80% relative humidity) in an incubator or cold room

IP protection class according to DIN EN 60529: IP 21

Ordering information: Supplied with standard attachment for test tubes or small beakers, 412-0099.

Model	VORTEX Genius 3
Motor input/output (W)	58/10

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Orbital diameter (mm)	4
Shaking motion	Orbital
Speed range (min^{-1})	500 - 2500*
Weight (kg)	4,5
W×D×H (mm)	127×149×136

Description	Pk	Cat. No.
VORTEX Genius 3, UK-plug	1	**412-0115**

Description	For	Pk	Cat. No.
Accessories			
Flask attachment for Erlenmeyer or round bottom flasks, 100 up to 250 ml**	Continuous mode	1	**412-0107**
Attachment for single-handed operation, 88 mm round with rubber insert	Continuous or touch mode	1	**412-0100**
Universal attachment, 150 mm with rubber insert	Continuous mode	1	**412-0101**
Test tube attachment, for 18 reagent tubes, 10 mm**	Continuous mode	1	**412-0103**
Test tube attachment, for 12 reagent tubes, 12 mm**	Continuous mode	1	**412-0104**
Test tube attachment, for 8 reagent tubes, 16 mm**	Continuous mode	1	**412-0105**
Test tube attachment, for 8 reagent tubes, 20 mm**	Continuous mode	1	**412-0106**
Test tube attachment, for 54 microcentrifuge tubes, 1,5/2,0 ml**	Continuous mode	1	**412-0102**
Microtitre plate attachment for 1 standard microtitre plate**	Continuous mode	1	**441-0036**
Standard attachment for test tubes, or small beakers	Continuous or touch mode	1	**412-0099**

* Depending on attachment and loading
** Use in combination with 412-0101

Vortex mixer, VORTEX 1
IKA

Test tube mixer with touch function and infinitely adjustable speed from 1000 to 2800 min^{-1}. Ideal for mixing small samples. Upper casing and test tube holder is made from inert plastic, the bottom of the unit is coated, zinc die-casting.

- Small, compact and reliable
- Designed for small containers up to 30 mm Ø, such as test tubes and centrifuge tubes
- Excellent mixing action

IP protection class according to DIN EN 60529: IP 40

Delivery information: Supplied with 12 V power pack.

Model	VORTEX 1
Max. capacity (kg)	0,1 including attachment
Max. capacity (ml)	100
Motor rating input/output (W)	1,2/0,8
Orbital diameter (mm)	4,5
Shaking motion	Orbital
Speed range (min^{-1})	1000 - 2800
Weight (kg)	0,55 kg
W×D×H (mm)	95×110×70

Description	Pk	Cat. No.
VORTEX 1, EU/UK/CH-plug	1	**444-0665**

Vortex mixers, VORTEX 4
IKA

VORTEX 4 basic

Compact universal mixers ideal for shaking small vessels or microtitre plates. These mixers feature two operating modes: **Mode A** (safe mode with attachment detection) means the maximum speed of 3000 min^{-1} is only reached using the standard attachment in touch mode. If other attachments are used, the speed is limited to 1300 min^{-1}. **Mode B** (without attachment detection) means a speed of 3000 min^{-1} is possible using all attachments. Mixers are stable at all speed ranges.

- Attachment detection
- Continuous or touch operation with standard attachment, in addition Vortex 4 digital offers timed mode
- Vortex 4 digital has a timer with countdown function, range 1 s to 999 min

IP protection class according to DIN EN 60529: IP 21

Delivery information: Vortex 4 basic is supplied with standard attachment for test tubes or small vessels up to 50 mm, universal attachment for various foam inserts, and one hand insert for use with universal attachment. Vortex 4 digital is supplied with the above and in addition includes the microtitre plate attachment and test tube insert with six holes of Ø 12 mm.

Model	VORTEX 4 basic	VORTEX 4 digital
Max. capacity (kg)	0,5 including attachment	
Motor rating input/output (W)	10/8	
Orbital diameter (mm)	4,5	
Shaking motion	Orbital	
Speed range (min^{-1})	0 - 3000	
Weight (kg)	3	
W×D×H (mm)	176×190×63	

Description	Pk	Cat. No.
VORTEX 4 basic, universal-plug	1	**444-0668**
VORTEX 4 digital, universal-plug	1	**444-0671**

Vortex mixers, MS 3
IKA

MS 3 basic

MS 3 digital

Compact universal mixers suitable for shaking tasks with all small vessels and microtitre plates. These mixers feature two operating modes:

Mode A (safe mode with attachment detection) means the maximum speed of 3000 min^{-1} is only reached using the standard attachment in touch mode. If other attachments are used, the speed is limited to 1300 min^{-1}.

Mode B (without attachment detection) means a speed of 3000 min^{-1} is possible using all attachments. Mixers are stable at all speed ranges and have sturdy zinc, die-cast casing.

- Continuous or touch operation with standard attachment, in addition MS 3 digital offers timed mode
- Attachment detection
- MS 3 digital has a timer with countdown function, range 1 s to 999 min

IP protection class according to DIN EN 60529: IP 21

Delivery information: MS 3 basic is supplied with standard attachment for test tubes or small vessels up to 50 mm, universal attachment for various foam inserts, and one hand insert for use with universal attachment. MS 3 digital is supplied with the above and in addition includes the microtitre plate attachment and test tube insert with six holes of Ø 12 mm.

Model	MS 3 digital	MS 3 basic
Max. capacity (kg)	0,5 including attachment	
Motor rating input/output (W)	10/8	
Orbital diameter (mm)	4,5	
Shaking motion	Orbital	
Speed range (min^{-1})	0 - 3000	

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Weight (kg)	2,9
W×D×H (mm)	148×205×63

Description	Pk	Cat. No.
MS 3 digital vortex mixer	1	**444-2541**
MS 3 basic vortex mixer	1	**444-2544**

Description	Pk	Cat. No.
Accessories		
Standard attachment for test tubes/vessels up to Ø 50 mm	1	**442-2233**
Microtitre plate attachment	1	**442-2234**
Universal attachment for various foam inserts	1	**442-2235**
One hand insert, for use with 442-2235	1	**444-0013**
Test tube insert, without holes, for use with 442-2235	1	**444-0018**
Test tube insert, holds 14 tubes Ø 10 mm, for use with 442-2235	1	**444-0015**
Test tube insert, holds 6 tubes Ø 12 mm, for use with 442-2235	1	**444-0016**
Test tube insert, holds 4 tubes Ø 16 mm, for use with 442-2235	1	**444-0017**

Vortex mixers, SA7 and SA8
Stuart

SA7

SA8

SA8 + cradle for standard microtitre plate

For rapid mixing of samples in test tubes, small flasks and bottles. The SA8 can agitate microtitre plates with optional accessory 444-1603. Robust die-cast body avoids unwanted movement during use. Integral retort rod fixing allows vessels to be secured for safer mixing for long periods.

- Ergonomic design
- SA7 has fixed speed and automatic start when cap is depressed
- SA8 has variable speed control and touch or continuous mode
- BioCote® antimicrobial protection

IP protection class according to DIN EN 60529: IP 45

Delivery information: Optional accessory pack for use with SA8, 444-1603 includes: 1× plastic cradle for standard microtitre plate, 1× circular foam insert for beakers and flasks up to 500 ml, 1× rectangular insert (which holds 8×0,2 ml, 8×0,5 ml and 16×1,5/2,0 ml microcentrifuge tubes) and 1× solid rectangular foam insert for custom drilling.

Model	SA7	SA8
Max. capacity (ml)	500	
Motor input (W)	20	
Orbit (mm)	4,2	
Shaking motion	Orbital	
Speed range (min^{-1})	2500 fixed	200 - 2500
Weight (kg)	3,2	
W×D×H (mm)	135×215×78	

Description	Pk	Cat. No.
SA7 fixed speed vortex mixer	1	**444-1601**
SA8 variable speed vortex mixer	1	**444-1602**

Description	Pk	Cat. No.
Accessories		
Accessory kit (only for SA8), containing 1× plastic cradle for standard microtitre plate, 1× circular foam insert for beakers and flasks up to 500 ml, 1× rectangular foam insert (holds 8×0.2 ml, 8×0.5 ml and 16×1.5/2.0 ml microcentrifuge tubes) and 1× solid rectangular foam insert for custom drilling.	1	**444-1603**
Retort rod, 300×12,5 mm for SA8 and SA7	1	**444-0112**

Vortex mixers, Vortex-Genie®

Scientific Industries

444-0060

Rugged and reliable vortex mixers with solid metal casing and rubber feet that prevent them "walking".
Vortex-Genie® 1 features touch-on operation and fixed speed, it is ideal for aggressive vortexing of difficult samples.

Vortex-Genie® 2 has variable speed for precise mixing from gentle to vigorous, it offers hands-free or touch-on control. Mixing action prevents spilling, even if tubes are uncapped.

Vortex-Genie® 2T has the same features as Vortex-Genie® 2, and in addition includes an integral timer function, it can also be used on continuous untimed mode.

- Wide range of attachments available
- Vortex-Genie® 2T timer function; touch-on 1 - 60 s, hands-free 1 - 60 min or continuous
- Can be used in cold room or incubator

Delivery information: Vortex-Genie® 1 is supplied with quick change standard pop-off cup for single test tubes. Optional 76 mm platform suitable for beakers, flasks and multiple tests tubes is available. Vortex-Genie® 2 and 2T are supplied with standard pop-off cup for single test tubes and 76 mm platform suitable for beakers, flasks and multiple tests tubes.

Model	Vortex-Genie® 1	Vortex-Genie® 2	Vortex-Genie® 2T
Max. capacity (ml)	500*		
Orbit (mm)	4		
Shaking motion	Orbital		
Speed range (min^{-1})	2700 fixed	600 - 2700	
Weight (kg)	4		
W×D×H (mm)	122×165×165		

Description	Pk	Cat. No.
Vortex-Genie® 1 vortex mixer, UK-plug	1	**444-0485**
Vortex-Genie® 2 vortex mixer, UK-plug	1	**444-0486**
Vortex-Genie® 2T vortex mixer, UK-plug	1	**444-0487**

Description	For	Pk	Cat. No.
Accessories			
Pop-off cup	Vortex-Genies®, Disruptor-Genie	1	**444-5901**
Platform, 152 mm, without insert (inserts listed below)	Vortex-Genies® except Vortex-Genie® 1	1	**444-5905**
Support for microtitre plates (fits in 152 mm platform)	Vortex-Genies® except Vortex-Genie® 1	2	**444-5919**
Adapter for 60 microtubes (fits in 152 mm platform)	Vortex-Genies® except Vortex-Genie® 1	2	**444-5921**
Two-tier insert for 96 well plate (fits in 152 mm platform)	Vortex-Genies® except Vortex-Genie® 1	1	**444-0061**
Recessed platform (foam inserts listed below)	Vortex-Genies® except Vortex-Genie® 1	1	**444-5916**
Foam insert, blank (without holes) (fits in recessed platform)	Vortex-Genies® except Vortex-Genie® 1	2	**444-5913**
Foam adapter for tubes 9 – 16 mm Ø (fits in recessed platform)	Vortex-Genies® except Vortex-Genie® 1	2	**444-5914**
Foam adapter for tubes 14 – 29 mm Ø (fits in recessed platform)	Vortex-Genies® except Vortex-Genie® 1	2	**444-5912**
Foam adapter for tubes 29 – 37 mm Ø (fits in recessed platform)	Vortex-Genies® except Vortex-Genie® 1	2	**444-5911**
Multiple sample starter set*	Vortex-Genies® except Vortex-Genie® 1	1	**444-5904**
Large sample set**	Vortex-Genies® except Vortex-Genie® 1	1	**444-0060**
Assorted tube inserts: 1 each of the following: blank, 9 – 16 mm, 14 – 29 mm and 29 – 37 mm (fit in recessed platform)	Vortex-Genies® except Vortex-Genie® 1	4	**444-5917**
Elastic bands to help secure vessels onto recessed platform	Vortex-Genies® except Vortex-Genie® 1	2	**444-5915**
Platform, Ø 75 mm without rubber cover	Vortex-Genies®	1	**444-5902**
Rubber cover for Ø 75 mm platform	Vortex-Genies®	1	**444-5903**
TurboMix attachment for 12×1,5/2,0 ml snap-top or screw-cap microtubes	Vortex Genie® 2 and Vortex Pulse	1	**444-0724**
Holder for 12×2,0 ml screw-cap microtubes (fits on TurboMix attachment)	Vortex-Genies® except Vortex-Genie® 1	1	**444-0775**
Small ampoule/tube attachment***	Vortex-Genies® except Vortex-Genie® 1	1	**444-9161**
Large ampoule/tube attachment****	Vortex-Genies® except Vortex-Genie® 1	1	**444-9162**

* Depending on speed
** Large sample set is ideal for mixing beakers, flasks and large tubes. The set consists of a recessed platform, 2 elastic bands, a blank foam insert, a foam insert for 4× 29 – 37 mm tubes, a foam insert for 8× 14 – 29 mm tubes and a foam insert for 12× 9 – 16 mm tubes
*** Small ampoule/tube attachment enables vigorous end-to-end mixing for up to four 15 – 17 mm Ø tubes or ampoules
**** Large ampoule/tube attachment enables vigorous end-to-end mixing for up to four 10 – 17 mm Ø tubes or ampoules

Digital vortex mixers, Digital Vortex-Genie® 2

Scientific Industries

The Digital Vortex-Genie® 2 is a programmable vortex mixer based on the popular Vortex-Genie®, providing digital control and display of both speed and time. The Digital Vortex-Genie® 2 is especially useful for mixing applications with strict or specific speed and time requirements. It offers precision, repeatability, and reproducibility. Using the "UP" and "DOWN" arrow keys, speed can be programmed between 500 and 2850 min^{-1}, and time can be programmed between 1-99 seconds for Touch mode and 1-99 minutes for Hands-Free mode. Accepts all accessories listed for the Vortex-Genie® 2.

Delivery information: The Digital Vortex-Genie® 2 is supplied with a pop-off cup and 7,6 cm platform. Other accessories are available, please order separately. Model for use with Applied Biosystems microplate protocols is also available.

Model	Digital Vortex-Genie® 2
Max. capacity (ml)	500
Orbit (mm)	4
Power supply	230 V
Shaking motion	Orbital
Speed range (min^{-1})	500 - 2850
Weight (kg)	4
W×D×H (mm)	122×165×165

Description	Pk	Cat. No.
Digital Vortex-Genie 2		
Digital Vortex-Genie® 2, 230 V, UK-plug	1	**444-0882**
Digital Vortex-Genie 2 for AB models		
Digital Vortex-Genie® 2, for Applied Biosystems microplate protocols, UK-plug	1	**444-0884**

Description	For	Pk	Cat. No.
Accessories			
Pop-off cup	Vortex-Genies®, Disruptor-Genie	1	**444-5901**
Platform, 152 mm, without insert (inserts listed below)	Vortex-Genies® except Vortex-Genie® 1	1	**444-5905**
Support for microtitre plates (fits in 152 mm platform)	Vortex-Genies® except Vortex-Genie® 1	2	**444-5919**
Adapter for 60 microtubes (fits in 152 mm platform)	Vortex-Genies® except Vortex-Genie® 1	2	**444-5921**
Two-tier insert for 96 well plate (fits in 152 mm platform)	Vortex-Genies® except Vortex-Genie® 1	1	**444-0061**
Recessed platform (foam inserts listed below)	Vortex-Genies® except Vortex-Genie® 1	1	**444-5916**
Foam insert, blank (without holes) (fits in recessed platform)	Vortex-Genies® except Vortex-Genie® 1	2	**444-5913**
Foam adapter for tubes 9 – 16 mm Ø (fits in recessed platform)	Vortex-Genies® except Vortex-Genie® 1	2	**444-5914**
Foam adapter for tubes 14 – 29 mm Ø (fits in recessed platform)	Vortex-Genies® except Vortex-Genie® 1	2	**444-5912**
Foam adapter for tubes 29 – 37 mm Ø (fits in recessed platform)	Vortex-Genies® except Vortex-Genie® 1	2	**444-5911**
Multiple sample starter set*	Vortex-Genies® except Vortex-Genie® 1	1	**444-5904**
Large sample set**	Vortex-Genies® except Vortex-Genie® 1	1	**444-0060**
Assorted tube inserts: 1 each of the following: blank, 9 – 16 mm, 14 – 29 mm and 29 – 37 mm (fit in recessed platform)	Vortex-Genies® except Vortex-Genie® 1	4	**444-5917**
Elastic bands to help secure vessels onto recessed platform	Vortex-Genies® except Vortex-Genie® 1	2	**444-5915**
Platform, Ø 75 mm without rubber cover	Vortex-Genies®	1	**444-5902**
Rubber cover for Ø 75 mm platform	Vortex-Genies®	1	**444-5903**
TurboMix attachment for 12×1,5/2,0 ml snap-top or screw-cap microtubes	Vortex Genie® 2 and Vortex Pulse	1	**444-0724**
Holder for 12×2,0 ml screw-cap microtubes (fits on TurboMix attachment)	Vortex-Genies® except Vortex-Genie® 1	1	**444-0775**
Small ampoule/tube attachment***	Vortex-Genies® except Vortex-Genie® 1	1	**444-9161**
Large ampoule/tube attachment****	Vortex-Genies® except Vortex-Genie® 1	1	**444-9162**

* Multiple sample starter set consists of a 152 mm platform, a foam insert for 60 microtubes and a foam insert for 1 standard microplate
** Large sample set is ideal for mixing beakers, flasks and large tubes. The set consists of a recessed platform, 2 elastic bands, a blank foam insert, a foam insert for 4× 29 – 37 mm tubes, a foam insert for 8× 14 – 29 mm tubes and a foam insert for 12× 9 – 16 mm tubes
*** Small ampoule/tube attachment enables vigorous end-to-end mixing for up to four 15 – 17 mm Ø tubes or ampoules
**** Large ampoule/tube attachment enables vigorous end-to-end mixing for up to four 10 – 17 mm Ø tubes or ampoules

Vortex mixer, PV-1
Grant

For gentle through to vigorous mixing and pellet resuspension in 0,5 ml, 1,5 ml, 15 ml and 50 ml tubes. The PV-1 vortex mixer is so small that it will fit in your hand, with no compromise in performance.

- Variable speed
- Continuous or touch operation
- Pressure-sensitive cup for tubes up to 20 mm diameter
- Rubber suction pads prevent walking and absorb vibration
- For use at 4 to 40 °C ambient (80% relative humidity, non-condensing) in a cold room or incubator

Model	PV-1
Max. mixing volume (ml)	50
Max. Ø of tubes (mm)	28,5
Orbit (mm)	4
Power supply	External power supply: 12 V, 320 mA
Shaking motion	Orbital
Speed range (min^{-1})	750 - 3000
Weight (kg)	1,1
W×D×H (mm)	90×150×80

Description	Pk	Cat. No.
PV-1 vortex mixer, UK-plug	1	**444-1032**

Vortex mixers, CLASSIC and WIZARD
VELP Scientifica

WIZARD

CLASSIC

Low profile and ergonomic design mixers with increased stability. Epoxy painted zinc alloy provides excellent chemical and corrosion resistance. Three non-slip feet absorb vibrations, enhancing the stability on the bench.

CLASSIC is ideal for diverse mixing needs. It features two operation modes, automatic touch mode and continuous and it is possible to change the vibration frequency.

• Special lever ensures maximum stability depending on the operation mode selected

WIZARD includes optical technology. It features two operation modes; sensor or continuous, and it is possible to change the vibration frequency.

• Sensor mode uses an infrared sensor system, which detects presence of the test tube and vibration is activated automatically
• No pressure is needed from the operator

IP Protection Class according to DIN EN 60259: IP 42

Delivery information: Both supplied with a cup for mixing a single test tube.

Model	CLASSIC	WIZARD
Input power (W)	15	
Orbital diameter (mm)	4,5	
Shaking motion	Orbital	
Speed range (min^{-1})	0 - 3000	
Weight (kg)	2,4	

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W×D×H (mm)	180×220×70

Description	Pk	Cat. No.
CLASSIC vortex mixer	1	**444-0745**
WIZARD vortex mixer	1	**444-0746**

Description	Pk	Cat. No.
Accessories		
Foam insert for 19×1,5 ml microcentrifuge tubes	1	**444-0737**
Foam insert, blank without holes	1	**444-0741**
Foam insert for 5×16 mm Ø tubes	1	**444-0738**
Insert for microtitre plate	1	**444-0739**
Small rubber support platform Ø 50 mm	1	**444-0740**
Foam insert for 4×129 mm Ø test tubes	1	**444-0742**

Vortex mixers, RX3 and ZX3
VELP Scientifica

RX 3

ZX 3

Vortex mixers with epoxy painted aluminium die-cast housing that provides good chemical resistance. Four feet give stability on the bench. Choice of two models.

- RX3 which operates in touch mode at a fixed vibration speed of 2400 min^{-1}
- ZX3 features two modes - manual or continuous, speed can be adjusted from 50 to 2400 min^{-1}

IP Protection Class according to DIN EN 60259: IP 20

Model	RX3	ZX3
Input power (W)	15	
Orbital diameter (mm)	4,5	
Shaking motion	Orbital	
Speed range (min^{-1})	0 - 3000	3000 (fixed)
Weight (kg)	2,7	
W×D×H (mm)	150×165×130	

Description	Pk	Cat. No.
RX3 vortex mixer	1	**444-0915**
ZX3 vortex mixer	1	**444-2000**

Description	For	Pk	Cat. No.
Accessories			
Insert for microtitre plate	ZX3	1	**444-0736**
Insert for 25×1,5 ml microcentrifuge tubes	ZX3	1	**444-0734**
Support platform Ø 90 mm	ZX3	1	**444-0735**

Vortex mixers, ZX4 and TX4
VELP Scientifica

TX4

The ZX4 and TX4 are digital vortex mixers with adjustable stirring speed and two operating modes, sensor or continuous, for outstanding repeatability. Their ergonomic and innovative design along with the unit's zinc alloy base gives excellent stability on the bench, 4 non-slip feet prevent "walking" during use. The technopolymer structure ensures optimum chemical resistance and enhanced handling.

- Thanks to the unique IR sensor mode, an infrared system detects the presence of the test tube and the vortex mixer automatically starts vibrating. This reduces repetitive strain
- IR sensor or continuous operation mode
- User can set the operating time and much more via the timer: 0 to 999 h 59 min on TX4
- The TX4 has a bright LCD display which constantly shows the most important information and enables parameters, such as time and speed to be easily set

IP protection class according to DIN EN 60529: IP 42

Delivery information: Supplied with mixing cup head. Various platform for mixing flasks, tubes or microtitre plates are available as options.

Model	TX4	ZX4
Input power (W)	15	
Orbital diameter (mm)	4,5	
Shaking motion	Orbital	
Speed range (min^{-1})	0 - 3000	
Weight (kg)	2.7	
W×D×H (mm)	150×130×165	

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Description	Pk	Cat. No.
TX4 digital vortex mixer	1	444-2001
ZX4 digital vortex mixer	1	444-2002

Description	Pk	Cat. No.
Accessories		
Foam insert for 19×1,5 ml microcentrifuge tubes	1	444-0737
Foam insert, blank without holes	1	444-0741
Foam insert for 5×16 mm Ø tubes	1	444-0738
Insert for microtitre plate	1	444-0739
Small rubber support platform Ø 50 mm	1	444-0740
Foam insert for 4×129 mm Ø test tubes	1	444-0742

Multi-tube vortexers

444-7061

444-7063

Designed to hold multiple test tubes, test tube racks, vials or cylinders. Vortexing action is created by securing the top of the vessel in place while allowing the bottom to move freely in a defined orbit. Two stainless steel posts hold the support plate securely in place for quiet, rattle-free mixing. The support plate is easily adjustable by loosening knobs and moving the support plate up and down. The circular groove around the top of the taller post allows the support plate to be swung away from the tray for easy removal of samples. The suction cup feet dampen motion and prevent "walking" on work bench. Made from stainless steel with corrosion resistant paint. Equipped with a powerful, permanent magnet motor with sealed ball bearings. Motor is rated for continuous duty.

Analogue vortexer (444-7063) has adjustable speed with an automatic timer for simple repeat procedures and a conveniently angled front panel.

Digital vortexer (444-7061) features a microprocessor controller for digital programming of both speed and time and a pulse feature for difficult mixing applications. Ideal for applications that require accuracy and repeatability. Digital readouts of both speed and time are easily viewed from the easy to read LED display. Timer can be programmed or can be run in continuous mode. Versatile pulsing feature stops and starts the unit in predetermined increments to add further agitation to mixing process. Pulsing program can be set from 1 second on/off up to 59 seconds on/off, allowing for a wide variety of pulsing combinations. The operator can set the pulsing features to run for 1 to 59 seconds and have a delay of 59 seconds, then the cycle repeats. Pulsing can be used in both timed and continuous mode.

- Ideal for mixing many tubes at one time
- Handles larger volumes than standard vortexers
- Analogue and digital models available

Delivery information: Supplied with one 50×12 mm blue test tube rack (444-7066). Additional colour coded foam test tube racks, post extension kit and replacement tray pad set are sold separately. Each unit is supplied complete with three plugs: EU, UK and CH for use throughout Europe.

Model	Digital	Analogue
Motor (W)	100	
Orbit (mm)	3,6	
Speed (min^{-1})	500 - 2500	1200 - 2400
Timer (min)	1 - 9999	0 - 1
Weight (kg)	18,6	
W×D×H (mm)	384×241×406	

Description	Pk	Cat. No.
Multi-tube vortex shaker, digital	1	444-7061
Multi-tube vortex shaker, analogue	1	444-7063

Description	Pk	Cat. No.
Accessories		
Post extension kit, 150 mm	1	444-7062
Replacement tray pad set, grey	1	444-7064
Holder, foam rubber, for tubes 50×10 mm, grey	1	444-7065
Holder, foam rubber, for tubes 50×12 mm, blue	1	444-7066
Holder, foam rubber, for tubes 50×13 mm, yellow	1	444-7067
Holder, foam rubber, for tubes 50×16 mm, green	1	444-7068
Holder, foam rubber, for tubes 28×25 mm, white	1	444-7091
Holder, foam rubber, for conical tubes 15×50 ml, red	1	444-7092

Multi-tube vortex mixer, V-32
Grant

Versatile multi-tube vortex mixer for vigorous re-suspension of cells or chemical pellets in a maximum of 32 tubes (16×1,5 ml, 8×0,5 ml and 8×0,2 ml), with the facility to mix individual tubes up to 15 ml. Typical applications include vigorous stirring and re-suspension of bacterial and yeast cells and pellets, metabolite and enzyme extraction and various DNA operations such as deproteinisation of DNA/protein complexes and purification of low molecular weight DNA/RNA fragments.

- Easy to use - continuous or touch operation and set speed knob from 500 to 3000 rpm
- Orbit: 2 mm
- Compact rugged design plus powerful motor gives quiet and consistent performance
- Rubber suction pads prevent the unit from 'walking' and also absorb vibration

Delivery information: Supplied with universal 32-place platform and flat platform for single tube mixing.

Model	V-32
Max. capacity	Up to 32 tubes: 16×1,5 ml + 8×0,5 ml + 8×0,2 ml
Orbit (mm)	2
Speed (min^{-1})	500 - 3000
Weight (kg)	1,5
W×D×H (mm)	120×180×100

Description	Pk	Cat. No.
Multi-tube vortex mixer V-32, UK-plug	1	**444-1036**

Description	For	Pk	Cat. No.
Accessories			
Spare universal 32-place tube platform	Total 32 tubes: 16×1,5 ml + 8×0,5 ml + 8×0,2 ml or: 1×15 ml tube	1	**444-1033**
Universal 6-place tube platform	6×10 ml, 15 mm Ø tubes	1	**444-1034**

Microplate shaker

Microplate shaker with microprocessor control which holds two or four microplates, deep well plates or two microtube racks. Variable speed across a wide range may be adjusted to suit the application; a low speed ensures that the well contents are not ejected, more vigorous agitation provides effective aeration across the small surface area of each of the wells. Ideal for use in immunology, biotechnology, microbiology and pharmacology applications.

- Two independent LED displays show speed and time
- Integral timer, 1 s to 160 h, shows elapsed time or counts down, automatic switch-off and audible alarm when program is complete
- Can be used at –10 to +60 °C (80% relative humidity, non-condensing), in an incubator, CO_2 incubator or cold room

Ordering information: The shaker can accommodate up to two optional accessory microtube racks. Each rack holds 70×1,5/2,0 ml microtubes.

Model	Microplate shaker
No. of microplates held	2 or 4
Orbit (mm)	3,0
Power (W)	25
Speed (min^{-1})	100 - 900
Speed accuracy (%)	±2
Weight (kg)	10
W×D×H (mm)	280×430×100

Description	Pk	Cat. No.
Microplate shaker, UK-plug	1	**444-7094**

Description	For	Pk	Cat. No.
Accessories			
Microtube rack, PVC coated steel	1,5/2,0 ml tubes, holds 70 tubes	1	**444-0276**

Microplate shaker, high speed

Ideal for molecular biology applications, mechanical and chemical cell lysis, mixing tissue samples, mixing cytogenetic suspensions, and vortexing cell suspensions. Shaker is also ideal for emulsification of bi-polar viscous fluids and for mixing fluids in small diameter tubes. Specifically designed to shake and/or vortex microplates in timed or continuous modes. Shaker features programmable timed mode from 1 second to 160 hours. Speed and time are easily adjusted with the up/down arrows on the front panel. The 279×311 mm tray assembly includes a foam pad and accepts up to forty eight 96-well microplates. Tray assembly height is adjustable from 3,2 mm up to 127 mm, accommodating most microplates, including deep-well microplates. Microplates can be stacked up to 6 plates high, to a maximum height of 127 mm. The unit's 12 suction cup feet and weight prevent the shaker from "walking" across the lab bench. Pulsing feature allows the user to program the unit to stop and start at a wide range of intervals. The repetitive stopping and starting action is ideal for difficult mixing applications, such as emulsification of highly viscous liquids or bi-polar liquids.

- Holds up to six microplates without stacking, up to a maximum of 48 microplates with stacking (6 in layers horizontally, up to 8 in a vertical stack). Can be used with vessels up to 127 mm high
- Programmable digital speed control and timer
- Programmable "pulsing" feature to enhance mixing action
- Can be used at 4 to 40 °C, in an incubator or cold room
- RS232 interface

Ordering information: Supplied with top plate and tray pad set. Tray pad set and replacement top plate are available separately. Each unit is supplied complete with three plugs: EU, UK and CH for use throughout Europe.

Model	Microplate shaker, high speed
Max. load (kg)	3,2
Orbit (mm)	3,6
Power (W)	120
Speed (min^{-1})	600 to 2500 programmable in 1 min^{-1} increments
Speed accuracy (%)	±25
Weight (kg)	22
W×D×H (mm)	305×394×325

Description	Pk	Cat. No.
High speed microplate shaker	1	**444-7016**

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Description	Pk	Cat. No.
Accessories		
Replacement tray	1	**444-0201**
Tray pad set	1	**444-7014**

Microplate and micro test tube mixer, MixMate®
Eppendorf

Innovative, flexible and compact, this mixer is specifically designed for mixing small volumes in numerous plate and tube formats. Rapid and precisely controlled mixing movements (^{2D}Mix-Control) enable efficient and highly homogenous mixing, increasing the experimental reproducibility. The versatile benchtop MixMate® can be used for micro test tubes, PCR tubes and strips, skirted, semi-skirted and unskirted PCR plates, deepwell plates and microtitre plates. Ideal for mixing PCR preparations, resuspending pellets, ELISA assays, quantification of proteins, reporter gene assays and mixing restriction preparations. MixMate® features an integrated vortexing function and automatic imbalance detection.

- ^{2D}Mix-Control provides optimised mixing with anti-spill technology
- Preprogrammed soft keys for different types of tubes
- Multi-functional and flexible, mixing of plates, tubes and vortexing
- Digital display enables simple and accurate setting and viewing of speed and time
- Continuous operation or timer mode from 15 s to 99,5 h

IP protection class according to DIN EN 61010: IP 20

Delivery information: Unit is supplied with three tube holders for 96-well PCR plates or strips, 24×0,5 ml micro tubes and 24×1,5/2,0 ml micro tubes.

Model	MixMate®
Motor input (W)	40
Orbital diameter (mm)	3
Shaking motion	Orbital, 2 dimensional control
Speed range (min^{-1})	300 to 3000 in increments of 50
Vortex frequency (min^{-1})	3500
Weight (kg)	4,2
W×D×H (mm)	170×230×130

Description	Pk	Cat. No.
MixMate® mixer, UK-plug	1	**732-6010**

Description	For	Pk	Cat. No.
Accessories			
Spare tube holder	96×0,2 ml PCR tubes, strips or plates	1	**732-6011**
Spare tube holder	24×0,5 ml micro tubes	1	**732-6012**
Spare tube holder	24×1,5/2,0 ml micro tubes	1	**732-6013**

Microplate shaker, MTS 2/4 digital
IKA

Microplate shaker with electronic control keeps the set speed constant via rated/actual speed comparison. The MTS 2/4 digital is especially suited for medical diagnostics. Supplied with attachment but without microtitre plate.

- Holds two or four microplates
- Digital timer with alarm allows a process time up to 99 minutes or continuous mode
- Electronic speed control
- Ideal for use under controlled conditions, can be used at 5 to 40 °C, in an incubator or CO_2 incubator (up to 80% RH)

IP protection class according to DIN EN 60529: IP 21

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Model	MTS 2/4
No. of microplates held	2 or 4
Orbital diameter (mm)	3,0
Power input/output (W)	35/13,2
Speed (min^{-1})	0 - 1100
Weight (kg)	2,7
W×D×H (mm)	185×320×105

Description	Pk	Cat. No.
MTS 2/4 digital microplate shaker, UK-plug	1	**444-2749**

Microplate shaker, PMS-1000i
Grant

444-0333

Compact microplate shaker which provides reliable and regulated shaking for 96- and 384-well microplates with easy set up and digital timer. Variable speed across a wide range may be adjusted to suit the application: A low speed ensures that the well contents are not ejected, more vigorous agitation provides effective aeration across the small surface area of each of the wells. Simple screw attachments allow quick and easy fitting of any standard depth plates, holding the plates securely in place. Ideal for use in immunology, biotechnology, microbiology and pharmacology applications.

- Integral timer, 1 min to 24 h, with automatic switch-off or non-stop up to 168 h
- Low voltage power supply and low energy consumption
- Set and display the speed in rpm
- Direct drive for a longer life and whisper quiet operation
- Can be used at 4 to 40 °C (80% relative humidity, non-condensing), in an incubator or cold room

Complies with IEC61010 parts one and two

Delivery information: Supplied with platform for two microplates, optional four microplate platform is available separately.

Model	PMS-1000i
No. of microplates held	2 (or 4 with optional platform)
Orbit (mm)	2
Power input (VDC)	12
Speed range (min^{-1})	150 - 1200
Weight (kg)	2
W×D×H (mm)	220×205×90

Description	Pk	Cat. No.
PMS-1000i microplate shaker, UK-plug	1	**444-1031**

Description	Pk	Cat. No.
Accessories		
Platform to accommodate 4 microtitre plates	1	**444-0333**

Microplate shakers, Titramax range
Heidolph

Titramax 101

Titramax 1000

Titramax 1000 & Incubator 1000

For vigorous mixing of microtitre plates. Vibration orbit of 1,5 mm guarantees no spills even with full vessels, 3 mm orbit gives best mixing results even with the smallest quantities. The shakers are designed for continuous operation and feature over-temperature protection, and an insulated platform with virtually no heat-up.

- Modular system, Titramax 1000 can be combined with the Incubator 1000 and a flat hood
- Timer function with audible signal allows a process time up to 120 minutes
- Electronic speed control

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• Ideal for use under controlled conditions, can be used at 0 to 50 °C, in an incubator or a cold room.

IP Protection Class according to DIN EN 60529: IP 30

Delivery information: Titramax 1000 complete package includes: Vibrating platform shaker, Titramax 1000, heating module, Incubator 1000 and flat incubator hood.

Model	Titramax 100	Titramax 101	Titramax 1000
Input power (W)	31		
Max. load (kg)	2	5	2
No. of microplates held	4		6
Orbit (mm)	1,5	3,0	1,5
Speed (min^{-1})	150 - 1350		
Speed accuracy (%)	±1		
Weight (kg)	5,5		6,5
W×D×H (mm)	245×310×125		320×375×125

Description	Pk	Cat. No.
Titramax range		
Titramax 100 microplate shaker, UK-plug	1	**444-0194**
Titramax 101 microplate shaker, UK-plug	1	**444-0195**
Titramax 1000 microplate shaker, UK-plug	1	**444-0196**

Description	Pk	Cat. No.
Accessories		
Flat hood	1	**444-1393**

Microplate shaker, mini, SSM5
Stuart

Designed for use with microtitre plates and microcentrifuge tubes. The aluminium tray is fitted with a specially designed mat that securely holds up to four microwell plates in place. High speed combined with a tiny orbit creates the vibrational shaking action required for mixing the very small volumes contained in the wells or in microcentrifuge tubes. Speed and time are easily set via the digital display.

• Digital selection of mixing speed and time
• Digital timer with alarm allows a process time in hours, minutes or seconds or continuous mode
• Ideal for use under controlled conditions, can be used at 4 to 40 °C, in an incubator or CO_2 incubator (up to 80% RH)
• BioCote® antimicrobial protection

IP protection class according to DIN EN 60529: IP 31

Ordering information: Tube holders are available as optional accessories. Two tube holders can be used at any one time, fit securely onto the platform turning the unit into an effective tube mixer.

Model	SSM5
Max. load (kg)	1,0
No. of microplates held	4
Orbit (mm)	1,5
Power (W)	50
Speed (min^{-1})	250 - 1250
Speed accuracy (%)	2
Weight (kg)	5
W×D×H (mm)	240×300×160

Description	Pk	Cat. No.
SSM5 microplate shaker	1	**444-0120**

Description	For	Pk	Cat. No.
Tube holder	1,5 /2,0 ml microcentrifuge tubes	1	**444-0191**
Tube holder	0.5 ml microcentrifuge tubes	1	**444-0192**
Tube holder	0.2 ml tubes	1	**444-0714**

Microplate shakers, TiMix 5 and TiMix 5 control

Edmund Bühler

High capacity microplate shaker with high speed orbital motion. TiMix 5 is an analogue version, and TiMix 5 control has digital display and programmable control, it can also be integrated into analytical robotics systems.

- Holds eight microplates in standard rack system/tray or up to 16 microplates with additional tray
- Rack system allows up to 48 microplates to be shaken
- Timer or continuous mode (TiMix 5), programmable or continuous mode (TiMix 5 control)
- Electronic speed control
- Can be used with incubator hood TH 15 (444-9391) at ambient +5 to 50 °C with accuracy of ±1% of the set value

IP protection class according to DIN EN 60529: IP 21

Ordering information: Supplied without attachments or trays.

Model	TiMix 5	TiMix 5 control
Max. load (kg)	5	
No. of microplates held	8 - 48	
Orbit (mm)	3,0	
Speed (min^{-1})	100 - 1400	
Speed accuracy (%)	max. ±2	
Timer	0 - 120 min/continuous	programmable/continuous
Weight (kg)	19	20
W×D×H (mm)	510×490×150	

Description	Pk	Cat. No.
TiMix 5 microplate shaker	1	**444-9143**
TiMix 5 control microplate shaker	1	**444-9142**

Description	For	Pk	Cat. No.
Accessories			
TH 15 incubator hood	KS 15 or TiMix 5 shakers, 1 l Erlenmeyer flasks	1	**444-9391**
Defined stop, this ensures the shaking plate will always stop in the same position so that a robot can be used*		1	**444-9139**
Standard rack system	Up to 8 standard microplates, microwell or deepwell plates	1	**444-9144**
Additional tray (to create second tier)	Up to 8 standard microplates as a second tier on the standard rack system	1	**444-9145**
Rack system with clamping pins	Up to 8 standard microplates	1	**444-0193**
Rack system with tall clamping pins	Up to max. 24 standard microplates stacked directly on top of each other	1	**444-9138**
Rack system with metal clamping pins	Up to max. 48 standard microplates stacked directly on top of each other	1	**444-0519**
Universal tray KS, with holes (430×300 mm)	Attaching test tube racks or clamps for Erlenmeyer flasks and other vessels**	1	**444-9296**
Combifix KS rack system, (400×275 mm)	Fastening various upright vessels, e.g. beakers and flasks (with additional strips which are also suitable for other vessels)	1	**444-9297**

* Factory fitted options can not be retrofitted.
** Accessory tube racks and flask clamps must be ordered separately. Please contact VWR for details.

Orbital mini shaker

General purpose shaker with microprocessor control which is ideal for a range of mixing applications. Variable speed control provides consistent, uniform shaking action. The speed is adjustable in 10 min^{-1} increments up to 500 min^{-1}, and increments of 25 min^{-1} up to 900 min^{-1} and the ramping feature slowly increases speed to the set point for added safety.

- Two independent LED displays show speed and time
- Integral timer, 1 s to 160 h, shows elapsed time or counts down and enables automatic switch-off and audible alarm when program is complete
- Range of interchangeable attachments
- Can be used at –10 to +60 °C (80% relative humidity), in an incubator, dry CO_2 incubator or cold room

Delivery information: Supplied with perforated tray, non-slip rubber mat but without attachments, accessories must be ordered separately.

Model	Orbital mini shaker
Max. load (kg)	4
Orbit (mm)	3
Power (W)	25
Shaking motion	Orbital
Speed (min^{-1})	100 - 900
Speed accuracy (%)	±2
Weight (kg)	10
W×D×H (mm)	280×430×100

Description	Pk	Cat. No.
Orbital mini shaker, UK-plug	1	**444-7093**

Description	For	Pk	Cat. No.
Accessories			
Stainless steel dilution cap tray, W×D 175×254 mm	24×28 mm dilution vials	1	**444-0514**
Microtube rack, PVC coated steel	1,5/2,0 ml tubes, holds 70 tubes	1	**444-0276**
Test tube rack, PVC coated steel	10 - 13 mm Ø tubes, holds 63 tubes	1	**444-0278**
Test tube rack, PVC coated steel	14 - 16 mm Ø tubes, holds 48 tubes	1	**444-0279**
Test tube rack, PVC coated steel	18 - 20 mm Ø tubes, holds 35 tubes	1	**444-0280**
Test tube rack, PVC coated steel	22 - 25 mm Ø tubes, holds 24 tubes	1	**444-0281**
Centrifuge tube rack, PVC coated steel	15 ml tubes, holds 35 tubes	1	**444-0283**
Centrifuge tube rack, PVC coated steel	50 ml tubes, holds 12 tubes	1	**444-0284**
Flask clamps, stainless steel	10 ml	1	**444-7040**
Flask clamps, stainless steel	25 ml	1	**444-7041**
Flask clamps, stainless steel	50 ml	1	**444-7042**
Flask clamps, stainless steel	125 ml	1	**444-7043**
Flask clamps, stainless steel	250 ml	1	**444-7044**
Flask clamps, stainless steel	500 ml	1	**444-7045**
Clamps for media bottles, stainless steel	500 ml	1	**444-7035**
Universal harness, attaches to tray to secure low profile plates	-	1	**444-0277**
Roller bar platform, which has 2 adjustable cushioned rollers to hold glassware securely, 297×218 mm, bar size 218 mm	-	1	**444-0282**
Spare single roller bar, 220 mm	Mounting on roller bar platform 444-0282	1	**444-0565**

Note: Shaker accommodates a maximum of 2 of the racks detailed and 35×10, 20×25, 15×50, 12×125, 6×250 or 4×500 ml flasks and 3×500 ml media bottles.

Orbital shaker, Standard 1000

General purpose shaker with microprocessor control which is ideal for basic mixing applications, blotting techniques, staining and destaining. Variable speed control provides consistent, uniform shaking action. The speed is adjustable via knob with 1 to 10 dial settings and the ramping feature slowly increases speed to the set point for added safety.

- Suitable for continuous operation
- Can be used at 0 to +40 °C (maximum 80% relative humidity, non-condensing), in an incubator, CO_2 incubator or cold room

Delivery information: Supplied with non-slip rubber mat.

Model	Standard 1000
Max. load (kg)	3,6
Orbit (mm)	15
Platform W×D (mm)	222×299
Power (W)	25
Shaking motion	Orbital
Speed (min^{-1})	40 - 300
Weight (kg)	10
W×D×H (mm)	280×430×102

Description	Pk	Cat. No.
Standard 1000 orbital shaker, UK-plug	1	**444-2901**

Orbital shaker, Standard 3500

General purpose shaker with microprocessor control which is ideal for basic mixing applications, bacterial suspensions, staining and destaining. Variable speed control provides consistent, uniform shaking action. The speed is adjustable via knob with 1 to 10 dial settings and the ramping feature slowly increases speed to the set point for added safety.

- Continuous operation or timer operation from 0 to 120 min
- Range of interchangeable attachments available
- Can be used at 0 to +40 °C (maximum 80% relative humidity, non-condensing), in an incubator, CO_2 incubator or cold room

Delivery information: Supplied with non-slip rubber mat but without attachments, accessories must be ordered separately. Please see entry 'Accessories for VWR Standard and Advanced series orbital shakers' for details on other platforms and accessories.

Model	Standard 3500
Max. load (kg)	15,8
Orbit (mm)	19
Platform W×D (mm)	330×279
Power (W)	75
Shaking motion	Orbital
Speed (min^{-1})	25 - 300
Weight (kg)	20
W×D×H (mm)	356×413×146

Description	Pk	Cat. No.
Standard 3500 orbital shaker, UK-plug	1	**444-2904**

Orbital shaker, Advanced 3500

Digital shaker with microprocessor control which is ideal for a range mixing applications, e.g. cell cultures, solubility studies and extraction procedures. Variable speed control provides consistent, uniform shaking action. The Accu-drive shaking system delivers exceptional speed control, accuracy, safety and durability; the shaking system continuously monitors shaking speed and will maintain the set point even under changing loads. Displayed speed is accurate to 1% of set speed. The ramping feature slowly increases speed to the set point for added safety. Built-in load sensor can detect an unbalanced condition and will automatically reduce the min^{-1} to a safe speed to prevent spills and protect samples. Speed calibration mode allows the user to recalibrate the speed display and RS232 serial port provides two-way communication for data logging and unit control.

- Two independent LED displays show speed and time
- Integral timer, 1 s to 160 h, shows elapsed time or counts down, automatic switch-off and audible alarm when program is complete
- Can be used at –10 to +60 °C (maximum 80% relative humidity, non-condensing), in an incubator, CO_2 incubator or cold room
- Five year warranty on motor and drive mechanism

Delivery information: Supplied with non-slip rubber mat but without attachments, accessories must be ordered separately. Please see entry 'Accessories for VWR Standard and Advanced series orbital shakers' for details on other platforms and accessories.

Model	Advanced 3500
Max. load (kg)	15,8
Orbit (mm)	19
Platform W×D (mm)	330×279
Power (W)	75
Shaking motion	Orbital
Speed (min^{-1})	15 - 300
Speed accuracy (min^{-1})	±1 below 100
Weight (kg)	20
W×D×H (mm)	356×413×146

Description	Pk	Cat. No.
Advanced 3500 orbital shaker, UK-plug	1	**444-2907**

Orbital shaker, Standard 5000

Heavy duty shaker with microprocessor control which is ideal for mixing applications with heavy loads, e.g. bacterial suspensions, staining and destaining. Variable speed control provides consistent, uniform shaking action. The speed is adjustable via knob with 1 to 10 dial settings and the ramping feature slowly increases speed to the set point for added safety.

- Continuous operation or timer operation from 0 to 120 min
- Range of interchangeable attachments available
- Can be used at 0 to +40 °C (maximum 80% relative humidity, non-condensing), in an incubator, CO_2 incubator or cold room

Delivery information: Supplied with non-slip rubber mat but without attachments, accessories must be ordered separately. Please see entry 'Accessories for VWR Standard and Advanced series orbital shakers' for details on other platforms and accessories.

Model	Standard 5000
Max. load (kg)	22,7
Orbit (mm)	25
Platform W×D (mm)	610×457
Power (W)	75
Shaking motion	Orbital
Speed (min^{-1})	25 - 300
Weight (kg)	45
W×D×H (mm)	676×597×155

Description	Pk	Cat. No.
Standard 5000 orbital shaker, UK-plug	1	**444-2913**

Orbital shaker, Advanced 5000

Digital shaker with microprocessor control which is ideal for mixing applications with heavy loads, e.g. cell cultures, solubility studies and extraction procedures. Variable speed control provides consistent, uniform shaking action. The Accu-drive shaking system delivers exceptional speed control, accuracy, safety and durability, the system continuously monitors shaking speed and will maintain set point even under changing loads. Displayed speed is accurate to 1% of set speed. The ramping feature slowly increases speed to the set point for added safety. Built-in load sensor can detect an unbalanced condition and will automatically reduce the min^{-1} to a safe speed to prevent spills and protect samples. Speed calibration mode allows the user to recalibrate the speed display and RS232 serial port provides two way communication for data logging and unit control.

- Two independent LED displays show speed and time
- Integral timer, 1 s to 160 h, shows elapsed time or counts down, automatic switch-off and audible alarm when program is complete
- Can be used at –10 to +60 °C (maximum 80% relative humidity, non condensing), in an incubator, CO_2 incubator or cold room
- 5 year warranty on motor and drive mechanism

Delivery information: Supplied with non slip rubber mat but without attachments, accessories must be ordered separately. Please see entry 'Accessories for VWR Standard and Advanced series orbital shakers' for details on other platforms and accessories.

Model	Advanced 5000
Max. load (kg)	22,7
Orbit (mm)	25
Platform W×D (mm)	610×457
Power (W)	75
Shaking motion	Orbital
Speed (min^{-1})	20 - 300
Speed accuracy (min^{-1})	±1 below 100
Weight (kg)	45
W×D×H (mm)	676×597×155

Description	Pk	Cat. No.
Advanced 5000 orbital shaker, UK-plug	1	**444-2916**

Orbital shakers, Advanced 10000

Digital shakers with microprocessor control which are ideal for mixing applications with heavy loads, e.g. cell cultures, solubility studies and extraction procedures. Variable speed control provides consistent, uniform shaking action. The Accu-drive shaking system delivers exceptional speed control, accuracy, safety and durability, the system continuously monitors shaking speed and will maintain the set point even under changing loads. Displayed speed is accurate to 1% of set speed. The ramping feature slowly increases speed to the set point for added safety. Built-in load sensor can detect an unbalanced condition and will automatically reduce the min^{-1} to a safe speed to prevent spills and protect samples. Speed calibration mode allows the user to recalibrate the speed display and RS232 serial port provides two-way communication for data logging and unit control.

- Two independent LED displays show speed and time
- Integral timer, 1 s to 160 h, shows elapsed time or counts down, automatic switch-off and audible alarm when program is complete
- Can be used at –10 to +60 °C (maximum 80% relative humidity, non-condensing), in an incubator, CO_2 incubator or cold room
- 5 year warranty on motor and drive mechanism

Delivery information: Supplied with non-slip rubber mat but without attachments, accessories must be ordered separately. Please see entry 'Accessories for VWR Standard and Advanced series orbital shakers' for details on other platforms and accessories.

Model	Advanced 10000-1	Advanced 10000-2
Max. load (kg)	45,4	
Orbit (mm)	25	51
Platform W×D (mm)	610×610	
Power (W)	75	
Shaking motion	Orbital	
Speed (min^{-1})	15 - 300	
Speed accuracy (min^{-1})	±1 below 100	
Weight (kg)	73	
W×D×H (mm)	676×719×178	

Description	Pk	Cat. No.
Advanced 10000-1 orbital shaker, UK-plug	1	**444-2919**
Advanced 10000-2 orbital shaker, UK-plug	1	**444-2922**

Orbital shakers, Advanced 15000

Digital shakers with microprocessor control which are ideal for mixing applications with very heavy loads and larger vessels, e.g. cell cultures, solubility studies and extraction procedures. Variable speed control provides consistent, uniform shaking action. The Accu-drive shaking system delivers exceptional speed control, accuracy, safety and durability, the system continuously monitors shaking speed and will maintain the set point even under changing loads. Displayed speed is accurate to 1% of set speed. The ramping feature slowly increases speed to the set point for added safety. Built-in load sensor can detect an unbalanced condition and will automatically reduce the min^{-1} to a safe speed to prevent spills and protect samples. Speed calibration mode allows the user to recalibrate the speed display and RS232 serial port provides two-way communication for data logging and unit control.

- Two independent LED displays show speed and time
- Integral timer, 1 s to 160 h, shows elapsed time or counts down, automatic switch-off and audible alarm when program is complete
- Can be used at –10 to +60 °C (maximum 80% relative humidity, non-condensing), in an incubator, CO_2 incubator or cold room
- 5 year warranty on motor and drive mechanism

Delivery information: Supplied with non-slip rubber mat but without attachments, accessories must be ordered separately. Please see entry 'Accessories for VWR Standard and Advanced series orbital shakers' for details on other platforms and accessories.

Model	Advanced 15000-1	Advanced 15000-2
Max. load (kg)	68	
Orbit (mm)	25	51
Platform W×D (mm)	610×910	
Power (W)	75	
Shaking motion	Orbital	
Speed (min^{-1})	15 - 300	
Speed accuracy (min^{-1})	±1 below 100	
Weight (kg)	84	
W×D×H (mm)	676×719×178	

Description	Pk	Cat. No.
Advanced 15000-1 orbital shaker, UK-plug	1	**444-2925**
Advanced 15000-2 orbital shaker, UK-plug	1	**444-2928**

Universal platforms

Description	For	Pk	Cat. No.
Universal platform, 330×330 mm	Standard/Advanced 3500, Advanced 3750 shakers	1	**444-2930**
Universal platform, 457×457 mm*	Standard/Advanced 3500, Advanced 3750** shakers	1	**444-2931**
Universal platform 330×279 mm	Standard/Advanced 3500, Incubating 3500, Advanced 3750, Professional 3500 shakers, mounting Erlenmeyer flask clamps and test tube racks	1	**444-7087**
Universal platform, 610×457 mm*	Standard/Advanced 3500, Advanced 3750**, Standard/Advanced 5000** shakers	1	**444-2932**
Universal platform, 610×610 mm	Advanced 10000-1/10000-2 shakers	1	**444-2933**
Universal platform, 762×457 mm*	Standard/Advanced 5000 shakers	1	**444-2934**
Universal platform, 914×610 mm	Advanced 15000-1/15000-2 shakers	1	**444-2935**
Set of 4 tier braces for stacking 2 platforms, clearance is 254 mm	Standard/Advanced 3500, Standard/Advanced 5000 shakers	1	**444-2965**

* Platforms are suitable for optional two tier braces, (444-2965) which allow stacking with 254 mm clearance between platforms (recommended for selected platform sizes)
** Platform stacking is not recommended for 3750 or 5000 models

Culture platforms

Description	For	Pk	Cat. No.
Culture platform, 457×457 mm*	Standard/Advanced 3500, Advanced 3750** shakers	1	**444-2936**
Culture platform, 610×457 mm*	Standard/Advanced 3500, Advanced 3750**, Standard/Advanced 5000 shakers	1	**444-2937**
Set of 4 tier braces for stacking 2 platforms, clearance is 254 mm	Standard/Advanced 3500, Standard/Advanced 5000 shakers	1	**444-2965**

* Platforms are suitable for optional two tier braces, (444-2965) which allow stacking with 254 mm clearance between platforms (recommended for selected platform sizes)
** Platform stacking is not recommended for 3750 or 5000 models

Dedicated platforms

Description	For	Pk	Cat. No.
Dedicated platform with 4×1 litre flask clamps, 330×330 mm	Standard/Advanced 3500, Advanced 3750 shakers	1	**444-2948**
Dedicated platform with 8×500 ml flask clamps, 330×330 mm	Standard/Advanced 3500, Advanced 3750 shakers	1	**444-2947**
Dedicated platform with 12×250 ml flask clamps, 330×330 mm	Standard/Advanced 3500, Advanced 3750 shakers	1	**444-2946**
Dedicated platform with 16×125 ml flask clamps, 330×330 mm	Standard/Advanced 3500, Advanced 3750 shakers	1	**444-2945**
Dedicated platform with 9×1 litre flask clamps, 457×457 mm	Standard/Advanced 3500, Advanced 3750** shakers	1	**444-2952**
Dedicated platform with 13×500 ml flask clamps, 457×457 mm*	Standard/Advanced 3500, Advanced 3750** shakers	1	**444-2951**
Dedicated platform with 20×250 ml flask clamps, 457×457 mm*	Standard/Advanced 3500, Advanced 3750** shakers	1	**444-2950**
Dedicated platform with 27×125 ml flask clamps, 457×457 mm*	Standard/Advanced 3500, Advanced 3750** shakers	1	**444-2949**
Set of 4 tier braces for stacking 2 platforms, clearance is 254 mm	Standard/Advanced 3500, Standard/Advanced 5000 shakers	1	**444-2965**

* Platforms are suitable for optional two tier braces, (444-2965) which allow stacking with 254 mm clearance between platforms (recommended for selected platform sizes)
** Platform stacking is not recommended for 3750 or 5000 models

Replacement rubber mats

Description	For	Pk	Cat. No.
Rubber mat, 330×279 mm	Standard/Advanced 3500, Incubating 3500, Advanced 3750 shakers	1	**444-2966**
Replacement rubber mat, 610×457 mm	Standard/Advanced 5000 shakers	1	**444-2967**
Replacement rubber mat, 610×610 mm	Advanced 10000-1/10000-2 shakers	1	**444-2968**
Replacement rubber mat, 914×610 mm	Advanced 15000-1/15000-2 shakers	1	**444-2969**

Platforms for separating funnels

Description	For	Pk	Cat. No.
Platform for separating funnels, 457×457 mm	Standard/Advanced 3500, Advanced 3750 shakers	1	**444-2953**
Clamp for separating funnels	Use with platforms 444-2931/444-2953	1	**444-2970**

Large vessel carrier platforms

Description	For	Pk	Cat. No.
Large vessel carrier platform, has 4 adjustable cushioned rollers to hold glassware securely, 764×459×353 mm, bar size 457 mm	Standard/Advanced 5000 shakers	1	**444-2940**
Large vessel carrier platform, has 4 adjustable cushioned rollers to hold glassware securely, 619×617×360 mm, bar size 610 mm	Advanced 10000-1/10000-2 shakers	1	**444-2941**
Large vessel carrier platform, has 5 adjustable cushioned rollers to hold glassware securely, 937×617×360 mm, bar size 610 mm	Advanced 15000-1/15000-2 shakers	1	**444-2942**
Replacement 457 mm roller bar with mounting hardware	Use with carrier 444-2940 or platforms 444-2938 / 444-2939	1	**444-2943**
Replacement 610 mm roller bar with mounting hardware	Use with carriers 444-2941 / 444-2942	1	**444-2944**

Microplate clamp

Attaches to the relevant universal platform being used with the shaker. For details of universal platforms please see entry above.

Number of microplate clamps held on universal platforms:		
Platform size (mm)	Platform Cat. No.	Number of microplate clamps (444-2954) held
330×279	444-7087	4
330×330	444-2930	6
457×457	444-2931	12
610×457	444-2932	18
610×610	444-2933	24
762×457	444-2934	21
914×610	444-2935	36

Description	For	Pk	Cat. No.
Microplate clamp, holds one standard microplate or one deepwell plate, 89×129 mm	Standard/Advanced 3500, 5000, 10000, 15000 shakers	1	**444-2954**

Stainless steel Erlenmeyer flask clamps

Tray or platform	Number of flask clamps per tray or platform	Number of flask clamps per tray or platform	Number of flask clamps per tray or platform	Number of flask clamps per tray or platform	Number of flask clamps per tray or platform	Number of flask clamps per tray or platform	Number of flask clamps per tray or platform	Number of flask clamps per tray or platform	Number of flask clamps per tray or platform	Number of flask clamps per tray or platform	Number of flask clamps per tray or platform
	10 ml flask clamp	25 ml flask clamp	50 ml flask clamp	125 ml flask clamp	250 ml flask clamp	500 ml flask clamp	1 l flask clamp	2 l flask clamp	2.8 l flask clamp	4 l flask clamp	6 l flask clamp
Mini shaker*	35	20	15	12	6	4	-	-	-	-	-
Incubating mini shaker*	35	20	12	8	5	-	-	-	-	-	-
Universal platform **444-7087**											
Standard/Advanced 3500	60	25	13	10	9	7	4	-	-	-	-
Incubating orbital shaker, Professional 3500	60	25	13	10	9	7	4	-	-	-	-
Advanced 3750	60	25	13	10	9	7	4	-	-	-	-
Universal platform **444-2930**											
Standard/Advanced 3500	60	30	15	12	12	8	4	3	1	1	1
Advanced 3750	60	30	15	12	12	8	4	3	1	1	1
Universal Platform **444-2931**											
Standard/Advanced 3500	113	64	32	20	20	13	8	5	2	4	2
Advanced 3750	113	64	32	20	20	13	8	5	2	4	2
Universal platform **444-2932**											
Standard/Advanced 3500	158	88	44	28	28	20	12	6	3	4	3
Advanced 3750	158	88	44	28	28	20	12	6	3	4	3
Standard/Advanced 5000	158	88	44	28	28	20	12	6	3	4	3
Universal platform **444-2934**											
Standard/Advanced 5000	203	112	56	36	36	26	15	8	3	6	4
Universal platform **444-2933**											
Advanced 10000-1/10000-2	221	121	61	41	41	25	16	9	5	5	5
Universal platform **444-2935**											
Advanced 15000-1/15000-2	336	160	94	61	64	40	24	14	7	9	7

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Description	For	Pk	Cat. No.
Accessories			
Flask clamps, stainless steel	10 ml	1	**444-7040**
Flask clamps, stainless steel	25 ml	1	**444-7041**
Flask clamps, stainless steel	50 ml	1	**444-7042**
Flask clamps, stainless steel	125 ml	1	**444-7043**
Flask clamps, stainless steel	250 ml	1	**444-7044**
Flask clamps, stainless steel	500 ml	1	**444-7045**
Flask clamps, stainless steel	1000 ml	1	**444-7030**
Flask clamps, stainless steel	2000 ml	1	**444-7031**
Flask clamps, stainless steel (for Fernbach flasks)	2800 ml	1	**444-7032**
Flask clamps, stainless steel	4000 ml	1	**444-7033**
Flask clamps, stainless steel	6000 ml	1	**444-7034**

* Platform supplied with mini shaker and incubating mini shaker. Note other shakers require an optional universal platform to enable flask clamps or test tube racks to be mounted which must be ordered separately.

VWR COLLECTION

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Stainless steel media bottle clamps

Tray or platform	Number of bottle clamps per tray or platform	
	500 ml media bottle clamp	1 l media bottle clamp
Mini shaker*	3	-
Incubating mini shaker*	-	-
Universal platform **444-7087**		
Standard/Advanced 3500	5	2
Incubating orbital shaker, Professional 3500	5	2
Advanced 3750	5	2
Universal platform **444-2930**		
Standard/Advanced 3500	6	5
Advanced 3750	6	5
Universal Platform **444-2931**		
Standard/Advanced 3500	16	10
Advanced 3750	16	10
Universal platform **444-2932**		
Standard/Advanced 3500	20	13
Advanced 3750	20	13
Standard/Advanced 5000	20	13
Universal platform **444-2934**		
Standard/Advanced 5000	28	18
Universal platform **444-2933**		
Advanced 10000-1/10000-2	25	18
Universal platform **444-2935**		
Advanced 15000-1/15000-2	40	30

Description	For	Pk	Cat. No.
Accessories			
Clamps for media bottles, stainless steel	500 ml	1	**444-7035**
Clamps for media bottles, stainless steel	1000 ml	1	**444-7036**

* Platform supplied with mini shaker and incubating mini shaker. Note other shakers require an optional perforated platform to enable flask clamps or test tube racks to be mounted which must be ordered separately.

Autoclavable PVC Erlenmeyer flask clamps

Tray or platform	Number of flask clamps per tray or platform				
	125 ml flask clamp	250 ml flask clamp	500 ml flask clamp	1 l flask clamp	2 l flask clamp
Mini shaker*	12	6	4	-	-
Incubating mini shaker*	8	4	-	-	-
Universal platform **444-7087**					
Standard/Advanced 3500	10	8	5	2	-
Incubating orbital shaker, Professional 3500	10	8	5	2	-
Advanced 3750	10	8	5	2	-
Universal platform **444-2930**					
Standard/Advanced 3500	12	10	6	4	3
Advanced 3750	12	10	6	4	3
Universal Platform **444-2931**					
Standard/Advanced 3500	20	18	12	8	4
Advanced 3750	20	18	12	8	4
Universal platform **444-2932**					
Standard/Advanced 3500	28	25	16	10	6
Advanced 3750	28	25	16	10	6
Standard/Advanced 5000	28	25	16	10	6
Universal platform **444-2934**					
Standard/Advanced 5000	36	33	20	14	8
Universal platform **444-2933**					
Advanced 10000-1/10000-2	41	35	24	13	9
Universal platform **444-2935**					
Advanced 15000-1/15000-2	61	55	38	22	13

Description	For	Pk	Cat. No.
Autoclavable PVC flask clamp, 125 ml	125 ml Erlenmeyer flasks	1	**444-2960**
Autoclavable PVC flask clamp, 250 ml	250 ml Erlenmeyer flasks	1	**444-2961**
Autoclavable PVC flask clamp, 500 ml	500 ml Erlenmeyer flasks	1	**444-2962**
Autoclavable PVC flask clamp, 1000 ml	1000 ml Erlenmeyer flasks	1	**444-2963**
Autoclavable PVC flask clamp, 2000 ml	2000 ml Erlenmeyer flasks	1	**444-2964**

* Platform supplied with mini shaker and incubating mini shaker. Note other shakers require an optional perforated platform to enable flask clamps or test tube racks to be mounted which must be ordered separately.

Half-sized test tube racks

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Tray or platform	Number of racks per tray or platform						
	1,5/2,0 ml microtube rack, capacity 70 tubes	10 to 13 mm test tube rack, capacity 63 tubes	14 to 16 mm test tube rack, capacity 48 tubes	18 to 20 mm test tube rack, capacity 35 tubes	22 to 25 mm test tube rack, capacity 24 tubes	15 ml centrifuge tube rack, capacity 35 tubes	50 ml centrifuge tube rack, capacity 12 tubes
Mini shaker*	2	2	2	2	2	2	2
Incubating mini shaker*	2	1	1	-	-	1	1
Microplate shaker*	2	-	-	-	-	-	-
Incubating microplate shaker*	2	-	-	-	-	-	-
Universal platform **444-7087**							
Standard/Advanced 3500	2	2	2	2	2	2	2
Incubating orbital shaker, Professional 3500	2	2	2	2	2	2	2
Advanced 3750	2	2	2	2	2	2	2
Universal platform **444-2930**							
Standard/Advanced 3500	2	2	2	2	2	2	2
Advanced 3750	2	2	2	2	2	2	2
Universal Platform **444-2931**							
Standard/Advanced 3500	4	4	4	4	4	4	4
Advanced 3750	4	4	4	4	4	4	4
Universal platform **444-2932**							
Standard/Advanced 3500	6	6	6	6	6	6	6
Advanced 3750	6	6	6	6	6	6	6
Standard/Advanced 5000	6	6	6	6	6	6	6
Universal platform **444-2934**							
Standard/Advanced 5000	8	8	8	8	8	8	8
Universal platform **444-2933**							
Advanced 10000-1/10000-2	8	8	8	8	8	8	8
Universal platform **444-2935**							
Advanced 15000-1/15000-2	7	7	7	7	7	7	7

Description	For	Pk	Cat. No.
Accessories			
Microtube rack, PVC coated steel	1,5/2,0 ml tubes, holds 70 tubes	1	**444-0276**
Test tube rack, PVC coated steel	10 - 13 mm Ø tubes, holds 63 tubes	1	**444-0278**
Test tube rack, PVC coated steel	14 - 16 mm Ø tubes, holds 48 tubes	1	**444-0279**
Test tube rack, PVC coated steel	18 - 20 mm Ø tubes, holds 35 tubes	1	**444-0280**
Test tube rack, PVC coated steel	22 - 25 mm Ø tubes, holds 24 tubes	1	**444-0281**
Centrifuge tube rack, PVC coated steel	15 ml tubes, holds 35 tubes	1	**444-0283**
Centrifuge tube rack, PVC coated steel	50 ml tubes, holds 12 tubes	1	**444-0284**

* Platform supplied with mini shaker, incubating mini shaker, microplate shaker and incubating microplate shaker. Note other shakers require an optional perforated platform to enable flask clamps or test tube racks to be mounted which must be ordered separately.

VWR COLLECTION

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Test tube racks, PVC coated steel

Tray or platform	Number of racks per tray or platform		
	10 to 14 mm test tube rack, capacity 48 tubes	16 to 20 mm test tube rack, capacity 33 tubes	21 to 25 mm test tube rack, capacity 21 tubes

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Mini shaker*	-	-	-
Incubating mini shaker*	-	-	-
Microplate shaker*	-	-	-
Incubating microplate shaker*	-	-	-
Universal platform **444-7087**			
Standard/Advanced 3500	-	-	-
Incubating orbital shaker, Professional 3500	-	-	-
Advanced 3750	-	-	-
Universal platform **444-2930**			
Standard/Advanced 3500	-	-	-
Advanced 3750	-	-	-
Universal Platform **444-2931**			
Standard/Advanced 3500	3	3	3
Advanced 3750	3	3	3
Universal platform **444-2932**			
Standard/Advanced 3500	5	5	5
Advanced 3750	5	5	5
Standard/Advanced 5000	5	5	5
Universal platform **444-2934**			
Standard/Advanced 5000	6	6	6
Universal platform **444-2933**			
Advanced 10000-1/10000-2	7	7	7
Universal platform **444-2935**			
Advanced 15000-1/15000-2	5	5	5

Description	For	Pk	Cat. No.
PVC coated test tube rack, 10 - 14 mm	48 tubes, 10 - 14 mm	1	**444-7037**
PVC coated test tube rack, 16 - 20 mm	33 tubes, 16 - 20 mm	1	**444-7038**
PVC coated test tube rack, 21 - 25 mm	21 tubes, 21 - 25 mm	1	**444-7039**

* Platform supplied with mini shaker, incubating mini shaker, microplate shaker and incubating microplate shaker. Note other shakers require an optional perforated platform to enable flask clamps or test tube racks to be mounted which must be ordered separately.

VWR COLLECTION

SELECTED FOR YOU

Test tube racks, pivoting stainless steel

Tray or platform	Number of racks per tray or platform				
	13 mm test tube rack, capacity 90 tubes	16 mm test tube rack, capacity 60 tubes	20 mm test tube rack, capacity 40 tubes	25 mm test tube rack, capacity 24 tubes	30 mm test tube rack, capacity 21 tubes
Mini shaker*	-	-	-	-	-
Incubating mini shaker*	-	-	-	-	-
Microplate shaker*	-	-	-	-	-
Incubating microplate shaker*	-	-	-	-	-
Universal platform **444-7087**					
Standard/Advanced 3500	1	1	1	1	1
Incubating orbital shaker, Professional 3500	1	1	1	1	1
Advanced 3750	1	1	1	1	1
Universal platform **444-2930**					
Standard/Advanced 3500	2	2	2	2	2
Advanced 3750	2	2	2	2	2
Universal Platform **444-2931**					
Standard/Advanced 3500	2	2	2	2	2
Advanced 3750	2	2	2	2	2
Universal platform **444-2932**					
Standard/Advanced 3500	3	3	3	3	3
Advanced 3750	3	3	3	3	3
Standard/Advanced 5000	3	3	3	3	3
Universal platform **444-2934**					

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Tray or platform	Number of racks per tray or platform				
Standard/Advanced 5000	4	4	4	4	4
Universal platform **444-2933**					
Advanced 10000-1/10000-2	4	4	4	4	4
Universal platform **444-2935**					
Advanced 15000-1/15000-2	6	6	6	6	6

Description	For	Pk	Cat. No.
Pivoting stainless steel test tube rack, 13 mm	90 tubes, 13 mm	1	**444-2955**
Pivoting stainless steel test tube rack, 16 mm	60 tubes, 16 mm	1	**444-2956**
Pivoting stainless steel test tube rack, 20 mm	40 tubes, 20 mm (accommodates 15 ml centrifuge tubes)	1	**444-2957**
Pivoting stainless steel test tube rack, 25 mm	24 tubes, 25 mm	1	**444-2958**
Pivoting stainless steel test tube rack, 30 mm	21 tubes, 30 mm	1	**444-2959**

* Platform supplied with mini shaker, incubating mini shaker, microplate shaker and incubating microplate shaker. Note other shakers require an optional perforated platform to enable flask clamps or test tube racks to be mounted which must be ordered separately.

Orbital shaker, VXR basic Vibrax®
IKA

Small, optoelectronically controlled shaker with a wide speed range. Circular shaking motion and slow speeds are well maintained.

- Suitable for continuous operation
- Range of interchangeable attachments available
- Can be used at 5 to 40 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 21

Ordering information: Supplied without attachments, required accessories must be ordered separately.

Model	VXR basic Vibrax
Max. load (kg)	2
Orbital diameter (mm)	4
Power input/output (W)	35/13,2
Shaking motion	Orbital
Speed (min^{-1})	0 - 2200
Weight (kg)	6,1
W×D×H (mm)	157×247×130

Description	Pk	Cat. No.
VXR basic Vibrax orbital shaker, UK-plug	1	**444-0058**

Description	For	Pk	Cat. No.
Accessories			
Test tube attachment	up to 36 test tubes or centrifuge tubes with 16 mm Ø	1	**444-2302**
One hand attachment (135×130 mm)	shaking single vessels, 1 - 250 ml, which are handheld	1	**444-2301**
Universal attachment	rapid and secure clamping, maximum 2×500 ml Erlenmeyer flasks	1	**444-2308**
Dish attachment (410×210 mm)	culture bottles, Petri dishes	1	**444-2303**
Microcentrifuge tube attachment	mixing with up to 64×1,5/2,0 ml microcentrifuge tubes	1	**444-2307**
Basic holder	test tube inserts	1	**444-2747**
Test tube insert	microcentrifuge tubes or test tubes, 70 holes Ø 10 mm	1	**444-2743**
Test tube insert	test tubes, 41 holes Ø 12 mm	1	**444-2744**
Test tube insert	test tubes, 32 holes Ø 16 mm	1	**444-2745**
Test tube insert	test tubes, 18 holes Ø 20 mm	1	**444-2746**

Orbital shakers, KS 130

IKA

Small shakers with electronic adjustment of speed and timer. Control model has RS232 analogue interface, integrated end point positioning for automated robot controlled sampling and all functions can be controlled and documented with optional labworldsoft® software.

- Continuous or timer operation; basic model from 5 to 50 min, control model 0 to 599 min
- Basic model has LED display for speed and time adjustment, control model has digital display for speed, time and operating mode
- Can be used at 5 to 50 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 21

Ordering information: Supplied without attachments, please order required accessories separately.

Model	KS 130 basic	KS 130 control
Display	LED speed/timer	Digital speed/timer/mode
Max. load (kg)	2	
Orbital diameter (mm)	4	
Power input/output (W)	45/10	
Shaking motion	Orbital	
Speed (min^{-1})	80 - 800	
Weight (kg)	7,7	8,8
W×D×H (mm)	270×316×98	

Description	Pk	Cat. No.
basic model		
KS 130 basic orbital shaker, UK-plug	1	**444-2736**
control model		
KS 130 control orbital shaker, UK-plug	1	**444-2738**

Description	For	Pk	Cat. No.
Accessories			
AS 130.3 dish attachment. W×D×H 420×270×32 mm	culture bottles or Petri dishes, PP with integrated slip-resistant foil	1	**444-2767**
labworldsoft®		1	**431-0192**
Fixing clip	25 ml flask	1	**444-2531**
Fixing clip	50 ml flask	1	**444-2532**
Fixing clip	100 ml flask	1	**444-2533**
Fixing clip	200/250 ml flask	1	**444-2534**
Fixing clip	500 ml flask	1	**444-2535**
AS 130.2 fixing clip attachment. W×D×H 230×230×24 mm, supplied without clips	round flasks, measuring cylinders and Erlenmeyer flasks	1	**444-2766**
AS 130.4 test tube support, holds 64 tubes with Ø 10 - 16 mm, and minimum height 80 mm	intensive shaking e.g. test tubes, cuvettes, centrifuge tubes	1	**444-2768**
AS 130.1 universal attachment. W×D×H 325×234×88 mm	various types of vessels positioned by adjustable clamping rods	1	**444-2765**

Note: Shaker KS 130 basic/control accommodates a maximum of 20×25, 12×50, 12×100, 4×250 or 4×500 ml flasks.

Orbital shakers, KS 260

IKA

KS 260 control

KS 260 basic

444-2775

Compact flat shakers with electronic adjustment of speed and timer. Control model has RS232 analogue interface, integrated end point positioning for automated robot controlled sampling and all functions can be controlled and documented with optional labworldsoft® software.

- Continuous or timer operation; basic model from 5 to 50 min, control model 0 to 599 min
- Basic model has LED display for speed and time adjustment, control model has digital display for speed, time and operating mode
- Can be used at 5 to 50 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 21

Ordering information: Supplied without attachments, required accessories must be ordered separately.

Model	KS 260 basic	KS 260 control
Display	LED speed/timer	Digital speed/timer/mode
Max. load (kg)	7,5	
Orbital diameter (mm)	10	
Power input/output (W)	45/10	
Shaking motion	Orbital	
Speed (min^{-1})	20 - 500	10 - 500
Weight (kg)	8,5	8,8
W×D×H (mm)	360×420×98	

Description	Pk	Cat. No.
KS 260 basic orbital shaker, UK-plug	1	**444-2321**
KS 260 control orbital shaker, UK-plug	1	**444-2323**

Description	For	Pk	Cat. No.
Accessories			
Dish attachment (410×370×32 mm)	cell culture flasks, Petri dishes or culture bottles	1	**444-2777**
labworldsoft®		1	**431-0192**
Fixing clip	25 ml flask	1	**444-2531**
Fixing clip	50 ml flask	1	**444-2532**
Fixing clip	100 ml flask	1	**444-2533**
Fixing clip	200/250 ml flask	1	**444-2534**
Fixing clip	500 ml flask	1	**444-2535**
Fixing clip attachment (330×330×24 mm) supplied without clips	9×500, 11×250, 23×100, 23×50, 56×25 ml flasks or bottles	1	**444-2776**
Universal attachment (425×335×135 mm)	infinitely variable clamping of all kinds of vessels	1	**444-2775**

Note: Shaker KS 260 basic/control accommodates a maximum of 56×25, 23×50, 23×100, 11×250 or 9×500 ml flasks.

Orbital shaker, KS 501 digital
IKA

Low profile laboratory shaker with digital display which has a large mounting surface. Continuous operation is guaranteed even under extreme loads. Ideal for larger vessels of 250 ml and over, e.g. round bottomed flasks, Erlenmeyer flasks, culture flasks and bottles. Variety of different vessels can be accommodated by choosing from the range of optional holding attachments (not included with shaker).

- Infinitely variable speed control
- Continuous operation or timer operation from 0 to 56 min
- Can be used at 5 to 50 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 21

Ordering information: Supplied without attachments, required accessories must be ordered separately.

Model	KS 501 digital
Max. load (kg)	15
Orbital diameter (mm)	30
Power input/output (W)	70/19
Shaking motion	Orbital
Speed (min^{-1})	0 - 300
Weight (kg)	24
W×D×H (mm)	505×585×120

Description	Pk	Cat. No.
KS 501 digital orbital shaker, UK-plug	1	**444-0507**

Description	For	Pk	Cat. No.
Accessories			
Dish attachment. W×D×H 450×450×45 mm	shaking dishes and large flat bottomed flasks or beakers	1	**444-2740**
Clip fixing attachment. W×D×H 475×460×95 mm, supplied without clips	shaking flasks and Erlenmeyer flasks	1	**444-2730**
Universal attachment. W×D×H 480×500×120 mm	shaking various vessels with a minimum volume of 50 ml, clamping rolls can be adjusted to 2 levels	1	**444-2710**
Separating funnel attachment. W×D×H 480×505×190 mm	12×50 ml, 10×100 ml or 6×250 ml	1	**444-2750**
Separating funnel attachment. W×D×H 480×505×190 mm	4×500 ml, 3×1000 ml or 2×2000 ml	1	**444-2751**
Separating funnel attachment. W×D×H 480×505×225 mm	4×1000 ml	1	**444-2752**
Fixing clip	25 ml flask	1	**444-2531**
Fixing clip	50 ml flask	1	**444-2532**
Fixing clip	100 ml flask	1	**444-2533**
Fixing clip	200/250 ml flask	1	**444-2534**
Fixing clip	500 ml flask	1	**444-2535**

Note: Shaker KS 501 digital accommodates a maximum of 50×25, 48×50, 25×100, 16×250 or 12×500 ml flasks.

Orbital platform shaker, PSU-10i
Grant

Orbital flatbed shaker, with LCD display of both set and actual speed, plus set and elapsed time. Available with a choice of four interchangeable accessory platforms, to enable use with a wide range of vessels, including bottles, flasks and beakers, dishes, boxes and Petri dishes. An audible signal accompanies automatic switch-off to indicate the completion of a set time period. The soft start feature ensures a smooth ramp up of the shaking speed.

- Variable speed control
- Continuous or timer operation from 1 min to 96 h with automatic switch-off
- Can be used at 4 to 40 °C, in an incubator or cold room
- Low voltage power supply enables safe cold room operation

Ordering information: Supplied without platform, required accessories must be ordered separately.

Model	PSU-10i
Display	LCD
Max. load (kg)	3

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Orbit (mm)	10
Power	input AC 100 - 240 50/60 Hz, output DC12V
Shaking motion	Orbital
Speed (min^{-1})	50 - 450*
Weight (kg)	4
W×D×H (mm)	220×205×90

Description	Pk	Cat. No.
PSU-10i orbital shaker	1	**444-0708**

Description	Pk	Cat. No.
Accessories		
Flat platform with non-slip rubber mat for Petri dishes, culture flasks, 230×230 mm	1	**444-0726**
Platform with clamps for 12×100 ml flasks or 150 ml beakers, W×D 250×190 mm	1	**444-0035**
Platform with clamps for 6×250 ml flasks or 300 ml beakers, W×D 250×190 mm	1	**444-0036**
Universal platform with adjustable bars, for flasks, bottles and beakers, W×D 270×195 mm	1	**444-0358**
Holding bar for universal platform (444-0358)	1	**444-1025**

* Maximum speed is dependent on load

Orbital multi-platform shaker, PSU-20i
Grant

PSU-20i + 444-0795

Powerful and efficient microprocessor controlled, multifunctional orbital shaker with rotation, reciprocation and vibration. The shaker has a reliable direct drive system, accommodates loads up to 8 kg and enables optimisation of the mixing whether in flasks, beakers, Petri dishes or other laboratory vessels. The PSU-20i is easy to operate, with simple set-up of multi-segment programs via push buttons and the 2-line LCD status display.

- All mixing functions – orbital motion, reciprocation and vibration – can be set for continuous or timed operation (1 min to 96 h), or be linked together in different combinations to establish optimum mixing and ensure accurately repeatable conditions
- Interchangeable platforms available including tiered platform option
- Orbital and reciprocating speed: 20 to 250 rpm
- Reciprocal rotation: 30 to 360° turning angle
- Vibration: 0 to 5° turning angle, programmable in a burst of 0 to 5 seconds
- Can be used at 4 to 40 °C, in an incubator or cold room

Ordering information: Supplied without a platform. A platform is required, a variety of accessory platforms are available including a universal platform with adjustable bars, a flat platform ideal for low profile containers, platforms with clamps for flasks and multi-tiered flat platforms.

Model	PSU-20i
Display	LCD
Max. load (kg)	8
Orbit (mm)	20
Pitch angle (º)	0 - 360 (reciprocal mode) 0 - 5 (vibrational mode)
Platform W×D (mm)	345×430*
Power (W)	38,4
Shaking motion	Orbital, reciprocal and vibrational
Speed (min^{-1})	20 - 250
Weight (kg)	14
W×D×H (mm)	410×410×130

Description	Pk	Cat. No.
PSU-20i orbital shaker, UK-plug	1	**444-0812**

Description	For	Pk	Cat. No.
Accessories			
Platform with clamps	30×100 ml flasks	1	**444-0784**
Platform with clamps	16×250 ml flasks	1	**444-0782**
Platform with clamps	9×500 ml flasks	1	**444-0786**
Platform with clamps	6×1000 ml flasks	1	**444-0785**
Flat platform with non-slip rubber mat, 480×380 mm	Accommodating low profile containers such as Petri dishes	1	**444-0787**
Two-tier flat platform with non-slip rubber mats, 480×380 mm, height between levels: 140 mm	Various containers on 2-tier platform	1	**444-0788**
Three-tier platform with non-slip rubber mats, 480×380 mm, height between levels: 140 mm	Various containers on 3-tier platform	1	**444-0789**
Four-tier platform with non-slip rubber mats, 480×380 mm, height between levels: 140 mm	Various containers on 4-tier platform	1	**444-0790**
Universal platform, with adjustable bars and two fixing levels, 345×430 mm	Accommodating high and low level vessels	1	**444-0795**
Holding bar for universal platform		1	**444-0781**

*Note platform dimensions shown above are for the universal platform.

Orbital shaker, lab scale, SSL1
Stuart

Laboratory scale platform shaker, which is ideal for most culturing or aeration applications. Unit has a powerful yet quiet shaking mechanism and has been designed for problem-free continuous use. The cradle-type platform has four rubber cushioned horizontal securing bars which can be easily adjusted horizontally or vertically, to hold different flasks, bottles and beakers. Shaker can accommodate Erlenmeyer flasks or bottles, up to 12×250 ml, 9×500 ml, 4×1000 ml or 2×2000 ml. Speed is fully variable, and is set digitally ensuring consistency; the speed accuracy is maintained even over long runs.

- Fully adjustable cradle system holds different sizes and types of vessel
- Digital speed selection up to 300 rpm with soft start
- Can be used at 4 to 40 °C (80% relative humidity), in a CO_2 incubator or environmental chamber
- Digital timer which can be set can be set in hours, minutes, seconds or for continuous operation, with audible signal
- BioCote® antimicrobial protection

IP protection class according to DIN EN 60529: IP 31

Ordering information: Supplied with four-bar cradle platform. A larger platform (444-1609) is available to extend the capacity of the shaker up to 30×250 ml, 16×500 ml, 9×1000 ml or 4×2000 ml. The maximum speed using this platform is 150 min^{-1}, platform must be ordered separately.

Model	SSL1
Max. load (kg)	10
Orbit (mm)	16
Platform W×D (mm)	335×335
Power (W)	50
Shaking motion	Orbital
Speed (min^{-1})	30 - 300
Speed accuracy (%)	±2
Weight (kg)	11
W×D×H (mm)	360×420×270

Description	Pk	Cat. No.
SSL1 orbital shaker	1	**444-0113**

Description	Pk	Cat. No.
Accessories		
Large platform, 510×510 mm, with 6 rubber securing bars, for SSL1 shaker. Holds 30×250 ml, 16×500 ml, 9×1000 ml or 4×2000 ml. Maximum speed with platform fitted is 150 rpm.	1	**444-1609**
Flat platform, 350×350 mm, without cradle, for SSL1 shaker	1	**444-1627**

Mini orbital shakers, KM 2 and KM 2 Akku
Edmund Bühler

Durable orbital shakers, with analogue control, available as standard or battery operated versions. The optional universal tray (Mini version) accepts a maximum 3×1000 ml or 4×500 ml flask clamps. Different vessels can be accommodated by choosing from the range of optional attachments available.

- Infinitely variable speed control
- KM 2 has continuous operation or timer operation from 0 to 120 min
- KM 2 Akku can be used at 5 to 40 °C (85% relative humidity), in an incubator or cold room
- Akku model has a lead acetate battery (24 V DC / 2,2 Ah, 4 W), which provides minimum 24 hour use at maximum load
- Using the Universal tray KM, the capacity is more than doubled

Ordering information: Supplied with basic platform and rubber mat and battery charger/power unit (KM 2 Akku only), universal trays must be ordered separately.

Model	KM 2	KM 2 Akku
Max. load (kg)	2	
Orbit (mm)	8	
Platform W×D (mm)	200×295	
Shaking motion	Orbital	
Speed (min^{-1})	30 - 420	
Weight (kg)	8,5	9,5
W×D×H (mm)	220×410×130	

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Description	Pk	Cat. No.
KM 2	1	**444-9109**
KM 2 Akku (battery operated)	1	**444-9111**

Description	For	Pk	Cat. No.
Accessories			
Universal tray KM, with holes (356×300 mm)	test tube racks or clamps for Erlenmeyer flasks and other vessels	1	**444-9114**
Clamping strip, horizontal	upright vessels	1	**444-9122**
Universal tray KM Mini, with holes (200×295 mm)	test tube racks or clamps for Erlenmeyer flasks and other vessels	1	**444-9121**

Universal tray KM accommodates a maximum 58×10, 29×25, 27×50, 24×100, 12×250, 8×500, 5×1000 or 2×2000 ml flasks or 3 test tube racks. The KM Mini tray holds 23×10, 15×25, 15×50, 15×100, 6×250, 4×500, 3×1000 or 1×2000 ml flasks. Please contact your local VWR sales office for details of other accessories that are available.

IP 21

2 year warranty

Orbital shakers, KS 15 A and KS 15 A control

Edmund Bühler

Orbital shakers, which are suitable for continuous operation. The universal tray accepts max. 5×1000 ml or 9×500 ml flask clamps, Combifix rack system accommodates 4×1000 ml or 6×500 ml Erlenmeyer flasks. Variety of different vessels can be accommodated by choosing from the range of optional attachments.

- KS 15 A has analogue control, KS 15 A control has digital display with a new programmable control with extended functionality
- Continuous operation or timer operation from 0 to 120 min (KS 15 A), and continuous operation or programmable (KS 15 A control)
- Infinitely variable speed control
- Can be used at 5 to 50 °C (85% relative humidity), in an incubator or cold room
- Can be used with incubator hood TH 15 (444-9391) at ambient +5 to 50 °C with accuracy of ±1% of the set value

Ordering information: Supplied without universal tray or rack system, accessories must be ordered separately. Please see shaking incubators entries for TH 15 incubator hood or visit www.vwr.com for more information.

Model	KS 15 A control	KS 15 A
Max. load (kg)	15	
Orbit (mm)	17	
Platform W×D (mm)	400×300	
Shaking motion	Orbital	
Speed (min^{-1})	30 - 420	
Weight (kg)	19	18
W×D×H (mm)	510×490×150	

Description	Pk	Cat. No.
KS 15 A control	1	**444-9212**
KS 15 A	1	**444-9213**

Description	For	Pk	Cat. No.
Accessories			
Stainless steel spring clamp	10 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9491**
Stainless steel spring clamp	25 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9492**
Stainless steel spring clamp	50 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9493**
Stainless steel spring clamp	100 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9494**
Stainless steel spring clamp	250 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9495**
Stainless steel spring clamp	500 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9496**
Stainless steel spring clamp	1000 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9497**
Stainless steel spring clamp	2000 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9498**
Universal tray KS, with holes (430×300 mm)	Attaching test tube racks or clamps for Erlenmeyer flasks and other vessels**	1	**444-9296**
Combifix KS rack system, (400×275 mm)	Fastening various upright vessels, e.g. beakers and flasks (with additional strips which are also suitable for other vessels)	1	**444-9297**

Universal tray KS accommodates a maximum 68×10, 34×25, 27×50, 24×100, 15×250, 9×500, 5×1000 or 2×2000 ml flasks or 4 test tube racks. The tray holds 4×100, 3×250, 2×500, 1×1000 or 1×2000 ml separating funnels.

Orbital/reciprocating shakers, SM 30 A and SM 30 A control, SM 30 C and SM 30 C control

Edmund Bühler

Bench top orbital shakers which are suitable for continuous operation and accommodate loads of up to 30 kg. 'A' models are orbital motion only, the versatile 'C' models have functionality to change motion from orbital to reciprocating without using any tools. Universal tray accepts a maximum of 11×1000 ml or 15×500 ml flask clamps, Combifix rack system accommodates 6×1000 ml or 12×500 ml Erlenmeyer flasks. Variety of different vessels can be accommodated by choosing from the range of optional attachments.

- Motion of 'C' models can be changed from orbital to reciprocating
- SM 30 has analogue control, SM 30 control has digital display and a new programmable control with extended functionality
- Continuous operation or programmable
- Infinitely variable speed control and can be used at 5 to 50 °C (85% relative humidity), in an incubator or cold room
- Can be used with illuminated incubator hood TH 30 at ambient +5 to 50 °C with accuracy of ±1% of the set value

Delivery information: Supplied with shaking plate and rubber mat but without universal tray or rack system, accessories must be ordered separately.

Model	SM 30 A	SM 30 A control	SM 30 C	SM 30 C control
Max. load (kg)	30			
Orbit (mm)	26			
Platform W×D (mm)	560×400			
Shaking motion	Orbital		Orbital/reciprocating	
Speed (min^{-1})	15 - 300			
Weight (kg)	33			
W×D×H (mm)	680×610×160			

Description	Pk	Cat. No.
SM 30 A, orbital motion only	1	**444-9115**
SM 30 A control with digital display, orbital motion only	1	**444-9112**
SM 30 C, orbital and reciprocal motion	1	**444-9332**
SM 30 C control with digital display, orbital and reciprocal motion	1	**444-9331**

Description	For	Pk	Cat. No.
Accessories			
Stainless steel spring clamp	10 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9491**
Stainless steel spring clamp	25 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9492**
Stainless steel spring clamp	50 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9493**
Stainless steel spring clamp	100 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9494**
Stainless steel spring clamp	250 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9495**
Stainless steel spring clamp	500 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9496**
Stainless steel spring clamp	1000 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9497**
Stainless steel spring clamp	2000 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9498**
Clamping strip, vertical, for SM shakers	tall or horizontal vessels	1	**444-9357**
Clamping strip, horizontal, for SM shakers	upright vessels	1	**444-9356**
Clamp strip	horizontal separating funnels	1	**444-9359**
Spring strip, for SM shakers	separating funnel stoppers or other horizontal vessels	1	**444-9358**
Racks for SM 30 shaker			
Universal tray SM, with holes (560×400 mm)	test tube racks or clamps for Erlenmeyer flasks and other vessels	1	**444-9360**
Combifix SM assembly A, basic rack with 5 clamping strips	various upright vessels, e.g. beakers and flasks	1	**444-9351**
Combifix SM assembly B, basic rack with 4 double clamping strips	tall or horizontal vessels	1	**444-9352**
Combifix SM assembly C, basic rack with 2 clamping strips and 1 spring strip	separating funnels	1	**444-9353**
2-Tier top frame SM, both trays have holes, total height 332 mm, distance between 2 tiers 300 mm	clamps or test tube racks, alternatively SM tray or rack systems can be mounted on the lower level	1	**444-9369**

Universal tray SM accommodates a maximum 117×10, 64×25, 63×50, 49×100, 23×250, 15×500, 11×1000 or 6×2000 ml flasks or 5 test tube racks. The tray holds 10×100, 6×250, 4×500, 4×1000 or 2×2000 ml separating funnels. Please contact your local VWR sales office for details of other accessories that are available.

Orbital shakers, Vibramax
Heidolph

Vibrating platform shakers designed for test tubes or other vessels with analogue control dials for vibration frequency. The insulated motor ensures virtually no heat transfer from motor to platform.

- Continuous or timer operation: allows for unattended operation up to 120 min, sends an acoustic signal
- Vibramax 100 has larger orbit for best mixing results even with small quantities
- Smaller orbit of Vibramax 110 prevents contamination even with full tubes
- Can be used at 0 to 50 °C (80% relative humidity), in an incubator or cold room

IP Protection Class according to DIN EN 60529: IP 30

Ordering information: Supplied with non-slip rubber mat, required accessories must be ordered separately. Vibramax 100 accessories are category B and Vibramax 110 accessories are category C.

Model	Vibramax 100	Vibramax 110
Max. load (kg)	2	
Orbit (mm)	3	1,5
Power input/output (W)	31/7	46/20
Shaking motion	Vibrating orbital	
Speed (min^{-1})	150 - 1350	150 - 2500
Weight (kg)	5,5	5
W×D×H (mm)	245×310×125	245×310×140

Description	Pk	Cat. No.
Vibramax 100, UK-plug	1	**444-1231**
Vibramax 110, UK-plug	1	**444-1232**

Orbital shakers, Rotamax 120 and Unimax series
Heidolph

Orbital shakers with analogue control dials for vibration frequency. The two dimensional swirling action produced is ideal for cultivating microorganisms and cell or tissue cultures. Motion is continuously adjustable.

- Continuous or timer operation; timer function with audible signal for unattended operation: Unimax 1010 up to 999 min process time, Rotamax 120 and Unimax 2010 up to 120 min
- Unimax models have digital display; for speed (Unimax 2010), for speed and time (Unimax 1010)
- Modular system; combine Unimax 1010 with Incubator 1000 with choice of a low or high incubator hood
- Can be used at 0 to 50 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: Rotamax IP 30, Unimax 1010 IP 40, Unimax 2010 IP 20

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Delivery information: Supplied with non-slip rubber mat, required accessories must be ordered separately. Rotamax accessories are category B, Unimax 1010 accessories are category D and Unimax 2010 accessories are category E. Unimax 1010 complete package includes: Orbital platform shaker Unimax 1010, heating module, Incubator 1000 and high incubator hood.

Model	Unimax 2010	Unimax 1010	Rotamax 120
Max. load (kg)	10	5	2
Orbit (mm)	20	10	20
Power input (W)	45	50	33
Shaking motion	Orbital		
Speed (min^{-1})	20 - 400	30 - 500	20 - 300
Weight (kg)	16	8,0	5,5
W×D×H (mm)	426×435×135	320×375×125	245×310×125

Description	Pk	Cat. No.
Rotamax 120 and Unimax		
Unimax 2010 orbital shaker, UK-plug	1	**444-1235**
Unimax 1010 orbital shaker, UK-plug	1	**444-1234**
Rotamax 120 orbital shaker, UK-plug	1	**444-1233**
Unimax 1010 complete package		
Unimax 1010 complete package, UK-plug	1	**444-0197**

Accessories for shakers
Heidolph

Category	for
A	Reax top/control
B	Vibramax 100, Rotamax 120
C	Vibramax 110
D	Unimax 1010, Duomax 1030, Polymax 1040 and Promax 1020
E	Unimax 2010, Promax 2020 and Polymax 2040
H	Multi Reax

Description	For	Pk	Cat. No.
Large test tube tray for test tubes and flasks up to 50 ml	A	1	**444-1398**
Test tube stand for up to 6×1,5 ml microcentrifuge tubes	A	1	**444-1397**
Foam attachment for 10 test tubes	A	1	**444-1396**
Perforated platform 100	B	1	**229-0621**
Spare tension roller for 444-1252	B	1	**444-1395**
Frame with 2 tension rollers	B	1	**444-1252**
Test tube attachment for 36 test tubes (Ø/L 16/80 mm)	C	1	**444-1254**
Test tube attachment for 49 test tubes (Ø/L 12/80 mm)	C	1	**444-1253**
Perforated platform 1000	D	1	**229-0622**
Attachment for max. 22 Erlenmeyer flasks, 25 ml	D	1	**444-1361**
Attachment for max. 14 Erlenmeyer flasks, 50 ml	D	1	**444-1362**
Attachment for max. 9 Erlenmeyer flasks, 100 ml	D	1	**444-1363**
Attachment for max. 5 Erlenmeyer flasks, 250 ml	D	1	**444-1364**
Attachment for max. 4 Erlenmeyer flasks, 500 ml	D	1	**444-1365**
Attachment for max. 2 Erlenmeyer flasks, 1000 ml	D	1	**444-1366**
Frame with 2 tension rollers	D	1	**444-1351**
Single tension roller for 444-1351	D	1	**444-1352**
Attachment for max. 4 funnels, 50/100 ml	D	1	**444-1371**
Perforated platform 2000	E	1	**444-1453**
Clamp size 1, for Erlenmeyer flasks 25 ml, max. 36 pcs/platform	E	1	**444-1461**
Clamp size 2, for Erlenmeyer flasks 50 ml, max. 36 pcs/platform	E	1	**444-1462**
Clamp size 3, for Erlenmeyer flasks 100 ml, max. 23 pcs/platform	E	1	**444-1463**
Clamp size 4, for Erlenmeyer flasks 250 ml, max. 12 pcs/platform	E	1	**444-1464**
Clamp size 5, for Erlenmeyer flasks 500 ml, max. 9 pcs/platform	E	1	**444-1465**
Clamp size 6, Erlenmeyer flasks 1000 ml, max. 5 pcs/platform	E	1	**444-1466**
Clamp for 2 litre Erlenmeyer flasks. 1000 series shakers require 2 clamps, and 2000 series shakers need 3 clamps	E	1	**444-1467**
Separating funnel clamp for perforated platform 2000, provides space for max. 2×2000 ml clamps	E	1	**444-1121**
Separating funnel clamp for perforated platform 2000, provides space for max. 4×250 ml, 3×500 ml or 3×1000 ml clamps	E	1	**444-1471**
Basic platform without tension rollers to fix arbitrary glassware	E	1	**444-1451**
Single tension roller for 444-1451	E	1	**444-1452**
Multi-tier attachment, includes perforated platform 2000 and 4 supporting rods	E	1	**444-0003**
Test tube attachment for 26 test tubes (Ø 10 - 16 mm)	H	1	**441-1309**
Test tube attachment for 12 test tubes (Ø 16 - 32 mm)	H	1	**441-1310**

Orbital shakers, Excella™ E1, E2, E5 and E10

All Excella™ bench top orbital shakers designed for use in an incubator or cold room, except the analogue controlled E1, have microprocessor control and a digital display. Microprocessor control allows speed to be calibrated via the keypad; the controller recalls last set points, even when power is interrupted, and restarts shaker when power resumes. Self-correcting microprocessor system continuously monitors and compensates for changes in workload and voltage, and will maintain set point. Audible and visual alarms alert user if set point limit is exceeded, audible alarm can be muted.

- Integral timer, 0,1 to 99,9 h, shows elapsed time or counts down, automatic switch-off and audible alarm when program is complete
- Large LED display shows speed, run time and self-diagnostic indicators
- Unicentric drive with brushless motor ensures quiet, reliable, vibration-free operation with high loads and at high speed
- Can be used at 5 to 45 °C (20 - 80% humidity, non-condensing), in a cold/temperature controlled room
- Wide variety of accessories available, which are suitable for use on other shakers from the same manufacturer

Ordering information: Supplied without platform or accessories, required accessories must be ordered separately, please enquire for details.

Model	E1	E2	E5	E10
Orbit (mm)	19			25
Platform W×D (mm)	330×280		460×460	760×460
Power (W)	80		120	150
Shaking motion	Orbital			
Speed (min^{-1})	50 - 400			
Weight (kg)	23,6		32	42
W×D×H (mm)	400×455×216		520×455×216	760×683×216

Description	Pk	Cat. No.
E1 orbital shaker with 19 mm orbit	1	**444-0554**
E2 orbital shaker with 19 mm orbit	1	**444-0548**
E5 orbital shaker with 19 mm orbit	1	**444-0555**
E10 orbital shaker with 25 mm orbit	1	**444-0549**

Note: Excella E1and E2 shakers accommodate a maximum of 60×10, 20×25, 15×50, 11×125, 6×250 or 4×500 ml flasks using the universal platform, and 60×10, 32×25, 20×50, 12×125, 8×250 or 6×500 ml flasks using the dedicated platform.
Excella E5 shakers accommodate a maximum of 109×10, 64×25, 45×50, 21×125, 18×250, 14×500, 8×1000, 5×2000, 4×2800, 4×4000 or 2×6000 ml flasks using the universal platform, and 64×50, 34×125, 25×250, 16×500, 9×1000, 5×2000 or 4×2800 ml flasks using the dedicated platform.
Excella E10 shakers accommodate a maximum of 92×50, 39×125, 30×250, 18×500, 12×1000, 8×2000, 6×2800, 6×4000 or 4×6000 ml flasks using the universal platform, and 108×50, 60×125, 40×250, 24×500, 5×1000, 12×2000, 6×2800, 6×4000 or 4×6000 ml flasks using the dedicated platform.

Orbital platform shakers, Innova® 2000, 2100 and 2300 series

These platform orbital shakers are ideal for use on the bench top, in an incubator or in a warm or cold room. Their low profile means multiple shakers can be accommodated in an incubator or environmental chamber. A space saving four-tier racking system is available as an option which allows up to eight shakers to be stacked. The program controller is easy to use and the display can be easily seen from all angles. These shakers can accommodate flasks up to six litres. An RS232 serial port provides two-way communication for data logging and unit control.

- Large easy to read displays shows set point and actual values
- Integral timer, 0,1 to 99,9 h, shows elapsed time or counts down, automatic switch-off and audible alarm when program is complete
- Triple eccentric counterbalanced drive with brushless motor ensures uniform motion regardless of where the sample is on the platform even when fully loaded and operating at top speed
- Can be used at 0 - 60 °C (90% humidity, non-condensing) in a cold/temperature controlled room

Ordering information: Supplied without platforms or accessories, required accessories must be ordered separately. Units with 51 mm orbit are also available, please contact your local VWR sales office.

Model	Innova 2000	Innova 2050	Innova 2100	Innova 2150	Innova 2300	Innova 2350
Orbit (mm)	19				25 (51 mm orbit as an option)	
Platform W×D (mm)	330×280	406×305	457×457	610×457	762×457	914×610
Power (W)	35		80		150	
Shaking motion	Orbital					
Speed (min^{-1})	25 - 500 with 19 mm orbit				25 - 500 with 25 mm orbit, 25 - 300 with 51 mm orbit	25 - 500 with 25 mm orbit, 25 - 300 with 51 mm orbit
Weight (kg)	15	16	34	36	48	52
W×D×H (mm)	355×370×146	430×370×146	480×550×163	601×591×163	762×566×163	914×610×163

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Description	Pk	Cat. No.
Innova® 2000 orbital shaker, 19 mm orbit	1	**444-4501**
Innova® 2050 orbital shaker, 19 mm orbit	1	**444-0537**
Innova® 2100 orbital shaker, 19 mm orbit	1	**444-0541**
Innova® 2150 orbital shaker, 19 mm orbit	1	**444-0542**
Innova® 2300 orbital shaker, 25 mm orbit	1	**444-0539**
Innova® 2350 orbital shaker, 25 mm orbit	1	**444-0540**

Note: Innova 2000 shakers accommodate a maximum of 60×10, 20×25, 15×50, 11×125, 6×250, 4×500 ml flasks using the universal platform, and 60×10, 32×25, 20×50, 12×125, 8×250, 6×500 ml flasks using the dedicated platform.
Innova 2050 shakers accommodate a maximum of 86×10, 32×25, 32×50, 16×125, 10×250, 8×500 ml flasks using the universal platform, and 86×10, 48×25, 35×50, 20×125, 12×250, 8×500 ml flasks using the dedicated platform.
Innova 2100 shakers accommodate a maximum of 109×10, 64×25, 45×50, 21×125, 18×250, 14×500, 8×1000, 5×2000, 4×2800, 4×4000, 4×5000 or 2×6000 ml flasks using the universal platform, and 64×50, 34×125, 25×250, 16×500, 9×1000, 5×2000, 4×2800 or 4×4000 ml flasks using the dedicated platform.
Innova 2150 shakers accommodate a maximum of 63×50, 35×125, 24×250, 20×500, 12×1000, 8×2000, 5×2800, 5×4000, 4×5000 or 3×6000 ml flasks using the universal platform, and 80×50, 48×125, 35×250, 20×500, 12×1000 or 8×2000 ml flasks using the dedicated platform.
Innova 2300 shakers accommodate a maximum of 183×10, 92×25, 92×50, 39×125, 30×250, 18×500, 12×1000, 8×2000, 6×2800, 6×4000, 6×5000 or 4×6000 ml flasks using the universal platform, and 108×50, 60×125, 40×250, 24×500, 15×1000, 12×2000, 6×2800, 6×4000, or 4×6000 ml flasks using the dedicated platform.
Innova 2350 shakers accommodate a maximum of 75×125, 50×250, 30×500, 24×1000, 15×2000, 12×2800, 10×4000, 10×5000 or 8×6000 ml flasks using the universal platform, and 96×125, 70×250, 40×500, 24×1000, 15×2000, 12×2800, 12×4000 or 6×6000 ml flasks using the dedicated platform.

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Reciprocating shaker, Advanced 3750

Digital shaker with microprocessor control which is ideal for a range mixing applications, e.g. solubility studies and extraction procedures. Variable speed control provides consistent, uniform shaking action. The shaking system continuously monitors shaking speed and will maintain the set point even under changing loads. Displayed speed is accurate to 1% of set speed. The ramping feature slowly increases speed to the set point for added safety. Built-in load sensor can detect an unbalanced condition and will automatically reduce the min^{-1} to a safe speed to prevent spills and protect samples. Speed calibration mode allows user to recalibrate the speed display and RS232 serial port provides two-way communication for data logging and unit control.

- Two independent LED displays show speed and time
- Integral timer, 1 s to 160 h, shows elapsed time or counts down, automatic switch-off and audible alarm when program is complete
- Can be used at –10 to +60 °C (maximum 80% relative humidity, non-condensing), in an incubator, CO_2 incubator or cold room
- Five year warranty on motor and drive mechanism

Delivery information: Supplied with non-slip rubber mat, but without attachments, accessories must be ordered separately.

Model	Advanced 3750
Max. load (kg)	6,8
Platform W×D (mm)	330×279
Power (W)	40
Shaking motion	Reciprocating
Speed (min^{-1})	20 - 300
Speed accuracy (min^{-1})	±1 below 100
Stroke (mm)	19
Weight (kg)	20
W×D×H (mm)	356×413×146

Description	Pk	Cat. No.
Advanced 3750 reciprocating shaker, UK-plug	1	**444-2910**

Description	For	Pk	Cat. No.
Universal platforms			
Universal platform, 330×330 mm	Standard/Advanced 3500, Advanced 3750 shakers	1	**444-2930**
Universal platform, 457×457 mm*	Standard/Advanced 3500, Advanced 3750** shakers	1	**444-2931**
Universal platform 330×279 mm	Standard/Advanced 3500, Incubating 3500, Advanced 3750, Professional 3500 shakers, mounting Erlenmeyer flask clamps and test tube racks	1	**444-7087**
Universal platform, 610×457 mm*	Standard/Advanced 3500, Advanced 3750**, Standard/Advanced 5000** shakers	1	**444-2932**
Culture platforms			
Culture platform, 457×457 mm*	Standard/Advanced 3500, Advanced 3750** shakers	1	**444-2936**
Culture platform, 610×457 mm*	Standard/Advanced 3500, Advanced 3750**, Standard/Advanced 5000 shakers	1	**444-2937**
Dedicated platforms			
Dedicated platform with 4×1 litre flask clamps, 330×330 mm	Standard/Advanced 3500, Advanced 3750 shakers	1	**444-2948**
Dedicated platform with 8×500 ml flask clamps, 330×330 mm	Standard/Advanced 3500, Advanced 3750 shakers	1	**444-2947**
Dedicated platform with 12×250 ml flask clamps, 330×330 mm	Standard/Advanced 3500, Advanced 3750 shakers	1	**444-2946**
Dedicated platform with 16×125 ml flask clamps, 330×330 mm	Standard/Advanced 3500, Advanced 3750 shakers	1	**444-2945**
Dedicated platform with 9×1 litre flask clamps, 457×457 mm	Standard/Advanced 3500, Advanced 3750** shakers	1	**444-2952**
Dedicated platform with 13×500 ml flask clamps, 457×457 mm*	Standard/Advanced 3500, Advanced 3750** shakers	1	**444-2951**
Dedicated platform with 20×250 ml flask clamps, 457×457 mm*	Standard/Advanced 3500, Advanced 3750** shakers	1	**444-2950**
Dedicated platform with 27×125 ml flask clamps, 457×457 mm*	Standard/Advanced 3500, Advanced 3750** shakers	1	**444-2949**
Replacement rubber mats			
Rubber mat, 330×279 mm	Standard/Advanced 3500, Incubating 3500, Advanced 3750 shakers	1	**444-2966**
Platforms for separating funnels			
Platform for separating funnels, 457×457 mm	Standard/Advanced 3500, Advanced 3750 shakers	1	**444-2953**
Clamp for separating funnels	Use with platforms 444-2931/444-2953	1	**444-2970**

* Platforms are suitable for optional two tier braces, (444-2965) which allow stacking with 254 mm clearance between platforms (recommended for selected platform sizes)
** Platform stacking is not recommended for 3750 or 5000 models

Reciprocating shakers, HS 260

IKA

HS 260 basic

HS 260 control

444-2778

Compact flat shakers with electronic adjustment of speed and timer. Control model has an RS232/analogue interface and integrated end point positioning for automated robot-controlled sampling, and all functions can be controlled and documented with optional labworldsoft® software.

- Continuous or timer operation; basic model from 5 to 50 min, control model 0 to 599 min
- Basic model has LED display for speed and time adjustment, control model has digital display for speed, time and operating mode
- Can be used at 5 to 50 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 21

Ordering information: Supplied without attachments, required accessories must be ordered separately.

Model	HS 260 basic	HS 260 control
Display	LED speed/timer	Digital speed/timer/mode
Max. load (kg)	7,5	
Motor rating input/output (W)	45/10	
Shaking motion	Reciprocating	
Speed (min^{-1})	20 - 300	10 - 300
Stroke (mm)	20	
Weight (kg)	8,5	8,8
W×D×H (mm)	360×420×100	

Description	Pk	Cat. No.
HS 260 basic, reciprocating shaker, UK-plug	1	**444-2325**
HS 260 control, reciprocating shaker, UK-plug	1	**444-2327**

Description	For	Pk	Cat. No.
Accessories			
Dish attachment (410×370×32 mm)	cell culture flasks, Petri dishes or culture bottles	1	**444-2777**
Separating funnel attachment	6×50, 5×100, 3×250, 3×500 ml separating funnels	1	**444-2778**
labworldsoft®		1	**431-0192**
Fixing clip	25 ml flask	1	**444-2531**
Fixing clip	50 ml flask	1	**444-2532**
Fixing clip	100 ml flask	1	**444-2533**
Fixing clip	200/250 ml flask	1	**444-2534**
Fixing clip	500 ml flask	1	**444-2535**
Fixing clip attachment (330×330×24 mm) supplied without clips	9×500, 11×250, 23×100, 23×50, 56×25 ml flasks or bottles	1	**444-2776**
Universal attachment (425×335×135 mm)	infinitely variable clamping of all kinds of vessels	1	**444-2775**

Note: Shaker HS 260 basic/control accommodates a maximum of 56×25, 23×50, 23×100, 11×250 or 9×500 ml flasks.

Reciprocating shaker, HS 501 digital
IKA

Low profile laboratory shaker with digital display and a large platform. Continuous operation is guaranteed even under extreme loads. Suitable for vessels which need to be laid flat, for example separating funnels. A variety of different vessels can be accommodated by choosing from the range of optional holding attachments.

- Infinitely variable speed control
- Continuous operation or timer operation from 0 to 56 min
- Electronic speed control
- Can be used at 5 to 50 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 21

Ordering information: Supplied without attachments, required accessories must be ordered separately.

Model	HS 501 digital
Max. load (kg)	15
Motor rating input/output (W)	70/19
Shaking motion	Reciprocating
Speed (min^{-1})	0 - 300
Stroke (mm)	30
Weight (kg)	24
W×D×H (mm)	505×585×120

Description	Pk	Cat. No.
HS 501 digital, reciprocating shaker, UK-plug	1	**444-0509**

Description	For	Pk	Cat. No.
Accessories			
Dish attachment. W×D×H 450×450×45 mm	shaking dishes and large flat bottomed flasks or beakers	1	**444-2740**
Clip fixing attachment. W×D×H 475×460×95 mm, supplied without clips	shaking flasks and Erlenmeyer flasks	1	**444-2730**
Universal attachment. W×D×H 480×500×120 mm	shaking various vessels with a minimum volume of 50 ml, clamping rolls can be adjusted to 2 levels	1	**444-2710**
Separating funnel attachment. W×D×H 480×505×190 mm	12×50 ml, 10×100 ml or 6×250 ml	1	**444-2750**
Separating funnel attachment. W×D×H 480×505×190 mm	4×500 ml, 3×1000 ml or 2×2000 ml	1	**444-2751**
Separating funnel attachment. W×D×H 480×505×225 mm	4×1000 ml	1	**444-2752**
Fixing clip	25 ml flask	1	**444-2531**
Fixing clip	50 ml flask	1	**444-2532**
Fixing clip	100 ml flask	1	**444-2533**
Fixing clip	200/250 ml flask	1	**444-2534**
Fixing clip	500 ml flask	1	**444-2535**

Note: Shaker HS 501 digital accommodates a maximum of 50×25, 48×50, 25×100, 16×250 or 12×500 ml flasks.

Dual action shaker, KL 2
Edmund Bühler

Laboratory shaker which has functionality to change motion from orbital to reciprocating without using any tools. Sturdy, maintenance free shaker, suitable for long term use. Accepts 9×250 ml Erlenmeyer flasks or 3×250 ml separating funnels. Variety of different vessels can be accommodated by choosing from the range of optional attachments.

- Motion can be changed from orbital to reciprocating
- Continuous operation or timer operation from 0 to 120 min
- Infinitely variable speed control
- Can be used at 5 to 50 °C (85% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 21

Delivery information: Supplied with racking system with 3 clamping strips, and rubber mat. Other accessories available.

Model	KL 2
Max. load (kg)	2
Shaking motion	Orbital/reciprocating
Speed (min^{-1})	30 - 420
Stroke/Orbit	8 mm
Weight (kg)	13,5

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W×D×H (mm)	355×455×195

Description	Pk	Cat. No.
KL 2 orbital and reciprocating shaker	1	**444-9120**

Description	For	Pk	Cat. No.
Accessories			
Clamping strip, horizontal, for KL/KS	upright vessels	1	**444-9291**
Clamp strip, for KL/KS	horizontal separating funnels	1	**444-9294**
Spring strip, for KL/KS	securing stoppers of separating funnels or other horizontal vessels	1	**444-9293**
Clamping strip, vertical, for KL/KS	horizontal or tall vessels	1	**444-9292**

Reciprocating shakers, KS 15 B and KS 15 B control
Edmund Bühler

Reciprocating shakers, which are suitable for continuous or timer operation. The optional universal tray accepts a maximum of 5×1000 ml or 9×500 ml flask clamps; Combifix rack system accommodates 4×1000 ml or 6×500 ml Erlenmeyer flasks. Variety of different vessels can be accommodated by choosing from the range of optional attachments.

- KS 15 B has analogue control, KS 15 B control has digital display and a new programmable control with extended functionality
- Continuous operation or timer operation from 0 to 120 min (KS 15 B), and continuous operation or programmable (KS 15 B control)
- Infinitely variable speed control
- Can be used at 5 to 50 °C (85% relative humidity), in an incubator or cold room
- Can be used with incubator hood TH 15 at ambient +5 to 50 °C with accuracy of ±1% of the set value

Delivery information: Supplied without universal tray or rack system, accessories must be ordered separately. Please see shaking incubator entries for TH 15 incubator hood or contact your local VWR office for more information.

Model	KS 15 B	KS 15 B control
Max. load (kg)	15	
Platform W×D (mm)	400×300	
Shaking motion	Reciprocating	
Speed (min^{-1})	30 - 420	
Stroke (mm)	17	
Weight (kg)	18	19
W×D×H (mm)	510×490×150	

Description	Pk	Cat. No.
KS 15 B reciprocating shaker	1	**444-9220**
KS 15 B control reciprocating shaker	1	**444-9222**

Description	For	Pk	Cat. No.
Accessories			
Stainless steel spring clamp	10 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9491**
Stainless steel spring clamp	25 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9492**
Stainless steel spring clamp	50 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9493**
Stainless steel spring clamp	100 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9494**
Stainless steel spring clamp	250 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9495**
Stainless steel spring clamp	500 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9496**
Stainless steel spring clamp	1000 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9497**
Stainless steel spring clamp	2000 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9498**
Universal tray KS, with holes (430×300 mm)	Attaching test tube racks or clamps for Erlenmeyer flasks and other vessels**	1	**444-9296**
Combifix KS rack system, (400×275 mm)	Fastening various upright vessels, e.g. beakers and flasks (with additional strips which are also suitable for other vessels)	1	**444-9297**

Universal tray KS accommodates a maximum 68×10, 34×25, 27×50, 24×100, 15×250, 9×500, 5×1000 or 2×2000 ml flasks or 4 test tube racks. The tray holds 4×100, 3×250, 2×500, 1×1000 or 1×2000 ml separating funnels.

Reciprocating shakers, SM 30 B and SM 30 B control, SM 30 C and SM 30 C control

Edmund Bühler

Bench top reciprocating shakers which are suitable for continuous operation and accommodate loads of up to 30 kg. Universal tray accepts max. 11×1000 ml or 15×500 ml flask clamps; Combifix rack system accommodates 6×1000 ml or 12×500 ml Erlenmeyer flasks. Variety of different vessels can be accommodated by choosing from the range of optional attachments.

- SM 30 B has analogue control, SM 30 B control has digital display with a new programmable control and extended functionality
- Continuous operation or programmable
- Infinitely variable speed control
- Can be used at 5 to 50 °C (85% relative humidity), in an incubator or cold room
- Can be used with illuminated incubator hood TH 30 at ambient +5 to 50 °C with accuracy of ±1% of the set value

Delivery information: Supplied with shaking plate and rubber mat, but without universal tray or rack system, accessories must be ordered separately.

Model	SM 30 B	SM 30 B control
Max. load (kg)	30	
Platform W×D (mm)	560×400	
Shaking motion	Reciprocating	
Speed (min^{-1})	15 - 300	
Stroke (mm)	30	
Weight (kg)	33	
W×D×H (mm)	680×610×160	

Description	Pk	Cat. No.
SM 30 B reciprocating shaker	1	**444-9323**
SM 30 B control reciprocating shaker	1	**444-9322**

Description	For	Pk	Cat. No.
Accessories			
Stainless steel spring clamp	10 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9491**
Stainless steel spring clamp	25 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9492**
Stainless steel spring clamp	50 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9493**
Stainless steel spring clamp	100 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9494**
Stainless steel spring clamp	250 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9495**
Stainless steel spring clamp	500 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9496**
Stainless steel spring clamp	1000 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9497**
Stainless steel spring clamp	2000 ml Erlenmeyer flasks, round bottomed flasks or beakers	1	**444-9498**
Clamping strip, vertical, for SM shakers	tall or horizontal vessels	1	**444-9357**
Clamping strip, horizontal, for SM shakers	upright vessels	1	**444-9356**
Clamp strip	horizontal separating funnels	1	**444-9359**
Spring strip, for SM shakers	separating funnel stoppers or other horizontal vessels	1	**444-9358**
Racks for SM 30 shaker			
Universal tray SM, with holes (560×400 mm)	test tube racks or clamps for Erlenmeyer flasks and other vessels	1	**444-9360**
Combifix SM assembly A, basic rack with 5 clamping strips	various upright vessels, e.g. beakers and flasks	1	**444-9351**
Combifix SM assembly B, basic rack with 4 double clamping strips	tall or horizontal vessels	1	**444-9352**
Combifix SM assembly C, basic rack with 2 clamping strips and 1 spring strip	separating funnels	1	**444-9353**
2-Tier top frame SM, both trays have holes, total height 332 mm, distance between 2 tiers 300 mm	clamps or test tube racks, alternatively SM tray or rack systems can be mounted on the lower level	1	**444-9369**

Option: Shakers with 46 mm stroke (SM 30 B and SM 30 B control only). Please contact your local VWR Sales office for details.
Universal tray SM accommodates a maximum 117×10, 64×25, 63×50, 49×100, 23×250, 15×500, 11×1000 or 6×2000 ml flasks or 5 test tube racks. The tray holds 10×100, 6×250, 4×500, 4×1000 or 2×2000 ml separating funnels. Please contact VWR for details of other accessories that are available.

Reciprocating shakers, Promax
Heidolph

Promax 2020

Promax 1020

Promax shakers have a one dimensional back and forth motion for vigorous mixing of flasks and separating funnels in chemical applications, using analogue dial controls for reciprocating frequency. The encapsulated housing ensures virtually no heat transfer from motor to platform and a sealed drive is isolated from spills.

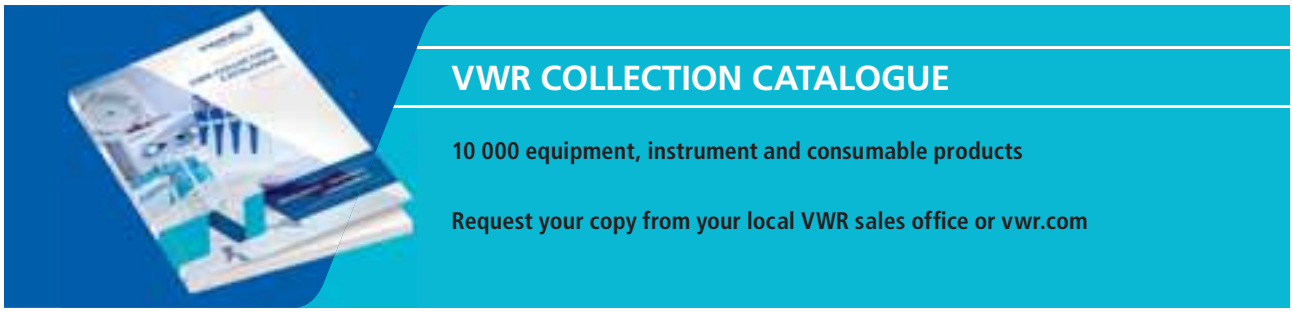
- Speed continuously adjustable
- Modular system; combine Promax 1020 with Incubator 1000 with choice of a low or high incubator hood
- Process timer with audible signal allows for unattended operation
- Promax 1020; digital timer up to 999 min, Promax 2020; analogue timer up to 120 min
- Can be used at 0 to 50 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 40 (Promax 1020); IP 20 (Promax 2020)

Delivery information: Supplied with non-slip rubber mat. Large range of attachments and clamps for up to 4 separating funnels, Erlenmeyer flasks and tension rollers are available separately. Promax 1020 accessories are category D, Promax 2020 accessories are category E, see entry for 'Accessories for Heidolph shakers' towards the end of the orbital shakers section. Please contact your local VWR office for further details.

Model	Promax 1020	Promax 2020
Input power (W)	50	115
Max. load (kg)	5	10
Shaking motion	Reciprocating	
Speed (min^{-1})	30 - 250	20 - 400
Speed accuracy (%)	<1	
Stroke (mm)	32	20
Timer	up to 999 minutes	up to 120 minutes
Weight (kg)	8,0	16
W×D×H (mm)	320×375×125	426×435×135

Description	Pk	Cat. No.
Promax 1020 reciprocating shaker, UK-plug	1	**444-1256**
Promax 2020 reciprocating shaker, UK-plug	1	**444-1255**



Mini nutating, 3D mixer

The mini nutating mixer that combines the action of an orbital shaker and a rocker to produce a three dimensional motion which provides gentle yet thorough mixing without foaming. Ideal for mixing samples in blood and centrifuge tubes. Speed and angle of tilt are fixed, providing the optimum conditions for mixing and re-suspending samples in blood and centrifuge tubes.

- Gentle movement keeps fragile tissue intact
- Can be used at 4 to 65 °C (85% relative humidity, non-condensing), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 54

Delivery information: Supplied with dimpled rubber mat.

Model	Mini nutating mixer
Angle (°)	20 fixed
Input power (W)	3,6
Max. load (kg)	0,8
Platform W×D (mm)	248×172
Shaking motion	3 dimensional gyratory
Speed (min^{-1})	20
Weight (kg)	1
W×D×H (mm)	248×172×152

Description	Pk	Cat. No.
Mini nutating mixer, UK-plug	1	**444-0149**

Mini blot, 3D shaker

The Mini blot shaker combines the actions of a rocker and a shaker to produce a three dimensional motion that is gentle enough for fragile gels and blots, yet provides thorough mixing. Designed for processing blots and staining applications, the pitch and speed of the shaker are optimally set to allow for use of a minimal amount of solution while preventing the membrane or gel from drying out. Using a smaller amount of reagents helps to conserve valuable probes and antibodies.

- Gyratory action for gentle, efficient staining
- Optimal pitch and speed for processing Western blots
- Can be used in an incubator or cold room

Delivery information: Supplied with a non-slip rubber mat and two large blot boxes. Two sizes are available to hold blots of 8×10 and 10×10 cm gels. The larger boxes will accommodate gels from VWR's modular Mini vertical PAGE systems.

Model	Mini blot shaker
Angle (°)	Fixed 5
Max. load (kg)	0,8
Operating temperature range (°C)	Ambient +4...65
Platform W×D (mm)	200×165
Shaking motion	3 dimensional
Speed (min^{-1})	Fixed 20
Weight (kg)	0,88
W×D×H (mm)	240×171×150

Description	Pk	Cat. No.
Mini blot shaker, UK-plug	1	**700-0246**

Description	Pk	Cat. No.
Accessories		
Large blot box, 117×89 mm	10	**700-0248**
Small blot box, 91×66 mm	10	**700-0249**

Rocking platform shakers

Rocking platform shakers have variable speed and adjustable tilt to provide optimum control of mixing conditions, a gentle wave motion is ideal for blotting membranes and gels. Shakers maintain constant speed regardless of load or voltage fluctuations. Durable shakers with choice of models with single- or double-tiered stainless steel platforms.

- Continuous or timer operation from 1 to 120 min, with automatic switch-off
- Model with double platform increases sample capacity when bench space is limited
- Can be used at 4 to 65 °C (80% relative humidity, non-condensing), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 54

Delivery information: Supplied with non-slip rubber mat.

Model	Single tier	Double tier
Angle (°)	±20	
Input power (W)	24	
Max. load (kg)	5	
Platform W×D (mm)	356×280	
Shaking motion	Rocking	
Speed (min^{-1})	6 - 120	
Weight (kg)	6,9	8,0
W×D×H (mm)	355×352×160	355×352×250

Description	Pk	Cat. No.
Rocking platform shaker, single tier, UK-plug	1	**444-0143**
Rocking platform shaker, double tier, UK-plug	1	**444-0146**

Rocking platform shaker

Rocking platform shaker with low profile design, can be used in most fume hoods and incubators. The cast aluminium base offers durability and stability, the spill resistant design channels fluids away from internal components. Precise speed control provides smooth, low-speed rocking motion down to 1 min^{-1}. Touch pad controls with easy to read LED display. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer displays elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off. Overload protection via audible and visual signals activated when system detects an obstruction or overload of the tray. Speed ramping feature slowly increases speed to desired set point to avoid splashing. Unit is ideal for cell culture work, staining and destaining gels, hybridisation procedures, haematology, and blotting techniques.

- Microprocessor control provides electronic tilt angle adjustment from 0 to 15° while unit is operating
- LED display shows speed, tilt angle and time simultaneously
- Timer from 1 sec to 160 h, with audible alarm when the time reaches zero
- Can be used at -10 to +60 °C (max 80% relative humidity, non-condensing) in cold rooms, incubators, and CO_2 environments

Delivery information: Supplied with a 324×254 mm non-slip rubber mat. Stacking tray must be ordered separately.

Model	Rocking platform shaker
Angle (°)	0 - 15*
Max. load (kg)	4,5**
Platform W×D (mm)	254×324
Shaking motion	Rocking
Speed range (min^{-1})	1 - 50*
Weight (kg)	6,5
W×D×H (mm)	279×432×127

Description	Pk	Cat. No.
Rocking platform shaker, UK-plug	1	**444-0757**

Description	For	Pk	Cat. No.
Accessories for Rocking platform shaker			
Spare dimpled mat to prevent tubes from rolling around	Rocking platform shaker	1	**444-0768**
Stacking tray	Rocking platform shaker	1	**444-0772**

* Note: Maximum speed/tilt angle may vary with heavy or unblanaced loads
** Centred on tray

3D rotator waver

The low profile 3D rotator waver provides precise speed control and a smooth, low foaming, three dimensional, wave motion. The cast aluminium base offers durability and added stability, the spill resistant design channels fluids away from internal components. The microprocessor control provides electronic tilt angle adjustment which allows user to easily and accurately adjust waving angle from 0 to 20° while unit is operating. Precise speed control provides smooth, low-speed waving motion down to 1 min^{-1}. Touch pad controls with easy to read LED display. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last settings, even after power has been turned off. Overload protection via audible and visual signals activated when system detects an obstruction or overload of the tray. Speed ramping feature slowly increases speed to desired set point to avoid splashing. The unit easily fits into most fume hoods and incubators, and is ideal for blood samples, DNA extractions, blotting techniques, and general mixing.

- Electronic tilt adjustment from 0 to 15° while unit is operating
- LED display shows speed, tilt angle and time simultaneously
- Timer from 1 sec to 160 h, with audible alarm when the time reaches zero
- Can be used at -10 to +60 °C (max 80% relative humidity, non-condensing) in cold rooms, incubators, and CO_2 environments

Delivery information: Supplied with a 299×222 mm non-slip rubber mat, suitable for holding Petri dishes. Stacking tray must be ordered separately.

Model	3D rotator waver
Angle (°)	0 - 20*
Max. load (kg)	2,3**
Platform W×D (mm)	222×299
Shaking motion	3 dimensional
Speed range (min^{-1})	1 - 30*
Weight (kg)	6,8
W×D×H (mm)	279×432×152

Description	Pk	Cat. No.
3 dimensional rotator waver, UK-plug	1	**444-0760**

Description	For	Pk	Cat. No.
Accessories for 3D rotator waver			
Spare dimpled mat for holding Petri dishes	3D rotator waver	1	**444-0770**
Stacking tray	3D rotator waver	1	**444-0773**

* Note: Maximum speed/tilt angle may vary with heavy or unblanaced loads
** Centred on tray

Shakers, Rocker 2D and 3D basic and digital

IKA

Shakers for smooth mixing tasks, 2D models feature a rocking motion and 3D units have three dimensional tumbling motion, basic models have fixed shaking angle and the digital units feature adjustable speed and shaking angle. Used for homogeneous mixing in flasks, culture flasks, Petri dishes and tubes. 3D shakers are ideal for cultivation of cell cultures, DNA extractions, distribution of cells and staining and destaining cells. Even with load and voltage fluctuations, shaking speed remains constant. Different attachments enable the units to be used for a variety of applications.

- Can be used at 4 to 50 °C in an incubator or cold room
-
- Easy operation via touch keypad
- Suitable for continuous operation
- Timer: Countdown, adjustable from 1 s to 99 h 59 min (digital models)
- Digital units have a counter: Show shaking time and also error code display

Delivery information: Supplied with universal non slip mat. Other accessories must be ordered separately.

Model	Rocker 2D basic	Rocker 2D digital	Rocker 3D basic	Rocker 3D digital
Angle (°)	8	0 - 15	8	0 - 15
Max. load (kg)	2			
Shaking motion	Rocking		Tumbling	
Speed range (min^{-1})	5 - 80		30 (fixed)	5 - 80
Weight (kg)	2,2			
W×D×H (mm)	280×330×150		280×330×165	280×330×185

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Description	Pk	Cat. No.
Rocker 2D basic	1	444-0815
Rocker 2D digital	1	444-0816
Rocker 3D basic	1	444-0817
Rocker 3D digital	1	444-0818

Description	Pk	Cat. No.
Spare universal mat	1	444-0886
Burled mat	1	444-0887
Tray, for 28×5 ml tubes, Ø 12 mm	1	444-0888
Tray, for 16×15 ml tubes, Ø 16 mm	1	444-0889
Tray, for 14×30 ml tubes, Ø 25 mm	1	444-0890
Tray for 10×30 ml tubes, Ø 28 mm	1	444-0891
Second level attachment	1	444-0892

Flask shaker, SF1
Stuart

Suitable for use with eight flasks up to 500 ml. Constructed from cast aluminium with metallic blue finish, and mounted on four vibration-absorbing rubber feet. Speed control is continuous using a control dial on the fascia panel. The side arms are secured to the central spindle by Allen screws.

- Built-in timer from 0 to 60 min or continuous mode, with manual override
- Simulates hand shaking, ideal for extractions
- Can be used at 5 to 40 °C, in an incubator or cold room
- BioCote® antimicrobial protection

IP protection class according to DIN EN 60529: IP 20

Delivery information: Supplied complete with eight clamps and Allen key.

Model	SF1
Amplitude (mm)	1,5
Capacity	3 kg
Power rating (W)	50
Speed range (min^{-1})	8 - 800
Weight (kg)	8,3
W×D×H (mm)	780×270×240

Description	Pk	Cat. No.
SF1 flask shaker	1	444-0104

Description	Pk	Cat. No.
Accessories		
Spare clamp for SF1	1	444-0289
2 side arms and 4 clamps for SF1	1	444-0290

3 Dimensional platform rotator, PS-3D
Grant

The compact PS-3D variable speed, fixed angle 3D rotator is ideally suited for personal use. Applications include mixing in tubes, culture flasks, gel staining, destaining, antibody staining, washes, hybridisations, and blots. The reliable motor produces regulated and reproducible rotating throughout the speed range.

- Gentle movement keeps fragile tissue intact during incubations
- Can be used at 4 to 40 °C (80% relative humidity, non-condensing), in an incubator or cold room

Delivery information: Supplied with non-slip mat, optional dimpled mat is available separately.

Model	PS-3D
Angle (°)	7
Input power (W)	External power supply: 12 V, 500 mA
Max. load (kg)	0,5
Platform W×D (mm)	200×200
Shaking motion	3D Orbital
Speed (min^{-1})	5 - 60
Weight (kg)	1,3
W×D×H (mm)	85×150×80

Description	Pk	Cat. No.
PS-3D platform rotator, UK-plug	1	**444-0722**

Description	For	Pk	Cat. No.
Accessories			
Dimpled mat	preventing tubes rolling around	1	**444-0338**

Platform rocker, PMR-30
Grant

The compact PMR-30 variable speed, fixed angle rocker is ideally suited for personal use. Applications include gel staining, destaining, antibody staining, washes, hybridisations, and blots. The reliable motor produces regulated and reproducible rocking throughout the speed range.

- Continuous or timer operation; integral digital timer 1 min to 24 h, with automatic switch-off, time remaining is displayed
- Can be used at 4 to 40 °C (80% relative humidity, non-condensing), in an incubator or cold room

Delivery information: Supplied with non-slip mat, optional dimpled mat is available separately.

Model	PMR-30
Angle (°)	7
Input power (W)	External power supply: 12 V; 0,32 A
Max. load (kg)	0,5
Platform W×D (mm)	210×210
Shaking motion	Rocking, side to side (2D)
Speed rocking (cycles/min)	5 - 30
Weight (kg)	2
W×D×H (mm)	220×205×120

Description	Pk	Cat. No.
PMR-30 platform rocker	1	**444-0341**

Description	For	Pk	Cat. No.
Accessories			
Dimpled mat	preventing tubes rolling around	1	**444-0338**

Multifunction 3 dimensional rotator, PS-M3D
Grant

The PS-M3D is a fixed angle, variable speed, multifunction 3D rotator providing variable mixing options in a compact unit. Applications include immunoprecipitation, tissue culture treatments, gel staining, destaining, antibody staining, washes, hybridisations and blots. The stepper motor produces regulated and reproducible rotating throughout the speed range. The PS-M3D provides all that is needed for mixing different sized particles:

3D orbital (long wave) required for large particles

Reciprocal (long and medium wave) ideal for large to medium particles

Vibration (short wave) suits small particles

Combining different phases in a customised sequence gives the following possible combinations: 3D orbital; 3D reciprocal; 3D vibration; 3D orbital and reciprocal; 3D orbital and vibration; 3D orbital and reciprocal and vibration; 3D reciprocal and vibration. An individual program may be configured for any different combination of components to ensure optimum mixing conditions.

- Multifunction: rotation, reciprocation and vibration
- All actions can be set for continuous or timed operation
- Individual phases can be linked together for flexibility
- Can be used at 4 to 40 °C (80% relative humidity, non-condensing), in an incubator or cold room

Ordering information: Supplied with non-slip mat, optional dimpled mat is available separately.

Model	PS-M3D
Angle (°)	7
Input power (W)	External power supply: 12 V, 500 mA
Max. load (kg)	1,0
No. of cycles	1 - 125
Platform W×D (mm)	238×238*
Shaking motion	3D Orbital, reciprocal, vibration
Speed (min^{-1})	1 - 100
Timer	1 - 250 sec
Timer (s) 360°/reciprocal mode	1 - 250
Timer (s) 360°/vibration mode	1 - 5
Turning angle (°) reciprocal mode	1 - 360 (in steps of 30°)
Turning angle (°) vibration mode	1 - 5
Weight (kg)	2
W×D×H (mm)	225×170×125

Description	Pk	Cat. No.
Multifunction 3 dimensional rotator, PS-M3D, UK-plug	1	**444-0727**

Description	For	Pk	Cat. No.
Accessories			
Dimpled mat	preventing tubes rolling around	1	**444-0338**

* Working area: 215×215 mm

Platform rocker, adjustable tilt, PMR-100
Grant

The sturdy PMR-100 variable speed and adjustable angle rocker is ideally suited for mixing solutions or nutrient media in vessels or bags. The unit provides soft or intensive side to side rocking, ensuring optimal sample mixing. Applications include gel destaining, agglutination testing, incubation in immunoassays, homogenisation of extraction media and blots. The reliable motor produces regulated and reproducible rocking throughout the speed range.

- Easy to read LCD screen shows actual and set time, speed and set angle
- Continuous or timer operation; integral digital timer 1 min to 99 h 59 min, with automatic switch-off, time remaining is displayed, ensures repeatability for time sensitive incubations
- Digital speed setting, from 1 to 99, high load capacity up to 5 kg (5 litres)
- Adjustable tilt angle to 9° at lower speeds, fixed at 10° for speeds over 50 giving flexible working
- Can be used at 4 to 40 °C (80% relative humidity for temperatures up to 31 °C, decreasing linearly to 50% relative humidity at 40 °C, non-condensing), in an incubator or cold room

Delivery information: Supplied with non-slip mat to keep vessels in place.

Model	PMR-100
Angle (°)	Variable range 0 - 9° in 1° increments (1 - 50 min^{-1}) Fixed tilt 10° (from 51-99 min^{-1})
Input power (W)	External power supply: 12 V
Max. load (kg)	5

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Platform W×D (mm)	460×360
Shaking motion	Rocking, side to side (2D)
Speed rocking (cycles/min)	1 - 99
Weight (kg)	13
W×D×H (mm)	400×480×250

Description	Pk	Cat. No.
PMR-100 platform rocker, UK-plug	1	**444-0813**

Mini rockers, digital, SSM3 and SSM4

Stuart

Compact, variable speed rockers are ideal for gentle mixing. Both models have an LED display and speed and time are controlled via an easy to use encoder control knob.

SSM3 3D gyratory rocker

The gentle 3D motion is ideal for foaming agitation, DNA extractions and staining or de-staining gels. The non-slip mat holds vessels in place, and the optional tier system increases the working space.

SSM4 see-saw rocker

The see-saw (rocking) motion is ideal for washing and blotting procedures. The non-slip mat holds vessels in place and the optional 2 tiers increases the working space.

- Digital setting and display of speed and time
- Can be used at 4 to 40 °C (80% relative humidity, non-condensing), in an incubator or cold room
- Continuous or timer operation; integral digital timer 1 s to 90 min or from 1 min to 9 h, with automatic switch-off, time remaining is displayed
- Optional, easy to fit, tier system triples the space available for samples
- BioCote® antimicrobial protection

IP protection class according to DIN EN 60529: IP 30

Delivery information: Both units are supplied with non-slip mat, but without tier system.

Model	SSM3	SSM4
Angle (°)	3 to 12 adjustable by hand	7 fixed
Input power (W)	50	
Max. load (kg)	3	
Platform W×D (mm)	235×235	
Shaking motion	3D gyratory	See-saw (rocking)
Speed range (min^{-1})	5 - 70	
Tier height (mm)	125 per tier	
Weight (kg)	5	
W×D×H (mm)	240×300×165	240×300×150

Description	Pk	Cat. No.
SSM3 gyratory rocker	1	**444-0118**
SSM4 see-saw rocker	1	**444-0119**

Description	Pk	Cat. No.
Tier system (2 platforms plus 8 bars)	1	**444-1625**

Rockers, lab scale, digital, SSL3 and SSL4
Stuart

Variable speed rockers with large platform are ideal for gentle mixing. Both models have an LED display with speed and time controlled via an easy to use encoder control knob.

SSL3 3D gyratory rocker

The gentle 3D motion is ideal for foaming agitation, DNA extractions and staining or de-staining gels. The non-slip mat holds vessels in place and the optional tier system increases the working space.

SSL4 see-saw rocker

The see-saw (rocking) motion is ideal for washing and blotting procedures. The non-slip mat holds vessels in place, and the optional 2 tiers increases the working space.

- Digital setting and display of speed and time
- Can be used at 4 to 40 °C (80% relative humidity, non-condensing), in an incubator or cold room
- Continuous or timer operation; integral digital timer 1 s to 90 min or from 1 min to 9 h, with automatic switch-off, time remaining is displayed
- Optional, easy to fit, tier system triples the space available for samples
- BioCote® antimicrobial protection

IP protection class according to DIN EN 60529: IP 30

Delivery information: Both units are supplied with non-slip mat, but without tier system.

Model	SSL3	SSL4
Angle (°)	3 to 12 adjustable by hand	7 fixed
Input power (W)	50	
Max. load (kg)	10	
Platform W×D (mm)	355×355	
Shaking motion	3D gyratory	See-saw (rocking)
Speed range (min^{-1})	5 - 70	
Tier height (mm)	125 per tier	
Weight (kg)	10	
W×D×H (mm)	360×420×170	360×420×160

Description	Pk	Cat. No.
SSL3 gyratory rocker	1	**444-0115**
SSL4 see-saw rocker	1	**444-0116**

Description	Pk	Cat. No.
Accessories		
Tier system (2 platforms plus 8 bars)	1	**444-1624**

Rocking platform shakers, Duomax 1030
Heidolph

Platform shaker with rocking motion, designed for homogeneous mixing, ideal for flasks, media bottles and large vessels. Units have analogue dial controls for rocking frequency and time.

- Modular system; can be combined with the Incubator 1000 and a low or high hood
- Timer function with audible signal allows a process time up to 120 min
- Choice of units with tilt fixed at 5° or 10° angle, electronic speed control
- Ideal for use under controlled conditions, can be used at 0 to 50 °C (80% relative humidity), in an incubator, cold room or CO_2 incubator

IP protection class according to DIN EN 60529: IP 40

Delivery information: Supplied with non-slip rubber mat, required accessories must be ordered separately. Accessories are category D, see entry for 'Accessories for Heidolph shakers' towards the end of the orbital shakers section. Please contact your local VWR office for further details.

Model	Duomax 1030, 5° angle	Duomax 1030, 10° angle
Angle (°)	5 or 10 (fixed, depending on model)	
Input power (W)	25	
Max. load (kg)	5	
Platform W×D (mm)	290×258	
Shaking motion	Rocking	
Speed (min^{-1})	2 - 50	
Weight (kg)	8	
W×D×H (mm)	320×375×185	

Description	Pk	Cat. No.
Duomax 1030 rocker, angle 5°, UK-plug	1	**444-1236**
Duomax 1030 rocker, angle 10°, UK-plug	1	**444-1237**

3 Dimensional platform shakers, Polymax series
Heidolph

Polymax 1040

Polymax 2040

Platform shaker with three dimensional gyratory motion, designed for homogeneous mixing, ideal for distribution of cells or solutes, preparing slides and electrophoresis gels, culture plates and Erlenmeyer flasks. Polymax 2040 is suitable for large vessels and culture plates. Units have analogue dial controls for adjusting wave frequency and time.

- Modular system: Polymax 1040 can be combined with the Incubator 1000 and a low or high hood
- Timer function with audible signal allows a process time up to 120 min
- Choice of units with tilt fixed at 5° or 10° angle
- Polymax 1040 has analogue speed control, Polymax 2040 has digital
- Ideal for use under controlled conditions, can be used at 0 to 50 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: Polymax 1040; IP 40, Polymax 2040; IP 20

Delivery information: Supplied with non-slip rubber mat, please order required accessories separately. Accessories for Polymax 1040 are category D, and Polymax 2040 accessories are category E, see entry for 'Accessories for Heidolph shakers' towards the end of the orbital shakers section. Please contact your local VWR office for further details.

Model	Polymax 1040	Polymax 2040
Angle (°)	5 or 10 (fixed, depending on model)	
Input power (W)	115	
Max. load (kg)	5	10
Platform W×D (mm)	290×258	390×340
Shaking motion	3 dimensional, gyratory	
Speed (min^{-1})	2 - 50	2,5 - 50
Weight (kg)	8	16
W×D×H (mm)	320×375×195	426×435×208

Description	Pk	Cat. No.
Polymax 1040 rocker, angle 5°, UK-plug	1	**444-1458**
Polymax 1040 rocker, angle 10°, UK-plug	1	**444-1459**
Polymax 2040 rocker, angle 5°, UK-plug	1	**444-1456**
Polymax 2040 rocker, angle 10°, UK-plug	1	**444-1457**

Tube rotator

A unique design of rotator makes this unit suitable for a wide range of mixing applications in biochemistry, molecular biology and histochemistry. The rotisserie assemblies allow for mixing tubes vertically, horizontally or any position in between, therefore gentle mixing using a horizontal position is easily accommodated for applications such as hybridisation. Alternatively rotation with vertically positioned tubes produces a tumbling motion suitable for mixing samples in blood tubes. The two halves of the rotisserie can be adjusted independently of each other to increase versatility and facilitate optimisation of mixing.

- Adjustable mixing angle changed with a simple turn of the plate - no tools required
- Can be used at 4 to 65 °C in cold room or incubator

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- Rotisserie assemblies available for a range of tube sizes
- Moulded housing and rotisserie plates are easy to clean
- Lightweight unit with a small footprint for easy manoeuvring and transport

Delivery information: The tube rotator is supplied with a rotisserie assembly for 36×1,5/2,0 ml microtubes; other rotisseries must be ordered separately.

Model	Tube rotator
Angle (°)	Plates freely adjustable from horizontal to vertical
Capacity	36×1,5/2,0 ml tubes or 10×10/15 ml and 16×5/7 ml tubes or 6×50 ml tubes
Max. load (kg)	0,8
Operating temperature range (°C)	4 - 65
Shaking motion	Rotating
Speed (min^{-1})	20 (fixed)
Weight (kg)	2,0
W×D×H (mm)	239×127×153

Description	Pk	Cat. No.
VWR rotator, UK-plug	1	**444-0502**

Description	Pk	Cat. No.
Accessories		
Spare rotisserie assembly for 36×1,5/2,0 ml tubes	1	**444-0503**
Rotisserie assembly for 10×10/15 and 16×5/7 ml tubes	1	**444-0504**
Rotisserie assembly for 6×50 ml tubes	1	**444-0505**

Overhead shakers, Trayster basic and digital

IKA

Overhead shakers with vertical rotation for smooth yet effective mixing, the basic model has fixed speed, and the digital unit features infinitely adjustable speed. Ideal for biological samples, particularly blood. Suitable for separating and mixing processes of powdered and liquid samples in tubes up to 50 ml. Easily removable attachments provide for quick cleaning in case of sample spills. Different attachments enable units to be used for a variety of applications.

- Can be used at 4 to 50 °C in an incubator or cold room
- Easy operation via touch keypad
- Suitable for continuous operation
- Timer: Countdown, adjustable from 1 s to 99 h 59 min (digital model)
- Digital unit has a counter: Shows shaking time and error code display

Ordering information: Supplied without attachments, required accessories must be ordered separately.

Model	Trayster basic	Trayster digital
Max. load (kg)	2	
Power input (W)	16	
Shaking motion	Overhead, rotating	
Speed (min^{-1})	20 (fixed)	5 - 80
Weight (kg)	1,7	
W×D×H (mm)	460×160×150	

Description	Pk	Cat. No.
Trayster basic overhead shaker	1	**444-1037**
Trayster digital overhead shaker	1	**444-1038**

Description	For	Pk	Cat. No.
Accessories for IKA Trayster basic and digital			
Tube insert	24×5 ml tubes Ø 12 mm	1	**444-0861**
Tube insert	12×15 ml tubes Ø 16 mm	1	**444-0862**
Tube insert	6×50 ml tubes Ø 28 mm	1	**444-0863**

360° Multifunction rotators, PTR-35, PTR-60

Grant

PTR-60

PTR-35

The PTR-35 and PTR-60 variable speed, variable angle, 360° multifunction rotators provide flexible mixing options in a compact unit. Applications include mixing mictrotubes, immunoprecipitation and other affinity matrix applications, preventing blood coagulation and latex diagnostics. The stepper motor produces regulated and reproducible rotating throughout the speed range. The rotators provide all that is needed for mixing different sized particles:

360° long wave required by large particles

Reciprocal long and medium wave ideal for large to medium particles

Vibration short wave suits small particles

Combining different phases in a customised sequence gives the following possible combinations: 360° vertical rotation; 360° reciprocal; 360° reciprocal and vibration; 360° reciprocal and pause; reciprocal; reciprocal and pause; vibration and reciprocal. An individual program may be configured for any different combination of components to ensure optimum mixing conditions.

- Multifunction: rotation, reciprocation and vibration
- All actions can be set for continuous or timed operation, integral timer: 1 min to 24 h with automatic switch off
- Individual phases can be linked together for flexibility
- Can be used at 4 to 40 °C (80% relative humidity, non-condensing), in an incubator or cold room

Ordering information: Supplied with standard platform for tubes up to 15 mm Ø, alternative platforms are available for larger tubes or combinations of tubes.

Model	PTR-35	PTR-60
Capacity, 15 mm Ø microtubes	26	48
Input power (W)	12 V, 0,6 A	24 V; 0,75 A
Max. load (kg)	0,5	0,8
Shaking motion	360°, reciprocal, vibration	
Speed (min^{-1})	1 - 100	
Timer (s) 360°/reciprocal mode	1 - 250	
Timer (s) 360°/vibration mode	1 - 5	
Turning angle (°) reciprocal mode	15 - 90	
Turning angle (°) vibration mode	1 - 5	
Weight (kg)	1,8	3,8
W×D×H (mm)	365×155×195	420×230×230

Description	Pk	Cat. No.
Multifunction rotator PTR-35, UK-plug	1	**444-0723**
Multifunction rotator PTR-60, UK-plug	1	**444-0728**

Description	For	Pk	Cat. No.
Accessories			
Platform for 10 tubes up to 30 mm Ø, for PTR-35	tube volumes up to 50 ml	1	**444-0750**
Platform for 14 tubes up to 30 mm Ø for PTR-60	50 ml centrifuge tubes	1	**444-0348**
Platform to hold one microplate, for PTR-35	standard 96-well microplate	1	**444-0754**
Replacement platform for 26 tubes up to 15 mm Ø for PTR-35	tube volumes 1,5-15 ml	1	**444-0751**
Replacement platform for 48 tubes up to 15 mm Ø for PTR-60	tube volumes 1,5-15 ml	1	**444-0755**
Platform for 5 tubes up to 30 mm Ø, plus 12 tubes up to 15 mm Ø for PTR-35	50 ml centrifuge tubes and 1,5/2,0/15 ml tubes	1	**444-0696**
Platform for 8 tubes up to 30 mm Ø, plus 22 tubes up to 15 mm Ø for PTR-60	50 ml centrifuge tubes and 1,5/2,0/15 ml tubes	1	**444-0699**
Heavy duty adapter for PTR-35	10 tubes Ø 30 mm	1	**444-0752**
Heavy duty adapter for 22 tubes up to 15 mm Ø for PTR-35	tube volumes up to 15 ml	1	**444-0753**

360° vertical rotator, PTR-25
Grant

Compact rotator with easy to use controls, provides thorough end over end mixing of samples in tubes up to 50 ml. Applications include hybridisation reactions, cell growth, soft extraction, binding reactions, preventing blood coagulation and homogenisation of biological components in solution. The reliable motor produces regulated rotation throughout the speed range.

- 360° vertical rotation, vertical rotation speed range 5 to 30 min^{-1}
- Easy to read LED screen shows time
- Continuous or timer operation; integral digital timer 1 min to 24 h, with automatic switch-off, time remaining is displayed
- Can be used at 4 to 40 °C (80% relative humidity for temperatures up to 31 °C, decreasing linearly to 50% relative humidity at 40 °C, non-condensing), in an incubator or cold room

Delivery information: Supplied with platform for 22 tubes (up to 15 mm Ø). Required accessories must be ordered separately.

Model	PTR-25
Capacity, 15 mm Ø microtubes	22
Input power (W)	12 V, 0,11 A
Max. load (kg)	0,5
Shaking motion	360° rotation
Speed (min^{-1})	5 - 30
Weight (kg)	1
W×D×H (mm)	310×110×175

Description	Pk	Cat. No.
PTR-25 mini rotator, UK-plug	1	**444-0814**

Description	For	Pk	Cat. No.
Accessories			
Platform for 4 tubes up to 30 mm Ø, plus 12 tubes up to 15 mm Ø for PTR-25	50 ml centrifuge tubes and 1,5/2,0/15 ml tubes	1	**444-0345**
Replacement platform for 22 tubes up to 15 mm Ø for PTR-25	tube volumes 1,5-15 ml	1	**444-0792**
Heavy duty tube adapter for PTR-25	18 tubes up to 14/15 mm Ø	1	**444-0793**

Shakers, Roller 6 and 10 basic and digital
IKA

Roller shakers with 6 or 10 rolls, provide smooth rocking and rolling action, basic models have fixed speed, and the digital units feature infinitely adjustable speed. Used for mixing blood samples, solid and liquid suspensions and viscous samples. The unit can be used with all conventional tubes and cylindrical bottles. Easily removable attachments enable quick cleaning in case of sample spills.

- Can be used at 4 to 50 °C in an incubator or cold room
- Suitable for continuous operation
- Removable rolls enable shaking of larger tubes
- Easy operation via touch keypad
- Timer: Countdown, adjustable from 1 s to 99 h 59 min (digital models)
- Digital units have a counter: Show shaking time and also error code display

Delivery information: Supplied with shield.

Model	Roller 6 basic	Roller 6 digital	Roller 10 basic	Roller 10 digital
Amplitude (mm)	24,5			
Max. load (kg)	2			
Shaking motion	Rocking and rolling			
Speed range (min^{-1})	30 (fixed)	5 - 80	30 (fixed)	5 - 80
Weight (kg)	4,5		7	
W×D×H (mm)	240×545×115		380×545×115	

Description	Pk	Cat. No.
Roller 6 basic	1	**444-0819**
Roller 6 digital	1	**444-0820**
Roller 10 basic	1	**444-0821**
Roller 10 digital	1	**444-0822**

Tube rollers, SRT series
Stuart

444-1606 and 444-1605

Robust rollers provide a gentle but efficient rocking and rolling action. Ideal for mixing blood samples, viscous substances and solid-liquid suspensions where minimum aeration is required. Units are easy to clean and have plastic rollers and a drip tray to collect any accidental spillages. Rollers can accommodate most sizes of tubes and bottles including Bijoux and Universals. An accessory stacking system is available for mounting units on top of each other where bench space is limited.

- Choice of six or nine roller designs with analogue fixed speed or digital variable speed models
- Can be used at 4 to 60 °C (80% relative humidity), in an incubator or cold room
- Digital models feature timer which can be set from 1 s to 90 min or from 1 min to 9 h
- BioCote® antimicrobial protection

IP protection class according to DIN EN 60529: IP 20

Model	SRT6	SRT6D	SRT9	SRT9D
Amplitude (mm)	16			
Control	Analogue	Digital/timer	Analogue	Digital/timer
Input power (W)	50			
Max. load (kg)	5			
No. of rollers	6		9	
Roller size l×Ø (mm)	340×30			
Shaking motion	Rocking and rolling			
Speed (min^{-1})	33	5 - 60	33	5 - 60
Weight (kg)	5,1		6,9	
W×D×H (mm)	565×240×110		565×360×110	

Description	Pk	Cat. No.
SRT6, 6 tube roller mixer, analogue, fixed speed	1	**444-1606**
SRT6D, 6 tube roller mixer, digital, variable speed	1	**444-1607**
SRT9, 9 tube roller mixer, analogue, fixed speed	1	**444-1604**
SRT9D, 9 tube roller mixer, digital, variable speed	1	**444-1605**

Description	Pk	Cat. No.
Accessories		
Stacking blocks enabling up to 3 tube rollers to be stacked in any combination	1 SET	**444-1608**

Rotating shakers, Loopster basic and digital
IKA

Rotators for smooth yet effective mixing, the basic model has fixed speed, and the digital unit features infinitely adjustable speed. Ideal for biological samples, particularly blood. Suitable for separating and mixing processes of powdered and liquid samples in tubes up to 50 ml. Easily removable attachments provide for quick cleaning in case of sample spills. Different attachments enable units to be used for a variety of applications.

- Freely adjustable rotary angle
- Can be used at 4 to 50 °C in an incubator or cold room
- Easy operation via touch keypad
- Suitable for continuous operation
- Timer: Countdown, adjustable from 1 s to 99 h 59 min (digital model)
- Digital unit has a counter: Shows shaking time and also error code display

Model	Loopster basic	Loopster digital
Angle (°)	Adjustable from horizontal to vertical	
Display	None	7 segment LED shows speed and time
Input power (W)	16	
Max. load (kg)	2	
Shaking motion	Rotating	
Speed range (min^{-1})	20 fixed	5 - 80
Timer	None	1 s - 99,9 h
Weight (kg)	3	
W×D×H (mm)	300×300×360	

Description	Pk	Cat. No.
Loopster basic rotating shaker	1	**444-1039**
Loopster digital rotating shaker	1	**444-1040**

Description	For	Pk	Cat. No.
Accessories			
Tube attachment	48×1,5 ml microcentrifuge tubes Ø 10 mm	1	**444-0850**
Tube attachment	24×5 ml tubes Ø 12 mm	1	**444-0851**
Tube attachment	20×15 ml centrifuge tubes Ø 16 mm	1	**444-0852**
Tube attachment	12×30 ml tubes Ø 25 mm	1	**444-0853**
Tube attachment	12×50 ml centrifuge tubes Ø 28 mm	1	**444-0854**
Universal disc	Single tube attachment holds 5 different types of tubes	1	**444-0855**
Spare clips	48×1,5 ml, Ø 10 mm	1	**444-0856**
Spare clips	24×5 ml, Ø 12 mm	1	**444-0857**
Spare clips	20×15 ml, Ø 16 mm	1	**444-0858**
Spare clips	12×30 ml, Ø 25 mm	1	**444-0859**
Spare clips	12×50 ml, Ø 28 mm	1	**444-0860**

Rotators, SB2 and SB3
Stuart

SB2

SB3

Rotators give gentle but effective mixing, suitable for keeping biological samples e.g. blood in suspension. SB3 is ideal for aerating cultures and general mixing applications. An integral tray catches any spillages from tubes being rotated. The optional dual holder accessory enables two tube holders to be used simultaneously.

- Fully adjustable mixing angle
- SB3 has a digital timer and speed display, allowing procedures to be accurately reproduced

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- Can be used at 4 to 60 °C (80% relative humidity), in an incubator or cold room
- BioCote® antimicrobial protection

IP protection class according to DIN EN 60529: IP 42

Ordering information: Supplied without holder; a range of tube holders are available separately.

Model	SB2	SB3
Angle (°)	Freely adjustable from horizontal to vertical	
Input power (W)	50	
Max. load (kg)	1	
Shaking motion	Rotating	
Speed (min^{-1})	20 fixed	2 - 40
Timer	None	1 - 999 min
Weight (kg)	3,2	
W×D×H (mm)	200×270×230	

Description	Pk	Cat. No.
SB2 Fixed speed rotator	1	**445-2101**
SB3 Variable speed rotator	1	**445-2102**

Description	For	Pk	Cat. No.
Accessories			
Microtube holder, max. 46 tubes 10 to 11.5 mm Ø	end-over-end action	1	**445-2103**
Test/blood tube holder, max. 20 tubes 9 to 20 mm Ø	end-over-end action	1	**445-2104**
50 ml centrifuge tube holder, max. 12 tubes 25 to 35 mm Ø	end-over-end action	1	**445-2105**
Culture tube holder, max. 63 tubes 12 mm Ø	rolling action	1	**445-0028**
Culture tube holder, max. 63 tubes 16 mm Ø	rolling action	1	**445-2107**
Culture tube holder, max. 30 tubes 26 mm Ø	rolling action	1	**445-2108**
Dual tube holder accessory	-	1	**445-0029**

IP 21

3 year warranty

Overhead shaker, Reax 2
Heidolph

Overhead shaker with one dimensional swirling action, designed for homogeneous mixing, ideal for haematology, medical diagnostics, materials testing and biochemistry. Unit has an analogue dial for adjusting speed setting.

- Designed for continuous use
- Easy to change universal adapter means various vessels can be used
- Ideal for use under controlled conditions, can be used at 0 to 40 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 21

Complies with DIN 38414 part 4 - Determination of effluent in water

Delivery information: Supplied with non-slip rubber mat, please order required accessories separately.

Model	Reax 2
Max. load (kg)	1
Power input (W)	27
Shaking motion	Overhead
Speed (min^{-1})	20 - 100
Weight (kg)	5,2
W×D×H (mm)	510×235×180

Description	Pk	Cat. No.
Reax 2 overhead shaker, UK-plug	1	**444-1455**

Description	For	Pk	Cat. No.
Accessories			
Test tube adapter	20 test tubes, 10 - 18 mm Ø	1	**444-1117**
Universal adapter	vessels and test tube racks from 50 - 160 mm high	1	**444-1120**

Overhead shakers, Reax 20 series
Heidolph

Overhead shaker with one dimensional swirling action, designed for homogeneous mixing, ideal for haematology, medical diagnostics, materials testing and biochemistry. Units have analogue control for adjusting speed setting.

- Series has different models that hold 4, 8 or 12 bottles
- Designed for continuous use
- Bottles can be attached quickly and easily
- Vessels up to 270 mm high with maximum Ø 136 mm can be fixed using the optional tension plate
- Ideal for use under controlled conditions, can be used at 0 to 40 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 21

Complies with DIN 38414 part 4 - Determination of effluent in water

Delivery information: Supplied with attachment for two litre bottles; attachments for 0,5 and 1 litre bottles are available, please order required accessories separately.

Model	Reax 20/4	Reax 20/8	Reax 20/12	
Max. load (kg)	30			
Power input (W)	280			
Shaking motion	Overhead			
Speed (min^{-1})	1 - 16*			2 - 32
Weight (kg)	23	28	33	
W×D×H (mm)	490×520×465	770×520×465	1050×520×465	

Description	Pk	Cat. No.
Models with speed range 1 - 16 min^{-1}		
Reax 20/4 overhead shaker, UK-plug	1	**445-1305**
Reax 20/8 overhead shaker, UK-plug	1	**445-1306**
Reax 20/12 overhead shaker, UK-plug	1	**445-1307**
Models with speed range 2 - 32 min^{-1}		
Reax 20/12 overhead shaker, with speed range 2 - 32 min^{-1}, UK-plug	1	**445-0031**

Description	For	Pk	Cat. No.
Accessories			
Tensioning plate with caps	allows ordinary bottles with 94 mm Ø neck to be used	1	**444-1460**
Attachment	4×1 litre bottles	1	**444-1118**
Attachment	4×0,5 litre bottles	1	**444-1119**

* Speed ranges of 0,5 - 8 min^{-1} and 2 - 32 min^{-1} are also available on request.

Rotator, drive unit, STR4
Stuart

The multi-functional STR4 rotator drive unit is used in conjunction with a wide range of drums designed to take different sizes and types of vessels, e.g. microtubes or bottles. The five drums are designed to give different mixing actions such as overhead shaking and eccentric shaking. Speed of rotation is variable from 6 to 60 min^{-1} for a range of mixing applications.

- Highly versatile - accepts a choice of 5 drums
- Built-in timer; 10 to 60 min or continuous mode
- Variable speed control
- Can be used at 5 to 40 °C, in an incubator or cold room
- BioCote® antimicrobial protection

IP protection class according to DIN EN 60529: IP 20

Delivery information: Supplied without vessel holding drum and clip plates, which must be ordered separately.

Model	STR4
Input power (W)	50
Max. load (kg)	3

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Shaking motion	Rotating
Speed range (min^{-1})	6 - 60
Weight (kg)	6,4
W×D×H (mm)	650×250×250

Description	Pk	Cat. No.
STR4 rotator drive	1	**445-2110**

Drum, test tube holder
Stuart

Designed to rotate test tubes in an end-over-end movement. Comprises a square metal drum which can accommodate a choice of plates fitted with tube clips.

- Up to four plates can be mounted on the drum
- Easy fitting via a push button mechanism

Description	Pk	Cat. No.
Drum for STR4 to hold test tube clip plates	1	**445-2111**
Clip plates for 12×12 mm tubes	1 PAIR	**445-2115**
Clip plates for 10×16 mm tubes	1 PAIR	**445-2116**
Clip plates for 8×19 mm tubes	1 PAIR	**445-2117**
Clip plates for 7×24 mm tubes	1 PAIR	**445-2118**

Drum for two 250 ml bottles
Stuart

This drum is designed for end-over-end mixing. The samples are securely held in place by a collar that fits around the neck of the flask or bottle and is secured by two washers.

- Accepts 2×250 ml conical flasks or reagent bottles

Description	Pk	Cat. No.
Drum for STR4 with two platforms to hold flasks or bottles	1	**445-2120**

Drum, figure 8
Stuart

Drum holds the vessel at a 45° angle so it is rolled and turned end-over-end at the same time giving a vigorous figure of eight mixing action. The sample container is retained by a strong Velcro strap.

- Accepts almost any container including reagent bottles, powder jars and paint tins up to 200 mm in length and 120 mm diameter

Description	Pk	Cat. No.
Drum for STR4 with figure of eight mixing action	1	**445-2121**

Drum for two or four 500 ml bottles
Stuart

This drum consists of a four segment Perspex® cradle. Each segment is fitted with a fully adjustable Velcro strap.

- Holds bottles and other containers up to 120 mm diameter and up to 300 mm in length

Description	Pk	Cat. No.
Drum for STR4 with four segment cradles holding up to four bottles	1	**445-2122**

Drum for microcentrifuge tubes
Stuart

Designed for thorough end-over-end mixing of 1,5/2,0 ml microcentrifuge tubes. Four racks (included) can be held securely in the drum.

- Each rack can accommodate up to 60 microcentrifuge tubes, ideal for a high throughput laboratory

Description	Pk	Cat. No.
Drum for STR4 with four segment cradles and four tube racks	1	**445-2123**
Spare rack for 60×1,5/2,0 ml tubes	1	**445-2124**

Incubating microplate shaker

Incubating microplate shaker with microprocessor control which holds four microplates or two microtube racks. The speed can be adjusted across a wide range to suit the application; a low speed ensures that the well contents are not ejected, more vigorous agitation provides effective aeration across the small surface area of each of the wells. Ideal for use in immunoassays, hybridisations, biotechnology, microbiology and pharmacology applications.

- Three independent LED displays show speed, temperature and time
- Integral timer, 1 s to 160 h, shows elapsed time or counts down, automatic switch-off and audible alarm when program is complete
- Microprocessor PID temperature controller maintains precise temperature from ambient +5 to 65 °C, adjustable in 1 °C increments
- Temperature calibration mode allows user to calibrate unit to an external temperature device
- Lexan® PC lid enables samples to be viewed, without altering internal temperature

Ordering information: Supplied with non perforated tray. The shaker can accommodate up to two accessory microtube racks. Each rack holds 70×1,5/2,0 ml microtubes.

Model	Incubating microplate shaker
No. of microplates held	4
Orbit (mm)	3,0
Speed (min^{-1})	100 - 900
Speed accuracy (%)	±2
Temperature range (°C)	Ambient +5...65
Uniformity at 37 °C (°C)	±0,5
Weight (kg)	12,5
W×D×H (mm)	280×430×200

Description	Pk	Cat. No.
Incubating microplate shaker, UK-plug	1	**444-7082**

Description	For	Pk	Cat. No.
Accessories			
Microtube rack, PVC coated steel	1,5/2,0 ml tubes, holds 70 tubes	1	**444-0276**

Incubating orbital mini shaker

Incubating mini shaker with microprocessor control which is ideal for bacterial suspensions, hybridisations, staining and de-staining, metabolism studies and cell culturing. Variable speed control provides consistent, uniform shaking action. The speed is adjustable in 10 min^{-1} increments up to 500 min^{-1}, and increments of 25 min^{-1} up to 900 min^{-1} and the ramping feature slowly increases speed to the set point for added safety. The platform accommodates up to 5×250 ml Erlenmeyer flasks or vessels up to 130 mm tall.

- Three independent LED displays show speed, temperature and time
- Integral timer, 1 s to 160 h, shows elapsed time or counts down, and enables automatic switch-off and audible alarm when program is complete
- Microprocessor PID temperature controller maintains precise temperature from ambient +5 to +65 °C, adjustable in 1 °C increments
- Range of interchangeable attachments
- Lexan® PC lid enables samples to be viewed, without altering internal temperature

Ordering information: Supplied with perforated tray but without attachments, accessories must be ordered separately.

Model	Incubating orbital mini shaker
Max. load (kg)	4
Orbit (mm)	3
Shaking motion	Orbital
Speed (min^{-1})	100 - 900
Speed accuracy (%)	±2
Temperature range (°C)	Ambient +5...65
Uniformity at 37 °C (°C)	±0,5
Weight (kg)	12,5
W×D×H (mm)	280×430×270

Description	Pk	Cat. No.
Incubating orbital mini shaker, UK-plug	1	**444-7083**

Description	For	Pk	Cat. No.
Accessories			
Microtube rack, PVC coated steel	1,5/2,0 ml tubes, holds 70 tubes	1	**444-0276**
Test tube rack, PVC coated steel	10 - 13 mm Ø tubes, holds 63 tubes	1	**444-0278**
Test tube rack, PVC coated steel	14 - 16 mm Ø tubes, holds 48 tubes	1	**444-0279**

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Description	For	Pk	Cat. No.
Accessories			
Centrifuge tube rack, PVC coated steel	15 ml tubes, holds 35 tubes	1	**444-0283**
Centrifuge tube rack, PVC coated steel	50 ml tubes, holds 12 tubes	1	**444-0284**
Flask clamps, stainless steel	10 ml	1	**444-7040**
Flask clamps, stainless steel	25 ml	1	**444-7041**
Flask clamps, stainless steel	50 ml	1	**444-7042**
Flask clamps, stainless steel	125 ml	1	**444-7043**
Flask clamps, stainless steel	250 ml	1	**444-7044**

Note: Shaker accommodates 1 of the racks detailed or 2 microtube racks (444-0276) or 35×10, 20×25, 12×50, 8×125, 5×250 ml flasks.

Incubating rocking platform shaker

The incubating rocking platform shaker combines smooth rocking motion and incubation in one compact bench top unit. The spill resistant design channels fluids away from internal components. The microprocessor control provides electronic tilt angle adjustment which allows the user to easily adjust the rocking angle from 0 to 15° while unit is operating. The PID temperature controller maintains precise temperature control from ambient +5 °C to 65 °C. Easy to use controls allow users to adjust temperature in 1 °C increments. Precise speed control provides smooth, low-speed rocking motion down to 1 min^{-1}. Touch pad controls with easy to read LED displays for temperature, speed, tilt angle, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. A hot warning illuminates when the air temperature in the chamber reaches 40 °C and remains on until the temperature cools to below 40 °C. Polycarbonate lid allows viewing of samples without disturbing the internal temperature. Timer displays elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off. Overload protection via audible and visual signals activated when system detects an obstruction or overload of the tray. Speed ramping feature slowly increases speed to desired set point to avoid splashing. Unit is ideal for cell cultures, staining and destaining gels, hybridisation procedures, haematology, and blotting techniques.

- Electronic tilt adjustment from 0 to 15° while unit is operating
- LED display shows temperature, speed, tilt angle and time simultaneously
- Timer from 1 sec to 160 h, with audible alarm when the time reaches zero
- Can be used at 5 to 40 °C (max 80% relative humidity, non-condensing) in cold rooms, incubators, and CO_2 environments

Ordering information: Supplied without accessories. Mat must be ordered separately.

Model	Incubating rocking platform shaker
Angle (°)	0 - 15*
Interior dimensions WxDxH (mm)	197×273×97
Max. load (kg)	4,5**
Platform W×D (mm)	191×254
Shaking motion	Rocking
Speed accuracy	±1 min^{-1}
Speed range (min^{-1})	1 - 50*
Temperature range (°C)	Ambient +5...65
Uniformity at 37 °C (°C)	±0,5
Weight (kg)	9,5
W×D×H (mm)	279×432×267

Description	Pk	Cat. No.
Incubating rocking platform shaker, UK-plug	1	**444-0763**

Description	For	Pk	Cat. No.
Mat for incubating rocking platform shaker			
Dimpled mat, 254×191 mm	Incubating rocking platform shaker	1	**444-0769**

* Note: Maximum speed/tilt angle may vary with heavy or unbalanced loads
** Centred on tray

Incubating 3D rotator waver

The incubating 3 dimensional rotator waver combines vertical and horizontal wave motion with incubation in one compact bench top unit. The spill resistant design channels fluids away from internal components. The microprocessor control provides electronic tilt angle adjustment which allows the user to easily adjust rocking angle from 0 to 20° while unit is operating. The PID temperature controller maintains precise temperature control from ambient +5 °C to 65 °C. Easy to use controls allow users to adjust temperature in 1 °C increments. Precise speed control provides smooth, low-speed wave motion down to 1 min^{-1}. Touch pad controls with easy to read LED displays for temperature, speed, tilt angle, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. A hot warning illuminates when the air temperature in the chamber reaches 40 °C and remains on until the temperature cools to below 40 °C. Polycarbonate lid allows viewing of samples without disturbing the internal temperature. Timer displays elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off. Overload protection via audible and visual signals activated when system detects an obstruction or overload of the tray. Speed ramping feature slowly increases speed to desired set point to avoid splashing. Unit is ideal for cell cultures, hybridisation procedures and blotting techniques.

- Electronic tilt adjustment from 0 to 20° while unit is operating
- LED displays shows temperature, speed, tilt angle and time simultaneously
- Timer from 1 sec to 160 h, with audible alarm when the time reaches zero
- Can be used at 5 to 40 °C (max 80% relative humidity, non-condensing) in cold rooms, incubators, and CO_2 environments

Ordering information: Supplied without accessories. Mat must be ordered separately.

Model	Incubating 3D waver
Angle (°)	0 - 20*
Interior dimensions WxDxH (mm)	197×273×86
Max. load (kg)	2,3**
Platform W×D (mm)	184×235
Shaking motion	3 dimensional
Speed accuracy	±1 min^{-1}
Speed range (min^{-1})	1 - 30*
Temperature range (°C)	Ambient +5...65
Uniformity at 37 °C (°C)	±0,5
Weight (kg)	9,5
W×D×H (mm)	279×432×267

Description	Pk	Cat. No.
Incubating 3D waver, UK-plug	1	**444-0766**

Description	For	Pk	Cat. No.
Mat for incubating 3-D rotator waver			
Dimpled mat, 235×184 mm	Incubating 3D waver	1	**444-0771**

* Note: Maximum speed/tilt angle may vary with heavy or unbalanced loads
** Centred on tray

Thermoshakers for microtubes and PCR plates, PHMT series
Grant

Compact, easy to operate microtube thermoshakers, with interchangeable blocks that hold 24 or 32 microtubes or one 96-well plate only (unskirted) with incubation to 100 °C. The powerful yet quiet motor produces regulated and reproducible rotation throughout the speed range, giving uniform amplitude across the shaking platform. Unit is easy to program and has soft start for delicate samples. A choice of blocks is available, to meet the needs of many standard laboratory procedures.

- Mixing and incubation phases are combined and reaction process times are reduced
- Rapid heating for swift change of application, increasing flexibility and throughput
- Integral timer, 1 min to 96 h, with buzzer and automatic switch-off, or continuous mode
- 2 line LCD shows actual and set values for temperature, shaking speed and time
- Fast start - 3 second acceleration to maximum speed
- Temperature calibration function compensates for the differences in thermal behaviour of different samples and tubes

Complies with IEC61010 parts 1 and 2

Additional interchangeable blocks can be ordered seperately.

Model	PHMT-PSC18	PHMT-PSC24N	PHMT-PSC24	PHMT-PSC32	PHMT-PSC96
Heat-up time, ambient to 37 °C (min)	10				
Orbit (mm)	2				
Speed (min^{-1})	250 - 1400				
Speed setting - resolution (min^{-1})	10				

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Temperature control range (°C)	Ambient +5...100
Uniformity at 37 °C (°C)	±0,1
Weight (kg)	4
W×D×H (mm)	205×230×130

Description	Pk	Cat. No.
For microtubes		
Thermoshaker, PHMT-PSC18 with block for 20×0,5 ml and 12×1,5 ml microtubes, UK-plug	1	**444-1026**
Thermoshaker, PHMT-PSC24N with block for 24×1,5 ml microtubes, UK-plug	1	**444-1027**
Thermoshaker, PHMT-PSC24 with block for 24×2,0 ml microtubes, UK-plug	1	**444-1028**
Thermoshaker, PHMT-PSC32 with block for 20×0,2 ml and 12×1,5 ml microtubes, UK-plug	1	**444-1029**
For microplates		
Thermoshaker, PHMT-PSC96 with block for one 96-well PCR plate (0,2 ml), UK-plug	1	**444-1030**

Description	For	Pk	Cat. No.
Accessories			
Spare block for PSC24N	24×1,5 ml microtubes	1	**460-0219**
Spare block for PSC24	24×2,0 ml microtubes	1	**444-0731**
Spare block for PSC32	20×0,2 ml and 12×1,5 ml microtubes	1	**444-0748**
Spare block for PSC96	96-well microplate	1	**444-0749**

Microplate thermoshakers, PHMP series
Grant

Compact, dual heating microplate thermoshakers, for use with standard footprint microplates with 4 to 384 wells, unit accommodates two or four microplates providing incubation to 60 °C. The dual heating, from both the platform and heated lid, provides a controlled microenvironment and ensures excellent uniformity and reproducibility. The heated lid also minimises evaporation. The powerful yet quiet motor produces regulated and reproducible rotation throughout the speed range, giving uniform amplitude across the shaking platform.

- Mixing and incubation phase are combined and reaction process times are reduced
- Integral timer, 1 min to 96 h, with audible alarm and automatic switch-off
- Can be used at 4 to 40 °C (80% relative humidity, non-condensing), in an incubator or cold room

Complies with IEC61010 parts 1 and 2

Model	PHMP	PHMP-4
Heat-up time	RT*...37 °C: 12 min	
No. of microplates held	2	4
Orbit (mm)	2,0	
Speed (min^{-1})	250 - 1200	
Speed setting - resolution (min^{-1})	10	
Temperature range (°C)	Ambient +5...60	
Temperature stability (°C)	±0,1	
Uniformity (°C)	±0,25	
Weight (kg)	6,1	9,5
W×D×H (mm)	270×260×125	390×390×140

Description	Pk	Cat. No.
PHMP thermoshaker, UK-plug	1	**444-0803**
PHMP-4 thermoshaker, UK-plug	1	**444-0800**

*RT = Ambient

Thermoshaker with cooling, for microtubes and microplates, PCMT
Grant

Compact thermoshaker with variable speed and temperature. This heating and cooling thermoshaker provides simultaneous or independent heating and mixing functions. The unit is ideal for DNA, RNA extractions, sample preparation, enzymatic reactions, processes and extractions of metabolites from cellular material.

- Fast heating and cooling times 4 to 100 °C, and mixing speed of 250-1400 min^{-1}
- Even mixing across the block and temperature uniformity of ±0,1 °C at 37 °C
- Digital timer, 1 min to 96 h, with audible alarm
- 2 line LCD display shows preset and actual values of time, temperature and speed
- Can be used at 4 to 40 °C (80% relative humidity, non condensing) in an incubator, cold room or workstation

Ordering information: Supplied without blocks, there is a choice of five interchangeable blocks for 0,2; 0,5; 1,5; 2,0 ml or a mixture, which must be ordered separately.

Model	PCMT
Cooling speed (°C/min)	5 at +100...+25 °C 1,8 at +25...+15 °C below ambient
Heating speed (°C/min)	5 from +25...+100 °C
No. of microplates held	1
Orbital diameter (mm)	2
Speed (min^{-1})	250 - 1400
Temperature control range (°C)	From 15 below ambient to +100
Temperature setting (°C)	+4...100
Uniformity (°C)	±0,1 at 37 °C
Weight (kg)	4
W×D×H (mm)	205×230×130

Description	Model	Pk	Cat. No.
Thermoshaker, PCMT, for microtubes and microplates, UK-plug	PCMT	1	**460-0171**

Description	For	Pk	Cat. No.
Accessories			
Interchangable block, HC18	20×0,5 ml and 12×1,5 ml microtubes	1	**460-0173**
Interchangable block, HC24	24×2,0 ml microtubes	1	**460-0175**
Interchangable block, HC24N	24×1,5 ml microtubes	1	**444-0798**
Interchangable block, HC32	20×0,2 ml and 12×1,5 ml microtubes	1	**460-0174**
Interchangable block, HC96	96-well microplates (0,2 ml)	1	**460-0176**

Thermal mixer, Eppendorf ThermoMixer® C
Eppendorf

ThermoMixer® C combines unique mixing performance with excellent temperature control to consistently guarantee complete, dependable and reproducible test results. Units feature ergonomic design and optimised features according to the Eppendorf PhysioCare Concept®, are simple and intuitive to use. Up to 20 user defined programs can be saved, heating and cooling rates and time modes can be set. Program keys provide fast and simple access to the most frequently used mixing/temperature parameters. Units remain stable even at maximum mixing speed. Improve assay results by mixing and incubating samples at the same time. Ideal for plasmid/RNA/DNA purification, cDNA synthesis, enzymatic reactions (e.g. DNA restriction digestion, proteinase K digestion, ligation), denaturation of DNA, RNA and proteins, bacterial growth and lysis reactions at 100 °C.

- ^{2D}Mix-Control provides optimised mixing with anti-spill technology
- Heating, mixing and cooling in one compact unit which is freely programmable
- Digital display enables simple and accurate setting and viewing of parameters
- Prevent condensation on tube lids and walls and improve temperature homogeneity with the new ThermoTop®
- SmartBlocks™ are easy to exchange due to QuickRelease™ system

Ordering information: Supplied without blocks, a wide variety of SmartBlocks™ are available, these are suitable for use with all common vessel and plate formats. Can be used with ThermoTop® cover.

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Model	ThermoMixer® C
Cooling speed (°C/min)	2,5 between 100 °C and ambient
Heating speed (°C/min)	<6
Incubating accuracy (°C)	±0,5 between 20 and 45 °C (across all positions on all SmartBlocks)
Mixing speed range (min^{-1})	300 - 3000*
Orbit (mm)	3
Temperature control range (°C)	From 15 below ambient to 100
Temperature setting (°C)	1...100
Timer	15 s to 99.30 h or continuous
Weight (kg)	6,2
W×D×H (mm)	206×304×131

Description	Pk	Cat. No.
ThermoMixer® C, without block, UK-plug	1	**444-1022**

Description	Speed	Pk	Cat. No.
Accessories			
ThermoTop®, with condens.protect® technology		1	**460-0220**
Thermoblock, SmartBlocks™			
SmartBlock™ 0,5 ml, thermoblock for 24×0,5 ml reaction vessels*	≤2000	1	**460-0227**
SmartBlock™ 1,5 ml, thermoblock for 24×1,5 ml reaction vessels*	≤2000	1	**460-0222**
SmartBlock™ 2,0 ml, thermoblock for 24×2,0 ml reaction vessels*	≤2000	1	**460-0228**
SmartBlock™ 5,0 ml, thermoblock for 8×5,0 ml Eppendorf Tubes®	≤1000	1	**460-0221**
SmartBlock™ 15 ml, thermoblock for 8×15 ml conical tubes	≤1000	1	**460-0229**
SmartBlock™ 50 ml, thermoblock for 4×50 ml conical tubes	≤1000	1	**460-0230**
SmartBlock™ 12 mm, thermoblock for 24×11-11,9 mm Ø reaction vessels, height 30 mm -76 mm	≤2000	1	**460-0232**
SmartBlock™ cryo, thermoblock for 24×1,5 ml cryo tubes, max. Ø 12,5 mm, all base designs	≤2000	1	**460-0231**
SmartBlock™ plates, thermoblock for microplates and deepwell plates, includes lid*	≤3000**	1	**460-0233**
SmartBlock™ PCR 96, thermoblock for 96-well PCR plates, includes lid*	≤2000	1	**460-0234**
SmartBlock™ PCR 384, thermoblock for 384-well PCR plates, includes lid*	≤3000	1	**460-0235**

* Depending on SmartBlock™ used.
** For deepwell plate, the maximum mixing frequency is 2000 rpm (level sensor). Maximum mixing frequency when using lid is 2000 rpm.

Thermal mixers, Eppendorf ThermoMixer® F1.5 and FP

Eppendorf

Eppendorf ThermoMixer® F1.5 is customised for 1,5 ml reaction vessels and Eppendorf ThermoMixer® FP is designed for plates. Units feature simple and intuitive operation using predefined temperature keys (37, 42, 56 and 95 °C). Both units are ideal for bacterial growth, enzymatic reactions and lysis reactions at 100 °C. The F1.5 is suitable for denaturation of DNA, RNA and proteins, labelling of nucleic acids and proteins and Proteinase K digestions of cells and tissues. The FP model is suitable for resuspending pellets, mixing protein quantification assays and ELISA assays.

- Precise temperature control from ambient +4 to 100 °C
- Efficient mixing up to 1500 min^{-1} (F1.5) or 2000 min^{-1} (FP) thanks to ^{2D}Mix-Control and anti-spill technology
- Digital display enables simple and accurate setting and viewing of parameters
- Prevent condensation on tube lids and walls and improve temperature homogeneity with the new ThermoTop®

Ordering information: Eppendorf ThermoMixer® F1.5 is supplied with fixed SmartBlock™ for 24×1,5 ml reaction vessels, and Eppendorf ThermoMixer® FP is supplied with fixed SmartBlock™ for microplates and deepwell plates, including lid. Can be used with ThermoTop® cover.

Model	ThermoMixer® F1.5	ThermoMixer® FP
Heating speed (°C/min)	<11	<18
Incubating accuracy (°C)	<±0,5 at 20 - 45 °C (all SmartBlock™ positions)	
Mixing speed range (min^{-1})	300 - 1500	300 - 2000
Orbit (mm)	3	
Temperature control range (°C)	Ambient +4...100	
Temperature setting (°C)	1...100	
Weight (kg)	6,0	5,8
W×D×H (mm)	206×304×131	

Description	Pk	Cat. No.
ThermoMixer® F1.5 (includes fixed block), for 24×1,5 ml reaction vessels, UK-plug	1	**444-1023**
ThermoMixer® FP (includes fixed block), with UK-plug	1	**444-1024**

Description	Pk	Cat. No.
Accessories		
ThermoTop®, with condens.protect® technology	1	**460-0220**
Lids for ThermoMixer® F1.5 and FP and SmartBlocks™ 0,5 - 2,0 ml, plates, PCR 96 and 384	1	**460-1000**

Incubator hoods, TH 15 and TH 30
Edmund Bühler

These incubator hoods have windows on three sides and the front door opens upwards. They can be combined with Edmund Bühler shakers to maximise use of bench space or function as independent units. TH 15 can be combined with KS 15 or TiMix 5 shakers and accommodates one litre Erlenmeyer flasks, TH 30 can be used with SM 30 shakers and accepts two litre Erlenmeyer flasks.

- Digital setting and display of temperature
- TH 30 has standard and UV lighting (15 W)
- Units feature an internal power socket for running small shakers inside the unit
- Shaking automatically stops when door is opened for improved user safety

EN 61010 / VDE 800 part 1

Ordering information: Units are supplied without accessories. Extended temperature range of ambient +5 to 60 °C for both units is available as a factory fitted option, please contact your local VWR office for details.

Model	TH 15	TH 30
Air circulation (m^3/h)	240	
Display resolution (°C)	±1	
Internal W×D×H (mm)	490×410×310	660×540×430
Temperature fluctuation (%)	±1	
Temperature range (°C)	Ambient +5...50	
Weight (kg)	21	33
W×D×H (mm)	510×450×455	680×610×560

Description	For	Pk	Cat. No.
TH 15 incubator hood	KS 15 or TiMix 5 shakers, 1 l Erlenmeyer flasks	1	**444-9391**
TH 30 incubator hood	SM30 shaker, 2 l Erlenmeyer flasks	1	**444-9392**

Description	For	Pk	Cat. No.
Factory fitted options			
Cooling device for TH 30	Cooling coil and connectors for an external cooling system (refrigerated circulator or flow through cooler, not supplied). Depending on cooling capacity of cooler, temperatures of approx. 5 °C below ambient can be reached	1	**444-9393**
Extended temperature range up to 60 °C	TH 15 and TH 30	1	**444-0725**
Accessories			
Two tier top frame SM/TH	Vessels with maximum height 140 mm, e.g. 200/250 ml Erlenmeyer flasks. Vessels are secured using Universal SM tray or sliding plate with Combifix SM, suitable for TH 30 only	1	**444-9396**
Shelf (365×588 mm)	Samples requiring temperature control without shaking, suitable for TH 30 only	1	**444-0510**
Shelf (378×318 mm)	Samples requiring temperature control without shaking, suitable for TH 15 only	1	**444-0520**

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Incubating orbital shaker, Professional 3500

Designed for a variety of shaking applications such as cell cultures, solubility studies, bacterial suspensions and general mixing. Large capacity platform holds up to 15,9 kg. Variable speed, microprocessor control provides consistent, uniform mixing action. Ramping feature slowly increases speed to the set point for added safety. The Accu-drive shaking system delivers exceptional speed control, accuracy, safety, and durability. System continuously monitors shaking speed and will maintain the set point even under changing loads. Displayed speed is accurate to 1% of set speed. Built-in load sensor can detect an unbalanced condition and will automatically reduce min^{-1} to a safe speed to prevent spills and protect samples. Powerful triple eccentric drive and brushless motor is designed for continuous duty and is able to handle heavy loads. Spill resistant design protects internal components from accidental spills and leaks. Removable tray design allows chamber to be cleaned easily. Opti-Flow forced ventilation system uses twin induction fans and air deflectors to deliver exceptional temperature uniformity and stability. Over-temperature sensor will shut down unit and activate audible and visual alarms if temperature limit is exceeded. Temperature calibration mode allows user to calibrate unit to an external temperature device and RS232 serial port provides two-way communication for data logging and unit control.

- Three independent LED displays show speed, temperature and time
- Integral timer, 1 s to 160 h, shows elapsed time or counts down, automatic switch-off and audible alarm when program is complete
- Microprocessor PID temperature controller maintains precise temperature from ambient +5 to 65 °C, adjustable in 1 °C increments and recalls last set points, even when unit has been shut off. Will also restart if power is interrupted
- Opti-Flow forced ventilation system and triple eccentric drive with brushless motor
- Polycarbonate lid enables samples to be viewed, without altering internal temperature. When lid is opened, automatic shut off circuit will stop shaker platform to protect operator

Delivery information: Supplied with non perforated tray, non-slip rubber mat and 2340 mm detachable power cord. Rubber mat fits into the non perforated platform tray, suitable for holding Petri dishes and cell culture flasks, required accessories must be ordered separately.

Model	Professional 3500
Internal W×D×H (mm)	305×340×241
Max. load (kg)	15,9
Orbit (mm)	19
Platform W×D (mm)	279×330
Shaking motion	Orbital
Speed (min^{-1})	15 - 300
Speed accuracy (min^{-1})	±1 below 100
Speed range (min^{-1})	15 - 300
Temperature range (°C)	Ambient +5...65
Uniformity at 37 °C (°C)	±0,5
Weight (kg)	34
W×D×H (mm)	356×648×406

Description	Pk	Cat. No.
Professional 3500 incubating shaker, UK-plug	1	**444-7085**

Description	For	Pk	Cat. No.
Accessories			
Microtube rack, PVC coated steel	1,5/2,0 ml tubes, holds 70 tubes	1	**444-0276**
Test tube rack, PVC coated steel	10 - 13 mm Ø tubes, holds 63 tubes	1	**444-0278**
Test tube rack, PVC coated steel	14 - 16 mm Ø tubes, holds 48 tubes	1	**444-0279**
Test tube rack, PVC coated steel	18 - 20 mm Ø tubes, holds 35 tubes	1	**444-0280**
Test tube rack, PVC coated steel	22 - 25 mm Ø tubes, holds 24 tubes	1	**444-0281**
Centrifuge tube rack, PVC coated steel	15 ml tubes, holds 35 tubes	1	**444-0283**
Centrifuge tube rack, PVC coated steel	50 ml tubes, holds 12 tubes	1	**444-0284**
Flask clamps, stainless steel	10 ml	1	**444-7040**
Flask clamps, stainless steel	25 ml	1	**444-7041**
Flask clamps, stainless steel	50 ml	1	**444-7042**
Flask clamps, stainless steel	125 ml	1	**444-7043**
Flask clamps, stainless steel	250 ml	1	**444-7044**
Flask clamps, stainless steel	500 ml	1	**444-7045**
Flask clamps, stainless steel	1000 ml	1	**444-7030**
Clamps for media bottles, stainless steel	500 ml	1	**444-7035**
Clamps for media bottles, stainless steel	1000 ml	1	**444-7036**
Universal platform 330×279 mm	Standard/Advanced 3500, Incubating 3500, Advanced 3750, Professional 3500 shakers, mounting Erlenmeyer flask clamps and test tube racks	1	**444-7087**

Note: Shaker accommodates 60×10, 25×25, 13×50, 10×125, 9(8)×250, 7(5)×500, 4(2)×1000 ml flasks using stainless steel (or PVC) flask clamps and 5×500 or 2×1000 ml media bottles.

Shaking incubators, INCU-Line

ILS 4

ILS 6

Shaking incubators with a small footprint. The compact units feature a stackable design and expanded temperature range which makes the ILS 4 & ILS 6 ideal for molecular biology applications and general use. The integral orbital shaker means they are highly versatile. The SmartChek™ temperature control system (exclusive to the VWR Collection) guarantees precise temperature control. Mechanical convection maintains a stable temperature environment and provides quick recovery after opening the door. A safety thermostat is located on the back of the unit. The insulated door has a large, double glazed observation panel and opens to almost to180° for easy access.

- Internal electrical socket
- SmartChek™ temperature control system
- Digital display
- Stackable design saves space
- Full range of accessories available

Ordering information: Supplied without accessories, these must be ordered separately.

Model	ILS 4	ILS 6
Internal W×D×H (mm)	343×375×381	442×396×406
Orbit (mm)	19	
Shaking motion	Orbital	
Speed (min^{-1})	20 - 300	
Speed range (min^{-1})	20 - 300	
Temperature accuracy at 37 (°C)	±0,1 °C	
Temperature range (°C)	Ambient +5...80 (in 0,1 °C increments)	
Temperature Uniformity	±0,25 °C	
Timer	0 - 99 minutes/continuous	
Weight (kg)	37,7	63,6
W×D×H (mm)	425×550×580	574×544×635

Description	Pk	Cat. No.
INCU-Line ILS 4 incubating shaker, chamber volume 49 litres	1	**444-0732**
INCU-Line ILS 6 incubating shaker, chamber volume 71 litres	1	**444-0733**

Description	For	Pk	Cat. No.
Accessories			
Additional shelf	ILS 6	1	**444-0831**
Full shelf	ILS 4	1	**444-0832**
half shelf	ILS 4	1	**444-0833**
Shaking platform, pre-drilled for clamping flasks (supplied without clamps)	ILS 4	1	**444-0834**
Flat platform, with non-slip rubber mat (300×300 mm)	ILS 4	1	**444-0835**
Flat double platform, with non-slip rubber mat	ILS 4	1	**444-0836**
Universal spring loaded clamp rack for flasks and bottles	ILS 4	1	**444-0837**
Flat platform, with non-slip rubber mat (390×330 mm)	ILS 6	1	**444-0842**
Shaking platform, pre-drilled for clamping flasks (supplied without clamps)	ILS 6	1	**444-0843**
Flask clamp, for 125 ml flasks, max. 16 on platform	ILS 4/ILS 6	1	**444-0838**
Flask clamp, for 250 ml flasks, max. 9 on platform	ILS 4/ILS 6	1	**444-0839**
Flask clamp, for 500 ml flasks, max. 5 on platform	ILS 4/ILS 6	1	**444-0840**
Flask clamp, for 1000 ml flasks, max. 4 on platform	ILS 4/ILS 6	1	**444-0841**
Platform with 4×2000 ml flask clamps	ILS 6	1	**444-0844**
Platform with 6×1000 ml flask clamps	ILS 6	1	**444-0845**
Platform with 8×500 ml flask clamps	ILS 6	1	**444-0846**
Platform with 12×250 ml flask clamps	ILS 6	1	**444-0847**
Platform with 20×125 ml flask clamps	ILS 6	1	**444-0848**
Platform with 30×50 ml flask clamps	ILS 6	1	**444-0849**

ILS 4 accommodates 4×1000 ml, 5×500 ml, 9×250 ml or 16×125 ml and ILS 6 accommodates 4×2000 ml, 6×1000 ml, 8×500 ml, 12×250 ml or 20×125 ml or 30×50 ml flasks.

Incubating shaker, KS 3000 i control and KS 3000 ic control

IKA

Compact incubator shakers designed for safe, unattended operation in a temperature controlled environment. The units have a large LED display for speed, temperature and timer. An integrated PID temperature control allows the use of PT1000 temperature sensors to assure highly accurate temperature control. The electronically controlled incubators come equipped with RS232 and USB ports for PC interface. All functions can be controlled and documented using optional labworldsoft® software. In addition the KS 3000 ic control has a built in cooling coil for connection to an external cooling unit.

- Controls with antimicrobial coating for reduction of bacteria
- Junction box in the workspace for connection of an additional temperature sensor, e.g. PT1000
- Wide range of accessories accommodate almost all shapes and sizes of vessels
- Unit stops automatically when hood is lifted
- Collecting tray with drain at the rear of the unit
- Electronic timer and error code display

IP protection class according to DIN EN 60529: IP 30

Delivery information: Supplied with PT1000 sensor. Please order other accessories separately.

Model	KS 300 i control	KS 300 ic control
Internal W×D×H (mm)	330×330×258	
Max. load with attachments (kg)	7,5	
Orbital diameter (mm)	20	
Permitted ambient temperature (°C)	15 - 32	
Power input/output (W)	1120/1000	
Shaking motion	Orbital	
Speed range (min^{-1})	10 - 500	
Temperature range (°C)	Ambient +5 to 80	10 below ambient to 80*
Temperature stability (°C)	±0,1	
Weight (kg)	35	37
W×D×H (mm)	465×695×430	

Description	Pk	Cat. No.
KS 3000 i control incubating shaker, UK-plug	1	**444-0807**
KS 3000 ic control incubating shaker, with connection for cooler, UK-plug	1	**444-0810**

Description	For	Pk	Cat. No.
Accessories			
Dish attachment (410×370×32 mm)	cell culture flasks, Petri dishes or culture bottles	1	**444-2777**
Separating funnel attachment	6×50, 5×100, 3×250, 3×500 ml separating funnels	1	**444-2778**
labworldsoft®		1	**431-0192**
Universal attachment (425×335×135 mm)	infinitely variable clamping of all kinds of vessels	1	**444-2775**

Note: KS 3000 i control accommodates a maximum of 50×25, 23×50, 23×100, 11×250 or 9×500 ml flasks.
* The external cooling unit must be ordered separately.

Incubating shaker, KS 4000 i control

IKA

Easy to use incubator shaker that allows unattended operation in a temperature-controlled environment. Unit features a large LED display for speed and time settings and integrated PID temperature control (using two PT1000 temperature sensors). Shakers have electronic temperature and speed control, there is a collecting tray with drain hose at the rear of the shaker and controls have antimicrobial coating to reduce bacteria.

- Digital setting and display of speed, time and temperature; timer continuous or 0 to 999 h
- Junction box in the workspace for connection of an additional temperature sensor
- Shaking automatically stops when door is opened or if the unit is disturbed, for improved user safety
- Model KS 4000 ic control can be connected to an external cooler unit, e.g. optional KV600
- All functions can be controlled and documented using optional labworldsoft® software

IP protection class according to DIN EN 60529: IP 30

Ordering information: Supplied without accessories, please order required accessories separately.

Model	KS 4000 i control	KS 4000 ic control with cooling coil
Internal height (mm)	325	
Max. load with attachments (kg)	20	
Orbital diameter (mm)		
Permitted ambient temperature (°C)	15 - 32	
Platform W×D (mm)	440×440	
Power input/output (W)	1120/1000	

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Shaking motion	Orbital
Speed range (min^{-1})	10 - 500
Temperature range (°C)	Ambient +5...80
Temperature stability (°C)	±0,1 (200 ml water at target temperature of 37 °C, RT 25 °C)
Weight (kg)	55
W×D×H (mm)	580×750×520

Description	Pk	Cat. No.
Standard model		
KS 4000 i control incubating shaker, UK-plug	1	**444-0299**
Model with connection for recirculating cooler*		
KS 4000 ic control incubating shaker, with connection for cooler, UK-plug	1	**444-0490**

Description	For	Pk	Cat. No.
Accessories			
Slip-resistant plate	Smooth shaking in the low viscosity range, e.g. cell culture flasks, Petri dishes, culture bottles and vessels with a low centre of gravity. With integrated slip-resistant foil (PP). Dimensions of set up plate 430×430 mm	1	**444-0492**
Perforated plate	Shaking flasks, Erlenmeyer flasks and bottles with a round cross section (fixing clips must be ordered separately). Dimensions of set up plate 430×430 mm	1	**444-0493**
labworldsoft®		1	**431-0192**
Universal attachment	Various types of vessels positioned by adjustable clamping rods. Dimensions of set up plate 360×410 mm	1	**444-0494**
Fixing clip	25 ml flask	1	**444-2531**
Fixing clip	50 ml flask	1	**444-2532**
Fixing clip	100 ml flask	1	**444-2533**
Fixing clip	200/250 ml flask	1	**444-2534**
Fixing clip	500 ml flask	1	**444-2535**

Note: Shaker KS 4000 i control accommodates a maximum of 50×25, 48×50, 25×100, 16×250 or 12×500 ml flasks.
*External cooling unit needs to be ordered separately

Shaking incubators, SI500, SI600 and SI600C
Stuart

Combined incubators with variable speed orbital shakers that are designed to provide controlled and uniform conditions for biological growth. The smoked acrylic side panels and door allow visibility of vessels during incubation; forced air circulation ensures uniform heating. SI600C has double glazed viewing windows to prevent condensation when the unit is set at sub-ambient temperatures. The accessory racks can be quickly locked into place or removed from the platform without the need for tools via the Magnalock system. The stainless steel tube accessory racks can also adjust the angle of the tubes up to 30°, which increases the surface area of samples. The platform accommodates most sizes of flasks, up to 1 litre on the SI500, typically the SI500 platform accepts 12×250 ml, 9×500 ml, or 4×1000 ml. The SI600/SI600C can accommodate 15×500 ml, 8×1000 ml, or 6×2000 ml Erlenmeyer flasks. Four securing bars can be adjusted vertically or horizontally to suit. USB communications port allows unit to be connected to a PC for long term temperature monitoring.

- Retractable platform allows easy access to samples at the back
- Digital speed and temperature control via easy to read LED control panel
- All units control up to 60 °C, the SI600C when combined with the SRC4 recirculating cooler can be used down to 15 °C below ambient (min. 5 °C)
- Integral timer which can be set from 1 s to 9 days, after which shaking will stop and unit remain at set temperature to protect samples
- Adjustable safety temperature cut-out provides extra protection for samples and shaking automatically stops when door is opened for improved user safety
- BioCote® antimicrobial protection

IP protection class according to DIN EN 60529: IP 22

Delivery information: Supplied with retractable platform with clamping system, but without accessory racks which must be ordered separately.

Model	SI500	SI600	SI600C
Display resolution (°C)	0,1		
Internal height (mm)	297	395	380
Max. load (kg)	10	15	10
Orbit (mm)	16		
Platform W×D (mm)	335×335	526×390	520×390

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Power input (W)	250	400	
Shaking motion	Orbital		
Speed range (min^{-1})	30 - 300		
Temperature fluctuation (°C)	±0,5		
Temperature range (°C)	Ambient +5...60		Ambient -15...60*
Weight (kg)	30	53	60
W×D×H (mm)	450×474×522	675×542×642	675×562×640

Description	Pk	Cat. No.
SI500 incubating shaker	1	**444-5503**
SI600 incubating shaker	1	**390-0876**
SI600C incubating shaker	1	**390-0877**

Description	For	Pk	Cat. No.
Tube holder	1,5 /2,0 ml microcentrifuge tubes	1	**444-0191**
Tube holder	0.5 ml microcentrifuge tubes	1	**444-0192**
Tube holder	0.2 ml tubes	1	**444-0714**
Accessories			
Tube rack	64×1,5/2,0 ml microtubes	1	**444-5507**
Tube rack	25×15 ml centrifuge tubes	1	**444-5508**
Tube rack	12×50 ml centrifuge tubes	1	**444-5509**
Tube rack	16×30 ml universal containers	1	**444-5510**

* SI600C requires separate recirculating cooler

Shaking incubator, digital, bench top, ES-20
Grant

Versatile and programmable bench top shaker incubator for mixing and incubating biological cultures and samples in a variety of flasks and vessels. This compact unit features robust construction with clear 7 mm thick Plexiglass® panels.

- Digital control of time, temperature and shaking speed for accuracy and repeatability
- Simple to program time, temperature and shaking speed using clear LCD. Timer 1 min to 96 h
- Temperature control by microprocessor plus forced heated air circulation ensure a constant and even temperature within the chamber
- Equipped with direct drive shaking system for reliable, long-term operation
- Designed for easy assembly/disassembly – easy to move from one location to another. Comes flat packed, takes an hour to assemble, no special tools required

Ordering information: Supplied without a platform. A platform is required, a variety of accessory platforms for a wide range of applications are available including an universal platform, a flat platform ideal for low profile containers and platforms with clamps for flasks.

Model	ES-20
Display resolution (°C)	0,1
Internal height (mm)	250
Max. load (kg)	2,5
Orbit (mm)	10
Power (kW)	0,16
Shaking motion	Orbital
Speed range (min^{-1})	50 - 250
Temperature range (°C)	25...42
Temperature setting (°C)	0,1
Temperature stability (°C)	±0,5
Weight (kg)	<15
W×D×H (mm)	340×340×435

Description	Pk	Cat. No.
Shaking incubator, ES-20, bench top, digital, without platform, UK-plug	1	**444-0558**

Description	Pk	Cat. No.
Accessories		
Flat platform with non-slip rubber mat, for Petri dishes, culture flasks, W×D 219×219 mm	1	**444-0344**
Platform with clamps for 12×100 ml flasks or 150 ml beakers, W×D 250×190 mm	1	**444-0035**
Platform with spring holders for up to 88 tubes/vessels with a variety of sizes, < 30 mm Ø	1	**444-0783**
Platform with clamps for 6×250 ml flasks or 300 ml beakers, W×D 250×190 mm	1	**444-0036**
Universal platform with adjustable bars, for flasks, bottles and beakers, W×D 270×195 mm	1	**444-0358**

Shaking incubator, digital, ES-80
Grant

Robust and reliable shaker incubator with programmable time, temperature and shaking speed. This unit is ideal for gentle or vigorous mixing and incubation of samples in a variety of flasks and vessels. The ES-80 features soft stop and start to protect samples, it has a stainless steel inner chamber. The unit is suitable for applications including cultivation of microorganisms and cells, long term growth projects, tissue sample extraction at temperatures up to 80 °C.

- Digital control of time, temperature and shaking speed for accuracy and repeatability
- Simple to program time, temperature and shaking speed using clear 2-line LCD. Timer 1 min to 96 h
- Temperature control by microprocessor plus forced heated air circulation ensure a constant and even temperature within the chamber
- Equipped with direct drive shaking system for reliable, long-term operation, with a 20 mm orbit
- Load up to 8 kg and temperature range from 25 to 80 °C

Ordering information: Supplied without a platform. A platform is required, a variety of accessory platforms are available including a flat platform ideal for low profile containers and platforms with clamps for flasks.

Model	ES-80
Display resolution (°C)	0,1
Internal height (mm)	300
Max. load (kg)	8
Orbit (mm)	20
Power (kW)	0,45
Shaking motion	Orbital
Speed range (min^{-1})	50 - 250
Temperature range (°C)	25...80
Temperature setting (°C)	0,1
Weight (kg)	43
W×D×H (mm)	590×525×510

Description	Pk	Cat. No.
Digital shaking incubator, ES-80, UK-plug	1	**444-0797**

Description	For	Pk	Cat. No.
Accessories			
Flat platform with non-slip rubber mat, 360×400 mm	Low profile containers and bottles	1	**444-0791**
Platform with clamps	30×100 ml flasks	1	**444-0784**
Platform with clamps	16×250 ml flasks	1	**444-0782**
Platform with clamps	9×500 ml flasks	1	**444-0786**
Platform with clamps	6×1000 ml flasks	1	**444-0785**

Incubating shakers, MaxQ™ 6000
Thermo Scientific

Digital high capacity incubating shakers which combine orbital shaking with general purpose incubation for added versatility. Both refrigerated and standard units have two adjustable-height shelves which provide added storage and the door can be hinged from either the left or right by the user for convenient placement in the lab. The spacious stainless steel chamber allows stacking of a 457×457 mm platform to double the shaking capacity. Applications include bacterial suspensions, solubility studies, extraction procedures, staining and destaining, hybridisations, diagnostic tests, washing procedures, protein expression and plasmid purification.

- Floor standing units which can be stacked on top of each other to save space*
- Triple eccentric drive provides agitation of large quantities of samples, even at high speeds
- Large viewing window and internal light offer sample visibility
- Electrical outlet provides power for operating stirrers or rotators within the chamber

Warranty period: 5 years parts, shaking mechanism 10 years.

Ordering information: Supplied without platform or clamps which must be ordered separately. A wide range of accessories are available, please visit www.vwr.com or contact your local VWR sales office for details.

Model	MaxQ 6000	MaxQ 6000 refrigerated
Max. load (kg)	15.9	
Orbital diameter (mm)	19	
Platform W×D (mm)	457×457	
Shaking motion	Orbital	
Speed (min^{-1})	15 - 500 ±1 (unstacked) 15 - 300 ±1 (stacked)	15 - 500 ±1 (unstacked) 15 - 300 ±1 (stacked
Temperature range (°C)	Ambient +10 to 80 °C, ±0,1 at 37 °C in the flask	15 below ambient to 80 °C, ±0,1 at 37 °C in the flask
Uniformity at 37 °C (°C)	±0,5	

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Weight (kg)	150	195
W×D×H (mm)	838×699×1029	

Description	Pk	Cat. No.
Incubating shaker MaxQ™ 6000	1	**444-0650**
Refrigerated incubator shaker MaxQ™ 6000	1	**444-0651**

Description	Pk	Cat. No.
Accessories		
Universal platform 457×457 mm for MaxQ™ 2000, MaxQ™4000 and MaxQ™ 6000 shakers	1	**444-0300**

Note: Universal platform accommodates a maximum of 10× microplate/deep well plates, 113×10, 64×25, 32×50, 32×125, 16×250, 16×300, 16×500, 9×1000, 6×2000, 4×4000,2×6000, 1×2500 or 4×2800 ml flasks.
* Stacking adapter required, please contact us for ordering information.

Incubating orbital shakers, Excella™ E24 & E25

Incubating orbital shakers with and without refrigeration, R denotes refrigeration. Bench top E24 or E24R can accommodate test tubes or flasks up to 2,8 litres in a tightly sealed growth chamber; they feature a clear acrylic lid for excellent visibility of samples. For larger capacity applications, the floor standing E25 and E25R models have a large viewing window in the top-opening lid and these models accept flasks up to six litres. Microprocessor controls allow temperature and speed to be calibrated via keypad. Microprocessor controller recalls last set points, even when power is interrupted, and restarts shaker when power resumes. Self-correcting microprocessor system continuously monitors and compensates for changes in workload, voltage and temperature and will maintain set point. Audible and visual alarms alert user if set point limit is exceeded, audible alarm can be muted. E25 models have adjustable feet to absorb vibration and help stabilise the load.

- Uniform temperature control by self-correcting microprocessor feedback control and tightly constructed chamber. High-velocity fans ensure rapid thermal recovery
- Integral timer, 0,1 to 99,9 h, shows elapsed time or counts down, automatic switch-off and audible alarm when program is complete
- Large LED display shows speed, run time, self-diagnostic indicators and temperature
- Unicentric drive with brushless motor ensures quiet, reliable, vibration-free operation with high loads and at high speed
- Safety features include automatic cut-out of shaker when lid is opened to protect operator and fail-safe thermostat that turns off heat if high temperature limit is exceeded to protect cultures

Ordering information: Supplied without platform and accessories, required accessories must be ordered separately; please contact your local VWR office for details.

Model	E24 and E24R	E25 and E25R
Internal W×D×H (mm)	514×546×356	850×580×480
Orbit (mm)	19	25
Platform W×D (mm)	460×460	760×460
Shaking motion	Orbital	
Speed range (min^{-1})	50 - 400	
Temperature range (°C)	Ambient +7 to 60 15 below ambient to 60 (R models only), minimum 4 °C	
Temperature stability (°C)	±0,1	
Weight (kg)	60 and 80	167 and 196
W×D×H (mm)	560×762×610	1270×770×850

Description	Pk	Cat. No.
E24 incubating shaker with 19 mm orbit	1	**444-0550**
E24R incubating shaker with 19 mm orbit	1	**444-0551**
E25 incubating shaker with 25 mm orbit	1	**444-0552**
E25R incubating shaker with 25 mm orbit	1	**444-0553**

Note: Excella E24 and E24R shakers accommodate a maximum of 109×10, 64×25, 45×50, 21×125, 18×250, 14×500, 8×1000, 5×2000, 4×2800, 4×4000 or 2×6000 ml flasks using the universal platform, and 64×50, 34×125, 25×250, 16×500, 9×1000, 5×2000 or 4×2800 ml flasks using dedicated platform.
Excella E25 and E25R shakers accommodate a maximum of 92×50, 39×125, 30×250, 18×500, 12×1000, 8×2000, 6×2800, 6×4000 or 4×6000 ml flasks using the universal platform, and 108×50, 60×125, 40×250, 24×500, 5×1000, 12×2000, 6×2800, 6×4000 or 4×6000 ml flasks using dedicated platform.

Incubating orbital shakers, bench top, Innova® 40 and 40R

These bench top incubating orbital shakers are available with and without refrigeration, R denotes refrigeration. The clear lid lifts up and out of the way providing visibility and giving easy access to all samples. The program controller is easy to use and the display can be easily seen from all angles. Intuitive programming allows multiple parameter changes to speed, holds up to four programs of 15 steps each. There is an interior light to assist viewing and the double pane thermal glass gives visibility and insulation. These shakers can accommodate flasks up to three litres, an RS232 serial port provides two-way communication for data logging and unit control.

- Large easy to read displays shows set point and actual values
- Integral timer, 0,1 to 99,9 h, shows elapsed time or counts down, automatic switch-off and audible alarm when program is complete
- Microprocessor controller maintains precise temperature, stores program for repeat use and recalls last set points, even when unit has been shut off. Will also restart if power is interrupted
- Triple eccentric counterbalanced drive with brushless motor ensures uniform motion regardless of where the sample is on the platform even when fully loaded and operating at top speed
- Air circulation system ensures rapid temperature equilibration and uniformity, multi-function reservoir humidifies the chamber to minimise sample evaporation

Ordering information: Supplied without platforms or accessories, required accessories must be ordered separately. Note model 40R has factory installed refrigeration, this can be added to the model 40 at a later date via the modular refrigeration system. Factory fitted options such as optional 25 mm orbit, remote alarm contact or validation packages are available, please contact your local VWR office before placing your order as options can not be retrofitted.

Model	40	40R
Internal W×D×H (mm)	514×546×356	
Orbit (mm)	19 (25 as an option)	
Platform W×D (mm)	460×460	
Shaking motion	Orbital	
Speed range (min^{-1})	25 - 500 with 19 mm orbit, 25 - 500 with 25 mm orbit	
Temperature range (°C)	Ambient + 5 to 80	15 below ambient to 80, minimum 4°C
Temperature stability (°C)	±0,1	
Uniformity at 37 °C (°C)	±0,25	
Weight (kg)	60,4	79,4
W×D×H (mm)	559×762×610	

Description	Pk	Cat. No.
Innova 40 incubating shaker, 19 mm orbit	1	**444-0544**
Innova 40R incubating shaker, 19 mm orbit	1	**444-0545**

Note: Innova 40 and 40R shakers accommodate a maximum of 109×10, 64×25, 45×50, 21×125, 18×250, 14×500, 8×1000, 5×2000, 4×2800, 4×4000, 4×5000 or 2×6000 ml flasks using the universal platform, and 64×50, 34×125, 25×250, 16×500, 9×1000, 5×2000, 4×2800, 4×4000 or 2×6000 ml flasks using dedicated platform.

Incubating orbital shakers, stackable, I 26 and I 26R

These incubating orbital shakers are available with and without refrigeration, R denotes refrigeration. Designed to maximise valuable laboratory space, the units can be stacked up to three units high using optional stacking kits. These smooth and quiet running incubators are ideal for culturing shear-sensitive cells as well as robust bacterial cultures. They feature microprocessor feedback for regulation of speed and temperature, plus audible and visual alarms to alert the user of set point deviations (alarm can be muted). The set point and operating status are retained when power is interrupted for automatic restart once power is restored. The door swings down and supports the slide out platform, which gives easy access to all samples; a sub platform protects the chamber from spills. There is large viewing window in the door. These shakers can accommodate flasks up to 2,8 litres, an RS232 serial port provides two-way communication for data logging and unit control.

- Large easy to read displays shows set point, actual values and alarm conditions
- Integral timer up to 99,9 h or continuous operation and audible alarm when program is complete
- Powerful fan and heater provide rapid heat-up and thermal recovery after door opening
- Triple eccentric counterbalanced drive with brushless motor ensures uniform motion
- Safety features include automatic cut-out of shaker when lid is opened; heater shut-off when high temperature limit is exceeded

Ordering information: Supplied without platforms or accessories, required accessories must be ordered separately. Tall, medium and short bases to raise shaker for easier access to chamber and controls are available. Please contact your local VWR office.

Model	I 26	I 26R
Internal W×D×H (mm)	864×635×356	
Orbital diameter (mm)	25	

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Platform W×D (mm)	762×457	
Shaking motion	Orbital	
Speed range (min^{-1})	25 - 400 with 25 mm orbit, 25 - 250 with 3 units stacked	
Temperature range (°C)	Ambient +5 to 60	15 below ambient to 60, minimum 4 °C
Temperature stability at 37 °C (°C)	±0,1	
Uniformity at 37 °C (°C)	±0,25	
Weight (kg)	168	182
W×D×H (mm)	1270×762×641	

Description	Pk	Cat. No.
I 26 incubating shaker, 25 mm orbit	1	**444-0700**
I 26R incubating shaker, 25 mm orbit	1	**444-0701**

Description	For	Pk	Cat. No.
Accessories			
Stacking kit for connecting 2 or 3 shakers (1 kit required to stack 2 shakers; 2 kits required for stacking 3 shakers)	I 26/ I 26R units	1	**444-0715**
Short base, raises shaker 102 mm for easier access, recommended when stacking 3 shakers		1	**444-0716**
Tall base, raises shaker 432 mm for easier access, recommended when positioning 1 shaker	I 26/ I 26R units	1	**444-0717**
Medium base, raises shaker 330 mm for easier access, recommended when stacking 2 shakers	I 26/ I 26R units	1	**444-0718**
Universal platform, supplied without clamps	I 26/ I 26R units	1	**444-0702**

Note: I 26 and I 26R shakers accommodate a maximum of 39×125, 30×250, 24×500, 12×1000, 8×2000, 6×2800 ml flasks using the universal platform, and 60×125, 40×250, 24×500, 15×1000, 12×2000, 6×2800 ml flasks using dedicated platforms.

Incubating orbital shakers, stackable, Innova® 42 and 42R

These incubating orbital shakers are available with and without refrigeration, R denotes refrigeration. Designed to maximise valuable laboratory space the units can be positioned on or under bench or stacked up to two units high with optional stacking kits. The program controller is easy to use and the display, positioned at the top of the unit, can be easily seen from all angles. Intuitive programming allows multiple parameter changes to speed, optional photosynthetic lights and optional UV light decontamination on a timed basis (R models only). There is a single height adjustable shelf for storage of incubating plates or other samples. The moisture proof, in-chamber power socket provides power for an additional instrument for example a rocker, roller or a second shaker. There is an interior light to assist viewing and the viewing window with double pane thermal glass gives visibility and insulation. These versatile shakers can accommodate flasks up to 6 litres, an RS232 serial port provides two-way communication for data logging and unit control.

- Large easy to read displays shows set point and actual values
- Integral timer, 0,1 to 99,9 h, shows elapsed time or counts down, automatic switch-off and audible alarm when program is complete
- Microprocessor controller maintains precise temperature, stores programs for repeat use and recalls last set points, even when unit has been shut off. Will also restart if power is interrupted
- Triple eccentric counterbalanced drive with brushless motor ensures uniform motion regardless of where the sample is on the platform even when fully loaded and operating at top speed
- Air circulation system ensures rapid temperature equilibration and uniformity, multi-function reservoir humidifies the chamber to minimise sample evaporation

Ordering information: Supplied without platforms or accessories, required accessories must be ordered separately. Factory fitted options such as 12-port gassing manifold, culture drawer, humidity probe, stacking kits, ultraviolet germicidal light or programmable photosynthetic light bank for the 42R are available, please contact your local VWR office before placing your order as options can not be retrofitted.

Model	42	42R
Internal W×D×H (mm)	518×516×477	
Orbit (mm)	19 or 25	
Platform W×D (mm)	460×460	
Shaking motion	Orbital	
Speed range (min^{-1})	25 - 400 with 19 mm or 25 mm orbit	
Temperature range (°C)	Ambient +5 to 80	20 below ambient to 80, minimum 4°C
Temperature stability (°C)	±0,1 at 37	
Uniformity at 37 °C (°C)	±0,25	
Weight (kg)	98,5	121
W×D×H (mm)	620×754×820	

Description	Pk	Cat. No.
Innova 42 incubating shaker, 19 mm orbit	1	**444-4554**
Innova 42 incubating shaker, 25 mm orbit	1	**444-4555**
Innova 42R incubating shaker, 19 mm orbit	1	**444-0559**
Innova 42R incubating shaker, 25 mm orbit	1	**444-0564**

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Note: Innova 42 and 42R shakers accommodate a maximum of 109×10, 64×25, 45×50, 21×125, 18×250, 14×500, 8×1000, 5×2000, 4×2800, 4×4000, 4×5000 or 2×6000 ml flasks using the universal platform, and 64×50, 34×125, 25×250, 16×500, 9×1000, 5×2000, 4×2800, 4×4000 or 2×6000 ml flasks using dedicated platforms.

Incubating orbital shakers, high capacity, Innova® 43 and 43R

These high capacity, floor standing incubating orbital shakers are available with and without refrigeration, R denotes refrigeration. The units have an easy open lid, and a foot-pedal release to provide hands free operation, castors enable the units to be moved about easily. The program controller is easy to use and the display can be easily seen from all angles. Intuitive programming allows temperature ramping and changes on a timed basis, multiple parameter changes to speed, optional photosynthetic lights and optional UV light decontamination on a timed basis (R models only). There is an interior light to assist viewing and the double pane thermal glass gives visibility and insulation. These high capacity shakers can accommodate flasks up to six litres, an RS232 serial port provides two-way communication for data logging and unit control.

- Large easy to read displays shows set point and actual values
- Integral timer, 0,1 to 99,9 h, shows elapsed time or counts down, automatic switch-off and audible alarm when program is complete
- Microprocessor controller maintains precise temperature, stores programs for repeat use and recalls last set points, even when unit has been shut off. Will also restart if power is interrupted
- Triple eccentric counterbalanced drive with brushless motor ensures uniform motion regardless of where the sample is on the platform even when fully loaded and operating at top speed
- Air circulation system ensures rapid temperature equilibration and uniformity, multi-function reservoir humidifies the chamber to minimise sample evaporation

Ordering information: Supplied without platforms or accessories, required accessories must be ordered separately. Factory fitted options such remote alarm contact, 12-port gassing manifold and ultraviolet germicidal light or programmable photosynthetic light bank for the 43R are available, please contact your local VWR office before placing your order as options can not be retrofitted.

Model	43	43R
Internal W×D×H (mm)	883×562×488	
Orbit (mm)	25 or 51	
Platform W×D (mm)	760×460	
Shaking motion	Orbital	
Speed range (min^{-1})	25 - 500 with 25 mm orbit, 25 - 300 with 51 mm orbit	
Temperature range (°C)	Ambient +5 to 80	20 below ambient to 80, minimum 4°C
Temperature stability (°C)	±0,1	
Uniformity at 37 °C (°C)	±0,25	
Weight (kg)	202	216
W×D×H (mm)	1156×813×1031	

Description	Pk	Cat. No.
Innova 43 incubating shaker, 25 mm orbit	1	**444-0546**
Innova 43 incubating shaker, 51 mm orbit	1	**444-0712**
Innova 43R incubating shaker, 25 mm orbit	1	**444-0547**
Innova 43R incubating shaker, 51 mm orbit	1	**444-0713**

Note: Innova 43 and 43R shakers accommodate a maximum of 183×10, 92×25, 92×50, 39×125, 30×250, 18×500, 12×1000, 8×2000, 6×3000, 6×4000, 6×5000 or 4×6000 ml flasks using the universal platform, and 108×50, 60×125, 40×250, 24×500, 15×1000, 12×2000, 6×3000, 6×4000 or 4×6000 ml flasks using dedicated platforms.

Incubating orbital shakers, stackable, Innova® 44 and 44R

These incubating orbital shakers are available with and without refrigeration, R denotes refrigeration. Designed to maximise valuable laboratory space the units can be stacked up to three units high. The door glides up and out of the way saving space, the slide out platform gives easy access to all samples. A pull-out service module enables convenient access to all electronics and heating/cooling components without having to disturb the stacked units. Intuitive programming allows multiple parameter changes to speed, optional photosynthetic lights and optional UV light decontamination on a timed basis (R models only). There is an interior light to assist viewing and the double pane thermal glass gives visibility and insulation. These high capacity shakers can accommodate flasks up to five litres, an RS232 serial port provides two-way communication for data logging and unit control.

- Large easy to read displays shows set point and actual values
- Integral timer, 0,1 to 99,9 h, shows elapsed time or counts down, automatic switch-off and audible alarm when program is complete
- Microprocessor controller maintains precise temperature, stores programs for repeat use and recalls last set points, even when unit has been shut off. Will also restart if power is interrupted
- Triple eccentric counterbalanced drive with brushless motor ensures uniform motion regardless of where the sample is on the platform even when fully loaded and operating at top speed
- Air circulation system ensures rapid temperature equilibration and uniformity, multi-function reservoir humidifies the chamber to minimise sample evaporation

Ordering information: Supplied without platforms or accessories, required accessories must be ordered separately. Factory fitted options such as remote alarm output, 12-port gassing manifold and ultraviolet germicidal light or programmable photosynthetic light bank for the 44R are available, please contact your local VWR office before placing your order as options can not be retrofitted.

Model	44	44R
Internal W×D×H (mm)	910×660×460	
Orbit (mm)	25 or 51	
Platform W×D (mm)	760×460	
Shaking motion	Orbital	
Speed range (min^{-1})	25 - 400 with 25 mm orbit, 25 - 300 with 51 mm orbit or with 2 units stacked 25 - 250 with 3 units stacked	
Temperature range (°C)	Ambient +5 to 80	20 below ambient to 80, minimum 4 °C
Temperature stability (°C)	±0,1	
Uniformity at 37 °C (°C)	±0,25	
Weight (kg)	238	257
W×D×H (mm)	1350×873×660	

Description	Pk	Cat. No.
Innova 44 incubating shaker, 25 mm orbit	1	**444-0429**
Innova 44 incubating shaker, 51 mm orbit	1	**444-0086**
Innova 44R incubating shaker, 25 mm orbit	1	**444-0430**
Innova 44R incubating shaker, 51 mm orbit	1	**444-0087**

Note: Innova 44 and 44R shakers accommodate a maximum of 91×50, 39×125, 30×250, 24×500, 14×1000, 8×2000, 6×2800, 6×4000 or 6×5000 ml flasks using the universal platform, and 60×125, 40×250, 24×500, 15×1000, 12×2000, 6×2800 or 6×4000 ml flasks using the dedicated platforms.

Accessories for Innova® incubating shakers and orbital shakers

Dedicated platforms are available, please enquire for details.

Description	For	Pk	Cat. No.
Universal platform	Excella E1, E2 and Innova 2000	1	**444-4512**
Universal platform	Excella E5, E24, E24R, Innova 2100, Innova 40/40R and Innova 42/42R	1	**444-4511**
Universal platform	Excella E10, E25, E25R, Innova 2300 and Innova 43/43R	1	**444-0563**
Universal platform	Innova 2050	1	**444-4553**
Universal platform	Innova 2150	1	**444-0528**
Universal platform	Innova 2350	1	**444-0556**
Universal platform	Innova 44/44R	1	**444-0431**
Universal platform (heavy loads)	Innova 44/44R	1	**444-0543**
Clamp	10 ml Erlenmeyer flasks	1	**444-4520**
Clamp with spring retainer	25 ml Erlenmeyer flasks	1	**444-4521**
Clamp with spring retainer	50 ml Erlenmeyer flasks	1	**444-4522**
Clamp with spring retainer	125 ml Erlenmeyer flasks	1	**444-4523**
Clamp with spring retainer	250 ml Erlenmeyer flasks	1	**444-4524**
Clamp with spring retainer	500 ml Erlenmeyer flasks	1	**444-4525**
Clamp with spring retainer	1000 ml Erlenmeyer flasks	1	**444-4526**
Clamp with spring retainer	2000 ml Erlenmeyer flasks	1	**444-4527**
Clamp with spring retainer	3000 ml Erlenmeyer flasks	1	**444-4528**
Clamp with spring retainer	4000 ml Erlenmeyer flasks	1	**444-4529**
Clamp with spring retainer	5000 ml Erlenmeyer flasks	1	**444-4530**
Clamp with spring retainer	6000 ml Erlenmeyer flasks	1	**444-4531**
Short base	raises height of Innova 44/44R shaker by 102 mm	1	**444-0710**

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Description	For	Pk	Cat. No.
Medium base	raises height of Innova 44/44R shaker by 305 mm	1	**444-0711**
Stacking kit	stacking 2 Innova 44/44R shakers	1	**444-0709**
BioCommand® SFI Track and Trend software. Compatible with Windows® 7, Windows Vista® and Windows XP® operating systems. Computer requires an RS232 or USB port. Shaker requires RS232 or RS485 port. Includes software and cable to connect one shaker	Innova shakers	1	**444-0914**

Note: To stack more than two Innova 44/44R shakers or for other accessories, including dedicated platforms, test tube racks, sticky pads, microplate holders etc, please enquire for details.

Spirit lamp
DURAN Group

Soda-lime glass

With ground glass joint cap.

Capacity: 100 ml

Ø×H: 75×103 mm

Ordering information: Supplied without socket and wick.

Description	Pk	Cat. No.
Spirit lamp	1	**451-0107**
Wick	1	**451-3111**
Socket	1	**451-3112**

Burners
Usbeck

DIN version

- With air regulation and pilot flame inside

Ordering information: Supplied without safety base, this needs to be ordered separately.

Description	For	Type	Pk	Cat. No.
Bunsen type				
With needle valve	Natural gas	Bunsen	1	**451-1335**
With needle valve	Propane	Bunsen	1	**451-1325**
With stopcock	Natural gas	Bunsen	1	**451-1330**
With stopcock	Propane	Bunsen	1	**451-1320**
Teclu type				
With needle valve	Natural gas	Teclu	1	**451-1365**
With needle valve	Propane	Teclu	1	**451-1355**
With stopcock	Natural gas	Teclu	1	**451-1360**
With stopcock	Propane	Teclu	1	**451-1350**

Description	Pk	Cat. No.
Safety base for burners		
Safety base for burners, provides extra stability and protects work surfaces	1	**451-1342**

Bunsen burner
Usbeck

Nickel plated brass with cast iron foot

- With air regulation and pilot flame
- Lever stop-cock

Height: 150 mm

Description	For	Head Ø (mm)	Type	Pk	Cat. No.
Lever stop-cock, Ø 14 mm	Natural gas	17	Bunsen	1	**451-0081**
Lever stop-cock, Ø 14 mm	Bottle gas	17	Bunsen	1	**451-0082**

Cartridge burner
Usbeck

Stainless steel

Propane/butane mix. For temperatures up to 1400 °C.

- With air regulation and needle valve

Ø×H: 105×215 mm

Delivery information: Supplied with cartridge, refill as accessory.

Description	For	Pk	Cat. No.
Burner with 400 ml cartridge	Butane/propane	1	**451-2200**
Cartridge burner with safety element	Butane/propane	1	**451-0163**

Description	Pk	Cat. No.
Accessories		
Gas cartridge, 400 ml	1	**451-2201**

Cartridge burner

Brass with replaceable steel plated perforated head

Designed for use with butane/propane mix gas cartridges. This burner can achieve temperatures in excess of 1000 °C. The design of the gas cartridge enables the burner to be detached and re-attached as often as needed, making it easy to store and transport.

Typical burning time of the 220 g cartridge is 2¾ hours.

Description	For	Pk	Cat. No.
Burner with cartridge	Butane/propane	1	**451-0046**
Burner without cartridge	Butane/propane	1	**451-0045**

Description	Pk	Cat. No.
Burner cartridge		
Cartridge butane/propane, 220 g	1	**451-0047**

Bunsen burner, Labogaz® 206

For use with butane gas cartridges C 206 (451-2001 please visit www.vwr.com for ordering information).

Ø×h: 100×200 mm

Flame temperature: ~1100 °C

Description	Pk	Cat. No.
Burner Labogaz® 206	1	**451-2110**

Gas cartridges, Campingaz®

Description	Pk	Cat. No.
CV 470, capacity 450 g, for Bunsen burner 470 and heaters	1	**451-2003**
C 206, capacity 190 g, for Bunsen burner 206 and X 2000 blowlamps	1	**451-2001**

Description	Pk	Cat. No.
Accessories		
CV 360, 52 g butane cartridge, for use with Campingaz® 360	1	**451-0155**

Bunsen burner, FIREBOY plus

Integra Biosciences

Mobile Bunsen burner with touch-free sensor ignition. If equipped with the adapter for gas cartridges and rechargeable battery (451-0016) it can be regarded as portable equipment suitable for safe use in the field or the laboratory. Alternatively, it can be connected to mains power and gas supply.

- Triple safety system: Flame monitoring, over-temperature and burning time limitation

Operates in three modes:

- Foot switch: Flame stays on as long as the foot switch is pressed

- Continuous: Manually switch On/Off

- Sensor: The sensor registers your hand movement and ignites the flame automatically

Adjustable burning time

DVGW-approved

Delivery information: Includes 2 nozzles for propane/butane and natural gas, power supply adapter and tubing adapter Ø 10 mm.

Description	For	Pk	Cat. No.
FIREBOY plus	Propane/butane and natural gas	1	**451-0135**

Description	Pk	Cat. No.
Accessories		
CV 360, 52 g butane cartridge, for use with Campingaz® 360	1	**451-0155**
Foot switch with connecting cable	1	**612-0776**
Windshield	1	**451-0014**
Splash protector, borosilicate glass	1	**451-0015**
Gas cartridge adapter for Campingaz® CV 360	1	**451-1424**
Gas cartridge adapter for Campingaz® CP 250	1	**451-1425**
Gas cartridge adapter for Campingaz® CV 270/470	1	**451-1426**
Long burner head	1	**451-0153**

Bunsen burner, FIREBOY eco
Integra Biosciences

Mobile Bunsen burner for all applications where only foot switch ignition is sufficient and a timer is not needed. A connector for permanent gas supply is also included.

- The flame remains ignited as long as the foot switch is activated
- Two adjustment controls for gas and air, On/Off switch

DVGW-approved

Delivery information: Includes 2 nozzles for propane/butane and natural gas, foot switch, power supply adapter and tubing adapter Ø 10 mm.

Description	For	Type	Pk	Cat. No.
FIREBOY eco	Propane/butane and natural gas	Bunsen	1	**451-0136**

Description	Pk	Cat. No.
Accessories		
CV 360, 52 g butane cartridge, for use with Campingaz® 360	1	**451-0155**
Gas cartridge adapter for Campingaz® CV 360	1	**451-1424**

Mobile Bunsen burner, FLAMEBOY
Integra Biosciences

Handy and practical instrument for universal applications featuring piezoelectric ignition.

- Safe instrument
- DVGW-approved

Both the size of the flame and its oxygen content are adjustable.

The two versions available differ only in respect of the connection to gas supply.

Delivery information: Supplied with three gas nozzles for various types of gas.

Description	Type	Pk	Cat. No.
FLAMEBOY with adapter for 10 mm Ø tubing	Bunsen	1	**451-0018**
FLAMEBOY with adapter for gas cartridge (e.g. Campingaz® CV 360, 451-0155)	Bunsen	1	**451-0020**

Description	Pk	Cat. No.
Accessories		
Adapter for gas cartridge, e.g. Campingaz® CV 360	1	**451-0021**

Electric Bunsen burner, BA6101

The electric Bunsen burner is ideal for heating test tubes, crucibles, flasks and beakers regardless of their shape. Radiation is directed upwards to a focal point. Low power consumption (400 W).

- Top cowl deflects heat away from users hand
- Air circulation from vented housing ensures base is cool enough to be held during operation
- Conical shaped heating element directs radiant heat to the top cavity

Ordering information: Available with and without recommended MC5 controller.

Description	Pk	Cat. No.
Without MC5 controller		
BA6101 electric Bunsen burner, without MC5 controller, UK plug	1	**451-0000**
With MC5 controller		
BA6101 electric Bunsen burner, with MC5 controller, UK plug	1	**451-0164**

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Description	Pk	Cat. No.
Controller		
MC5 controller	1	**451-0165**

Blow lamp, X 2000

Multi-purpose blowtorch for soft and hard soldering and many other applications.

- Handle made of polypropylene for high impact resistance
- One-hand operation of the adjustment knob
- Gas consumption: 140 g/h
- Flame temperatures up to 1700 °C

Butane cartridge available separately.

Description	Type	Pk	Cat. No.
Blow lamp X 2000	X 2000	1	**451-2147**

Description	Pk	Cat. No.
Gas cartridges, Campingaz®		
C 206, capacity 190 g, for Bunsen burner 206 and X 2000 blowlamps	1	**451-2001**

Tripod stands
Usbeck

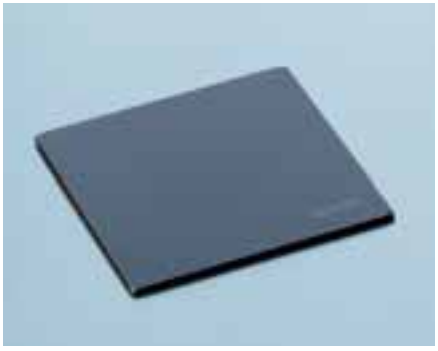
l-Ø×H (mm)	Pk	Cat. No.
Stainless steel 18/8		
100×180	1	**451-9101**
120×210	1	**451-9102**
120×250	1	**451-0160**
120×260	1	**451-0161**
140×220	1	**451-9103**
160×230	1	**451-0159**
Zinc plated steel		
100×180	1	**451-0092**
120×210	1	**451-0093**
120×250	1	**451-0157**
120×260	1	**451-0158**
140×220	1	**451-0094**
160×230	1	**451-0095**

Wire gauze
Usbeck

Zinc plated iron wire, ceramic centre

L×W (mm)	Pk	Cat. No.
120×120	1	**451-9201**
160×160	1	**451-9202**
200×200	1	**451-9203**

Protection plates
DURAN Group



Glass ceramic

- Ideal for use with burners
- Uniformity of heating distribution
- Excellent energy transfer

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• Plates can either be used with quadrupods or with plate holders

Temperature: –200 to +700 °C

L×W (mm)	Pk	Cat. No.
135×135	1	451-9421
155×155	1	451-9422
175×175	1	451-9423

For	Pk	Cat. No.
Square quadrupods, chrome-nickel steel, height 220 mm (451-9412: 210 mm)		
451-9421	1	451-9411
451-9422	1	451-9412
451-9423	1	451-9413
Plate holders, chrome-nickel steel		
451-9421	1	451-9431
451-9422	1	451-9432
451-9423	1	451-9433

Triangles for crucibles
Usbeck

Tinned iron wire with clay tubes

Description	Pk	Cat. No.
Tube length 40 mm	1	451-9301
Tube length 50 mm	1	451-9302
Tube length 60 mm	1	451-9303
Tube length 80 mm	1	451-9387

Gas lighter, piezoelectric
Usbeck

Length: 220 mm

Description	Pk	Cat. No.
Gas lighter	1	451-0109

Safety gas tubing

Red rubber, spiraling stainless steel wire core

• Flexible and resistant to buckling
• Cut, tear and temperature resistant
• Complies with DIN 12898

DVGW-Reg.-N°. G84e 100 D&N

Pk	Cat. No.
0,5 m	451-4311
0,6 m	451-4315
0,75 m	451-4312
1 m	451-4313
1,25 m	451-4316
1,5 m	451-4314
2 m	451-4317
3 m	451-4318

Flexible tubing for burners

Flexible metal with rubber push on connections

Suitable for Bunsen burners, not suitable for LPG.

Bore: 8 mm

Length: 0,9 m

Description	Pk	Cat. No.
Flexible tubing for burners	0,9 m	**228-0100**

Rubber tubing for burners

With reinforced rubber end

Suitable for Bunsen burners, not suitable for LPG.

Bore: 6,3 mm

Length: 0,45, 0,6 or 0,9 m

Description	Pk	Cat. No.
Rubber tubing for burners, length: 0,45 m	1	**451-0166**
Rubber tubing for burners, length: 0,6 m	1	**451-0167**
Rubber tubing for burners, length: 0,9 m	0,9 m	**228-0095**

Tubing, rubber

Natural rubber, red

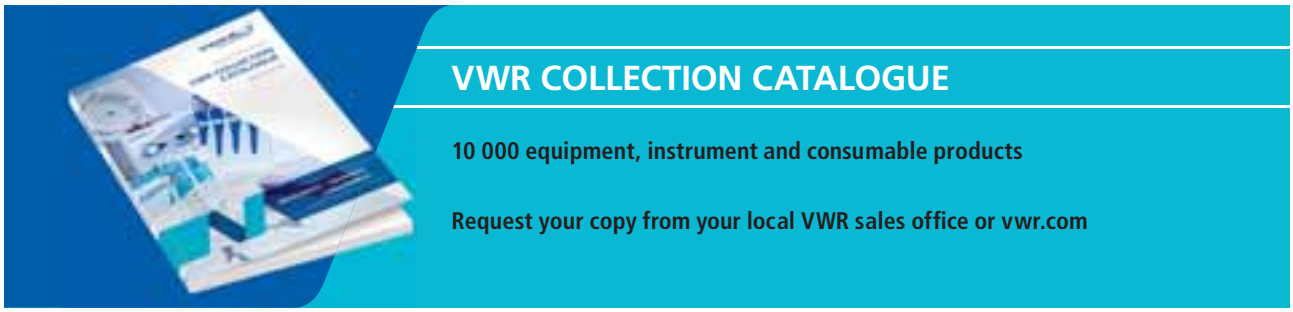
Tubing for Bunsen burners but also suitable for a wide range of standard laboratory applications.

- Good chemical resistance
- Good temperature resistance
- Not pressure resistant

Temperature resistance: –10 to +50 °C

Hardness (Shore durometer A): 45

Ø int. (mm)	Ø ext. (mm)	Wall thickness (mm)	Pk	Cat. No.
6,35	12,75	3,18	10 m	**228-0099**



Hotplates, VHP-C series

Compact hotplates with a chemically resistant ceramic top. The elevated control panel minimises contact with spills and enables easy reading and adjustment of the temperature. Units feature a digital error code display and "hot" top indicator to warn users that the surface is hot.

- VHP-C7 can be used with the VT-5 contact thermometer (442-0573), enabling precise temperature control
- Fixed safety circuit shuts off heater if temperature rises above 550 °C
- Microprocessor control sends feedback to the hotplate to maintain set temperature
- Digital display ensures accurate and repeatable temperature settings

IP protection class according to DIN EN 60529: IP 21

Type	Heating area (mm)	Temp. (°C)	Heating capacity (W)	Plate size (mm)	W×D×H (mm)	Pk	Cat. No.
VHP-C4, UK-plug	100×100	50...500	250	120×120	150×260×105	1	**453-0053**
VHP-C7, UK-plug	180×180	50...500	1000	200×200	220×330×105	1	**453-0054**

Description	Pk	Cat. No.
Accessories		
Support rod, stainless steel, length 450 mm, Ø 10 mm, for all stirrers with M10 thread	1	**442-2041**
Bosshead clamp	1	**442-2043**
Extension cable, separates casing from the sensor, avoiding damage from vapours released by the medium	1	**620-8104**

Hotplates, Advanced series

VWR Advanced hotplates deliver accurate and repeatable results. Units are microprocessor controlled and have an easy to read LED display for set point temperature. The control panel features easy to use controls which allow users to dial in adjustments for temperature. Rear housing features an off-centred, integral support rod holder with locking knob to accept the optional support rod and clamp kit. The low profile design takes up less space and fits into fume hoods. A spill resistant housing channels fluids away from internal components. A "hot" symbol warning light is illuminated when heat is turned on and remains on until top plate cools down. Enhanced electronics regulate heating and bring samples to temperature quickly and efficiently. Temperature measurement is controlled more accurately by using a resistance thermometer (RTD). Ceramic tops feature a chemically resistant, reflective white top plate surface that is easy to clean. Durable aluminium tops will not crack or chip, and provide a more even heating surface.

- Excellent temperature uniformity
- Microprocessor controlled with built-in memory allowing recall of last set temperature (even if unit has been turned off)
- Cool touch, chemically resistant housing
- LED display for temperature
- Choice of models with ceramic or aluminium top plates

Ordering information: Optional support rod kit is available which includes a 457 mm stainless steel support rod, thermometer/temperature probe extension clamp, 3-prong medium swivel clamp, and hook connector.

Type	Heating area (mm)	Temp. (°C)	Heating capacity (W)	W×D×H (mm)	Pk	Cat. No.
Models with aluminium top plates						
Hotplate, aluminium, UK-plug	100×100	RT* +5...400	350	167×274×108	1	**444-0579**
Hotplate, aluminium, UK-plug	180×180	RT* +5...400	1000	250×375×108	1	**444-0585**
Hotplate, aluminium, UK-plug	250×250	RT* +5...400	1550	330×455×108	1	**444-0591**
Models with ceramic top plates						
Hotplate, ceramic, UK-plug	100×100	RT* +5...500	350	167×274×108	1	**444-0576**
Hotplate, ceramic, UK-plug	180×180	RT* +5...500	1000	250×375×108	1	**444-0582**
Hotplate, ceramic, UK-plug	250×250	RT* +5...500	1550	330×455×108	1	**444-0588**

Description	For	Pk	Cat. No.
Accessories			
Stirrer support rod clamping kit (rod, 2 clamps and hook connector)	444-0566, 444-0567, 444-0568,444-0569, 444-0570, 444-0571, 444-0572, 444-0573, 444-0574, 444-0575, 444-0576, 444-0577, 444-0578, 444-0579, 444-0580, 444-0581, 444-0582, 444-0583, 444-0584, 444-0585, 444-0586, 444-0587, 444-0588, 444-0589, 444-0590, 444-0591, 444-0592, 444-0593, 444-0594, 444-0595, 444-0596, 444-0597, 444-0598, 444-0599, 444-0600, 444-0601, 444-0602, 444-0603, 444-0604, 444-0605, 444-0606, 444-0607, 444-0608, 444-0609, 444-0610	1	**444-2844**
Support plate for 100 mm stirrers and hotplate stirrers	444-0566, 444-0567, 444-0568,444-0575, 444-0576, 444-0577, 444-0578, 444-0579, 444-0580, 444-0593, 444-0594, 444-0595, 444-0596, 444-0597, 444-0598	1	**444-2851**

* RT= Ambient

Hotplates, Professional series

VWR Professional hotplates are designed for applications that require exceptional accuracy, stability, and repeatability. Enhanced microprocessor control offers an external resistance thermometer (RTD) probe option that delivers superior temperature control of the sample. Touch pad controls with easy to read, independent LED displays for temperature and time, allow operator to view all settings at once. Rear housing features an off-centred, built-in support rod holder with locking knob that accepts the supplied probe kit. Low profile design takes up less space and fits into fume hoods. Spill resistant housing channels fluids away from internal components. A "hot" symbol warning light is illuminated when heat is turned on and remains on until the plate cools down. Plate over-temperature limit ensures plate temperature will never exceed users' programmed set temperature limit, allowing for control of sensitive flash points. An audible alarm will sound when time reaches zero or when unit reaches set point temperature in timed mode, and if the probe disengages from sample, unit will automatically shut off heater. Enhanced electronics regulate heating and bring samples to temperature quickly and efficiently. Ceramic tops feature a chemically resistant, reflective white top plate surface that's easy to clean. Durable aluminium tops will not crack or chip, and provide a more even heating surface.

- Excellent temperature uniformity
- Separate digital displays for temperature and time with indicators that toggle between actual and set point. Display will show last used settings, even after power has been turned off
- Cool touch, chemically resistant housing
- Includes external RTD temperature probe kit
- Choice of models with ceramic or aluminium top plates

Delivery information: Each unit is supplied complete with a 203 mm stainless steel PT1000 temperature probe, 457 mm stainless steel support rod, thermometer/temperature probe extension clamp, hook connector and a PTFE coated magnetic stirring bar.

Type	Heating area (mm)	Temp. (°C)	Heating capacity (W)	Plate size (mm)	W×D×H (mm)	Pk	Cat. No.
Models with aluminium top plates							
Hotplate, aluminium, UK-plug	180×180	RT* +5...400	1000	180×180	250×375×108	1	**444-0621**
Hotplate, aluminium, UK-plug	250×250	RT* +5...400	1550	250×250	330×455×108	1	**444-0627**
Models with ceramic top plates							
Hotplate, ceramic, UK-plug	180×180	RT* +5...500	1000	180×180	250×375×108	1	**444-0618**
Hotplate, ceramic, UK-plug	250×250	RT* +5...500	1550	250×250	330×455×108	1	**444-0624**

Description	For	Pk	Cat. No.
Accessories			
Spare temperature probe, 200 mm, stainless steel	Professional series units	1	**444-0641**
Spare temperature probe, 200 mm, PTFE	Professional series units	1	**444-0642**
Spare temperature probe, 250 mm, stainless steel	Professional series units	1	**444-0643**
Spare temperature probe, 250 mm, PTFE	Professional series units	1	**444-0644**
Replacement probe kit, 200 mm, stainless steel	Professional series units	1	**444-0645**

* RT= Ambient

Hotplates, C-MAG HP series
IKA

C-MAG HP 10

C-MAG HP 4

C-MAG HP 7

Ceramic plate

Compact hotplates with a chemically resistant ceramic top. The elevated control panel minimises contact with spills and enables easy reading and adjustment of the temperature. Units feature a digital error code display and "hot" top indicator to warn user that the surface is hot.

- VHP-C7 and VHP-C10 can be used with e.g. ETS-D5 contact thermometer, enabling precise temperature control
- Fixed safety circuit shuts off heater if temperature rises above 550 °C
- Microprocessor control sends feedback to the hotplate to maintain set temperature

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• Digital display ensures accurate and repeatable temperature settings

IP protection class according to DIN EN 60529: IP 21

Type	Heating area (mm)	Temp. (°C)	Heating capacity (W)	Plate size (mm)	W×D×H (mm)	Pk	Cat. No.
Hotplate, C-MAG HP 4, UK-plug	100×100	Max. 500	250	100×100	150×260×105	1	**553-0000**
Hotplate, C-MAG HP 7, UK-plug	180×180	Max. 500	1000	180×180	220×330×105	1	**553-0001**
Hotplate, C-MAG HP 10, UK-plug	260×260	Max. 500	1500	260×260	300×415×105	1	**553-0002**

Analogue hotplates, CB and SB series
Stuart

Ceramic top plate (CB) or aluminium/silicon alloy top plate (SB)

- "Hot" warning light flashes whenever the plate temperature is above 50 °C
- BioCote® antimicrobial protection

Ceramic: Excellent chemical resistance, easy to clean and allows higher temperatures.

Aluminium/silicon alloy: Efficient and fast rise in temperature.

Type	Heating area (mm)	Temp. (°C)	Heating capacity (W)	Plate size (mm)	W×D×H (mm)	Pk	Cat. No.
CB300	200×200	Max. 450	1200	300×300	300×365×105	1	**453-1130**
CB500	250×450	Max. 375	2250	300×500	520×360×130	1	**453-1134**
SB300	300×300	Max. 300	600	300×300	300×365×105	1	**453-1136**
SB500	300×500	Max. 300	1500	300×500	520×360×130	1	**453-1137**

Hotplates, Undergrad UC150 and US150
Stuart

Compact, general purpose hotplates designed for safety and performance. The hotplate has microprocessor control and an innovative LED based true °C temperature setting system rather than a scale. However, to accurately control sample temperature (from 50 to 200 °C) the unit can be used in conjunction with the SCT1 digital contact thermometer to accurately monitor sample temperature rather than plate temperature. Both models have an integral fitting for a retort rod.

Model UC150 has a glass ceramic top which has excellent chemical resistance. The surface is easy to clean and allows high plate temperatures for faster heating.

Model US150 has a robust aluminium/silicon alloy top plate for excellent heat transmission. The top plate has a thin ceramic coating for added chemical resistance. A 700 W element gives rapid heating and ensures even temperature distribution across the whole surface of the plate.

- Choice of top plate: Robust coated aluminium or chemically resistant ceramic
- Flashing "hot" warning light whenever the plate temperature is above 50 °C, is mains independent so stays on even when the unit is unplugged
- Accurate temperature control with LED temperature indicator
- Compact, space saving unit, can be stored on its side to maximise storage space
- Designed with recess at the base for a retort stand to slide underneath unit, saves space and time when setting up

IP protection class according to DIN EN 60529: IP 32

Type	Heating area (mm)	Temp. (°C)	Heating capacity (W)	Plate size (mm)	W×D×H (mm)	Pk	Cat. No.
UC150 glass ceramic	120×120	RT* +5..450	500	150×150	172×248×122	1	**453-0142**
US150 coated aluminium/silicon	150×150	RT* +5..325	700	150×150	172×248×120	1	**453-0143**

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Description	Pk	Cat. No.
Accessories		
SCT1 electronic temperature controller, 50 to 200 °C, resolution 1 °C, measuring accuracy ±0,5 °C, W×D×H: 90×75×123 mm	1	**442-0326**
Retort rod, (l×Ø) 600×12 mm	1	**442-0321**

* RT= Ambient

Digital hotplates
Stuart

SD500

SD160

Aluminium plate

High performance microprocessor controlled hotplates with digital temperature display and control. Model SD160 digital display indicates both set and actual temperatures. Models SD300 and SD500 are ideal for larger vessels.

- Uniform distribution of heat
- "Hot" warning light flashes whenever the plate temperature is above 50 °C
- BioCote® antimicrobial protection

Model SD160 comes with fitting for support rod

Type	Heating area (mm)	Temp. (°C)	Heating capacity (W)	Plate size (mm)	W×D×H (mm)	Pk	Cat. No.
SD160	160×160	Max. 325	700	160×160	190×300×110	1	**453-1129**
SD300	300×300	Max. 300	600	300×300	320×365×105	1	**453-1123**
SD500	300×500	Max. 300	1500	300×500	520×360×130	1	**453-1124**

Hotplate, CP300
Stuart

PTFE construction, glass ceramic plate

Separate control box (150×160×65 mm) connected via a PTFE coated lead. Ideal for digestions and metal analysis.

- Exceptional resistance to chemical attack
- BioCote® antimicrobial protection

The controller is also fitted with a 'hot' warning light that will flash whenever the plate temperature of the hotplate is above 50 °C and it will continue to operate when the hotplate is turned off and remains connected to the electricity supply.

IP protection class according to DIN EN 60529: IP 43 (plate) and IP 30 (controller)

Type	Heating area (mm)	Temp. (°C)	Heating capacity (W)	Plate size (mm)	W×D×H (mm)	Pk	Cat. No.
CP300	200×200	Max. 400	900	300×300	320×360×60	1	**453-0000**

Hotplates RC series
VELP Scientifica

Hotplates with coated aluminium alloy plates give even heat distribution. Choice of models with one or two plates.

- Housing has good chemical resistance
- Analogue temperature control

Type	Heating area (mm)	Heating capacity (W)	Plate size (mm)	W×D×H (mm)	Pk	Cat. No.
RC	Ø 155	600	Ø 155	165×115×280	1	**453-0126**
RC2	2×Ø 155	1200	Ø 155	340×90×190	1	**453-0125**

Description	For	Pk	Cat. No.
Round bowl for heating 100 ml flasks	RC, RC2, ARE, AREX, AREC, T.ARE, ARED and AM4	1	**453-0144**
Round bowl for heating 250 ml flasks	RC, RC2, ARE, AREX, AREC, T.ARE, ARED and AM4	1	**453-0123**
Round bowl for heating 500 ml flasks	RC, RC2, ARE, AREX, AREC, T.ARE, ARED and AM4	1	**453-0122**
Round bowl for heating 1000 ml flasks	RC, RC2, ARE, AREX, AREC, T.ARE, ARED and AM4	1	**453-0124**

Heating mantles, WHG2, WHG2H, WHG2R and WHG4R series

Winkler

For round bottomed flasks

Mantles have crocheted outer jacket made from glass silk (WHG2H models are made from silicate yarn). Sizes from 500 ml upwards have a base opening (62 mm).

- Maximum temperature 450 °C (WHG2H models have maximum of 900 °C)
- Mantles for 25 and 50 ml flasks have one heating zone, larger units have two, three or four heating zones depending on model
- Detachable plug-in connection (cable length 0,5 m WHG2 and WHG2R models or 0,2 m WHG2H and WHG4R models)
- RCD personal safety plug with 1 m cable

Type	Heating capacity (W)	Flask capacity (ml)	Pk	Cat. No.
WHG2 models, Max 450 °C, with 1 or 2 heating zones, RCD personal safety plug				
WHG2 25, RCD plug	40	25	1	**453-1001**
WHG2 50, RCD plug	50	50	1	**453-1004**
WHG2 100, RCD plug	100	100	1	**453-1007**
WHG2 250, RCD plug	120	250	1	**453-1010**
WHG2 500, RCD plug	250	500	1	**453-1013**
WHG2 1000, RCD plug	400	1000	1	**453-1016**
WHG2 2000, RCD plug	600	2000	1	**453-1019**
WHG2 3000, RCD plug	700	3000	1	**453-1022**
WHG2 4000, RCD plug	800	4000	1	**453-1025**
WHG2 5000, RCD plug	1000	5000	1	**453-1028**
WHG2 6000, RCD plug	1200	6000	1	**453-1031**
WHG2 10000, RCD plug	1600	10000	1	**453-1034**
WHG2 20000, RCD plug	2000	20000	1	**453-1037**
WHG2 models, Max 450 °C, with 1 or 2 heating zones, SS safety plug				
WHG2 25, SS plug	40	25	1	**453-1002**
WHG2 50, SS plug	50	50	1	**453-1005**
WHG2 100, SS plug	100	100	1	**453-1008**
WHG2 250, SS plug	120	250	1	**453-1011**
WHG2 500, SS plug	250	500	1	**453-1014**
WHG2 1000, SS plug	400	1000	1	**453-1017**
WHG2 2000, SS plug	600	2000	1	**453-1020**
WHG2 3000, SS plug	700	3000	1	**453-1023**
WHG2 4000, SS plug	800	4000	1	**453-1026**
WHG2 5000, SS plug	1000	5000	1	**453-1029**
WHG2 6000, SS plug	1200	6000	1	**453-1032**
WHG2 10000, SS plug	1600	10000	1	**453-1035**
WHG2 20000, SS plug	2000	20000	1	**453-1038**
WHG2R models, Max 450 °C, have increased power, with 1 or 2 heating zones, RCD personal safety plug				
WHG2R 50, RCD plug	70	50	1	**453-1058**
WHG2R 100, RCD plug	110	100	1	**453-1061**
WHG2R 250, RCD plug	200	250	1	**453-1064**
WHG2R 500, RCD plug	300	500	1	**453-1067**
WHG2R 1000, RCD plug	450	1000	1	**453-1070**
WHG2R 2000, RCD plug	700	2000	1	**453-1073**
WHG2R 6000, RCD plug	1400	6000	1	**453-1076**
WHG2R 10000, RCD plug	2000	10000	1	**453-1079**
WHG2R models, Max 450 °C, have increased power, with 1 or 2 heating zones, SS safety plug				
WHG2R 50, SS plug	70	50	1	**453-1059**
WHG2R 100, SS plug	110	100	1	**453-1062**
WHG2R 250, SS plug	200	250	1	**453-1065**
WHG2R 500, SS plug	300	500	1	**453-1068**
WHG2R 1000, SS plug	450	1000	1	**453-1071**
WHG2R 2000, SS plug	700	2000	1	**453-1074**
WHG2R 6000, SS plug	1400	6000	1	**453-1077**
WHG2R 10000, SS plug	2000	10000	1	**453-1080**
WHG2H models, Max 900 °C, with 2 heating zones, RCD personal safety plug				
WHG2H 250, RCD plug	300	250	1	**453-1040**
WHG2H 500, RCD plug	500	500	1	**453-1043**
WHG2H 1000, RCD plug	750	1000	1	**453-1046**
WHG2H 2000, RCD plug	1200	2000	1	**453-1049**
WHG2H 4000, RCD plug	1800	4000	1	**453-1052**
WHG2H 6000, RCD plug	2500	6000	1	**453-1055**
WHG2H models, Max 900 °C, with 2 heating zones, SS safety plug				
WHG2H 250, SS plug	300	250	1	**453-1041**
WHG2H 500, SS plug	500	500	1	**453-1044**
WHG2H 1000, SS plug	750	1000	1	**453-1047**
WHG2H 2000, SS plug	1200	2000	1	**453-1050**
WHG2H 4000, SS plug	1800	4000	1	**453-1053**
WHG2H 6000, SS plug	2500	6000	1	**453-1056**

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Type	Heating capacity (W)	Flask capacity (ml)	Pk	Cat. No.
WHG4R models, Max 450 °C, with 4 heating zones, RCD personal safety plug				
WHG4R 4000, RCD plug	1000	4000	1	**453-1082**
WHG4R 6000, RCD plug	1400	6000	1	**453-1085**
WHG4R 10000, RCD plug	2000	10000	1	**453-1088**
WHG4R 20000, RCD plug	2800	20000	1	**453-1091**
WHG4R models, Max 450 °C, with 4 heating zones, SS safety plug				
WHG4R 4000, SS plug	1000	4000	1	**453-1083**
WHG4R 6000, SS plug	1400	6000	1	**453-1086**
WHG4R 10000, SS plug	2000	10000	1	**453-1089**
WHG4R 20000, SS plug	2800	20000	1	**453-1092**

SS safety plugs are shockproof plugs with multipole coupling (these can be used where users mains network is already protected by a residual current device). RCD personal safety plugs are equipped with a residual current device (RCD) which is connected to the heating mantle via a multipole plug (these should be used if the users mains network is not protected by a residual current device).

Heating mantles with magnetic stirrer, Electromantle® EMA series
Electrothermal

For round bottom flasks. Max. 450 °C, built-in electronic controller; stirring up to 520 min^{-1}

Separate regulator and power-switch for heating and stirring.

- Chemically resistant PP-housing
- Bi-directional stirring

Delivery information: Supplied with a clamp for rod Ø 12,7 mm and one stirring bar.

Type	Heating capacity (W)	W×D×H (mm)	Flask capacity (ml)	Weight (kg)	Pk	Cat. No.
EMA0050/CEB	60	260×180×150	50	2,3	1	**454-1413**
EMA0100/CEB	60	260×180×150	100	2,3	1	**454-1414**
EMA0250/CEB	150	260×180×150	250	2,3	1	**454-1415**
EMA0500/CEB	200	310×240×160	500	3,3	1	**454-1416**
EMA1000/CEB	300	310×240×160	1000	3,3	1	**454-1417**
EMA2000/CEB	500	400×350×200	2000	6,8	1	**454-1418**

Heating mantles, Electromantle® EMX and EMV series
Electrothermal

Max. 450 °C, with temperature regulation, opening in the base

Multipurpose heating apparatus which accepts a variety of funnels. The opening in the base enables funnels or vessels with bottom drain taps to be heated. EMX models have a stainless steel liner which provide electrical and mechanical protection against spills and ensures easy cleaning. On EMV models, the stainless steel earthing screen provides added protection against shock should spillage or flask breakage occur.

- Bottom outlet accommodates 60º funnels of various diameters
- Chemically resistant PP housing
- Earthed

Delivery information: Supplied with clamp for support rod.

Type	Heating capacity (W)	W×D×H (mm)	Flask capacity (ml)	Pk	Cat. No.
EMX, spill-proof with stainless steel liner					
EMX1000/SCE	240	320×250×150	500 - 1000	1	**454-1407**
EMX5000/SCE	600	410×330×200	2000 - 5000	1	**454-1408**
EMV, with V-shaped mantle					
EMV0050/CE	60	130×270×180	10 - 50	1	**454-1409**
EMV0250/CE	150	130×270×180	100 - 250	1	**454-1410**
EMV1000/CE	300	150×310×240	500 - 1000	1	**454-1411**
EMV5000/CE	800	200×400×330	2000 - 5000	1	**454-1412**

Modular heating mantles with stirrer, Electromantle® OMCA series
Electrothermal

Heater element temperature max. 220 °C; magnetic stirrer speed: 100 - 800 min^{-1}

Base unit accommodates choice of three interchangeable cartridges: 250, 500 or 1000 ml round bottom flask sizes.

- Constructed of ABS flame-retardant thermoplastic
- Heater cartridge case is spun aluminium with polyester paint coating

Ceramic fibre thermal insulation permits faster heat up while reducing energy consumption.

Three digit display toggles between set temperature and actual temperature ±1 °C.

Type	Pk	Cat. No.
OMCA250 complete with 250 ml cartridge	1	**454-0073**
OMCA500 complete with 500 ml cartridge	1	**454-0074**
OMCA1000 complete with 1000 ml cartridge	1	**453-0090**
Cartridge 250 ml	1	**454-0070**
Cartridge 500 ml	1	**453-0091**
Cartridge 1000 ml	1	**454-0072**

Soxhlet extraction mantles, Electromantle® EME series
Electrothermal

For round bottom flasks. Max. 450 °C, built-in electronic controller

Independent units with separate heating control.

- Flexible heating element provides maximum heat transfer with minimum risk of flask breakage
- Unique airflow ensures unit is safe to the touch
- PTFE-coated external surface

Stirrer models include a stirring speed range of 50 - 1000 min^{-1} per 3 heater recesses.

Delivery information: 3-way units supplied with 3× support rods (all the same size) and 6-way units supplied with 3× support rods (2 short, 1 long)

Type	Heating capacity (W)	W×D×H (mm)	Flask capacity (ml)	Pk	Cat. No.
With 3 recesses					
EME30100/CEB	180	630×260×90	100	1	**454-0022**
EME30250/CEB	450	630×260×90	250	1	**454-0023**
EME30500/CEB	600	755×285×130	500	1	**454-0024**
EME31000/CEB	900	755×285×130	1000	1	**454-0025**
With 6 recesses					
EME60100/CEB	360	1200×260×90	100	1	**454-0026**
EME60250/CEB	900	1200×260×90	250	1	**454-0027**
EME60500/CEB	1200	1450×285×130	500	1	**454-0028**
EME61000/CEB	1800	1450×285×130	1000	1	**454-0029**
Stirrer models with 3 recesses					
EMEA30100/CE	245	630×260×90	100	1	**454-0030**
EMEA30250/CE	560	630×260×90	250	1	**454-0031**
EMEA30500/CE	725	750×280×110	500	1	**454-0032**
EMEA31000/CE	1085	750×280×110	1000	1	**454-0033**
Stirrer models with 6 recesses					
EMEA60100/CE	490	1200×260×90	100	1	**454-0034**
EMEA60250/CE	1120	1200×260×90	250	1	**454-0035**
EMEA60500/CE	1450	1440×280×110	500	1	**454-0036**
EMEA61000/CE	2170	1440×280×110	1000	1	**454-0037**

Temperature control units
Julabo

Fulfil temperature-dependent measurement, control, safety and monitoring tasks.

Typical applications; heating mantles, heating baths and heating mats.

- Multi-Display (LED) and splash-proof keypad
- High and low temperature warning functions with an interval tone ensure safe operation
- The built-in RS232 interface enables online communication with a PC

LC4 model

- Connection for heating device 230 V/2 kW

LC4-F model as for LC4, but additionally:

- Connection for temperature recorder and external programmer
- Two bright Multi-Displays (LED) for permanent indication of set point and actual values

LC6 programmable controller

- LCD-Dialog-Display and Multi-Display (LED)
- Connections for two working sensors and one safety sensor
- Analogue connection for temperature recorder and external programmer

Connection for heating device 230 V-3 kW

Type	LC4	LC4-F	LC6
Connections for working and safety sensors	2× PT100		3× PT100
Control	PID	PID adaptive	adapt./casc.
Interfaces	RS232		RS232/485
Programmer profile/sections	- / -		6 / 60
Temperature range (°C)	-50...+350		-100...+400
Temperature stability (°C)	>±0,05	>±0,03	

Type	Pk	Cat. No.
LC4	1	**620-8113**
LC4-F	1	**620-8115**
LC6	1	**620-8114**

If you haven't found the Nabertherm furnace you are looking for please contact your local VWR sales office. All Nabertherm furnaces are available on request.

Muffle furnaces, with fold down or lift door, L and LT series
Nabertherm

455-0192

455-0147

Electrically heated muffle furnaces are ideal for daily laboratory use. Units feature rust-free, textured stainless steel exteriors. The furnances have Tmax 1100 or 1200 °C. Models feature an adjustable air inlet which is integrated in the door, an exhaust air outlet in the rear wall of the furnace and a silent solid state power control relay.

- Heating on two sides by means of ceramic heating plates (heating on three sides for models L 24/11 - LT 40/12)
- Ceramic heating plates with integral heating element which is protected from fumes and splashing, and easy to replace
- Module lining is highly durable cured vacuum fibre
- Double walled casing for low external temperatures and high stability
- Fold down door (L models) can be used as work platform or lift door (LT models) with hot surface facing away from the operator

Delivery information: Supplied with choice of digital R 6 controller with one storable holding temperature (L 1 model only) or PID B 180 controller with one free programmable ramp, holding temperature and holding time, or professionel P 330 controller with 9 freely adjustable programs and 40 segments, RS422 interface and programmable socket for fan or catalyst (not model L 15, LT 15). All units require a 230 V single phase power supply, except L 24, LT 24 and L 40, LT 40 (380 V, 3 phase). Optional accessories e.g. a vertical vent, vent with fan or catalytic converter, over-temperature limit controller with adjustable temperature cut out for thermal protection Class 2 in accordance with EN 60519-2 as temperature limiter to protect the oven and load, protective gas connection on the rear wall of furnace. Manual or automatic gas supply systems are also available.

Type	Max. temp. (°C)	Power (W)	Capacity (l)	W×D×H int. (mm)	W×D×H ext. (mm)	Pk	Cat. No.
L models with fold down door and R 6 controller							
L 1/12	1200	Max. 1500	1	90×115×110	250×265×340	1	**455-0192**
L models with fold down door and B 180 controller							
L 3/11	1100	Max. 1200	3	160×140×100	380×370×420	1	**455-0140**
L 3/12	1200	Max. 1200	3	160×140×100	380×370×420	1	**455-0142**
L 5/11	1100	Max. 2400	5	200×170×130	440×470×520	1	**455-0193**
L 5/12	1200	Max. 2400	5	200×170×130	440×470×520	1	**455-0145**
L 9/11	1100	Max. 3000	9	230×240×170	480×550×570	1	**455-6134**
L 9/12	1200	Max. 3000	9	230×240×170	480×550×570	1	**455-0148**
L 15/11	1100	Max. 3600	15	230×340×170	480×650×570	1	**455-0194**
L 15/12	1200	Max. 3600	15	230×340×170	480×650×570	1	**455-0150**
L 24/11 *	1100	Max. 4500	24	280×340×250	560×660×650	1	**455-0152**
L 24/12 *	1200	Max. 4500	24	280×340×250	560×660×650	1	**455-0154**
L 40/11 *	1100	Max. 6000	40	320×490×250	600×790×650	1	**455-0197**
L 40/12 *	1200	Max. 6000	40	320×490×250	600×790×650	1	**455-6010**
L models with fold down door and P 330 controller							
L 3/11	1100	Max. 1200	3	160×140×100	380×370×420	1	**455-0141**
L 3/12	1200	Max. 1200	3	160×140×100	380×370×420	1	**455-0143**
L 5/11	1100	Max. 2400	5	200×170×130	440×470×520	1	**455-0144**
L 5/12	1200	Max. 2400	5	200×170×130	440×470×520	1	**455-0146**
L 9/11	1100	Max. 3000	9	230×240×170	480×550×570	1	**455-0147**
L 9/12	1200	Max. 3000	9	230×240×170	480×550×570	1	**455-0149**
L 15/11	1100	Max. 3600	15	230×340×170	480×650×570	1	**455-0195**
L 15/12	1200	Max. 3600	15	230×340×170	480×650×570	1	**455-0151**
L 24/11 *	1100	Max. 4500	24	280×340×250	560×660×650	1	**455-0153**
L 24/12 *	1200	Max. 4500	24	280×340×250	560×660×650	1	**455-0155**
L 40/11 *	1100	Max. 6000	40	320×490×250	600×790×650	1	**455-0156**
L 40/12 *	1200	Max. 6000	40	320×490×250	600×790×650	1	**455-0157**
LT models with lift door and B 180 controller							
LT 3/11	1100	Max. 1200	3	160×140×100	380×370×420	1	**455-0168**
LT 3/12	1200	Max. 1200	3	160×140×100	380×370×420	1	**455-0170**
LT 5/11	1100	Max. 2400	5	200×170×130	440×470×520	1	**455-0172**
LT 5/12	1200	Max. 2400	5	200×170×130	440×470×520	1	**455-0174**
LT 9/11	1100	Max. 3000	9	230×240×170	480×550×570	1	**455-0176**
LT 9/12	1200	Max. 3000	9	230×240×170	480×550×570	1	**455-0178**
LT 15/11	1100	Max. 3600	15	230×340×170	480×650×570	1	**455-0180**
LT 15/12	1200	Max. 3600	15	230×340×170	480×650×570	1	**455-0182**

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Type	Max. temp. (°C)	Power (W)	Capacity (l)	W×D×H int. (mm)	W×D×H ext. (mm)	Pk	Cat. No.
LT models with lift door and B 180 controller							
LT 24/11 *	1100	Max. 4500	24	280×340×250	560×660×650	1	**455-0184**
LT 24/12 *	1200	Max. 4500	24	280×340×250	560×660×650	1	**455-0186**
LT 40/11 *	1100	Max. 6000	40	320×490×250	600×790×650	1	**455-0188**
LT 40/12 *	1200	Max. 6000	40	320×490×250	600×790×650	1	**455-0190**
LT models with lift door and P 330 controller							
LT 3/11	1100	Max. 1200	3	160×140×100	380×370×420	1	**455-0169**
LT 3/12	1200	Max. 1200	3	160×140×100	380×370×420	1	**455-0171**
LT 5/11	1100	Max. 2400	5	200×170×130	440×470×520	1	**455-0173**
LT 5/12	1200	Max. 2400	5	200×170×130	440×470×520	1	**455-0175**
LT 9/11	1100	Max. 3000	9	230×240×170	480×550×570	1	**455-0177**
LT 9/12	1200	Max. 3000	9	230×240×170	480×550×570	1	**455-0179**
LT 15/11	1100	Max. 3600	15	230×340×170	480×650×570	1	**455-0181**
LT 15/12	1200	Max. 3600	15	230×340×170	480×650×570	1	**455-0183**
LT 24/11 *	1100	Max. 4500	24	280×340×250	560×660×650	1	**455-0185**
LT 24/12 *	1200	Max. 4500	24	280×340×250	560×660×650	1	**455-0187**
LT 40/11 *	1100	Max. 6000	40	320×490×250	600×790×650	1	**455-0189**
LT 40/12 *	1200	Max. 6000	40	320×490×250	600×790×650	1	**455-0191**

Description	Pk	Cat. No.
Accessories		
Vertical vent	1	**455-6258**
Vent with catalytic converter	1	**455-0084**
Vent with fan	1	**455-6259**

Note: Maximum continuous operating temperature should be 50 °C below the 'Max. temp.' of the model shown in the table above.
* 380 V, 3 phase power supply

Compact muffle furnaces, LE series
Nabertherm

455-6290

455-0196

With an excellent price/performance ratio, these compact, lightweight muffle furnaces are ideal for many laboratory applications. Units feature double walled, rust-free, textured stainless steel exteriors which ensure low external temperatures and high stability. The heating elements are encased in quartz glass tubes making them reliable for a variety of applications. The furnaces have Tmax 1100 °C, working temperature of 1050 °C. Models have an exhaust air outlet in the rear wall of the furnace and a silent solid state power control relay.

- Heating on two sides by means of heating elements in quartz glass tubes
- Maintenance friendly replacement of heating elements and insulation
- Multilayered insulation with fibre plates in the furnace chamber
- Controller is mounted to the side of the door for larger models but under the door for the LE 1/11, LE 2/11 and LE 4/11
- Fold down door can also be used as a work platform

Delivery information: LE 1, LE 2 and LE 4 models supplied with digital R 6 controller with one storable holding temperature; LE 6 and LE 14 models supplied with digital B 150 controller, which features one ramp and one dwell time, or P 300 controller with nine freely adjustable programs and 40 segments with option to add an RS422 interface. All units are supplied with plugs and these models require a 230 V single phase power supply. Please contact your local VWR sales office or visit www.vwr.com for details.

Type	Max. temp. (°C)	Power (W)	Capacity (l)	W×D×H int. (mm)	W×D×H ext. (mm)	Pk	Cat. No.
Models with R 6 controller							
LE 1/11	1100	Max. 1500	1	90×115×110	250×265×340	1	**455-0196**
LE 2/11	1100	Max. 1800	2	110×180×110	275×380×350	1	**455-0082**
LE 4/11	1100	Max. 1800	4	170×200×170	335×400×410	1	**455-6289**
Models with B 150 controller							
LE 6/11	1100	Max. 1800	6	170×200×170	510×400×320	1	**455-6290**
LE 14/11	1100	Max. 2900	14	220×300×220	555×500×370	1	**455-6253**

Description	Pk	Cat. No.
Accessories		
Vertical vent	1	**455-6258**
Vent with catalytic converter	1	**455-0084**
Vent with fan	1	**455-6259**

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Note: Maximum continuous operating temperature should be 50 °C below the max. temp. of the model shown above.

Ashing furnaces with fold down or lift door, LV and LVT series
Nabertherm

These models are especially designed for ashing in the laboratory. Units feature rust-free, textured stainless steel exteriors. A special air intake and exhaust system allows air exchange of more than 6 times per minute. Incoming air is pre-heated to ensure a good temperature uniformity. Models have Tmax 1100 °C, and feature a silent solid state power control relay.

- Heating on two sides by means of ceramic heating plates, module lining is highly durable, high performance cured vacuum fibre
- Ceramic heating plates with integral heating element which is protected from fumes and splashing, and is easy to replace
- Double walled casing for low external temperatures and stability
- Optional fold down door (LV models) which can be used as work platform or lift door (LVT models) with hot surface facing away from the operator
- Air exchanged more than 6 times per minute

Delivery information: Supplied with choice of digital PID B 180 controller with one freely programmable ramp, holding temperature and holding time or professional P 330 controller with nine freely adjustable programmes and 40 segments and RS422 interface. All units are supplied with plugs and these models require a 230 V single phase power supply.

Type	Max. temp. (°C)	Power (W)	Capacity (l)	W×D×H int. (mm)	W×D×H ext. (mm)	Pk	Cat. No.
LVT models with lift door, B 180 controller							
LVT 3/11	1100	Max. 1200	3	160×140×100	380×370×750	1	**455-0198**
LVT 5/11	1100	Max. 2400	5	200×170×130	440×470×850	1	**455-0200**
LVT 9/11	1100	Max. 3000	9	230×240×170	480×550×900	1	**455-0202**
LVT 15/11	1100	Max. 3600	15	230×340×170	480×650×900	1	**455-0258**
LVT models with lift door, P 330 controller							
LVT 3/11	1100	Max. 1200	3	160×140×100	380×370×750	1	**455-0199**
LVT 5/11	1100	Max. 2400	5	200×170×130	440×470×850	1	**455-0201**
LVT 9/11	1100	Max. 3000	9	230×240×170	480×550×900	1	**455-0203**
LVT 15/11	1100	Max. 3600	15	230×340×170	480×650×900	1	**455-0204**
LV models with fold down door, B 180 controller							
LV 3/11	1100	Max. 1200	3	160×140×100	380×370×750	1	**455-0158**
LV 5/11	1100	Max. 2400	5	200×170×130	440×470×850	1	**455-0160**
LV 9/11	1100	Max. 3000	9	230×240×170	480×550×900	1	**455-0162**
LV 15/11	1100	Max. 3600	15	230×340×170	480×650×900	1	**455-0164**
LV models with fold down door, P 330 controller							
LV 3/11	1100	Max. 1200	3	160×140×100	380×370×750	1	**455-0159**
LV 5/11	1100	Max. 2400	5	200×170×130	440×470×850	1	**455-0161**
LV 9/11	1100	Max. 3000	9	230×240×170	480×550×900	1	**455-0163**
LV 15/11	1100	Max. 3600	15	230×340×170	480×650×900	1	**455-0165**

Note: Maximum continuous operating temperature should be 50 °C below the max. temp. of the model shown in the table above.

Ashing furnaces, AAF series
Carbolite

The AAF range of ashing furnaces are ideal for ashing materials such as food, plastics, coal and other hydrocarbons, in which high volumes of fumes are generated. Smoke and fumes are removed by a constant airflow (of between 4 and 5 volume changes per minute) created by convection between the air inlet and the tall chimney, however it is not too high to disturb samples in the crucibles, or chill them as the incoming air is preheated.

The element and insulation design preheat the airflow to ensure consistent uniformity throughout the chamber and the elements are protected from chemical and mechanical damage by a high quality hard wearing lining.

Delivery information: Supplied as standard with a type 301 PID digital temperature controller with single ramp. Alternatively a choice of multi-segment programmers are available. Note furnaces are supplied without plugs and should be hardwired at position of use. The 3 litre model requires 230 V single phase, 7 litre model requires 230 V single phase or can alternatively be supplied with 415 V two phase (of three phase) supply at extra charge. The 18 litre unit requires 230 V single phase or 415 V three phase supply, and can be reconfigured on site to single or three phase "universal" power supply. Please contact your local VWR sales office for details.

Type	Max. temp. (°C)	Power (W)	Capacity (l)	W×D×H int. (mm)	W×D×H ext. (mm)	Pk	Cat. No.
AAF models with 301 PID controller							
AAF 11/3	1100	Max. 2100	3	150×250×90	375×485×585	1	**458-0031**
AAF 11/7	1100	Max. 4000	7	170×455×90	430×740×650	1	**458-0035**
AAF 11/18	1100	Max. 7100	18	196×400×235	505×675×705	1	**458-0027**

Note: Maximum continuous operating temperature should be 100 °C below the max. temp. of the model shown above.

Furnaces economy, ELF series
Carbolite

The ELF furnaces are ideal for light heat treatment applications and for educational purposes, they are not suitable for ashing or heavy industrial duties; please see details on the AAF and CWF ranges respectively. Digital PID temperature controller (type 301) ensures precise and repeatable temperatures with push button temperature setting, adjustable heating rate and a process timer.

These models have two side mounted free radiating elements embedded in low thermal mass insulation, which ensures rapid heat up, while providing excellent thermal uniformity within the chamber.

- Safety features include; door switch that isolates power from the heating elements and a double skinned body for safe outer surface temperatures
- Removable dense ceramic chamber hearth floor for easy spillage clean up
- Drop down door may be used as a shelf when loading/unloading

Delivery information: Note these furnaces are supplied without plugs and should be hardwired at position of use. The ELF 11/6 and ELF11/14 models require 230 V single phase and ELF 11/23 model requires 230 V single phase or can alternatively be supplied with 415 V two phase (of three phase) supply at extra charge. Please contact your local VWR sales office for details.

Type	Max. temp. (°C)	Power (W)	Capacity (l)	W×D×H int. (mm)	W×D×H ext. (mm)	Pk	Cat. No.
ELF 11/6	1100	Max. 2000	6	180×210×165	410×420×580	1	**455-0167**
ELF 11/14	1100	Max. 2600	14	220×310×210	450×520×630	1	**455-0026**
ELF 11/23	1100	Max. 5000	23	255×400×235	505×690×715	1	**455-0132**

Note: Maximum continuous operating temperature should be 100 °C below the max. temp. of the model shown above.

Furnaces, CWF series
Carbolite

The CWF furnaces heating modules are situated on each side of the chamber and house a free radiating element, which offers 50% faster performance in comparison with traditional embedded element designs. Hard wearing materials are integral to the door surround and hearth, providing excellent resistance to everyday wear and tear, whilst secondary low thermal mass insulation ensures maximum thermal efficiency.

Safe operation is ensured by a double skin construction providing natural air convection for low outer case temperatures and power to the elements is isolated as soon as the door is opened.

Delivery information: Supplied as standard with a type 301 PID digital temperature controller with single ramp. Alternatively a choice of multi-segment programmers are available. Note furnaces are supplied without plugs and should be hardwired at position of use. The 5 litre models require 230 V single phase, 13 litre models require 230 V single phase or can alternatively be supplied with 415 V two phase (of three phase) supply at extra charge. The 23 litre units require 230 V single phase or 415 V three phase supply, and can be reconfigured on site to single or three phase "universal" power supply. Please contact your local VWR sales office for details.

Type	Max. temp. (°C)	Power (W)	Capacity (l)	W×D×H int. (mm)	W×D×H ext. (mm)	Pk	Cat. No.
CWF models with 301 PID controller							
CWF 11/5	1100	Max. 2400	5	140×250×135	375×485×585	1	**455-3121**
CWF 11/13	1100	Max. 3100	13	200×325×200	435×610×665	1	**455-3122**
CWF 11/23	1100	Max. 7000	23	245×400×235	505×675×705	1	**455-3123**
CWF 12/5	1200	Max. 2400	5	140×250×135	375×485×585	1	**455-3124**
CWF 12/13	1200	Max. 3100	13	200×325×200	435×610×655	1	**455-3125**
CWF 12/23	1200	Max. 7000	23	245×400×235	505×675×705	1	**455-3126**
CWF 13/5	1300	Max. 2400	5	140×250×135	375×485×585	1	**455-3127**
CWF 13/13	1300	Max. 3100	13	200×325×200	435×610×655	1	**455-3128**
CWF 13/23	1300	Max. 7000	23	245×400×235	505×675×705	1	**455-3129**

Note: Maximum continuous operating temperature should be 100 °C below the max. temp. of the model shown above.

Compact tube furnaces, R and RD series
Nabertherm

These compact bench top tube furnaces with integrated control systems can be widely used for a variety of processes. Equipped with a standard C 530 ceramic working tube and two fibre plugs they have an unbeatable price/performance ratio. Units feature rust-free, textured stainless steel exteriors. R models feature Tmax 1200 or 1300 °C, RD models have Tmax 1100 or 1300 °C.

- Tube diameter: RD models 15 to 30 mm, R models 50 to 120 mm
- Heated length: RD models 150 to 200 mm, R models 250 to 1000 mm
- C 530 ceramic working tube and two fibre plugs supplied as standard
- R and RD models feature S type thermocouple, except RD models with Tmax 1300 which have a K type thermocouple
- Silent solid state power control relay

Delivery information: Supplied with working tube and plugs. Models available with digital PID B 180 controller, professional P 330 controller or digital R 6 controller. All R and RD models are single phase except R 120/1000/12, R 100/750/13 and R 120/1000/13 models which are single phase with plug. Optional accessories such as over-temperature limit controller with adjustable temperature cut-out for thermal protection Class 2 in accordance with EN 60519-2 as temperature limiter to protect the oven and load, a cascade controller for temperature measurement in the working tube and behind the tube, working tubes designed for process requirements and three-zoned design with HiProSystem control (heated length from 750 mm, for 1300 °C models) are available. Please contact your local VWR sales office for details of these optional accessories.

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Type	Max. temp. (°C)	Power (W)	Ø int. tube (mm)	Tube length (mm)	Heated length (mm)	Uniform length (mm)	W×D×H ext. (mm)	Pk	Cat. No.
R series, Tmax 1200 °C models with B 180 controller with one free programmable ramp, holding temperature and holding time									
R 50/250/12	1200	Max. 1200	50	450	250	80*	400×240×490	1	**455-0135**
R 50/500/12	1200	Max. 1800	50	700	500	170*	650×240×490	1	**455-0136**
R 100/750/12	1200	Max. 3600	90	1070	750	250*	1000×360×640	1	**455-0138**
R 120/1000/12 **	1200	Max. 6000	120	1400	1000	330*	1300×420×730	1	**455-0137**
R series, Tmax 1200 °C models with P 330 controller with nine freely adjustable programs and 40 segments and RS422 interface									
R 50/250/12	1200	Max. 1200	50	450	250	80*	400×240×490	1	**455-0218**
R 50/500/12	1200	Max. 1800	50	700	500	170*	650×240×490	1	**455-0219**
R 100/750/12	1200	Max. 3600	100	1070	750	250*	1000×360×640	1	**455-0221**
R 120/1000/12 **	1200	Max. 600	120	1400	1000	330*	1300×420×730	1	**455-0220**
R series, Tmax 1300 °C models with B 180 controller with one free programmable ramp, holding temperature and holding time									
R 50/250/13	1300	Max. 1200	50	450	250	80*	400×240×490	1	**455-0222**
R 50/500/13	1300	Max. 1800	50	700	500	170*	650×240×490	1	**455-0224**
R 100/750/13 **	1300	Max. 3600	90	1070	7500	250*	1000×360×640	1	**455-0226**
R 120/1000/13 **	1300	Max. 6500	120	1400	1000	330*	1300×420×730	1	**455-0228**
R series, Tmax 1300 °C models with P 330 controller with nine freely adjustable programs and 40 segments and RS422 interface									
R 50/250/13	1300	Max. 1200	50	450	250	80*	400×240×490	1	**455-0223**
R 50/500/13	1300	Max. 1800	50	700	500	170*	650×240×490	1	**455-0225**
R 100/750/13 **	1300	Max. 3600	90	1070	750	250*	1000×360×640	1	**455-0227**
R 120/1000/13 **	1300	Max. 6500	120	1400	1000	330*	1300×420×730	1	**455-0229**
RD series, Tmax 1100 °C models with R 6 controller with one storable holding temperature									
RD 30/200/11	1100	1500	30	~340	200	65***	350×200×350	1	**455-0323**
RD series, Tmax 1300 °C models with R 6 controller with one storable holding temperature									
RD 30/200/13	1300	1500	30	~340	200	65***	350×200×350	1	**455-0324**

Note: Maximum continuous operating temperature should be 50 °C below the max. temp. of the model shown above.
* ΔT 10 °C, uniform length measured with end plugs fitted.
** 380 V three phase power supply.
*** ΔT 5 °C, uniform length measured with end plugs fitted.

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Crucibles

Porcelain, glazed inside and out, except base

- Withstand maximum temperature of 1000 °C

According to DIN 12904

Lids are available separately.

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Low form	5	30×19	5	**459-0194**
Low form	10	35×22	5	**459-0195**
Low form	17	40×25	5	**459-0196**
Low form	21	45×28	5	**459-0197**
Low form	34	50×32	5	**459-0198**
Low form	62	60×38	5	**459-0199**
Low form	91	70×44	5	**459-0200**
Medium form	10	30×25	5	**459-0201**
Medium form	12	35×28	5	**459-0202**
Medium form	20	40×32	5	**459-0203**
Medium form	30	45×36	5	**459-0204**
Medium form	45	50×40	5	**459-0205**
Medium form	80	60×48	5	**459-0206**
Medium form	120	70×56	5	**459-0207**
Medium form	200	80×62	5	**459-0208**
Tall form	15	30×38	5	**459-0209**
Tall form	26	35×44	5	**459-0210**
Tall form	35	40×50	5	**459-0211**
Tall form	50	45×56	5	**459-0212**
Tall form	72	50×62	5	**459-0213**
Tall form	130	60×75	5	**459-0214**

For Ø (mm)	Pk	Cat. No.
Lids for crucibles		
30	5	**459-0215**
35	5	**459-0216**
40	5	**459-0217**
45	5	**459-0218**
50	5	**459-0219**
60	5	**459-0220**
70	5	**459-0221**
80	5	**459-0222**

Crucibles
Haldenwanger

Porcelain, glazed inside and out, except base

- Withstand maximum temperature of 1000 °C

Lids are available separately.

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Low form	6	30×20	1	**459-0103**
Low form	11	35×23	1	**459-0102**
Low form	15	40×26	1	**459-0101**
Low form	25	45×29	1	**459-0104**
Low form	29	50×32	1	**459-0136**
Low form	50	60×38	1	**459-0105**
Low form	85	70×47	1	**459-0137**
Medium form	15	35×28	1	**459-0106**
Medium form	20	40×32	1	**459-0148**
Medium form	38	45×36	1	**459-0146**
Medium form	49	50×40	1	**459-0147**
Medium form	90	60×50	1	**459-0144**
Medium form	150	70×60	1	**459-0142**
Medium form	250	89×75	1	**459-1118**
Tall form	11	26×34	1	**459-1121**
Tall form	15	30×38	1	**459-1122**
Tall form	24	35×44	1	**459-0138**
Tall form	40	40×51	1	**459-1120**
Tall form	50	46×58	1	**459-0139**
Tall form	75	51×65	1	**459-0140**
Tall form	120	60×79	1	**459-0141**

For Ø (mm)	Pk	Cat. No.
Lids for crucibles		
28	1	**459-1150**
25/26	1	**459-0046**
30	1	**459-0045**
35	1	**459-1152**
40	1	**459-0044**
45	1	**459-0153**
50	1	**459-0042**
70	1	**459-0151**
89	1	**459-1158**

VWR COLLECTION

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Crucibles

Stainless steel 304

- Highly resistant to chemicals and reagents
- Withstand maximum temperature of 800 °C

Without lid.

Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
15	30×30	1	**459-4501**
25	35×35	1	**459-4502**
50	45×45	1	**459-4503**

Crucibles, Metalware™

Nickel

- Recommended working temperature range up to 350 °C

Can be used at temperatures up to 800 °C, but this will diminish the working life of the crucible.

Lids are available separately.

Capacity (ml)	Ø×H (mm)	Thickness (mm)	Pk	Cat. No.
5	20×25	0,5	1	**459-0050**
10	25×30	0,5	1	**459-0052**
15	30×30	0,5	1	**459-0053**
25	35×35	0,5	1	**459-0054**
30	40×40	0,5	1	**459-0061**
50	45×45	0,5	1	**459-0065**
70	50×50	0,5	1	**459-0066**
130	60×60	0,5	1	**241-0008**
270	80×80	0,5	1	**459-0051**
15	30×30	1,0	1	**459-0165**
25	35×35	1,0	1	**459-0166**
30	40×40	1,0	1	**459-0167**
70	50×50	1,0	1	**459-0168**
50	45×45	1,5	1	**459-0169**
30	40×40	2,0	1	**459-0170**

For Ø (mm)	Pk	Cat. No.
Lids for nickel crucibles		
20	1	**459-0055**
25	1	**459-0056**
30	1	**459-0057**
35	1	**459-0058**
40	1	**459-0059**
45	1	**459-0060**
50	1	**459-0062**
60	1	**459-0063**
80	1	**459-0064**

Crucibles, low form

Fused quartz, translucent, glazed

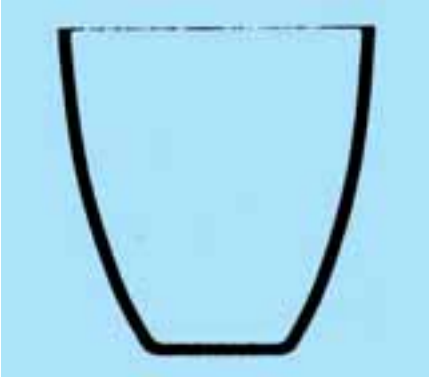
- Max. temperature: 1050 °C

Ordering information: Crucible and lid have to be ordered separately.

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Low form	5	29×29	1	**459-0237**
Low form	10	41×29	1	**216-4479**
Low form	15	43×34	1	**216-4481**
Low form	25	49×37	1	**459-0176**
Low form	50	59×46	1	**459-0172**
Low form	80	69×50	1	**459-0178**
Low form	150	84×58	1	**459-0173**

For Ø (mm)	Pk	Cat. No.
Lids		
29	1	**459-0249**
41	1	**216-4480**
49	1	**459-0177**
59	1	**216-4485**
69	1	**216-4487**
84	1	**459-0179**

Crucibles, tall form



Fused quartz, translucent, glazed

- Max. temperature: 1050 °C

Ordering information: Crucible and lid have to be ordered separately.

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Tall form	10	27×32	1	**459-0238**
Tall form	20	35×38	1	**216-4490**
Tall form	30	43×39	1	**216-4492**
Tall form	50	51×51	1	**459-0180**
Tall form	200	76×81	1	**459-0239**

For Ø (mm)	Pk	Cat. No.
Lids		
27	1	**459-0250**
35	1	**216-4491**
43	1	**216-4493**
51	1	**216-4495**
76	1	**459-0251**

Incinerating dishes
Haldenwanger

Porcelain, glazed inside and out, except base

- Withstand maximum temperature 1000 °C
- Shallow form without spout, deep form with spout

The rectangular dishes have sloping sides.

Measurements shown are W×D×H for rectangular dishes and Ø×H for others.

Type	Capacity (ml)	Ø ext.×H (mm)	W×D×H (mm)	Pk	Cat. No.
Round dishes					
Shallow	8	37×10	-	1	**459-2112**
Shallow	10	42×11	-	1	**459-2113**
Shallow	15	48×12	-	1	**459-2114**
Deep	15	40×21	-	1	**459-2121**
Deep	30	50×25	-	1	**459-2122**
Deep	60	60×31	-	1	**459-2123**
Flour (Mohs)	30	56×23	-	1	**459-2141**
Rectangular dishes					
Shallow	10	-	26×48×10	1	**459-2131**
Shallow	20	-	46×70×13	1	**459-2132**
Shallow	33	-	42×55×16	1	**459-0038**
Shallow	55	-	55×96×16	1	**459-2134**

Combustion boats
Haldenwanger

Glazed porcelain

- With recovery ring
- Withstand maximum temperature 1000 °C

W×D×H (mm)	Pk	Cat. No.
85×13×8	1	459-2213
96×12×10	1	459-2214

Filtration crucibles

Pyrex® borosilicate glass

- With integral glass sintered disc
- Ideal for drying precipitates to constant mass at 110 °C
- Suitable for ignition work up to 450 °C

Porosity	Capacity (ml)	Plate Ø (mm)	Pk	Cat. No.
1	10	20	1	459-0240
4	10	20	5	459-0241
1	30	30	5	459-0242
2	30	30	5	459-0234
3	30	30	5	459-0235
4	30	30	5	459-0236
5	30	30	5	459-0243
1	60	40	5	459-0244
2	60	40	5	459-0245
3	60	40	5	459-0246
4	60	40	5	459-0247
5	60	40	5	459-0248

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Block heaters, analogue

These multipurpose units are ideal for incubation and activation of cultures, enzyme reactions, blood urea nitrogen determinations, immunoassays, melting or boiling points. Two separate temperature adjustment knobs provide low and high temperature control. Low range knob adjusts from above ambient to 100 °C and high range knob adjusts from 75 to 150 °C. High wattage, constant temperature dry block heaters are economical, versatile and compact. Each of the five models accepts separate, interchangeable, modular heating blocks, which accommodate various sample containers such as microtubes, centrifuge tubes, vials, microplates, and PCR strips or tubes.

- Multipurpose device for a wide range of applications
- Temperature range from ambient +5 to 150 °C
- Accommodate VWR interchangeable modular heating blocks for tubes from 0,2 ml up to 50 ml capacity
- Analogue controls

Ordering information: Heating blocks are not included, please order these separately.

Type	Blocks	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
Block heater, analogue	1 ***	RT* +5...150	±1,5	0,11	203×315×89	2,6	1	**460-3250**
Block heater, analogue	2 ***	RT* +5...150	±2,0	0,21	203×391×89	2,9	1	**460-3253**
Block heater, analogue	3 ***	RT* +5...150	±2,0	0,21	203×467×89	3,6	1	**460-3256**
Block heater, analogue	4 ***	RT* +5...150	±2,5	0,31	203×429×89	3,9	1	**460-3259**
Block heater, analogue	6 ***	RT* +5...150	±2,5	0,41	203×531×89	4,5	1	**460-3262**

* RT = Ambient
** EU-plug *** UK-plug **** CH-plug

Block heaters, digital

Designed for applications that require repeatable results and superior temperature stability. These multipurpose units are ideal for incubation and activation of cultures, enzyme reactions, blood/urea nitrogen determinations, immunoassays, melting or boiling points. Easy to use controls with independent LED displays show actual and set point temperatures. Controls allow users to adjust temperature set point in ±0,1 °C increments. Timer function with audible alarm when time reaches zero. Optional external temperature probe kit monitors actual block or sample temperature. LED display on front panel will show actual probe temperature and adjust heater output to maintain user-defined set point. All dry block heaters include a built in support rod holder for mounting the probe kit. Efficient heater features close tube-to-block contact with a low-density design for exceptional temperature uniformity.

- Exceptional temperature uniformity and stability. Units offer a temperature stability of ±0,2 °C
- Temperature range from ambient +5 to 120 °C
- Timer will display elapsed time or when programmed to user-defined limit, will count down to zero and shut off unit
- Accommodate VWR interchangeable modular heating blocks for tubes from 0,2 ml up to 50 ml capacity
- Two LED displays, timer with audible alarm and microprocessor control

Ordering information: Heating blocks are not included, please order these separately.

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Type	Blocks	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
Block heater, digital	1 ***	RT* +5...120	±0,2	0,11	203×315×89	2,6	1	**460-3265**
Block heater, digital	2 ***	RT* +5...120	±0,2	0,21	203×391×89	2,9	1	**460-3268**
Block heater, digital	3 ***	RT* +5...120	±0,2	0,21	203×467×89	3,6	1	**460-3271**
Block heater, digital	4 ***	RT* +5...120	±0,2	0,31	203×429×89	3,9	1	**460-3274**
Block heater, digital	6 ***	RT* +5...120	±0,2	0,41	203×531×89	4,5	1	**460-3277**

Description	Pk	Cat. No.
Accessories		
External temperature probe kit. Kit includes stainless steel RTD probe, 457 mm vertical support rod, thermometer/probe extension clamp and hook connector.	1	**460-3288**

*RT = Ambient
** EU-plug *** UK-plug ****CH-plug

Dry block heater, Advanced, digital, with heated lid

This advanced dry block heater with heated lid is designed for applications that require repeatable results and superior temperature stability. This multipurpose unit is ideal for isothermal incubation, enzyme reactions, immunoassays, nucleic acid denaturation and a wide variety of other laboratory procedures. Integral support rod holder with locking knob accepts optional external temperature probe kit. Block heater accepts one microplate block or two separate interchangeable modular blocks. Each block has a thermometer well for measuring block temperature. Efficient heating due to close tube and block contact with a low density design for exceptional temperature uniformity. The heated lid helps to regulate the temperature. PID temperature control, with optional external RTD probe. Samples are heated to temperature quickly and accurately. Temperature is adjusted in ±0,1 °C increments. Touch pad controls with easy to read, independent LED displays for temperature and time, also show set point and actual temperature. Display will show last used settings, even after power has been turned off. In timed mode, an alarm will sound when time reaches zero and when unit reaches set point temperature. Temperature calibration mode allows the user to calibrate the unit to an external temperature device. Hot warning symbol light is illuminated when the temperature is above 40 °C. Over shoot protection means if the unit exceeds the set temperature by 10 °C the unit will automatically stop heating. Units can be run in environments from 18 to 33 °C (20 to 80% relative humidity, non-condensing).

- Exceptional uniformity, stability, and regulation of temperature, offers temperature stability and temperature uniformity at 37 °C of ±0,2 °C within the block and ±0,1 °C across similar blocks
- Temperature range from ambient +5 to 100 °C, heat up time to 100 °C is 50 min
- Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero
- Heated lid reduces condensation on sample lids
- Optional external temperature probe kit monitors actual block or sample temperature
- Accommodates VWR interchangeable modular heating blocks for tubes from 0,2 ml microtubes to test tubes or vials up to 85 mm in height

Ordering information: Modular blocks and optional temperature probe kit available, these must be ordered separately.

Type	Blocks	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
Block heater, digital	2 ***	RT* +5...100	±0,2	0,4	203×391×178	2,7	1	**460-0184**

Description	Pk	Cat. No.
Accessories		
External temperature probe kit. Kit includes stainless steel RTD probe, 457 mm vertical support rod, thermometer/probe extension clamp and hook connector.	1	**460-3288**

*RT = Ambient
** EU-plug *** UK-plug ****CH-plug

Modular heating blocks and accessories for VWR® block heaters

Constructed from a solid anodised aluminium block.

- Close contact of tubes to block walls allows for maximum heat transfer
- Each block has a thermometer well for measuring block temperature

Single block W×D×H: 95×76×51 mm

Double block W×D×H: 95×152×57 mm

Description	Well size (mm)	For	No. of holes	Depth (mm)	W×D×H (mm)	Pk	Cat. No.
Blocks for microcentrifuge tubes							
Single block	Ø 7,9	0,5 ml PCR tubes	30	27,6	95×76×51	1	**460-3211**
Single block	Ø 11,1	1,5 ml VWR microtubes	20	39,1	95×76×51	1	**460-3235**
Single block	Ø 11,5	1,5 ml Eppendorf microtubes	20	36,9	95×76×51	1	**460-3212**
Single block	Ø 11,5	2,0 ml VWR/Eppendorf microtubes	20	38,1	95×76×51	1	**460-3245**
Single block	Ø 10,9	2,0 ml Corning microtubes	20	38,1	95×76×51	1	**460-3246**
Blocks for conical bottom centrifuge tubes							
Single block	Ø 17,1	15 ml conical tubes	12	44,5	95×76×51	1	**460-3221**
Single block	Ø 29,0	50 ml conical tubes	5	47,6	95×76×51	1	**460-3223**

Modular heating blocks and accessories for VWR block heaters

Description	Well size (mm)	For	No. of holes	Depth (mm)	W×D×H (mm)	Pk	Cat. No.
Blocks for standard test tubes							
Single block	Ø 8,3	6 mm round bottom tubes	30	48,4	95×76×51	1	**460-3213**
Single block	Ø 10,7	10 mm round bottom tubes	24	48,4	95×76×51	1	**460-3214**
Single block	Ø 13,9	12/13 mm round bottom tubes	16	48,4	95×76×51	1	**460-3215**
Single block	Ø 13,9	12/13 mm round bottom tubes	20	48,4	95×76×51	1	**460-3216**
Single block	Ø 17,5	15/16 mm round bottom tubes	12	48,4	95×76×51	1	**460-3217**
Single block	Ø 19,1	17/18 mm round bottom tubes	12	48,4	95×76×51	1	**460-3243**

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Description	Well size (mm)	For	No. of holes	Depth (mm)	W×D×H (mm)	Pk	Cat. No.
Blocks for standard test tubes							
Single block	Ø 21,0	20 mm round bottom tubes	8	48,4	95×76×51	1	**460-3218**
Single block	Ø 26,2	25 mm round bottom tubes	6	48,4	95×76×51	1	**460-3219**
Single block	Ø 35,0	35 mm round bottom tubes	4	47,6	95×76×51	1	**460-3222**
Combination blocks, designed for variable sample sizes							
Single block, microtube combination 0,5 ml, 1,5 ml, 2,0 ml	Ø 7,9 / Ø 11,1 / Ø 11,5		6/10/5	27,6/39,1/38,1	95×76×51	1	**460-3248**
Single block, centrifuge tube combination 1,5 ml, 15 ml, 50 ml	Ø 11,1 / Ø 17,1 / Ø 29,0		4/3/2	39,1/44,5/47,6	95×76×51	1	**460-3247**
Single block, test tube combination 6 mm, 12/13 mm, 25 mm	Ø 8,3 / Ø 13,9 / Ø 26,2		6/5/3	48,4/48,4/48,4	95×76×51	1	**460-3220**
Blocks for vials, designed for sample/serum and scintillation vials							
Single block	Ø 12,7	12 mm vials	20	30,0	95×76×51	1	**460-3279**
Single block	Ø 15,8	15 mm vials	20	35,0	95×76×51	1	**460-3280**
Single block	Ø 16,4	16 mm vials	15	45,0	95×76×51	1	**460-3287**
Single block	Ø 17,8	17 mm vials	12	45,0	95×76×51	1	**460-3281**
Single block	Ø 19,7	19 mm vials	12	45,0	95×76×51	1	**460-3282**
Single block	Ø 21,7	21 mm vials	9	45,0	95×76×51	1	**460-3283**
Single block	Ø 23,8	23 mm vials	8	45,0	95×76×51	1	**460-3284**
Single block	Ø 25,8	25 mm vials	8	45,0	95×76×51	1	**460-3285**
Single block	Ø 28,8	28 mm vials	6	45,0	95×76×51	1	**460-3286**

VWR COLLECTION

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Accessories for VWR block heaters

Solid blocks

- For use as a low-temperature hotplate or for custom drilling

Blocks for microtitre plates

- Recessed well for better stability; flat surface is good for flat and round bottom plates. Fits 2/4/6 block heaters

Blocks for PCR – plates, tubes, strips

- Tapered tube wells for 0,2 ml tubes. Spaced for easy access and removal

Blocks for cuvettes

- Two parallel slots fit 6 cuvettes in each slot, side by side for excellent stability and heat transfer

Description	Well size (mm)	For	No. of holes	Depth (mm)	W×D×H (mm)	Pk	Cat. No.
Solid blocks							
Single block					95×76×51	1	**460-3236**
Double block					95×152×57	1	**460-3239**
Blocks for microtitre plates							
Double block	-	96- or 384-well plate	-	13,5	95×152×57	1	**460-3238**
Blocks for PCR – plates, tubes, strips							
Double block, 1×96-well PCR plate	Ø 6,4	0,2 ml tubes	96	15,5	95×152×57	1	**460-3226**
Single block, 10×8-PCR tube strips	Ø 6,4	0,2 ml tubes	80	15,5	95x76x51	1	**460-3224**
Single block, 64×individual PCR tubes	Ø 6,4	0,2 ml tubes	64	20,2	95×76×51	1	**460-3225**

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Description	Well size (mm)	For	No. of holes	Depth (mm)	W×D×H (mm)	Pk	Cat. No.
Blocks for cuvettes							
Single block, 2×6 cuvettes (12,5 mm)	-		-	25,4	95×76×51	1	**460-3237**

Stainless steel sand baths

Ideal for irregular shaped vessels. Stainless steel construction for superior corrosion resistance. Designed to hold sand, stainless steel shot or non-volatile liquids.

Description	W×D×H (mm)	Pk	Cat. No.
Sand bath for one-block heater	95×76×64	1	**460-3227**
Sand bath for two-block heater	95×149×64	1	**460-3228**
Sand bath for three-block heater	95×224×64	1	**460-3229**
Sand bath for four-block heater	147×191×64	1	**460-3230**
Sand bath for six-block heater	147×287×64	1	**460-3231**
Sand for sand bath	-	450 g	**460-3232**
Stainless steel shot for sand bath	-	450 g	**460-3233**

Low temperature covers

Plexiglas® covers with 2 open sides reduce airflow, providing additional temperature stability in low temperature applications.

Description	W×D×H (mm)	Pk	Cat. No.
2-Block cover, max. tube height 89 mm	165×165×41	1	**460-3240**
2-Block cover, max. tube height 206 mm	165×165×114	1	**460-3289**
4-Block cover, max. tube height 89 mm	178×216×41	1	**460-3241**
6-Block cover, max. tube height 89 mm	178×316×41	1	**460-3242**

Analogue block heaters, QBA
Grant

Compact block heaters with interchangeable blocks feature analogue control with a precision thermostat. Units have robust cool wall aluminium and chemically resistant plastic construction with a low profile, sloping fascia for ease of use and 2 °C setting resolution.

- Operating temperature range is ambient +5 to 100 °C
- Choice of two models for one or two interchangeable blocks
- Temperature stability and uniformity at 37 °C is ±1,0 °C within the block and across different blocks
- Over-temperature thermal fuse

Delivery information: Supplied with block extraction tool. Blocks must be ordered separately.

Type	Blocks	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
QBA1, UK-plug	1	RT* +5...100	±1,0	0,15	200×230×100	2,5	1	**460-0071**
QBA2, UK-plug	2	RT* +5...100	±1,0	0,3	200×280×100	3	1	**460-0073**

* RT = Ambient
Note: Temp. stability value shown above is at 37 °C.

Digital block heater, BTD
Grant

Compact digital block heater with fixed circular block. Unit features digital control, two line display allowing simple and accurate setting of temperature and time, plus display of current status while in operation. The aluminium block is housed in durable and easy to clean, chemically resistant plastic. Unit has a 0,1 °C display resolution.

- Operating temperature range is ambient +5 to 100 °C
- Block accommodates up to 49 samples simultaneously: 24×1,5/2,0 ml, 15×0,5 ml and 10×0,2 ml microtubes
- Timer with audible alarm, for operation from 1 min to 96 h
- Powerful heater for fast heat up, 25 to 100 °C in just 15 min
- Over-temperature thermal fuse

Temperature uniformity at 37 °C is ±0,1 °C.

Type	Blocks	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
BTD, UK-plug	1	RT* +5...100	±0,1	0,2	210×230×110	2,5	1	**460-0069**

* RT = Ambient
Note: Temp. stability value shown above is at 37 °C.

Digital block heaters, QBD and QBH
Grant

Compact digital block heaters with choice of models for 1 or 2 or 4 interchangeable blocks. Units feature an LED temperature display, easy to use interactive user interface for fast and accurate set up. Variable high and low temperature alarms can be set to within 0,5 °C of the set point. Heaters are made from cool wall aluminium and chemically resistant plastic, have a low profile, a sloping fascia for ease of use, off-set adjustment for high accuracy operating temperatures and 0,1 °C display resolution.

- QBD models have operating range of ambient +5 to 130 °C, QBH has an upper temperature of 200 °C
- Function timer and reaction timer with audible alarm, for operation from 1 min to 72 h
- Two-point user recalibration of internal and external probes is possible
- Temperature stability and uniformity at 37 °C is ±0,1 °C within the block and ±0,2 °C across different blocks
- Over-temperature thermal fuse

Delivery information: Supplied with block extraction tool. External PT1000 probe enabling in-sample or in-block temperature control is available as an accessory. Blocks must be ordered separately.

Type	Blocks	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
QBD1, UK-plug	1	RT* +5...130	±0,1	0,15	200×230×100	2,5	1	**460-0075**
QBD2, UK-plug	2	RT* +5...130	±0,1	0,3	200×280×100	3	1	**460-0077**
QBD4, UK-plug	4	RT* +5...130	±0,1	0,6	200×380×100	4	1	**460-0079**
QBH2, UK-plug	2	RT* +5...200	±0,1	0,3	200×280×100	3	1	**460-0081**

* RT = Ambient
Note: Temp. stability value shown above is at 37 °C.

Interchangeable blocks for Grant block heaters QBA, QBD and QBH

Grant

Grant blocks have a depth of 63 mm, ensuring precise temperature control for test tube applications.

Single block W×D×H (mm): 140×50×63

Double-size interchangeable blocks for QBA2, QBD2 and QBH2 only

Particularly useful in molecular biology and biotechnology fields.

- Suitable for 0,2 ml tubes, strips or microplates
- Can be used with standard/high temperature 96-well microtitre plates

QDP-H blocks (460-0085) for 0,2 ml microplates, strips or individual tubes have 96 holes in microplate configuration. The block accommodates one 96-well plate, 8×12-well or 12×8-well strips or up to 96 individual capped tubes. A snug fit is ensured in the precision drilled wells. Uniformity is ±0,3 °C within tubes across the block.

QDP-FL universal block (460-0084) for standard 96-well plate accommodates the most commonly used types of standard or high temperature plates and cell culture plates. Supplied with hinged lid. Uniformity is ±0,5 °C between the wells.

Delivery information: Supplied with block extraction tool.

Description	For	No. of holes	Depth (mm)	W×D×H (mm)	Pk	Cat. No.
Undrilled block	-	-	-	140×50×63	1	**460-8510**
Single block	10 mm Ø tubes	24	50	140×50×63	1	**460-8511**
Single block	12 mm Ø tubes	24	50	140×50×63	1	**460-8512**
Single block	13 mm Ø tubes	12	50	140×50×63	1	**460-8211**
Single block	16 mm Ø tubes	12	50	140×50×63	1	**460-8513**
Single block	15 ml Falcon tubes	10	75	140×50×63	1	**460-0182**
Single block	18 mm Ø tubes	12	50	140×50×63	1	**460-8514**
Single block	24 mm Ø tubes and universal bottles	5	50	140×50×63	1	**460-8515**
Single block	50 ml tubes	4	50	140×50×63	1	**460-8212**
Single block	0,5 ml tubes	24	30	140×50×63	1	**460-8516**
Single block	1,5 ml tubes	24	35	140×50×63	1	**460-8517**
Single block	2,0 ml tubes	24	35	140×50×63	1	**460-8123**
Single block	0,2 ml tubes	56	14	140×50×63	1	**460-8124**
Double block	Microplates*	-	-	140×100×75	1	**460-0084**
Double block	0,2 ml PCR tubes, strips or plates*	96	14	140×100×75	1	**460-0085**

* These alternative double-size blocks are available for use with models QBD2, QBD4, QBH2 and QBA2 only.

IP20

3 year warranty

Block heaters, digital, SBH:D

Stuart

Digital block heaters for precise heating of test tubes, microcentrifuge tubes, cuvettes and microtitre plates. Units provide uniform and stable temperatures and have an easy to read LED display which shows set and actual temperature.

- "Hot" warning light will flash whenever the temperature of the blocks is above 50 °C
- Units heat up to 100 °C in less than 12 min
- BioCote® antimicrobial protection
- Temperature stability and uniformity at 37 °C is ±0,1 °C within the block and across different blocks
- Both three-block models are compatible with the Stuart sample concentrator

IP protection class according to DIN EN 60529: IP 20

Delivery information: Supplied with block extraction tool. Blocks must be ordered separately.

Type	Blocks	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
SBH130D/3	3	RT* +8...130	±0,1	0,45	310×280×115	3,2	1	**444-1610**
SBH130D	2	RT* +8...130	±0,1	0,3	235×280×115	2,3	1	**460-0004**
SBH200D/3	3	RT* +8...200	±0,1	0,45	310×280×115	3,2	1	**460-0007**
SBH200D	2	RT* +8...200	±0,1	0,3	235×280×115	2,3	1	**460-0006**

*RT = Ambient

Block heaters, digital, dual control, SBH:DC
Stuart

Digital block heaters accommodating two blocks with independent temperature control, allowing them to be set at different temperatures. Ideal for precise heating of test tubes, microcentrifuge tubes, cuvettes and microtitre plates, or for applications where samples have to be transferred between two temperatures very quickly. Units provide uniform and stable temperatures and have an easy to read LED display which shows set and actual temperature.

- Two blocks with independent temperature control
- "Hot" warning light will flash whenever the temperature of the blocks is above 50 °C
- Units heat up to 100 °C in less than 12 min
- BioCote® antimicrobial protection
- Temperature stability and uniformity at 37 °C is ±0,1 °C within the block and across different blocks

IP protection class according to DIN EN 60529: IP 20

Delivery information: Supplied with block extraction tool. Blocks must be ordered separately.

Type	Blocks	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
SBH130DC	2	RT* +8...130	±0,1	0,3	310×280×115	2,9	1	**460-0005**
SBH200DC	2	50...200	±0,1	0,3	310×280×115	2,9	1	**444-1611**

*RT = Ambient

Aluminium blocks for Stuart SBH block heaters
Stuart

Made from anodised aluminium, all blocks except 460-0017 and 460-0014 have W×D×H of 75×95×50 mm, so they can be used in any combination.

- Blocks have a separate hole to accommodate a thermometer if required

Description	For	No. of holes	Depth (mm)	W×D×H (mm)	Pk	Cat. No.
Undrilled block	-	-	-	75×95×50	1	**460-2120**
Single block	10 mm Ø tubes	20	47	75×95×50	1	**460-2110**
Single block	12 mm Ø tubes	20	33	75×95×50	1	**460-0008**
Single block	12 mm Ø tubes	20	47	75×95×50	1	**460-2112**
Single block	13 mm Ø tubes	20	47	75×95×50	1	**453-0018**
Single block	16 mm Ø tubes	12	47	75×95×50	1	**460-2116**
Single block	19 mm Ø tubes	8	47	75×95×50	1	**460-2119**
Single block	2 ml tubes	20	33	75×95×50	1	**460-2122**
Single block	Glass and disposable cuvettes	-	-	75×95×50	1	**460-2129**
Single block	1,5 ml tubes	20	14	75×95×50	1	**460-2121**
Single block	25 mm Ø tubes	6	47	75×95×50	1	**460-0009**
Single block	28 mm Ø tubes	6	47	75×95×50	1	**460-0010**
Single block	30 mm Ø tubes	4	47	75×95×50	1	**460-0012**
Single block	0,5 ml tubes	30	-	75×95×50	1	**460-0011**
Single block	33 mm Ø tubes	4	47	75×95×50	1	**460-0013**
Double block	384-well plate	-	-	150×95×61	1	**460-0014**
Single block	0,2 ml tubes	48	-	75×95×50	1	**460-0015**
Single block	0,2 ml PCR strip	10×8	-	75×95×50	1	**460-0016**
Double block	96-well plate	-	-	150×95×61	1	**460-0017**

Digital dry block heaters
IKA

Digital block heaters which hold from one up to four aluminum blocks, provide precise temperature control in small vessels. The PT1000 temperature sensor allows temperature control directly in the sample vessel. It is used with PCR tubes, PCR strips, Greiner tubes, microplates and cuvettes. The block heaters are ideal for melting and boiling point determination, enzyme reactions, incubation and activation of cultures, immunoassays, DNA denaturation, culture media tests, coagulation tests, blood/urea nitrogen determinations and *in situ* hybridisations.

- Stepless adjustable temperature from ambient up to 120 °C
- Timer: Countdown, adjustable from 1 min to 99h 59 min
- Counter: Shows heating time
- Highly versatile with a large number of aluminium alloy blocks
- Fixed safety circuit and error code display
- Acoustic signal at end of test

Delivery information: Supplied with PT1000 temperature sensor, but without heating blocks, blocks must be ordered separately.

Blocks	Temp. range (°C)	Temp. stability (°C)	Heating capacity (W)	W×D×H (mm)	Weight	Pk	Cat. No.
1	RT*...120	±0,2	155	151×228×73	1	1	**460-1004**
2	RT*...120	±0,2	250	151×304×73	1,3	1	**460-1005**
3	RT*...120	±0,2	330	151×380×73	1,6	1	**460-1006**
4	RT*...120	±0,2	412	151×456×73	2	1	**460-1007**

Description	For	Pk	Cat. No.
Blocks			
Single block, 30×7,9 mm Ø holes	PCR tubes, 0,5	1	**460-1008**
Single block, 20×11,5 mm Ø holes	Eppendorf Tubes®, 1,5	1	**460-1009**
Single block, 20×11,1 mm Ø holes	Microtubes 1,5	1	**460-1010**
Single block, 20×11,5 mm Ø holes	VWR/Eppendorf Tubes®, 2,0	1	**460-1011**
Single block, 20×10,9 mm Ø holes	Corning tubes, 2,0	1	**460-1012**
Single block, 12×17,1 mm Ø holes	Conical tubes, 15	1	**460-1013**
Single block, 5×29 mm Ø holes	Conical tubes, 50	1	**460-1014**
Single block, combination: 6/5/3×6/12/13/25 mm Ø holes	Test tubes, 6 ml/12 - 13 ml/25	1	**460-1015**
Single block, combination: 4/3/2×1,5/15/50 ml	Centrifuge tubes, 1,5 ml/15 ml/50	1	**460-1016**
Single block, combination: 6/10/5×0,5/1,5/2 ml	Microtubes, 0,5 ml/1,5 ml/2,0	1	**460-1017**
Single block, 30×8,3 mm Ø holes	Tubes, 6 mm, with round bottom	1	**460-1018**
Single block, 24×10,7 mm Ø holes	Tubes, 10 mm, with round bottom	1	**460-1019**
Single block, 16×13,9 mm Ø holes	Tubes, 12 - 13 mm, with round bottom	1	**460-1020**
Single block, 20×13,9 mm Ø holes	Tubes, 12 - 13 mm, with round bottom	1	**460-1021**
Single block, 12×17,5 mm Ø holes	Tubes, 15 - 16 mm, with round bottom	1	**460-1022**
Single block, 8×21 mm Ø holes	Tubes, 20 mm, with round bottom	1	**460-1023**
Single block, 6×26,2 mm Ø holes	Tubes, 25 mm, with round bottom	1	**460-1024**
Single block, 4×35 mm Ø holes	Tubes, 35 mm, with round bottom	1	**460-1025**
Single block, 12×19,1 mm Ø holes	Tubes, 17 - 18 mm, with round bottom	1	**460-1026**
Single block, 20×12,7 mm Ø holes	Vials, 12 mm	1	**460-1027**
Single block, 20×15,8 mm Ø holes	Vials, 15 mm	1	**460-1028**
Single block, 15×16,4 mm Ø holes	Vials, 16 mm	1	**460-1035**
Single block, 12×17,8 mm Ø holes	Vials, 17 mm	1	**460-1029**
Single block, 12×19,7 mm Ø holes	Vials, 19 mm	1	**460-1030**
Single block, 9×21,7 mm Ø holes	Vials, 21 mm	1	**460-1031**
Single block, 8×23,8 mm Ø holes	Vials, 23 mm	1	**460-1032**
Single block, 8×25,8 mm Ø holes	Vials, 25 mm	1	**460-1033**
Single block, 6×28,8 mm Ø holes	Vials, 28 mm	1	**460-1034**
Single block, 80× 6,4 mm Ø strips	PCR tube strips (10×8 strips)	1	**460-1036**
Single block, 64× 6,4 mm Ø holes	PCR tubes (64)	1	**460-1037**
Double block	96-well PCR plate (1)	1	**460-1038**
Single block, 2×6 cuvettes 12,5 mm Ø	Cuvettes	1	**460-1039**
Double block	96- or 384-well plate (1)	1	**460-1040**
Sensors			
Spare stainless steel PT1000.60 temperature sensor, length 230 mm, Ø 3 mm		1	**442-0584**
Coated PT1000.90 temperature sensor, length 230 mm, Ø 3 mm		1	**460-1041**

* RT = Ambient

Dri-Block® heaters, analogue DB range

DB-2A

DB-3A

DB-3D

The Techne® Dri-Blocks® are particularly suitable for microbiology and clinical laboratories for incubation, boiling, inactivation, wet ashing, sample concentration and enzyme analysis. There is a choice of temperature ranges; 25 to 100 °C or 25 to 200 °C. These models have a rotary knob for temperature setting (but no digital display).

- Wide range of interchangeable blocks to accommodate tubes, microcentrifuge tubes and 96-well plates
- Very accurate temperature control
- Temperature stability at 40 °C is ±0,05 or ±0,1 °C, maximum temperature variation between identical blocks is ±0,2 °C
- Rapid heat up rate: 8 minutes from 30 to 37 °C

IP protection class according to DIN EN 60529: IP 31

Delivery information: Supplied with block extraction tool. Blocks must be ordered separately.

Type	Blocks	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
DB-2A, analogue	2	+25...+100	±0,10	0,40	202×260×105	4	1	**460-0054**
DB-3A, analogue	3	+25...+200	±0,15	0,65	279×260×105	6	1	**460-0058**
DB-3	3	+25...+100	±0,10	0,65	202×260×105	6	1	**460-0057**

Description	For	No. of holes	Depth (mm)	Pk	Cat. No.
Anodised aluminium blocks					
Undrilled block	-	-	-	1	**460-0038**
Interchangeable block	6 mm Ø tubes	30	48	1	**460-0039**
Interchangeable block	10 mm Ø tubes	20	48	1	**460-0040**
Interchangeable block	12 mm Ø tubes	20	48	1	**460-0041**
Interchangeable block	13 mm Ø tubes	20	48	1	**460-0042**
Interchangeable block	15 mm Ø tubes	12	48	1	**460-0043**
Interchangeable block	16 mm Ø tubes	12	48	1	**460-0044**
Interchangeable block	19 mm Ø tubes	8	48	1	**460-0045**
Interchangeable block	25 mm Ø tubes	6	48	1	**460-0046**
Interchangeable block	26 mm Ø tubes	6	48	1	**460-0047**
Interchangeable block	1,5 ml microcentrifuge tubes	20	35	1	**460-0048**
Interchangeable block	0,5 ml microcentrifuge tubes	30	27	1	**460-0049**
Interchangeable block	0,2 ml microtubes	72	13,8	1	**460-0241**
Interchangeable block	0,2 ml microtubes	96	48	1	**460-0050**
Interchangeable block	Block for 96×0,2 ml microtubes	96	17,3	1	**460-0146**

Note: Temp. stability value shown above is at 100 °C.

Dri-Block® heaters, digital DB range

These Techne® compact Dri-Block® heaters provide precision temperature control for general heating and incubating applications as well as sensitive analytical procedures in microbiology and clinical laboratories. They are designed for precise heating of test-tubes, microcentrifuge tubes, cuvettes and microtitre plates and can hold any combination of aluminium insert blocks, depending on the model. The DB100/2TC Dri-Block® heater accommodates two aluminium insert blocks

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and features independent digital temperature controls. Each block can be set at different temperatures between 0 and 100 °C (although a maximum temperature differential of 70 °C between blocks is recommended). This flexibility is ideal for multiple users or for applications where samples have to be transferred between two temperatures very quickly. Dri-Block® heaters cover the temperature range from ambient +5 to 100 °C or 200 °C (depending on model). Independent indicator lights show mains power and heater action, units can be set to display either °C or °F. The outer casing is vented and cool to the touch, even at maximum operating temperature and these compact units have flat tops - enabling several Dri-Block® heaters to be stacked for easy storage.

- Bright orange 5-digit LED digital display for fast and accurate setting of temperature and timer with alarm (timer is adjustable from 1 min to 100 h, in 1 min increments)
- Wide range of interchangeable blocks to accommodate test tubes, microcentrifuge tubes, cuvettes, microtitre and PCR plates
- Very high temperature precision (sample uniformity) of <±0,1 °C @ 37 °C and high temperature accuracy (set-point temperature) of <±1 °C @ 37 °C
- Maximum temperature variation between identical blocks of ±0,2 °C @ 37 °C
- Rapid heat up rate from 25-100 °C of between 7 and 9 minutes for models with 2, 3 or 4 interchangeable blocks
- Over-temperature cut-out in the event of a fault; power is cut from the heater when temperature reaches 192 °C (DB100 models) and 240 °C (DB200 models)

IP protection Class according to DIN EN 60529: IP 31

Delivery information: Supplied with block extraction tool. Blocks must be ordered separately.

Type	Blocks	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
DB100/2	2	RT* +5...100	≤±0,1 °C at 37 °C ≤±0,15 °C at 100	0,3	202×260×105	5	1	**460-0242**
DB100/3	3	RT* +5...100	≤±0,1 °C at 37 °C ≤±0,15 °C at 100	0,45	279×260×105	6	1	**460-0244**
DB100/4	4	RT* +5...100	≤±0,1 °C at 37 °C ≤±0,15 °C at 100	0,6	356×260×105	7	1	**460-0245**
DB200/2	2	RT* +5...200	≤±0,1 °C at 37 °C ≤±0,15 °C at 100	0,3	202×260×105	5	1	**460-0246**
DB200/3	3	RT* +5...200	≤±0,1 °C at 37 °C ≤±0,15 °C at 100	0,45	279×260×105	6	1	**460-0059**

Type	Blocks	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
Dri-Block with independent digital temperature controls								
DB 100/2TC, with dual digital control of two blocks	2	RT*+5...100	≤±0,1 °C at 37 °C ≤±0,15 °C at 100	0,3	279×260×105	5	1	**460-0243**

* RT = Ambient

Multiposition stirring block heaters, Drybath 15 - 100 and 15 - 250
2mag

Ideal for viscosity measurements, testing and quality control. The units have a clear digital display for settings of stirrer speed, stirrer power and temperature of the integrated heater. The SoftStart procedure ensures reliable centering and safe acceleration of the stirring bar. The heating block is made of aluminium alloy, PTFE coated for chemical resistance and easy cleaning.

- Maintenance- and wear-free inductive drive
- Speed range of 100 to 2000 rpm
- Stirrer has ten step power settings
- 100% synchronized, jerk-free stirring
- Independent over-temperature protection inside the heating plate

15 - 100

- Suitable for 100 ml flasks and 150 ml beaker glasses
- 15 holes with Ø 57,5 mm and 48 mm depth
- 65 mm between stirring points

15 - 250

- Suitable for 250 ml flasks and 400 ml beaker glasses
- 15 holes with Ø 71,5 mm and 78 mm depth
- 84 mm between stirring points

Delivery information: Supplied with 2mag heatMIXcontrol control unit and adjustable over-temperature limiter for the additional protection of the heating controller.

Type	Blocks	Temp. range (°C)	Heating capacity (W)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
Drybath 15 - 100, UK-plug	1	Max. 200	40	280×430×120	27	1	**460-0188**
Drybath 15 - 250, UK-plug	1	Max. 200	40	335×515×150	35	1	**460-0191**

Description	Pk	Cat. No.
Accessories		
Extension for control unit SafeControl, temperature sensor PT100 for direct control of media temperature	1	**442-0831**
Asteroid 40 stirring bar, triangular, concave, PTFE, Ø 28 × 40 mm	1	**442-0815**

Thermoshaker, Thermal Shake Touch

The Thermal Shake Touch is designed for applications that require consistent and precise results. With heating and shaking capabilities, the low profile unit uses interchangeable blocks to accommodate a wide variety of tubes and microplates. The LCD touch screen enables faster setting of temperature, speed and time, which can all be viewed at once. Display features on-screen help topics with operational tips. Touch screen is compatible with rubber gloves used in labs. Program control capabilities allow user-programmable operation for automated use and memory for five separate, 5-step programs. Adjustable temperature ramp rate feature separately defines the heating and cooling rates in increments of 0,5 °C/min. Single point calibration mode for maximum temperature accuracy, the single point calibration procedure allows the user to calibrate up to 6 different defined temperatures. Constructed from a high quality heat and chemically resistant polymer so the housing remains cool to the touch throughout normal operating temperatures. Maximum temperature limiting function ensures the temperature will not exceed user-defined limits allowing control of temperature-sensitive samples. A hot top warning illuminates when the temperature reaches 40 °C and remains on until the unit is cooled below 40 °C. The unit's enhanced electronics and temperature sensor provide accurate, dependable temperature settings across the operating range from 5 to 35 °C, (maximum 80% relative humidity, non-condensing). Applications include cell cultures, DNA, RNA, and protein studies.

- Easy to use 109 mm colour LCD touch screen allows the user to save and visibly track progress through the live status bar for five user-defined programs, each with five individual steps
- Suitable for rapid heating, cooling and high speed shaking and a pulse mode feature, ideal for quick vortex applications
- Timer with audible alarm, 1 min to 99 h, 59 min, heat function will automatically shut off if the unit recognises an internal issue
- USB port can transfer information to a flash drive for data logging, programme storage and software updates

Delivery information: Supplied with 1,5 ml block (460-0210), a rack and a cover, additional blocks must be ordered separately. Note that Eppendorf Thermomixer R® blocks are compatible with the VWR Thermal Shake Touch. Model with NIST traceable certificate is also available, this includes a 3 point NIST traceable calibration. The traceable certificate includes actual calibration measurement data and uncertainty. The calibration laboratory is ISO/IEC 17025 compliant.

Model	Thermal Shake Touch
Heating speed (°C/min)	5
Orbit (mm)	3
Speed accuracy (%)	±2
Speed range (min^{-1})	300 - 3000
Temperature accuracy (°C)	±1 (between 20 and 45 °C) ±2 (above 45 °C)
Temperature control range (°C)	RT* +4...100
Weight (kg)	7,4
W×D×H (mm)	248×260×132

Description	Pk	Cat. No.
Thermal Shake Touch, UK-plug	1	**460-0204**
Thermal Shake Touch, NIST certificate, UK-plug	1	**460-0205**

Description	Well size (mm)	For	No. of holes	Depth (mm)	Pk	Cat. No.
Interchangeable blocks for Thermal Shake Touch and Cooling Thermal Shake Touch						
Interchangeable tube block	Ø 7,9	30×0,5 ml tubes**	30	25,7	1	**460-0209**
Interchangeable tube block	Ø 11,1	24×1,5 ml tubes**	24	33,5	1	**460-0210**
Interchangeable tube block	Ø 11,5	24×2,0 ml tubes**	24	33,5	1	**460-0211**
Interchangeable tube block	Ø 12,0	24×5 - 7 ml tubes	24	34,3	1	**460-0212**
Interchangeable tube block	Ø 12,6	24×2,0 ml cryo tubes	24	34,0	1	**460-0213**
Interchangeable tube block	Ø 17,3	9×15 ml conical tubes	9	102	1	**460-0214**
Interchangeable tube block	Ø 30,0	4×50 ml conical tubes	4	98,8	1	**460-0215**

*RT = Ambient
** Microtube blocks include a removable rack and cover.

Thermoshaker, Cooling Thermal Shake Touch

The Cooling Thermal Shake Touch is designed for applications that require consistent and precise results. With heating, cooling and shaking capabilities, the low profile unit uses interchangeable blocks to accommodate a wide variety of tubes and microplates. The LCD touch screen enables faster setting of temperature, speed and time, which can all be viewed at once. Display features on-screen help topics with operational tips. Touch screen is compatible with rubber gloves used in labs. Program control capabilities allow user-programmable operation for automated use and memory for five separate, 5-step programs. Adjustable temperature ramp rate feature separately defines the heating and cooling rates in increments of 0,5 °C/min. Single point calibration mode for maximum temperature accuracy, the single point calibration procedure allows the user to calibrate up to 6 different defined temperatures. Constructed from a high quality heat and chemical resistant polymer so the housing remains cool to the touch throughout normal operating temperatures. Maximum temperature limiting function ensures the temperature will not exceed user-defined limits allowing control of temperature-sensitive samples. A hot top warning illuminates when the temperature reaches 40 °C and remains on until the unit is cooled below 40 °C. The unit's enhanced electronics and dual temperature sensors provide accurate, dependable temperature settings across the operating range from 5 to 35 °C, (maximum 80% relative humidity, non-condensing). Applications include cell cultures, DNA, RNA, hybridisation, and protein studies.

- Easy to use 109 mm colour LCD touch screen allows the user to save and visibly track progress through the live status bar for five user-defined programs, each with five individual steps
- Suitable for rapid heating, cooling and high speed shaking and a pulse mode feature, ideal for quick vortex applications
- Timer with audible alarm, 1 min to 99 h, 59 min, heat function will automatically shut off if the unit recognises an internal issue
- USB port can transfer information to a flash drive for data logging, programme storage and software updates

Ordering information: Supplied without blocks, blocks must be ordered separately. Note that Eppendorf Thermomixer R® blocks are compatible with the VWR Cooling Thermal Shake Touch. Model with NIST traceable certificate is also available, this includes a 3 point NIST traceable calibration. The traceable certificate includes actual calibration measurement data and uncertainty. The calibration laboratory is ISO/IEC 17025 compliant.

Model	Cooling Thermal Shake Touch
Cooling rate (°C/min)	Above ambient: 2 - 3 Below ambient: 0,5 - 1,0
Heating speed (°C/min)	5
Orbit (mm)	3
Speed accuracy (%)	±2
Speed range (min^{-1})	300 - 3000
Temperature accuracy (°C)	±0,5 (between 20 and 45 °C) ±2 (below 20 °C and above ambient)
Temperature control range (°C)	From 17 below ambient to 100
Weight	7,4
W×D×H (mm)	248×260×132

Description	Pk	Cat. No.
Cooling Thermal Shake Touch, UK-plug	1	**460-0198**
Cooling Thermal Shake Touch, NIST certificate, UK-plug	1	**460-0199**

Description	Well size (mm)	For	Depth (mm)	Pk	Cat. No.
Interchangeable blocks for Thermal Shake Touch and Cooling Thermal Shake Touch					
Interchangeable tube block	Ø 7,9	30×0,5 ml tubes**	25,7	1	**460-0209**
Interchangeable tube block	Ø 11,1	24×1,5 ml tubes**	33,5	1	**460-0210**
Interchangeable tube block	Ø 11,5	24×2,0 ml tubes**	33,5	1	**460-0211**
Interchangeable tube block	Ø 12,0	24×5 - 7 ml tubes	34,3	1	**460-0212**
Interchangeable tube block	Ø 12,6	24×2,0 ml cryo tubes	34,0	1	**460-0213**
Interchangeable tube block	Ø 17,3	9×15 ml conical tubes	102	1	**460-0214**
Interchangeable tube block	Ø 30,0	4×50 ml conical tubes	98,8	1	**460-0215**

** Microtube blocks include a removable rack and cover.

Dry block thermostat for PCR strips or 0,2 ml tubes, DB-4S
Grant

An aluminium dry block heater designed to maintain samples in PCR strips or 0,2 ml microtubes at a constant temperature. The ultra compact unit is easy to use, provides excellent stability and uniformity, has a 2-line LCD screen which displays the actual and set values for time and temperature.

- Holds 32×0,2 ml microtubes or 4× 0,2 ml strips
- Operating temperature range is ambient + 5 to 100 °C
- Timer with audible alarm, for 1 min to 96 h
- Temperature stability and uniformity at 37 °C are ±0,1 °C within the strip and across different strips
- Low voltage slim cord allows use in workstations

Type	Temp. range (°C)	Temp. stability (°C)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
DB-4S, UK-plug	RT* +5...100	±0,1	140×120×70	0,7	1	**460-0192**

* RT = Ambient

Dry block thermostat for cuvettes, DB-10C
Grant

Dry block thermostat which holds 10 cuvettes (each with 10 mm optical pathway), maintains constant temperature of the samples to be measured. The integral aluminium block provides excellent stability and uniformity. The easy to use unit has a 2-line LCD display which shows both set and actual values for temperature and time. The DB-10C is ideal for preparation of photometric analysis and diagnostic methods (enzyme reaction intensity and metabolite concentration).

- Operating temperature range is ambient + 5 to 42 °C
- Dry temperature control system maintains clean and aerosol free environment
- Temperature stability and uniformity at 37 °C are ±0,1 and ±0,3 °C
- Timer with audible alarm, 1 to 96 h

Delivery information: Supplied with block for 10 cuvettes.

Type	Blocks	Temp. range (°C)	Temp. stability	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
DB-10C, UK-plug	1	RT* +5...42	±0,1	140×120×70	0,9	1	**460-0194**

* RT = Ambient

Digital block heater/coolers, PCH-1, PCH-2 and PCH-3
Grant

The Grant bio block heater/coolers are compact, flexible and easy to use – they are ideal for the rapid heating and cooling of microtubes, and a very effective tool for DNA sample preparation for denaturing and electrophoresis. There is a choice of three models: The PCH-1 has a capacity of up to 32 microtubes in a combination of two sizes (12×1,5 ml plus 20×0,5 ml), whereas the PCH-2 can accommodate up to 20 microtubes of one size (1,5 ml), and the PCH-3 can hold up to 20×2 ml microtubes.

- Powerful Peltier cooler for rapid heating and cooling
- Temperature stability is ±0,1 °C
- 2-line LCD indicates both set and actual values for temperature and time
- Reaction timer with audible alarm for operation from 1 min to 96 h
- Dry temperature control system maintains clean and aerosol-free environment

Delivery information: Supplied with block and block cover.

Model	PCH-1	PCH-2	PCH-3
Cooling rate, 100 °C to -10 (°C/min)	28		

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Cooling rate, RT to -10 °C (°C/min)	21
Heat-up time, ambient to 37 °C (min)	3
Heating rate, ambient to 100 °C (°C/min)	16
Setting resolution (°C)	0,1
Temperature setting (°C)	-10 to 100
Weight (kg)	3,6
W×D×H (mm)	240×260×165

Description	Pk	Cat. No.
PCH-1 block heater/cooler for 12×1,5 ml and 20×0,5 ml microtubes, UK-plug	1	**460-0140**
PCH-2 block heater/cooler for 20×1,5 ml microtubes, UK-plug	1	**460-0141**
PCH-3 block heater/cooler for 20×2,0 ml microtubes, UK-plug	1	**460-0218**

Thermal mixer, Eppendorf ThermoStat™ C

Eppendorf

ThermoStat™ C is ideal for accurately setting and maintaining temperatures, Peltier technology provides precise temperature control. A digital display enables simple and accurate setting and viewing of parameters. Temperature keys give quick access to five important experimental temperatures (4, 16, 37, 56 and 95 °C). Up to 15 user defined programs can also be saved. Suitable for cooling buffers and samples at low temperatures, preheating media, biochemical reactions at low temperatures, cDNA synthesis, denaturation of DNA, RNA and proteins and immunoprecipitation.

- Precise temperature control from -10 to 110 °C (depending on SmartBlocks™ used)
- Temperature stability and uniformity at 20 - 45 °C is ±0,5 °C across all positions on all SmartBlocks™
- Maximum heating rate: 5,5 °C/min and maximum cooling rate: 5 °C/min between 110 °C and ambient
- Timer for operation from 15 s to 99.30 h or continuous
- Prevent condensation on tube lids and walls, and improve temperature homogeneity with the new ThermoTop®
- SmartBlocks™ are easy to exchange due to QuickRelease™ system

Ordering information: Supplied without blocks, a wide variety of SmartBlocks™ are available which are suitable for use with all common vessel and plate formats. Can be used with ThermoTop® cover.

Model	ThermoStat™ C
Cooling speed (°C/min)	5 between 110 °C and ambient
Heating speed (°C/min)	5,5
Incubating accuracy (°C)	±0,5 at 25 - 45 °C
Temperature control range (°C)	30 °C below ambient to 110
Temperature setting (°C)	from -10 to +110
Weight (kg)	4,3
W×D×H (mm)	206×304×131

Description	Pk	Cat. No.
ThermoStat™ C, UK-plug	1	**460-1003**

Description	Pk	Cat. No.
Accessories		
ThermoTop®, with condens.protect® technology	1	**460-0220**
Thermoblock, SmartBlocks™		
SmartBlock™ 0,5 ml, thermoblock for 24×0,5 ml reaction vessels*	1	**460-0227**
SmartBlock™ 1,5 ml, thermoblock for 24×1,5 ml reaction vessels*	1	**460-0222**
SmartBlock™ 2,0 ml, thermoblock for 24×2,0 ml reaction vessels*	1	**460-0228**
SmartBlock™ 5,0 ml, thermoblock for 8×5,0 ml Eppendorf Tubes®	1	**460-0221**
SmartBlock™ 15 ml, thermoblock for 8×15 ml conical tubes	1	**460-0229**
SmartBlock™ 50 ml, thermoblock for 4×50 ml conical tubes	1	**460-0230**
SmartBlock™ 12 mm, thermoblock for 24×11-11,9 mm Ø reaction vessels, height 30 mm -76 mm	1	**460-0232**
SmartBlock™ cryo, thermoblock for 24×1,5 ml cryo tubes, max. Ø 12,5 mm, all base designs	1	**460-0231**
SmartBlock™ plates, thermoblock for microplates and deepwell plates, includes lid*	1	**460-0233**
SmartBlock™ PCR 96, thermoblock for 96-well PCR plates, includes lid*	1	**460-0234**
SmartBlock™ PCR 384, thermoblock for 384-well PCR plates, includes lid*	1	**460-0235**

* Denotes SmartBlocks which can be used with lid and ThermoTop. Note the maximum mixing frequency when using the lid with plates is 2000 min^{-1}.
** For deepwell plate, the maximum mixing frequency is 2000 rpm (level sensor).

Sample concentrator, SBHCONC/1

Stuart

A fast and convenient way of concentrating multiple samples in a block heater at once, it utilises a simple gas delivery system where gas is passed over the sample surface via stainless steel or PTFE coated needles. The gas delivery needles are inserted into a silicon membrane, in virtually any configuration. The height of the gas reservoir is located on an adjustable stand for accurate height control, making the sample concentrator compatible with any combination of block heater sample vessels.

- Compact unit which fits into a fume cupboard easily
- Sample concentrator and block heater together provide fast, efficient evaporation
- Gas delivery needles are available in choice of lengths, either 76 or 127 mm to suit various tube heights
- BioCote® antimicrobial protection

IP protection class according to DIN EN 60529: IP 32

Ordering information: The Stuart sample concentrator is only compatible with the SBH130D/3 and SBH200D/3 block heaters. Needles, block heater and blocks must be ordered separately.

Description	Pk	Cat. No.
SBHCONC/1 sample concentrator	1	**444-1626**

Description	Pk	Cat. No.
Accessories		
Needles, 76 mm long	100	**460-0051**
Needles, 127 mm long, PTFE coated	100	**460-0061**
Needles, 127 mm long	100	**460-0052**
Needles, 76 mm long, PTFE coated	100	**460-0062**

Sample concentrator, FSC

Gas is passed via the unique gas chamber through hypodermic needles on to the surface of the test solution. This unit from Techne® provides accurate and reproducible control over the positioning of the needles and the standard 76 mm length needles can be replaced with optional 127 mm needles where large samples require evaporation in long tubes. These are available separately. PTFE needles are available for corrosive solutions. Suitable for use with most inert gases.

- Ideal sample preparation for analytical techniques
- Samples heated quickly to assist evaporation
- Compact enough for convenient use in a fume cupboard

IP Protection Class according to DIN EN 60529: IP 21

Ordering information: 460-0060, gas chamber and stand only. Needles, Techne® DB range block heater and blocks must be ordered separately. Overall size (W×D×H) 240×295×530 mm. Note: gas supply not to exceed 2 psi.

Description	Pk	Cat. No.
Sample concentrator, FSC	1	**460-0060**

Description	Pk	Cat. No.
Accessories		
Needles, 76 mm long	100	**460-0051**
Needles, 127 mm long, PTFE coated	100	**460-0061**
Needles, 127 mm long	100	**460-0052**
Needles, 76 mm long, PTFE coated	100	**460-0062**

Immersion thermostat, MX

The MX immersion thermostat is user friendly with three control buttons and on-screen prompts. The convenient slide control enables the flow rate to be easily adjusted, and it can clamp securely to straight or curved tank walls.

- Large EasyView™ LCD display with alarm or fault icons and English prompts and menus
- User-adjustable high and low temperature limits and low liquid level alarms
- Single speed pressure pump
- Integral pump and heater coil protection
- Single point calibration

Complies with DIN 12876-1, Safety class I

Maximum pump capacities:
10,6 l/min, 100 mbar

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
MX	RT*...135	±0,07	1,1	109×97×358	4,5	1	**462-0205**

* RT = Ambient

Immersion thermostats
Julabo

ED

ME

SE-Z

Range of heating immersion thermostats with wide range of functionality and features for your applications.

- Mechanically adjustable pressure pump
- Over-temperature and low liquid level protection to avoid any potential damage
- Compact units suitable for use with virtually any tanks up to 50 litres and 26 mm wall thickness
- Wetted parts and housing made of high quality stainless steel or plastic

ED model

- Temperature range of 20 to 100 °C
- LED temperature display for actual and set point values
- Keypad for set point input
- Adjustable high temperature cut-off/low liquid level protection (float)

EH model

In addition to the features of the ED, above, the EH has an extended temperature range.

- Temperature range of 20 to 150 °C
- Adjustable high temperature cut-off/low liquid level protection (float)
- Timer function

MB model

The unit is suitable for use with small bath volumes up to 20 litres, features PID temperature control with drift compensation, and early warning systems with audible signal for low liquid level, and for high/low temperature limits.

- Temperature range up to 100 °C and an LED Multi-Display with resolution of 0,01/0,1 °C
- Actual and up to three set temperatures can be viewed
- RS232 interface; free EasyTemp software for control via a PC, can be downloaded from the Julabo website

MA model

In addition to the features of the MB, above, the MA has a wider temperature range, electronically adjustable pump capacity and a temperature stability of ±0,01 °C.

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ME model

The more advanced ME has the same features as MB/MA models; in addition it has PID cascade temperature control for highest internal and external temperature stability. Display gives simultaneous indication of internal/external set point and actual values.

- Temperature range up to 200 °C with VFD comfort display with resolution of 0,01 °C
- External PT100 sensor connection
- Integrated controller for 10 program steps for time and temperature dependent processes
- Electronically adjustable pump capacity including illuminated pump stage display

SE-Z model

Suitable for the most demanding applications; the same features as ME model and in addition includes Intelligent Cascade Control, self optimising for optimum results and Temperature Control Features (TCF) for band limit, limit setting, co-speed factor and control dynamics.

- Temperature range up to 300 °C
- Suitable for use with tanks up to 100 litres, bridge extends from 31 cm to 66 cm
- Built-in cooling coil for counter cooling with tap water
- Powerful electronically adjustable pressure and suction pump
- 3 kW Heating capacity

Max. flow rate / max. pressure:
ED/EH: 15 l/min, 350 mbar
MB: 10 l/min, 120 mbar
MA/ME: 11 - 16 l/min, 450 mbar
SE-Z: 22 - 26 l/min, 700 mbar, 400 mbar suction

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
ED	20...100	±0,03	2	130×150×330	3,3	1	**461-0413**
EH	20...150	±0,03	2	130×150×330	3,3	1	**461-0418**
MB	20...100	±0,02	2	130×150×330	3,3	1	**461-0170**
MA	20...200	±0,01	2	130×150×330	4	1	**461-0632**
ME	20...200	±0,01	2	130×150×330	4	1	**461-0384**
SE-Z	20...300	±0,01	3	320×170×400	8	1	**461-0419**

Description	For	Pk	Cat. No.
Accessories			
Cooling coil	ED, EH, MB, MA, ME	1	**461-3125**
Pump set for external circulation	ED, EH, MB, MA, ME	1	**461-3124**
Bath attachment clamp for attaching to tank with wall thickness up to 60 mm	ED, EH, MB, MA, ME	1	**461-0472**

Immersion thermostat, Alpha
Lauda

The Alpha immersion thermostat has an easy to use control console featuring 3-button operation and large, clear LED display, ensuring easy navigation through the menu. The thermostat is suitable for use with non flammable liquids (water, water/glycol mixtures). Units can provide both internal and external thermostating. Temperature stability of ±0,05 K gives precise heating and cooling suitable for a wide range of applications. Using an optional pump circulation set and a cooling coil, the immersion thermostat can be expanded to create a fully fledged thermostating system.

- Temperature range 25 to 100 °C, resolution 0,1 °C, temperature stability of ±0,05 K
- User-calibration at a single point for re-calibration of working temperatures
- Pump flow rate can be reduced from 15 to 5 l/min by means of a reducer
- Safety functions such as alarms, warnings and errors are shown on the LED display

Maximum pump capacities:

15 l/min, 200 mbar

Delivery information: Supplied with flow reducer and screw clamp, which allows the immersion thermostat to be attached to any tank with a maximum wall thickness of 30 mm, and capacity of up to 50 litres; the maximum temperature achievable is dependent on the tank insulation.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
Alpha A	25...100	±0,05	1,5	125×150×300	3,5	1	**461-0052**

Description	For	Pk	Cat. No.
Accessories for Alpha series			
Cooling coil	Alpha A	1	**461-0053**
Pump circulation set (for external thermostating)	Alpha A	1 SET	**461-0054**

Immersion thermostats, ECO
Lauda

Immersion thermostats with menu navigation in plain text for user friendly operation. Various interface modules are available as optional accessories. The ECO immersion thermostats can be used with baths from any manufacturer thanks to the screw clamp which is included as standard.

- Variopump with six adjustable stages
- Flow rate switch for control of flow rate between internal and external circulation
- Simultaneous display of set and actual temperature
- Over-temperature setting via menu
- USB interface as standard

Silver controller

The Silver control head has a heating power of 1,3 kW and is perfectly suited for thermostating tasks up to 150 °C. Unit is fitted with a monochrome LCD display.

- LCD display, resolution of 0,01 °C
- Controller with one program and 20 segments

Gold controller

Offers a comprehensive programmer and increased sophistication compared to Silver controllers.

- Heating power 2,6 kW, working temperature range from 20 to 200 °C
- Colour TFT-Display, resolution of 0,01 °C
- Controller with five programs and 150 temperature-time segments
- Graphical display of temperature profiles
- Ramp function and clock timer

Maximum pump capacity:

Both models: 22 l/min, 0,55 bar

Delivery information: Supplied with screw clamp, which allows the thermostat to be attached to any tank. A wide range of accessories including baths and cooling coil are available.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
Silver	20...150	±0,01	1,3	130×135×325	3,0	1	**461-2109**
Gold	20...200	±0,01	2,6	130×135×325	3,4	1	**461-2110**

Description	For	Pk	Cat. No.
Accessories			
Analogue module	all ECO models	1	**461-0588**
RS232/RS485 interface	all ECO models	1	**461-0575**
Contact module with 1 input and 1 output	all ECO models	1	**461-0589**
Contact module with 3 inputs and 3 outputs	all ECO models	1	**461-0590**
Profibus module	all ECO models	1	**461-0591**
External PT100/LiBus module	all ECO models	1	**461-0576**

Immersion thermostats, general purpose, Optima™ T100 and TC120
Grant

The Optima™ range of general purpose thermostats can be combined with plastic baths, premium stainless steel baths or refrigeration units. Digital microprocessor controlled T100 and TC120 thermostats feature an easy to use rotary dial and two function keys for quick temperature setting and menu navigation. Units feature a bright, easy to view four digit display, three programmable temperature presets, low liquid protection, fixed over-temperature cut-out, visual alarm, countdown timer and user calibration facility for optimum accuracy.

- T100 temperature range: Ambient +5 to 100 °C. Settable range 0 to 100 °C (operation below ambient requires accessory cooling)
- TC120 temperature range: Ambient +5 to 120 °C. Settable range –20 to +120 °C (operation below ambient requires accessory cooling)
- Stirred circulation within the bath ensures excellent temperature stability and uniformity
- Stability: ±0,05 °C at 70 °C
- TC120 has an audible and visual alarm and adjustable over-temperature cut-out

Maximum pump capacities:

TC120 : 16 l/min, 210 mbar

Ordering information: Optional clamp allows attachment of thermostat on to virtually any vertical sided bath or vessel, please order separately.

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Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
T100	RT* +5...100	±0,05	1,3	120×172×335	2,7	1	**461-0647**
TC120	RT* +5...120	±0,05	1,3	120×172×335	2,7	1	**461-0655**

Description	For	Pk	Cat. No.
Bridge plates			
Bridge plate	connecting "new" T-series Optima™ thermostat onto an "old" plastic P12 or P18 tank	1	**461-0774**
Bridge plate	connecting "new" T-series Optima™ thermostat onto an "old" plastic P5 tank	1	**461-0775**
Bridge plate	connecting "new" T-series Optima™ thermostat onto an "old" stainless steel S12/S18/S26 or S38 tank	1	**461-0776**
Bridge plate	connecting "new" T-series Optima™ thermostat onto an "old" stainless steel S5 tank	1	**461-0777**
Accessories			
Clamp. Alternative to bridge plate allows attachment to vertical sided tanks. Tank can have a maximum wall thickness of 35 mm (rectangular) or 30 mm (circular, up to 30 mm diameter) and a capacity of up to 50 litres. For T100, TC120, TX150 and TXF200 immersion thermostats		1	**461-1001**

*RT = Ambient

Immersion thermostats, advanced, Optima™ TX150 and TXF200

Grant

The Optima™ range of advanced thermostats can be combined with plastic baths, premium stainless steel baths or refrigeration units. The TX150 and TXF200 thermostats feature a full colour QVGA TFT screen displaying actual and set temperature and clear status icons. The QVGA TFT screen, in combination with the easy to use dial and function keys, allows rapid navigation through the intuitive menu system. Both units have RS232 and USB interfaces and can be programmed via remote PC or laptop using Grant's versatile Labwise™ software (optional). Additional features include countdown timer, adjustable over-temperature cut-out, visual, audible and programmable high and low temperature alarms. The TX150 has the capacity to store one program with 30 segments. The TXF200 can also be programmed via the user interface and can store up to 10 programs containing 100 segments. The programming interface includes set target temperature with a choice of time to target temperature or temperature ramp speed and an additional programmable relay for on/off control of ancillary equipment or refrigeration units.

- TX150 temperature range: Ambient +5 to 150 °C. Settable range –50 to +150 °C (operation below ambient requires accessory cooling)
- TXF200 temperature range: Ambient +5 to 200 °C. Settable range –50 to +200 °C (operation below ambient requires accessory cooling)
- Stability: ±0,01 °C at 70 °C
- External PT1000 temperature probe socket
- Offset adjustment for isothermal performance
- Five-point user calibration of internal and external probes (two fixed points and three user defined)

Maximum pump capacities:

TX150 18 l/min, 310 mbar
TXF200 22 l/min, 530 mbar variable speed

Ordering information: Optional clamp allows attachment of thermostat onto virtually any vertical sided bath or vessel, please order separately.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
TX150	RT* +5...150	±0,01	1,9	120×172×345	2,5	1	**461-0663**
TXF200	RT* +5...200	±0,01	1,9	120×172×345	2,5	1	**461-0671**

Description	For	Pk	Cat. No.
Bridge plates			
Bridge plate	connecting "new" T-series Optima™ thermostat onto an "old" plastic P12 or P18 tank	1	**461-0774**
Bridge plate	connecting "new" T-series Optima™ thermostat onto an "old" plastic P5 tank	1	**461-0775**
Bridge plate	connecting "new" T-series Optima™ thermostat onto an "old" stainless steel S12/S18/S26 or S38 tank	1	**461-0776**
Bridge plate	connecting "new" T-series Optima™ thermostat onto an "old" stainless steel S5 tank	1	**461-0777**
Accessories			
Labwise® Control and Analysis software. Includes USB & RS232 cable	GR150, GP200, TX150 and TXF200	1	**461-0223**

*RT = Ambient

Labwise® software
Grant

The high performance GR150, GP200 and new TX150 & TXF200 thermostatic controllers together with Labwise® software make set up, monitoring and data logging straightforward. Labwise® features a graphic display of the controller's performance as a program is run, has real time zoom and scaling of graphical display and allows data to be logged for future recall and analysis. Labwise® software controls the pump speed for GP200/TXF200 series units and runs on a PC. User has choice of set up language: English, French, German, Spanish or Italian.

Set up features include:

- Set temperature, high and low alarms; alarms can be configured to switch a relay
- Set reaction timer and delayed start and stop time
- Control of output relays for operating ancillary equipment

Programming features include:

- Program values may be set graphically or numerically with up to 30 segments per program
- Set heat or cool time to target and set number of loops, 1 to 254, or infinite looping between selected points

Description	Pk	Cat. No.
Labwise® Control and Analysis software. Includes USB & RS232 cable	1	**461-0223**

Immersion thermostats
Huber

CC-E

CC-E xd

MPC-E

Immersion thermostats form the basis of many different combinations with polycarbonate or stainless steel bath vessels. All models are fitted with a powerful pressure/suction pump and meet the requirements of Safety Class III (FL) for use with flammable fluids. Temperatures down to –30 °C can be achieved in combination with a refrigerated bath. A screw clamp is included allowing the thermostats to be easily mounted on any vessels. A pump adapter for external temperature control and cooling coils for a cooling water connection are available as optional accessories.

- Pilot ONE® is interchangeable and can be used as a remote control (with an optional data cable)
- The controller can be upgraded with enhanced functionality at any time (Exclusive and Professional E-grade® packages), basic version features 11 languages (German, English, French, Italian, Spanish, Portuguese, Czech, Polish, Russian, Chinese and Japanese)
- The temperature resolution can be displayed to 0,1 °C or 0,01 °C, display can be customised to the user's preferences and important information e.g. set point, actual internal or process temperatures can be displayed in a larger format
- Powerful variable speed pressure/suction pump with variable pressure control (VPC)
- User can set visual and acoustic alarms limiting the temperature range, and program the unit with its clock and calendar functions for automatic startup

MPC-E Controller

Modern and easy to use microprocessor controller with a large temperature display limited to essential functions only. MPC controller features over-temperature alarm and low liquid level protection. All MPC models also feature a powerful and suction pump for optimum performance.

- Large temperature display
- LED indicators for pump, cooling and heating
- Simple operation using only three keys

Maximum pump capacities:
Pilot ONE® (CC-E): 27 l/min, 0,7 bar, 0,4 bar suction
Pilot ONE® (CC-E xd): 22 l/min, 0,4 bar, 0,4 bar suction
MPC-E: 20 l/min, 0,2 bar, 0,18 bar suction

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
MPC-E	25...200*	±0,05	2	132×153×312	3,4	1	**461-0551**
CC-E	25...200*	±0,01	2	132×159×315	4,0	1	**461-0124**
CC-E xd	25...200*	±0,01	2	132×159×360	4,8	1	**461-0863**

Description	Pk	Cat. No.
Optional upgrade		
Exclusive E-grade® package	1	**461-0098**
Professional E-grade® package	1	**461-0099**

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*Note: Working temperature range can be lowered to: –30 to +200 °C if an external cooling device is used.

Optional upgrade

Huber

The Pilot ONE® controllers can be upgraded giving post sale flexibility by means of their easy to use "Plug and Play" technology. Upgrades providing additional functionality are very easy, simply enter an activation code. All units listed above are supplied with "Basic" Pilot ONE® controllers which can be upgraded to **Pilot ONE® "Exclusive"** which has additional features allowing:

- Graphical display and display resolution of 0,1 and 0,01 °C
- Three programs each with five steps and compact or full menu display
- Ramp functionality
- True Adaptive Control (TAC)
- External control capability

Pilot ONE® "Professional" enables:

- Non-linear ramping
- Ten programs, with a total of 100 program steps
- User and administrator menus
- Second set point function
- Option for external temperature control via an external PT100 sensor

Description	Pk	Cat. No.
Exclusive E-grade® package	1	**461-0098**
Professional E-grade® package	1	**461-0099**

Immersion thermostat, Techne® TE-10D

"Clip On" Tempunit® thermoregulator designed to be used with Techne® unheated water baths or any other suitable laboratory vessels. They will heat, circulate and safely control the temperature of the liquid in the bath within precise limits. Units have a rugged splashproof case, a powerful pressure pump and external circulation fittings.

- Four digit setting with a bright LED digital temperature display
- User adjustable over-temperature cut-out and low liquid level cut-out as standard
- PID controller, PRT temperature sensor

Complies with: EN61326: 1997, EN 61010-1: 2001 and EN 61010-2-010: 2003

Maximum pump capacity:
10 l/min, 145 mbar

Delivery information: Supplied with clamp; other thermoregulators and accessories are available, please contact your local VWR office for details.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
TE-10D	-40...120*	±0,01	1	237×124×260	3	1	**461-0376**

*Note: Refrigeration or cooling coil required for below ambient cooling.

Baths, polycarbonate with MX temperature controller

Transparent polycarbonate baths keep samples visible, units feature user friendly MX temperature controller with three control buttons and on-screen prompts. The convenient slide control enables the flow rate to be easily adjusted, the elevated tank bottom gives secure handholds when lifting or positioning the bath and is stable on uneven surfaces. Controller bridge made from heat and chemical resistant DuraTop™ is easily removed to clean the tank. The 17 and 28 litre models have a drain and opening with lid for optional cooling coil which is ideal for set points near ambient temperature.

- Large EasyView™ LCD display with alarm or fault icons and English prompts and menus
- User-adjustable high and low temperature limits and low liquid level alarms
- Single speed pressure pump
- Integral pump and heater coil protection
- Single point calibration

Complies with DIN 12876-1 Class I safety requirements for use with non flammable liquids

Maximum pump capacities:
10,6 l/min, 100 mbar

Delivery information: Supplied with a lid.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
MX11P100	RT* +10...85	±0,07	1,1	11	156×210×203	208×532×441	1	**462-0206**
MX17P100	RT* +10...85	±0,07	1,1	17	305×105×203	345×457×441	1	**462-0207**
MX28P100	RT* +10...85	±0,07	1,1	28	300×315×203	345×562×441	1	**462-0208**

Description	For	Pk	Cat. No.
Accessories			
Cooling coil	use with VWR baths, 462-0207, 462-0208, 462-0212, 462-0213 and 462-0214	1	**462-0279**
Lids for polycarbonate baths			
Replacement lid for VWR open bath systems	Polycarbonate baths with 11 litre capacity (462-0206)	1	**462-0281**
Replacement lid for VWR open bath systems	Polycarbonate baths with 17 litre capacity (462-0207)	1	**462-0283**
Replacement lid for VWR open bath systems	Polycarbonate baths with 28 litre capacity (462-0208)	1	**462-0285**

* RT = Ambient

Baths for immersion thermostats

Made from stainless steel or polycarbonate. Ideal for use with VWR immersion thermostats. To be used where the durability of stainless steel or the transparency of polycarbonate are advantageous.

- Open baths, ideal for use with immersion thermostats from VWR or other manufacturers
- Available in stainless steel or polycarbonate
- Robust and durable
- Easy to clean

Note: The temperature ranges listed below apply only when the vessels are used with immersion thermostats; an immersion thermostat is required but not supplied with the bath.

Temp. range (°C)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
Polycarbonate					
< 85	8	284×156×203	302×174×232	1	**462-0265**
< 85	11	389×156×203	406×174×232	1	**462-0266**
< 85	14	493×156×203	513×174×232	1	**462-0267**
< 85	17	312×305×203	351×324×232	1	**462-0268**
< 85	23	417×305×203	455×324×232	1	**462-0269**
< 85	28	523×305×203	561×324×232	1	**462-0270**

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Temp. range (°C)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
Stainless steel					
< 150	13	229×165×203	321×289×244	1	**462-0263**
< 150	28	419×216×203	530×327×244	1	**462-0264**

Baths and circulators, Plexiglas® or Makrolon® tanks

Julabo

ED-5 A/B

ED-13A

ED-19A

Open bath circulators are mainly intended for operation in the Plexiglas® or Makrolon® baths. Temperature application to an external, closed system is possible via the pump nozzles on selected models (ED-5A, MB-5A, MB-7A, ED-5M, MB-5M). Typical applications: Circulation to measuring cells, cuvette holders, temperature testing of food/luxury articles and material testing.

ED models

- LED temperature display for actual and set point values
- Keypad for set point input
- Adjustable high temperature or low liquid level protection

MB models

Multi-Display (LED) for actual value, up to 3 set points, high/low temperature warning functions, high temperature protection.

- Early warning system signals a lowering of bath fluid level
- PID temperature control with drift compensation
- RS232 interface

Max. flow rate / max. pressure:
ED: 15 l/min, 350 mbar
MB: 10 l/min, 120 mbar

Ordering information: All units with an RS232 interface can use the free EasyTemp software for control via a PC; the software can be downloaded free of charge from the Julabo website. Please contact VWR for details.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
ED-5A*	20...60	±0,03	2	5	120×240×150	140×400×350	1	**461-0415**
ED-13A**	20...60	±0,03	2	13	180×300×150	410×330×360	1	**461-0422**
ED-5A/B	20...60	±0,03	2	5	120×240×150	140×400×350	1	**461-0420**
ED-7A/B	20...60	±0,03	2	7	120×340×150	140×500×350	1	**461-0421**
ED-19A**	20...60	±0,03	2	19	360×300×150	550×330×360	1	**461-0423**
ED-5M*	20...100	±0,03	2	5	120×240×150	140×400×350	1	**461-0424**
ED-5M/B	20...100	±0,03	2	5	120×240×150	140×400×350	1	**461-0425**
MB-5A*	20...60	±0,02	2	5	120×240×150	140×400×350	1	**461-0148**
MB-7A*	20...60	±0,02	2	7	120×340×150	140×500×350	1	**461-0174**
MB-13A**	20...60	±0,02	2	13	180×300×150	410×330×360	1	**461-0175**
MB-19A**	20...60	±0,02	2	19	360×300×150	550×330×360	1	**461-0176**
MB-5M*	20...100	±0,02	2	5	120×240×150	140×400×350	1	**461-0192**

Description	For	Pk	Cat. No.
Water bath protective media, Aqua-Stabil			
Aqua-Stabil solution, 100 ml	open heating baths, heating circulators, water baths and shaking water baths	6	**461-3100**
Aqua-Stabil solution, 100 ml	open heating baths, heating circulators, water baths and shaking water baths	12	**461-0048**
Plexiglas® test tube racks, up to 60 °C			
Test tube rack for baths 5A, 5A/B, 5M, 5M/B, 7A, 7A/B	20 test tubes, 100×17 mm Ø	1	**461-3920**
Test tube rack for baths 5A, 5A/B, 5M, 5M/B, 7A, 7A/B	36 test tubes, 40×10/11 mm Ø	1	**461-3923**
Test tube rack for baths 5A, 5A/B, 5M, 5M/B, 7A, 7A/B	30 test tubes, 50×12/13 mm Ø	1	**461-3921**
Test tube rack for baths 5A, 5A/B, 5M, 5M/B, 7A, 7A/B	20 test tubes, 160×17 mm Ø	1	**461-0012**
Test tube rack for baths 5A, 5A/B, 5M, 5M/B, 7A, 7A/B	6×50 ml conical tubes	1	**461-0013**
Accessories			
Hollow PP balls, 20 mm Ø	open heating baths, heating circulators, water baths and shaking water baths	1.000	**461-3619**
RS232 interface cable, 2.5 m	units with RS232	1	**461-0033**

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* integrated cooling coil
** optional cooling coil
Note: Models ending in A or A/B, e.g. ED-5A, have a Plexiglas® tank, and models ending in M or M/B have a Makrolon® tank.

Baths and lids, Plexiglas® or Makrolon®
Julabo

A range of baths fitted with supports for test tube racks and handles for use with immersion thermostats.

- Temperature range up to 60 °C for Plexiglas®, and up to 100 °C with Makrolon®
- Rugged construction and rigid
- Enable user to view items in the bath

Ordering information: Supplied without bridge plate for thermostat mounting. Please order thermostat separately.

Type	Temp. range (°C)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
Plexiglas® bath for use with ED/MB	≤60	5	390×120×150	410×150×170	2	1	**461-0326**
Plexiglas® bath for use with ED/MB	≤60	7	490×120×150	510×140×170	2,5	1	**461-0327**
Plexiglas® bath for use with ED/MB/MA	≤60	13	320×300×150	410×330×170	4	1	**461-3951**
Plexiglas® bath for use with ED/MB/MA	≤60	19	470×300×150	550×330×170	5	1	**461-3952**
Makrolon® bath for use with ED/MB	≤100	5	390×120×150	410×150×180	2	1	**461-0328**
Makrolon® bath for use with ED	≤100	13	320×300×150	410×330×180	4,3	1	**461-3545**
Makrolon® bath for use with ED/MB	≤100	19	470×300×150	550×330×180	5,3	1	**461-3546**

Description	For	Pk	Cat. No.
Plexiglas® test tube racks, up to 60 °C			
Test tube rack for baths 5A, 5A/B, 5M, 5M/B, 7A, 7A/B	20 test tubes, 100×17 mm Ø	1	**461-3920**
Test tube rack for baths 5A, 5A/B, 5M, 5M/B, 7A, 7A/B	36 test tubes, 40×10/11 mm Ø	1	**461-3923**
Test tube rack for baths 5A, 5A/B, 5M, 5M/B, 7A, 7A/B	30 test tubes, 50×12/13 mm Ø	1	**461-3921**
Test tube rack for baths 5A, 5A/B, 5M, 5M/B, 7A, 7A/B	20 test tubes, 160×17 mm Ø	1	**461-0012**
Test tube rack for baths 5A, 5A/B, 5M, 5M/B, 7A, 7A/B	6×50 ml conical tubes	1	**461-0013**
Accessories			
Hollow PP balls, 20 mm Ø	open heating baths, heating circulators, water baths and shaking water baths	1.000	**461-3619**

Heating thermostats with transparent baths, ECO
Lauda

ECO units with transparent plastic baths provide visibility in all cases where test samples need to be observed during thermostating. The thermostats with polycarbonate baths can be used in the temperature range of up to 100 °C. They have a filling volume of 5 up to 20 litres. The 15 litre (or larger) Silver and Gold baths accommodate up to three capillary viscometers. The Silver and Gold ET 6, ET 12 and ET 20 models are equipped with a cooling coil as standard. Bath/circulation thermostats have menu navigation in plain text for user friendly operation. Various interface modules are available as optional accessories.

- Variopump with six adjustable stages
- Flow rate switch for flow rate control between internal and external circulation
- Simultaneous display of set and actual temperature
- Over-temperature setting via menu
- USB interface as standard

Silver controller

- Heating power 1,3 kW, working temperature range up to 100 °C
- LCD display, resolution of 0,01 °C
- Programmer with one program and 20 segments

Gold controller

- Heating power 2,6 kW, working temperature range up to 100 °C
- Colour TFT display, resolution of 0,01 °C
- Programmer with five programs and 150 segments
- Graphical display of temperature profiles
- Ramp function and clock timer

Maximum pump capacity:

All models: 22 l/min, 0,55 bar

Delivery information: Supplied with cooling coil (except ET 15 S and ET 15 G models). The ET 15 S model includes a pump circulation set with 13 mm diameter plastic nipples as standard, ET 15 G includes a pump circulation set with M16×1 threads. A wide range of optional modules and accessories such as covers for 15 litre models are available, please enquire for details.

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Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
Silver controllers								
ET 6 S	20...100	±0,01	1,3	5 - 6	130×285×160	143×433×349	1	**461-0539**
ET 12 S	20...100	±0,01	1,3	9,5 - 12	300×175×160	322×331×389	1	**461-0519**
ET 15 S	20...100	±0,01	1,3	13,5 - 15	275×130×310	428×148×532	1	**461-0521**
ET 20 S	20...100	±0,01	1,3	15 - 20	300×350×160	322×506×389	1	**461-0523**
Gold controllers								
ET 6 G	20...100	±0,01	2,6	5 - 6	130×285×160	143×433×349	1	**461-0540**
ET 12 G	20...100	±0,01	2,6	9,5 - 12	300×175×160	322×331×389	1	**461-0520**
ET 15 G	20...100	±0,01	2,6	13,5 - 15	275×130×310	428×148×532	1	**461-0522**
ET 20 G	20...100	±0,01	2,6	15 - 20	300×350×160	322×506×389	1	**461-0524**

Description	For	Pk	Cat. No.
Accessories			
Analogue module	all ECO models	1	**461-0588**
RS232/RS485 interface	all ECO models	1	**461-0575**
Contact module with 1 input and 1 output	all ECO models	1	**461-0589**
Contact module with 3 inputs and 3 outputs	all ECO models	1	**461-0590**
Profibus module	all ECO models	1	**461-0591**
External PT100/LiBus module	all ECO models	1	**461-0576**

Water baths, transparent polycarbonate
Lauda

This series of transparent polycarbonate baths have been specifically designed to enable the user to view the objects being thermostated. They can be used up to 100 °C. The high quality, robust baths are available in a variety of sizes and can be combined with immersion thermostats from Lauda or from other manufacturers.

Type	Temp. range (°C)	Capacity (l)	Bath W×D×H (mm)	Pk	Cat. No.
Polycarbonate bath, ET 6	≤100	6	130×420×160	1	**461-0541**
Polycarbonate bath, ET 12	≤100	12	300×315×160	1	**461-0542**
Polycarbonate bath, ET 15	≤100	15	416×130×310	1	**461-0543**
Polycarbonate bath, ET 20	≤100	20	300×490×160	1	**461-0544**

Water baths and circulators, plastic, Optima™ range
Grant

T100-P12

TX150-P12

The Grant Optima™ range consists of either general purpose or advanced performance thermostats combined with double walled plastic baths. Baths are easy to clean and available in three sizes - 5, 12 and 18 litres. They offer a cost effective solution for applications requiring accurate temperature control. Can be used up to 99 °C.

General purpose thermostats: T100 and TC120

Digital microprocessor controlled T100 and TC120 thermostats feature an easy to use rotary dial and two function keys for quick temperature setting and menu navigation. Units feature a bright, easy to view 4-digit display, three programmable temperature presets, low liquid protection, fixed over-temperature cut-out, visual alarm, countdown timer and user calibration facility for optimal accuracy.

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- T100 temperature range: Ambient +5 to 100 °C. Settable range 0 to 100 °C (operation below ambient requires cooling accessory)
- TC120 temperature range: Ambient +5 to 120 °C. Settable range –20 to 120 °C (operation below ambient requires cooling accessory)
- Stirred circulation within the tank ensures excellent temperature stability and uniformity
- Stability ±0,05 °C at 70 °C
- TC120 has an audible and visual alarm and adjustable over-temperature cut-out

Advanced thermostats: TX150 and TXF200

TX150 and TXF200 thermostats feature a full colour QVGA TFT screen displaying actual and set temperature and clear status icons. The QVGA TFT screen in combination with the easy to use dial and function keys allows rapid navigation through the intuitive menu system. Both units have an RS232 and USB interface and can be programmed via remote PC or laptop using Grant's versatile Labwise™ software (optional). Additional features include countdown timer, adjustable over-temperature cut-out, visual, audible and programmable high and low temperature alarms. The TX150 has the capacity to store 1 program with 30 segments. The TXF200 can also be programmed via the user interface and can store up to 10 programs containing 100 segments. The programming interface includes set target temperature with a choice of time to target temperature or temperature ramp speed and an additional programmable relay for on/off control of ancillary equipment or refrigeration units.

- TX150 temperature range: Ambient +5 to 150 °C. Settable range –50 to 150 °C (operation below ambient requires cooling accessory)
- TXF200 temperature range: Ambient +5 to 200 °C. Settable range –50 to 200 °C (operation below ambient requires cooling accessory)
- Stability ±0,01 °C at 70 °C
- External PT1000 temperature probe socket
- Offset adjustment for isothermal performance
- 5-point user calibration of internal and external probes (two fixed points and three user defined)

Maximum pump capacities:
TC120 16 l/min, 210 mbar
TX150 18 l/min, 310 mbar
TXF200 22 l/min, 530 mbar variable speed

Delivery information: Stirred baths are supplied with thermostat, bath and mounting bridge plate but without lid. Lids are recommended when working above 60 °C and should be ordered separately. For details of the full range of models and accessories please see the VWR website.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
General purpose models								
T100-P5	RT* +15...99	±0,05	1,3	5	120×150×140	390×200×380	1	**461-0646**
T100-P12	RT* +5...99	±0,05	1,3	12	210×280×140	415×350×380	1	**461-0642**
T100-P18	RT* +5...99	±0,05	1,3	18	280x325x140	600×350×380	1	**461-0644**
TC120-P5	RT* +15...99	±0,05	1,3	5	120×150×140	390×200×380	1	**461-0654**
TC120-P12	RT* +5...99	±0,05	1,3	12	210×280×140	415×350×380	1	**461-0650**
TC120-P18	RT* +5...99	±0,05	1,3	18	280×325×140	600×350×380	1	**461-0652**
Advanced models								
TX150-P5	RT* +15...99	±0,01	1,9	5	120×150×140	390×200×380	1	**461-0662**
TX150-P12	RT* +5...99	±0,01	1,9	12	210×280×140	415×350×380	1	**461-0658**
TX150-P18	RT* +5...99	±0,01	1,9	18	280×325×140	600×350×380	1	**461-0660**
TXF200-P5	RT* +15...99	±0,01	1,9	5	120×150×140	390×200×380	1	**461-0670**
TXF200-P12	RT* +5...99	±0,01	1,9	12	210×280×140	415×350×380	1	**461-0666**
TXF200-P18	RT* +5...99	±0,01	1,9	18	280×325×140	600×350×380	1	**461-0668**

Description	For	Pk	Cat. No.
Accessories			
Flat plastic lid, without hinges	P12 bath	1	**462-8128**
Flat plastic lid, without hinges	P18 bath	1	**462-8129**
Flat stainless steel lid, without hinges	P5 bath	1	**462-8130**

* RT = Ambient

Baths and lids, plastic, P series
Grant

A range of cost-effective plastic baths, for use with all Optima thermostats.

- Temperature range ambient +5 up to 99 °C
- Rugged construction, double-walled for rigidity
- Easy to clean

Ordering information: All baths include bridge plate for controller mounting. Lids are recommended when working above 60 °C. Please order lids separately.

Type	Temp. range (°C)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
P5	RT* +15...99	5	120×150×140	330×240×180	2,1	1	**461-4231**
P12	RT* +5...99	12	210×280×140	350×415×180	2,3	1	**461-4232**
P18	RT* +5...99	18	280×325×140	365×600×180	2,3	1	**461-4233**

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Description	For	Pk	Cat. No.
Accessories			
Flat plastic lid, without hinges	P12 bath	1	**462-8128**
Flat plastic lid, without hinges	P18 bath	1	**462-8129**
Flat stainless steel lid, without hinges	P5 bath	1	**462-8130**
Bridge plates			
Bridge plate	connecting "new" T-series Optima™ thermostat onto an "old" plastic P12 or P18 tank	1	**461-0774**
Bridge plate	connecting "new" T-series Optima™ thermostat onto an "old" plastic P5 tank	1	**461-0775**

* RT = Ambient

Baths and circulators, polycarbonate

CC-106A

CC-108A

CC-110A

Heating circulation bath thermostats with polycarbonate or stainless steel baths, which are simple to use and are suitable for a variety of applications such as: sample temperature control, analysis, materials testing or checking food. The units offer high temperature stability and are fitted with over-temperature and low level protection suitable for Safety Class III/FL (DIN 12876) for use with flammable fluids. A powerful pressure/suction pump ensures optimum circulation and temperature homogenity in the bath and also allows temperature control of externally attached applications using a pump adapter (accessory). There is a range of accessories including inserts, variable adjustable platforms, bath covers, probes as well as hoses, temperature control fluids and various adapters.

The **Pilot ONE®** multi-touch controller features a brilliant 14,5 cm touchscreen with graphic functions and easy navigation menu in 11 languages. All important operating parameters and temperature values are clearly displayed on the touchscreen. The favourites menu, one-click operation and the integral technical glossary mean operation is simple. Integrated USB and Ethernet ports allow connection to a PC or network, e.g. for remote control or data transmission.

- Pilot ONE® controller with Plug & Play technology, 14,5 cm touchscreen and comfortable menu navigation
- Precise temperature control
- Overtemperature and low level protection
- Powerful pressure/suction pump
- Programmer with calendar and clock functions, allows 5-point calibration
- PT100 sensor connection, USB and LAN interfaces

MPC-Controller: Modern and easy to use microprocessor controller with a large temperature display limited to essential functions only. MPC controller features over-temperature alarm and low liquid level protection. All MPC models also feature a powerful suction pump for optimum performance.

- Large temperature display
- LED indicators for pump, cooling and heating
- Simple operation using just three keys

DIN 12876

Maximum pump capacities:
Pilot ONE® (CC-E): 27 l/min, 700 mbar, 400 mbar suction
MPC: 20 l/min, 0,2 bar, 0,18 bar suction

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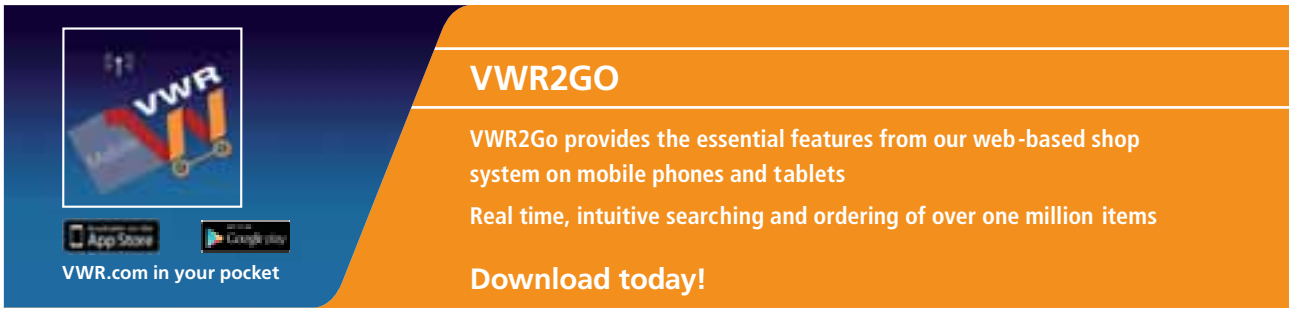
Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
With CC-E controller								
CC-106A	(15)25...100	±0,01/0,1	2	6	130×110×150	147×307×330	1	**461-1002**
CC-108A	(15)25...100	±0,01/0,1	2	8	120×210×150	147×407×330	1	**461-0126**
CC-110A	(15)25...100	±0,01/0,1	2	10	130×310×150	147×507×330	1	**461-0127**
CC-112A	(15)25...100	±0,01/0,1	2	12	303×161×150	333×360×335	1	**461-0128**
CC-118A	(15)25...100	±0,01/0,1	2	18	303×321×150	333×520×335	1	**461-0129**
With MPC-E controller								
MPC-106A	(15)25...100	±0,1	2	6	130×110×150	147×307×330	1	**461-0552**
MPC-108A	(15)25...100	±0,1	2	8	130×210×150	147×407×330	1	**461-0553**
MPC-110A	(15)25...100	±0,1	2	10	130×310×150	147×507×330	1	**461-0554**
MPC-112A	(15)25...100	±0,1	2	12	303×161×150	333×360×335	1	**461-0555**
MPC-118A	(15)25...100	±0,1	2	18	303×321×150	333×520×335	1	**461-0556**

Description	Pk	Cat. No.
Optional upgrade		
Exclusive E-grade® package	1	**461-0098**
Professional E-grade® package	1	**461-0099**

Note: The working temperature range of all models can be lowered with an optional cooling coil, connected to tap water or a chiller.



Baths and lids, stainless steel, with MX temperature controller

Stainless steel baths with user friendly MX temperature controller with three control buttons and on-screen prompts. The convenient slide control enables the flow rate to be easily adjusted. Baths can be used for external circulation, the controller bridge made from chemically resistant DuraTop™ is easily removed to clean the tank. The 10 and 20 litre models have an opening with lid for optional cooling coil which is ideal for set points near ambient temperature.

- Large EasyView™ LCD display with alarm or fault icons and English prompts and menus
- User-adjustable high and low temperature limits and low liquid level alarms
- Single speed pressure pump
- Integral pump and heater coil protection
- Single point calibration

Complies with DIN 12876-1, Safety class I

Maximum pump capacities:
10,6 l/min, 100 mbar

Delivery information: Supplied with a bath cover.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
MX06S135	RT* +10...135	±0,07	1,1	6	110×100×152	206×340×406	1	**462-0211**
MX10S135	RT* +10...135	±0,07	1,1	10	255×99×152	342×353×406	1	**462-0212**
MX20S135	RT* +10...135	±0,07	1,1	20	214×257×203	342×531×457	1	**462-0213**

Description	For	Pk	Cat. No.
Accessories			
Cooling coil	use with VWR baths, 462-0207, 462-0208, 462-0212, 462-0213 and 462-0214	1	**462-0279**

* RT = Ambient

Baths and circulators, stainless steel
Julabo

Bath circulators mounted on a stainless steel bridge with stainless steel bath tank for internal and external temperature applications. The units are mainly intended for operation in the bath tank. Temperature application to external closed systems is possible via the pump nozzles. Typical applications: Circulation to measuring cells, cuvette holders, temperature testing of food/luxury articles and material testing.

ED models

- Temperature range of 20 to 100 °C
- LED temperature display for actual and set point values
- Keypad for set point input
- Adjustable high temperature/dry running protection

EH models

Same features as ED above, and in addition:

- Temperature range of 20 to 150 °C
- High temperature cut-off/low liquid level protection (float)
- Timer function

MB models

Multi-Display (LED) for actual value, up to 3 set points, high/low temperature warning functions, high temperature protection. It is possible to calibrate three temperatures simultaneously.

- Temperature range of 20 to 100 °C and a LED Multi-Display with resolution of 0,01/0,1 °C
- Early warning system signals a lowering of bath fluid level
- PID temperature control with drift compensation
- RS232 interface

Classification (according to DIN 12876-1: 1): ED and MB. Classification (according to DIN 12876-1: 3): EH

Maximum pump capacities:
ED/EH: 15 l/min, 350 mbar
MB: 10 l/min, 120 mbar

Ordering information: All units with an RS232 interface can use the EasyTemp software for control via a PC; the software can be downloaded free of charge from the Julabo website.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
ED-5	RT*...100	±0,03	2	4,5	150×150×150	170×330×360	1	**461-0414**
ED-13	RT*...100	±0,03	2	13	180×300×150	390×330×370	1	**461-0426**
ED-19	RT*...100	±0,03	2	19	360×300×150	570×330×370	1	**461-0427**
ED-27	RT*...100	±0,03	2	27	360×300×200	570×370×420	1	**461-0428**
ED-33	RT*...100	±0,03	2	33	670×300×150	910×330×380	1	**461-0429**

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Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
EH-5	RT*...150	±0,03	2	4,5	150×150×150	170×330×360	1	**461-0430**
EH-13	RT*...150	±0,03	2	13	180×300×150	390×330×370	1	**461-0431**
EH-19	RT*...150	±0,03	2	19	360×300×150	570×330×370	1	**461-0432**
EH-27	RT*...150	±0,03	2	27	360×300×200	570×370×420	1	**461-0433**
EH-33	RT*...150	±0,03	2	33	670×300×150	910×330×380	1	**461-0434**
EH-39	RT*...150	±0,03	2	39	360×300×300	540×340×520	1	**461-0435**
MB-5	RT*...100	±0,02	2	4,5	150×150×150	170×330×360	1	**461-0177**
MB-13	RT*...100	±0,02	2	13	180×300×150	390×330×370	1	**461-0178**
MB-19	RT*...100	±0,02	2	19	360×300×150	570×330×370	1	**461-0180**

Description	For	Pk	Cat. No.
Test tube racks			
Polypropylene test tube racks, up to 80 °C	60 test tubes, 16/17 mm Ø	1	**461-0481**
Polypropylene test tube racks, up to 80 °C	90 test tubes, 12/13 mm Ø	1	**461-0482**
Stainless steel test tube racks, up to 150 °C	50 test tubes, 16/17 mm Ø	1	**461-0483**
Stainless steel test tube racks, up to 150 °C	90 test tubes, 12/13 mm Ø	1	**461-0484**
Stainless steel test tube racks, up to 150 °C	90 microtubes, 11/12 mm Ø	1	**461-0485**
Stainless steel test tube racks, up to 150 °C	21 test tubes, 30 mm Ø	1	**461-0486**
Stainless steel test tube racks, up to 150 °C	28 test tubes, 16/17 mm Ø	1	**461-0016**
Stainless steel test tube racks, up to 150 °C	38 test tubes, 12/13 mm Ø	1	**461-0017**
Accessories			
Immersion height adjustable platform	19 and 27 litre baths	1	**461-3912**
Immersion height adjustable platform	13 and 17 litre baths	1	**461-0049**
Lids			
Lift up bath lid	13/17 litre baths	1	**462-4110**
Lift up bath lid	19/27 litre baths	1	**461-3904**
Lift up bath lid	33 litre baths	1	**461-3104**
Flat bath lid	13/17 litre baths	1	**461-3541**
Flat bath lid	19/27 litre baths	1	**461-3901**
Flat bath lid	33 litre baths	1	**461-3542**
Flat bath lid	39 litre baths	1	**461-3540**

* RT = Ambient

Baths and lids, stainless steel

Julabo

A range of stainless steel baths fitted with supports and handles for use with thermostats.

- Temperature range up to 150 °C
- Stainless steel tank is easy to clean and resists corrosion

Ordering information: Supplied without bridge plate for controller mounting. Lids are recommended when working above 60 °C. Please order lids separately.

Type	Temp. range (°C)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
Stainless steel bath for use with ED/EH/MB/MA/ME	≤150	5	330×150×150	380×190×180	3,5	1	**461-0329**
Stainless steel bath for use with ED/EH/MB/MA/ME	≤150	13	330×300×150	380×330×180	5,0	1	**461-3941**
Stainless steel bath for use with ED/EH/MB/MA/ME	≤150	17	330×300×200	380×330×230	6,0	1	**461-0330**
Stainless steel bath for use with ED/EH/MB/MA/ME	≤150	19	500×300×150	560×330×180	6,5	1	**461-3942**
Stainless steel bath for use with ED/EH/MA/ME	≤150	27	500×300×200	560×330×230	8,0	1	**461-3943**
Stainless steel bath for use with ED/EH/MA/ME	≤150	33	830×300×150	900×330×200	15,0	1	**461-3944**
Stainless steel bath for use with ED/EH/MA/ME	≤150	39	500×300×300	540×330×350	14,5	1	**461-0331**

Description	For	Pk	Cat. No.
Test tube racks			
Polypropylene test tube racks, up to 80 °C	60 test tubes, 16/17 mm Ø	1	**461-0481**
Polypropylene test tube racks, up to 80 °C	90 test tubes, 12/13 mm Ø	1	**461-0482**
Stainless steel test tube racks, up to 150 °C	50 test tubes, 16/17 mm Ø	1	**461-0483**
Stainless steel test tube racks, up to 150 °C	90 test tubes, 12/13 mm Ø	1	**461-0484**

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Description	For	Pk	Cat. No.
Test tube racks			
Stainless steel test tube racks, up to 150 °C	90 microtubes, 11/12 mm Ø	1	**461-0485**
Stainless steel test tube racks, up to 150 °C	21 test tubes, 30 mm Ø	1	**461-0486**
Stainless steel test tube racks, up to 150 °C	28 test tubes, 16/17 mm Ø	1	**461-0016**
Stainless steel test tube racks, up to 150 °C	38 test tubes, 12/13 mm Ø	1	**461-0017**
Lids			
Lift up bath lid	13/17 litre baths	1	**462-4110**
Lift up bath lid	19/27 litre baths	1	**461-3904**
Lift up bath lid	33 litre baths	1	**461-3104**
Flat bath lid	13/17 litre baths	1	**461-3541**
Flat bath lid	19/27 litre baths	1	**461-3901**
Flat bath lid	33 litre baths	1	**461-3542**
Flat bath lid	39 litre baths	1	**461-3540**

Baths/circulation thermostats with stainless steel baths, ECO
Lauda

E 10 S with Silver controller

E 20 G with Gold controller

Baths/circulation thermostats with plain text menu navigation which are ideal for user friendly operation.

- Variopump with six adjustable stages
- Flow rate switch for control of flow rate between internal and external circulation
- Simultaneous display of set and actual temperature
- Over-temperature setting via menu
- USB interface as standard

Silver controller

The heating thermostats with Silver control head are suitable for a temperature range of up to 150 °C. All heating thermostats are equipped with a cooling coil as standard.

- Heating power 1,3 kW, working temperature range up to 150 °C
- LCD display, resolution of 0,01 °C
- Controller with one program and 20 segments

Gold controller

The heating thermostats with Gold control head can be used in a temperature range of up to 200 °C. All heating thermostats are equipped with a cooling coil as standard.

- Heating power 2,6 kW, working temperature range up to 200 °C
- Colour TFT display, resolution of 0,01 °C
- Controller with five programs and 150 segments
- Graphical display of temperature profiles
- Ramp function and clock timer

Maximum pump capacity:

All models: 22 l/min, 0,55 bar

Delivery information: Supplied with stainless steel bath and cooling coil. The E 4 S model includes a bath cover and pump connections with 13 mm diameter plastic nipples, E 4 G models include a bath cover and pump circulation set for external applications with M16×1 threads as standard. A wide range of optional modules and accessories such as bath covers are available, please enquire for details.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
Silver controllers								
E 4 S	20...150	0,01	1,3	3 - 3,5	135×105×150	168×272×376	1	**461-0507**
E 10 S	20...150	0,01	1,3	7,5 - 10	300×190×150	331×361×376	1	**461-0509**
E 15 S	20...150	0,01	1,3	12 - 16	300×190×200	331×361×426	1	**461-0511**

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Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
Silver controllers								
E 20 S	20...150	0,01	1,3	13 - 19	300×365×150	331×537×376	1	**461-0513**
E 25 S	20...150	0,01	1,3	16 - 25	300×365×200	331×537×426	1	**461-0515**
E 40 S	20...150	0,01	1,3	32 - 40	300x613×200	350×803×428	1	**461-0517**
Gold controllers								
E 4 G	20...200	0,01	2,6	3 - 3,5	135×105×150	168×272×376	1	**461-0508**
E 10 G	20...200	0,01	2,6	7,5 - 10	300×190×150	331×361×376	1	**461-0510**
E 15 G	20...200	0,01	2,6	12 - 16	300×190×200	331×361×426	1	**461-0512**
E 20 G	20...200	0,01	2,6	13 - 19	300×365×150	331×537×376	1	**461-0514**
E 25 G	20...200	0,01	2,6	16 - 25	300×365×200	331×537×426	1	**461-0516**
E 40 G	20...200	0,01	2,6	32 - 40	300x613×200	350×803×428	1	**461-0518**

Water baths, insulated stainless steel

Lauda

Insulated stainless steel baths which can be used up to 200 °C. The outer jacket is made of powder coated sheet steel. All baths are equipped with a built-in drain tap. These high quality, robust baths are available in a variety of sizes and can be combined with immersion thermostats from Lauda or other manufacturers.

Type	Temp. range (°C)	Capacity (l)	Bath W×D×H (mm)	Pk	Cat. No.
Stainless steel bath	≤200	3,5	135×240×150	1	**461-0545**
Stainless steel bath	≤200	11	300×329×150	1	**461-0546**
Stainless steel bath	≤200	16	300×329×200	1	**461-0547**
Stainless steel bath	≤200	19	300×505×150	1	**461-0548**
Stainless steel bath	≤200	25	300×505×200	1	**461-0549**
Stainless steel bath	≤200	40	300×750×200	1	**461-0550**

Water baths and circulators, stainless steel, Optima™

Grant

The Grant Optima™ range consists of both general purpose and advanced performance thermostats combined with premium stainless steel baths (drain tap on 12, 18, 26 and 38 l baths). Stirred circulation within the bath ensures excellent temperature stability and uniformity. Units can also be used with accessory C1G and C2G immersion coolers for operation below ambient temperatures.

General purpose thermostats T100 and TC120

Digital microprocessor controlled T100 and TC120 thermostats feature an easy to use rotary dial and two function keys for quick temperature setting and menu navigation. Units feature a bright, easy to view 4 digit display, 3 programmable temperature presets, low liquid protection, fixed over-temperature cut-out, visual alarm, countdown timer and user calibration facility for optimal accuracy.

- T100 temperature range: Ambient +5 to 100 °C. Settable range 0 to 100 °C (operation below ambient requires cooling accessory)
- TC120 temperature range: Ambient +5 to 120 °C. Settable range –20 to +120 °C (operation below ambient requires cooling accessory)
- Pump for external circulation, an audible and visual alarm and adjustable over-temperature cut-out (TC120 only)
- Models 12 l and above have a dual position mounting plate so the Optima™ can be orientated on the tank in two directions - ideal for optimising bench space
- Stability ±0,05 °C at 70 °C

Advanced thermostats TX150 and TXF200

TX150 and TXF200 thermostats feature a full colour QVGA TFT screen displaying actual and set temperature and clear status icons. The QVGA TFT screen

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in combination with the easy to use dial and function keys allows rapid navigation through the intuitive menu system. Both units have an RS232 and USB interface and can be programmed via remote PC or laptop using Grant's versatile Labwise™ software (software optionally available). Additional features include countdown timer, adjustable over-temperature cut-out, visual, audible and programmable high and low temperature alarms. The TX150 has the capacity to store 1 program with 30 segments. The TXF200 can also be programmed via the user interface and can store up to 10 programs containing 100 segments. The programming interface includes set target temperature with a choice of time to target temperature or temperature ramp speed and an additional programmable relay for on/off control of ancillary equipment or refrigeration units.

- TX150 temperature range: Ambient +5 to 150 °C. Settable range –50 to +150 °C (operation below ambient requires cooling accessory)
- TXF200 temperature range: Ambient +5 to 200 °C. Settable range –50 to +200 °C (operation below ambient requires cooling accessory)
- Stability ±0,01 °C at 70 °C
- External PT1000 temperature probe socket
- Offset adjustment for isothermal performance
- Five-point user calibration of internal and external probes

Maximum pump capacities:
TC120 16 l/min, 210 mbar
TX150 18 l/min, 310 mbar
TXF200 22 l/min, 530 mbar variable speed

Delivery information: Stirred baths are supplied with thermostat, tanks and mounting bridge plate but without lid. Lids are recommended when working above 60 °C and should be ordered separately.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
General purpose models								
T100-ST5	RT* +15...100**	±0,05	1,3	5	150×300×150	180×330×395	1	**461-0691**
T100-ST12	RT* +5...100**	±0,05	1,3	12	300×325×150	330×360×415	1	**461-0687**
T100-ST18	RT* +5...100**	±0,05	1,3	18	300×505×150	330×540×415	1	**461-0688**
T100-ST26	RT* +5...100**	±0,05	1,3	26	300×505×200	330×540×465	1	**461-0689**
T100-ST38	RT* +5...100**	±0,05	1,3	38	300×690×200	330×730×460	1	**461-0690**
TC120-ST5	RT* +15...120**	±0,05	1,3	5	150×300×150	180×330×395	1	**461-0700**
TC120-ST12	RT* +5...120**	±0,05	1,3	12	300×325×150	330×360×415	1	**461-0696**
TC120-ST18	RT* +5...120**	±0,05	1,3	18	300×505×150	330×540×415	1	**461-0697**
TC120-ST26	RT* +5...120***	±0,05	1,3	26	300×505×200	330×540×465	1	**461-0698**
TC120-ST38	RT* +5...120***	±0,05	1,3	38	300×690×200	330×730×460	1	**461-0699**
Advanced models								
TX150-ST5	RT* +15...150**	±0,01	1,9	5	150×300×150	180×330×395	1	**461-0710**
TX150-ST12	RT* +5...150**	±0,01	1,9	12	300×325×150	330×360×415	1	**461-0706**
TX150-ST18	RT* +5...150**	±0,01	1,9	18	300×505×150	330×540×415	1	**461-0707**
TX150-ST26	RT* +5...150***	±0,01	1,9	26	300×505×200	330×540×465	1	**461-0708**
TX150-ST38	RT* +5...150***	±0,01	1,9	38	300×690×200	330×730×460	1	**461-0709**
TXF200-ST5	RT* +15...200**	±0,01	1,9	5	150×300×150	180×330×395	1	**461-0720**
TXF200-ST12	RT* +5...200**	±0,01	1,9	12	300×325×150	330×360×415	1	**461-0716**
TXF200-ST18	RT* +5...200**	±0,01	1,9	18	300×505×150	330×540×415	1	**461-0717**
TXF200-ST26	RT* +5...200***	±0,01	1,9	26	300×505×200	330×540×465	1	**461-0718**
TXF200-ST38	RT* +5...200***	±0,01	1,9	38	300×690×200	330×730×460	1	**461-0719**

Description	For	Pk	Cat. No.
Refrigerated coolers, CG, series			
Refrigerated cooler C1G	Tank sizes (l) 5, 12, 18, 26, 38	1	**473-4100**
Refrigerated cooler C2G	Tank sizes (l) 26, 38	1	**473-4101**
Accessories			
Labwise® Control and Analysis software. Includes USB & RS232 cable	GR150, GP200, TX150 and TXF200	1	**461-0223**
Probes for Optima series baths and circulators			
External probe, flexible plastic, 3 m cable	Monitoring temperature of external loads	1	**461-0630**
External probe, stainless steel, 3 m cable	Monitoring temperature of external loads	1	**461-0631**
Lids			
Stainless steel lid	ST5	1	**461-0680**
Gabled stainless steel lid, hinged	ST12	1	**461-0677**
Gabled stainless steel lid, hinged	ST18, ST26	1	**461-0678**
Gabled stainless steel lid, hinged	ST38	1	**461-0679**

* RT = Ambient
** Temperature range can be extended to 0 °C with accessory cooling, Grant C1G. Cat. No 473-4100
*** Temperature range can be extended to –15 °C with accessory cooling Grant C2G. Cat. No 473-4101

Baths and lids, stainless steel, ST series
Grant

Premium baths which are constructed from corrosion resistant stainless steel for durability in demanding environments. Available in five sizes: 5, 12, 18, 26 and 38 litres to suit a wide variety of applications.

- All baths are supplied with mounting bridge plate. Models of 12 litres and above have a mounting plate which allows the Optima™ thermostat to be orientated on the tank in two directions - ideal for optimising bench space
- Baths of 12 litres and above feature a drain tap for easy emptying and can accommodate Grant C1G and C2G immersion coolers for operation at below ambient temperatures
- Can be used up to 200 °C

Ordering information: All baths supplied without lid. Accessory lids are recommended when working above 60 °C and should be ordered separately.

Type	Temp. range (°C)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
ST5	≤200	5	150×150×140	180×330×200	1	**461-0676**
ST12	≤200	12	205×300×140	330×360×200	1	**461-0672**
ST18	≤200	18	300×385×130	330×540×200	1	**461-0673**
ST26	≤200	26	300×385×180	330×540×255	1	**461-0674**
ST38	≤200	38	300×575×180	330×730×255	1	**461-0675**

Description	For	Pk	Cat. No.
Lids			
Stainless steel lid	ST5	1	**461-0680**
Gabled stainless steel lid, hinged	ST12	1	**461-0677**
Gabled stainless steel lid, hinged	ST18, ST26	1	**461-0678**
Gabled stainless steel lid, hinged	ST38	1	**461-0679**

Butyrometer bath, stainless steel, for use in dairy laboratories
Grant

Specifically designed for use in dairy laboratories, deep enough to allow immersion of Gerber butyrometers, and suitable for general laboratory applications where a deep 290 mm tank is required. The T100-MST20 butyrometer bath has a stainless steel tank in a stainless steel outer case, and a hinged stainless steel lid. The digital control unit provides precise temperature control, has a bright LED and is mounted on a stainless steel cover over the tank and can be easily detached for cleaning or servicing. It has an injection-moulded plastic case, with heater, float, stirrer and temperature sensor projecting downwards into the liquid. All immersed parts are made of materials to resist occasional contamination of the water by spilt Gerber acid. The bath has space for three racks, which each hold 12 butyrometers.

- Simple user interface based on a sensitive rotor plus two keys
- Stirred circulation within the tank for excellent temperature stability and uniformity
- Operating set-point, plus three adjustable preset temperature values and fixed over-temperature cut-out
- User recalibration facility, for optimum accuracy at the required operating temperature
- Low liquid protection by float switch; fault indication display and visual alarm

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
T100-MST20	RT* +5...100	±0,05	1,3	20	240x210×290	412×232×490	14	1	**461-0741**

Description	For	Pk	Cat. No.
Accessories for butyrometer bath, stainless steel, for use in dairy laboratories			
Stainless steel test tube rack, H1-25M	12 butyrometers	1	**462-0092**

* RT = Ambient

Probes for Optima series baths and circulators
Grant

Description	Pk	Cat. No.
External probe, flexible plastic, 3 m cable	1	**461-0630**
External probe, stainless steel, 3 m cable	1	**461-0631**

Baths and circulators, stainless steel

Huber

Circulating bath thermostats with baths made from stainless steel are simple to use and are suitable for many applications such as: Sample temperature control, analysis, materials testing or checking food. The units offer high temperature stability and are fitted with over-temperature and low level protection suitable for use with flammable fluids. A powerful pressure/suction pump ensures optimum circulation and temperature homogenity in the bath and also allows temperature control of external applications using a pump adapter (accessory). There is a range of optional accessories including inserts, variable adjustable platforms, bath covers, probes as well as tubing, temperature control fluids and various adapters, please see www.vwr.com for details.

The **Pilot ONE**® multi-touch controller features a brilliant 14,5 cm touchscreen with graphic functions and easy navigation menu in 11 languages. All important operating parameters and temperature values are clearly displayed on the touchscreen. The favourites menu, one-click operation and the integral technical glossary mean operation is simple. Integrated USB and Ethernet ports allow connection to a PC or network, e.g. for remote control or data transmission.

- Pilot ONE® controller with Plug & Play technology, 14,5 cm touchscreen and comfortable menu navigation
- Precise temperature control
- Overtemperature and low level protection
- Powerful pressure/suction pump
- Programmer with calendar and clock functions, allows 5-point calibration
- PT100 sensor connection, USB and LAN interfaces

MPC-controller is a modern and easy to use microprocessor controller with a large temperature display limited to essential functions only. MPC controller features over-temperature alarm and low liquid level protection. All MPC models also feature a powerful and suction pump for optimum performance.

- Large temperature display
- LED indicators for pump, cooling and heating
- Simple operation using only three keys

Comply with DIN 12876, Safety class III, FL
Maximum pump capacities:
Pilot ONE® (CC-E): 27 l/min, 700 mbar, 25 l/min, 400 mbar (suction)
MPC: 20 l/min, 0,2 bar, 0,18 bar (suction)

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
With CC-E controller								
CC-208B	(–30)25...200	±0,01/0,1	2	8,5	230×127×150	290×350×375	1	**461-0132**
CC-212B	(–30)25...200	±0,01/0,1	2	12	290×152×150	350×375×375	1	**461-0133**
CC-215B	(–30)25...200	±0,01/0,1	2	15	290×152×200	350×375×425	1	**461-0134**
CC-220B	(–30)25...200	±0,01/0,1	2	20	290×329×150	350×555×375	1	**461-0135**
CC-225B	(–30)25...200	±0,01/0,1	2	25	290×329×200	350×555×425	1	**461-0864**
With MPC-E controller								
MPC-208B	(–30)25...200	±0,1	2	8,5	230×127×150	290×350×375	1	**461-0557**
MPC-212B	(–30)25...200	±0,1	2	12	290×152×150	350×375×375	1	**461-0558**
MPC-215B	(–30)25...200	±0,1	2	15	290×152×200	350×375×425	1	**461-0559**
MPC-220B	(–30)25...200	±0,1	2	20	290×329×150	350×555×375	1	**461-0560**
MPC-225B	(–30)25...200	±0,1	2	25	290×329×200	350×555×425	1	**461-0865**

Description	Pk	Cat. No.
Optional upgrade		
Exclusive E-grade® package	1	**461-0098**
Professional E-grade® package	1	**461-0099**

Note: The working temperature range of all models can be lowered with an optional cooling coil, connected to tap water or a chiller.

Heating circulators

Stainless steel circulating baths with choice of Advanced Programmable or Advanced Digital temperature controller. Both are easy to navigate with large, intuitive displays and multiple communication options including USB-A & B, RS232/485, Ethernet and external temperature probe. The reservoir drain can be accessed by removing the front panel. All models feature user adjustable high temperature safety cut-off points as well as over-temperature protection. The DuraTop™ surface is cool to the touch even when operating at high temperatures.

Advanced Digital models feature an intuitive 9,5 cm display with touch pad control, single point calibration, menus and prompts in 4 languages: French, German, Spanish and English.

Advanced Programmable models have an intuitive 10,9 cm SmartTouch display, 5-point calibration capability, menus and prompts in 6 languages: French, German, Spanish, English, Chinese and Arabic, plus time/temperature programming (ten 100-step programs).

- Working temperatures from ambient +10 to 200 °C with stability of ±0,01 °C
- Variable speed pressure/suction pump with external circulation and temperature control capability
- Swivel 180™ rotating controllers, LidDock™ lid stowing system and DuraTop™ chemically resistant deck
- Event scheduling (time and date), real time clock and temperature trends for up to 10 days with Advanced Programmable models
- Selectable home screens and on-screen help
- Automatic and/or user-adjustable performance optimisation

Comply with DIN 12876-1, Safety Class III
Maximum pump capacities:
16,7 l/min, 250 mbar; suction: 12,2 l/min

Delivery information: Supplied with a reservoir cover, bypass tubing, male inlet and outlet adapters for 47, 63 and 95 mm tubing, ¼" to M16 adapters are also included. For probes and accessories, please visit www.vwr.com.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
Models with Advanced Digital temperature controller								
AD07H200	RT* +10…200	±0,01	2,2	7	142×157×127	221×499×409	1	**462-0215**
AD15H200	RT* +10…200	±0,01	2,2	15	276×212×140	368×569×422	1	**462-0217**
AD20H200	RT* +10…200	±0,01	2,2	20	316×250×140	419×610×422	1	**462-0219**
AD28H200	RT* +10…200	±0,01	2,2	28	359×314×140	457×672×422	1	**462-0221**
Models with Advanced Programmable temperature controller								
AP07H200	RT* +10…200	±0,01	2,2	7	142×157×127	221×499×409	1	**462-0216**
AP15H200	RT* +10…200	±0,01	2,2	15	276×212×140	368×569×422	1	**462-0218**
AP20H200	RT* +10…200	±0,01	2,2	20	316×250×140	419×610×422	1	**462-0220**
AP28H200	RT* +10…200	±0,01	2,2	28	359×314×140	457×672×422	1	**462-0222**

(* RT = Ambient)

Heating circulators

Julabo

ME-12

MA 26

SE-6

Heating circulators with stainless steel bath tank for internal and external temperature applications. Units have powerful heating capacities for large closed or open external systems with simultaneous operation in the bath tank. Models are available with different bath sizes and operating facilities. Accessories: External PT100 sensors, bath fluids, tubing and adapters for connecting external systems. All models feature an integrated cooling coil for applications at or near ambient temperature.

MA models

Features include Multi-Display (LED) for actual value, up to three set points, high/low temperature warning functions and high temperature protection. It is possible to calibrate three temperatures simultaneously.

- Early warning system signals a lowering of bath fluid level
- PID temperature control with drift compensation and electronically adjustable pump capacity
- RS232 interface

ME models

Features as MA, and have a bright VFD comfort display for simultaneous indication of internal/external set point and actual values, and PID cascade temperature control for highest internal and external temperature stability.

- Electronically adjustable pump capacity including illuminated pump stage display
- Connection for external PT100 sensor for measurement and control
- Integrated controller with 10 program steps

HE, SE models

Features as ME, and in addition have optional electronic module with analogue connections for temperature recorder, set point programmer.

- ICC (Intelligent Cascade Control), self-optimising temperature control, for optimum results
- TCF (Temperature Control Features) for band limit, limit setting, co-speed factor and control dynamics
- Particularly powerful pressure and suction pump to 1,1 bar, electronically adjustable

HL, SL models

Features as HE/SE, and in addition have LCD dialogue display, backlit with interactive menu and connections for optional solenoid valves or HST Booster heater with an additional heating capacity of 4 kW.

- RS232/RS485 interface for comprehensive communication and networking possibilities
- Integrated programmer for 6×60 program steps

Classification (according to DIN 12876-1: 3): MA, ME, HE, SE, HL, SL

Max. flow rate / max. pressure:

MA, ME: 11 - 16 l/min, 450 mbar

HE, SE, HL, SL: 22 - 26 l/min, 700 mbar pressure, 400 mbar suction

Ordering information: All units with an RS232 interface can use the free EasyTemp software for control via a PC; the software can be downloaded free of charge. Please contact your local VWR office for details.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
MA-12	RT*...200	±0,01	2	12	220×150×200	300×430×450	1	**461-0633**
MA-26	RT*...200	±0,01	2	26	220×300×200	360×610×450	1	**461-0634**
ME-4	RT*...200	±0,01	2	4,5	130×150×150	210×420×380	1	**461-0391**
ME-6	RT*...200	±0,01	2	6	130×150×200	210×430×420	1	**461-0392**
ME-12	RT*...200	±0,01	2	12	220×150×200	300×430×450	1	**461-0393**
ME-26	RT*...200	±0,01	2	26	220×300×200	360×610×450	1	**461-0395**
HE-4	RT*...250	±0,01	2	4,5	130×150×150	210×420×400	1	**461-0436**
SE-6	RT*...300	±0,01	3	6	130×150×200	210×430×440	1	**461-0437**
SE-12	RT*...300	±0,01	3	12	220×150×200	300×430×470	1	**461-0438**
SE-26	RT*...300	±0,01	3	26	220×300×200	360×610×470	1	**461-0439**

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Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
HL-4	RT*...250	±0,01	2	4,5	130×150×150	210×420×400	1	**461-0169**
SL-6	RT*...300	±0,01	3	6	130×150×200	210×430×440	1	**461-0167**
SL-12	RT*...300	±0,01	3	12	220×150×200	300×430×470	1	**461-0168**
SL-26	RT*...300	±0,01	3	26	220×150×200	360×610×470	1	**461-0440**

(* RT = Ambient)

Heating thermostats with stainless steel baths, Alpha

Lauda

The Alpha heating thermostats have an easy to use control console featuring three button operation and large, clear LED display, ensuring easy navigation through the menu. The thermostats are suitable for use with non flammable liquids (water, water/glycol mixtures). Units can provide both internal and external thermostating. Temperature stability of ±0,05 K gives precise heating and cooling suitable for a wide range of applications. Using an optional pump circulation set and a cooling coil, the heating thermostat can be expanded to create a fully fledged thermostating system.

- Temperature range 25 to 85 °C, resolution 0,1 °C, temperature stability of ±0,05 K
- User-calibration at a single point for re-calibration of working temperatures
- Pump flow rate can be reduced from 15 to 5 l/min by means of a reducer
- Safety functions such as alarms, warnings and errors are shown on the LED display

Maximum pump capacities:

15 l/min, 200 mbar

Delivery information: Supplied with stainless steel bath, flow reducer and screw clamp, which allows the immersion thermostat to be attached to any tank with a maximum wall thickness of 25 mm, and capacity of up to 50 litres; the maximum temperature achievable is dependent on the tank insulation.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
Alpha A 6	25...85	±0,05	1,5	2,5 - 5,5	145×161×150	181×332×370	1	**461-0055**
Alpha A 12	25...85	±0,05	1,5	8 - 12	235×161×200	270×332×420	1	**461-0056**
Alpha A 24	25...85	±0,05	1,5	18 - 25	295×374×200	332×535×420	1	**461-0057**

Description	For	Pk	Cat. No.
Accessories for Alpha series			
Cooling coil	Alpha A	1	**461-0053**
Pump circulation set (for external thermostating)	Alpha A	1 SET	**461-0054**

Heating thermostats, Proline Master and Command

Lauda

Heating circulators with simple touch control and differing Varioflex pump performance. Most models have a pressure/suction pump. Models P12 and P 12 C have a more powerful pressure pump with 8 stages which can be adjusted to the appropriate capacity requirements up to 1,1 bar with pump flow up to a maximum 32 l/min and are able to control the temperature of deeper baths, up to 320 mm. Units have ergonomic handles and pump connections on the back and sides.

- Wide temperature range of up to 300 °C
- Heating capacity: 3,5 kW
- PowerAdapt means shorter heating-up periods and optimal performance without over-heating
- Choice of Master or Command version
- It is possible to upgrade from the Master series to the Command series at a later date

Master thermostats

Proline Master thermostats have an easy to read green LED display with 0,01 °C resolution, simple 3-key operation with additional Tmax button and indicator lights for heating and cooling. SelfCheck assistant ensures user is automatically alerted to possible faults including over-temperature/overloading with visual and acoustic alarms. Units have two module sockets, which can be upgraded with RS232/485 interface, analogue or contact modules.

- Selectable limitation of the setting range
- Integrated external regulator in cascade connection
- Flow temperature and correctional value limitation to achieve careful heating during operation under external control
- Simple temperature probe calibration
- Adjustable Start mode (automatic/manual)

Command thermostats

Features of Proline Command thermostats are the same as Master series, and in addition units have high resolution, back-lit, graphic LCD display with actual values in 0,1/0,01 or 0,001 °C resolution. Data input is via either cursor keys or numerical soft keys. Units have multi-graphic display with clear text messages and graphical representation of sequential temperature curves and are menu driven in four languages (German, English, French and Spanish).

- Fixed temperatures: User can select and edit 8 temperatures
- Real-time clock in combination with timer function
- Programmable control timer with storage for up to 150 temperature/time segments, each with five programs
- Integrated opto decoupled RS232/485 interface as standard
- Control head console can be detached and used as a remote control (up to 50 metres)

Max. flow rate / max. pressure:

25 l/min, 0,7 bar, suction 0,4 bar

Models P12, P12 C only: 32 l/min, 1,1 bar

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
Master thermostats								
P 5	35...300	±0,01	3,5	3,5 - 5,5	150×50×200	200×260×454	1	**461-0334**
P 8	35...300	±0,01	3,5	5,5 - 8	150×150×200	200×360×454	1	**461-0336**
P 18	30...300	±0,01	3,5	12,5 - 19	300×200×200	370×410×454	1	**461-0338**
P 26	30...300	±0,01	3,5	18 - 27	300×350×200	370×560×454	1	**461-0340**
P 12	30...300	±0,01	3,5	6,5 - 13,5	150×150×320	220×360×574	1	**461-0342**
P 40	30...300*	±0,01	3,5	30 - 37	250×250×450	320×545×710	1	**461-2975**
P 50	30...300*	±0,01	3,5	35 - 53	750×300×200	1025×350×454	1	**461-2976**
Command thermostats								
P 5 C	35...300	±0,01	3,5	3,5 - 5,5	150×50×200	200×260×454	1	**461-0335**
P 8 C	35...300	±0,01	3,5	5,5 - 8	150×150×200	200×360×454	1	**461-0337**
P 18 C	30...300	±0,01	3,5	12,5 - 19	300×200×200	370×410×454	1	**461-0339**
P 26 C	30...300	±0,01	3,5	18 - 27	300×350×200	370×560×454	1	**461-0341**
P 12 C	30...300	±0,01	3,5	6,5 - 13,5	150×150×320	220×360×574	1	**461-0343**
P 40 C	30...300	±0,01	3,5	30 - 37	250×250×450	320×545×710	1	**461-0574**
P 50 C	30...300*	±0,01	3,5	35 - 53	750×300×200	1025×350×454	1	**461-2977**

Note: Temperature range of all models can be extended to –30...+300 °C using external cooling.
* Maximum temperature only with bath cover

Heating circulators
Huber

The low bath volume means these circulators are ideal for controlling the temperature of small external applications, or for direct temperature control of small objects directly in the bath.
The Pilot ONE® controller offers a brilliant 14.5 cm touchscreen with graphic functions and a comfortable navigation menu in 11 languages and USB and Ethernet connections.

- Pilot ONE® is interchangeable and can be used as a remote control (with an optional data cable)
- Controller can be upgraded with enhanced functionality at any time (Exclusive and Professional E-grade® packages), basic version features six languages (English, German, French, Spanish, Italian and Russian)
- The display resolution is 0,1 °C; display can be customised to the users' preferences and important information e.g. set point, actual internal or process temperatures can be displayed in a larger format
- Powerful Variable Pressure Control (VPC)
- User can set visual and acoustic alarms limiting the temperature range, and program the unit with its clock and calendar functions for auto start for unsupervised startup

Maximum pump capacities:

27 l/min, 700 mbar, 25 l/min, 400 mbar (suction) for CC-202/205
33 l/min, 700 mbar, 22 l/min, 400 mbar (suction) for CC-304/308/315

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
CC-202C	45...200*	±0,02	2	2	Ø 25×150	178×260×355	1	**461-6456**
CC-205B	45...200*	±0,02	2	5	105×90×150	178×337×355	1	**461-6457**
CC-304B	28...300**	±0,02	2	5	130×100×155	210×335×392	1	**461-0137**
CC-308B	28...300**	±0,02	3	8,5 (5,2***)	130×110×155	242×404×392	1	**461-0138**
CC-315B	28...300**	±0,02	3; 4	15 (8,5***)	270×145×200	335×382×433	1	**461-0139**

Description	Pk	Cat. No.
Optional upgrade		
Exclusive E-grade® package	1	**461-0098**
Professional E-grade® package	1	**461-0099**

*Note: Working temperature range can be lowered to –30 to –200 °C or –20 to +300 °C.
** if an external cooling device is used.
*** With displacement insert.

VWR COLLECTION

2 year warranty

SELECTED FOR YOU

Refrigerated circulating baths with MX temperature controller

Stainless steel baths with user friendly MX temperature controller with three control buttons and on-screen prompts. Baths can be used for external closed loop circulation. The controller rests on a chemically resistant DuraTop™ deck, which is cool to the touch even when working at high temperatures and units feature LidDock™ lid stowing system. Cool Command™ technology regulates the amount of cooling required, saving energy while providing rapid cooling and precise control at elevated temperatures.

- Large EasyView™ LCD display with alarm or fault icons and English prompts and menus
- User adjustable high and low temperature limits and low liquid level alarms
- Single speed pressure pump with external closed loop circulation capability
- Integral pump and heater coil protection
- Single point calibration

Complies with DIN 12876-1, Safety class I

Maximum pump capacities:
10,6 l/min, 100 mbar

Delivery information: Supplied with a reservoir cover, bypass tubing, male inlet and outlet adapters for 47, 63 and 95 mm tubing, ¼" to M16 adapters are also included.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Cooling capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
MX7LR-20 (low profile)	–20...+135	±0,07	1,1	0,2	7	142×157×127	411×589×439	1	**462-0223**
MX07R-20	–20...+135	±0,07	1,1	0,2	7	142×157×127	221×541×645	1	**462-0225**

Note: Cooling capacity at 20 °C

Refrigerated circulators

Stainless steel circulating baths with choice of Advanced Programmable or Advanced Digital temperature controller. Both are easy to navigate with large, intuitive displays and multiple communication options including USB-A & B, RS232/485, Ethernet and external temperature probe. The reservoir drain can be accessed by removing the front panel. All models feature user adjustable high temperature safety cut-off points as well as over-temperature protection. The DuraTop™ surface is cool to the touch even when operating at high temperatures.

Advanced Digital models feature an intuitive 9,5 cm display with touch pad control, single point calibration, menus and prompts in 4 languages: French, German, Spanish and English.

Advanced Programmable models have an intuitive 10,9 cm SmartTouch display, 5-point calibration capability, menus and prompts in 6 languages: French, German, Spanish, English, Chinese and Arabic, plus time/temperature programming (ten 100-step programs).

- Working temperatures from –40 to +200 °C with stability of ±0,01 °C (except 45 litre models with maximum 135 °C)
- Variable speed pressure/suction pump with external circulation and temperature control capability
- Swivel 180™ rotating controllers, LidDock™ lid stowing system, DuraTop™ chemically resistant deck and WhisperCool™ environmental control system reduces noise, increases refrigeration efficiency and lowers energy consumption
- Cool Command™ technology regulates the amount of cooling required, saving energy while providing rapid cooling and precise control at elevated temperatures
- Event scheduling (time & date), real time clock and temperature trends for up to 10 days with Programmable models
- Selectable home screens and on-screen help
- Automatic and/or user-adjustable performance optimisation

Comply with DIN 12876-1, Safety class III
Maximum pump capacities:
16,7 l/min, 250 mbar, 12,2 l/min suction

Delivery information: Supplied with a reservoir cover, bypass tubing, male inlet and outlet adapters for 47, 63 and 95 mm tubing, ¼" to M16 adapters are also included. For probes and accessories, please visit vwr.com or contact your local VWR sales office.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Cooling capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
Models with Advanced Digital temperature controller									
AD7LR-20	–20…+200	±0,01	2,2	0,2	7	142×157×127	411×589×411	1	**462-0224**
AD07R-20	–20…+200	±0,01	2,2	0,2	7	142×157×127	221×541×617	1	**462-0226**
AD07R-40	–40…+200	±0,01	2,2	0,505	7	142×157×127	221×541×617	1	**462-0228**
AD15R-30	–30…+200	±0,01	2,2	0,915	15	276×212×140	368×569×683	1	**462-0230**
AD15R-40	–40…+200	±0,01	2,2	1,0	15	276×212×140	368×569×683	1	**462-0232**
AD20R-30	–30…+200	±0,01	2,2	0,915	20	316×250×140	419×610×683	1	**462-0234**
AD28R-30	–30…+200	±0,01	2,2	0,915	28	359×314×140	457×672×683	1	**462-0236**
AD45R-20	–25…+135	±0,01	2,2	1,4	45	398×549×140	568× 909× 1070	1	**462-0238**
Models with Advanced Programmable temperature controller									
AP07R-20	–20...+200	±0,01	2,2	0,2	7	142×157×127	221×541×617	1	**462-0227**
AP07R-40	–40…+200	±0,01	2,2	0,505	7	142×157×127	221×541×617	1	**462-0229**
AP15R-30	–30…+200	±0,01	2,2	0,915	15	276×212×140	368×569×683	1	**462-0231**
AP15R-40	–40…+200	±0,01	2,2	1,0	15	276×212×140	368×569×683	1	**462-0233**
AP20R-30	–30…+200	±0,01	2,2	0,915	20	316×250×140	419×610×683	1	**462-0235**
AP28R-30	–30…+200	±0,01	2,2	0,915	28	359×314×140	457×672×683	1	**462-0237**
AP45R-20	–25…+135	±0,01	2,2	1,4	45	398×549×140	568× 909× 1070	1	**462-0239**

Note: Cooling capacity at 20 °C

Remote temperature probes for VWR circulators

Remote temperature probes for use with circulators with a programmable controller. Permit points of control to be switched from inside a programmable circulator bath to a remote location, such as an open tank. Compensates for heat loss through tubing between the circulator and the control point. Platinum RTD sensor with stainless steel sheath. Rubber coupling with 25,4 mm Ø, connects sheath to flexible cable. Probe cable ends in a DB9 female plug.

LengthxØ (mm): 152x4

Description	Pk	Cat. No.
Remote temperature probe, 3 metre cable	1	**461-0101**
Remote temperature probe, 7,6 metre cable	1	**461-0102**
Remote temperature probe, 15,25 metre cable	1	**461-0103**

Cooling coils for VWR bath circulators

For auxiliary cooling of VWR circulators. The stainless steel coil, when connected to a water source, permits more rapid cooling from high temperatures or better control when operating close to ambient temperatures. Not recommended for use in circulator baths where fluid temperature exceeds the boiling point of water.

Description	Pk	Cat. No.
Cooling coil	1	**461-0105**

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Refrigerated and heating circulators

Julabo

Refrigerated and heating circulators are ideal for temperature application to external systems with simultaneous operation in the bath tank. Units provide high heating/cooling capacities to ensure rapid heating and cooling times, wiith Active Cooling Control to +200 °C (not on ED or F12 models). FP models offer proportional cooling control to ensure energy-saving performance and to reduce heat generation to the environment. Convenient cleaning of dust by removable front vent grid. Some models have a handle or castors to allow easy transport. All models include a drain port on the front to allow the bath fluid to be easily drained off. Typical applications: Temperature control of external, closed systems, such as spectrophotometers, refractometers, viscometers. For simultaneous temperature control of small objects in the circulator bath.

ED models

- LED temperature display for actual and set point values
- Keypad for set point input
- Adjustable over-temperature/dry-running protection

EH models

Features are the same as ED above, and in addition has an extended temperature range.

- High temperature cut-off/ low liquid level protection (float)
- Timer function

MA models

Features as EH above, and in addition has a wider temperature range and electronically adjustable pump capacity.

- RS232 interface
- Three point calibration
- Early warning system for low liquid level and high/low temperature

ME models

Features as MA, and have a bright VFD comfort display for simultaneous indication of internal/external set point and actual values, and PID cascade temperature control for highest internal and external temperature stability.

- Electronically adjustable pump capacity including illuminated pump stage display
- Connection for external PT100 sensor for measurement and control
- Integrated programmer with 10 program steps

HE models

Features as ME, and in addition have optional electronic module with analogue connections for temperature recorder and set point programmer.

- Particularly powerful pressure and suction pump to 1,1 bar, electronically adjustable
- ICC (Intelligent Cascade Control), self-optimising
- TCF (Temperature Control Features) for band limit, limit setting, co-speed factor, control dynamics

HL models

Features as HE, and in addition have LCD dialogue-display, backlit with interactive menu and connections for optional solenoid valves or HST Booster heater with an additional heating capacity of 4 kW.

- RS232/RS485 interface for comprehensive communication and networking possibilities
- Integrated programmer for six 60-step programs

Max. flow rate / max. pressure:
ED, EH: 15 l/min, 350 mbar
MA, ME: 11 - 16 l/min, 450 mbar (with electronically adjustable pump capacity)
HE, HL: 22 - 26 l/min, 700 mbar pressure, 400 mbar suction (with electronically adjustable pump capacity)

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Cooling capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
F12-ED	–20...+100	±0,03	2	0,16; 0,1; 0,02	4,5	130×150×130	200×360×560	1	**461-0410**
F25-ED	–28...+100	±0,03	2	0,26; 0,2; 0,06	4,5	120×140×140	230×420×610	1	**461-0442**
F26-ED	–28...+100	±0,03	2	0,26; 0,2; 0,06	4,5	120×140×140	420×420×420	1	**461-0444**
F34-ED	–30...+100	±0,03	2	0,45; 0,32; 0,14	20	240×300×150	380×580×620	1	**461-0448**
F12-EH	–20...+150	±0,03	2	0,16; 0,1; 0,02	4,5	130×150×130	200×360×560	1	**461-0441**
F25-EH	–28...+150	±0,03	2	0,26; 0,2; 0,06	4,5	120×140×140	230×420×610	1	**461-0443**
F32-EH	–35...+150	±0,03	2	0,45; 0,39; 0,15	8	180×120×150	310×420×640	1	**461-0450**
F33-EH	–30...+150	±0,03	2	0,5; 0,32; 0,12; 0,03	16	230×140×200	360×460×690	1	**461-0446**
F34-EH	–30...+150	±0,03	2	0,45; 0,32; 0,14	20	240×300×150	380×580×620	1	**461-0449**
F38-EH	–35...+80	±0,05	2	0,92; 0,66; 0,32	45	350×410×270	460×700×890	1	**461-0452**
FP35-MA	–35...+150	±0,02	2	0,45; 0,39; 0,15; 0,05	2,5	180×120×50	310×420×640	1	**461-0611**
F32-MA	–35...+200	±0,02	2	0,45; 0,39; 0,15; 0,05	8	180×120×150	310×420×640	1	**461-0608**
F33-MA	–30...+150	±0,02	2	0,5; 0,32; 0,12; 0,03	16	230×140×200	360×460×690	1	**461-0609**

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Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Cooling capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
F34-MA	–30...+150	±0,02	2	0,45; 0,32; 0,14; 0,03	20	240×300×150	380×580×620	1	**461-0610**
FP40-MA	–40...+200	±0,02	2	0,68; 0,5; 0,32; 0,17; 0,04	16	230×140×200	370×460×690	1	**461-0612**
FP50-MA	–50...+200	±0,02	2	0,9; 0,8; 0,5; 0,32; 0,16	8	180×120×150	420×490×700	1	**461-0613**
F25-ME	–28...+200	±0,01	2	0,26; 0,2; 0,06	4,5	120×140×140	230×420×610	1	**461-0397**
F26-ME	–28...+200	±0,01	2	0,26; 0,2; 0,06	4,5	120×140×140	420×420×420	1	**461-0398**
F32-ME	–35...+200	±0,01	2	0,45; 0,39; 0,15; 0,05	8	180×120×150	310×420×640	1	**461-0154**
F33-ME	–30...+200	±0,01	2	0,5; 0,32; 0,12; 0,03	16	230×140×200	360×460×690	1	**461-0399**
F34-ME	–30...+150	±0,01	2	0,45; 0,32; 0,14; 0,03	20	240×300×150	380×580×620	1	**461-0400**
FP40-ME	–40...+200	±0,01	2	0,68; 0,5; 0,32; 0,17; 0,04	16	230×140×200	370×460×690	1	**461-0402**
FP50-ME	–50...+200	±0,01	2	0,9; 0,8; 0,5; 0,32; 0,16	8	180×120×150	420×490×700	1	**461-0155**
F25-HE	–28...+200	±0,01	2	0,26; 0,2; 0,06	4,5	120×140×140	230×420×640	1	**461-0445**
F32-HE	–35...+200	±0,01	2	0,45; 0,39; 0,15; 0,05	8	180×120×150	310×420×660	1	**461-0451**
FP40-HE	–40...+200	±0,01	2	0,68; 0,5; 0,32; 0,17; 0,04	16	230×140×200	370×460×710	1	**461-0494**
FP45-HE	–42...+200	±0,01	2	0,85; 0,7; 0,42; 0,28; 0,08	26	230×260×200	380×580×690	1	**461-0455**
FP50-HE	–50...+200	±0,01	2	0,9; 0,8; 0,5; 0,32; 0,16	8	180×120×150	420×490×720	1	**461-0457**
FP35-HL	–35...+150	±0,01	2	0,45; 0,39; 0,15; 0,05	2,5	180×120×50	310×420×660	1	**461-0166**
F25-HL	–28...+200	±0,01	2	0,26; 0,2; 0,06	4,5	120×140×140	230×420×640	1	**461-0165**
F32-HL	–35...+200	±0,01	2	0,45; 0,39; 0,15; 0,05	8	180×120×150	310×420×660	1	**461-0164**
F33-HL	–30...+200	±0,01	2	0,5; 0,32; 0,12; 0,03	16	230×140×200	360×460×710	1	**461-0447**
F34-HL	–30...+150	±0,01	2	0,45; 0,32; 0,14; 0,03	20	240×300×150	380×580×640	1	**461-0493**
FP40-HL	–40...+200	±0,01	2	0,68; 0,5; 0,32; 0,17; 0,04	16	230×140×200	370×460×710	1	**461-0453**
FP45-HL	–42...+200	±0,01	2	0,85; 0,7; 0,42; 0,28; 0,08	26	230×260×200	380×580×690	1	**461-0456**
FP50-HL	–50...+200	±0,01	2	0,9; 0,8; 0,5; 0,32; 0,16	8	180×120×150	420×490×720	1	**461-0163**

Note: Cooling capacity at +20; 0; –20; –30 and –40 °C

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Cryo-compact circulators, CF series
Julabo

Compact refrigerated/heating circulators which can be used on bench top or in a fume hood, ideal for temperature control of distillation apparatus or mini plant installation. All four models feature pump connections for external temperature applications and a bath opening for temperature control of small objects directly in the circulator bath. The maximum ambient temperature of +40 °C and air cooled ventilation means the units can be positioned alongside other units or directly in a fume hood.

CF30/CF40 models are ideal for routine applications:

- Working temperatures up to +150 °C with pressure pump
- Splash-proof key pad
- LED temperature display with precise PID temperature control
- RS232 interface for PC connection

CF31 and CF41 are suitable for demanding applications. Features are the same as CF30 and CF40 and in addition:

- Working temperatures up to +200 °C with powerful electronically adjustable pressure and suction pump
- Bright VFD display and interactive LCD display with user guide
- Intelligent and self-optimsing ICC (Intelligent Cascade Control) and TCF (Temperature Control Features)
- RS232/RS485 interface for PC connection and external PT100 external sensor connection
- Integrated programmer with six 60-step programs, three point calibration and early warning for low liquid level

Max. flow rate / max. pressure:

CF30, CF40: 15 l/min, 350 mbar pressure

CF31, CF41: 22 - 26 l/min, 400 - 700 mbar pressure, 200 - 400 mbar suction (with electronically adjustable pump capacity).

Delivery information: Supplied with two barbed fittings for 8 and 12 mm inner diameter tubing. An electronic module with analogue connections is available as an optional accessory for CF31 or CF41 units, please contact your local VWR office for details.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Cooling capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
CF30	-30...+150	±0,03	2	0,32; 0,25; 0,15; -	3,5	160×30×140	240×460×400	1	**461-3460**
CF31	-30...+200	±0,02	2	0,32; 0,25; 0,15; -	3,5	160×30×140	240×460×400	1	**461-3461**
CF40	-40...+150	±0,03	2	0,47; 0,4; 0,28; 0,12	5,5	190×30×190	280×460×460	1	**461-3462**
CF41	-40...+200	±0,02	2	0,47; 0,4; 0,28; 0,12	5,5	190×30×190	280×460×460	1	**461-3463**

Note: Cooling capacity at +20; 0; –20 and –30 °C.

Ultra-low temperature refrigerated circulators

Julabo

Ultra-low temperature refrigerated circulators for heating and cooling. The units are suitable for external temperature applications with simultaneous operation in the bath tank. The units provide particularly high heating and cooling capacities for rapid heating and cooling times even for large volume, external systems. FP models offer proportional cooling control to ensure energy saving performance and to reduce heat generation to the environment. Models with the designation W are water cooled. All models have handles and castors which allow easy transportation and drain ports for conveniently draining the bath fluid. The units offer an improved insulation to prevent ice formation and have a filling level display. Typical applications: Temperature control of jacketed reaction vessels, autoclaves, mini plant installations, kilo labs, freezing point determination, calibration at low temperatures and petroleum testing.

ME models

Feature a bright VFD comfort display for simultaneous indication of internal/external set point and actual values, and PID cascade temperature control for highest internal and external temperature stability. Early warning systems with audible signal for low liquid level, and for high/low temperature limits. It is possible to calibrate three temperatures simultaneously.

- Actual and up to three set temperatures can be viewed
- Electronically adjustable pump capacity including illuminated pump stage display
- Connection for external PT100 sensor for measurement and control
- Integrated programmer with 10 program steps
- RS232 interface

HL, SL models

Same features as ME, and in addition have backlit LCD, with interactive menu and connections for optional solenoid valves or HST Booster heater with an additional heating capacity of 6 kW. An electronic module with analogue connections for temperature recorder and set point programmer available as an optional accessory.

- ICC intelligent, self-optimising cascade temperature control
- TCF (Temperature Control Features) for band limit, limit setting, co-speed factor and control dynamics
- Particularly powerful pressure and suction pump to 1,1 bar, electronically adjustable
- RS232/RS485 interface for comprehensive communication and networking possibilities
- Integrated programmer for six 60-step programs

Max. flow rate / max. pressure:

ME: 11 - 16 l/min, 450 mbar (with electronically adjustable pump capacity)

HL, SL: 22 - 26 l/min, 700 mbar pressure, 400 mbar suction (with electronically adjustable pump capacity)

All units with an RS232 interface can use the free EasyTemp software for control via a PC; the software can be downloaded free of charge from the Julabo website. Models FP(W)90, FP(W)55 and FP(W) 52 are available on request with an expanded working temperature range of up to +150 °C. Units with bath opening, instead of an insulated filling port are also available. Please contact your local VWR sales office for details.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Cooling capacity (kW)	Capacity (l)	W×D×H (mm)	Pk	Cat. No.
F70-ME	-70...+100	±0,02	1,3	0,34; 0,22; 0,17; 0,13; 0,07; -	4,5	420×540×710	1	**461-0403**
F81-ME	-81...+100	±0,02	1,3	0,45; 0,38; 0,36; 0,32; 0,27; 0,07	6,5	500×580×880	1	**461-0404**
FP89-ME	-90...+100	±0,02	1,3	1,0 ; 0,92 ; 0,88 ; 0,75 ; 0,58 ; 0,2	8	550×600×900	1	**461-0405**
F81-HL	-81...+100	±0,02	1,3	0,45; 0,38; 0,36; 0,32; 0,27; 0,07	6,5	500×580×890	1	**461-0462**
FP89-HL	-90...+100	±0,02	1,3	1,0 ; 0,92 ; 0,88 ; 0,75 ; 0,58 ; 0,2	8	550×600×920	1	**461-0162**
FP51-SL	-51...+200	±0,05	3	2,0; 1,5; 1,0; 0,26 ;- ;-	11	460×550×890	1	**461-0159**
FP52-SL	-60...+100	±0,05	3	3,0; 2,8; 1,6; 0,65; 0,1; -	24	590×760×1160	1	**461-0495**
FP55-SL	-60...+100	±0,05	3	5,2; 4,1; 2,2; 0,7; 0,13; -	27	850×760×1160	1	**461-0496**
FPW55-SL	-60...+100	±0,05	3	5,5; 4,1; 2,2; 1,0; 0,13	27	590×760×1160	1	**461-0497**
FP90-SL	-90...+100	±0,05	3	1,8; 1,7; 1,6; 1,35; 0,75; 0,15	22	590×760×1160	1	**461-0498**
FPW90-SL	-90...+100	±0,05	3	1,8; 1,7;1,6; 1,35; 0,75; 0,15	22	590×760×1160	1	**461-0499**
FPW91-SL	-91...+100	±0,2	3	5,2; 4,7; 4,0; 3,5; 2,3; 0,8	22	850×760×1160	1	**461-0500**
F95-SL	-95...0	±0,05	3	1,7; 1,5; 1,3; 1,1; 0,36	22	590×760×1160	1	**461-0465**

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Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Cooling capacity (kW)	Capacity (l)	W×D×H (mm)	Pk	Cat. No.
Models with expanded working temperature range								
FP52-SL	-60...+150	±0,05	3	3,0; 2,8; 1,6; 0,65; 0,1	24	590×760×1160	1	**461-0466**
FP55-SL	-60...+150	±0,05	3	5,2; 4,1; 2,2; 0,7; 0,13	27	850×760×1160	1	**461-0467**
FP90-SL	-90...+150	±0,05	3	1,8; 1,7; 1,6; 1,35; 0,75; 0,15	22	590×760×1160	1	**461-0468**

Note: Cooling capacity at 20; 0; –20; –40; –60 and –80 °C

Cooling thermostats, Alpha
Lauda

Alpha RA 8

Alpha RA 12

Alpha RA 24

The Alpha cooling thermostats have an easy to use control console featuring three button operation and large, clear LED display, ensuring easy navigation through the menu. The thermostats are suitable for use with non flammable liquids (water, water/glycol mixtures). Units can provide both internal and external thermostating. Temperature stability of ±0,05 K gives precise heating and cooling suitable for a wide range of applications. The automatic cooling system enables cooling throughout the entire temperature range of –25 to +100 °C. All cooling thermostats contain a compressor system which can be switched on or off as required, thus conserving energy and saving wear and tear on the compressor to give a longer working life.

- Temperature range –25 to +100 °C, resolution 0,1 °C, temperature stability of ±0,05 K
- User calibration at a single point for re-calibration of working temperatures
- Safety functions such as alarms, warnings and errors are shown on the LED display
- The front plate can be quickly removed to make cleaning the condenser easy, a drain connection at the rear of the unit makes emptying the temperature fluid simple
- Units have an integrated timer which automatically shuts down to standby mode after a preset time

Maximum pump capacities:

15 l/min, 200 mbar

Delivery information: Supplied with bath covers and pump kits with 13 mm Ø pump connections.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Cooling capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
Alpha RA 8	-25…+100	±0,05	1,5	0,225	8	165×190×160	235×500×605	1	**461-0058**
Alpha RA 12	-25…+100	±0,05	1,5	0,325	15	300×190×160	365×500×605	1	**461-0059**
Alpha RA 24	-25…+100	±0,05	1,5	0,425	22	350×290×160	415×605×605	1	**461-0088**

Note: Cooling capacity at 20 °C

Cooling thermostats, ECO
Lauda

RE 415 S

Cooling thermostats with menu navigation in plain text for user friendly operation. Various interface modules are available as accessories. All models are available as air- or water-cooled variants.

- Variopump with six adjustable stages
- Flow rate switch for control of flow rate between internal and external circulation
- Simultaneous display of set and actual temperature
- Over-temperature setting via menu
- USB interface as standard

Silver controller

The cooling thermostats with Silver control head are suitable for use in the temperature range from –50 up to +150 °C. They are equipped with a bath cover and a pump circulation set for external applications as standard.

- Heating power 1,3 kW, working temperature range up to 150 °C
- LCD display, resolution of indication 0,01 °C
- Programmer with one program and 20 segments

Gold controller

The cooling thermostats with Gold control head are suitable for use in the temperature range from –50 up to +200 °C.

- Heating power 2,6 kW, working temperature range up to 200 °C
- Colour TFT display, resolution of indication 0,01 °C
- Programmer with five programs and 150 segments
- Graphical display of temperature profiles
- Ramp function and clock timer

Maximum pump capacity:

All models: 22 l/min, 0,55 bar

Delivery information: Units supplied with bath cover and closing plugs. S models have pump connections with 13 mm plastic nipples, G models have a stainless steel pump circulation set with a M16×1 thread. Water cooled models are available, please contact your local VWR sales office for details.

Type	Temp. range (°C)	Temp. stability (°C)	Cooling capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
Silver controllers								
RE 415 S	–15...+150	±0,02	0,18; 0,12; (0,03)*	3,3 - 4	135×105×160	180×350×546	1	**461-0525**
RE 420 S	–20...+150	±0,02	0,2; 0,15; 0,03*	3,3 - 4	135×105×160	180×396×555	1	**461-0527**
RE 620 S	–20...+150	±0,02	0,2; 0,15; 0,03*	4,6 - 5,7	150×130×160	200×430×581	1	**461-0529**
RE 630 S	–30...+150	±0,02	0,3; 0,24; 0,1*	4,6 - 5,7	150×130×160	200×430×581	1	**461-0531**
RE 1050 S	–50...+150	±0,02	0,7; 0,6; 0,35*	8 - 10	200×200×160	280×440×624	1	**461-0533**
RE 1225 S	–25...+150	±0,02	0,3; 0,24; 0,09*	9,3 - 12	200×200×200	250×435×624	1	**461-0535**
RE 2025 S	–25...+150	±0,02	0,3; 0,24; 0,09*	14 - 20	300×350×160	350×570×624	1	**461-0537**
Gold controllers								
RE 415 G	–15...+150	±0,02	0,18; 0,12; (0,03)*	3,3 - 4	135×105×160	180×350×546	1	**461-0526**
RE 420 G	–20...+200	±0,02	0,2; 0,15; 0,03*	3,3 - 4	135×105×160	180×396×555	1	**461-0528**
RE 620 G	–20...+200	±0,02	0,2; 0,15; 0,03*	4,6 - 5,7	150×130×160	200×430×581	1	**461-0530**
RE 630 G	–30...+200	±0,02	0,3; 0,24; 0,1*	4,6 - 5,7	150×130×160	200×430×581	1	**461-0532**
RE 1050 G	–50...+200	±0,02	0,7; 0,6; 0,35*	8 - 10	200×200×160	280×440×624	1	**461-0534**
RE 1225 G	–25...+200	±0,02	0,3; 0,24; 0,09*	9,3 - 12	200×200×200	250×435×624	1	**461-0536**
RE 2025 G	–20...+200	±0,02	0,3; 0,24; 0,09*	14 - 20	300×350×160	350×570×624	1	**461-0538**

Description	For	Pk	Cat. No.
Accessories			
Analogue module	all ECO models	1	**461-0588**
RS232/RS485 interface	all ECO models	1	**461-0575**
Contact module with 1 input and 1 output	all ECO models	1	**461-0589**
Contact module with 3 inputs and 3 outputs	all ECO models	1	**461-0590**
Profibus module	all ECO models	1	**461-0591**
External PT100/LiBus module	all ECO models	1	**461-0576**

Note: Cooling capacity at +20; 0; and –20 °C (–15 °C for models RE 415 S and RE 415 G).

Cooling and heating thermostats, stainless steel, Ministats

Huber

Their compact dimensions enable Ministats to be placed in the smallest of spaces, for example in a laboratory fume cupboard or inside technical plant. Despite their minimal size the systems have a wide variety of features and offer performance levels suitable for temperature control of photometers, refractometers, viscometers, distillation apparatus, reaction vessels and mini-plants. They are mainly used for external applications, however the bath opening allows objects to be thermoregulated directly in a thermostat bath. A powerful pressure/suction pump with an infinitely controlled rotational speed ensures optimum circulation. The maximum pressure can also be regulated by an optional pressure sensor, meaning that sensitive glass reactors and apparatus can be protected from breakage. Ministats have the "professional" level Pilot ONE controller as standard with a colour TFT display and convenient operator guidance. Analogue NAMUR connections are available via the optional Com.G@te module allowing Ministats to be integrated into plant and process control systems. The Pilot ONE multi-touch controller features a brilliant 14,5 cm touchscreen with graphic functions and easy navigation menu in 11 languages. All important operating parameters and temperature values are clearly displayed on the touchscreen. The favourites menu, one-click operation and the integral technical glossary mean operation is simple. Integrated USB and Ethernet ports allows connection to a PC or network, e.g. for remote control or data transmission.

- Pilot ONE controller with Plug & Play technology, 14,5 cm touchscreen and easy menu navigation
- Precise temperature control
- Over-temperature and low level protection
- Powerful pressure/suction pump
- Programmer features calendar and clock functions, allows 5-point calibration
- PT100 sensor connection, USB and LAN interfaces

Comply with DIN 12876, Safety class III, FL
"W" denotes models are water cooled.
Max. flow rate/max pressure:
27 l/min, 700 mbar, (pressure) 20 l/min, 400 mbar (suction)

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Cooling capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
Ministat 125	-25…+150	±0,01/0,1 °C	1	0,3; 0,21; 0,05; -*	2,75/1,3**	178×80×120	225×370×429	1	**461-0803**
Ministat 125w	-25…+150	±0,01/0,1	1	0,3; 0,21; 0,05; -*	2,75/1,3**	178×80×120	225×370×429	1	**461-1003**
Ministat 230	-40…+200	±0,01/0,1 °C	2	0,42; 0,38; 0,25; 0,14*	3,2/1,7**	170×87×135	255×450×476	1	**461-0744**
Ministat 230w	-40…+200	±0,01/0,1 °C	2	0,42; 0,38; 0,25; 0,14*	3,2/1,7**	170×87×135	255×450×476	1	**461-0739**
Ministat 240	-45…+200	±0,01/0,1 °C	2	0,6; 0,55; 0,35; 0,125*	4,9/2,8**	205×85×157	300×465×516	1	**461-0745**
Ministat 240w	-45…+200	±0,01/0,1 °C	2	0,6; 0,55; 0,35; 0,125*	4,9/2,8**	205×85×157	300×465×516	1	**461-0740**

Description	Pk	Cat. No.
Optional upgrade		
Exclusive E-grade® package	1	**461-0098**
Professional E-grade® package	1	**461-0099**

* Cooling capacity at +20; 0; –20 and –30 °C
** With displacement insert

Cooling circulators
Huber

These circulators with insulated refrigeration baths are designed for direct temperature control from –30 up to +200 °C.

The Pilot ONE® controller offers a brilliant 5.7" touchscreen with graphic functions and a comfortable navigation menu in 11 languages and USB and Ethernet connections.

- Pilot ONE® is interchangeable and can be used as a remote control (with an optional data cable)
- Controller can be upgraded with enhanced functionality at any time (Exclusive and Professional E-grade® packages), basic version features six languages (English, German, French, Spanish, Italian and Russian)
- The display resolution is 0,1 °C; display can be customised to the users' preferences and important information e.g. set point, actual internal or process temperatures can be displayed in a larger format
- Powerful variable speed pressure/suction pump with Variable Pressure Control (VPC)
- User can set visual and acoustic alarms, limiting the temperature range, and program the unit with its clock and calendar functions for auto start for unsupervised startup

MPC controller

Modern and easy to use microprocessor controller with a large temperature display limited to essential functions only. MPC controller features over-temperature alarm and low-liquid level protection. All MPC models also feature a powerful pressure and suction pump for optimum performance.

- Large temperature display
- LED indicators for pump, cooling and heating
- Simple operation using only three keys

Comply with DIN 12876 Safety class III, FL

Maximum pump capacities:
Pilot ONE® (CC-E): 27 l/min, 700 mbar, 25 l/min, 400 mbar (suction)
MPC: 20 l/min, 0,2 bar, 0,18 bar (suction)

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Cooling capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
Models with CC-E controller controller									
K6-cc-NR	–25...+200	±0,02	2	0,15; 0,1; 0,05*	4,5	140×120×150	210×400×546	1	**461-0564**
K6s-cc-NR	–25...+200	±0,02	2	0,21; 0,15; 0,05*	4,5	140×120×150	210×400×546	1	**461-6459**
K12-cc-NR	–20...+200	±0,02	2	0,2; 0,12; 0,05*	12	290×152×150	350×560×430	1	**461-0142**
K15-cc-NR	–20...+200	±0,02	2	0,2; 0,12; 0,05*	15	290×152×200	350×560×430	1	**461-0143**
K20-cc-NR	–30...+200	±0,02	2	0,35; 0,27; 0,16*	20	290×329×150	350×555×615	1	**461-0144**
K25-cc-NR	–30...+200	±0,02	2	0,35; 0,27; 0,16*	25	290×329×200	350×555×615	1	**461-0145**
Models with MPC-E controller									
K6-mpc-NR	–25...+200	±0,05	2	0,15; 0,1; 0,05*	4,5	140×120×150	210×400×546	1	**461-0614**

Description	Pk	Cat. No.
Optional upgrade		
Exclusive E-grade® package	1	**461-0098**
Professional E-grade® package	1	**461-0099**

*Cooling capacity at 0; –10 and –20 °C

Compatible control refrigerated circulators
Huber

CC-415

CC-405

CC-520w

These compact refrigerated circulators with insulated refrigeration baths are ideal for direct temperature control from –55 up to +200 °C. The low bath volume and high heating and cooling capacity means short heating and cooling rates, which can be increased by using the optional displacement inserts. Optional calibration inserts enable circulators to be used as calibration baths. All models have Active Cooling Control for cooling power control at the maximum working

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temperature and an automatic cooling power regulation which saves energy and reduces heat dissipation into the laboratory. Units feature a PT100 sensor connection, adjustable over-temperature and level protection, low liquid level warning and a drain positioned at the front for easy emptying. Natural refrigerant is available as an option, please enquire for details.
All models feature the Pilot ONE® controller which offers a brilliant 14.5 cm touchscreen with graphic functions and a comfortable navigation menu in 11 languages and USB and Ethernet connections.

- Pilot ONE® is interchangeable and can be used as a remote control (with an optional data cable)
- Controller can be upgraded with enhanced functionality at any time (Exclusive and Professional E-grade® packages). The basic version features six languages (English, German, French, Spanish, Italian and Russian)
- The display resolution is 0,1 °C which can be changed to 0,01 °C (Exclusive E-grade® package); display can be customised to the users' preferences and important information e.g. set point, actual internal or process temperatures can be displayed in a larger format
- Powerful variable speed pressure/suction pump with Variable Pressure Control (VPC); speed is steplessly controlled
- User can set visual and acoustic alarms limiting the temperature range, and program the unit with its clock and calendar functions for auto start for unsupervised startup

Comply with DIN 12876 Safety class III, FL

Maximum pump capacities:
33 l/min, 700 mbar pressure, 22 l/min, 400 mbar suction

All models have a variable speed pressure/suction pump and can be used for external open or closed applications.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Cooling capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
CC-405	-40...+200	±0,02	1,5	0,7; 0,7; 0,7; 0,45; 0,18; 0,03*	5	120×110×150	370×460×679	1	**461-6460**
CC-415	-40...+200	±0,02	1,5	1,2; 1,2; 1; 0,6; 0,2; 0,05*	5	120×110×150	410×480×764	1	**461-6461**
CC-505	-50...+200	±0,02	1,5	1,2; 1,2; 1; 0,6;-;0,15*	5	120×110×150	410×480×764	1	**461-6462**
CC-520W	-55...+200	±0,02	3	5,0; 5,0; 5,0; 3,0;-;1,5*	17/10**	270×150×200	539×629×1102	1	**461-6463**
CC-805	-80...+100	±0,02	1,5	0,5; 0,5; 0,5; 0,4; -; 0,3*	5	120×110×150	410×480×764	1	**461-0567**

Description	Pk	Cat. No.
Optional upgrade		
Exclusive E-grade® package	1	**461-0098**
Professional E-grade® package	1	**461-0099**

* Cooling capacity at +100; +20; 0; –20; –30 and –40 °C.
** With displacement insert.
Models covering the range –90 to +200 °C and water cooled units are available; please contact your local VWR sales office.

Refrigerated baths and circulators, Optima™
Grant

Grant low temperature circulators provide a source of precision cooling for most low temperature applications. They are suitable for use in both open and closed loop circulation (i.e. remote vessel open or closed). R2, R3, R4 & R5 models include a drain tap. The four Grant Optima™ thermostats can be combined with the five Grant refrigeration units to provide a choice models to cover basic through to sophisticated needs. Grant also offers a choice of two ready assembled low temperature refrigeration kits (LTC models) which have the Optima™ mounted on the refrigeration unit as a ready to use system with an additional years warranty (total 4 years)

General purpose thermostats – T100 and TC120

Digital microprocessor controlled T100 and TC120 thermostats feature an easy to use rotary dial and two function keys for quick temperature setting and menu navigation. Units feature a bright, easy to view four digit display, three programmable temperature presets, low liquid protection, over-temperature cut-out, visual alarm, countdown timer and user calibration facility for optimal accuracy.

- T100 temperature range: 0 to 100 °C with refrigeration unit
- TC120 temperature range: –25 to 100 °C with refrigeration unit
- Pump for external circulation, an audible and visual alarm and adjustable over-temperature cut-out (TC 120 only)
- Stability and uniformity ±0,1 °C at –10 °C

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Advanced thermostats – TX150 and TXF200

TX150 and TXF200 thermostats feature a full colour QVGA TFT screen displaying actual and set temperature and clear status icons. The QVGA TFT screen in combination with the easy to use dial and function keys allows rapid navigation through the intuitive menu system. Both units have an RS232 and USB interface and can be programmed via remote PC or laptop using Grant's versatile Labwise™ software (software optionally available). Additional features include countdown timer, adjustable over-temperature cut-out, visual, audible and programmable high and low temperature alarms. The TX150 has the capacity to store one programme with 30 segments. The TXF200 can also be programmed via the user interface and can store up to 10 programmes containing 100 segments. The programming interface includes set target temperature with a choice of time to target temperature or temperature ramp speed and an additional programmable relay for on/off control of refrigeration units.

- TX150 and TXF200 temperature range: Ambient –47 to 100 °C with refrigeration unit (R unit dependent)
- Pump for external circulation, an audible and visual alarm and adjustable over-temperature cut-out
- Stability at –10 °C is ±0,1 °C
- External PT1000 temperature probe socket
- Five-point user calibration of internal and external probes

Maximum pump capacities:
TC120 16 l/min, 210 mbar
TX150 18 l/min, 310 mbar
TXF200 22 l/min, 530 mbar variable speed

Delivery information: LTC models are supplied with insulated tubing and clips, and include an additional years warranty. For details of the full range of models and accessories please see the VWR website.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Cooling capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
Models with general purpose thermostats, T100 and TC120									
T100-R1	0...100	±0,1	1,3	0,25; 0,14; 0,035	5	110×145×140	230×410×605	1	**461-0683**
T100-R2	0...100	±0,1	1,3	0,25; 0,14; 0,035	5	110×145×140	230×410×605	1	**461-0684**
T100-R4	0...100	±0,1	1,3	0,90; 0,50; 0,18	20	230×305×140	390×490×725	1	**461-0685**
T100-R5	0...100	±0,1	1,3	1,10; 1,05; 0,58; 0,13	12	260×115×180	415×575×780	1	**461-0686**
TC120-R1	–25...100	±0,1	1,3	0,25; 0,14; 0,035	5	110×145×140	230×410×605	1	**461-0692**
TC120-R2	–25...100	±0,1	1,3	0,25; 0,14; 0,035	5	110×145×140	230×410×605	1	**461-0693**
TC120-R4	–25...100	±0,1	1,3	0,90; 0,50; 0,18	20	230×305×140	390×490×725	1	**461-0694**
TC120-R5	–25...100	±0,1	1,3	1,10; 1,05; 0,58; 0,13	12	260×115×180	415×575×780	1	**461-0695**
Models with advanced thermostats, TX150 and TXF200									
TX150-R1	–20...+100	±0,1	1,9	0,25; 0,14; 0,035	5	110×145×140	230×410×605	1	**461-0701**
TX150-R2	–20...+100	±0,1	1,9	0,25; 0,14; 0,035	5	110×145×140	230×410×605	1	**461-0702**
TX150-R3	–30...+100	±0,1	1,9	0,16; 0,15; 0,05	5	110×145×140	230×410×605	1	**461-0703**
TX150-R4	–30...+100	±0,1	1,9	0,90; 0,50; 0,18	20	230×305×140	390×490×725	1	**461-0704**
TX150-R5	–47...+100	±0,1	1,9	1,10; 1,05; 0,58; 0,13	12	260×115×180	415×575×780	1	**461-0705**
TXF200-R1	–20...+100	±0,1	1,9	0,25; 0,14; 0,035	5	110×145×140	230×410×605	1	**461-0711**
TXF200-R2	–20...+100	±0,1	1,9	0,25; 0,14; 0,035	5	110×145×140	230×410×605	1	**461-0712**
TXF200-R3	–30...+100	±0,1	1,9	0,16; 0,15; 0,05	5	110×145×140	230×410×605	1	**461-0713**
TXF200-R4	–30...+100	±0,1	1,9	0,90; 0,50; 0,18	20	230×305×140	390×490×725	1	**461-0714**
TXF200-R5	–47...+100	±0,1	1,9	1,10; 1,05; 0,58; 0,13	12	260×115×180	415×575×780	1	**461-0715**
LTC packages									
LTC2 (TC120 + R2)	–25...+100	±0,1	1,3	0,25; 0,14; 0,035	5	110×145×140	230×410×605	1	**461-0681**
LTC4 (TX150 + R4)	–30...+100	±0,1	1,9	0,90; 0,50; 0,18	20	230×305×140	390×490×725	1	**461-0682**

Cooling capacity, defined at 20; 0; –20 and –40 °C in an ambient of 20 °C

Cooling circulators, Optima™ R series
Grant

Grant cooling circulators provide a source of precision cooling for most low temperature applications. They are suitable for use in both open and closed loop circulation (i.e. remote vessel, open or closed). R2, R3, R4 & R5 models include a drain tap and a relay to control refrigeration on/off. Grant Optima™ thermostats must be combined with these refrigeration units to provide a choice of models to cover basic through to sophisticated needs.

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Type	Temp. range (°C)	Cooling capacity (kW)	Capacity (l)	W×D×H (mm)	Pk	Cat. No.
R1 refrigeration unit	min. –20...+100	0,25; 0,14; 0,10; 0,035; -; -; -	5	230×410×590	1	**473-0000**
R2 refrigeration unit	min. –20...+100	0,25; 0,14; 0,10; 0,035; -; -; -	5	230×410×590	1	**473-0001**
R3 refrigeration unit	min. –30...+100	0,16; 0,15; 0,12; 0,05; 0,005; -; -	5	230×410×590	1	**473-0002**
R4 refrigeration unit	min. –30...+100	0,90; 0,50; 0,30; 0,18; 0,04 ; -; -	20	390×490×710	1	**473-0003**
R5 refrigeration unit	min. –47...+100	1,10; 1,05; 0,80; 0,58; 0,37; 0,13; 0,025	12	415×575×765	1	**473-0004**

Note: Cooling capacity at +20; 0;–10; –20; –30; –40 and –47 °C

Circulating chillers

These circulating chillers are an environmentally friendly, water-conserving and a reliable means of controlling the temperature of liquids in open tanks or closed loop systems. They provide high cooling performance at low cost. With a temperature range from –10 to +40 °C, they are ideally suited for many process and routine applications. There are two pump versions available, with a wide choice of cooling volumes and compressor sizes to suit special applications. The devices are characterised by readily programmable, bright LED displays that can be read easily and comfortably. The standard, magnetically-coupled centrifugal pumps (MD model series) generate a high flow rate at relatively low pressure. The positive displacement pumps (PD model series) have a lower flow rate, but provide higher, adjustable pressures for more demanding applications. The modulating system maintains stable temperatures, even under fluctuating load conditions. The circulating chillers provide a temperature stability of ±0,1 °C. Dimensions (W×H×D): 368×575×702 mm

- Exceptional cooling performance and wide temperature range from –10 to +40 °C
- Extra-large digital display for easy reading of the set temperature, the flow rate and/or the pressure even from a distance
- Optical and acoustic alarm function if any of the set parameters are not maintained
- Adjustable low and high temperature limits, low fluid level alarm function, temperature stability with easy to operate calibration function and optional interfaces for various functions, such as remote control

Delivery information: Supplied with ½" lockable NPT inlet and outlet fittings, and lockable castors. Each unit is supplied complete with three plugs: EU, UK and CH for use throughout Europe. Please contact the VWR sales office for details of options and accessories.

Type	Cooling capacity (kW)	Pk	Cat. No.
1171PD	0,66/0,44/0,16*	1	**462-7032**
1171MD	0,66/0,44/0,16*	1	**462-7033**
1173PD	0,99/0,74/0,41*	1	**462-7034**
1173MD	0,99/0,74/0,41*	1	**462-7035**
1175MD	1,41/0,91/0,62*	1	**462-7036**
1175PD	1,41/0,91/0,62*	1	**462-7037**
1177MD	2,07/1,41/0,63*	1	**462-7038**
1177PD	2,07/1,41/0,63*	1	**462-7039**
1179MD	2,40/1,59/0,83*	1	**462-7040**
1179PD	2,40/1,59/0,83*	1	**462-7041**

* Cooling capacity at +20, +10 and 0 °C

Recirculating coolers, F series
Julabo

Environmentally friendly recirculating coolers that save tap water, these units were designed for simple cooling tasks where reliable continuous operation is important. Due to their compact design, the coolers can be positioned either on or under lab bench tops. Units can be used with water, water/glycol or Julabo Thermal G. They are ideal for cooling rotary evaporators, Kjeldahl instruments, measurement cells, automated analysis systems, CCD cameras, polarimeters, refractometers, calorimeters and Soxhlet apparatus.

- Environmentally friendly, units help to save costly tap water and are ideal for basic cooling tasks
- Splash-proof membrane keypad with LED temperature display shows actual value and setpoint (resolution 0,1 °C)
- PID Temperature control with set control parameters, temperature resolution ±0,1 °C
- Easy to use via convenient 3-key setpoint adjustment
- Straightforward filling and draining, and filling level indicator
- Low energy consumption

Max. flow rate / max. pressure:
F250: 15 l/min, 350 mbar pressure
F500: 24 l/min, 500 mbar pressure
F1000: 23 l/min, 1000 mbar pressure

Delivery information: F250 supplied with 2× barbed fittings for tubing 8 and 10 mm Ø (pump connections M10×1 female). F500 and F1000: 2× barbed fittings for tubing 8 and 12 mm Ø. (pump connections M16×1 male).

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Type	Temp. range (°C)	Temp. stability (°C)	Cooling capacity (kW)	Capacity (l)	W×D×H (mm)	Pk	Cat. No.
F250	–10...+40	±0,5	0,25; 0,22; 0,21; 0,18; 0,09	1,7 - 2,6	240×400×520	1	**461-3400**
F500	0...+40	±0,5	0,5; 0,4; 0,3; 0,25; -	5 - 7,5	375×440×590	1	**461-0768**
F1000	0...+40	±0,5	1,0; 0,7; 0,55; 0,35; -	7 - 9,5	375×490×640	1	**461-1004**

Note: Cooling capacity at +20; +10; +5; 0 and –5 °C

Recirculating coolers, FL series
Julabo

Compact, ergonomically designed chillers which have integrated stainless steel tanks with large volumes. Models can be either air or water cooled. Applications include use with rotary evaporators, autoclaves, reaction vessels and for routine laboratory cooling. All units have an LED temperature display for actual/ set point integrated into a splash-proof keypad and recessed grips for easy relocation integrated in the housing. A hinged tray serves as a compartment for the operating manual and other documents. The removable venting grid allows for easy cleaning of the condenser. Venting slots are located on the front and back, allowing units to be placed directly next to each other. Models FL2503 to FLW11006 have an early warning function with sensor monitoring to signal if the condenser is dirty, and online diagnostics with "BlackBox" function.

- Temperature range of –20 to +40 °C, and PID controller enables a temperature stability of ±0,5 °C
- Units are filled from the top, have a protective hinged lid and include an easily visible level indicator
- Models with pump pressure >1 bar display pump pressure on a gauge and have pump pressure bypass to adjust the pump capacity
- Visual and audible alarms for low liquid level
- RS232 interface and an analogue alarm output are located on the front panel for easy access

IP protection class according to IEC529; IP 21

Max. flow rate / max. pressure:
FL_00: 15 l/min, 350 mbar pressure
FL_01: 23 l/min, 1000 mbar pressure
FL_03: 40 l/min, 500 - 3000 mbar pressure
FL_06: 60 l/min, 500 - 6000 mbar pressure

Delivery information: Supplied with two barbed fittings for 8 and 12 mm internal bore tubing. Water, water-glycol mixture and Julabo Thermal bath fluid are recommended for these units. Please note units FL4003, FL4006, FLW4003, FLW4006, FL7006, FL11006, FL20006, FLW7006, FLW11006 and FLW20006 require a three phase power supply.

Type	Temp. range (°C)	Temp. stability (°C)	Cooling capacity (kW)	Capacity (l)	W×D×H (mm)	Pk	Cat. No.
FL300	–20...+40	±0,5	0,3; 0,2; 0,15	3 - 4,5	250×500×600	1	**461-3465**
FL601	–20...+40	±0,5	0,6; 0,4; 0,33	5,5 - 8	320×500×600	1	**461-3466**
FL1201	–20...+40	±0,5	1,2; 0,9; 0,6	12 - 17	500×760×640	1	**461-3467**
FL1701	–20...+40	±0,5	1,7; 1,1; 0,85	12 - 17	500×760×640	1	**461-3468**
FL1203	–20...+40	±0,5	1,2; 0,8; 0,5	12 - 17	500×760×640	1	**461-3469**
FL1703	–20...+40	±0,5	1,7; 1,0; 0,75	12 - 17	500×760×640	1	**461-3470**
FL2503	–20...+40	±0,5	2,5; 1,5; 1,2	24 - 30	600×760×1150	1	**461-3471**
FL4003	–20...+40	±0,5	4,0; 2,4; 1,5	24 - 30	600×760×1150	1	**461-3472**
FL2506	–15...+40	±0,5	2,5; 1,0; 0,3	24 - 30	600×760×1150	1	**461-3473**
FL4006	–20...+40	±0,5	4,0; 1,9; 0,9	24 - 30	600×760×1150	1	**461-3474**
FL7006	–20...+40	±0,5	7,0; 5,1; 3,0	39 - 47	780×850×1480	1	**461-3475**
FL11006	–20...+40	±0,5	11,0; 7,5; 5,0	39 - 47	780×850×1480	1	**461-3476**
FL20006	–25...+40	±0,5	20,0; 10,0; 6,0	15 - 37	950×1150×1610	1	**461-0638**

Type	Temp. range (°C)	Temp. stability (°C)	Cooling capacity (kW)	Capacity (l)	W×D×H (mm)	Pk	Cat. No.
Water cooled models							
FLW1701	–20...+40	±0,5	1,7; 1,1; 0,85	12 - 17	500×760×640	1	**461-3477**
FLW1703	–20...+40	±0,5	1,7; 1,0; 0,75	12 - 17	500×760×640	1	**461-3478**
FLW2503	–20...+40	±0,5	2,7; 1,7; 1,0	24 - 30	600×760×1150	1	**461-3479**
FLW4003	–20...+40	±0,5	4,3; 2,2; 1,3	24 - 30	600×760×1150	1	**461-3480**
FLW2506	–15...+40	±0,5	2,5; 1,0; 0,3	24 - 30	600×760×1150	1	**461-3481**
FLW4006	–20...+40	±0,5	4,0; 1,7; 0,7	24 - 30	600×760×1150	1	**461-3482**
FLW7006	–20...+40	±0,5	7,4; 5,5; 3,1	39 - 47	780×850×1480	1	**461-3483**
FLW11006	–20...+40	±0,5	11,5; 7,3; 4,8	39 - 47	780×850×1480	1	**461-3484**
FLW20006	–25...+40	±0,5	20,0; 11,0; 6,0	15 - 37	950×1150×1610	1	**461-0639**

Note: Cooling capacity at 20; 0; –10 °C

Recirculating coolers, FC series
Julabo

Environmentally friendly recirculating coolers that save tap water, units are rapid and powerful, and offer short cool-down times and high efficiency. Due to the compact design, the coolers fit either on or under lab bench tops. FC units feature two separate Multi-Displays (LED) for actual and set point values. Models with the designation W are water cooled, operate almost noiselessly and offer reduced heat generation to the environment. The units feature permanent performance supervision via sensors and pump motor and compressor overload protection. In the event of any disturbance, units shut down completely. FC models have early warning systems with audible signal for low liquid level, and both units feature high/low temperature limits as well as freezing/dry running protection. Units are conveniently filled from the front and have a removable venting grid.

- Built-in heating element to allow cooling and heating applications with FC models
- FC coolers have an adjustable ratio for inlet/outlet temperature
- Connection for external PT100 sensor for external measurement and control (T-type models)
- RS232 interface, connections for standby input and alarm output
- Connection for external programming, temperature recorder, external PT100 sensor (T-type models)

Max. flow rate / max. pressure:
FC models: 20 l/min, 500 mbar pressure
FC S models: 22 l/min, 1200 mbar pressure
FC T models: 28 l/min, 3500 mbar pressure

Delivery information: Supplied with 2 barbed fittings for 8 and 12 mm internal bore tubing. All units with an RS232 interface can use the free EasyTemp software for control via a PC; the software can be downloaded free of charge from the Julabo website.

Type	Temp. range (°C)	Temp. stability (°C)	Cooling capacity (kW)	Capacity (l)	W×D×H (mm)	Pk	Cat. No.
FC600	-20...+80	±0,2	0,6; 0,47; 0,4; 0,21	6 - 8	350×540×490	1	**473-3220**
FC600S	-10...+80	±0,2	0,5; 0,37; 0,3; 0,1	6 - 8	350×540×490	1	**473-3221**
FC1200	-20...+80	±0,2	1,3; 0,95; 0,75; 0,37	8 - 11	460×610×490	1	**473-3230**
FC1200S	-15...+80	±0,2	1,2; 0,85; 0,65; 0,26	8 - 11	460×610×490	1	**473-3231**
FC1200T	-10...+80	±0,2	1,1; 0,75; 0,55; 0,15	8 - 11	460×610×490	1	**473-3232**
FC1600	-20...+80	±0,2	1,65; 1,25; 1,0; 0,47	8 - 11	460×610×490	1	**473-3240**
FC1600S	-15...+80	±0,2	1,55; 1,15; 0,9; 0,36	8 - 11	460×610×490	1	**473-3241**
FC1600T	-15...+80	±0,2	1,45; 1,05; 0,8; 0,25	8 - 11	460×610×490	1	**473-3242**
FCW2500T*	-25...+80	±0,2	2,5; 2,0; 1,8; 0,8; 0,25	8 - 11	460×610×490	1	**473-0024**

Note: Cooling capacity at +20; +10; +5, –10 and –20 °C
* FCW2500T with water cooling

Circulating chillers, Microcool range
Lauda

The Microcool range of circulation chillers includes four compact models providing cooling capacities from 0,25 to 1,2 kW with working temperatures from –10 up to +40 °C. An RS232 interface and alarm contact are integrated as standard, enabling system integration into processes without additional costs. Units feature an integrated overflow connection and filling funnel which ensures controlled and safe filling. The bench top MC 250 is equipped with a magnetic coupling pump. The other floor standing units fit under the laboratory bench. They are equipped with a pressure gauge to display the pressure and castors which can be controlled and locked. Pump pressure can be controlled via the integrated adjustable bypass allowing connection for delicate glassware or high pressure for maximum flow rate. The units are ideal for use where heat needs to be dissipated reliably and fast, e.g. in laboratories for cooling rotary evaporators, distillation systems or other analytical devices.

- User interface with large LED display and a membrane keyboard make the units easy to use
- High-quality block pump with magnetic coupling. The magnetic coupling of pump and electric motor avoid sealing problems on the pump shaft
- Chillers have an autostart timer and auto-shutdown function and an illuminated window for checking the heat transfer liquid level

Protection class according to DIN 60529: IP 32

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Max. flow rate / max. pressure:
MC 250: 16 l/min, 0,35 bar pressure
MC 600 and MC 1200: 35 l/min, 1,3 bar pressure
W denotes model is water cooled.

Type	Temp. range (°C)	Temp. stability (°C)	Cooling capacity (kW)	Capacity (l)	W×D×H (mm)	Pk	Cat. No.
MC 250	–10...+40	±0,5	0,25; 0,2; 0,15; 0,09	2 - 4	200×350×465	1	**473-0033**
MC 600	–10...+40	±0,5	0,6; 0,5; 0,36; 0,15	4 - 8	350×480×595	1	**473-0034**
MC 1200	–10...+40	±0,5	1,2; 1,05; 0,75; 0,4	7 - 14	450×550×650	1	**473-0035**
MC 1200 W	–10...+40	±0,5	1,2; 1,05; 0,75; 0,4	7 - 14	450×550×650	1	**473-0036**

Note: Cooling capacity at +20; +10; 0 and –10 °C.

Circulating chillers, Variocool
Lauda

The compact Variocool circulating chillers are ideal for demanding temperature control tasks in laboratories, mini plants and production. The units have a colour TFT screen and membrane keyboard, a USB interface and an integrated alarm which are easily accessable on the front of the unit. They also feature an electronic fill gauge on the display and low fluid level alarm. Models can be either air or water cooled, all have lockable castors. A wide range of factory fitted options and interfaces which can be retrofitted give the user greater flexibility and control. Options include high power pumps to allow higher supply pressure, heaters adapted to the cooling capacity to enable rapid heating as required, flow control, outdoor installation, use with deionised water and noise reduction. Optional interfaces including analogue module, RS232/485, contact modules, profibus and PT100/LiBus modules are all available to facilitate customisation of the unit to applications. For details of the options and interfaces, please contact your local VWR sales office.

- Working temperature range of -20 to +40 °C can be increased to +80 with an optional heater
- Energy efficient models with good temperature control help lower energy consumption and increase cost savings
- All models except VC 600 have an adjustable bypass and pressure gauge to enable connection to pressure sensitive applications
- Larger models have a tower design and air cooled units have microchannel condensers to save space and lower quantity of refrigerant used

IP protection class according to IEC 60529: IP 32

Max. flow rate / max. pressure:

VC 600 - VC 2000 W: 28 l/min, 0,9 bar pressure

VC 3000 - VC 10000 W: 37 l/min, 3,2 bar pressure

Delivery information: Supplied with screw caps. Water is recommended for positive temperatures and kryo30 fluid for operation at negative temperatures. Please note units VC 5000, VC 5000 W, VC 7000, VC 7000 W, VC 10000 and VC 10000 W require a three phase power supply.

Type	Temp. range (°C)	Temp. stability (°C)	Cooling capacity (kW)	Capacity (l)	W×D×H (mm)	Pk	Cat. No.
VC 600	-20...+40	±0,2	0,6; 0,36; 0,21	8	350×480×595	1	**461-0746**
VC 1200	-20...+40	±0,2	1,2; 0,7; 0,4	15	450×550×650	1	**461-0747**
VC 2000	-20...+40	±0,2	2,0; 1,06; 0,68	15	450×550×650	1	**461-0748**
VC 3000	-20...+40	±0,2	3,0; 1,68; 1,03	33	550×650×970	1	**461-0752**
VC 5000	-20...+40	±0,2	5,0; 2,75; 1,7	33	550×650×970	1	**461-0756**
VC 7000	-20...+40	±0,5	7,0; 3,7; 2,4	64	650×670×1250	1	**461-0757**
VC 10000	-20...+40	±0,5	10,0; 5,3; 3,5	64	650×670×1250	1	**461-0758**

Type	Temp. range (°C)	Temp. stability (°C)	Cooling capacity (kW)	Capacity (l)	W×D×H (mm)	Pk	Cat. No.
Water cooled models							
VC 1200 W	-20...+40	±0,2	1,2; 0,7; 0,4	15	450×550×650	1	**461-0753**
VC 2000 W	-20...+40	±0,2	2,0; 1,06; 0,68	15	450×550×650	1	**461-0754**
VC 3000 W	-20...+40	±0,2	3,0; 1,68; 1,03	33	550×650×970	1	**461-0755**
VC 5000 W	-20...+40	±0,2	5,0; 2,75; 1,7	33	550×650×970	1	**461-0759**
VC 7000 W	-20...+40	±0,5	7,0; 3,7; 2,4	64	650×670×1250	1	**461-0760**
VC 10000 W	-20...+40	±0,5	10,0; 5,3; 3,5	64	650×670×1250	1	**461-0761**

Note: Cooling capacity at 20; 0; –10 °C

Circulating cooling thermostats, Minichiller and Unichillers

Huber

Many applications depend on a reliable source of cooling. Circulating chillers in the Unichiller® range offer an ideal solution for environmentally friendly and economical cooling in laboratory and industry. There are over 50 air and water cooled models to choose from, with cooling powers from 0,3 to 50 kW. Efficient energy management ensures low operating costs and reduced usage of valuable fresh water. Huber circulating chillers are a resource saving solution which give a quick return on investment.

Unichillers® with MPC controller

Compact, value for money units; Unichillers® are available with cooling powers up to 2,5 kW for applications in the laboratory. The models ranging from the Minichiller® to Unichiller® 025w-MPC are suitable for use on or under the laboratory bench.

- The MPC Controller is robust, ideal for simple applications
- Easy to use controller with 3 keys and LED display

Unichillers with Pilot ONE®

The tower models offer power with small footprints. These models are fitted with the new exchangeable Pilot ONE®, and are used in both research and production.

- The Pilot ONE® controller is interchangeable and can be used as a remote control (with an optional data cable)
- Pilot ONE® controller offers a brilliant 5.7" touchscreen with graphic functions and a comfortable navigation menu in 11 languages (German, English, French, Italian, Spanish, Portuguese, Czech, Polish, Russian, Chinese and Japanese) and USB and Ethernet connections
- User can set visual and acoustic alarms, limiting the temperature range, and program the unit with its clock and calendar functions for auto start for unsupervised startup
- Powerful pressure pump, bench models with max. pump pressure of 3 bar have a built-in, adjustable bypass and a pressure gauge; in floor-standing models pressure control is carried out via external bypass (optional)

Comply with IP Class 20: IEC 60529:20

Ordering information: T denotes tower models, w denotes water cooled models. Please contact VWR for details on other models or options and accessories available.

Type	Temp. range (°C)	Pump	Cooling capacity (kW)	W×D×H (mm)	Pk	Cat. No.
Minichillers, Unichillers with MPC-E controller						
Minichiller	–20...+40	20 l/min, 200 mbar	0,2; 0,07	225×360×380	1	**461-0568**
Minichiller w	–20...+40	20 l/min, 200 mbar	0,2; 0,07	225×360×380	1	**461-0843**
Unichiller 006-MPC	–20...+40	30 l/min, 700 mbar	0,5; 0,15	280×490×414	1	**461-0801**
Unichiller 007-MPC	–20...+40	25 l/min, 250 mbar	0,55; 0,2	350×430×622	1	**461-6470**
Unichiller 010-MPC	–20...+40	25 l/min, 250 mbar	0,8; 1,5	350×430×622	1	**461-6471**
Unichiller 012-MPC	–20...+40	25 l/min, 250 mbar	1,0; 0,25	420×480×579	1	**461-6467**
Unichiller 012w-MPC	–20...+40	25 l/min, 250 mbar	1,0; 0,25	350×430×622	1	**451-0140**
Unichiller 015-MPC	–20...+40	25 l/min, 250 mbar	1,0; 0,3	420×480×579	1	**461-6466**
Unichiller 015w-MPC	–20...+40	25 l/min, 250 mbar	1,0; 0,3	350×430×622	1	**451-0141**
Unichiller 022-MPC	–10...+40	25 l/min, 250 mbar	1,6; -	460×590×743	1	**461-6468**
Unichiller 022w-MPC	–10...+40	25 l/min, 250 mbar	1,6; -	420×480×579	1	**451-0138**
Unichiller 025-MPC	–10...+40	25 l/min, 250 mbar	2,0; -	460×590×743	1	**461-6469**
Unichiller 025w-MPC	–10...+40	25 l/min, 250 mbar	2,0; -	420×480×579	1	**451-0139**
Minichillers, Unichillers with Pilot ONE® controller (with RS232 digital interface)						
Minichiller plus	–20...+40	20 l/min, 200 mbar	0,2; 0,07	225×360×380	1	**461-0833**
Minichiller w plus	–20...+40	20 l/min, 200 mbar	0,2; 0,07	225×360×380	1	**461-0834**
Unichiller 006-MPC plus	–20...+40	30 l/min, 700 mbar	0,5; 0,15	280×490×414	1	**461-0844**
Unichiller 007-MPC plus	–20...+40	25 l/min, 250 mbar	0,55; 0,2	350×430×622	1	**461-0839**
Unichiller 010-MPC plus	–20...+40	25 l/min, 250 mbar	0,8; 1,5	350×430×622	1	**461-0840**
Unichiller 012-MPC plus	–20...+40	25 l/min, 250 mbar	1,0; 0,25	420×480×579	1	**461-0835**
Unichiller 012w-MPC plus	–20...+40	25 l/min, 250 mbar	1,0; 0,25	350×430×622	1	**461-0841**
Unichiller 015-MPC plus	–20...+40	25 l/min, 250 mbar	1,0; 0,3	350×430×622	1	**461-0845**
Unichiller 015w-MPC plus	–20...+40	25 l/min, 250 mbar	1,0; 0,3	350×430×622	1	**461-0842**
Unichiller 022-MPC plus	–10...+40	25 l/min, 250 mbar	1,6; -	460×590×743	1	**461-0837**
Unichiller 022w-MPC plus	–10...+40	25 l/min, 250 mbar	1,0; 0,25	420×480×579	1	**461-0836**
Unichiller 025-MPC plus	–10...+40	25 l/min, 250 mbar	2,0; -	460×590×743	1	**461-0838**
Unichiller 025w-MPC plus	–10...+40	25 l/min, 250 mbar	2,0; -	420×480×579	1	**461-0846**

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Type	Temp. range (°C)	Pump	Cooling capacity (kW)	W×D×H (mm)	Pk	Cat. No.
Unichillers in tower housing with Pilot ONE® (CC-E) controller						
Unichiller 017T	–10...+40	25 l/min, 300 mbar	0,9; -	450×510×1231	1	**461-6472**
Unichiller 017Tw	–10...+40	25 l/min, 300 mbar	0,9; -	400×440×1100	1	**451-0143**
Unichiller 020T	–20...+40	25 l/min, 300 mbar	2,0; 0,8	450×510×1231	1	**461-6473**
Unichiller 020Tw	–20...+40	25 l/min, 300 mbar	2,0; 0,8	400×440×1100	1	**451-0144**
Unichiller 025T	–10...+40	25 l/min, 300 mbar	1,2; -	450×510×1231	1	**461-6474**
Unichiller 025Tw	–10...+40	25 l/min, 300 mbar	1,2; -	400×440×1100	1	**451-0145**
Unichiller 040T	–10...+40	26 l/min, 300 mbar	2,5; -	500×552×1451	1	**461-6475**
Unichiller 030Tw	–20...+40	26 l/min, 300 mbar	3,0; 1,0	400×440×1100	1	**451-0146**
Unichiller 045T	–20...+40	26 l/min, 300 mbar	4,5; 1,5	500×552×1451	1	**461-6476**
Unichiller 040Tw	–10...+40	26 l/min, 300 mbar	2,5; -	400×440×1100	1	**451-0147**
Unichiller 055T	–10...+40	57 l/min, 560 mbar	3,0; -	600×632×1610	1	**461-6477**
Unichiller 055Tw	–10...+40	57 l/min, 560 mbar	4,0; -	500×552×1261	1	**451-0148**
Unichiller 060T	–20...+40	80 l/min, 560 mbar	6,0; 2,0	600×632×1610	1	**461-6478**
Unichiller 060Tw	–20...+40	80 l/min, 560 mbar	6,0; 2,1	500×552×1261	1	**461-0416**
Unichiller 080T	–10...+40	84 l/min, 560 mbar	4,8; -	600×790×1614	1	**461-6479**
Unichiller 080Tw	–10...+40	84 l/min, 560 mbar	4,65; -	500×552×1261	1	**451-0150**

Note: Cooling capacity at 0 and –20 °C

IP 31

Temperature control systems, Presto® PLUS series

Julabo

The Presto® PLUS high dynamic temperature control systems are ideal for precise, external temperature applications such as jacketed reaction vessels, reactor systems, autoclaves, distillation/pilot plants, calibration and in the semiconductor industry. The compact units offer extremely rapid heat up and cool down times and feature self-optimising ICC - Intelligent Cascade Control. All models have a backlit, 4-line LCD display and a bright VFD-Info-Display. Units are easy to set up with pull out handle and castors. The pump pressure is adjustable in stages and is indicated on the illuminated display. The automatic filling and de-gas mode ensures user friendly handling. Air cooled, water cooled or combined air/water cooled models are available. Analogue and digital interfaces allow for safe laboratory automation.

- Wide working temperature ranges without changing bath fluids and small filling volume
- Remote device with LCD display and bright VFD-Info-Display
- Combined air and/or water cooling on models LH46
- RS232/RS485 interface for online communication
- Integrated programmer for six profiles, 60 sections each

IP protection class according to IEC 60529: IP 31

Max. flow rate / max. pressure:

LH46, LH47: 24 to 33 l/min, 0,8 to 1,6 bar

LH50: 24 to 35 l/min, 0,8 to 2,2 bar

Ordering information: All units with an RS232 interface can use the free EasyTemp software for control via a PC; the software can be downloaded free of charge from the Julabo website.

Please note LH47 and LH50 units require a three phase supply.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Cooling capacity (kW)	Capacity (l)	W×D×H (mm)	Pk	Cat. No.
LH46	-45...+250	±0,01...0,05	1,8	2,5; 2,3; 0,7; 0,1	6	500×590×640	1	**461-0503**
LH47	-47...+250	±0,01...0,05	1,8	3,7; 3,0; 0,9; 0,2	11	400×550×1270	1	**461-0504**
LH50	-50...+250	±0,01...0,10	6	5,5; 7,0; 2,6; 0,5	18	400×550×1270	1	**461-0505**

Note: Cooling capacity at +200; +20; –20 and –40 °C

Temperature control systems, new Presto® series

Julabo

The new PRESTO® systems cover a working temperature range of –40 to +250 °C with high cooling and heating capacity. These instruments can compensate for exothermic and endothermic reactions with extraordinary speed, they feature high flow rates, constant pressure, and a controlled build-up of pump pressure. Changes in the temperature-control liquid's viscosity are balanced dynamically. Permanent internal monitoring and self-lubricating pumps contribute to long service life. The integrated touch panel gives the user a clear view of important information. Fingertip control via the new touch screen. Multiple interfaces enable remote control of the PRESTO® across networks and in superordinated control systems. Wireless remote control of the new PRESTO® can easily be done by using the WirelessTEMP products.

- Fingertip control via the new touch screen with 14,4 cm colour touch panel
- Up to 3 user level with password management
- USB (Host und Device), Ethernet and SD-Card slot
- Units are whisper quiet and barely audible when operating
- Filling system is accessible from the top

Max. flow rate / max. pressure:

A30: 25 l/min, 0,5 bar
A40/W40, A80/W80: 16 - 40 l/min, 0,3 - 1,7 bar
W91/W92 (t/tt): 26 - 80 l/min, 0,5 - 3,0 bar
W91x/W92x (t/tt): 18 - 70 l/min, 0,8 - 5,5 bar

Ordering information: Supplied without accessories. Please see www.vwr.com for details of accessories.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Cooling capacity (kW)	Capacity (l)	W×D×H (mm)	Pk	Cat. No.
Air cooled models								
A30	-30...+250	±0,01...0,05	2,7	0,5; 0,5; 0,5; 0,4; 0,3; 0,2; 0,05; -	2,4	242×583×612	1	**461-0635**
A40	-40...+250	±0,01...0,05	2,7	1,2; 1,2; 1,2; 0,9; 0,8; 0,6; 0,3; 0,1	3,5	323×583×662	1	**461-0636**
A80	-80...+250	±0,01...0,05	1,8	1,2; 1,2; 1,2; 1,2; 1,2; 1,1; 1,1; 1,1	3,9	430×650×1258	1	**461-0735**
Water cooled models								
W40	-40...+250	±0,01...0,05	2,7	1,2; 1,2; 1,2; 1,0; 0,8; 0,55; 0,3; 0,06	3,5	323×583×662	1	**461-0637**
W80	-80...+250	±0,01...0,05	1,8	1,2; 1,2; 1,2; 1,2; 1,2; 1,1; 1,1; 1,1	3,9	430×650×1258	1	**461-0736**
Power packages, water cooled models with extended temperature range								
W91tx	-91...+250	±0,05...±0,2	24	11,0; 11,0; 11,0; 10,0; 9,5; 9,0; 6,5; 1,5	28	950×1270×1900	1	**461-0808**
W92tx	-92...+250	±0,05...±0,2	24	31,0; 29,0; 19,0; 15,5; 9,5; 9,0; 6,5; 1,5	28	950×1270×1900	1	**461-0814**

Note: Cooling capacity at +200; +100; +20; 0; –10; –20; –30 and –40 °C
W91/W92 (t/tt/x): Cooling capacity at +200; +100; +20; 0; –20; –40; –60 and –80 °C

Circulating chillers, Unistat range

Huber

Unistats® are the ideal solution for fast and precise thermal control of externally connected applications. These compact units enable previously unachievable performance, offer rapid temperature change and allow use over a wide temperature range without requiring a fluid change. There are over 60 models to choose from in sleek tower housings, or flat-build with cooling powers from 0,7 to 130 kW. Whatever the application, Unistats® provide professional scale up offering

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the same stable process conditions from the development lab to production systems. Units have a range of safety functions, provide flexible communication via USB and LAN interfaces and give comprehensive warning alarms. Units are ideal for use with reactor systems, autoclaves, pilot and mini plant systems, scale up developments, double wall reactors, distillation systems, material testing and use in combinational chemistry and the semiconductor industry.

- Working temperatures from -120 °C to +425 °C
- Multilingual, interactive Pilot ONE® controller with Plug & Play technology, 14,5 cm touch screen and easy menu navigation and graphic capabilities
- Highly accurate, intelligent temperature control
- Maximum process stability and reproducibility
- The fastest heating and cooling rates
- Increased thermal fluid life

Units comply with DIN 12876; rated Safety Class III

Ordering information: All units require a three phase, 400 V mains supply except "petite fleur®/w/eo" which needs 230 V mains supply and "Unistat® tango® / wl" and unistat® "405/w, 410w and 705/w which feature a convertible 230 or 400 V, three phase mains supply. W denotes water cooled models. Please contact VWR for details on other models or options and accessories available.

Type	Temp. range (°C)	Temp. stability (°C)	Pump	Heating capacity (kW)	Cooling capacity (kW)	Capacity (l)	W×D×H (mm)	Pk	Cat. No.
Air cooled models									
unistat tango	-45...+250	±0,01	55 l/min, 900 mbar	1,5/3,0	0,7; 0,7; 0,7; 0,7; 0,4; 06; -; -	1,5	425×270×636	1	**461-6000**
unistat 705	-75...+250	±0,01	55 l/min, 900 mbar	1,5/3,0	0,6; 0,6; 0,65; 0,6; 0,6; 0,3; -	1,5	425×400×720	1	**461-6003**
unistat 405	-45...+250	±0,01	55 l/min, 900 mbar	1,5/3,0	1,0; 1,0; 1,0; 1,0; 0,6; 0,15; -; -	1,5	425×308×636	1	**461-0742**
unistat 425	-40...+250	±0,01	105 l/min, 1500 mbar	2	2,0; 2,0; 2,5; 1,8; 0,2; -	3,6	460× 554× 1332	1	**461-6007**
unistat 430	-40...+250	±0,01	90 l/min, 1700 mbar	4	3,5; 3,5; 3,5; 2,2; 0,3; -	3,9	460× 554× 1332	1	**461-6009**
unistat 815	-85...+250	±0,01	40 l/min, 900 mbar	2	1,3; 1,3; 1,5; 1,5; 1,4; 1,2; 0,2	3,8	460× 649× 1342	1	**461-6011**
petite fleur-NR	-40...+200	±0,01	33 l/min, 900 mbar	1,5	0,48; 0,48; 0,45; 0,27; 0,04; -	1,5	260×450×504	1	**461-0743**
petite fleur-eo	-40...+200	±0,01	33 l/min, 900 mbar	1,5	0,48; 0,48; 0,45; 0,27; 0,04; -	1,5	260×450×504	1	**461-0832**
Water cooled models									
unistat tango wl	-45...+250	±0,01	55 l/min, 900 mbar	1,5/3,0	0,7; 0,7; 0,7; 0,7; 0,4; 0,05; -; -	1,5	425×270×636	1	**461-6001**
unistat 705w	-75...+250	±0,01	55 l/min, 900 mbar	1,5/3,0	0,6; 0,6; 0,65; 0,6; 0,6; 0,3; -	1,5	425×400×720	1	**461-6002**
unistat 405w	-45...+250	±0,01	55 l/min, 900 mbar	1,5/3,0	1,3; 1,3; 1,3; 1,3; 0,7; 0,15; -; -	1,5	425×270×636	1	**461-6004**
unistat 510w	-50...+250	±0,01	105 l/min, 1500 mbar	6	5,3; 5,3; 5,3; 2,8; 0,9; -	4,7	460× 554× 1332	1	**461-6006**
unistat 425w	-40...+250	±0,01	105 l/min, 1500 mbar	2	2,8; 2,8; 2,5; 1,9; 0,2; -	3,6	460× 554× 1332	1	**461-6008**
unistat 430w	-40...+250	±0,01	90 l/min, 1700 mbar	4	3,5; 3,5; 3,5; 2,2; 0,3; -	3,9	460× 554× 1332	1	**461-6010**
unistat 815w	-85...+250	±0,01	40 l/min, 900 mbar	2	1,5; 1,5; 1,5; 1,5; 1,4; 1,2; 0,2	3,2	460× 604× 1342	1	**461-6012**
petite fleur w-NR	-40...+200	±0,01	33 l/ min, 900 mbar	1,5	0,48; 0,48; 0,45; 0,27; 0,04; -	1,5	260×450×504	1	**461-0562**
unistat 410w	-45...+250	±0,01	55 l/min, 900 mbar	1,5/3,0	2,5; 2,5; 1,5; 0,8; 0,2; -	1,5	425×360×636	1	**461-0563**

Note: Cooling capacity at +200; +100; 0; –20; –40 and –80 °C.

Flow through coolers, DLK series

Lauda

Flow through coolers upgrade any type of thermostat with pump connections giving a high quality cooling thermostat and allow work below room temperature. The flow through cooler automatically stops running when the Proline, Ultra or Ecoline (E 300 controller) series thermostat that it is connected to is switched off. This ensures the flow through cooler is protected against freezing or running dry. Units have stainless steel heat exchangers and cooling coils.

- Economical and environmentally friendly as tap water is not wasted or polluted
- Reliable and reproducible cooling, is not dependent on ambient temperature or pressure
- Cooling units are hermetically sealed, and corrosion is avoided ensuring maintenance free cooling
- Control connection for mains power supply for DLK 10 and DLK 25
- Proportional cooling when using DLK 45 with P controller thermostats, and DLK 45 CAN with Proline thermostats

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Type	Temp. range (°C)	Temp. stability (°C)	Cooling capacity (kW)	W×D×H (mm)	Pk	Cat. No.
DLK 10	-15...+150	-	0,25; 0,20; 0,10; -	200×400×320	1	**461-2279**
DLK 25	-30...+150	-	0,33; 0,28; 0,25; 0,22; 0,20; -	290×540×330	1	**461-2280**
DLK 45	-40...+150	±0,5	1,1; 0,95; 0,85; 0,75; 0,55; 0,30	470×560×430	1	**461-2281**
DLK 45 CAN	-40...+150	±1,0	1,1; 0,95; 0,85; 0,75; 0,55; 0,30	470×560×430	1	**473-0021**

Note: Cooling capacity at +20, 0, –10, –20, –30, and –40 °C.

Immersion coolers, FT series
Julabo

FT immersion coolers are primarily used for counter cooling when connected to a heating circulator, or for rapidly cooling fluids down to low temperatures. The compact, easy to use units are suitable for a variety of cooling applications.

- Efficient cooling with reduced energy consumption
- Easy to move around the laboratory by convenient carrying handles; larger FT900/902 have castors
- Alternative to cooling with dry ice or tap water
- FT402 and FT902 provide temperature control via a keypad and have an external PT100 sensor
- Environmentally friendly as tap water is not wasted

Type	Temp. range (°C)	Temp. stability (°C)	Cooling capacity (kW)	W×D×H (mm)	Pk	Cat. No.
FT200	-20...+30	-	0,25; 0,04;- ;-	180×270×390	1	**473-3005**
FT400	-40...+30	-	0,45; 0,14; 0,03;-	200×300×430	1	**473-3306**
FT402	-40...+30	±0,5	0,45; 0,14; 0,03;-	200×300×430	1	**473-0019**
FT900	-90...+30	-	0,3; 0,24; 0,2; 0,07	380×550×600	1	**473-3020**
FT902	-90...+30	±1,0	0,3; 0,24; 0,2; 0,07	380×550×600	1	**473-0020**

Note: Cooling capacity at 20; –20; –40; and –80 °C

3 year warranty

Refrigerated coolers, CG, series
Grant

Refrigerated coolers are primarily used as accessories for counter-cooling when used with a heated circulating bath, or for rapidly cooling fluids down to low temperatures. Units have nickel-plated copper coil and 925 mm flexible pipe connection. The C1G coil is 77 mm Ø and 55 mm high, and is suitable for use with all sizes of bath/circulators, whilst the larger height (105 mm), of the C2G coil makes it suited for larger (26 & 38L) baths only.

- Coil designed to fit beneath bridge plate of Grant baths without reducing working space
- Fast cooling rate
- Alternative to cooling with dry ice or tap water

The cooling coil may be continuously immersed in liquids up to 100 °C with the cooler switched off, and may be used to cool liquid down from 100 °C, but it is not designed for continuous operation above 40 °C.

Description	Type	For	Cooling capacity (kW)	Temp. range (°C)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
Refrigerated cooler C1G	C1G	Tank sizes (l) 5, 12, 18, 26, 38	0,35; 0,11; -*	0...40	305×460×225	17	1	**473-4100**
Refrigerated cooler C2G	C2G	Tank sizes (l) 26, 38	0,4; 0,32; 0,17*	-15...+40	305×460×225	21,5	1	**473-4101**

Note: Cooling capacity at +20, 0 and –10 °C

Heat exchange coil, CW5
Grant

Accessory heat exchange coil for use Grant heated circulating water baths. The heat exchange coil is designed to be attached to a supply of cooling tap water or a refrigerated circulator.

• Temperature range 2 °C above the temperature of the coolant

Coil Øxl (mm): 77x55

Pipe bore inlet/outlet (mm): 7

Description	Pk	Cat. No.
Heat exchange coil, CW5	1	**462-8269**

Temperature calibration baths
Julabo

Calibration baths have been designed for applications in calibration laboratories such as ISO, DKD, NAMAS, UKAS and conform to the requirements according to DIN EN ISO 9001:2000. Units have a chamber at a constant temperature level and can be used for precise calibration of temperature sensors, measuring instruments, thermometers according to national and international standards. Refrigerated models are suitable for use at temperatures from –30 to +200 °C as well as use as calibration baths for temperatures from 50 to 300 °C. With the optional precision reference sensor it is possible to measure the reference temperature. Baths feature a PID cascade temperature control for highest internal and external temperature stability and an integrated programmer with 10 program steps.

• Temperature uniformity from 0,005 to 0,03 K (depending on the model)
• Bright VFD comfort display shows three temperature values simultaneously
• Particularly powerful pressure and suction pump to 1,1 bar, electronically adjustable
• RS232 interface and connection for PT100 reference sensor
• Electronic module (available as option) with analogue connections for temperature recorder, set point device

Max. flow rate / max. pressure:

22 to 26 l/min, 400 mbar to 700 mbar (with electronically adjustable pump capacity)

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Cooling capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
SL-8K	50...300	±0,005	3	-	8	Ø120×170	220×460×470	1	**461-0570**
SL-14K	50...300	±0,005	3	-	14	Ø120×310	220×460×610	1	**461-0571**
FK30-SL	-30...+200	±0,005	2	0,46; 0,34; 0,15	14	Ø120×170	320×450×790	1	**461-0572**
FK31-SL	-30...+200	±0,005	2	0,46; 0,34; 0,15	24	Ø120×310	320×450×910	1	**461-0573**

Description	For	Pk	Cat. No.
Options			
ISO 3 point calibration certificate	calibration baths	1	**461-3529**
ISO 5 point calibration certificate	calibration baths	1	**461-3530**
DKD 3 point calibration certificate	calibration baths	1	**461-3531**
DKD 5 point calibration certificate	calibration baths	1	**461-3532**

Note: Cooling capacity at +20; 0 and –20 °C

Options
Julabo

Description	Pk	Cat. No.
ISO 3 point calibration certificate	1	**461-3529**
ISO 5 point calibration certificate	1	**461-3530**
DKD 3 point calibration certificate	1	**461-3531**
DKD 5 point calibration certificate	1	**461-3532**

Bath fluids

Bath fluids for improved thermostat life.

- Oil bath fluid can be used up to approx. 250 °C
- Heating bath fluid can be used up to approx. 170 °C
- Non corrosive
- High flash point
- Low evaporation

Note: At temperatures approaching the recommended maximum operating temperature it may be advisable to use these products in a fume cupboard or vented area.

Description	Temp. range (°C)	Viscosity (cP)	Pk	Cat. No.
Oil bath fluid	≤250	~5000	1 l	**1.06900.1000**
Oil bath fluid	≤250	~5000	5 l	**1.06900.5000**
Heating bath fluid	≤170	~330	2,5 l	**1.15265.2500**

1 cP = 1 mPa.s

Bath fluids
Julabo

Bath fluids have been carefully selected and proven in long-term service. They are suitable for use with heating and refrigerated circulators whenever water cannot be employed as bath fluid. The choice of bath fluid is critical for best results in temperature control and operation of the circulator.

- Low toxicity and almost odourless
- High stability and good thermal conductivity
- Low viscosity and low corrosiveness

Type	Temp. range (°C)	Fire point (°C)	Flash point (°C)	Colour	Pk	Cat. No.
For refrigerated circulators						
Thermal HY	–80...+55	80	78	Clear	10 l	**461-0131**
Thermal HY	–80...+55	80	78	Clear	5 l	**461-0130**
Thermal H5	–50...+105	142	124	Clear	10 l	**461-0141**
Thermal H5	–50...+105	142	124	Clear	5 l	**461-0140**
Thermal H20S	0...220	274	230	Light Brown	10 l	**461-0151**
Thermal H20S	0...220	274	230	Light Brown	5 l	**461-0225**
Thermal H10	–20...+180	216	190	Clear	10 l	**461-3103**
Thermal H10	–20...+180	216	190	Clear	5 l	**461-0226**
Thermal G	–30...+80	-	-	Light Yellow	10 l	**461-0474**
Thermal G	–30...+80	-	-	Light Yellow	5 l	**461-3122**
For highly dynamic temperature control systems (Presto, Magnum and W92)						
Thermal HL80	–85...+170	>112	>63	Clear	10 l	**461-0228**
Thermal HL80	–85...+170	>112	>63	Clear	5 l	**461-0490**
Thermal HL45	–45...+250	>162	>121	Clear	10 l	**461-0229**
Thermal HL45	–45...+250	>162	>121	Clear	5 l	**461-0491**
Thermal HL40	–40...+250	142	124	Clear	10 l	**461-0479**
Thermal HL40	–40...+250	142	124	Clear	5 l	**461-0480**
For high temperature circulators (Forte HT closed systems)						
Thermal H350	50...350	235	210	Clear	5 l	**461-3102**
Thermal H250	80...250	334	292	Clear	10 l	**461-0473**
Thermal H250	80...250	334	292	Clear	5 l	**461-0227**
Thermal H335	30...335	212	184	Light Yellow	10 l	**461-0475**
Thermal H335	30...335	212	184	Light Yellow	5 l	**461-0476**
Thermal H250S	20...250	274	230	Light Brown	10 l	**461-0477**
Thermal H250S	20...250	274	230	Light Brown	5 l	**461-0478**

Bath fluids
Lauda

- Allow highly accurate thermostating, even at extreme temperatures
- Simple and safe handling, suitable for long term operation
- Optimise thermostat life

Type	Temp. range (°C)	Colour	Pk	Cat. No.
Aqua 90	5...90	Colourless	5 l	**461-2858**
Aqua 90	5...90	Colourless	10 l	**461-2870**
Aqua 90	5...90	Colourless	20 l	**461-2881**
Kryo 20*	–20...+180	Colourless	5 l	**461-2850**
Kryo 20*	–20...+180	Colourless	10 l	**461-2867**
Kryo 20*	–20...+180	Colourless	20 l	**461-2878**
Kryo 30	–30...+90	Light Yellow	5 l	**461-2851**
Kryo 30	–30...+90	Light Yellow	10 l	**461-2864**
Kryo 30	–30...+90	Light Yellow	20 l	**461-2876**
Kryo 40	–40...+60	Colourless	5 l	**461-2857**
Kryo 40	–40...+60	Colourless	10 l	**461-2869**
Kryo 40	–40...+60	Colourless	20 l	**461-2880**
Kryo 51*	–50...+120	Colourless	5 l	**461-2883**
Kryo 51*	–50...+120	Colourless	10 l	**461-2884**
Kryo 51*	–50...+120	Colourless	20 l	**461-2885**
Kryo 60*	–60...+80	Colourless	5 l	**461-2853**
Kryo 60*	–60...+80	Colourless	10 l	**461-2859**
Kryo 60*	–60...+80	Colourless	20 l	**461-2871**
Kryo 70**	–70...+220	Colourless	5 l	**461-0762**
Kryo 70**	–70...+220	Colourless	10 l	**461-0764**
Kryo 70**	–70...+220	Colourless	20 l	**461-0766**
Kryo 90*	–90...+30	Colourless	5 l	**461-0763**
Kryo 90*	–90...+30	Colourless	10 l	**461-0765**
Kryo 90*	–90...+30	Colourless	20 l	**461-0767**
Therm 160	60...160	Brown	5 l	**461-2849**
Therm 160	60...160	Brown	10 l	**461-2861**
Therm 160	60...160	Brown	20 l	**461-2873**
Therm 180*	0...180	Colourless	5 l	**461-2848**
Therm 180*	0...180	Colourless	10 l	**461-2866**
Therm 180*	0...180	Colourless	20 l	**461-2855**
Therm 240*	50...240	Colourless	5 l	**461-2120**
Therm 240*	50...240	Colourless	10 l	**461-2907**
Therm 240*	50...240	Colourless	20 l	**461-2908**
Ultra 300*	80...300	Brown	5 l	**461-2846**
Ultra 300*	80...300	Brown	10 l	**461-2863**
Ultra 300*	80...300	Brown	20 l	**461-2875**
Ultra 350	30...200	Clear Yellow	5 l	**461-2845**
Ultra 350	30...200	Clear Yellow	10 l	**461-2862**
Ultra 350	30...200	Clear Yellow	20 l	**461-2874**

* Denotes Silicone oil
** Only suitable for closed circuits

Silicone fluids, Dow Corning 200®

A range of silicone fluids recommended for use in baths. Fluids possess excellent heat transfer characteristics and cover a large temperature range from –10 °C to +288 °C. Low in toxicity, inert and long lasting due to their low volatility.

Note: Harmful vapours may be given off at elevated temperatures. It is advisable to use this material in a fume cupboard at temperatures greater than 140 °C.

- Non corrosive
- High flash point
- Long service life
- Low evaporation

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Description	Temp. range (°C)	Viscosity (cP)	Colour	Pk	Cat. No.
Dow Corning® Xiameter PMX 200/10 cS silicone fluid	-10...+200	9,3	Clear	400 g	**630044R**
Dow Corning® Xiameter PMX 200/10 cS silicone fluid	-10...+200	9,3	Clear	4 kg	**630046T**
Dow Corning® Xiameter PMX 200/10 cS silicone fluid	-10...+200	9,3	Clear	20 kg	**630047U**
Dow Corning® Xiameter PMX 200/20 cS silicone fluid	≤200	19	Clear	500 g	**630054T**
Dow Corning® Xiameter PMX 200/20 cS silicone fluid	≤200	19	Clear	5 kg	**630056V**
Dow Corning® Xiameter PMX 200/20 cS silicone fluid	≤200	19	Clear	20 kg	**630057W**

1 cP = 1 mPa.s

Water baths, VWB series

Water baths with double walled, stainless steel (inner) and coated steel sheet (outer) housing. Temperature is evenly distributed by a flat radiator. Electronic PID controller with digital temperature setting gives high temperature stability. A digital timer can be set so that the water bath will maintain the required temperature after the timer alarm has sounded. The baths have a drain cock and are protected against 'running dry' as the heater automatically switches off if the liquid is low. Note: Baths are classified Safety Class 1, allowing unattended operation when used with non flammable liquids.

- Temperature range ambient +5 to 100 °C
- Digital temperature indicator with three user-defined fixed temperatures
- In standby mode display shows residual heat, display also shows when power and heating is on
- Temperature stability: ±0,2 K
- Digital temperature display and setting 0,1 °C

Delivery information: Supplied with transparent polycarbonate hinged lid and removable shelf as standard.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (W)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
Baths									
VWB 2	RT* +5...100	±0,2	0,5	1 - 2	300×150×100	351×225×310	5,2	1	**462-0240**
VWB 6	RT* +5...100	±0,2	0,5	2 - 6	300×150×150	351×225×310	5,4	1	**462-0241**
VWB 12	RT* +5...100	±0,2	1,0	4 - 12	300×325×150	381×375×310	7,5	1	**462-0242**
VWB 18	RT* +5...100	±0,2	1,6	6 - 18	505×300×150	556×375×310	9,7	1	**462-0243**
VWB 26	RT* +5...100	±0,2	1,6	8 - 26	505×300×200	556×375×360	14,1	1	**462-0244**

Description	For	For tube Ø (mm)	W×D×H (mm)	Pk	Cat. No.
Tube racks for VWB 2 bath, maximum 1 rack per bath					
Test tube rack, holds 56 tubes		10	220×65×135	1	**462-0245**
Test tube rack, holds 48 tubes		12	220×65×135	1	**462-0246**
Test tube rack, holds 33 tubes		14	220×65×135	1	**462-0247**
Test tube rack, holds 18 tubes		18	220×65×135	1	**462-0248**
Test tube rack, holds 12 tubes		25	220×65×135	1	**462-0249**
Test tube rack, holds 6 tubes		35	220×65×135	1	**462-0250**
Test tube rack, holds 3 tubes		50	220×65×135	1	**462-0251**
Tube racks suitable for: VWB 6, VWB 12, VWB 18, VWB 26, maximum 1, 4, 7, 7 racks per bath respectively					
Test tube rack holds 56 tubes		10	220×65×155	1	**462-0252**
Test tube rack holds 48 tubes		12	220×65×155	1	**462-0253**
Test tube rack holds 33 tubes		14	220×65×155	1	**462-0254**
Test tube rack holds 18 tubes		18	220×65×155	1	**462-0255**
Test tube rack holds 12 tubes		25	220×65×155	1	**462-0256**
Test tube rack holds 6 tubes		35	220×65×155	1	**462-0257**
Test tube rack holds 3 tubes		50	220×65×155	1	**462-0258**
Accessories					
Flat cover with 1 set of water bath rings	VWB 2, VWB 6			1	**462-0259**
Flat cover with 3 sets of water bath rings	VWB 12			1	**462-0260**
Flat cover with 4 sets of water bath rings	VWB 18, VWB 26			1	**462-0261**
Level controller	All VWB baths			1	**462-0262**

* RT = Ambient

Water baths, unstirred, JB Academy series
Grant

Digital unstirred water bath range with choice of models from 5 to 18 litres. All units have stainless steel tanks and durable painted steel cases, offer fast heat-up times, good temperature control, front panel lock, easy to use controls and a bright, clear display. All baths have heater mat technology ensuring optimum working space, without a heating element in the tank they are easier to clean. The range is ideal for use in education and teaching as well as industrial applications such as product and materials testing.

- Temperature stability ±0,5 °C, temperature range ambient +5 to 95 °C
- Set and Forget™ technology. Modern technology for fast heat up and excellent temperature accuracy
- Baths have clear audible and visual alarms and advanced dry start and dry run protection, avoiding damage if accidentally switched on without water or bath runs dry. Simply fill and restart
- User-defined single point calibration allowing optimum accuracy at a frequently used temperature
- LED display with 0,5 °C resolution, front panel lock-out to ensure the current settings are not accidentally altered

Delivery information: Supplied with a perforated base tray which allows any container to be placed directly in the bath. Other accessories must be ordered separately. UK & EU plug included. Lid recommended for use over 60 °C

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Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
JBA5	RT* +5...95	± 0,5	0,35	5	145×290×115	215×335×200	1	**462-1021**
JBA12	RT* +5...95	± 0,5	0,8	12	315×290×115	365×360×225	1	**462-1019**
JBA18	RT* +5...95	± 0,5	1,4	18	495×290×115	570×335×275	1	**462-1020**

*RT = Ambient

Water baths, unstirred, JB Nova series
Grant

Digital unstirred water bath range with choice of models from 5 to 26 litres. All units have stainless steel tanks and durable painted steel cases, offer fast heat-up times, good temperature control, front panel lock, easy to use controls and a bright, clear display. All baths have heater mat technology ensuring optimum working space, without a heating element in the tank they are easier to clean. The 12 litre and larger models feature a convenient drain tap on the front of the bath. The range is ideal for use in education as well as industrial applications such as product and materials testing.

- Temperature stability ±0,5 °C, temperature range ambient +5 to 95 °C
- Set and Forget™ technology. Modern technology for fast heat up and excellent temperature accuracy
- Baths have clear audible and visual alarms and advanced dry start and dry run protection, avoiding damage if accidentally switched on without water or bath runs dry. Simply fill and restart
- User-defined single point calibration allowing optimum accuracy at a frequently used temperature
- LED display with 0,5 °C resolution
- Front panel lock-out to ensure the current settings are not accidentally altered

Delivery information: Supplied with a transparent polycarbonate lid and perforated base tray which allows any container to be placed directly in the bath. UK & EU plug included.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
JBN5	RT* +5...95	±0,5	0,35	5	145×290×115	215×335×200	1	**462-8557**
JBN12	RT* +5...95	±0,5	0,8	12	315×290×115	380×260×225	1	**462-8558**
JBN18	RT* +5...95	±0,5	1,4	18	495×290×115	590×335×275	1	**462-8559**
JBN26	RT* +5...95	±0,5	1,4	26	495×290×165	590×335×275	1	**462-1022**

*RT = Ambient

Water baths, unstirred, SUB Aqua Pro series
Grant

High quality, digital unstirred water bath range with choice of models from 2 to 34 litres and a dual bath with 5 and 12 litres. Dual baths are ideal when two different temperatures are needed and space is limited. All units have stainless steel tanks and durable painted steel cases, offer fast heat-up times, excellent temperature control, easy to use controls and a bright, clear display. All baths have heater mat technology ensuring optimum working space, without a heating element in the tank they are easier to clean. The 12 litre and larger models feature a convenient drain tap on the front of the bath. The range is ideal for use in university research and teaching, pharma/biotech, healthcare and industrial applications.

- Excellent temperature control ±0,2 °C stability, temperature range ambient +5 to 99 °C
- Set and Forget™ technology. Modern technology for fast heat up and excellent temperature accuracy
- Adjustable over-temperature alarm, bath alarms and cuts off heating at a user defined temperature to protect samples
- Baths feature advanced dry start and dry run protection, avoiding damage if accidentally switched on without water or bath runs dry. Simply fill and restart
- 2 point user-defined calibration ensuring optimum accuracy for demanding test setups
- LED display with 0,1 °C resolution, front panel lock-out to ensure the current settings are not accidentally altered
- Three programmable temperature presets, countdown timer from 1 to 999 min with audible buzzer for accurate reaction timing

Delivery information: Supplied with a transparent polycarbonate lid and perforated base tray which allows any container to be placed directly in the bath. UK & EU plug included.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
SAP2	RT* +5...99	± 0,2	0,25	2	131×117×132	185×200×200	1	**462-0474**
SAP2S (shallow)	RT* +5...99	± 0,2	0,35	2	289×139×47	335×215×150	1	**462-0475**
SAP5	RT* +5...99	± 0,2	0,35	5	281×131×132	335×215×200	1	**462-0476**
SAP12	RT* +5...99	± 0,2	0,8	12	306×281×132	360×380×225	1	**462-0477**
SAP18	RT* +5...99	± 0,2	1,4	18	281×485×132	335×590×275	1	**462-0478**
SAP26	RT* +5...99	± 0,2	1,4	26	278×481×182	335×590×275	1	**462-0479**
SAP34	RT* +5...99	± 0,2	1,8	34	281×635×180	335×770×270	1	**462-0480**
SAPD	RT* +5...99	± 0,2	1,15	5; 12	298×148×150 323×298×150	545×380×225	1	**462-0481**

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Description	For	Pk	Cat. No.
Accessories			
Stainless steel test tube rack for 10 mm Ø tubes	84 tubes	1	**462-8451**
Stainless steel test tube rack for 13 mm Ø tubes	55 tubes	1	**462-8452**
Stainless steel test tube rack for 16 mm Ø tubes	36 tubes	1	**462-8453**
Stainless steel test tube rack for 19 mm Ø tubes	32 tubes	1	**462-8454**
Stainless steel test tube rack for 25 mm Ø tubes	18 tubes	1	**462-8455**
Stainless steel test tube rack for 30 mm Ø tubes	12 tubes	1	**462-8456**
Stainless steel rack for 0.5 ml microtubes	105 tubes	1	**462-8457**
Raised half shelf with perforated mesh	JBA12, JBN12, SAP12, SAPD, (SUB Aqua 12, SUB Aqua Dual, JB Aqua 12, JB Aqua Dual, SBB Aqua 12 Plus)	1	**462-8231**
Raised half shelf with perforated mesh	JBN26, SAP26, (SUB Aqua 26, JB Aqua 26, SBB Aqua 26 Plus)	1	**462-8232**
Stainless steel base tray**	SAP12, JBN12, JBA12, GLS Aqua 12 Plus and SBB Aqua 12 Plus	1	**462-8350**
Stainless steel base tray**	SAP2	1	**462-0188**
Stainless steel base tray**	SAP18/26. JBN18/26, JBA18, GLS Aqua 18 Plus, OLS200 and SBB Aqua 18/26 Plus	1	**462-8351**
Stainless steel base tray**	SAP2S, SAP5, JBN5, JBA5 and SBB Aqua 5 Plus	1	**462-8131**

*RT = Ambient
** Required if flat-bottomed flasks are to be placed directly onto the base of the bath and to allow better convection in the bath.

Water baths, TW series
Julabo

Water baths with microprocessor technology with PID temperature control are ideal for routine laboratory applications, temperature control of samples, incubations, dental applications and material testing. The units have temperature indication (LED) for easy operation, a removable bottom plate and a drain tap for convenient emptying.

- Bright LED temperature display for actual and set temperature
- Audible and optical warning signal for cut-off function
- Dry-running protection
- With drain tap for easy emptying (except TW2)

Ordering information: Supplied without shelves, racks or lid. Lids are recommended when working above 60 °C. Please order required accessories separately.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
TW2	20...99	±0,2	1	1 - 2	150×130×110	170×160×260	3,5	1	**462-0085**
TW8	20...99	±0,2	2	3 - 8	230×270×140	290×320×280	8,5	1	**461-3115**
TW12	20...99	±0,2	2	5 - 14	350×270×140	400×320×280	9,8	1	**461-3116**
TW20	20...99	±0,2	2	8 - 26	500×300×180	560×350×320	14,2	1	**461-3117**

Description	For	Pk	Cat. No.
Accessories			
Hollow PP balls, 20 mm Ø	open heating baths, heating circulators, water baths and shaking water baths	1.000	**461-3619**
Lift up stainless steel lid	TW2	1	**462-4106**
Lift up stainless steel lid	TW8	1	**462-4107**
Lift up stainless steel lid	TW12	1	**462-4108**
Lift up stainless steel lid	TW20, SW22, SW23	1	**462-4109**
Flat bath covers, ring sets with 1 opening, 190 mm Ø	TW8	1	**462-0006**
Flat bath covers, ring sets with 4 openings, 92 mm Ø	TW8	1	**462-0007**
Flat bath covers, ring sets with 2 openings, 190 mm Ø	TW20	1	**462-0008**
Flat bath covers, ring sets with 6 openings, 115 mm Ø	TW20	1	**462-0009**
Flat bath covers, ring sets with 6 openings, 92 mm Ø	TW12	1	**462-0010**
Lift up Makrolon® lid	TW8	1	**461-3105**
Lift up Makrolon® lid	TW12	1	**461-3106**
Lift up Makrolon® lid	TW20, SW22, SW23	1	**461-3905**
Lift up Makrolon® lid	TW2	1	**462-0081**
Stainless steel hygiene insert	TW2	1	**462-0082**
Test tube rack, PP, for 60 test tubes, 16/17 mm Ø, up to 80 °C	TW8, TW12, TW20, SW22, SW23	1	**461-3107**
Test tube rack, PP, for 90 microtubes, 12/13 mm Ø, up to 80 °C	TW8, TW12, TW20, SW22, SW23	1	**461-3108**
Test tube rack, PP, for 90 microtubes, 11/12 mm Ø, up to 80 °C	TW8, TW12, TW20, SW22, SW23	1	**461-3109**
Test tube rack, PP, for 21 tubes, 30 mm Ø, up to 80 °C	TW8, TW12, TW20, SW22, SW23	1	**461-3110**

Water baths, aqualine series
Lauda

Unstirred, corrosion resistant stainless steel baths, with heater and temperature sensors mounted underneath the tank ensuring maximum usable space. Robust and reliable, controls are recessed for protection, baths are easy to clean and the minimum filling level is just 20 mm.

- Easy operation via digital LED display
- Integrated over-temperature cut-out
- Angled lid prevents condensation dripping into samples
- Homogenous temperature distribution thanks to heating elements positioned underneath the tank

IP protection class according to DIN EN 60529: IP 22

Temperature stability at 37 °C: ±0,2 K

Delivery information: Supplied with a transparent polycarbonate gabled lid, but without racks or platform, required accessories must be ordered separately.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
AL 2	25...95	±0,2	0,5	0,9 - 1,7	300×151×65	347×249×311*	4,9	1	**462-1012**
AL 5	25...95	±0,2	0,5	1 - 5	300×151×150	347×249×311*	5,1	1	**462-1013**
AL 12	25...95	±0,2	1,0	2 - 12	329×300×150	375×438×333*	7,5	1	**462-1014**
AL 18	25...95	±0,2	1,2	3 - 18	505×300×150	550×438×333*	11	1	**462-1015**
AL 25	25...95	±0,2	1,2	3 - 25	505×300×200	550×438×383*	14	1	**462-1016**

Description	For	Pk	Cat. No.
Accessories			
Stainless steel lifting platform	AL 12 (max. 1 platform), AL 18 and AL 25 (max. 2 platforms)	1	**462-1018**
Stainless steel rack, for 1 x in AL 12, 2 x in AL 18, AL 25	91 tubes with 10/13 mm Ø, height, 80 mm	1	**462-1004**
Stainless steel rack, for 1 x in AL 12, 2 x in AL 18, AL 25	45 tubes with 14/18 mm Ø, height, 80 mm	1	**462-1005**
Stainless steel rack, for 1 x in AL 12, 2 x in AL 18, AL 25	45 tubes with 14/18 mm Ø, height, 110 mm	1	**462-1006**
Stainless steel rack, for 1 x in AL 12, 2 x in AL 18, AL 25	15 tubes with 24/30 mm Ø, height, 110 mm	1	**462-1007**
Stainless steel rack, for 2 x in AL 5	15 tubes with 10/13 mm Ø, height, 80 mm	1	**462-1000**
Stainless steel rack, for 2 x in AL 5	11 tubes with 14/18 mm Ø, height, 80 mm	1	**462-1001**
Stainless steel rack, for 2 x in AL 5	11 tubes with 14/18 mm Ø, height, 110 mm	1	**462-1002**
Stainless steel rack, for 2 x in AL 5	4 tubes with 24/30 mm Ø, height, 110 mm	1	**462-1003**
Stainless steel rack, for 1 x in AL 5, 3 x in AL 12, 5 x in AL 18, AL 25	36 tubes with 10/13 mm Ø, height, 80 mm	1	**462-1008**
Stainless steel rack, for 1 x in AL 5, 3 x in AL 12, 5 x in AL 18, AL 25	21 tubes with 14/18 mm Ø, height, 80 mm	1	**462-1009**
Stainless steel rack, for 1 x in AL 5, 3 x in AL 12, 5 x in AL 18, AL 25	21 tubes with 14/18 mm Ø, height, 110 mm	1	**462-1010**
Stainless steel rack, for 1 x in AL 5, 3 x in AL 12, 5 x in AL 18, AL 25	10 tubes with 24/30 mm Ø, height, 110 mm	1	**462-1011**

* D = overall depth (open lid + controller), H = with lid closed

Water baths, WNB and WNE series
Memmert

Water baths with a corrosion resistant stainless steel tank and outer case. WNB models have a single PT100 sensor and WNE units have two; all units have a feature that allows boiling. The heating elements are in the sides and on the bottom of the tank giving better temperature uniformity.

Basic controller:

Microprocessor PID temperature controller with an integrated self-diagnostic system with fault indicator and digital LED display with 0,1 °C resolution.

- Programmable digital timer, 1 min to 99 h 59 min with three functions; on, wait and hold
- Dual over-temperature protection, mechanical and electronic systems

Excellent controller:

PID microprocessor controller with an integrated self-diagnostic system and digital LED display for all set parameters and alarm values, with 0,1 °C resolution (for temperatures below 99,9 °C).

- Programmable digital timer, 1 min to 999 h with four functions; on, delayed on, hold, hold set temperature dependent with defined holding time
- Acoustic and visual alarm for low liquid level; heating is automatically switched off at the end of the program
- Safety features are the same as Basic controller and in addition, an independent adjustable over-temperature controller, TWW protection Class 3,1 or adjustable temperature limiter, Class 2 which can be set by user

Ordering information: All models are supplied without racks, ring sets or lid. Lids are recommended when working above 60 °C, lids should be ordered at the same time as the bath. Please order required accessories separately, see www.vwr.com for further details of accessories available.

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Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
Models with Basic controllers									
WNB 7	RT* +5...95	±0,1	1,2	7	240×210×140	468×356×238	11	1	**462-3587**
WNB 10	RT* +5...95	±0,1	1,2	10	350×210×140	578×356×238	13	1	**462-3582**
WNB 14	RT* +5...95	±0,1	1,8	14	350×290×140	578×436×238	15	1	**462-3583**
WNB 22	RT* +5...95	±0,1	2,0	22	350×290×220	578×436×296	16	1	**462-3584**
WNB 29	RT* +5...95	±0,1	2,4	29	590×350×140	818×516×238	22	1	**462-3585**
WNB 45	RT* +5...95	±0,1	2,8	45	590×350×220	818×516×296	24	1	**462-3586**
Models with Excellent controllers									
WNE 7	RT* +5...95	±0,1	1,2	7	240×210×140	468×356×238	11	1	**462-3592**
WNE 10	RT* +5...95	±0,1	1,2	10	350×210×140	578×356×238	13	1	**462-3588**
WNE 14	RT* +5...95	±0,1	1,8	14	350×290×140	578×436×238	15	1	**462-3589**
WNE 22	RT* +5...95	±0,1	2,0	22	350×290×220	578×436×296	16	1	**462-3593**
WNE 29	RT* +5...95	±0,1	2,4	29	590×350×140	818×516×238	22	1	**462-3590**
WNE 45	RT* +5...95	±0,1	2,8	45	590×350×220	818×516×296	24	1	**462-3591**
WPE 45	RT* +5...95	±0,1	2,8	45	590×350×220	818×516×296	24	1	**462-3624**

* RT= Ambient

Heating bath, stirred, HBR 4 digital
IKA

Cylindrical stainless steel bath with heating elements underneath bath vessel. Water or low viscosity oil 50 mPas (cP) can be used as the heat transfer fluid. Bath has stirring speed range of 100 to 800 l/min and the tank dimensions are 200×160 mm (øxH).

- Infinitely adjustable safety temperature limiter, according to DIN 12877
- Double jacket and carrying handles provide protection against accidental burns
- Fuzzy logic and digital display showing speed and rated, actual and safety temperatures
- Integrated magnetic stirrer that circulates fluid ensuring improving heat dispersal
- Safety elements are checked when the unit is switched on

IP protection class according to DIN EN 60529: IP 21

Ordering information: Supplied without lid or ring set. Please order required accessories separately.

Type	Temp. range (°C)	Heating capacity (kW)	Capacity (l)	ØxH (mm)	Weight (kg)	Pk	Cat. No.
HBR 4 digital, UK-plug	RT* +5...200	1	4	250×250	4,4	1	**462-0146**

Description	Pk	Cat. No.
Accessories		
Intermediate base for HBR 4	1	**453-2293**
Rings for HBR 4	1	**462-2053**

* RT = Ambient

Shaking water baths, VKB series

Linear shaking water baths with stainless steel tank and simple, intuitive 3 button user interface. It is quick and easy to fit alternative shaking trays. Heating element is positioned on the underside of the tank, no heating element in the bath means it is easier to clean and keep clean. Baths have an independent sample protection feature. Available ready to use in two sizes to suit a variety of applications including sample preparation, mixing and thawing.

- Intuitive user interface enabling quick changes to temperature and shaking speed
- Discrete, under tray, magnetically coupled shaking mechanism is reliable and quiet in operation
- Excellent temperature stability ±0,2 °C
- Temperature range: Ambient + 5 to 99 °C
- Adjustable shaking speed range: 40 to 400 strokes per minute (dependent on load)
- Display: LED, resolution 0,1 °C

Delivery information: Supplied with a universal spring tray and clear gabled polycarbonate lid. A stainless steel gabled lid is available as an option and a wide choice of accessory trays and test tube racks are available; these must be ordered separately.

Model	VKB 12	VKB 18
Capacity (l)	12	18
Flask immersion depth (mm)	0/60 min/max	
Linear stroke length (mm)	18	

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Shaker tray W×D (mm)	240×235	420×235
Uniformity (°C)	±0,1 (at 37 °C)	
Weight (kg)	10	13
W×D×H (mm)	335×390×270	335×570×270

Description	Pk	Cat. No.
Shaking water bath, VKB 12, UK-plug	1	**462-0354**
Shaking water bath, VKB 18, UK-plug	1	**462-0353**

Description	For	Pk	Cat. No.
Trays for VKB shaking water baths			
Plain stainless steel tray for VKB 12	Containers, bags and other vessels	1	**462-0358**
Plain stainless steel tray for VKB 18	Containers, bags and other vessels	1	**462-0357**
Universal flask tray with springs, stainless steel for VKB 12	25×25 ml, 16×50 ml, 9×100 ml, 5×250 ml, 4×500 ml or 2×1000	1	**462-0360**
Universal flask tray with springs, stainless steel for VKB 18	45×25 ml, 28×50 ml, 18×100 ml, 11×250 ml, 6×500 ml or 3×1000	1	**462-0359**
Test tube tray, stainless steel for VKB 12	3 test tube racks	1	**462-0361**
Test tube tray, stainless steel for VKB 18	5 test tube racks	1	**462-0362**
Racks for VKB shaking water baths			
Stainless steel test tube rack for VKB 12/VKB 18*	119×0,5 ml microtubes	1	**462-0369**
Stainless steel test tube rack for VKB 12/VKB 18*	48×1,5 ml microtubes	1	**462-0370**
Stainless steel test tube rack for VKB 12/VKB 18*	48×10 mm Ø tubes	1	**462-0363**
Stainless steel test tube rack for VKB 12/VKB 18*	44×13 mm Ø tubes	1	**462-0364**
Stainless steel test tube rack for VKB 12/VKB 18*	24×16 mm Ø tubes	1	**462-0365**
Stainless steel test tube rack for VKB 12/VKB 18*	21×19 mm Ø tubes	1	**462-0366**
Stainless steel test tube rack for VKB 12/VKB 18*	12×25 mm Ø tubes	1	**462-0367**
Stainless steel test tube rack for VKB 12/VKB 18*	10×30 mm Ø tubes	1	**462-0368**
Lids for VKB shaking water baths			
Gabled stainless steel lid	VKB 12	1	**462-0371**
Gabled stainless steel lid	VKB 18	1	**462-0372**
Replacement gabled, non drip, polycarbonate lid	VKB 12	1	**462-0373**
Replacement gabled, non drip, polycarbonate lid	VKB 18	1	**462-0374**

* Note the tray racks must be used in conjunction with the appropriate stainless steel tray.

Shaking water baths, SW22 and SW23

Julabo

Stainless steel shaking water baths are suitable for unsupervised continuous operation. The bright, LED Multi-Display showing up to six temperature values is visible from across the lab. Advanced microprocessor technology with PID temperature control eliminates temperature overshoot and provides high temperature stability. Sensitive samples are well protected; as soon as the high and low temperature limits are reached an intermittent tone sounds. If the liquid in the bath reaches a minimum, the unit shuts down completely and a continuous single tone sounds.

- Electronic timer for setting running time 1 min to 9 h 59 min
- Removable shaking tray prevents direct contact with the bath liquid
- RS232 interface allows on-line communication with PC EasyTemp control software available to download free of charge
- Dry-running protection/safety temperature fixed at 130 °C

Ordering information: Supplied without trays, racks or lid. Please order required accessories separately.

Model	SW22	SW23
Capacity (l)	8 - 20	
Heating capacity (W)	2000	
Linear stroke length (mm)	15	
Shaking speed range (min^{-1})	20 - 200	
Tank dimensions W×D×H (mm)	500×300×180	
Temperature range (°C)	20...99,9	
Temperature stability (%)	±0,2	±0,02
Weight (kg)	19,4	21,4
W×D×H (mm)	700×350×260	

Description	Pk	Cat. No.
Shaking water bath, SW22	1	**462-4102**
Shaking water bath, SW23	1	**462-4104**

Description	For	Pk	Cat. No.
Accessories			
Hollow PP balls, 20 mm Ø	open heating baths, heating circulators, water baths and shaking water baths	1.000	**461-3619**
Lift up stainless steel lid	TW20, SW22, SW23	1	**462-4109**
Lift up Makrolon® lid	TW20, SW22, SW23	1	**461-3905**
Test tube rack, PP, for 60 test tubes, 16/17 mm Ø, up to 80 °C	TW8, TW12, TW20, SW22, SW23	1	**461-3107**
Test tube rack, PP, for 90 microtubes, 12/13 mm Ø, up to 80 °C	TW8, TW12, TW20, SW22, SW23	1	**461-3108**
Test tube rack, PP, for 90 microtubes, 11/12 mm Ø, up to 80 °C	TW8, TW12, TW20, SW22, SW23	1	**461-3109**

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Description	For	Pk	Cat. No.
Accessories			
Test tube rack, PP, for 21 tubes, 30 mm Ø, up to 80 °C	TW8, TW12, TW20, SW22, SW23	1	**461-3110**
Carrier tray with test racks	360 microlitre tubes, Ø 11/12 mm	1	**462-0004**
Carrier tray with test racks	84 test tubes, Ø 30/31 mm	1	**462-0005**
Carrier tray for Erlenmeyer flasks, holds 45 flasks	25 ml	1	**462-4111**
Carrier tray for Erlenmeyer flasks, holds 32 flasks	50 ml	1	**462-4112**
Carrier tray for Erlenmeyer flasks, holds 18 flasks	100 ml	1	**462-4113**
Carrier tray for Erlenmeyer flasks, holds 15 flasks	200 ml	1	**462-4114**
Carrier tray for Erlenmeyer flasks, holds 11 flasks	250 - 300 ml	1	**462-4115**
Carrier tray for Erlenmeyer flasks, holds 8 flasks	500 ml	1	**462-4116**
Carrier tray for Erlenmeyer flasks, holds 5 flasks	1000 ml	1	**462-4117**
Spring clamp	10 ml	1	**462-0011**
Spring clamp	25 ml	1	**462-0012**
Spring clamp	50 ml	1	**462-0013**
Spring clamp	100 ml	1	**462-0014**
Spring clamp	250 ml	1	**462-0015**
Spring clamp	300 ml	1	**462-0016**
Spring clamp	500 ml	1	**462-0017**
Spring clamp	1000 ml	1	**462-0018**
Basic tray for assembling up to 4 test tube racks	SW22, SW23	1	**462-4146**
Basic tray for assembling spring clamps on	SW22, SW23	1	**462-4143**
Universal tray for 25 - 1000 ml Erlenmeyer flasks (400×230 mm)	SW22, SW23	1	**462-0083**

Shaking water baths, Aqua Pro series
Grant

The Aqua Pro series of shaking water baths offers three bath models with exceptional temperature performance and usability. The baths are ideal for basic as well as more demanding applications in education, research, food and beverage industry, biopharma and the life sciences. The magnetically coupled, maintenance free shaking mechanism sits below the shaking tray ensuring a larger working area and enabling the user to easily remove the mechanism for cleaning. Units feature soft start and are extremely quiet during operation, they also have a drain tap at the front for easier emptying. Aqua Pro models are capable of gentle mixing or dynamic shaking depending on the application requirements. They incorporate Set and Forget™ technology - fast heat up and excellent temperature accuracy. The OLS26 offers orbital and linear motion in one bath. Simply rotate the tray carrier by 180° to change between the two shaking modes. No need to buy separate trays to achieve orbital or linear motion. OLS26 features a dual display showing temperature and shaking speed and has adjustable shaking speed/stroke length.

- Dual point user calibration facility and user defined high temperature alarm and cut-off which provides sample protection
- Easy insert test tube/microtube racks
- Multipurpose flask tray can be used to accommodate deep well plates using an SH-DWP holder, flask clamps and SR racks (using fittings supplied)
- Multipurpose universal tray can accommodate test tube/micro tube racks
- Excellent temperature uniformity and stability of ±0,1 °C
- Advanced run dry/dry start protection
- Countdown timer

Delivery information: All models are supplied with a clear polycarbonate lift-off gabled lid but without accessories. There is a wide range of multifunctional shaking trays available, to hold everything from microtubes and deep well plates to 1 litre flasks and bottles. Please order required accessories separately.

Model	LSB12	LSB18	OLS26
Capacity (l)	12	18	26
Heating capacity (kW)	0,8	1,4	
Linear speed (strokes/min)	20 - 200*		
Linear stroke length (mm)	20		18, 28, 36
Orbital radius (mm)	-		9
Orbital speed (m/s)			20 - 200*
Shaker tray W×D (mm)	235×240	235×420	235×380
Stability	±0,1 °C at 70 °C		
Temperature range (°C)	Ambient + 5...99		Ambient + 5...99 (0...99 with accessory cooling)
Uniformity	±0,1 at 70 °C		
Weight (kg)	9,2	11,2	13,8
W×D×H (mm)	360×380×275	335×565×275	335×565×325

Description	Pk	Cat. No.
LSB12 linear shaking water bath with clear polycarbonate lid	1	**462-0517**
LSB18 linear shaking water bath with clear polycarbonate lid	1	**462-0518**
OLS26 combined orbital/linear shaking water bath with clear polycarbonate lid	1	**462-0519**

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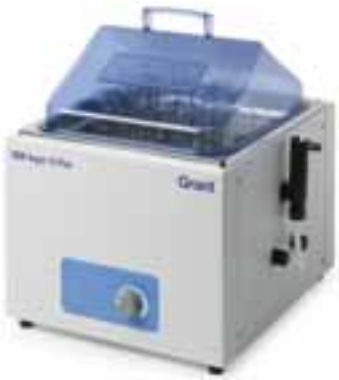
Description	For	Pk	Cat. No.
Accessories			
Gabled stainless steel lid	JBA12, JBN12, SAP12, (SUB Aqua 12, SUB Aqua Dual, JB Aqua 12, JB Aqua Dual, SBB Aqua 12 Plus, GLS Aqua 12 Plus), LSB12	1	**462-8211**
Gabled stainless steel lid	JBA12, JBN18/26, SAP18/26, (SUB Aqua 18/26, JB Aqua 18/26, SBB Aqua 18/26, GLS Aqua 18 Plus), LSB18	1	**462-8212**
Polycarbonate lid	GLS Aqua 12 Plus, LSB12	1	**462-0333**
Polycarbonate lid	GLS Aqua 18 Plus, OLS200, OLS26	1	**462-0334**
Gabled stainless steel lid	OLS26	1	**462-8120**
Trays			
Universal tray with adjustable springs. Versatile, suitable for a variety of vessel types	LSB12	1	**462-0543**
Universal tray with adjustable springs. Versatile, suitable for a variety of vessel types	LSB18	1	**462-0544**
Universal tray with adjustable springs. Versatile, suitable for a variety of vessel types	OLS26	1	**462-0545**
Flask tray with threaded holes to attach 25 to 1000 ml SC flask clamps, SH plate holders and SR racks	LSB12	1	**462-0537**
Flask tray with threaded holes to attach 25 to 1000 ml SC flask clamps, SH plate holders and SR racks	LSB18	1	**462-0538**
Flask tray with threaded holes to attach 25 to1000 ml SC flask clamps, SH plate holders and SR racks	OLS26	1	**462-0539**
Test tube tray, compatible with SR test tube racks or can be used alone to accommodate bags and miscellaneous vessels	LSB12 (holds up to 3× SR test tube racks)	1	**462-0540**
Test tube tray, compatible with SR test tube racks or can be used alone to accommodate bags and miscellaneous vessels	LSB18 (holds up to 5× SR test tube racks)	1	**462-0541**
Test tube tray, compatible with SR test tube racks or can be used alone to accommodate bags and miscellaneous vessels	OLS26 (holds up to 5× SR test tube racks)	1	**462-0542**
Stainless steel perforated base tray, allows bath to be used as an unstirred bath	LSB12	1	**462-0520**
Stainless steel perforated base tray, allows bath to be used as an unstirred bath	LSB18/OLS26	1	**462-0521**
Flask clamps and plate holder			
Flask clamp	25 ml flasks (TF12 holds 18, TF18 holds 33 and TF26 holds 28)	1	**462-0524**
Flask clamp	50 ml flasks (TF12 holds 14, TF18 holds 26 and TF26 holds 24)	1	**462-0526**
Flask clamp	100 ml flasks (TF12 holds 9, TF18 holds 17 and TF26 holds 15)	1	**462-0522**
Flask clamp	250 ml flasks (TF12 holds 5, TF18 holds 14 and TF26 holds 8)	1	**462-0525**
Flask clamp	500 ml flasks (TF12 holds 4, TF18 holds 6 and TF26 holds 6)	1	**462-0527**
Flask clamp	1000 ml flasks (TF12 holds 2, TF18 holds 4 and TF26 holds 3)	1	**462-0523**
Deep well plate holder	1× deep well plate (≥ 2ml) (TF12 holds 2, TF18 holds 4 and TF26 holds 4)	1	**462-0528**
SR test tube/microtube racks			
Test tube rack	48× tubes 10 mm Ø	1	**462-0529**
Test tube rack	44× tubes 13 mm Ø	1	**462-0530**
Test tube rack	24× tubes 16 mm Ø	1	**462-0531**
Test tube rack	21× tubes 19 mm Ø	1	**462-0532**
Test tube rack	12× tubes 25 mm Ø	1	**462-0533**
Test tube rack	10× tubes 30 mm Ø	1	**462-0534**
Microtube rack	48× microtubes 1,5 ml Ø	1	**462-0535**
Microtube rack	119× microtubes 0,5 ml Ø	1	**462-0536**
Upgrade kits			
Tray upgrade kit	allows 462-0543, 462-0540 & 462-0537 trays to be used with GLS Aqua 12 Plus models (tray not included)	1	**462-0546**
Tray upgrade kit	allows 462-0544, 462-0541 & 462-0538 trays to be used with GLS Aqua 18 Plus models (tray not included)	1	**462-0547**
Tray upgrade kit	allows 462-0545,462-0542 & 462-0539 trays to be used with OLS200 models (tray not included)	1	**462-0548**
Accessories			
Heat exchange coil	source of constant cooling, allows bath to be operated at or below ambient, down to 0 °C, fits OLS26	1	**462-0515**
Heat exchange coil	attaching to a cold water supply or a refrigerated circulator. Can be used down to 2 °C above the temperature of the coolant, fits OLS26	1	**462-0516**

* depending on load

Boiling baths, SBB Aqua Plus series
Grant



Boiling baths are designed for continuous operation with water above 90 °C. They have a stainless steel tank in an outer case and analogue control by means of a simple dial for straightforward temperature settings. Baths have two fixed over-temperature safety cut-outs which can be reset by the user.

- Energy regulator can be adjusted to ensure a steady boiling action, avoiding excessive steam or spitting
- Constant level device maintains the required liquid level, avoiding the need to monitor and top up the bath
- Heater and temperature sensors are mounted at the base of the tank, protected by a perforated tray, giving more usable space
- Robust construction, durable and resistant to corrosion
- New modern design

Ordering information: Supplied with polycarbonate lid but without rings.

Required accessories must be ordered separately, see SUB Aqua Pro baths entry.

Type	Temp. (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
SBB Aqua 5 Plus	100	1,3/1,5	5	145×290×105	270×215×385	1	**462-0172**
SBB Aqua 12 Plus	100	1,35/1,5	12	315×290×105	270×390×385	1	**462-0165**
SBB Aqua 18 Plus	100	1,35/2,0	18	495×290×105	270×570×385	1	**462-0167**
SBB Aqua 26 Plus	100	1,35/2,0	26	495×290×155	300×570×385	1	**462-0169**

Anti-evaporation spheres for water baths

Lightweight, economic PP spheres which form a blanket on the liquid surface. Spheres have 20 mm Ø, 275 spheres cover approximately 1000 cm^2.

- Reduce heat loss by 77%, and evaporation by 87%
- Insulate like a solid, and still allow instant access to the liquid in the bath

Description	Pk	Cat. No.
Anti-evaporation spheres	100	**462-7049**
Anti-evaporation spheres	1.000	**462-7050**

Anti-evaporation spheres for water baths
Grant

Lightweight, economic PP spheres which form a blanket on the liquid surface. Spheres have 20 mm Ø, 275 spheres cover approximately 1000 cm^2.

- Reduce heat loss by 77%, and evaporation by 87%
- Insulate like a solid, and still allow instant access to the liquid in the bath

Description	Pk	Cat. No.
Anti-evaporation spheres	300	**462-8239**

Water bath protective agent, Aquaresist

Prevents the growth of algae and bacteria in baths and circulating thermostats, for optimally hygienic working conditions.

- Durable. Effective for weeks, as displayed by a colour indicator
- Economical. Low consumption - only 1 ml solution per 1 litre of water

Description	Pk	Cat. No.
Water bath protective agent, Aquaresist	100 ml	**462-7000**

Water bath protective media, Aqua-Stabil

Julabo

Ideal for use in heating baths, circulators, water baths and shaking water baths. Use 2 ml solution per 1 litre water.

- Prevents contamination and the formation of algae, bacteria and microorganisms

Description	For	Pk	Cat. No.
Aqua-Stabil solution, 100 ml	open heating baths, heating circulators, water baths and shaking water baths	6	**461-3100**
Aqua-Stabil solution, 100 ml	open heating baths, heating circulators, water baths and shaking water baths	12	**461-0048**

Ovens with natural convection, DRY-Line®

Drying ovens with natural convection used for thermal processes, heated storage and for convection drying applications with temperatures up to 220 °C. Exhaust duct at the back of the unit with manually adjustable slide.

- Microprocessor controller
- Integrated timer can be set for continuous mode or timer operation: 0 to 999 min or 0 to 99,9 h
- Over-temperature protection with visual alarm (Class 3,1 safety device)
- Temperature setting in increments of 1 °C

Delivery information: Supplied with two chrome plated shelves.

Model	DL 53	DL 115
Temperature range (°C)	Ambient +5...220	
Capacity (l)	53	115
Convection type	Natural convection	
Shelves supplied (max.)	2 (4)	
Max. load per shelf (kg)	10	15
Internal W×D×H (mm)	401×330×401	600×400×480
External W×D×H (mm)	620×600×680	820×710×760
Nominal power consumption (W)	800	1000
Weight (kg)	41	62
Temperature fluctuation (time) (°C)	at 150 °C: ±0,4	at 150 °C: ±0,3
Temperature variation (spatial) (°C)	at 150 °C: ±3,3	at 150 °C: ±3,0

Description	Pk	Cat. No.
DRY-Line® 53	1	**466-3510**
DRY-Line® 115	1	**466-3513**

Description	For	Pk	Cat. No.
Shelves			
Chrome plated shelf	DL 53/VL 53/IL 53	1	**466-3522**
Chrome plated shelf	DL 115/VL 115/IL 115	1	**466-3523**

Ovens with forced convection, VENTI-Line®

Drying ovens with forced air circulation, which are ideal for routine drying and heating applications when short drying times are required. Ovens feature adjustable ventilation by means of manually adjustable ventilation slide and 50 mm Ø exhaust duct at the rear of the unit.

- Microprocessor controller
- Integrated timer can be set for continuous mode or timer operation: 0 to 999 min or 0 to 99,9 h
- Over-temperature protection with visual alarm (Class 3,1 safety device)
- Temperature setting in increments of 1 °C

Delivery information: Supplied with two chrome plated shelves.

Model	VL 53	VL 115
Temperature range (°C)	Ambient +12...220	Ambient +5...220
Temperature variation at 150 °C (°C)	±0,4	±0,3
Capacity (l)	53	115
Convection type	Forced convection	
Shelves supplied (max.)	2 (4)	
Max. load per shelf (kg)	10	15
Internal W×D×H (mm)	401×330×401	600×400×480
External W×D×H (mm)	620×640×680	820×710×760
Nominal power consumption (W)	800	1000
Weight (kg)	40	59
Temperature fluctuation (time) (°C)	at 150 °C: ±0,4	at 150 °C: ±0,3
Temperature variation (spatial) (°C)	at 150 °C: ±2,7	at 150 °C: ±2,5

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Description	Pk	Cat. No.
VENTI-Line® 53	1	**466-3516**
VENTI-Line® 115	1	**466-3519**

Description	For	Pk	Cat. No.
Shelves			
Chrome plated shelf	DL 53/VL 53/IL 53	1	**466-3522**
Chrome plated shelf	DL 115/VL 115/IL 115	1	**466-3523**

Ovens, E 28
Binder

Robust space-saving oven/steriliser with hydraulic mechanical thermostat and temperature setting via analogue dial indicator thermometer.

- Adjustable ventilation flap
- Option of models with or without Class 1 (DIN 12880) safety device
- Timer 0 to 120 min
- Analogue temperature display

IP protection class according to DIN EN 60529: IP 20

Delivery information: Supplied with two chrome plated shelves.

Temperature range (°C)	60...230
Capacity (l)	28
Convection type	Natural convection
Shelves supplied (max.)	2 (4)
Max. load per shelf (kg)	9
Internal W×D×H (mm)	400×250×280
External W×D×H (mm)	580×425×405
Nominal power consumption (W)	800
Weight (kg)	22
Temperature fluctuation (time) (°C)	at 70 °C: ±1,5
Temperature variation (spatial) (°C)	at 70 °C: ±3

Description	Pk	Cat. No.
E 28	1	**466-3161**
E 28 with safety device	1	**466-3262**

Drying ovens with natural convection, ED series
Binder

Universal drying ovens with stainless steel chambers which are ideal for drying and sterilisation applications in the pharmaceutical and chemical industries, biotechnology, medicine and universities. Ovens feature one temperature program ramp, an adjustable temperature safety device, Class 2 (DIN 12880) with visual alarm and adjustable ventilation by means of front ventilation slide and rear 50 mm Ø exhaust duct. GLP/GMP compliance is assisted by the optional RS422 interface and APT-COM™ DataControlSystem software.

- APT.line™ preheating chamber technology with natural convection
- DS controller with integrated timer 0 to 99 h
- Digital temperature setting with accuracy of 1 °C
- Calibration and validations possible

IP protection class according to DIN EN 60529: IP 20

Delivery information: Supplied with two chrome plated shelves.

Please note ED 400 and ED 720 units require a three phase supply.

Model	ED 23	ED 53	ED 115	ED 240	ED 400	ED 720
Temperature range (°C)	ambient +5...300					
Capacity (l)	20	53	115	240	400	720
Convection type	Natural convection					
Shelves supplied (max.)	2 (3)	2 (5)	2 (6)	2 (7)	2 (10)	2 (15)
Max. load per shelf (kg)	12	15	20	30	35	45
Internal W×D×H (mm)	222×277×330	400×330×400	600×400×480	800×500×600	1000×500×800	1000×600×1200
External W×D×H (mm)	435×625×495	635×680×620	835×750×705	1035×850×825	1235×870×1025	1235×970×1530
Nominal power consumption (W)	800	1200	1600	2700	3400	5000
Weight (kg)	22	42	57	86	125	174

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Temperature fluctuation (time) (°C)	at 150 °C: ±0,3					
Temperature variation (spatial) (°C)	at 70 °C: ±1,5 at 150 °C: ±2,5 at 300 °C: ±3,8	at 70 °C: ±2,0 at 150 °C: ±3,2 at 300 °C: ±4,5	at 70 °C: ±1,5 at 150 °C: ±2,5 at 300 °C: ±4,5	at 70 °C: ±1,5 at 150 °C: ±2,5 at 300 °C: ±5,0	at 70 °C: ±1,7 at 150 °C: ±3,0 at 300 °C: ±5,0	at 70 °C: ±1,5 at 150 °C: ±2,8 at 300 °C: ±5,0

Description	Pk	Cat. No.
ED 23 without RS422	1	**466-3251**
ED 53 without RS422	1	**466-3269**
ED 115 without RS422	1	**466-3285**
ED 23 with RS422	1	**466-3248**
ED 53 with RS422	1	**466-3270**
ED 115 with RS422	1	**466-3286**
ED 240 with RS422	1	**466-3243**
ED 400 with RS422	1	**466-3267**
ED 720 with RS422	1	**466-3268**

Material	For	Pk	Cat. No.
Accessories			
Steel, chromium plated	ED/FD/BD/KB 23	1	**390-6018**
Steel, chromium plated	E/B 28	1	**390-6000**
Steel, chromium plated	ED/FD/FED/BD/KB/M/MK 53	1	**390-6001**
Steel, chromium plated	ED/FD/FED/FDL/MDL/BD/KB/KBF/M 115	1	**390-6002**
Steel, chromium plated	ED/FD/FED/BD/KB/KBW/KBWF/KBF/M/MK 240	1	**390-6003**
Steel, chromium plated	ED/FED/BD/M 400	1	**390-6004**
Steel, chromium plated	ED/FED/BD/KB/KBW/KBWF/KBF/M 720	1	**390-6005**
Stainless steel	ED/FD/BD/KB 23	1	**390-6019**
Stainless steel	ED/FD/FED/BD/KB/M/MK 53	1	**390-6006**
Stainless steel	ED/FD/FED/FDL/MDL/BD/KB/KBF/M 115	1	**390-6007**
Stainless steel	ED/FD/FED/BD/KB/KBW/KBWF/KBF/M/MK 240	1	**390-6008**
Stainless steel	ED/FED/BD/M 400	1	**390-6010**
Stainless steel	ED/FED/BD/KB/KBW/KBWF/KBF/M 720	1	**390-6009**

IP20

2 year warranty

Drying ovens with forced convection, FD series

Binder

Universal drying ovens with stainless steel chambers which are ideal for use in the pharmaceutical and chemical industries, biotechnology, medicine and universities. Ovens feature one temperature program ramp, an adjustable TWB Class 2 safety device with visual alarm and adjustable ventilation by means of ventilation slide and 50 mm Ø exhaust duct. Fast recovery times after opening the door or air change.

- APT.line™ preheating chamber technology with forced convection for fast, uniform drying
- DS controller with integrated timer 0 to 99 h
- Digital temperature setting with degree accuracy
- Calibration and validations possible

IP protection class according to DIN EN 60529: IP 20

Delivery information: Supplied with two chrome plated shelves.

Model	FD 23	FD 53	FD 115	FD 240
Temperature range (°C)	ambient +5...300			
Capacity (l)	20	53	115	240
Convection type	Forced convection			
Shelves supplied (max.)	2 (3)	2 (5)	2 (6)	2 (7)
Max. load per shelf (kg)	12	15	20	30
Internal W×D×H (mm)	222×277×330	400×330×400	600×400×480	800×500×600
External W×D×H (mm)	433×516×492	635×680×620	835×750×705	1035×850×825
Nominal power consumption (W)	800	1600	1200	2700
Weight (kg)	33	44	62	96
Temperature fluctuation (time) (°C)	at 150 °C: ±0,3			
Temperature variation (spatial) (°C)	at 70 °C: ±0,8 at 150 °C: ±2,2 at 300 °C: ±4,3	at 70 °C: ±0,8 at 150 °C: ±2,0 at 300 °C: ±3,7	at 70 °C: ±0,8 at 150 °C: ±1,8 at 300 °C: ±3,9	at 70 °C: ±0,8 at 150 °C: ±2,0 at 300 °C: ±4,3

Description	Pk	Cat. No.
FD 23	1	**466-3249**
FD 53	1	**466-3273**
FD 115	1	**466-3244**
FD 240	1	**466-3246**

Drying ovens, FED series
Binder

Multi-functional drying ovens with stainless steel chambers which are ideal for use in the pharmaceutical and chemical industries, biotechnology, medicine and universities. Ovens feature one temperature program ramp, an adjustable temperature safety device, Class 2 (DIN 12880) with visual alarm and adjustable ventilation by means of front ventilation slide and rear 50 mm Ø exhaust duct. Fast recovery times after opening the door or air change. GLP/GMP compliance is assisted by the RS422 interface and by optional APT-COM™ DataControlSystem software.

- APT.line™ preheating chamber technology with forced convection for fast, uniform drying
- MS controller with timer functions; delayed-ON, delayed-OFF, temperature dependent delayed-OFF
- Digital temperature setting with degree accuracy
- Adjustable fan speed (0 - 100%)
- Calibration and validations possible

IP protection class according to DIN EN 60529: IP 20

Delivery information: Supplied with two chrome plated shelves. Please note FED 400 and FED 720 units require a three phase supply.

Model	FED 53	FED 115	FED 240	FED 400	FED 720
Temperature range (°C)	ambient +5...300				
Capacity (l)	53	115	240	400	720
Convection type	Forced convection				
Shelves supplied (max.)	2 (5)	2 (6)	2 (7)	2 (10)	2 (15)
Max. load per shelf (kg)	15	20	30	35	45
Internal W×D×H (mm)	400×330×400	600×400×480	800×500×600	1000×500×800	1000×600×1200
External W×D×H (mm)	635×680×620	835×750×705	1035×850×825	1235×870×1025	1235×970×1530
Nominal power consumption (W)	1200	1600	2700	3400	5000
Weight (kg)	44	62	96	145	195
Temperature fluctuation (time) (°C)	at 150 °C: ±0,3				
Temperature variation (spatial) (°C)	at 70 °C: ±0,8 at 150 °C: ±2,0 at 300 °C: ±3,7	at 70 °C: ±0,7 at 150 °C: ±1,8 at 300 °C: ±3,9	at 70 °C: ±0,8 at 150 °C: ±2,0 at 300 °C: ±4,3	at 70 °C: ±1,0 at 150 °C: ±2,5 at 300 °C: ±4,8	at 70 °C: ±1,0 at 150 °C: ±2,0 at 300 °C: ±5,5

Description	Pk	Cat. No.
FED 53 with RS422	1	**466-0020**
FED 115 with RS422	1	**466-0021**
FED 240 with RS422	1	**466-0022**
FED 400 with RS422	1	**466-0023**
FED 720 with RS422	1	**466-0024**

Safety drying oven, FDL 115
Binder

These drying ovens for limited quantities of solvents, have high temperature accuracy and silicone- and dust-free stainless steel chambers. Units are widely used for applications such as quality assurance of paints or other liquid coatings. FDL ovens feature an MP controller with adjustable ramp function and integrated weekly program timer with real time function. FDL 115 has an adjustable temperature safety device, Class 2 (DIN 12880) with visual and acoustic alarm, and rear 100 mm Ø exhaust duct. Units have a replaceable Class F6 (for fine particle sizes between 1 µm and 10 µm) fresh air filter cartridge and fresh air monitoring with visual and acoustic alarm and automatic heating shut off. GLP/GMP compliance is assisted by the RS422 interface and optional APT-COM™ DataControlSystem software.

- APT.line™ preheating chamber technology with symmetrical airflow and defined velocities for reproducible drying
- Fulfil all safety regulations for handling materials containing solvents in accordance with EN 1539
- Digital temperature setting
- Calibration and validation possible

IP protection class according to DIN EN 60529: IP 33

Highest permitted solvent quantity: 6,65 / 0,014 (g/lbs.) (at T-180 °C, M-100 g/mol, U-40 g/m3, K=0,5) (g), T = drying temperature, M = molecular mass, U = lower explosion limit and K = solvent vapour concentration as percentage of lower explosion limit

Delivery information: Supplied with two chrome plated shelves.

Model	FDL 115
Temperature range (°C)	ambient +5...300
Capacity (l)	115
Convection type	Forced convection

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Shelves supplied (max.)	2 (5)
Max. load per shelf (kg)	20
Internal W×D×H (mm)	600×435×435
External W×D×H (mm)	835×685×800
Weight (kg)	90
Power consumption (W)	2900
Temperature fluctuation (time) (°C)	at 150 °C: ±0,3
Temperature variation (spatial) (°C)	at 70 °C: ±1,5 at 150 °C: ±2,5 at 300 °C: ±4

Description	Pk	Cat. No.
FDL 115	1	**466-0147**

Temperature test chambers, FP series

Binder

These high precision temperature test chambers with stainless steel interiors are ideal for precise and accurate conditioning of materials and samples, ageing tests, curing of plastics and determination of humidity content. Units feature a controller with two programs with 10 sections each, or alternatively one program with 20 sections. The time interval of a single program section can be adjusted up to a maximum of 99,59 or 999,59 hours on all program sections and there is also an adjustable TWB Class 2 safety device with visual alarm. Adjustable ventilation by means of ventilation slide and flap together with 50 mm Ø exhaust duct. Fast recovery times after opening the door or air change. GLP/GMP compliance is assisted by the integral RS422 interface and optional APT-COM™ DataControlSystem software.

- Electronically controlled APT.line™ preheating chamber technology with forced convection for fast, uniform drying
- Adjustable temperature ramp functionality via program editor
- Adjustable fan speed (0 - 100%)
- Digital temperature setting
- Calibration and validation possible

IP protection class according to DIN EN 60529: IP 20

Delivery information: Supplied with two chrome plated shelves. Please note FP 400 and FP 720 units require a three phase supply.

Model	FP 53	FP 115	FP 240	FP 400	FP 720
Temperature range (°C)	ambient +5...300				
Capacity (l)	53	115	240	400	720
Convection type	Forced convection				
Shelves supplied (max.)	2 (5)	2 (6)	2 (7)	2 (10)	2 (15)
Max. load per shelf (kg)	15	20	30	35	45
Internal W×D×H (mm)	400×330×400	600×400×480	800×500×600	1000×500×800	1000×600×1200
External W×D×H (mm)	635×680×620	835×750×705	1035×850×825	1235×870×1025	1235×970×1530
Weight (kg)	45	62	98	145	184
Power consumption (W)	1200	1600	2700	3400	5000
Temperature fluctuation (time) (°C)	at 150 °C: ±0,3				
Temperature variation (spatial) (°C)	at 70 °C: ±0,8 at 150 °C: ±2,0 at 300 °C: ±3,7	at 70 °C: ±0,7 at 150 °C: ±1,8 at 300 °C: ±3,9	at 70 °C: ±0,8 at 150 °C: ±2,0 at 300 °C: ±4,3	at 70 °C: ±1,0 at 150 °C: ±2,5 at 300 °C: ±4,8	at 70 °C: ±1,0 at 150 °C: ±2,0 at 300 °C: ±5,5

Description	Pk	Cat. No.
FP 53	1	**466-0152**
FP 115	1	**466-0221**
FP 240	1	**466-0222**
FP 400	1	**466-0223**
FP 720	1	**466-0224**

Temperature test chambers, M series
Binder

Temperature test chambers with stainless steel interiors which are ideal for material testing and ageing tests. Units feature a high air exchange rate due to the heavy-duty fan, an adjustable TWB Class 2 safety device with visual alarm and 50 mm Ø exhaust duct. Fast recovery times after opening the door or air change. Units have digital temperature setting. GLP/GMP compliance is assisted by the integral RS422 interface and optional APT-COM™ DataControlSystem software.

- Electronically controlled APT.line™ preheating chamber technology with forced convection for fast, uniform drying
- Adjustable temperature ramp functionality via program editor, user friendly LCD screen with easy to read menu guide
- Adjustable fan speed (0 - 100%) and programmable exhaust ventilation flap
- MCS controller with 25 programs with 100 sections each, for a maximum of 500 program segments
- Calibration and validation possible

IP protection class according to DIN EN 60529: IP 20

Delivery information: Supplied with two chrome plated shelves. Please note M 400 and M 720 units require a three phase supply.

Model	M 53	M 115	M 240	M 400	M 720
Temperature range (°C)	ambient +5...300				
Capacity (l)	53	115	240	400	720
Convection type	Forced convection				
Shelves supplied (max.)	2 (5)	2 (6)	2 (7)	2 (10)	2 (15)
Max. load per shelf (kg)	15	20	30	35	45
Internal W×D×H (mm)	400×330×400	600×400×480	800×500×600	1000×500×800	1000×600×1200
External W×D×H (mm)	635×725×780	835×795×865	1035×895×985	1235×915×1185	1235×1015×1695
Weight (kg)	61	89	131	173	203
Power consumption (W)	1200	1600	2700	3400	5000
Temperature fluctuation (time) (°C)	±0,3				
Temperature variation (spatial) (°C)	at 70 °C: ±0,5 at 150 °C: ±1,3 at 300 °C: ±2,8	at 70 °C: ±0,6 at 150 °C: ±1,5 at 300 °C: ±2,8	at 70 °C: ±0,8 at 150 °C: ±1,5 at 300 °C: ±2,8	at 70 °C: ±0,7 at 150 °C: ±1,5 at 300 °C: ±5,0	at 70 °C: ±0,7 at 150 °C: ±1,9 at 300 °C: ±4,6

Description	Pk	Cat. No.
M 53	1	**466-0014**
M 115	1	**466-0015**
M 240	1	**466-0016**
M 400	1	**466-0017**
M 720	1	**466-0018**

Environmental test chambers, MK series
Binder

These high precision temperature test chambers with stainless steel interiors are ideal for natural simulation with heating and refrigeration in cyclic temperature tests. Units feature an MCS controller with 25 programs with 100 sections each and digital temperature setting. User friendly control is via an LCD screen with easy to read menu guide, integrated electronic chart recorder and real time clock. The range features programmable condensation protection for test material, an independent adjustable temperature safety device, Class 2 (DIN 12880), with visual and acoustic alarm and a rear 80 mm Ø access port. Fast recovery times after opening the door or air change. GLP/GMP compliance is assisted by the integral RS422 interface and optional APT-COM™ DataControlSystem software.

- Electronically controlled APT.line™ preheating chamber technology with forced convection for fast, uniform drying
- Adjustable temperature ramp functionality via program editor
- Variable adjustable high performance fan
- Heated viewing window with interior lighting
- Calibration and validation possible

IP protection class according to DIN EN 60529: IP 20

Delivery information: Supplied with one stainless steel shelf and Binder test certificate. Please note MK 240 and MK 720 units require a three phase supply.

Model	MK 53	MK 115	MK 240	MK 720
Temperature range (°C)	-40...+180			
Capacity (l)	53	115	228	734
Convection type	Forced convection			
Shelves supplied (max.)	1 (5)	1 (4)	1 (6)	1 (11)

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Max. load per shelf (kg)	15	30		40
Max. power consumption (W)	2600	3500	4200	7200
Internal W×D×H (mm)	402×330×402	600×400×480	735×443×700	1200×600×1020
External W×D×H (mm)	740×794×1245	1000×915×1725	1135×1000×1715	1615×1175×2005
Weight (kg)	150	260	360	570
Temperature fluctuation (time) (°C)	±0,1 - 0,5			
Temperature variation (spatial) (°C)	±0,4 - 2,0	±0,1 - 2,0	±0,1 - 1,2	±0,3 - 2,0

Description	Pk	Cat. No.
MK 53	1	**466-0030**
MK 115	1	**466-0319**
MK 240	1	**390-0323**
MK 720	1	**390-0328**

Heating and drying ovens, Generation 2012 Universal UN/UNplus (natural convection) and UF/ UFplus (forced convection)

Memmert

The Generation 2012 range includes natural and forced convection models with a temperature range up to +300 °C. There is a choice of two different displays, SingleDISPLAY or TwinDISPLAY depending on the application. All models have stainless steel inner chamber and housing, ensuring long working life and easy cleaning. These ovens have an integrated data logger and digital timer, which is adjustable from 1 minute to 99 days, 23 hours. The SetpointWAIT function ensures the process time does not start before the set temperature is reached. This feature can also be used with additional, freely positionable PT100 sensors, so that the process time starts when the set temperature is reached at all measuring points. All models with TwinDISPLAY feature the intuitive control and logging software, AtmoCONTROL, which uses drag and drop symbols to input values. The software allows online monitoring of up to 32 connected appliances and can send an automatic alarm message to one or several email addresses. Complex ramping processes can be programmed quickly and easily for TwinDISPLAY models.

SingleDISPLAY models, ideal for standard applications:

- ControlCOCKPIT parameters: Temperature (Celsius or Fahrenheit), fan speed, exhaust air flap position, program time, time zones and daylight saving time
- One PT100 temperature sensor in a 4-wire circuit and Ethernet interface for reading out the protocol log
- Double over-temperature protection including visual alarm: Electronic temperature monitoring with freely adjustable monitoring temperature and mechanical temperature limiter TB acc. to DIN 12880 which switches off the heating if the maximum permitted temperature is exceeded by approx. 10 °C, protecting the oven

TwinDISPLAY models, ideal for complex ramping processes:

- Intuitive, user friendly ovens with 2 TFT displays. ControlCOCKPIT with USB port. ControlCOCKPIT parameters as above
- Two PT100 sensors in a 4-wire circuit for mutual monitoring, taking over functions in case of an error
- The HeatBALANCE function allows application specific adjustment of heating power distribution (balance) between the upper and lower heating areas
- Logged protocol data is displayed on the ControlCOCKPIT (max. 10 000 values correspond to approx. 1 week)
- Ethernet interface for reading out the protocol log and for uploading and implementing programs and for online logging
- Multiple over-temperature protection with audible and visual alarm: Electronic temperature monitoring TWW/TWB adjustable on display (independent adjustable temperature safety device Class 3.1, which protects the samples and the oven) and mechanical temperature limiter TB (protection Class 1) acc. to. DIN 12880. AutoSAFETY automatically adjusts to the set value within a freely adjustable tolerance range. Setting individual MIN / MAX values for over-/under-temperature

IP protection class according to DIN EN 60529: IP 20

Ordering information: Supplied without shelves, please order required shelves, stainless steel grids or trays separately. Range of accessories and factory fitted options such as access ports, interior sockets, lighting and interior door are available on request. Please contact VWR for further details prior to ordering as these can not be retro-fitted. Please note U 450 and U 750 units require a three phase supply.

Model	Temperature range (°C)	Capacity (l)	Convection type	Max. load per shelf (kg)	Power consumption (W)	Temperature fluctuation (time) (°C)	Temperature variation (spatial) (°C)
UN and UNplus models with natural convection							
UN30	ambient +5...300	32	Natural convection	30	1600	at 150 °C: ≤ ±0,8	at 150 °C: ≤ ±3
UN55		53			2000		
UN75		74			2500		
UN110		108			2800		
UN160		161			3200		
UN260		256			3400		
UN450		449			5800		
UN750		749			7000		

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UF and UFplus models with forced convection							
UF30	ambient +10...300	32	Forced convection	30	1600	at 150 °C: ≤±0,5	at 150 °C: ≤ ±2
UF55	53	2000					
UF75	74	2500					
UF110	108	2800					
UF160	161	3200	at 150 °C: ≤±0,6				
UF260	256	3400	at 150 °C: ≤±0,5				
UF450	449	5800	at 150 °C: ≤±0,6				
UF750	749	7000					
UF1060	1060		at 150 °C: ≤±0,8	30	1600	at 150 °C: ≤±0,5	at 150 °C: ≤ ±2
UF55		53			2000		
UF75		74			2500		
UF110		108			2800		
UF160		161			3200	at 150 °C: ≤±0,6	
UF260		256			3400	at 150 °C: ≤±0,5	
UF450		449			5800	at 150 °C: ≤±0,6	
UF750		749			7000		

Description	Shelves supplied (max.)	W×D×H ext. (mm)	W×D×H int. (mm)	Weight (kg)	Pk	Cat. No.
UN and UNplus models with natural convection						
UN30 with SingleDISPLAY	0 (3)	585×434×707	400×250×320	44	1	**466-0367**
UN30plus with TwinDISPLAY	0 (3)	585×434×707	400×250×320	44	1	**466-0368**
UN55 with SingleDISPLAY	0 (4)	585×514×787	400×330×400	55	1	**466-0371**
UN55plus with TwinDISPLAY	0 (4)	585×514×787	400×330×400	55	1	**466-0372**
UN75 with SingleDISPLAY	0 (6)	585×514×947	400×330×560	64	1	**466-0373**
UN75plus with TwinDISPLAY	0 (6)	585×514×947	400×330×560	64	1	**466-0376**
UN110 with SingleDISPLAY	0 (5)	745×584×867	560×400×480	72	1	**466-0361**
UN110plus with TwinDISPLAY	0 (5)	745×584×867	560×400×480	72	1	**466-0362**
UN160 with SingleDISPLAY	0 (8)	745×584×1107	560×400×720	80	1	**466-0363**
UN160plus with TwinDISPLAY	0 (8)	745×584×1107	560×400×720	80	1	**466-0364**
UN260 with SingleDISPLAY	0 (9)	824×684×1186	640×500×800	96	1	**466-0365**
UN260plus with TwinDISPLAY	0 (9)	824×684×1186	640×500×800	96	1	**466-0366**
UN450plus with TwinDISPLAY	0 (8)	1224×784×1247	1040×600×720	160	1	**466-0370**
UN750 with SingleDISPLAY	0 (14)	1224×784×1726	1040×600×1200	192	1	**466-0374**
UN750plus with TwinDISPLAY	0 (14)	1224×784×1726	1040×600×1200	192	1	**466-0375**
UF and UFplus models with forced convection						
UF30 with SingleDISPLAY	0 (3)	585×434×707	400×250×320	44	1	**466-0351**
UF30plus with TwinDISPLAY	0 (3)	585×434×707	400×250×320	44	1	**466-0352**
UF55 with SingleDISPLAY	0 (4)	585×514×787	400×330×400	55	1	**466-0355**
UF55plus with TwinDISPLAY	0 (4)	585×514×787	400×330×400	55	1	**466-0356**
UF75 with SingleDISPLAY	0 (6)	585×514×947	400×330×560	64	1	**466-0357**
UF75plus with TwinDISPLAY	0 (6)	585×514×947	400×330×560	64	1	**466-0360**
UF110 with SingleDISPLAY	0 (5)	745×584×867	560×400×480	72	1	**466-0345**
UF110plus with TwinDISPLAY	0 (5)	745×584×867	560×400×480	72	1	**466-0346**
UF160 with SingleDISPLAY	0 (8)	745×584×1107	560×400×720	80	1	**466-0347**
UF260 with SingleDISPLAY	0 (9)	824×684×1186	640×500×800	96	1	**466-0349**
UF260plus with TwinDISPLAY	0 (9)	824×684×1186	640×500×800	96	1	**466-0350**
UF450 with SingleDISPLAY	0 (8)	1224×784×1247	1040×600×720	160	1	**466-0353**
UF450plus with TwinDISPLAY	0 (8)	1224×784×1247	1040×600×720	160	1	**466-0354**
UF750 with SingleDISPLAY	0 (14)	1224×784×1726	1040×600×1200	192	1	**466-0358**
UF750plus with TwinDISPLAY, suitable for use in cleanrooms, verified by independent Fraunhofer-Institute	0 (14)	1224×784×1726	1040×600×1200	192	1	**466-0359**
UF1060 with SingleDISPLAY	0 (14)	1224×1035×1726	1040×850×1200	305	1	**466-0433**
UF1060plus with TwinDISPLAY	0 (14)	1224×1035×1726	1040×850×1200	305	1	**466-0434**

For details of the range of shelves and grids, please visit www.vwr.com or contact your local VWR sales office.

Drying ovens, Heratherm® General Protocol series

Thermo Scientific

Heating and drying ovens with stainless steel chambers, which are designed for routine applications. Units with natural convection are ideal for gentle drying and heating, to protect delicate samples. Units with forced convection are suitable for faster drying and heating, and superior temperature uniformity.

- Automatic over-temperature alarm system
- Built-in timer
- Large, easy to read vacuum fluorescent display and microprocessor controlled touch button operation
- Doors can be opened over 180° to allow easy access to the interior
- Exhaust vent can be used as access port for an external temperature sensor

Supplied with two shelves and standard RS232 data interface. Range of accessories and factory fitted options such as access ports are available on request; please contact your local VWR sales office for further details.

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Model	OGS60	OGS100	OGS180	OMS60	OMS100	OMS180
Temperature range (°C)	50...250					
Capacity (l)	60	100	180	60	100	180
Convection type	Natural convection			Forced convection		
Shelves supplied (max.)	2 (13)	2 (16)	2 (19)	2 (13)	2 (16)	2 (19)
Max. load per shelf (kg)	25					
Internal W×D×H (mm)	328×415×480	438×414×580	438×589×680	354×368×508	464×368×608	464×543×708
External W×D×H (mm)	530×565×720	640×565×820	640×738×920	530×565×720	640×565×820	640×738×920
Weight (kg)	42	53	66	42	53	66
Power consumption (W)	1800	3100		1400	3060	
Temperature fluctuation (time) (°C)	at 150 °C: ±0,4			at 150 °C: ±0,3		
Temperature variation (spatial) (°C)	at 150 °C: ±4,4	at 150 °C: ±4,0		at 150 °C: ±2,8	at 150 °C: ±2,5	at 150 °C: ±2,8

Description	Pk	Cat. No.
OGS models with natural convection		
OGS60 General Protocol drying oven	1	**466-0261**
OGS100 General Protocol drying oven	1	**466-0262**
OGS180 General Protocol drying oven	1	**466-0263**
OMS models with forced convection		
OMS60 General Protocol drying oven	1	**466-0264**
OMS100 General Protocol drying oven	1	**466-0265**
OMS180 General Protocol drying oven	1	**466-0266**

Description	For	Pk	Cat. No.
Additional shelf kits, including 2 shelf supports			
Wire mesh shelf	Natural convection General Protocol, Advanced Protocol and Advanced Protocol Security models with 60 litre capacity	1	**466-0291**
Wire mesh shelf	Natural convection General Protocol, Advanced Protocol and Advanced Protocol Security models with 100 litre capacity	1	**466-0292**
Wire mesh shelf	Natural convection General Protocol, Advanced Protocol and Advanced Protocol Security models with 180 litre capacity	1	**466-0293**
Wire mesh shelf	Forced convection General Protocol, Advanced Protocol and Advanced Protocol Security models with 60 litre capacity	1	**466-0294**
Wire mesh shelf	Forced convection General Protocol, Advanced Protocol and Advanced Protocol Security models with 100 litre capacity	1	**466-0295**
Wire mesh shelf	Forced convection General Protocol, Advanced Protocol and Advanced Protocol Security models with 180 litre capacity	1	**466-0296**
Stacking kits			
Stacking kit	All General Protocol, Advanced Protocol and Advanced Protocol Security models with 60 litre capacity	1	**466-0301**
Stacking kit	All General Protocol, Advanced Protocol and Advanced Protocol Security models with 100 litre capacity	1	**466-0302**
Stacking kit	All General Protocol, Advanced Protocol and Advanced Protocol Security models with 180 litre capacity	1	**466-0303**
Support stands with castors			
Support stand with castors (height 187 mm)	All General Protocol, Advanced Protocol and Advanced Protocol Security models with 60 litre capacity	1	**466-0304**
Support stand with castors (height 187 mm)	All General Protocol, Advanced Protocol and Advanced Protocol Security models with 100 litre capacity	1	**466-0305**
Support stand with castors (height 187 mm)	All General Protocol, Advanced Protocol and Advanced Protocol Security models with 180 litre capacity	1	**466-0306**

Drying ovens, Heratherm® Advanced Protocol series

Thermo Scientific

Heating and drying ovens with coated or stainless steel exterior. The timer allows the oven to be turned on or off after a pre-set time, with a choice between weekly, hourly or real time settings. Units with natural convection are ideal for gentle drying and heating, to protect delicate samples. Units with forced convection have adjustable fan speed and are suitable for faster drying and heating, and offer superior temperature uniformity.

- Automatic over-temperature alarm system
- Large, easy to read vacuum fluorescent display and microprocessor controlled touch button operation
- Programmable controller for temperature ramps and dwells. Up to 10 programs can be saved
- Access port allows the introduction of sensors for independent data monitoring
- Boost function enables rapid heating up

Supplied with two shelves and standard RS232 data interface. Please see 'Drying ovens, Heratherm General Protocol' for details on shelves, stacking kits and stands. Range of accessories and factory fitted options such as access ports are available on request; please contact your local VWR sales office for further details.

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Model	Temperature range (°C)	Capacity (l)	Convection type	Max. load per shelf (kg)	Power consumption (W)	Temperature fluctuation (time) (°C)	Temperature variation (spatial) (°C)
OGH/OGH SS models with natural convection							
OGH60/ OGH60 SS	50...330	60	Natural convection	25	1800	at 150 °C: ±0,3	at 150 °C: ±2,5
OGH100/OGH100 SS		100			3100		at 150 °C: ±3,0
OGH180/OGH180 SS		180					at 150 °C: ±2,5
OMH/OMH SS models with forced convection							
OMH60/ OMH60 SS	50...330	60	Forced convection	25	1400	at 150 °C: ±0,2	at 150 °C: ±1,8
OMH100/OMH100 SS		100			3060		at 150 °C: ±1,3
OMH180/OMH180 SS		180					at 150 °C: ±1,8

Description	Shelves supplied (max.)	W×D×H ext. (mm)	W×D×H int. (mm)	Pk	Cat. No.
OGH/OGH SS models with natural convection					
OGH60, coated exterior	2 (13)	530×565×720	328×398×480	1	**466-0267**
OGH100, coated exterior	2 (16)	640×565×820	438×398×580	1	**466-0268**
OGH180, coated exterior	2 (19)	640×738×920	438×564×680	1	**466-0269**
OGH60 SS, stainless steel exterior	2 (13)	530×565×720	328×398×480	1	**466-0270**
OGH100 SS, stainless steel exterior	2 (16)	640×565×820	438×398×580	1	**466-0271**
OGH180 SS, stainless steel exterior	2 (19)	640×738×920	438×564×680	1	**466-0272**
OMH/OMH SS models with forced convection					
OMH60, coated exterior	2 (13)	530×565×720	354×343×508	1	**466-0273**
OMH100, coated exterior	2 (16)	640×565×820	464×343×608	1	**466-0274**
OMH180, coated exterior	2 (19)	640×738×920	464×518×708	1	**466-0275**
OMH60 SS, stainless steel exterior	2 (13)	530×565×720	354×343×508	1	**466-0276**
OMH100 SS, stainless steel exterior	2 (16)	640×565×820	464×343×608	1	**466-0277**
OMH180 SS, stainless steel exterior	2 (19)	640×738×920	464×518×708	1	**466-0278**

Description	For	Pk	Cat. No.
Additional shelf kits, including 2 shelf supports			
Wire mesh shelf	Natural convection General Protocol, Advanced Protocol and Advanced Protocol Security models with 60 litre capacity	1	**466-0291**
Wire mesh shelf	Natural convection General Protocol, Advanced Protocol and Advanced Protocol Security models with 100 litre capacity	1	**466-0292**
Wire mesh shelf	Natural convection General Protocol, Advanced Protocol and Advanced Protocol Security models with 180 litre capacity	1	**466-0293**
Wire mesh shelf	Forced convection General Protocol, Advanced Protocol and Advanced Protocol Security models with 60 litre capacity	1	**466-0294**
Wire mesh shelf	Forced convection General Protocol, Advanced Protocol and Advanced Protocol Security models with 100 litre capacity	1	**466-0295**
Wire mesh shelf	Forced convection General Protocol, Advanced Protocol and Advanced Protocol Security models with 180 litre capacity	1	**466-0296**
Stacking kits			
Stacking kit	All General Protocol, Advanced Protocol and Advanced Protocol Security models with 60 litre capacity	1	**466-0301**
Stacking kit	All General Protocol, Advanced Protocol and Advanced Protocol Security models with 100 litre capacity	1	**466-0302**
Stacking kit	All General Protocol, Advanced Protocol and Advanced Protocol Security models with 180 litre capacity	1	**466-0303**
Support stands with castors			
Support stand with castors (height 187 mm)	All General Protocol, Advanced Protocol and Advanced Protocol Security models with 60 litre capacity	1	**466-0304**
Support stand with castors (height 187 mm)	All General Protocol, Advanced Protocol and Advanced Protocol Security models with 100 litre capacity	1	**466-0305**
Support stand with castors (height 187 mm)	All General Protocol, Advanced Protocol and Advanced Protocol Security models with 180 litre capacity	1	**466-0306**

Models with a stainless steel exterior are also available, these have the same model name with suffix SS. Their specification data is the same as the models shown above.

Drying ovens, large capacity, Heratherm® General Protocol and Advanced Protocol series

Thermo Scientific

Heratherm® large capacity ovens were designed for larger samples or high sample volume. All models have a large, easy to view, vacuum fluorescence display and simple to use touch button operation which is controlled by a microprocessor and automatic over-temperature alarm system to protect samples. All units are available in convenient 230 V version - no special connection required.

General Protocol ovens

The General Protocol ovens provide gentle heating via natural convection ideal for high capacity routine drying and heating applications. Units have corrosion-resistant stainless steel (1.4016) inner chambers, an intuitive user interface, easy to read display and lockable castors for easy set up, stability and mobility in the lab. There is a choice of 2 sizes, 400 or 750 litres, the larger unit is also available in 400 V for high temperatures and fastest heat-up and recovery times.

- Low overall energy consumption: Up to 25% energy savings compared to conventional ovens
- Protect delicate samples while still offering a uniformity of ± 3,0 °C and temperature stability of 0,5 °C at 150 °C
- Doors can be opened over 180° for ease of access and units have easy to remove shelves for cleaning
- Timer function to program start or switch off times for additional energy savings

Advanced Protocol ovens

The Heratherm® Advanced Protocol ovens offer mechanical convection via a 2-speed fan for faster drying and better temperature stability and uniformity. Units have resistant stainless steel (1.4301) inner chambers and access port for external sensors for independent data monitoring, or other devices for specific test set ups. Greater flexibility, accuracy and dependability are provided through a wide range of additional features. There is a choice of 2 sizes, 400 or 750 litres, the larger unit is also available in 400 V for high temperatures for up to 300 °C and fast heat-up.

- Fan has low speed for applications that require minimal airflow (e.g. drying of powders), or high speed for fastest drying and heating, and best temperature stability and uniformity
- Units offer a simple calibration routine to ensure temperature compliance over time
- Programmable controller for pre-defined temperature ramps, up to 10 temperature steps can be defined per program
- Fan speed and damper position are controlled electronically, and can be changed for every program step individually for maximum process flexibility
- Up to 10 programs can be saved for repeating processes quickly and easily
- Sophisticated timer provides choice of simple on/off timer, recurring weekly timer or set oven activity based on the 24 hour clock

Delivery information: Supplied with 2 shelves, additional shelves are available as optional accessories.

Model	OGS400	OGS750	OGS750-3P	OMH400	OMH750	OMH750-3P
Temperature range (°C)	50...250		50...300	50...250		50...300
Capacity (l)	419	774		396	731	
Convection type	Natural convection			Forced convection		
Shelves supplied (max.)	2 (39)					
Max. load per shelf (kg)	25					
Internal W×D×H (mm)	544×590×1307	1004×590×1307		544×545×1335	1004×545×1335	
External W×D×H (mm)	778×770×1545	1261×770×1545		778×770×1545	1261×770×1545	
Weight (kg)	136	182		135	185	
Power consumption (W)	2400	3000	6350	2400	3000	5750
Temperature fluctuation (time) (°C)	at 150 °C: ±0,5			at 150 °C: ±0,3	at 150 °C: ±0,4	
Temperature variation (spatial) (°C)	at 150 °C: ±3,0	at 150 °C: ±3,7		at 150 °C: ±2,1	at 150 °C: ±3,1	

Description	Pk	Cat. No.
General Protocol series with natural convection		
OGS400 oven with natural convection	1	**466-0377**
OGS750 oven with natural convection	1	**466-0379**
OGS750-3P oven with natural convection (3 phase supply)	1	**466-0380**
Advanced Protocol series with forced convection		
OMH400 oven with forced convection	1	**466-0341**
OMH400 oven with forced convection and stainless steel exterior	1	**466-0378**
OMH750 oven with forced convection	1	**466-0342**
OMH750 oven with forced convection and stainless steel exterior	1	**466-0381**
OMH750-3P oven with forced convection (3 phase supply)	1	**466-0382**

Description	For	Pk	Cat. No.
Wire mesh shelf, includes 2 shelf supports, 984×503 mm	750 litre, 400 V Advanced Protocol models only	1	**466-0445**
Wire mesh shelf, includes 2 shelf supports, 528×535 mm	400 litre General Protocol and Advanced Protocol models	1	**466-0446**
Wire mesh shelf, includes 2 shelf supports, 984×535 mm	750 litre General Protocol and Advanced Protocol models	1	**466-0447**

For details of the range of shelves, please visit www.vwr.com or contact your local VWR sales office.

Drying ovens, Heratherm® Advanced Protocol Security series

Thermo Scientific

Heating and drying ovens with coated or stainless steel exterior. The timer allows the oven to be turned on or off after a preset time, with a choice between weekly, hourly or real time settings. Units with natural convection are ideal for gentle drying and heating, to protect delicate samples. Units with forced convection have adjustable fan speed and are suitable for faster drying and heating, and superior temperature uniformity.

- Standard over-temperature alarm and additional under-temperature alarm
- Large, easy to read vacuum fluorescent display and microprocessor controlled touch button operation
- Programmable controller for temperature ramps and dwells. Up to 10 programs can be saved
- Access port allows the introduction of sensors for independent data monitoring
- Boost function enables rapid heating up
- Auto-dry function deactivates oven when samples are dry (with use of optional temperature sensor)
- Lockable door with door alarm

Supplied with two shelves and standard RS232 data interface. Please see 'Drying ovens, Heratherm General Protocol' for details on shelves, stacking kits and stands. Range of accessories and factory fitted options such as access ports are available on request; please contact your local VWR sales office for further details.

Model	Temperature range (°C)	Capacity (l)	Convection type	Max. load per shelf (kg)	Power consumption (W)	Temperature fluctuation (time) (°C)	Temperature variation (spatial) (°C)
OGH-S/OGH-S SS models with natural convection							
OGH60-S/ OGH60-S SS	50...330	60	Natural convection	25	1810	at 150 °C: ±0,3	at 150 °C: ±2,5
OGH100-S/ OGH100-S SS		100			3100		at 150 °C: ±3,0
OGH180-S/ OGH180-S SS		180					at 150 °C: ±2,5
OMH-S/OMH-S SS models with forced convection							
OMH60-S/ OMH60-S SS	50...330	60	Forced convection	25	1400	at 150 °C: ±0,2	at 150 °C: ±1,8
OMH100-S/ OMH100-S SS		100			3060		at 150 °C: ±1,3
OMH180-S/ OMH180-S SS		180					at 150 °C: ±1,8

Description	Shelves supplied (max.)	W×D×H ext. (mm)	W×D×H int. (mm)	Weight (kg)	Pk	Cat. No.
OGH-S/OGH-S SS models with natural convection						
OGH60-S, coated exterior	2 (13)	530×565×720	328×389×480	44	1	**466-0279**
OGH100-S, coated exterior	2 (16)	640×565×820	438×389×580	55	1	**466-0280**
OGH180-S, coated exterior	2 (19)	640×738×920	438×564×680	69	1	**466-0281**
OGH60-S SS, stainless steel exterior	2 (13)	530×565×720	328×389×480	44	1	**466-0282**
OGH100-S SS, stainless steel exterior	2 (16)	640×565×820	438×389×580	55	1	**466-0283**
OGH180-S SS, stainless steel exterior	2 (19)	640×738×920	438×564×680	69	1	**466-0284**
OMH-S/OMH-S SS models with forced convection						
OMH60-S, coated exterior	2 (13)	530×565×720	328×343×508	44	1	**466-0285**
OMH100-S, coated exterior	2 (16)	640×565×820	438×343×608	55	1	**466-0286**
OMH180-S, coated exterior	2 (19)	640×738×920	464×518×708	69	1	**466-0287**
OMH60-S SS, stainless steel exterior	2 (13)	530×565×720	328×343×508	44	1	**466-0288**
OMH100-S SS, stainless steel exterior	2 (16)	640×565×820	438×343×608	55	1	**466-0289**
OMH180-S SS, stainless steel exterior	2 (19)	640×738×920	464×518×708	69	1	**466-0290**

Description	For	Pk	Cat. No.
Additional shelf kits, including 2 shelf supports			
Wire mesh shelf	Natural convection General Protocol, Advanced Protocol and Advanced Protocol Security models with 60 litre capacity	1	**466-0291**
Wire mesh shelf	Natural convection General Protocol, Advanced Protocol and Advanced Protocol Security models with 100 litre capacity	1	**466-0292**
Wire mesh shelf	Natural convection General Protocol, Advanced Protocol and Advanced Protocol Security models with 180 litre capacity	1	**466-0293**
Wire mesh shelf	Forced convection General Protocol, Advanced Protocol and Advanced Protocol Security models with 60 litre capacity	1	**466-0294**
Wire mesh shelf	Forced convection General Protocol, Advanced Protocol and Advanced Protocol Security models with 100 litre capacity	1	**466-0295**
Wire mesh shelf	Forced convection General Protocol, Advanced Protocol and Advanced Protocol Security models with 180 litre capacity	1	**466-0296**
Stacking kits			
Stacking kit	All General Protocol, Advanced Protocol and Advanced Protocol Security models with 60 litre capacity	1	**466-0301**
Stacking kit	All General Protocol, Advanced Protocol and Advanced Protocol Security models with 100 litre capacity	1	**466-0302**
Stacking kit	All General Protocol, Advanced Protocol and Advanced Protocol Security models with 180 litre capacity	1	**466-0303**

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Description	For	Pk	Cat. No.
Support stands with castors			
Support stand with castors (height 187 mm)	All General Protocol, Advanced Protocol and Advanced Protocol Security models with 60 litre capacity	1	**466-0304**
Support stand with castors (height 187 mm)	All General Protocol, Advanced Protocol and Advanced Protocol Security models with 100 litre capacity	1	**466-0305**
Support stand with castors (height 187 mm)	All General Protocol, Advanced Protocol and Advanced Protocol Security models with 180 litre capacity	1	**466-0306**
Sample sensor	All Advanced Protocol Security models	1	**466-0300**

Models with a stainless steel exterior are also available, these have the same model name with suffix SS. Their specification data is the same as the models shown above.

Ovens, MINO Digital series

Reliable, efficient, general purpose ovens, to suit most drying, warming and general laboratory applications. These units from Genlab have a sheet steel exterior finished with an easy to clean powder coated paint. The interior chamber is made from mild steel coated with aluminium (CLAD). They are heated via Incoloy sheathed elements fitted around the fan on the rear of the chamber. Ovens have fixed shelf runners and removable chrome plated wire grid shelves. The top vent is fitted with a clip to hold a glass immersion thermometer. The units are fitted with a PID microprocessor controller with dual displays of set point and actual temperature, which are auto tuned for each individual unit to optimise the heat up, overshoot and control of temperature. They also include main switch with indicator and heat and overheat indicators.

- Temperature fluctuation ±0,5 °C
- Temperature range 40 to 250 °C
- Microprocessor digital controller with dual display of set point and actual temperature
- Independent adjustable temperature safety system with visual alarm protects the samples and the oven

Delivery information: Supplied with removable chrome plated wire grid shelves. Options such as a stainless steel interior and process timer are available, please contact your local VWR office for details.

Model	MINO/30/DIG	MINO/50/DIG	MINO/75/DIG	MINO/100/DIG	MINO/125/DIG	MINO/150/DIG	MINO/200/DIG
Temperature range (°C)	40...250						
Capacity (l)	30	50	75	100	125	150	200
Convection type	Forced convection						
Shelves supplied (max.)	2 (2)	2 (3)		3 (4)	3 (5)		4 (7)
Internal W×D×H (mm)	360×350×240	490×330×330	490×450×330	490×450×450	490×450×550	490×530×550	490×530×750
External W×D×H (mm)	500×620×560	630×590×650	630×720×650	630×720×770	630×720×870	630×800×870	630×800×1070
Weight (kg)	20	26	34	44	57	66	85
Temperature fluctuation (time) (°C)	±0,5						

Description	Pk	Cat. No.
MINO/30 digital oven with forced convection	1	**466-0440**
MINO/50 digital oven with forced convection	1	**466-0441**
MINO/75 digital oven with forced convection	1	**466-0442**
MINO/100 digital oven with forced convection	1	**466-0436**
MINO/125 digital oven with forced convection	1	**466-0437**
MINO/150 digital oven with forced convection	1	**466-0438**
MINO/200 digital oven with forced convection	1	**466-0439**

Drying / general purpose ovens

Genlab Premier ovens (PRO) are a range of efficient, reliable, cost effective units to suit the majority of drying, warming and general laboratory applications. The exterior is constructed from sheet steel finished in an easy clean, powder coated paint and the interior chamber is made from stainless steel. PRO models have digital temperature control, forced convection and all units are fitted with fixed shelf runners. Ovens are heated by Incoloy sheathed elements positioned around the fan fitted at the back of the chamber. The MINO/6 natural convection oven with analogue temperature control, has a mild steel coated with aluminium (CLAD) inner chamber. This unit's control system consists of a direct reading thermostat and over-temperature thermostat both with calibrated scales and tamper-proof locks, the controls are positioned below the door.

- Digital PID microprocessor controller with dual display of set point and actual temperature, which are auto-tuned for each individual unit to optimise the heat up, overshoot and control of temperature (PRO models only)
- Controller has a 0 - 999 h process timer that can be selected for a fixed time period at a required set point (PRO models only)
- Control panel includes heat and overheat indicators
- PRO models have forced (fan) convection, the smaller MINO model features natural convection

Delivery information: Supplied with removable chrome plated wire grid shelves.

Model	MINO/6	PRO/30	PRO/50	PRO/75	PRO/100	PRO/125	PRO/150	PRO/200
Temperature range (°C)	40...250							
Capacity (l)	6	30	50	75	100	125	150	200
Convection type	Natural convection	Forced convection						
Shelves supplied (max.)	1 (1)	2 (2)	2 (3)		3 (4)	3 (5)		4 (7)
Internal W×D×H (mm)	230×190×150	240×360×350	400×360×350	460×490×330	440×490×460	550×490×460	520×530×540	690×530×540
External W×D×H (mm)	350×330×410	500×480×620	660×480×620	720×610×600	700×610×730	810×610×730	780×650×810	950×650×810
Max. power consumption (W)	350	750		1000		1250	1500	2000
Weight (kg)	7	20	31	40	50	60	66	85
Temperature fluctuation (time) (°C)	at 150 °C: ±0,25							

Description	Pk	Cat. No.
MINO/6, natural convection	1	**466-0238**
PRO/30, forced convection	1	**466-0312**
PRO/50, forced convection	1	**466-0313**
PRO/75, forced convection	1	**466-0314**
PRO/100, forced convection	1	**466-0315**
PRO/125, forced convection	1	**466-0316**
PRO/150, forced convection	1	**466-0317**
PRO/200, forced convection	1	**466-0318**

Vacuum ovens, VD and VDL series

Binder

Vacuum drying ovens with stainless steel inner chambers. VDL safety vacuum drying chambers have been designed for drying substances with combustible solvent components; the inner chamber complies with the ATEX Directive for Zone II 3 G. VDL units feature a pressure monitor for controlled heating release, over-pressure encapsulation of all live unit components and a flame protection gasket. Both VD and VDL units have a microprocessor controller with two programs with 10 sections each or, alternatively, one program with 20 sections. The time interval of a single program section can be adjusted up to a maximum of 99,59 or 999,59 hours on all program sections. Units have an adjustable TWB Class 2 safety device with visual alarm. GLP/GMP compliance is assisted by the integral RS422 interface and optional APT-COM™ DataControlSystem software.

- Electronically controlled APT.line™ preheating chamber technology with two expansion racks
- Adjustable temperature ramp functionality via program editor
- Spring-mounted safety glass panel with splinter protection
- MP controller
- Calibration and validation possible

IP protection class according to DIN EN 60529: IP 20-VD and IP 54-VDL

Delivery information: Supplied with two aluminium expansion shelves.

Model	VD 23	VD 53	VD 115	VDL 23	VDL 53	VDL 115

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Temperature range (°C)	ambient +15...200					
Capacity (l)	23	53	115	23	53	115
Shelves supplied (max.)	2 (4)	2 (5)	2 (6)	2 (4)	2 (5)	2 (6)
Max. load per shelf (kg)	20					
Internal W×D×H (mm)	285×285×285	400×330×400	506×450×506	285×285×285	400×330×400	506×450×506
External W×D×H (mm)	515×625×655	635×625×775	740×625×900	515×625×655	635×625×775	740×625×900
Nominal power (W)	800	1200	1900	800	1200	1900
Weight (kg)	63	95	153	63	95	153
Temperature fluctuation (time) (°C)	±0,1					
Temperature variation (spatial) (°C)	at 100 °C: ±1,5 at 200 °C: ±3	at 100 °C: ±2 at 200 °C: ±4,5	at 100 °C: ±3,5 at 200 °C: ±9	at 100 °C: ±1,5 at 200 °C: ±3	at 100 °C: ±2 at 200 °C: ±4,5	at 100 °C: ±3 at 200 °C: ±9

Description	Pk	Cat. No.
VD 23 vacuum oven	1	**466-3217**
VD 53 vacuum oven	1	**466-3218**
VD 115 vacuum oven	1	**466-3219**
VDL 23 vacuum oven	1	**466-3220**
VDL 53 vacuum oven	1	**466-3221**
VDL 115 vacuum oven	1	**466-3222**

Description	For	Pk	Cat. No.
Accessories			
Expansion rack, stainless steel	VD 23	1	**390-6025**
Expansion rack, stainless steel	VD 53	1	**390-6026**
Expansion rack, stainless steel	VD 115	1	**390-6027**
Expansion rack, aluminium	VD 23	1	**466-0148**
Expansion rack, aluminium	VD 53	1	**466-0149**
Expansion rack, aluminium	VD 115	1	**466-0150**
Vacuum module, 1.7 m^3/h	VD 23	1	**466-0246**
Vacuum module, 3.0 m^3/h	VD 23	1	**466-0247**
Vacuum module, 1.7 m^3/h	VD 53	1	**466-0248**
Vacuum module, 3.0 m^3/h	VD 53	1	**466-0249**
Vacuum module, 1.7 m^3/h	VD 115	1	**466-0250**
Vacuum module, 3.0 m^3/h	VD 115	1	**466-0251**

Vacuum ovens, VO series
Memmert

Vacuum ovens which have corrosion resistant, stainless steel inner chambers and housing. Direct contact between the load and the heated, removable thermoshelves ensures rapid and equal heating without thermal loss. Each of the thermoshelves has a PT100 temperature sensor at the centre and a wide heated area as the heating elements are vulcanised onto the underside of the shelves. This gives excellent thermal transition, very fast heating up times and precise control. The control circuits react precisely to differences in load and humidity, ensuring all levels remain equally at the selected set temperature. Units feature an auto diagnostic system with fault indication. GLP/GMP compliance is assisted by the serial USB interface and Celsius software for control and documentation of temperature and pressure.

- MLC (Multi-Level-Controlling) microprocessor controller adapts performance to the volume (local temperature sensing) for each thermoshelf. Actual temperature of each thermoshelf can be seen separately on digital display
- Digital LED display for all set parameters and digital seven-day program timer with real time clock
- Integrated timer for temperature and pressure (vacuum) profiles of up to 40 ramps, each segment adjustable from 1 min up to 999 h
- Various protection features including digitally adjustable, microprocessor over-temperature controller TWW, maximum value for over-temperature, minimum value for under-temperature with audible and visual alarm and protection for each thermoshelf
- Glass door, with a spring-loaded, 15 mm thick safety glass panel inside and a non splinter screen on the outside

Delivery information: Units supplied with pump control, one thermoshelf with two connectors and with a works calibration certificate (measurements taken at 160 °C and 50 mbar in the middle of the shelf). Additional accessories and factory fitted options are available on request, please enquire for further details.

Model	VO 200	VO 400	VO 500
Temperature range (°C)	20...200		
Capacity (l)	29	49	101
Shelves supplied (max.)	1 (3)	1 (4)	
Max. load per shelf (kg)	20		
Internal W×D×H (mm)	385×250×305	385×330×385	545×400×465
External W×D×H (mm)	550×400×600	550×480×680	710×550×760
Nominal power (W)	1200	2000	2400
Weight (kg)	58	82	120
Temperature fluctuation (time) (°C)	≤±0,3		
Temperature variation (spatial) (°C)	at 160 °C: <±2*		

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Description	Pk	Cat. No.
Basic VO models		
Vacuum oven, VO 200	1	**466-5050**
Vacuum oven, VO 400	1	**466-5051**
Vacuum oven, VO 500	1	**466-5052**

* Temperature variation at 160 °C/50 mbar (aluminium thermoshelf)

Vacuum pump module
Memmert

The noise-reducing design of the vacuum module with integrated pump incorporates an anti-vibration metal plate. Pump capacity at atmospheric pressure of ~2,04 m^3/h for VO 200; ~3,6 m^3/h for VO 400 and VO 500.

- Chemically resistant vacuum pump with PTFE double diaphragm and automatic purge process via the vacuum oven controller
- Modular design, with same external dimensions as the corresponding vacuum oven, allows easy stacking
- Full glass door

Includes tubing, connector for vacuum oven and pump performance signal cable.

Description	For	Pk	Cat. No.
Vacuum pump module	VO 200 vacuum oven	1	**466-0413**
Vacuum pump module	VO 400 vacuum oven	1	**466-0414**
Vacuum pump module	VO 500 vacuum oven	1	**466-0415**

Vacuum ovens, Vacutherm® series
Thermo Scientific

Vacuum drying ovens with stainless steel chambers, vacuum fittings, tubing and ball valve. Units are designed for gentle drying of heat sensitive samples and have adjustable temperature limit protection, protection Class 2 (DIN 12880, Part 1). All models have DN 25 access port in the rear wall (except VT 6025), analogue pressure display and two different ventilation valves for rapid or precise gentle ventilation of the chamber, (VT 6025 has only rapid valve as standard). All models feature inert gas connection for controlled atmosphere use (except VT 6025). BL models have a double pane door made of safety glass, permanent ventilation of the control panel via two independently operated fans to prevent solvent leakage and pressure related activation of heating elements at <80 mbar.

- M models with jacketed heating have maximum temperature of 200 °C, heat transfer is from vacuum chamber via shelves to the load
- P models with shelf heating have maximum temperature of 300 °C. The shelves incorporate heating coils so heat is transferred directly to the load
- Rapid heat up times and up to 6 times quicker process times compared to standard drying methods for P models
- Kelvitron® microprocessor temperature controller provides digital display of set or actual reading for jacket heated models, and shelf heated units have a Digicon® multi-channel controller
- BL models for safe drying of samples containing flammable solvents have a forced release of inert gas system which prevents formation of explosive mixtures in the chamber in the event of leakage

IP protection class according to DIN EN 60529: IP 20

Delivery information: Supplied with shelves. Factory fitted options, such as timers, controllers and RS232 interface are available on request; please contact your local VWR sales office for further details.

Model	VT 6025	VT 6060 M	VT 6130 M	VT 6060 P	VT 6130 P	VT 6060 M-BL	VT 6130 M-BL	VT 6060 P-BL	VT 6130 P-BL
Temperature range (°C)	ambient +15...200			ambient +10...300		ambient +15...200		ambient +10...300	
Capacity (l)	25	53	128	53	128	53	128	53	128
Convection type	Air jacket system			Shelf heating		Air jacket system		Shelf heating	
Shelves supplied (max.)	2 (4)		3 (5)	2 (2)	3 (3)	2 (4)	3 (5)	2 (2)	3 (3)
Max. load per shelf (kg)	20								
Internal W×D×H (mm)	300×307×275	415×371×345	495×529×489	415×371×345*	495×529×489**	415×371×345	495×529×489	415×371×345*	495×529×489**
External W×D×H (mm)	480×450×600	744×570×576	895×750×720	744×570×576	895×750×720	744×570×576	895×750×720	744×570×576	895×750×720
Weight (kg)	58	82	153	90	164	82	153	90	164
Power consumption (W)	1300	1700	2200	1600	3000	1700	2200	1600	3000
Temperature fluctuation (time) (°C)	≤0,5								
Temperature variation (spatial) (°C)	at 200 °C: ±4		at 200 °C: ±6	at 200 °C: ±3 at 300 °C: ±7 at 400 °C: ±9	at 200 °C: ±4 at 300 °C: ±7 at 400 °C: ±9	at 200 °C: ±4	at 200 °C: ±6	at 200 °C: ±3 at 300 °C: ±7 at 400 °C: ±9	at 200 °C: ±4 at 300 °C: ±7 at 400 °C: ±9

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Description	Pk	Cat. No.
VT 6025 with jacketed heating	1	466-2700
VT 6060 M with jacketed heating	1	466-2710
VT 6130 M with jacketed heating	1	466-2720
VT 6060 P with shelf heating	1	466-2730
VT 6130 P with shelf heating	1	466-2740
VT 6060 M-BL with jacketed heating, for flammable solvents	1	466-1107
VT 6130 M-BL with jacketed heating, for flammable solvents	1	466-1108
VT 6060 P-BL with shelf heating, for flammable solvents	1	466-1109
VT 6130 P-BL with shelf heating, for flammable solvents	1	466-2741

Description	Pk	Cat. No.
Accessories		
Extra shelf and supports for VT 6025	1	466-2709
Aluminium tray for VT 6130 models	1	466-2774
Stainless steel tray for VT 6130 models	1	466-2773
Aluminium tray for VT 6060 models	1	466-2772
Stainless steel tray for VT 6060 models	1	466-2771

Note: shelf heated vacuum ovens have fixed shelf height: * height of upper shelf is 140 mm, lower shelf 119 mm.
** height of upper shelf is 146 mm, 2 lower shelves 119 mm.

Drying cabinets, standard and insulated

DC 1000

DC 125

These Genlab drying cabinets are suitable for general purpose warming applications and drying glassware or instruments. Made from sheet steel finished in an easy to clean powder coated paint. Fitted with adjustable shelf runners, removable plated wire grid shelves and ventilation holes. Insulated models (IWC) give energy savings of over 30% compared to the non-insulated range (DC). Heated by Incoloy sheathed elements in the base of the unit. The 500 and 1000 litre models have fan assistance as standard. All units have toughened glass doors; 125 and 250 litre models have sliding doors and the 500 and 1000 litre models have hinged doors. Units are controlled via a direct reading thermostat with calibrated scale and tamper-proof lock. The units also have an illuminated mains switch with heat indicator.

- Maximum temperature 50 °C above ambient
- Two types are available; standard non-insulated units (DC) and insulated units for improved efficiency plus energy and cost savings (IWC)
- Insulated units give greater temperature control, allowing greater accuracy during the drying and warming process

Delivery information: Supplied with three shelves. Options such as an extraction system for the 500 and 1000 l models are also available; please enquire for details.

Model	IWC100	IWC200	IWC425	IWC885	DC125	DC250	DC500	DC1000
Capacity (l)	100	200	425	885	125	250	500	1000
Convection type	Natural convection		Forced convection		Natural convection		Forced convection	
External W×D×H (mm)	740×420×600	1000×500×660	600×650×1680	1180×650×1680	740×420×600	1000×500×660	600×650×1680	1180×650×1680
Internal W×D×H (mm)	670×370×400	930×450×490	530×590×1350	1110×590×1350	720×400×430	980×480×520	580×620×1380	1160×620×1380
Max. power consumption (W)	500	750	1750	2500	500	750	1750	2500
Temperature range (°C)	Max. ambient +50							
Weight (kg)	45	60	80	140	55	75	130	40

Description	Pk	Cat. No.
Insulated models		
IWC100	1	466-0233
IWC200	1	466-0234
IWC425	1	466-0235
IWC885	1	466-0236

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Description	Pk	Cat. No.
Standard models		
DC125	1	**466-0230**
DC250	1	**466-0231**
DC500	1	**466-0232**
DC1000	1	**466-0229**

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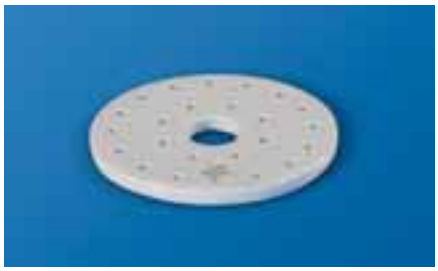
Desiccators



Borosilicate glass 3.3

- With knobbed lids
- DIN 12491

Nominal size (DN)	Usable height (mm)	Ø ext.×H (mm)	Ø int. (mm)	Pk	Cat. No.
Desiccators					
100	65	153×195	92	1	**467-0069**
150	95	215×265	143	1	**467-0070**
200	130	270×315	192	1	**467-0071**
250	140	320×370	239	1	**467-0072**
300	165	380×445	285	1	**467-0073**

Type	Ø (mm)	Pk	Cat. No.
Desiccator plates			
Porcelain	90	1	**467-0100**
Porcelain	140	1	**467-0101**
Porcelain	190	1	**467-0102**
Porcelain	235	1	**467-0103**
Porcelain	280	1	**467-0104**

Desiccator bases
DURAN Group

With GL 32 MOBILEX

Without connection

With NS 24/29, NOVUS

Ideal for drying and drying processes, storage under vacuum and protection from the effects of air and moisture. Applications include cultivation of organisms, material research and corrosion testing, cleaning equipment for analysis of trace elements, gas and liquid reactions and they can be used as a mini cleanroom for chip technology.

- Choice of various desiccator components to suit different applications
- Increased safety due to DURAN® quality borosilicate glass
- All models have flat flange
- Excellent mechanical, thermal and chemical resistance

Ordering information: Supplied without plate, lid or stopcock, please order required accessories separately.

Type	Nominal size (DN)	Usable height (mm)	Ø ext.×H (mm)	Pk	Cat. No.
Without connection	100	58	153×112	1	**467-1110**
Without connection	150	81	215×154	1	**467-1115**
Without connection	200	118	270×202	1	**467-1120**
Without connection	250	122	320×235	1	**467-1125**
Without connection	300	154	380×283	1	**467-1130**
With NS 24/29, NOVUS	100	58	153×112	1	**467-1210**

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Type	Nominal size (DN)	Usable height (mm)	Ø ext.×H (mm)	Pk	Cat. No.
With NS 24/29, NOVUS	150	81	215×154	1	**467-1215**
With NS 24/29, NOVUS	200	118	270×202	1	**467-1220**
With NS 24/29, NOVUS	250	122	320×235	1	**467-1225**
With NS 24/29, NOVUS	300	154	380×283	1	**467-1230**
With GL 32, MOBILEX	150	81	215×154	1	**467-1315**
With GL 32, MOBILEX	200	115	270×202	1	**467-1320**
With GL 32, MOBILEX	250	120	320×235	1	**467-1325**
With GL 32, MOBILEX	300	150	380×283	1	**467-1330**

Desiccator lids
DURAN Group

With knob

With NS 24/29, NOVUS

With GL 32, MOBILEX

Plain lids, flat flange ground to fit. Lids have a knob, an NS socket or a screw thread outlet.

Type	Nominal size (DN)	Pk	Cat. No.
With knob	100	1	**467-1160**
With NS 24/29, NOVUS	100	1	**467-1260**
With knob	150	1	**467-1175**
With NS 24/29, NOVUS	150	1	**467-1275**
With GL 32, MOBILEX	150	1	**467-1375**
With knob	200	1	**467-1180**
With NS 24/29, NOVUS	200	1	**467-1280**
With GL 32, MOBILEX	200	1	**467-1380**
With knob	250	1	**467-1185**
With NS 24/29, NOVUS	250	1	**467-1285**
With GL 32, MOBILEX	250	1	**467-1385**
With knob	300	1	**467-1190**
With NS 24/29, NOVUS	300	1	**467-1290**
With GL 32, MOBILEX	300	1	**467-1390**

Desiccator lids, WERTEX

DURAN®, borosilicate glass

Suitable for WERTEX type vacuum desiccators.

- With special tube (NS 24/29, Type WERTEX)
- With ring-grooved flange

Type	Nominal size (DN)	Pk	Cat. No.
NS 24/29, WERTEX	100	1	**467-1460**
NS 24/29, WERTEX	150	1	**467-1475**
NS 24/29, WERTEX	200	1	**467-1481**
NS 24/29, WERTEX	250	1	**467-1485**
NS 24/29, WERTEX	300	1	**467-1490**

Desiccators, grease-free

Borosilicate glass. Elastomer ring is compressed under vacuum making a dry seal. The PTFE valve is situated centrally on the lid, which in conjunction with the dry seal, enables the lid to be lifted on and off vertically.

- Choice of models with or without Seal-Cote plastic protection, which prevents fragmentation of the glass
- Lids lift off vertically, giving nearly double the storage volume

BS 3423:1962

Delivery information: Supplied with sealing ring, gauze, and PTFE stopcock. 9 mm O.D. vacuum connection.

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Type	Nominal size (DN)	Usable height (mm)	Ø ext.×H (mm)	Pk	Cat. No.
Dry-seal desiccator	150	120	197×254	1	**467-0012**
Dry-seal desiccator	250	200	318×375	1	**467-0010**
Dry-seal desiccator with Seal-Cote	150	120	197×254	1	**467-0015**
Dry-seal desiccator with Seal-Cote	200	160	254×320	1	**467-0014**
Dry-seal desiccator with Seal-Cote	250	200	318×375	1	**467-0013**

Desiccator, Nalgene®
Thermo Scientific

Ideal for drying and drying processes. Cover is transparent, robust PC with recessed rim. Base is durable blue PP.

- Base is impervious to all solid desiccants
- Autoclavable

Delivery information: Supplied with 140 mm aluminium plate.

Type	Nominal size (DN)	Usable height (mm)	Ø ext.×H (mm)	Pk	Cat. No.
Without stopcock	181	87	181×149	1	**467-0021**

Desiccator, Nalgene®
Thermo Scientific

Transparent PC, unbreakable and lightweight. Suitable for vacuum and non vacuum applications. Has wide base for greater stability. Accepts 6,4 mm (¼") to 19 mm (¾") I.D. vacuum tubing and can be used with any standard 230 mm desiccator plate, e.g. 467-3100. Should be used at room temperature only.

- Convenient side arms on lid and base
- O-ring ensures an airtight seal, and does not require greasing
- Removable stopcock

Ordering information: Supplied without plate, please order suitable plate separately.

Type	Nominal size (DN)	Usable height (mm)	Ø ext.×H (mm)	Pk	Cat. No.
PC	280	200	280×329	1	**467-3120**

Desiccators, Nalgene®
Thermo Scientific

Transparent PC lid and blue PP base with or without PTFE stopcock. Accepts 6,4 mm (¼") I.D. vacuum tubing and can be used with any standard 230 mm desiccator plate, for example Cat. No. 467-3100. Desiccator 467-3110 should be used at room temperature only, 467-3112 is autoclavable.

- Base is impervious to all solid desiccants, including acids and alkalies (do not use concentrated acids as desiccants)
- No gasket or vacuum is needed to ensure cover is airtight, only requires grease

Ordering information: Supplied without plate, please order suitable plate separately.

Type	Nominal size (DN)	Usable height (mm)	Ø ext.×H (mm)	Pk	Cat. No.
Without stopcock	330	143	330×262	1	**467-3112**
With stopcock	330	143	330×262	1	**467-3110**

Desiccators
Kartell

Transparent polycarbonate cover with polypropylene base. The specially grooved stopper ensures air is readmitted very slowly to avoid disturbing the contents.

- Implosion proof
- Will withstand vacuum of 740 mm Hg with loss no greater than 20 mm in 24 hours
- Includes removable pan for holding drying agent

Delivery information: Supplied with vacuum release tap and O-ring.

Type	Nominal size (DN)	Usable height (mm)	Ø ext.×H (mm)	Pk	Cat. No.
Desiccator	200	175	235×230	1	**467-2120**
Desiccator	150	135	170×190	1	**467-2115**
Desiccator	250	225	285×300	1	**467-2125**

Type	Ø (mm)	Pk	Cat. No.
Accessories			
Spare vacuum valve for desiccators	-	1	**467-2290**
Rubber O-ring	150	1	**467-2215**
Rubber O-ring	200	1	**467-2220**
Rubber O-ring	250	1	**467-2225**

Stopcocks for desiccators
Lenz

With **PTFE** spindles (except stopper).

Description	Type	For	Pk	Cat. No.
Needle-valve stopcock for desiccators, side tubulation, NS24/29 drip tip cone	Lid fitting	NOVUS	1	**467-1254**
Needle-valve stopcock for desiccators, side tubulation, NS24/29 cone	Lateral fitting	NOVUS	1	**467-1253**

Desiccant cartridges
Bel-Art Products

Reusable desiccant in a rugged polyester/felt bag with Mylar® cover is ideal for use in most desiccators.

- Gel cartridges can be regenerated in a vented oven at 150 °C for about 3 hours until blue colour reappears
- Natrasorb® TI indicating silica gel beads are blue colour when recharged and pink when saturated
- Can be regenerated repeatedly without losing drying performance

Type	Ø (mm)	Pk	Cat. No.
Desiccant cartridge for 160 mm diameter desiccator, 0.23 kg	114	1	**467-4191**
Desiccant cartridge for 200 mm diameter desiccator, 0.68 kg	197	1	**467-4192**
Desiccant cartridge for 250 mm diameter desiccator, 1.36 kg	238	1	**467-4193**

Desiccant canister, Desi-Can™
Bel-Art Products

Reusable canister which is ideal for use in desiccator cabinets, cupboards, containers, tool boxes and other storage areas to prevent rust and moisture. The silica gel inside effectively absorbs moisture through perforations in the aluminium case. One canister will maintain a safe level of humidity in 0,9 m^3 (3 ft^3).

- Can be regenerated in an oven at 150 °C for about 3 hours giving unlimited life
- Monitor window shows blue colour when desiccant is recharged and pink when saturated

Description	W×D×H (mm)	Pk	Cat. No.
Desi-Can™	102×51×13	1	**467-0000**

VWR COLLECTION

SELECTED FOR YOU

Desiccator plates

Porcelain desiccator plates. Central hole 20 mm Ø, filter holes ~ Ø 5 mm. Suitable for use with any desiccators with corresponding diameter.

Conform to DIN 12911

Type	Ø (mm)	Pk	Cat. No.
Porcelain	90	1	**467-0100**
Porcelain	140	1	**467-0101**
Porcelain	190	1	**467-0102**
Porcelain	235	1	**467-0103**
Porcelain	280	1	**467-0104**

Desiccator plates, Nalgene®
Thermo Scientific

Unbreakable desiccator plates with fire polished, corrosion resistant, inert, non stick glass surface bonded to metal. Suitable for use with desiccators: 467-3120, 467-3110 and 467-3112.

- Greater resistance to thermal shock than porcelain
- Marked with numbered quadrants for easy reference
- Autoclavable

Type	Ø (mm)	Pk	Cat. No.
Ceramic metal composite	230	1	**467-3100**

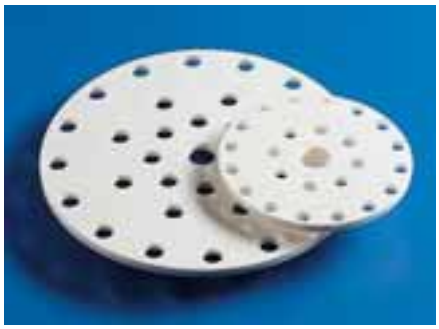
Desiccator plates
Haldenwanger

Porcelain desiccator plates. Central hole 20 mm Ø, filter holes ~5 mm Ø. Suitable for use with any desiccators with corresponding diameter.

Conform to DIN 12911

Type	Ø (mm)	Pk	Cat. No.
Porcelain	90	1	**467-1910**
Porcelain	140	1	**467-1915**
Porcelain	190	1	**467-1920**
Porcelain	235	1	**467-1925**
Porcelain	280	1	**467-1930**

Desiccator plates
Kartell



Perforated PP desiccator plates. Suitable for use with desiccators: 467-2115, 467-2120 and 467-2125. Use at room temperature only, not suitable for use with hot crucibles.

Type	Ø (mm)	Pk	Cat. No.
PP	141	1	**467-2110**
PP	189	1	**467-2111**
PP	238	1	**467-2112**

Desiccator cabinets, Nalgene®
Thermo Scientific

Acrylic, with stainless steel latches and hinge, neoprene gasket

Transparent cabinets provide dust and moisture free storage. Ideal for storing anhydrous, hygroscopic biological or chemical compounds and electronic assemblies. Removable lipped tray holds desiccant.

- Can be used on benchtop or in refrigerators and freezers
- Shelves are removable and adjustable, and are vented to maximise airflow

Shelves	With	W×D×H ext. (mm)	Pk	Cat. No.
2	3 grooves	305×305×178	1	**467-0022**
3	5 grooves	305×305×305	1	**467-0023**
4	7 grooves	305×305×457	1	**467-0024**

Desiccator cabinets, SICCO Mini Basic series
Bohlender

Clear, polycarbonate

Each compartment has one door with snap fit closing and integrated gasket ensuring easy opening and tight closure. Temperature resistant from –35 to +70 °C, suitable for use under normal pressure.

- Large opening and door with wide opening angle enable user to access the entire interior space
- Robust construction, lightweight, portable and stackable
- Supplied with desiccant which is in a handy, resealable container

Description	With	W×D×H ext. (mm)	W×D×H int. (mm)	Pk	Cat. No.
Mini desiccator, Basic, (6,2 l)	1 chamber	221×214×183	212×180×162	1	**467-4105**
Mini desiccator, Basic, (6,2 l)	2 chambers	221×214×360	212×180×162	1	**467-4106**
Mini desiccator, Basic, (6,2 l)	3 chambers	221×214×540	212×180×162	1	**467-0051**

Mini desiccator cabinets, SICCO, Premium
Bohlender

Clear polycarbonate

Each chamber has a single door with snap fit closing and integrated gasket ensuring easy opening and tight closure. Temperature resistant from –35 to +70 °C, suitable for use under normal pressure.

- Large opening and door with wide opening angle enable user to access the entire interior space
- Robust construction, lightweight and portable
- Choice of units with one, two or three chambers, each chamber supplied with two shelves
- Supplied with hygrometer and desiccant which is in a handy resealable container

Description	With	W×D×H ext. (mm)	Pk	Cat. No.
Mini desiccator, Premium (6,2 l)	1 chamber	221×214×183	1	**467-0130**
Mini desiccator, Premium (2× 6,2 l)	2 chambers	221×214×362	1	**467-0131**
Mini desiccator, Premium (3× 6,2 l)	3 chambers	221×214×540	1	**467-0132**

Mini portable desiccator cabinets, SICCO, Mobile
Bohlender

Clear polycarbonate

Portable desiccator with convenient handle. Door with snap fit closing and integrated gasket ensuring easy opening and tight closure. Temperature resistant from –35 to +70 °C, suitable for use under normal pressure.

- Large opening and door with wide opening angle enable user to access the entire interior space
- Robust construction, lightweight and portable
- Premium model includes hygrometer and two shelves
- Supplied with desiccant which is in a handy, resealable container

Description	W×D×H ext. (mm)	W×D×H int. (mm)	Pk	Cat. No.
Portable mini desiccator, Mobile Basic (6,2 l)	221×214×183	212×180×162	1	**467-0126**
Portable mini desiccator, Mobile Premium (6,2 l)	221×214×183	212×180×162	1	**467-0129**

Mini desiccator cabinets, SICCO, Black
Bohlender

Black polycarbonate

Opaque black panels reduce light incidence and protect samples from ultraviolet radiation. Door with snap fit closing and integrated gasket ensuring easy opening and tight closure. Temperature resistant from –35 to +70 °C, suitable for use under normal pressure.

- Large opening and door with wide opening angle enable user to access the entire interior space
- Robust construction, lightweight, portable and stackable
- Premium model includes hygrometer and two shelves
- Supplied with desiccant which is in a handy, resealable container

Description	W×D×H ext. (mm)	W×D×H int. (mm)	Pk	Cat. No.
Mini desiccator, Black Basic (6,2 l)	221×214×183	212×180×162	1	**467-0124**
Mini desiccator, Black Premium (6,2 l)	221×214×183	212×180×162	1	**467-0127**

Mini desiccator cabinets, SICCO, Protect
Bohlender

Orange polycarbonate

Orange panels reduce light incidence and protect samples from ultraviolet radiation. Door with snap fit closing and integrated gasket ensuring easy opening and tight closure. Suitable for use under normal pressure, temperature resistant from –35 to +70 °C.

- Large opening and door with wide opening angle enable user to access the entire interior space
- Robust construction, lightweight, portable and stackable
- Premium model includes hygrometer and two shelves
- Supplied with desiccant which is in a handy, resealable container

Description	W×D×H ext. (mm)	W×D×H int. (mm)	Pk	Cat. No.
Mini desiccator, Protect Basic (6,2 l)	221×214×183	212×180×162	1	**467-0125**
Mini desiccator, Protect Premium (6,2 l)	221×214×183	212×180×162	1	**467-0128**

Desiccator cabinet, SICCO Star Horizontal
Bohlender

Transparent PMMA

Cabinet has a reinforced aluminium frame, forward opening door with foam rubber gasket and magnetic strip. Ideal for wide products such as A3 sheets or conductor boards.

- Door mounted electronic hygrometer indicates minimum and maximum temperature and humidity values
- Temperature resistance from –20 °C to +70 °C
- Cabinet has non slip rubber feet and is stackable

Delivery information: Supplied with two removable, acrylic glass, telescopic shelves, desiccant tray and silica gel. Capacity to accommodate a maximum of 13 shelves.

Description	Shelves	W×D×H ext. (mm)	W×D×H int. (mm)	Pk	Cat. No.
Star Horizontal (42 l)	2	525×375×340	480×330×260	1	**467-0081**

Description	For	Pk	Cat. No.
Accessories			
Desiccant tray for silica gel, (1 kg max)	Star desiccators	1	**467-0052**
Silica gel, 360 g	Star desiccators	1	**467-0074**

Desiccator cabinets, SICCO Star series
Bohlender

Star

Super-Star

Protect Star

Transparent PMMA or borosilicate glass 3.3

Cabinets have a reinforced aluminium frame, door with foam rubber gasket and magnetic strip. Designed for storing or drying humidity sensitive products using silica gel. The controlled environment inside the desiccator is ideal for storing reference materials, retained samples, metallographic specimens, tobacco and DNA samples. Super-Star cabinets can be filled with inert gas, e.g. Nitrogen to allow safe and secure storage of poisonous chemicals.

- Door mounted electronic hygrometer indicates minimum and maximum temperature and humidity values; hygrometers on Super-Star cabinets have a two line display
- Temperature resistance from –20 °C to +70 °C
- Cabinets have non slip rubber feet and Star models are stackable

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• Super-Star cabinets have a cylinder lock and include a hose with quick couplings 2×6 mm Ø gas inlet, non-return valve and tubing connectors

Delivery information: Supplied with four removable, acrylic glass, telescopic shelves, desiccant tray and silica gel. Capacity to accommodate a maximum of 26 shelves.

Description	Shelves	W×D×H ext. (mm)	W×D×H int. (mm)	Pk	Cat. No.
PMMA					
Star for drying and storage (42 l)	4	304×375×520	260×330×480	1	**467-4126**
Super-Star for gas filling (42 l)	4	304×375×520	260×330×480	1	**467-0053**
Protect Star with orange acrylic side panels for light sensitive samples (42 l)	4	304×375×520	260×330×480	1	**467-0114**
Borosilicate glass 3.3					
Star-Vitrum for storing hot materials, up to 300 °C (42 l)	4	310×375×525	260×330×480	1	**467-0112**

Description	For	Pk	Cat. No.
Accessories			
PMMA, transparent shelf with aluminium rails	Star desiccators	1	**467-4137**
Desiccant tray for silica gel, (1 kg max)	Star desiccators	1	**467-0052**
Silica gel, 360 g	Star desiccators	1	**467-0074**

Desiccator cabinet, SICCO Auto Star
Bohlender

Transparent acrylic

Cabinet has a reinforced aluminium frame, door with foam rubber gasket and magnetic strip. Suitable for long-term storage, frequent opening of the door is compensated automatically. Ideal solution for storing reference samples, electronics, photographic equipment, papers and valuable cultural assets.

- Door mounted electronic hygrometer indicates minimum and maximum temperature and humidity values
- Automatic drying which enables constant low interior humidity between 20% and 30%
- Temperature resistance from –20 °C to +70 °C
- Cabinet has non slip rubber feet and is stackable

Delivery information: Supplied with four removable, acrylic glass, telescopic shelves. Silica gel and desiccant tray not included. Capacity to accommodate a maximum of 26 shelves. Requires electrical power source.

Description	Shelves	W×D×H ext. (mm)	W×D×H int. (mm)	Pk	Cat. No.
Auto Star (42 l)	4	310×375×525	260×330×480	1	**467-0054**

Description	For	Pk	Cat. No.
Accessories			
PMMA, transparent shelf with aluminium rails	Star desiccators	1	**467-4137**

Desiccator cabinet, SICCO Big Star
Bohlender

Transparent acrylic

Cabinet has a reinforced aluminium frame, door with foam rubber gasket and magnetic strip. Designed for storing or drying humidity sensitive products using silica gel. The controlled environment inside the desiccator is ideal for storing reference materials, retained samples, metallographic specimens, tobacco and DNA samples.

- Door mounted electronic hygrometer indicates minimum and maximum temperature and humidity values
- Temperature resistance from –20 °C to +70 °C
- Cabinet has non slip rubber feet and is stackable

Delivery information: Supplied with two removable, stainless steel, telescopic shelves and desiccant tray. Silica gel not included. Capacity to accommodate a maximum of 17 shelves.

Description	Shelves	W×D×H ext. (mm)	W×D×H int. (mm)	Pk	Cat. No.
Big Star (140 l)	2	560×580×560	495×540×500	1	**467-0061**

Description	For	Pk	Cat. No.
Accessories			
Stainless steel shelf with 2 aluminium rails	Big star and Maxi desiccators	1	**467-0113**
Desiccant tray for silica gel, (1 kg max)	Star desiccators	1	**467-0052**
Silica gel, 360 g	Star desiccators	1	**467-0074**

Desiccator cabinets, SICCO Maxi series
Bohlender

Maxi 1

Maxi 2

Transparent acrylic

Cabinets have a reinforced aluminium frame, door with foam rubber gasket and magnetic strip. Designed for storing or drying humidity sensitive products using silica gel. The controlled environment inside the desiccator is ideal for storing reference materials, retained samples, metallographic specimens, tobacco and DNA samples.

- Door mounted electronic hygrometer* indicates minimum and maximum temperature and humidity values
- Temperature resistance from –20 °C to +70 °C
- Easy to move about as cabinets have four castors, two of them with brakes

Delivery information: Supplied with four removable, stainless steel, telescopic shelves and one desiccant tray*. Capacity to accommodate maximum of 34 shelves (17 shelves per chamber for Maxi 2 model). Silica gel not included.

Description	Shelves	With	W×D×H ext. (mm)	W×D×H int. (mm)	Pk	Cat. No.
Maxi 1 (280 l)	4	1 chamber and 1 door	560×580×1150	495×540×1030	1	**467-0044**
Maxi 2 (140 l)*	4	2 chambers and 2 doors	560×580×1150	495×540×500*	1	**467-0045**

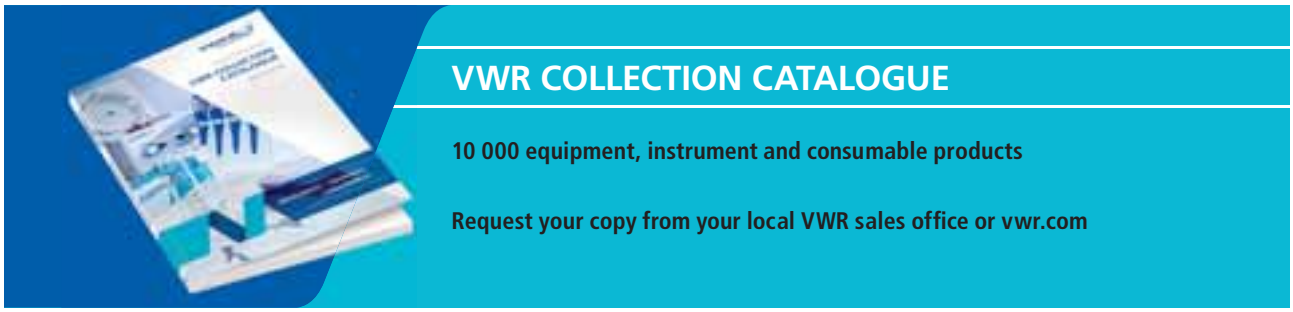
* Maxi 2 model has two 140 l chambers each with a hygrometer, two shelves and a dessicant tray. The dimensions given are for each chamber.

Desiccator cabinets
Bel-Art Products

These durable cabinets are made from 6,35 mm thick acrylic. The gasketed, air-tight doors are made from 9,5 mm thick acrylic with full length hinges and stainless steel twist locking latches. Available in clear or dark bronze acrylic.

- Dry, dust-free storage for use in freezers, refrigerators, or on the benchtop
- Supplied with perforated trays which ensure proper circulation within the cabinet

Description	Shelves	W×D×H ext. (mm)	Pk	Cat. No.
Bronze acrylic	2	180×254×180	1	**467-0062**
Bronze acrylic	2	230×406×230	1	**467-0064**
Bronze acrylic	3	305×305×305	1	**467-0067**
Clear acrylic	2	180×254×180	1	**467-0063**
Clear acrylic	2	230×406×230	1	**467-0065**
Clear acrylic	3	305×305×305	1	**467-0066**



Spark-free MediLine refrigerators with ATEX certification
Liebherr

LKexv 1800 MediLine

LKexv 3600 MediLine

Temperature range: +2 to 10 °C or +1 to 15 °C

ATEX certified MediLine spark-free fridges with explosion protected interiors and cooling. Designed for the storage of flammable materials.

- Temperature regulator outside
- Lockable and reversible door
- Automatic defrost with drain compartment for water defrost (manual drain)

All Liebherr laboratory refrigerators with spark-free interior are tested according to the ATEX Directive. They have a Zone II nA interior for gases, taking into account the safety requirements of material category 3G. They are therefore suitable for storing explosive and highly flammable substances.

Model	LKexv 1800 MediLine	LKexv 2600 MediLine	LKexv 3600 MediLine	LKexv 5400 MediLine
Capacity (l)	180	240	333	554
Temperature (°C)	+1...+15			
Defrost	Automatic			
Alarm	No			
Shelves/drawers	3 glass shelves/-	4 glass shelves/-	5 glass shelves/-	
Door(s)	1 solid, reversible			
Door lock	Yes			
Material	Exterior: steel, epoxy coated, white Interior: ABS			
W×D×H int. (mm)	513×441×702	470×440×1062	470×440×1452	600×560×1452
W×D×H ext. (mm)	600×600×860	600×610×1250	600×610×1640	750×730×1640
Weight (kg)	38	49	59	77

Type	Pk	Cat. No.
Ventilated, ATEX approved refrigerator, LKexv 1800 MediLine	1	**471-1046**
Ventilated, ATEX approved refrigerator, LKexv 2600 MediLine	1	**471-1047**
Ventilated, ATEX approved refrigerator, LKexv 3600 MediLine	1	**471-1048**
Ventilated, ATEX approved refrigerator, LKexv 5400 MediLine	1	**471-1049**

Spark-free MediLine laboratory refrigerators with ATEX certificate, LKexv and LKUexv
Liebherr

Temperature range: +3 to +8 °C

These spark-free MediLine laboratory refrigerators feature forced air cooling with an electronic controller system ensuring high temperature consistency and uniform temperature distribution. They are designed especially for storing explosive and highly flammable substances.

The controller stores the minimum and maximum interior temperatures, the last three temperature alarms and power failures, together with the time, date and duration of the alarm. The digital display indicates the exact temperature and the operating status. There is a secondary safety thermostat to protect contents from freezing. The refrigerant used is hydro carbon. Defrost water is collected in a tray and must be manually emptied.

- Tested according to ATEX Directive
- Electronic control system with 0,1 °C temperature adjustment
- Pre-drilled access ports
- Lockable, self-closing, reversible doors
- Audible and visual alarms for door-open and temperature (user-adjustable)
- RS485 interface and volt-free contact for central monitoring

All Liebherr laboratory refrigerators with spark-free interior are tested according to the ATEX Directive. They have a Zone II nA interior for gases, taking into account the safety requirements of material category 3G. They are therefore suitable for storing explosive and highly flammable substances.

Model	LKUexv 1610 MediLine	LKVexv 3910 MediLine
Capacity (l)	141	360
Temperature (°C)	+3...+8	+3...+8
Air circulation	Ventilated	
Display	Digital	
Defrost	Automatic	
Alarm	Audible and visual (temperature and door)	
Shelves/drawers	3 adjustable glass shelves	5 adjustable glass shelves
Door(s)	Self-closing solid door, right hand reversible hinge	
Door lock	Yes	
Material	Exterior: white powder-coated Interior: moulded polystyrol	
W×D×H int. (mm)	440×435×670	440×435×1635
W×D×H ext. (mm)	600×615×820	600×615×1840
Weight (kg)	40	68

Type	Pk	Cat. No.
Spark-free underbench refrigerator, MediLine, LKUexv 1610	1	**471-0485**
Spark-free upright refrigerator, MediLine, LKexv 3910	1	**471-0484**

Laboratory refrigerators and freezers, ATEX
Liebherr

Interior satisfies the requirement, for storage of volatile solvents, of the ATEX Directive 94/9 EC, rated as II 3G Ex nA II T6.

- Digital control and display
- Audible and visual alarm for temperature with interface for remote alarm
- Audible and visual alarm for open door status (on the equipment - not recorded)
- Recording of temperature alarms
- RS485 interface for PC control and traceability

Interior has housing for probe diameter 30 mm for the control / qualification.

Predrilled access port for PT100 (not supplied) probe diameter 8 mm for the independent temperature monitoring of the interior.

ATEX refrigerators

Temperature control: +5 °C ±3 °C

- Dynamic cooling
- Auto defrost

ATEX freezers

Temperature range: –1 down to –26 °C ±5 °C

- Static cooling
- Manual defrost

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Model	LFKUex 1610	LFKex 3910	LGUex 1600	LGex 3510
Capacity (l)	141	360	139	310
Temperature (°C)	+5 °C ±3 °C		– 1...–26 °C ±5 °C	
Defrost	Automatic			
Alarm	Audible and visual			
Shelves/drawers	3 glass shelves	5 glass shelves	4 transparent drawers	8 transparent drawers
Door(s)	1 reversible door			
Door lock	Yes			
Specifications	ABS interior			
W×D×H ext. (mm)	600×615×820	600×615×1840	600×615×820	600×615×1840
Weight (kg)	40	68	43	82

Type	Pk	Cat. No.
Refrigerators ATEX		
Refrigerator ATEX, LFKUex 1610 (under bench)	1	**471-0647**
Refrigerator ATEX, LFKex 3910	1	**471-0644**
Freezers ATEX		
Freezer ATEX, LGUex 1600 (under bench)	1	**471-0663**
Freezer ATEX, LGEex 3510	1	**471-0656**

BioLine ATEX refrigerators, GRAM

BioCompact II RR210 LG

BioPlus, ER1270 LG

BioLine is a comprehensive refrigeration range designed to deal with special bioscience needs. BioLine is distinct from other "spark-free" refrigerators on the market, as both the interior and the exterior of all units have been shown to comply with the European ATEX [EN/IEC60079-15] directive which means they are safe for use in potentially explosive atmospheres (Zone 2 [Category 3]).

The unique air distribution system combined with a finned tube evaporator results in excellent temperature consistency for biostorage; the evaporator design eliminates the risk of "cold walls", which can damage delicate items stored touching the sides of the cabinet. Whilst the air distribution system which directs the cold air down the rear of the cabinet and back up to the evaporator fan at the top, ensures a uniform temperature throughout - using only a minimum of energy. The use of both cyclopentane to foam the insulation material and also hydrocarbon refrigerants means that BioLine storage solutions have only minimal environmental impact.

- MPC 4.6 control unit provides access to audible and visual temperature alarms, high/low temperature log and out of range time/temperature history, audible and visual door open alarm, calibration of sensors
- Extra sensor (E-sensor) for temperature reference in the storage compartment
- Volt-free contact for external connection to building management system
- Smart defrost; intelligent automatic system makes sure an absolute minimum of time and energy is used during each defrost cycle
- Access port and door lock as standard
- Ventilated air circulation

BioCompact II line: +2 to +15 °C

The BioCompact II is the entry level product range within BioLine series. These refrigerator cabinets are for basic storage purposes where the focus is on reliability and stringent control. The interior is plastic for easy cleaning and the family incorporates cabinets with a small footprint (models 210 and 410) - perfect biostorage solution when space is limited.

Note: BioCompact RR210 and RR410 models are also offered without audible temperature alarms or E-sensor, this lower cost option is ideal if an in-house monitoring system is available. The 210 and 410 models are available with glass door (LED lighting built into door). BioCompact 210 cabinets may be stacked or can be wall hung. Stacked 210s can also be ordered built together in any combination – i.e. two fridges, two freezers or a fridge with a freezer. For assistance regarding any of these options please contact your local VWR sales office.

BioMidi line: +2 to +15 °C

The BioMidi cabinet is designed to meet the majority of biomaterial refrigeration requirements, with very few limitations. The specifications include the major features from the top-of-the-range BioPlus model, but constructed from a combination of stainless steel and aluminium, BioMidi provides a lower cost option. The functional design ensures easy, ergonomically correct access to the storage space. The BioMidi 625 offers ample storage space, whilst the BioMidi 425 takes up limited wall space in the laboratory. These cabinets are highly reliable with great temperature control.

Note: Options include stainless steel exterior, glass doors and draft shield inner doors (help retain temperatures during door openings). Please contact VWR for full details.

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BioPlus line: +2 to +15 °C

The BioPlus range is designed for storage of the most delicate biomaterials in situations where even tiny fluctuations in conditions inside the storage cabinet can have a serious effect on the contents.

Other variants of the BioPlus models are available, these include the smaller ER500 and the ER1400 - a taller version of the ER1270. Glass doors are available as an option to fit to all BioPlus cabinets. To help retain temperatures during door openings draft shield inner doors are optional and all cabinets are available with stainless steel exteriors. For pricing please contact VWR for a quotation.

- Electrical automatic defrosting system
- Dry cooling that reduces condensation on the surface of the contents of the cabinet
- High capacity refrigeration unit that makes sure the interior quickly returns to the specified temperature after the door has been opened
- A Gram monitor is fitted on the control unit, enabling the transfer of information directly to a computer
- Foot pedal so that the cabinet is easy to open, with full access even when the user's hands are full

BioLine cabinets are designed to be customised to the specific requirements of each user. For this reason the cabinets listed are offered without interior accessories. Shelf options include plastic coated wire shelves (not suitable for use with draft shield inner doors), stainless steel wire shelves and stainless steel perforated shelves designed to provide maximum stability. Drawers are also available. For the BioCompact 210 and 410 units there are tight mesh plastic coated wire drawers (with two vertical dividers), the deeper plastic coated wire basket version or aluminium drawers with vertical and horizontal dividers and sliding drawers rails. For the larger upright models the aluminium drawers plus two stainless steel drawers options are available to choose from. The two steel versions differ only in terms of the weight they can hold, up to either 30 kg or 40 kg maximum. So long as there is the space, each cabinet can be configured in any combination of accessories. For full details and pricing information on the various options available, please contact your local VWR office.

Model	Capacity (l)	Temperature (°C)	Display	Defrost	Door(s)	Material	Specifications	W×D×H ext. (mm)	Weight (kg)
BioCompact II refrigerators									
RR210	125	+2...+15	LED	Automatic	1 solid	Exterior: steel, white lacquered Interior: ABS	Recessed wheels and skids	595×640×830	44
RR410	346						Castors (legs available as cost free option)	595×640×1885	72
RR610	583							695×868×1984	106
BioMidi refrigerators									
RR425	425	+2...+15	LED	Automatic	1 solid	Exterior: steel, white lacquered Interior: aluminium and stainless steel	Recessed wheels	600×731×2000	109
RR625	625							815×731×2000	115
BioPlus refrigerators									
ER600D	600	+2...+15	LED	Automatic	1 solid	Exterior: steel, white lacquered Interior: stainless steel	Castors (legs available as cost free option)	695×876×1984	107
ER600W								815×856×1984	109
ER660D	660							695×876×2132	118
ER660W								815×756×2132	120
ER1270	1270							1390×876×1984	242

Type	Pk	Cat. No.
BioCompact II refrigerators		
Under bench refrigerator, BioCompact II RR210 LG (ATEX compliant)	1	**471-0813**
Upright refrigerator, BioCompact II RR410 LG (ATEX compliant)	1	**471-0814**
Upright refrigerator, BioCompact II RR610 LG (ATEX compliant)	1	**471-0841**
BioMidi refrigerators		
Upright refrigerator, BioMidi, RR425 LG (ATEX compliant)	1	**471-0511**
Upright refrigerator, BioMidi, RR625 LG (ATEX compliant)	1	**471-0512**
BioPlus refrigerators		
Upright refrigerator, white, BioPlus, ER600 D LG (ATEX compliant)	1	**471-0503**
Upright refrigerator, white, BioPlus, wider version ER600W LG (ATEX compliant)	1	**471-0810**
Upright refrigerator, white, BioPlus, ER660D LG (ATEX compliant)	1	**471-0504**
Upright refrigerator, white, BioPlus, wider version, ER660W LG (ATEX compliant)	1	**471-0811**
Upright refrigerator, white, BioPlus, ER1270 LG (ATEX compliant)	1	**471-0502**

Laboratory refrigerators, spark-free, LR and LSR series, Lec

LR207

LR1607

LSR288

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Temperature: +2 to +10 °C

Lec laboratory spark-free refrigerators offer safe, reliable storage of volatile liquids, reagents, poisons and samples. They have spark-free interiors to reduce the risk of internal explosions, CFC- and HCFC-free refrigeration systems ensuring minimal risk to the environment as well as locks to prevent theft or unauthorised access.

- Environmentally friendly: CFC- and HFC-free
- Temperature alarm
- Low energy consumption
- No internal fan
- Doors with reversible hinges

Model	LR207	LR307	LR1607	LSR151	LSR288
Capacity (l)	82	107	415	151	288
Temperature (°C)	+2... +10				
Display	Digital				
Defrost	Yes				
Alarm	Audible and visual				
Shelves/drawers	2 shelves/1 wire basket		5 shelves/-	3 shelves/1 wire basket	5 shelves/1 wire basket
Door(s)	1 solid, reversible hinge				
Door lock	Yes				
Specifications	Fixed feet	Adjustable feet front	Castors	Adjustable feet front	
W×D×H ext. (mm)	502×540×660	495×620×830	695×910×1688	595×595×845	595×634×1570
Weight (kg)	27,5	31,5	130	36	81,5

Type	Pk	Cat. No.
Upright laboratory refrigerator, LR 207	1	**471-0581**
Upright laboratory refrigerator, LR 307	1	**471-0565**
Upright laboratory refrigerator, LR 1607	1	**471-0580**
Upright laboratory refrigerator, LSR 151	1	**471-0838**
Upright laboratory refrigerator, LSR 288	1	**471-0839**

Laboratory fridge/freezers, spark free, ISR/LSC, Lec

Temperature: +2 to +8 or +10 °C for the fridge, –25 °C for the freezer

Security is essential in laboratories so freezers come complete with door locks and two keys ensuring that only authorised individuals are able to access them. In addition, the spark-free interior reduces the risk of internal explosion. Reversible doors across all models give greater flexibility where space is at a premium or where positioning the product is specific. Adjustable feet are available on most models making it easier when positioning the product on uneven surfaces.

- Integral control panel
- Automatic defrost (refrigerator only)
- Low energy consumption
- Doors with reversible hinges

Model	ISR27	LSC119	LSC263	LSC324
Capacity (l)	75,5/5,5	106/13	159/104	190/134
Temperature (°C)	Fridge: +2...10 Freezer: –6...–9	Fridge: +2...+10 Freezer: –18...–25		
Defrost	Fridge: automatic freezer: manual			
Alarm	Audible and visual			
Shelves/drawers	Fridge: 2 shelves/1 basket Freezer: 1 compartment		Fridge: 2 shelves/1 drawer Freezer: 1 compartment /3 drawers	Fridge: 2 shelves/2 half baskets Freezer: 1 compartment /3 drawers
Door(s)	Solid, reversible hinge			
Door lock	Yes			
W×D×H int. (mm)	415×370×540	Fridge: 450×450×525 Freezer: 400×295×120	Fridge: 457×450×725 Freezer: 408×415×670	Fridge: 510×430×805 Freezer: 463×445×780
W×D×H ext. (mm)	502×540×670	540×600×860	540×600×1680	600×600×1870
Weight (kg)	25	34	58	70

Type	Pk	Cat. No.
Laboratory bench top spark-free fridge/freezer, ISR27	1	**471-0574**
Laboratory bench top spark-free fridge/freezer, LSC119	1	**471-0834**
Laboratory upright spark-free fridge/freezer, LSC263 (fridge at the top, freezer at the bottom)	1	**471-0835**
Laboratory upright spark-free fridge/freezer, LSC324 (fridge at the top, freezer at the bottom)	1	**471-1110**

Laboratory refrigerators, spark-free, Labcold

60 l

390 l

Temperature range: +2 to +10 °C

A range of refrigerators all of which have a performance selected to be suitable for laboratory use. Specially designed for the safe storage of materials which may contain volatile or flammable gases, liquids or components.

- Internally free from sources of heat, arc or spark which may ignite flammable vapours
- Door lock
- Easy-grip door handle (RLHD13043 and RLPR09043)
- CFC, HCFC and ammonia free

Maximum ambient temperature for correct operation: 32 °C

Model	RLPR02042	RLPR05042A	RLHD13043
Capacity (l)	60	160	390
Temperature (°C)	+2...+10		
Air circulation	Non ventilated		
Display	Optional		Digital for temperature
Defrost	Automatic		
Alarm	Optional		
Shelves/drawers	2 wire mesh shelves	3 glass shelves/1 plastic drawer	6 plastic coated wire mesh shelves
Door(s)	1 solid		
Door lock	Yes		
Material	Exterior: enamel, white Interior: ABS		
W×D×H ext. (mm)	485×520×572	550×620×850	600×640×1750
Weight (kg)	18	34	86

Type	Pk	Cat. No.
Refrigerator spark-free, bench top, RLPR02042	1	**471-0144**
Under bench refrigerator spark-free, RLPR05042A	1	**471-0923**
Refrigerator spark-free, upright, RLHD13043	1	**471-0148**

Commercial refrigerators with forced air cooling
Liebherr

Refrigerator, solid door

Refrigerator, glass door

Temperature range: 0 to 15 °C

Commercial refrigerators with forced air cooling; the ventilation stops when door is opened.

- Automatic defrosting
- Lockable door

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- LED interior lighting (glass models only)
- Interchangeable hinge

Model	FKUv 1610	FKv 1800	FKv 2640	FKv 3640	FKv 5440	FKv 503	FKUv 1613	FKv 2643	FKv 3643	FKv 5443
Capacity (l)	141	180	240	333	554	45	141	236	335	544
Temperature (°C)	+1...+15					+1...+12	+1...+15			
Air circulation	Ventilated									
Display	Digital					-	Digital			
Defrost	Automatic									
Alarm	Audible and visual door and temperature alarm					-	Audible and visual door and temperature alarm			
Shelves/ drawers	3 mesh wire shelves/-		4 grid plastic coated shelves/-	4 mesh wire shelves/-		2 mesh wire shelves/-	3 mesh wire shelves/-		4 mesh wire shelves/-	5 mesh wire shelves/-
Door(s)	Solid					Glass				
Door lock	Yes									
Material	Exterior: steel Interior: plastic	Exterior: steel, epoxy coated, white Interior: ABS				Exterior: stainless steel Interior: ABS	Exterior: steel, epoxy coated, white Interior: ABS			
W×D×H int. (mm)	441×439×667	513×441×702	440×470 ×1060	440×425 ×1452	600×560 ×1452	338×270×516	440×435×670	440×425 ×1060	440×425 ×1452	560×550 ×1452
W×D×H ext. (mm)	600×615×830	600×600×850	600×610 ×1250	600×610 ×1640	730×750 ×1640	425×450×612	600×615×830	600×610 ×1250	600×610 ×1640	750×730 ×1640
Weight (kg)	35		49	60	77	31	41	53	56	74

Type	Pk	Cat. No.
Refrigerators, with solid door, FKv and FKUv		
Professional under bench refrigerator, Premium, white, FKUv 1610	1	**471-0471**
Professional under bench refrigerator, Premium, white, FKv 1800	1	**471-1064**
Professional refrigerator, Premium, white, FKv 2640	1	**471-1034**
Professional refrigerator, Premium, white, FKv 3640	1	**471-1032**
Professional refrigerator, Premium, white, FKv 5440	1	**471-1030**
Refrigerators, with glass door, FKv and FKUv		
Professional under bench, refrigerator, grey, FKv 503	1	**471-1036**
Professional under bench refrigerator, Premium, white, FKUv 1613	1	**471-1062**
Professional refrigerator, Premium, white, FKv 2643	1	**471-1033**
Professional refrigerator, Premium, white, FKv 3643	1	**471-1031**
Professional refrigerator, Premium, white, FKv 5443	1	**471-1029**

Professional refrigerators, GKv and GKPv series

Liebherr

These commercial refrigerators feature a fan for forced air cooling with temperature adjustable from -2 to +15 °C or +1 to +15 °C.

GKv series: ABS interior, exterior made from white epoxy coated steel or stainless steel, high density insulation 50 mm (allows temperature control even at +43 °C).
GKPv series: Interior and exterior made from stainless steel AISI 306, with indirect ventilated cooling, insulation 83 mm (allows temperature control even at +43 °C).

- Electronic temperature regulation, with digital display
- Alarm for temperature and door opening
- Automatic defrosting with evaporation of condensates
- Interior with rounded corners to make cleaning easier
- Door is lockable and reversible, self closing at 45° but stable at 90°

Delivery information: These refrigerator cabinets are delivered with adjustable feet (150-180 mm), except models GKPv 6570 and GKPv 1470 which are fitted with castors.

Model	GKv 4310	GKPv 6573	GKPv 6570	GKPv 6590	GKPv 1470	GKPv 1490
Capacity (l)	434	601			1427	
Temperature (°C)	+1...+15			–2...+16	+1...+15	–2...+16
Display	Digital					
Defrost	Automatic					
Alarm	Audible and visual					
Shelves/drawers	6 clear-coated wire shelves/-	4 plastic-coated shelves/-			2×4 plastic-coated shelves/-	
Door(s)	Solid	Glazed with stainless steel frame	Solid		2 solid doors	
Door lock	Yes					
Material	Exterior: steel, epoxy coated, white Interior: ABS	Exterior: stainless steel grade 304 Interior: stainless steel				

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Specifications	-	Electronic temperature controller		Electronic temperature controller, multi-function digital display and RS485 interface	Electronic temperature controller	Electronic temperature controller, multi-function digital display and RS485 interface
W×D×H int. (mm)	475×480×1688	510×650×1047			1240×650×1550	
W×D×H ext. (mm)	600×680×1900	700×830×2150			1430×830×2150	
Weight (kg)	73	144	180		239	

Type	Pk	Cat. No.
GKv series		
Professional refrigerator, white, GKv 4310	1	**471-1015**
GKPv series		
Professional refrigerator, grey, GKPv 6573	1	**471-1066**
Professional refrigerator, grey, GKPv 6570	1	**472-1064**
Professional refrigerator, grey, GKPv 6590	1	**471-0910**
Professional refrigerator, grey, GKPv 1470	1	**472-1060**
Professional refrigerator, grey, GKPv 1490	1	**471-0909**

MediLine, laboratory refrigerators, LKPv series
Liebherr

Temperature range 0 or -2 to +16 °C (±3 °C); insulation 83 mm (max. ambient temperature: 43 °C).

These are the heavy duty MediLine models with forced air cooling. Controller features door and temperature alarms which can be customised to suit the end user. Controller can be locked.

- Back-up battery for 7,5 days data logging and 72 hours battery back up for controller in case of mains failure; interface options including infrared and RS485 for external data logging
- Forced air ventilation
- Multi-function digital display and electronic temperature controller
- Ergonomic handle and self closing doors
- Integrated alarm systems; door open too long, exceeding set temperature
- Equipped with castors, two with brakes, and plastic coated wire grid shelves

An optional product temperature probe is available and allows the controller to display the air and the product temperatures, performance graph available on request. Please contact your local VWR sales office for details.

Model	LKPv 6520	LKPv 6523	LKPv 8420	LKPv 1420	LKPv 1423
Capacity (l)	601		856	1427	
Temperature (°C)	–2...+15	0...+15	–2...+15		0...+15
Air circulation	Ventilated				
Display	Digital				
Defrost	Automatic				
Alarm	Audible and visual for temperature and door opening				
Shelves/drawers	4 grid shelves plastic-coated/-		5 adjustable, plastic coated grid shelves	8 grid shelves plastic-coated/-	
Door(s)	1 solid	1 glass	1 solid	2 solid	2 glass
Door lock	Yes				
Material	Exterior: steel, white Interior: chrome-nickel steel				
Specifications	Insulation: 83–60 mm 2 castors with brake				
Access ports	Yes				
W×D×H int. (mm)	533×650×1550	520×700×1550	620×850×1550	1263×650×1550	1250×700×1550
W×D×H ext. (mm)	700×830×2150		790×980×2150	1430×830×2150	
Weight (kg)	164	167	186	259	284

Type	Pk	Cat. No.
Laboratory refrigerator, MediLine, LKPv 6520	1	**472-2393**
Laboratory refrigerator, MediLine, LKPv 6523	1	**471-1072**
Laboratory refrigerator, MediLine, LKPv 8420	1	**472-0119**
Laboratory refrigerator, MediLine, LKPv 1420	1	**472-2391**
Laboratory refrigerator, MediLine, LKPv 1423	1	**471-1050**

MediLine, laboratory refrigerators, compact

Liebherr

LKUv 1610 (plain door)

LKv 3910 (plain door)

LKv 3912 (glass door)

Temperature range: +3 to +8 °C

These MediLine laboratory refrigerators with Comfort controller provide maximum storage space on a 60 cm wide footprint. The under bench models are 820 mm high and will fit under almost any laboratory bench. These appliances meet the exacting demands made of laboratory refrigeration.

The forced-air cooling system in conjunction with the accurate electronic controller system ensures high temperature consistency and uniform temperature distribution in the interior. The controller stores the minimum and maximum interior temperatures, the last three temperature alarms and power failures, together with the time, date and duration of the alarm. The digital display indicates the exact temperature and the operating status. There is a secondary safety thermostat to protect contents from freezing. The refrigerant type used is hydrocarbon.

- Electronic temperature control system with 0,1 °C temperature adjustment
- Temperature performance graph available on request
- Audible and visual alarms for door-open and temperature (user-adjustable)
- RS485 interface and volt-free contact for central monitoring
- Interior ceiling light with switch on glass door models, LKV 3913 with LED lighting

Model	LKUv 1610	LKUv 1613	LKv 3910	LKv 3913
Capacity (l)	141		360	
Temperature (°C)	+3...+8			
Air circulation	Ventilated			
Display	Digital			
Defrost	Automatic			
Alarm	Audible and visual			
Shelves/drawers	3 plastic coated grid shelves/-		5 plastic coated grid shelves/-	
Door(s)	Self-closing solid door and right hand reversible hinge	Self-closing glass door and right hand reversible hinge	Self-closing solid door and right hand reversible hinge	Self-closing glass door and right hand reversible hinge
Door lock	Yes			
Material	Exterior: enamel, white Interior: polystyrol	Exterior: steel, white Interior: ABS	Exterior: enamel, white Interior: polystyrol	Exterior: steel, white Interior: ABS
Access ports	Yes			
W×D×H int. (mm)	440×435×670		440×435×1635	
W×D×H ext. (mm)	600×615×820		600×615×1840	
Weight (kg)	40	43	71	84

Type	Pk	Cat. No.
Under bench MediLine refrigerator (dynamic cooling system), LKUv 1610	1	**471-0486**
Under bench MediLine refrigerator (dynamic cooling system), LKUv 1613	1	**471-1051**
Upright MediLine refrigerator (dynamic cooling system), LKv 3910	1	**471-0488**
Upright MediLine refrigerator (dynamic cooling system), LKv 3913	1	**471-1052**

Laboratory refrigerated cabinets, LKPv
Liebherr

Temperature range: -2 to 15 ° C

Ventilated cooling 5 °C, ±3 °C

Powder coated housing, 83 mm insulation to allow for temperature control with ambient temperature at +40 °C (30 °C on glass doors), stainless steel inner liner with removable racks and outlet water cleaning.

- Electronically controlled with LCD display
- Temperature and door open alarms
- Integrated 7 day data logger, the data is transferred by infrared interface or RS485 connection
- Adjustable headband for a technical access from the front
- Hot gas defrost with condensate evaporation
- The reversible lockable door closes automatically at an angle below 45° (stable at 90°)

Access port, 8 mm diameter for PT100 probe (not supplied) for centralised monitoring of temperature, performance graph available on request. These models are supplied with castors Ø 100 mm, 2 with brakes

Model	LKPv 1430	LKPv 6530	LKPv 1432	LKPv 6532
Capacity (l)	1430	630	1230	630
Temperature (°C)	–2... +15		+2...+ 15	
Air circulation	Ventilated			
Display	LCD			
Defrost	Yes			
Alarm	Door and temperature			
Shelves/drawers	2×4 shelves	4 shelves	2×4 shelves	4 shelves
Door(s)	2 plain doors	1 plain door	2 glass doors	1 glass door
Door lock	Yes			
Material	Exterior: steel, epoxy coated, white Interior: stainless steel			
W×D×H int. (mm)	1240×650×1550	510×650×1550	1240×650×1550	533×650×1550
W×D×H ext. (mm)	1430×830×2155	700×830×2150	1430×830×2150	700×830×2155
Weight (kg)	213	132	230	141

Type	Pk	Cat. No.
With plain door		
Laboratory refrigerated cabinet, LKPv 1430	1	**471-0665**
Laboratory refrigerated cabinet, LKPv 6530	1	**471-0667**
With glass door		
Laboratory refrigerated cabinet, LKPv 1432	1	**471-0666**
Laboratory refrigerated cabinet, LKPv 6532	1	**471-0668**

Pharmacy refrigerators, MKv and MKUv to DIN 58345
Liebherr

Temperature range: +3 to +8 °C

These Pharmacy refrigerators are specifically designed for the safe storage of pharmacy products compliant with DIN 58345. They provide maximum storage space on a 60 cm footprint and the under bench models are only 820 mm high (MKUv) so will fit under almost any bench.

The forced air cooling system in conjunction with the electronic controller system ensures high temperature consistency and uniform temperature distribution. The Comfort controller stores the minimum and maximum interior temperatures, the last three temperature alarms, together with the time, date and duration of the alarm event. The digital display indicates the exact temperature and the operating status. There is a secondary safety thermostat to protect contents from temperatures below +2 °C. Additionally, the power failure alarm display indicates an audible and visual signal for at least 12 hours immediately upon power failure (the alarm can be switched off immediately).

The interior is white, seamless plastic with rounded corners for easy cleaning. The close-mesh grid shelves ensure that items do not tip over; the shelves are removable at 90° door opening.

- Electronic temperature control system with 0,1 °C temperature adjustment
- Audible and visual alarms for door open and temperature (user-adjustable)
- RS485 interface and volt-free contact for central monitoring
- Interchangeable self-closing door with lock
- LED interior ceiling light, with switch on glass door models
- Refrigerant used is hydrocarbon: R 600a

Options: Height adjustable legs for models MKv 3910 and MKv 3913; stacking kit and roller set for models MKUv 1610 and MKUv 1613. The pre-drilled access port is designed to accept a PT100 sensor or similar

Model	MKUv 1610	MKUv 1613	MKv 3910	MKv 3913
Capacity (l)	141		360	
Temperature (°C)	+3...+8			
Air circulation	Ventilated			

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Display	Digital			
Defrost	Automatic			
Alarm	Audible and visual for door-open and temperature			
Shelves/drawers	3 adjustable, plastic coated grid shelves		5 adjustable, plastic coated grid shelves	
Door(s)	1 self-closing solid door and right hand reversible hinge	1 self-closing glass door and right hand reversible hinge	1 self-closing solid door and right hand reversible hinge	1 self-closing glass door and right hand reversible hinge
Door lock	Yes			
Material	Exterior: steel, epoxy coated, white Interior: stainless steel	Exterior: steel, white Interior: ABS	Exterior: steel, epoxy coated, white Interior: stainless steel	Exterior: steel, white Interior: ABS
Access ports	Yes			
W×D×H int. (mm)	440×435×670		440×435×1635	
W×D×H ext. (mm)	600×615×820		600×615×1840	
Weight (kg)	40	46	71	91

Type	Pk	Cat. No.
Pharmacy refrigerator, MKUv 1610, with plain door	1	**472-0121**
Pharmacy refrigerator, MKUv 1613, with glass door	1	**471-1053**
Pharmacy refrigerator, MKv 3910, with plain door	1	**472-0123**
Pharmacy refrigerator, MKv 3913, with glass door	1	**471-1054**

Refrigerators, GRAM

Temperature range: +2 to +12 °C

The unique air distribution system combined with a finned tube evaporator results in excellent temperature consistency for biostorage: the evaporator design eliminates the risk of "cold walls", which can damage delicate items stored touching the sides of the cabinet. Whilst the air distribution system which directs the cold air down the rear of the cabinet and back up to the evaporator fan at the top, ensures a uniform temperature throughout.

Refrigerators Compact

The Compact range cabinets are general purpose commercial refrigerators for basic biostorage purposes where the focus is on reliability and refined performance. The small footprint of this design also makes it the perfect storage solution when space is limited. The Compact 210 cabinets can be used under counter, stacked or wall mounted. Build together sets (for stacking) and wall suspension sets come at an additional cost. Please contact your local VWR office for further details.

- Multi-purpose controller with visual temperature alarm and acoustic door open alarm
- Easy to clean plastic moulded interior walls
- Reversible door with full height integrated handle
- Environmentally friendly design (insulation is based on cyclopentane)
- Cabinet temperature is easily set and checked on the panel above the door
- The electronic thermostat ensures a uniform, correct temperature

Note: Options include glass doors (with LED light built into door), legs as an alternative to the lockable castors on 410 and 610 models, please contact your local VWR office for details.

Refrigerators Midi

Midi's are fridges of high quality in every detail, but are also economical to purchase and run. They offer maximum storage space but take up limited space in the laboratory. These cabinets are highly reliable with superb temperature control. This is linked to the unique Gram air distribution system that maintains correct and uniform temperature throughout the cabinet.

- The simple to use control system has built-in alarms and emergency programs that maintain temperature until any faults are remedied
- Full-height handle integrated into the door
- Unique air distribution system ensures the cabinet maintains a uniform set temperature
- Removable sealing strips which can be easily removed without the use of tools, for cleaning and replacement
- Bright halogen lamps light up when the door is open; at the same time the air distribution fan is switched off, thus minimising cold air loss

Refrigerators Plus

The Plus range of cabinets are general purpose commercial fridges with stainless steel/aluminium constructed interior and exterior. Ideal for basic biostorage purposes combining excellent reliability, great value and ample storage space. Volt-free contacts allow connection to remote building management systems.

- The simple to use control system has built-in visual temperature alarm and acoustic door open alarm; the control panel can be locked to avoid tampering
- Self-closing door has foot pedal opener, integrated full height handle and lock
- Door seals are easily removed without the use of tools, for cleaning and replacement
- Bright halogen lamps light up when the door is open; at the same time the air distribution fan is switched off, minimising cold air loss

Model	K210 LG	K410 LG	K610 LG	K425 LSH	KG425 LSH	K625 LSH	KG625 LSH	K600 RSH	K660 RSH	K1270 RSH	K1400 RSH
Capacity (l)	125	346	583	425		625		600	660	1270	1400
Temperature (°C)	+2...+12										
Air circulation	Ventilated										
Display	Digital			LED							
Defrost	Automatic										
Alarm	Visual temperature alarm and audible door alarm										

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Shelves/ drawers	3 plastic-coated wire shelves/-	6 plastic-coated wire shelves/-	4 plastic-coated wire shelves/-	4 white plastic-coated wire shelves		4 grey plastic-coated wire shelves		4 grey plastic-coated wire shelves/-	5 grey plastic-coated wire shelves/-	8 grey plastic-coated wire shelves/-	10 grey plastic-coated wire shelves/-
Door(s)	1 solid, right, reversible			1 solid, right, reversible, self-closing	1 glass, right, reversible, self-closing	1 solid, right, reversible, self-closing	1 glass, right, reversible, self-closing	1 solid, right, reversible, self-closing		2 solid, self-closing	
Door lock	Yes										
Material	Exterior: steel, white lacquered Interior: ABS, white		Exterior: steel, white lacquered Interior: ABS, grey	exterior: white laquered interior: aluminium, bottom pan in stainless steel				Exterior and Interior: stainless steel, aluminium			
Specifications	Adjustable feet (front); weels (rear)	4 lockable castors									
W×D×H ext. (mm)	595×640× 830	595×640× 1900	695×868× 2000	600×731×2000		815×731×2000		695×876× 2010	695×876× 2160	1390×876× 2010	1390×876× 2150
Weight (kg)	46	75	110	114		121		113	124	249	259

Type	Pk	Cat. No.
Refrigerators, Compact		
Under bench refrigerator, Compact K210 LG	1	**471-0831**
Upright refrigerator, Compact K410 LG	1	**471-0832**
Upright refrigerator, Compact K610 LG	1	**471-0833**
Refrigerators, Midi		
Upright refrigerator Midi K425 LSH - plain door	1	**471-0543**
Upright refrigerator Midi KG425 LSH - glass door	1	**471-0545**
Upright refrigerator Midi K625 LSH - plain door	1	**471-0544**
Upright refrigerator Midi KG625 LSH - glass door	1	**471-0546**
Refrigerators, Plus		
Upright refrigerator Plus K600 RSH	1	**471-0531**
Upright refrigerator Plus K660 RSH	1	**471-0532**
Upright refrigerator Plus K1270 RSH	1	**471-0530**
Upright refrigerator Plus K1400 RSH	1	**471-0827**

Pharmacy refrigerators, Lec

Temperature: +2 to +8 °C

For safe storage of vaccines, insulin and general drugs in pharmacies, hospital wards, clinics, surgeries, nursing homes and veterinary dispensaries. With storage bin.

- Unique adjustable air sensing thermostat gives storage temperature range of 5 °C, ±0,3 °C and external temperature display with max/min memory
- Internal air circulating fan to give close temperature control and rapid temperature pull down
- Fully automatic defrosting
- Lockable door for security
- Adjustable plastic coated wire mesh shelves

Model	PE 102C	PE 109C	PE 207C	PE 307C	PE 1607C	PSR 151	PSR 273	PG 102C	PG 207C	PG 307C	PG 1607C	PGR 151	PGR 273
Capacity (l)	41	45	82	107	444	151	273	41	82	107	444	151	273
Temperature (°C)	+2...+8												
Air circulation	Ventilated												
Display	Digital												
Defrost	Automatic												
Alarm	Audible and visual temperature alarm												
Shelves/ drawers	2 wire shelves/-	1 wire shelf/1 wire drawer	2 wire shelves/1 wire drawer		5 wire shelves/-	3 plastic coated wire mesh shelves/1 basket	5 plastic coated wire mesh shelves/1 basket	2 wire shelves/-	2 wire shelves/1 wire drawer		5 wire shelves/-	3 wire shelves/1 wire drawer	5 wire shelves/1 wire drawer
Door(s)	1 solid, hinged reversible door							1 glass door					
Door lock	Yes												
Material	Exterior: steel, epoxy coated, white Interior: ABS											exterior: white interior: plastic	
W×D×H int. (mm)	245×310 ×400	410×270 ×400	419×315 ×540	403×400 ×700	590x670 x1170	500×450 ×705	480×445 ×1382	245×310 ×400	419×315 ×540	403×400 ×700	590x670 x1170	500×450 ×705	480×445 ×1382
W×D×H ext. (mm)	379×500 ×702	470×465 ×530	502×540 ×660	495×620 ×830	685×910 ×1688	595×610 ×845	595×640× 1565	379×500 ×702	502×540 ×660	495×620 ×830	685×910 ×1688	595×610 ×845	595×640 ×1565
Weight (kg)	23,5	20	28	32	96	37	60	25,5	30	37	106	42	69

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Type	Pk	Cat. No.
PE refrigerators with solid door		
Pharmacy and vaccine refrigerator, PE 102C	1	**472-1045**
Pharmacy and vaccine refrigerator, PE 109C	1	**471-0816**
Pharmacy and vaccine refrigerator, PE 207C	1	**471-0583**
Pharmacy and vaccine refrigerator, PE 307C	1	**471-0817**
Pharmacy and vaccine refrigerator, PE 1607C	1	**471-0582**
PSR refrigerators with solid door		
Pharmacy and vaccine refrigerator, under bench, PSR 151	1	**471-0822**
Pharmacy and vaccine refrigerator, upright, PSR 273	1	**471-0823**
PG refrigerators with glass door		
Pharmacy and vaccine refrigerator, PG 102C	1	**471-0568**
Pharmacy and vaccine refrigerator, PG 207C	1	**471-0586**
Pharmacy and vaccine refrigerator, PG 307C	1	**471-0818**
Pharmacy and vaccine refrigerator, with lockable roller castors, PG1607C	1	**471-0569**
PGR refrigerators with glass door		
Pharmacy and vaccine refrigerator, PGR 151	1	**471-0819**
Pharmacy and vaccine refrigerator, PGR 273	1	**471-0820**

Pharmacy/vaccine refrigerators, Labcold

Temperature: +2 to +8 °C

Pharmacy refrigerators designed for dispensary, surgery, ward and general use for the storage of drugs and vaccines under controlled conditions in line with the "Code of Ethics and Standards" of the Royal Pharmaceutical Society of Great Britain. Where necessary, to achieve the required temperature control, circulating fans are fitted. All models feature automatic temperature data logging for up to 13 months, remote alarm contacts and alarm battery back-up.

- Digital temperature display with max./min. record
- Lockable door
- High/low temperature alarm, door open alarm
- Powered by the unique IntelliCold™ controller for superior temperature uniformity and energy consumption, plus extra functions designed to storetemperature sensitive pharmaceuticals in optimum conditions and assist busy professionals with regulatory requirements
- CFC, HCFC and 100% ammonia free

Conforms to RPS guidelines and to Department of Health "Green Book" requirements.

Model	RLDF0110	RLDF0210	RLDF0510	RLDF1010	RLDF1310	RLDF1510	RLDF18041	RLDG0510	RLDG1010	RLDG1510
Capacity (l)	36	66	150	300	360	430	500	150	300	430
Temperature (°C)	+2...+8									
Air circulation	Ventilated									
Display	Digital									
Defrost	Automatic									
Alarm	Audible and visual									
Shelves/ drawers	2 plastic coated wire mesh shelves/-	3 plastic coated wire mesh shelves/-		6 plastic coated wire mesh shelves/-			5 plastic coated wire mesh shelves/-	3 plastic coated wire mesh shelves/-	6 plastic coated wire mesh shelves/-	
Door(s)	1 solid							1 glass		
Door lock	Yes									
Material	Exterior: enamel, white Interior: metal	Exterior: steel Interior: aluminium	Exterior: enamel, white Interior: steel, white painted		Exterior: enamel, white Interior: ABS	Exterior: steel Interior: aluminium	Exterior: enamel, white Interior: ABS	Exterior: steel Interior: aluminium	Exterior: enamel, white Interior: steel, white painted	Exterior: steel Interior: aluminium
W×D×H ext. (mm)	450×485×535	450×485×720	600×610×820	600×660 ×1500	600×615 ×1885	600×700 ×1860	765×725 ×1710	600×600×820	600×660 ×1500	600×700 ×1860
Weight (kg)	26	28		64	86	74	90	43	72	84

Type	Pk	Cat. No.
Refrigerators with solid door		
Wall mounted/bench top vaccine and pharmacy refrigerator, RLDF0110	1	**471-0918**
Wall mounted/bench top vaccine and pharmacy refrigerator, RLDF0210	1	**471-1100**
Under bench vaccine and pharmacy refrigerator, RLDF0510	1	**471-0919**
Upright vaccine and pharmacy refrigerator, RLDF1010	1	**471-0920**
Upright vaccine and pharmacy refrigerator, RLDF1310	1	**471-1098**
Upright vaccine and pharmacy refrigerator, RLDF1510	1	**471-1101**
Upright vaccine and pharmacy refrigerator, RLDF18041	1	**471-1102**
Refrigerators with glass door		
Under bench vaccine and pharmacy refrigerator, RLDG0510	1	**471-0921**
Upright vaccine and pharmacy refrigerator, RLDG1010	1	**471-0922**
Upright vaccine and pharmacy refrigerator, RLDG1510	1	**471-1103**

Pharmaceutical refrigerators

MED-125

MED-468

Temperature range: +2 to 20 °C

- Suitable for integration into lab benching
- Automatic defrosting
- Recirculating air cooling (except for MED-85 and MED-125)
- Melt water evaporation
- Potential-free contact, RS485 interface (except for MED-85 and MED-125)
- Optical and acoustic alarm to warn of temperature changes (except for MED-85 and MED-125)
- Minimum/maximum temperature memory (except for MED-85 and MED-125)
- Key switch protected control panel (except for MED-85 and MED-125)
- Outer panels made of galvanised sheet steel, white coated (except MED-520-CR which is made of stainless steel 4301)
- Interior made of impact resistant white plastic with moulded shelf guides or smooth aluminium sheet

Other accessories and options available upon request. Available with glass door.

Model	MED-85	MED-100	MED-125	MED-288	MED-340	MED-468	MED-520	MED-520-CR	MED-600-S
Capacity (l)	80	95	120	280	330	460	500		600
Temperature (°C)	+2...12	+2...20							
Air circulation	Non ventilated	Ventilated							
Defrost	Yes								
Alarm	-	Audible and visual							
Shelves/drawers	1/3 (top drawer lockable)	1/3		-/5	-/9	-/10	-/12		-/13 (4 top drawers are transparent)
Door(s)	1 (plain)								
Door lock	Yes								
Material	Exterior: steel Interior: plastic			Exterior: steel Interior: aluminium				Exterior: stainless steel Interior: aluminium	Exterior: steel Interior: aluminium
Specifications	Insulation: 42 mm thick of high grade foamed and pro-environmental material	Insulation: 50 mm thick of high grade foamed and pro-environmental material	Insulation: 50 mm thick of high grade foamed and pro-environmental material_ x000D_ Adjustable feet	Insulation: 55 mm thick of high grade foamed and pro-environmental material_x000D_ Adjustable feet			Insulation: 70 mm thick of high grade foamed and pro-environmental material_x000D_ Adjustable feet		Insulation: 60 mm thick of high grade foamed and pro-environmental material_ x000D_ Adjustable feet
W×D×H ext. (mm)	470×510×740	540×535×820	540×535×810	670×700×1240	670×640×1715	740×740×1715	770×760×1930		510×1000×2120
Weight (kg)	37	50	47	87	100	130	150		

Type	Pk	Cat. No.
Pharmaceutical refrigerator, MED-85	1	**472-0310**
Pharmaceutical refrigerator, MED-100	1	**472-0320**
Pharmaceutical refrigerator, MED-125	1	**471-2535**
Pharmaceutical refrigerator, MED-288	1	**472-0113**
Pharmaceutical refrigerator, MED-340	1	**471-2536**
Pharmaceutical refrigerator, MED-468	1	**471-2537**
Pharmaceutical refrigerator, MED-520	1	**472-0350**
Pharmaceutical refrigerator, MED-520-CR (outer panel in stainless steel 4301)	1	**471-2538**
Pharmaceutical refrigerator, MED-600-S	1	**471-2539**

Freezers, GRAM

Temperature range: –5 to –25 °C

The unique air distribution system combined with a finned tube evaporator results in excellent temperature consistency for biostorage: the evaporator design eliminates the risk of "cold walls", which can damage delicate items stored touching the sides of the cabinet. Whilst the air distribution system which directs the cold air down the rear of the cabinet and back up to the evaporator fan at the top, ensures a uniform temperature throughout.

Freezers Compact

The Compact range cabinets are general purpose commercial freezers for basic biostorage purposes where the focus is on reliability and refined performance. The small footprint of this design also makes it the perfect storage solution when space is limited. The Compact 210 cabinets can be used under bench, stacked or wall mounted. Build together sets (for stacking) and wall suspension sets come at an additional cost. Please contact us for further details.

- Multi-purpose controller with visual temperature alarm and acoustic door open alarm
- Easy to clean plastic moulded interior walls
- Reversible door with full height integrated handle
- Environmentally friendly design (insulation is based on cyclopentane)
- Cabinet temperature is easily set and checked on the panel above the door
- The electronic thermostat ensures a uniform, correct temperature

Note: Options include glass doors (with LED light built into door), legs as an alternative to the lockable castors on 410 and 610 models, please contact your local VWR office for details.

Freezers Midi

Midi's are freezers of high quality in every detail, but are also economical to purchase and run. They offer maximum storage space but take up limited space in the laboratory. These cabinets are highly reliable with superb temperature control. This is linked to the unique Gram air distribution system that maintains correct and uniform temperature throughout the cabinet.

- The simple to use control system has built-in alarms and emergency programs that maintain temperature until any faults are remedied
- Full-height handle integrated into the door
- Unique air distribution system ensures the cabinet maintains a uniform set temperature
- Removable sealing strips which can be easily removed without the use of tools, for cleaning and replacement
- Bright halogen lamps light up when the door is open; at the same time the air distribution fan is switched off, thus minimising cold-air loss

Freezers Plus

The Plus range of cabinets are general purpose commercial fridges and freezers with stainless steel/aluminium constructed interior and exterior. Ideal for basic biostorage purposes combining excellent reliability, great value and ample storage space. Volt-free contacts allow connection to remote building management systems.

- The simple to use control system has built-in visual temperature alarm and acoustic door open alarm; the control panel can be locked to avoid tampering
- Self-closing door has foot pedal opener, integrated full height handle and lock
- Door seals are easily removed without the use of tools, for cleaning and replacement
- Bright halogen lamps light up when the door is open; at the same time the air distribution fan is switched off, minimising cold air loss

Model	F210 LG	F410 LG	F610 LG	F425 LSH	F625 LSH	F600 RSH	F660 RSH	F1270 RSH	F1400 RSH
Capacity (l)	125	346	583	425	625	600	660	1270	1400
Temperature (°C)	–5...–22			-5...-25					
Air circulation	Ventilated								
Display	Digital			LED					
Defrost	Automatic								
Alarm	Visual temperature alarm and audible door alarm								
Shelves/drawers	3 plastic-coated wire shelves/-	6 plastic-coated wire shelves/-	4 plastic-coated wire shelves/-	4 white plastic-coated wire shelves	4 grey plastic-coated wire shelves	4 grey plastic-coated wire shelves/-	5 grey plastic-coated wire shelves/-	8 grey plastic-coated wire shelves/-	10 grey plastic-coated wire shelves/-
Door(s)	1 solid, right-hinged, reversible			1 solid, right-hinged, reversible, self-closing		1 solid, right-hinged, reversible and self-closing		2 solid, self-closing	
Door lock	Yes								

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Material	Exterior: steel, white lacquered Interior: ABS, white		Exterior: steel, white lacquered Interior: ABS, grey	exterior: white laquered interior: aluminium, bottom pan in stainless steel		Exterior and Interior: stainless steel, aluminium			
Specifications	Adjustable feet at the front and wheels at the rear	4 lockable castors		recessed wheels		4 lockable castors			
Access ports				no					
W×D×H ext. (mm)	595×640×830	595×640×1900	695×868×2000	600×731×2000	815×731×2000	695×876×2010	695×876×2160	1390×876×2010	1390×876×2150
Weight (kg)	46	78	115	118	128	120	130	255	265

Type	Pk	Cat. No.
Freezers Compact		
Under bench freezer, Compact F210 LG	1	**471-0828**
Upright freezer, Compact F410 LG	1	**471-0829**
Upright freezer, Compact F610 LG	1	**471-0830**
Freezers		
Upright freezer Midi F425 LSH - plain door	1	**471-0547**
Upright freezer Midi F625 LSH - plain door	1	**471-0548**
Freezers Plus		
Upright freezer Plus F600 RSH	1	**471-0534**
Upright freezer Plus F660 RSH	1	**471-0535**
Upright freezer Plus F1270 RSH	1	**471-0533**
Upright freezer Plus F1400 RSH	1	**471-0826**

Refrigerated chromatography cabinets, Eco Pro G2

Temperature range: +1 to +4 °C

The EcoPro G2 has been loaded with new design, quality, reliability and perfomance features.

- Thick and robust cabinet design with advanced thermal efficiency
- 'Smartphone style' touch sensitive hidden-until-lit control panel with unique high visibility temperature display combines sophistication with functionality
- Ergonomic door and handle design for ease of opening and cleaning
- With 'Fluid Food-Fresh Dynamics' modelling: advanced Circulair II air distribution system maximises efficient operation even when shelves are fully loaded

Model	EP700G-SS	EP1440G-SS
Capacity (l)	600	1350
Temperature (°C)	+1...+4	
Display	Digital	
Defrost	Automatic	
Alarm	Audible and visual	
Shelves/drawers	3/-	6/-
Door(s)	1 glass	2 glass
Material	Exterior: stainless steel Interior: aluminium	
W×D×H ext. (mm)	700×820×2080	1440×820×2080
Weight (kg)	121	183

Type	Pk	Cat. No.
Upright refrigerated cabinet EP700H-SS	1	**471-1107**
Upright refrigerated cabinet EP1440H-SS	1	**471-1104**

Description	Pk	Cat. No.
Accessories		
Double electrical socket (IP56)	1	**560-0014**
Frame support rack (rear fixed)	1	**560-0015**
Full stainless steel shelf (800×1200×500 mm) - 3 shelves	1	**560-0016**
Half stainless steel shelf (800×600×500 mm) - 3 shelves	1	**560-0017**
Quarter stainless steel shelf (800×600×275 mm) - 3 shelves	1	**560-0018**
Full stainless steel shelf (800×1200×500 mm) - 2 shelves	1	**560-0019**
Half stainless steel shelf (800×600×500 mm) - 2 shelves	1	**560-0020**
Quarter stainless steel shelf (800×600×275 mm) - 2 shelves	1	**560-0021**
2× Double electrical socket (IP56)	1	**560-0022**
Access port (Ø 65 mm)	1	**560-0023**
Internal socket with safety cut-out switch	1	**560-0024**

Commercial fridge/freezer
Liebherr

Temperature range: +1 to 15 °C for the fridge and –14 to –28 °C for the freezer

This cabinet is ideal for use in a restricted space.

- Moulded polystyrol interior (for ease of cleaning and improved hygiene)
- Tropicalised to perform in ambient temperatures of up to +43 °C
- Dual controllers and dual compressors for optimum performance
- Electronic controller
- Static cooling system

Model	GCv 4060
Capacity (l)	361
Temperature (°C)	Fridge: +1...+15 Freezer:–14...–28
Display	Digital
Defrost	Fridge: automatic Freezer: manual
Alarm	Audible and visual
Shelves/drawers	Fridge: 4 grid shelves/- Freezer: -/3 grid drawers
Door(s)	1 door for the refrigerator 1 door for the freezer
Door lock	Yes
Material	Exterior: stainless steel Interior: ABS
W×D×H int. (mm)	440×435×1105
W×D×H ext. (mm)	600×615×2000
Weight (kg)	82

Type	Pk	Cat. No.
Commercial fridge/freezer, GCv 4060 (refrigerator at the top, freezer at the bottom)	1	**471-1113**

Combined laboratory fridge/freezer, MediLine
Liebherr

Temperature range: +3 to 8 °C (fridge); -9 to -30 °C (freezer)

Independent dual 'Comfort' refrigeration control and compression systems for both compartments so that the refrigerator and freezer sections can be operated separately.

- Electronic controllers (one for fridge, one for freezer)
- Self closing doors with ergonomic handles and door locks
- RS485 interface
- Three alarm event memory, door and temperature alarms can be customised to suit end user requirements
- Dual compressor and dual controller

Ordering information: An optional product temperature probe is available and allows the controller to display the air and the product temperatures. Please contact your local VWR office for details. Also please note that a spark-free version of this unit is available, LCexv 4010, please enquire for details.

Model	LCv 4010
Capacity (l)	240/105 (fridge/freezer)
Temperature (°C)	+3...+8/-9...-30 (fridge/freezer)
Display	Digital
Defrost	Off cycle defrost - fridge Static manual defrost - freezer
Alarm	Audible and visual
Shelves/drawers	4 plastic-coated wire shelves (fridge) / 3 clear solid fronted drawers (freezer)
Door(s)	Solid
Door lock	Yes

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Material	Exterior: steel, epoxy powder coated Interior: abrasion proof special plastic
W×D×H int. (mm)	440×435×1105
W×D×H ext. (mm)	600×615×2000
Weight (kg)	93

Type	Pk	Cat. No.
Combined fridge/freezer, white coated steel, LCv 4010, with right-hand reversible door hinges	1	**471-0696**

Laboratory fridge/freezer with Comfort electronic controller and spark-free interior, MediLine
Liebherr

Fridge/freezer with spark-free interior for storing explosive and highly flammable substances - for instance in the chemical industry or in special laboratories.

- Comfort electronic controller with digital temperature display enables temperatures to be set accurately
- Integrated data memory
- Dual controllers and dual compressors for optimum functionality
- 1-point calibration
- Access port for temperature sensor (Ø 10 mm)
- Convenient clear drawers (freezer part) with a transparent front providing a clear view of the products stored inside
- The doors are self-closing for convenient use, the door hinge is reversible and the gaskets are replaceable

Tested according to the 94/9 EC (ATEX 95) Directive. Rated as II 3G Ex nA II T6, suitable for storing explosive and highly flammable substances in sealed containers.

Ordering information: Please note that a non spark-free version is also available on request.

Model	LCexv 4010
Capacity (l)	Fridge: 240 Freezer: 105
Temperature (°C)	Fridge: +3...+8 Freezer: –9...–30
Display	Digital
Defrost	Fridge: automatic Freezer: manual
Alarm	Audible and visual
Shelves/drawers	Fridge: 4 glass shelves/- Freezer: 3 compartments
Material	Exterior: white coated steel Interior: fully moulded plastic, spark-free
W×D×H int. (mm)	Fridge: 440×435×1105 Freezer: 431×435×597
W×D×H ext. (mm)	Fridge: 600×615×2000
Weight (kg)	87

Type	Pk	Cat. No.
Laboratory fridge/freezer with Comfort electronic controller and spark-free interior, MediLine, LCexv 4010	1	**471-1071**

Combined fridge/freezers, spark-free, Labcold

Temperature range: +2 to 8 °C (fridge); -17 to -23 °C (freezer)

For laboratory and general use where there is a concern that volatile or flammable materials or components might be stored. Spark-free interior in both compartments.

- Independent refrigeration control systems for both sections so that the refrigerator and freezer sections can be operated separately
- Model RLFF13246/LK has a lockable door
- CFC and HCFC free

Ordering information: For details of optional extras and accessories, e.g. battery powered temperature display and min/max recorder, please contact your local VWR sales office.

Model	RLFF13246/LK	RLFF13246
Capacity (l)	230/160	
Temperature (°C)	Fridge: 2...+8 Freezer: -17...-23	
Air circulation	Non ventilated	
Display	Optional	
Defrost	Automatic (refrigerator only)	

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Shelves/drawers	4 glass shelves/4 plastic drawers	
Door(s)	2 solid doors	
Door lock	Yes	No
Material	Exterior: enamel, white Interior: ABS	
W×D×H ext. (mm)	595×630×1965	
Weight (kg)	82	80
Alarm	Optional	
Temperature display		

Type	Pk	Cat. No.
Combined fridge/freezer with lockable door, RLFF13246/LK	1	**471-0440**
Combined fridge/freezer, RLFF13246	1	**471-0141**

Economy basic refrigerators and freezers, Labcold

These models provide basic value-for-money refrigerated storage and are designed to offer the lowest price possible while still offering the confidence of Labcold long term reliability.

- Adjustable temperature
- Robust construction

Model	RLPL04043	RLFR1804	RLVL03203	RLVF1825
Capacity (l)	104	505	90	505
Temperature (°C)	+ 4 (nominal)		– 20 (nominal)	
Air circulation	Non ventilated	Ventilated	Non ventilated	
Defrost	Automatic		Manual	
Alarm	No			
Shelves/drawers	3 shelves/-	4 shelves/-	-/3 plastic drawers	6 shelves/-
Door(s)	Solid			
Door lock	No	Yes	No	Yes
W×D×H ext. (mm)	495×500×841	765×725×1710	500×490×835	765×725×1710
Weight (kg)	27	105	28	86
Temperature display	no	yes	no	yes

Type	Pk	Cat. No.
Basic refrigerator		
Under bench refrigerator, RLPL04043	1	**472-0117**
Upright refrigerator, RLFR1804	1	**472-1019**
Basic freezers		
Under bench freezer, RLVL03203	1	**471-0525**
Upright freezer, RLVF1825	1	**472-1036**

Refrigerators and freezers, Eco Pro, G2 series

Temperature range: +1 to +4 °C for the refrigerators and –18 to –21 °C for the freezers

Designed for the exacting storage and hygiene requirements of the food industry, these fridges and freezers are packed with features that transfer perfectly to the laboratory environment. EcoPro G2 has been designed specifically with these things in mind and is loaded with new design, quality, reliability, efficiency and performance features.

- Robust and substantial design with advanced thermal efficiency
- 'Smartphone style' touch sensitive hidden-until-lit control panel with unique high visibility temperature display combines sophistication with functionality
- Ergonomic door and handle design for ease of opening and cleaning
- With 'Fluid Food-Fresh Dynamics' modelling: Advanced Circulair II air distribution system maximises efficient operation even when shelves are fully loaded
- Revolutionary racking system means added stability with less components
- Improved 'Fuzzy Logic II' intelligent controller with 'e' mode drives reduced energy consumption
- Cyclopentane foam that maintains thermal efficiency longer than other insulation

Model	EP700H	EP1440H	EP700L	EP1440L
Capacity (l)	600	1350	600	1350
Temperature (°C)	+1...+4		–18...–21	
Display	Digital			
Defrost	Automatic			
Alarm	Visual and audible			

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Shelves/drawers	3/-	6/-	3/-	6/-
Door(s)	1 solid	2 solid	1 solid	2 solid
Material	Exterior: stainless steel Interior: aluminium			
W×D×H ext. (mm)	700×820×2080	1440×820×2080	700×820×2080	1440×820×2080
Weight (kg)	121	183	121	183

Type	Pk	Cat. No.
Refrigerators		
Upright refrigerator, EP700H	1	**471-1108**
Upright refrigerator, EP1440H	1	**471-1105**
Freezers		
Upright freezer, EP700L	1	**471-1109**
Upright freezer, EP1440L	1	**471-1106**

Spark-free MediLine laboratory freezers with ATEX certificate, LGUex and LGex
Liebherr

Temperature range: -9 to -26 °C and -9 to -30 °C

These spark-free laboratory freezers feature static cooling with an electronic controller system ensuring high temperature consistency and uniform temperature distribution. They are designed especially for storing explosive and highly flammable substances but are also suitable for non spark-free applications for the storage of temperature sensitive and high value product.

The controller stores the minimum and maximum interior temperatures, the last three temperature alarms and power failures, together with the time, date and duration of the alarm. The digital display indicates the exact temperature and the operating status. The refrigerant used is a hydrocarbon.

- Electronic control system with 0,1 °C temperature adjustment
- Audible and visual alarms for door-open and temperature (user-adjustable)
- RS485 interface volt-free contact
- On board data logging
- Pre-drilled access port
- Self-closing door with fitted lock

All Liebherr laboratory freezers with spark-free interior are tested according to the ATEX Directive. They have a Zone II nA interior for gases, taking into account the safety requirements of material category 3G. They are therefore suited for storing explosive and highly flammable substances.

Model	LGex 3410 MediLine	LGUex 1500 MediLine
Capacity (l)	310	139
Temperature (°C)	–9...–30	–9...–26
Air circulation	Non ventilated	
Display	Digital	
Defrost	Manual	
Alarm	Visual and audible (temperature and door)	
Shelves/drawers	-/8 drawers	-/3 drawers and 1 basket
Door(s)	Self-closing solid door, reversible	
Door lock	Yes	
Material	Exterior: white powder-coated Interior: moulded polystyrol	
W×D×H int. (mm)	420×400×1587	454×450×663
W×D×H ext. (mm)	600×615×1840	600×615×820
Weight (kg)	60	52

Type	Pk	Cat. No.
Upright spark-free laboratory freezer, MediLine, LGex 3410	1	**471-0481**
Under bench spark-free laboratory freezer, MediLine, LGUex 1500	1	**471-0483**

ATEX Freezers, Bioline range

Temperature range: –5 to –25 °C

BioLine is a comprehensive refrigeration range designed to deal with special bioscience needs. BioLine is distinct from other "spark-free" freezers on the market, as both the interior and the exterior of all units have been shown to comply with the European guidelines contained in the ATEX [EN/IEC60079-15] directive which means they are safe for use in potentially explosive atmospheres (Zone 2 [Category 3]).

The unique air distribution system is combined with BioLine's innovative "smart defrost" function to maintain temperature consistency for biostorage: Smart defrost is an intelligent automatic defrosting control that makes sure the absolute minimum of time and energy is used during each defrost cycle. Whilst the air distribution system which directs the cold air down a special plate to the rear of the cabinet interior and back up to the evaporator fan mounted in the top, ensures a uniform temperature throughout using only a minimum of energy. And by also using cyclopentane to foam the insulation material and hydrocarbon refrigerants, BioLine storage solutions have only minimal environmental impact.

- MPC 4.6 control unit provides access to audible and visual temperature alarms; high/low temperature log and out of range time/temperature history; audible and visual door open alarm; calibration of sensors
- Extra sensor (E-sensor) for temperature reference in the storage compartment
- Volt-free contact for external connection to building management system
- Smart defrost: intelligent automatic system makes sure an absolute minimum of time and energy is used during each defrost cycle
- Access port and door lock as standard
- Ventilated air circulation

BioCompact II freezers

BioCompact II is the entry level product range within BioLine. These freezer cabinets are for basic storage purposes where the focus is on reliability and stringent control. The interior is plastic for easy cleaning and the family incorporates cabinets with a small footprint (models 210 and 410) - perfect biostorage solution when space is limited.

Note: BioCompact RF210 and RF410 models are also offered without audible temperature alarms or E-sensor, this lower cost option is ideal if an in-house monitoring system is available. The 210 and 410 models are available with glass door (LED lighting built into door). BioCompact 210 cabinets may be stacked or can be wall hung. Stacked 210s can also be ordered built together in any combination – e.g. two fridges, two freezers or a fridge with a freezer. For assistance regarding any of these options please contact VWR for details.

BioMidi freezers

The BioMidi cabinets are designed to meet the majority of biomaterial freezer requirements, with very few limitations. The specifications include the major features from the top-of-the-range BioPlus models, but they are constructed from a combination of stainless steel and aluminium, BioMidi provides a lower cost option. In addition the BioMidi EF425 is available offering a -40 °C freezer version for an extended temperature range. The functional design of the BioMidi cabinet ensures easy, ergonomically correct access to the storage space. The BioMidi 625 offers ample storage space, whilst the BioMidi 425 takes up limited wall space in the laboratory. These cabinets are highly reliable with great temperature control.

Note: Options include stainless steel exterior and draft shield inner doors (help retain temperatures during door openings). Please contact VWR for full details.

BioPlus freezers

The BioPlus range is designed for storage of the most delicate biomaterials, in situations where even tiny fluctuations in conditions inside the storage cabinet can have a serious effect on the contents.

- Electrical automatic defrosting system
- Special Gram Multi Purpose Controller with LED display. A Gram Monitor is fitted on the control unit, enabling the transfer of information directly to a computer
- Foot pedal so that the cabinet is easy to open, with full access even when the user's hands are full

Note: Other variants of the BioPlus models are available; these include the smaller RF500, RF600W and RF660W (wide versions of the RF600D and RF660D) and the RF1400 - a taller version of the RF1270. To help retain temperatures during door openings draft shield inner doors are optional and all cabinets are available with stainless steel exteriors. For pricing please contact VWR for a quotation.

BioLine cabinets are designed to be customised to the specific requirements of each user. For this reason the cabinets listed are offered without interior accessories. Shelf options include plastic coated wire shelves (not suitable for use with draft shield inner doors), stainless steel wire shelves and stainless steel perforated shelves designed to provide maximum stability. Drawers are also available. For the BioCompact 210 and 410 units there are tight mesh plastic coated wire drawers (with two vertical dividers), the deeper plastic coated wire basket version or aluminium drawers with vertical and horizontal dividers and sliding drawers rails. For the larger upright models the aluminium drawers plus two stainless steel drawers options are available to choose from. The two steel versions differ only in terms of the weight they can hold, up to either 30 kg or 40 kg maximum. So long as there is the space, each cabinet can be configured with any combination of accessories. For full details and pricing information on the various options available, your local VWR sales office for details.

Model	RF210	RF410	RF610	EF425	RF425	RF625	RF1270	RF600D	RF660D
Capacity (l)	125	346	583	425		625	1270	600	660
Temperature (°C)	–5...–25			–5...–40	–5...–25				
Display	LED								
Defrost	Automatic								
Door(s)	1 solid						2 solid	1 solid	
Material	Exterior: steel, white lacquered Interior: ABS			Exterior: steel, white lacquered Interior: aluminium and stainless steel			Exterior: steel, white lacquered Interior: stainless steel		
Specifications	Recessed wheels and skids	Castors (legs available as cost free option)		Recessed wheels			Castors (legs available as cost free option)		
W×D×H ext. (mm)	595×640×830	595×640×1885	695×868×1984	600×731×2000		815×731×2000	1390×876×1984	695×876×1984	815×756×2132

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Type	Pk	Cat. No.
BioCompact II freezers		
Under bench freezer, BioCompact II RF210 LG (ATEX compliant)	1	**471-0807**
Upright freezer, BioCompact II RF410 LG (ATEX compliant)	1	**471-0808**
Upright freezer, BioCompact II RF610 LG (ATEX compliant)	1	**471-0809**
BioMidi freezers		
Upright freezer, white, BioMidi EF425 LG (ATEX compliant)	1	**471-0842**
Upright freezer, white, BioMidi RF425 LG (ATEX compliant)	1	**471-0509**
Upright freezer, white, BioMidi RF625 LG (ATEX compliant)	1	**471-0510**
BioPlus freezers		
Upright freezer, BioPlus, RF1270 LG (ATEX compliant)	1	**471-0505**
Upright freezer, BioPlus, RF600 D LG (ATEX compliant)	1	**471-0506**
Upright freezer, BioPlus, RF660 D LG (ATEX compliant)	1	**471-0507**

Laboratory freezers, spark-free, Labcold

Chest freezer

Upright freezer

Under bench freezer

Temperature: –20 °C

Designed for the storage of frozen biological and laboratory samples. For laboratory and general use where there is a concern with volatile or flammable materials.

- Spark-free interiors for safety with no source of arc, spark or heating which might ignite flammable vapours
- Operator controlled defrosting for improved temperature stability
- CFC- and HCF-free

Ordering information: For details of optional extras and accessories please contact your local VWR office.

Model	RLVF02203	RLVF04202A/LK	RLVF04202A	RLVF14201	RLCF0720	RLCF1520	RLCF2120
Capacity (l)	36	110		375	215	447	607
Temperature (°C)	–20						
Display	Optional			Digital	-		
Defrost	Manual						
Alarm	Optional				Visual for high temperature		
Shelves/drawers	1 wire mesh shelf/-	4 plastic drawers separated by fixed refrigerated shelves		6 wire mesh fixed shelves/-			
Baskets					1 wire mesh basket	2 wire mesh baskets	3 wire mesh baskets
Door lock	No	Yes	No	Yes			
Material	Exterior: enamel, white Interior: ABS				Exterior: enamel, white Interior: aluminium, white painted		
W×D×H ext. (mm)	440×500×515	545×565×850		595×640×1850	720×730×860	1300×730×860	1700×730×860
Weight (kg)	19	38	39	85	46	68	82

Type	Pk	Cat. No.
Upright models		
Laboratory under bench freezer, spark-free RLVF02203	1	**471-0853**
Laboratory under bench freezer, spark-free RLVF04202A/LK	1	**471-0444**
Laboratory under bench freezer, spark-free RLVF04202A	1	**471-0443**
Laboratory upright freezer, spark-free RLVF14201	1	**472-1035**
Chest models		
Laboratory chest freezer, spark-free RLCF0720	1	**471-0075**
Laboratory chest freezer, spark-free RLCF1520	1	**471-0076**
Laboratory chest freezer, spark-free RLCF2120	1	**471-0077**

Laboratory freezers, spark-free, ISU and LSF, Lec

Freezer, underbench, ISU27

Freezer, underbench, LSF151

Freezer, upright, ISU37

Temperature range: –18 to –20 or –25 °C

Lec laboratory spark-free freezers offer safe, reliable storage of volatile liquids, reagents, poisons and samples. They have spark-free interiors to reduce the risk of internal explosions, CFC- and HCFC-free refrigeration systems ensuring minimal risk to the environment and locks to prevent theft or unauthorised access.

- Manual defrost
- Temperature alarm
- Reversible door

Model	ISU27	ISU37	LSF151	LSF232
Capacity (l)	50	102	151	232
Temperature (°C)	– 18...– 20		– 18...– 25	
Defrost	Manual			
Alarm	Audible and visual temperature alarm			
Shelves/drawers	1 wire shelf/-	2 wire shelves/-	-/-	2 compartments with drop-down fronts and 4 solid drawers
Baskets	-	1 wire basket	3 wire baskets with wire shelves beneath	-
Door(s)	Solid, reversible			
Door lock	Yes			
W×D×H ext. (mm)	500×510×562	495×580×830	595×640×845	595×640×1570
Weight (kg)	17	33	36	60

Type	Pk	Cat. No.
Upright freezer, ISU27	1	**471-0577**
Upright freezer, under bench, ISU37	1	**471-0564**
Upright freezer, under bench, LSF151	1	**471-0836**
Upright freezer, LSF232	1	**471-0837**

Universal upright freezers
Liebherr

GX 823

G 5216

Temperature range: –18 to –25 °C

These are general purpose freezers with static cooling - ideal for the storage of non critical products. Spacious, energy-saving, these upright freezers are highly economical with optimised cooling systems and compressors. They use very little electricity and are highly user friendly. All these models are equipped with a recovery defrost water system. All models include SuperFrost technology which makes freezing simple and saves energy, it quickly reduces the temperature to –32 °C.

- Electronic temperature control
- All drawers can be removed to create larger storage space

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Model	GX 823	GP 1376	GP 2433	GP 2733
Capacity (l)	67	101	192	226
Temperature (°C)	–18...–25			
Air circulation	Non ventilated			
Display	LCD	Digital	LCD	
Defrost	Manual			
Alarm	No	Audible and visual		
Shelves/drawers	-/2	-/4	-/6	-/7
Door(s)	1 reversible solid door			
Material	Steel			
Energy class	A+	A++		
W×D×H ext. (mm)	553×624×631	553×624×851	600×632×1447	600×632×1644

Type	Pk	Cat. No.
GX, GP models		
Table top freezer, GX 823	1	**471-1028**
Upright freezer, GP 1376	1	**471-1021**
Upright freezer, GP 2433	1	**471-1067**
Upright freezer, GP 2733	1	**471-1068**

Professional upright freezers
Liebherr

Temperature range: -9 to -26 °C / -14 to -28 °C

These models are commercial freezers with static cooling.

- Digital display
- Manual defrosting
- Reversible and lockable door with self closing at 45° (stable at 90°)
- Electronic temperature control (not for GG 4010)

Model	GGU 1400	GGU 1500	GG 4010	G 5216	GG 5210-740	GG 5210
Capacity (l)	143		382	454	513	
Temperature (°C)	–9...–26		–14...–28			
Air circulation	Non ventilated					
Display	Digital			LED	Digital	
Defrost	Manual					
Shelves/drawers	3 wire shelves/-	3 drawers + 1 basket	6 + 3 baskets	-/7×2	-/14 heavy duty plastic drawers	14 (2×7) baskets
Door lock	Yes					
Material	Exterior: steel Interior: plastic					
W×D×H int. (mm)	474×443×676		457×480×1686	607×560×1510		
W×D×H ext. (mm)	600×615×830		600×680×1900	750×760×1725	750×750×1864	
Weight (kg)	34	41	85	104	107	

Type	Pk	Cat. No.
Under bench freezer, GGU 1400	1	**471-1065**
Underbench freezer, GGU 1500	1	**471-0472**
Upright freezer, GG 4010	1	**471-0913**
Upright freezer, G5216	1	**472-2383**
Upright freezer, GG 5210-740	1	**471-0914**
Upright freezer, GG 5210	1	**472-2384**

Professional upright freezers, GGPv
Liebherr

Temperature range from -10 to -35 °C

Commercial freezer models featuring automatic defrost.

- Indirect forced air cooling
- Electronic temperature controller with digital display, temperature and alarms
- Insulation 83 mm (temperature guaranteed at +43 °C)
- Automatic defrosting with evaporation of condensates
- Doors remain open at 90° and are self closing at less that 60°; reversible and lockable

Delivery information: These freezer cabinets are delivered with adjustable feet (150-180 mm), except models GGPV6570 and GGPV1470 which are supplied with castors.

Model	GGPv 6570	GGPv 1470
Capacity (l)	630	1430
Temperature (°C)	–10...–35	–10...–26
Display	Digital	
Defrost	Automatic	
Alarm	Audible and visual	
Shelves/drawers	4 plastic coated wire shelves/-	8 (2×4) plastic coated wire shelves/-
Door(s)	1 solid	2 solid
Door lock	Yes	
Material	Exterior and Interior: stainless steel	
Specifications	-	
W×D×H int. (mm)	510×650×1550	1240×650×1550
W×D×H ext. (mm)	700×830×2150	1430×830×2150
Weight (kg)	142	211

Type	Pk	Cat. No.
Upright freezer, GGPv 6570	1	**472-1058**
Upright freezer, GGPv 1470	1	**472-1054**

Laboratory freezers, MediLine, LGPv series
Liebherr

Temperature range: –10 to –26 °C and –10 to –35 °C

These are heavy duty MediLine models with forced air cooling. The controller features door and temperature alarms which can be customised to suit the end user. Controller can be locked. The refrigerant used is hydrocarbon.

- Back-up battery for 7,5 days data logging and 72 hours battery back up for controller in case of mains failure
- RS485 interface connection, volt-free contacts, pre-drilled access port and optional infrared key for data download
- Forced air ventilation with hot gas defrost – for very small internal temperature variation
- Multi-function digital display and electronic temperature controller with temperature spikes due to electronically controlled defrost programs
- Ergonomic handle and self closing doors
- Equipped with castors, two with brakes, and plastic plastic coated wire shelves

Ordering information: A range of accessories like product temperature probe, data download key, RS485 interface converter, etc are available, please contact your local VWR sales office for futher information. Temperature performance graphs available on request.

Model	LGPv 6520	LPGv 8420	LGPv 1420
Capacity (l)	600	856	1420
Temperature (°C)	–10...–35		–10...–26
Air circulation	Ventilated		
Display	LCD		
Defrost	Automatic		
Alarm	Audible and visual		
Shelves/drawers	4 adjustable grid shelves, plastic coated	5 shelves	8 adjustable grid shelves, plastic coated
Door(s)	1		2
Door lock	Yes		

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Material	Exterior: steel, white coated Interior: stainless steel		
Specifications	Insulation: 83-60 mm 2 castors with brake		
Access ports	Access port, Ø 8 mm diameter for PT100 probe (not supplied)		
W×D×H int. (mm)	533×650×1550	620×850×1550	1263×650×1550
W×D×H ext. (mm)	700×830×2150	790×980×2150	1430×830×2150
Weight (kg)	171	197	262

Type	Pk	Cat. No.
Laboratory upright freezer MediLine, LGPv 6520	1	**472-2390**
Laboratory upright freezer MediLine, LGPv 8420	1	**472-0118**
Laboratory upright freezer MediLine, LGPv 1420	1	**472-2389**

Standard chest freezers
Liebherr

Temperature range: -14 to -26 °C

Commerical chest freezers featuring StopFrost technology to reduce the build up of ice.

- Analogue display
- Manual defrosting

Model	GTL 3005	GTL 4905	GTL 6105
Capacity (l)	299	485	601
Temperature (°C)	–14...–26		
Display	Analogue		
Defrost	Manual		
Alarm	No		
Baskets	2		3
Door lock	Yes		
Material	Exterior: steel, white coated Interior: stainless steel		
W×D×H int. (mm)	871×526×702	1245×575×702	1520×575×702
W×D×H ext. (mm)	998×725×917	1372×776×917	1647×776×917
Weight (kg)	54	72	82

Type	Pk	Cat. No.
Chest freezer, GTL 3005	1	**471-0286**
Chest freezer, GTL 4905	1	**471-0287**
Chest freezer, GTL 6105	1	**471-0288**

Low temperature chest freezers, MediLine, LGT series
Liebherr

Temperature range: –10 to –45 °C

The low temperature chest freezers down to –45 °C have been developed to meet the specific requirements of an array of research, industrial or clinical applications. Where there is a need to store products or samples at lower than usual freezing temperatures these range of laboratory chest freezers are the ideal solution, as they offer supreme temperature stability as well as temperature uniformity within the units. Therefore the safe, cold storage of specimen, biological samples or other products is guaranteed.

The outstanding energy efficiency of the LGT range not only contributes to the protection of the environment but also reduces running costs. The low temperature chest freezers are available in three sizes and are equipped with a precision digital controller, which guarantees maximum temperature accuracy.

- Single point calibration for precise temperature setting
- Aluminium handle
- Interior light integrated in the freezer lid
- Environmentally friendly refrigerant R 290
- Comfort controller with 0,1 °C digital temperature accuracy and symbols for indicating operating status
- Min./ max. temperature memory: last three temperature alarm and power failure events are saved
- Volt-free contact and RS485 serial interface for external temperature and alarm documentation plus interface for an optional NTC temperature probe

Delivery information: Delivered without basket, please contact your local VWR office.

Model	LGT2325	LGT3725	LGT4725
Capacity (l)	215	365	459
Alarm	Visual and audible temperature and lid-open alarm		
Door lock	Yes		
Material	Exterior: steel Interior: aluminium		
W×D×H int. (mm)	889×410×630	1170×500×650	1445×500×650
W×D×H ext. (mm)	1132×760×919	1373×808×919	1648×808×919
Weight (kg)	58	71	81

Type	Pk	Cat. No.
Low temperature chest freezer, LGT2325	1	**471-0940**
Low temperature chest freezer, LGT3725	1	**471-0941**
Low temperature chest freezer, LGT4725	1	**471-0942**

Biomedical upright freezers
Panasonic

Temperature range: -20 to -35 °C (model MDF-U443: to -40 °C)

These Biomedical freezers offer the outstanding reliability and performance required in storage and research applications. In the medical field, they provide effective storage of blood supplies and vaccines, as well as samples for diagnosis. In the industrial field, they are ideal for ageing and temperature tests on electronic components, precision devices and compound resins.

- Visual and audible alarm for the high and low adjustable temperatures and for power outage
- Microprocessor control with digital temperature display of the temperature
- Non-volatile memory backup for settings
- Lockable door latch
- Self diagnostic

On four castors and two adjustable feet

Model	MDF-U333	MDF-U443	MDF-U537	MDF-U537D	MDF-U5412	MDF-U5312	MDF-U731M
Capacity (l)	274	426	482	452	482		690
Temperature (°C)	– 20...– 30	– 20...– 40	– 20...– 30	– 20...– 30	– 20...– 40	– 20...– 30	– 20...– 30
Display	Digital						
Alarm	Audible and visual						
Shelves/drawers	4 large drawers + 1 small	5 shelves	6 drawers medium + 8 small		6 small drawers medium + 4 big	6 drawers medium + 8 small	4 shelves
Door(s)	1		2	2 (2 separate cabinets)	2	3	1
Door lock	Yes						
Access ports	1			2	1		2
W×D×H int. (mm)	490×485×1290	640×615×1090	658×607×1272	658×607×589 (top) 658×607×603 (bottom)	658×607×1272		650×710×1520
W×D×H ext. (mm)	610×733×1620	800×832×1810	800×772×1802	804×772×1802	804×772×1802		770×830×1955
Specifications	Cooling: under the shelves	Cooling: ventilated	Cooling: under the shelves				Cooling system: top-mount

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Type	Pk	Cat. No.
MDF-U333	1	472-1114
MDF-U443	1	472-0116
MDF-U537	1	472-1116
MDF-U537 D (2 independent freezer cabinets in one body, with separate defrost and operation)	1	472-1117
MDF-U5412	1	471-0699
MDF-U5312	1	471-1026
MDF-U731M	1	471-0990

ULTRA.GUARD™ ultra-low temperature –86 °C UF V freezers
Binder

Temperature range: -40 to -86 °C

The ULTRA.GUARD™ ultra-low temperature freezer UF V series secure long-term storage of samples at temperatures down to –86 °C. The main areas of applications are biotechnology, hospitals, pharma industries, research institutes and blood-banking.

The ULTRA.GUARD™ ensures greater security in the laboratory, with access control based on RFID technology. Access to the chamber is only given to staff who are accredited by the laboratory administrator.

- Automatic door mechanism makes opening the chamber easy with just the push of a button
- Personalised access control with RFID technology and easy data monitoring
- VIP.COMPLETE™ innovative insulation with advanced vacuum panels on all 6 sides helps to significantly lower power consumption
- Two-stage cascade refrigeration system with hermetically sealed compressors
- Uncomplicated maintenance and cleaning; the easily accessible air filter of the ULTRA.GUARD™ can be replaced without tools in a few simple steps.

Possibility to extend the warranty, for details contact your local VWR sales office.

According to DIN EN ISO 11204 Class 2

Model	UF V 500	UF V 700
Capacity (l)	485	725
Temperature (°C)	–40...–86	
Display	LED	
Alarm	Audible and visual	
Shelves/drawers	4 compartments	
Door(s)	1 external + 4 internal	
Door lock	Yes	
Material	Exterior: steel, epoxy coated, white Interior: stainless steel	
Specifications	Noise level: 49 dB(A) Robust, adjustable and lockable casters RS422 interface	
W×D×H ext. (mm)	900×890×1970	1200×890×1970
Weight (kg)	320	360

Type	Pk	Cat. No.
Freezer ULTRA.GUARD™ UF V 500	1	471-0846
Freezer, ULTRA.GUARD™ UF V 700	1	471-0924

Description	Pk	Cat. No.
Accessories		
Magnetic bag, DIN A4	1	471-0780
Deep temperature gloves, medium size	1	471-0781
PDF Data logger with USB port for UF V 700. Independent temperature data recording compliant with FDA guideline 21 CFR Part 11. Plug-and-play data transfer requires no software (PDF reader)	1	471-0796
Ethernet interface	1	471-0798
Circular chart recorder for UF V 700	1	471-0847
Circular chart recorder for UF V 500	1	471-0850
De-icing kit for UF V 700 (consists of scraper, a wiper and a deicing tray) guarantees controlled water runoff	1	471-0848
De-icing kit for UF V 500 (consists of scraper, a wiper and a deicing tray) guarantees controlled water runoff	1	471-0849
Access port 30 mm, rear	1	471-0799
Additional PT100 sensor with lemo socket	1	471-0800
GUARD.CONTROL™ RFID technology personalises access and records user traffic	1	471-0851

Ultra-low temperature freezers, –86 °C, Innova®

New Brunswick

Range of temperature: –50 to –86 °C at ambient temperature of +32 °C

Innova® freezers use Vacuum Insulation Panel technology to provide up to 30% more storage capacity than traditionally-insulated freezers without increasing external dimensions.

Construction: High quality 304L grade stainless steel interior, lockable outer door, stainless steel shelves with three (two on U101) insulated inner doors (upright models only) and heavy-duty, lockable castors. A heated vent prevents vacuum formation. Patented Tollesbury Technology™ reduces temperature recovery time after door opening.

Insulation: Ultra-thin Vacuum Insulation Panels with Vacupor NT, encapsulated between a metallic polymer film barrier, bonded to foamed-in-place polyurethane foam.

Every New Brunswick freezer is equipped with unique S.M.A.R.T. Plus™ diagnostic software to help quickly identify the cause of a fault or set point variance. Upright models have 2 adjustable shelves giving 3 compartments (except model U101 which has one shelf and two compartments). Model U360 additionally features automated data logging; temperature, alarms and door opening data are stored for up to 30 days, for on-screen graphing. The data is downloadable to a PC with optional communication ports.

- Easy to read front-mounted control panel for temperature setting and alarm display, 4 PIN security lock
- On/off power switch located behind lockable panel to prevent accidental operation, automatic reset protects microprocessor in event of electrical power spikes
- Designed to fit through standard doorways and lifts
- Remote alarm port for connection to BMS, autodialler etc.
- Audible and visual alarms for high/low temperature, power failure, low battery, filter clean and system failure

CE and UL certified. All NBS freezers meet WEEE Directives for disposal, and are 95 - 98% recyclable (by weight).

Ultra-low temperature hydrocarbon-based "Green" upright freezer: U725-G

The hydrocarbon U725-G ultra-low temperature freezer is an effort to deter global warming and meets the environmental requirements of today's laboratory. The U-725-G not only has the same advanced features as the original Innova® U725 model, but also offers a 5 – 10% decrease of power consumption. The result is a decrease in yearly operating costs, an eco-friendly energy-saving design and the elimination of the use of detrimental HFC refrigerants that contribute to global warming. This "Green" freezer has roughly the equivalent hydrocarbon content of a typical lighter. In addition, they have been designed to meet the latest EC regulations and ACRID guidelines for the use of hydrocarbon refrigerants.

Accessory: 7-day chart recorder

Continuously monitor and record temperature for up to 7 days. Temperature range of +20 °C to –90 °C, ±2%

- Front-mounted for easy access

Factory installation recommended

Accessory: CO_2 & LN_2 back-up systems

Safely protects your samples in the event of mechanical breakdown or power outage. Maintains temperature between –55 °C and –70 °C with CO_2, or down to –85 °C with LN_2, subject to environmental conditions.

- Coolant addition is pulsed to avoid excessive consumption
- Built-in safety device prevents pulsing while the door is open

Ordering information: Custom built inventory control systems and storage boxes are available; please contact VWR for details.

Model	U101	U360	U535	U725	U725-G	C585	C760
Capacity (l)	101	360	535	725		585	760
Temperature (°C)	–50...–86						
Air circulation	Non ventilated						
Display	LED						
Alarm	Audible and visual						
Shelves/drawers	2 compartments, 1 fixed shelf	3 compartments, 2 adjustable shelves				-	
Door(s)	1 outer door 2 insulated inner doors	1 outer door 3 insulated inner doors				1 outer lid 2 injection-molded, insulated lids	1 outer lid 3 injection-molded, insulated lids
Door lock	Yes						
Material	Exterior: steel, powder coated, scratch and rust resistant Interior: polished 304L stainless steel						
Specifications	Capacity: 60 standard 10×10 boxes max.	Capacity: 252 standard 10×10 boxes max.	Capacity: 336 standard 10×10 boxes max.	Capacity: 504 standard 10×10 boxes max.		Capacity: 486 standard 10×10 boxes max.	Capacity: 572 standard 10×10 boxes max.
Access ports	2 (Ø 20 mm)						
W×D×H int. (mm)	480×330×640	440×615×1365	640×615×1365	865×615×1365		1200×625×780	1560×625×780
W×D×H ext. (mm)	900×566×830	600×867×1950	800×867×1950	1025×867×1950		1690×785×1092	2050×785×1092
Weight (kg)	116	270	250	315	317	240	285

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Type	Pk	Cat. No.
Upright Freezers		
Innova® upright freezer,–86 °C, U101, (fits under a bench)	1	**471-0447**
Innova® upright freezer,–86 °C, U360, slimline model	1	**471-0461**
Innova® upright freezer,–86 °C, U535	1	**471-0845**
Innova® upright freezer,–86 °C, U725	1	**471-0450**
Ultra-low temperature hydrocarbon-based "Green" –86 °C upright freezer		
Innova® upright "Green" –86 °C freezer, U725-G	1	**471-0462**
Chest –86 °C freezers		
Innova® chest –86 °C freezer, C585	1	**444-0534**
Innova® chest –86 °C freezer, C760	1	**444-0535**

Description	Pk	Cat. No.
Accessories		
7-day chart recorder	1	**471-1099**
CO_2 back-up system for Innova® freezers	1	**471-0451**
LN_2 back-up system for Innova® freezers	1	**471-0453**

Ultra-low temperature freezers, –86 °C, Premium
New Brunswick

Range of temperature: –50 to –86 °C at ambient temperature of +32 °C

Like Innova® freezers, Premiums are high-quality, fully-featured freezers, with the ability to safely preserve the samples over the long term. The difference is that Premium freezers use traditional urethane insulation to achieve and maintain ultra-low temperatures.

Construction: High quality 304L grade stainless steel interior, lockable outer door, stainless steel shelves with five insulated inner doors (upright models only) and heavy-duty, lockable castors. A heated vent prevents vacuum formation. Upright models have four adjustable shelves giving 5 compartments.

Every New Brunswick freezer is equipped with unique S.M.A.R.T. Plus™ diagnostic software to help quickly identify the cause of a fault or set point variance.

- Easy-to-read front-mounted control panel for temperature setting and alarm display, 4 PIN security lock
- On/off power switch located behind lockable panel to prevent accidental operation, automatic reset protects microprocessor in event of electrical power spikes
- Designed to fit through standard doorways and lifts
- Remote alarm port for connection to BMS, autodialler etc.
- Audible and visual alarms for high/low temperature, power failure, low battery, filter clean and system failure

CE and UL certified. All NBS freezers meet WEEE Directives for disposal, and are 95 - 98% recyclable (by weight).

Accessory: 7-day chart recorder

Continuously monitor and record temperature for up to 7 days. Temperature range of +20 °C to –90 °C, ±2%

- Front-mounted for easy access

Factory installation recommended

Accessory: CO_2 & LN_2 back-up systems

Safely protects your samples in the event of mechanical breakdown or power outage. Maintains temperature between –55 °C and –70 °C with CO_2, or down to –85 °C with LN_2, subject to environmental conditions.

- Coolant addition is pulsed to avoid excessive consumption
- Built-in safety device prevents pulsing while the door is open

Ordering information: Custom built inventory control systems and storage boxes are available; please contact VWR for details.

Model	U410	U570	C340	C660
Capacity (l)	410	570	340	660
Temperature (°C)	–50...–86			
Air circulation	Non ventilated			
Display	LED			
Alarm	Audible and visual			
Shelves/drawers	5 compartments, 4 adjustable stainless-steel shelves		-	

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Door(s)	1 outer door 5 insulated inner doors		1 outer door 2 insulated inner panels	
Door lock	Yes			
Material	Exterior: steel, powder coated, scratch and rust resistant Interior: polished 304L stainless steel			
Specifications	Capacity: 240 standard 10×10 boxes max.	Capacity: 400 standard 10×10 boxes max.	Capacity: 260 standard 10×10 boxes max.	Capacity: 520 standard 10×10 boxes max.
Access ports	2 (Ø 20 mm)			
W×D×H int. (mm)	550×575×1265	765×575×1265	760×590×760	1470×590×760
W×D×H ext. (mm)	800×852×1915	1025×852×1925	1340×840×1075	2050×840×1075
Weight (kg)	235	265	205	280

Type	Pk	Cat. No.
Upright freezers		
Premium upright –86 °C freezer, U410	1	**471-0457**
Premium upright –86 °C freezer, U570	1	**471-0459**
Chest freezers		
Premium chest –86 °C freezer, C340	1	**471-0455**
Premium chest –86 °C freezer, C660	1	**471-0456**

Description	Pk	Cat. No.
Accessories		
7-day chart recorder	1	**471-1099**
CO_2 back-up system for Premium freezers	1	**471-0452**
LN_2 back-up system for Premium freezers	1	**471-0454**

Ultra-low temperature freezers, -86 °C, high efficiency (HEF™)
New Brunswick

Range of temperature: –50 to –86 °C at ambient temperature of +32 °C

These ultra-efficient freezers combine Vacuum Insulation Panel technology with traditional insulation techniques for superb insulating efficiency. The result is a decrease in operating costs, a more eco-friendly design and the elimination of the use of HFC refrigerants.

Construction: High quality 304L grade stainless steel interior, lockable outer door, stainless steel shelves with five insulated inner doors (upright models only), high-grade seals on inner and outer doors and heavy-duty, lockable castors. A heated vent prevents vacuum formation.

Insulation: Ultra-thin Vacuum Insulation Panels encapsulated between a metallic polymer film barrier, bonded to foamed-in-place polyurethane foam. In addition, they use more environmentally-friendly hydrocarbon refrigerants instead of traditional HFCs for increased efficiency.

Every New Brunswick freezer is equipped with unique S.M.A.R.T. Plus™ diagnostic software to help quickly identify the cause of a fault or setpoint variance. Upright models have 4 adjustable shelves with insulated inner doors - giving five compartments. All models offer excellent temperature uniformity and rapid pull-down.

- Easy to read front-mounted LED control panel for temperature setting and alarm display, 4 PIN security lock
- On/off power switch to prevent accidental shutdown, automatic reset protects microprocessor in event of power outage
- Designed to fit through standard doorways and lifts
- Remote alarm port for connection to BMS, autodialler etc

CE and UL certified. All NBS freezers are CE certified, meet WEEE Directives for disposal, and are 95 - 98% recyclable (by weight). HEF vacuum insulation panels are warranted for twelve years.

Ordering information: Custom built inventory racking systems and storage boxes are available; please contact your local VWR office for details.

Model	C660-HEF Chest	U410-HEF Upright	U570-HEF Upright
Capacity (l)	660	410	570
Temperature (°C)	–50...–86		
Display	LED		
Alarm	Audible and visual for high/low temperature, power failure, low battery, filter clean and system failure		
Shelves/drawers	-/-	4 adjustable shelves/-	
Door(s)	1 outer door, 2 insulated inner panels	1 solid outer door and 5 insulated inner doors	1 outer door, 2 insulated inner panels
Door lock	Yes		
W×D×H int. (mm)	1470×590×760	550×575×1265	765×575×1265
W×D×H ext. (mm)	2050×840×1075	800×852×1915	1025×852×1915
Weight (kg)	304	262	296

Type	Pk	Cat. No.
HEF C660, HEF™ high efficiency –86 °C chest freezer	1	**471-0804**
HEF U410, HEF™ high efficiency –86 °C upright freezer	1	**471-0805**
HEF U570, HEF™ high efficiency –86 °C upright freezer	1	**471-0806**

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Description	Pk	Cat. No.
Accessories		
CO_2 back-up system for Innova® freezers	1	**471-0451**
LN_2 back-up system for Innova® freezers	1	**471-0453**

Chest and upright -86 °C freezers, HERAfreeze® HFC/HFU series
Thermo Scientific

HFC390

HFU600T

Peek Line series freezers (HFU-T upright freezers) with vacuum panel insulation, offering increased storage capacity with the same footprint and outstanding energy performance; Performance series (HFU-B upright models and HFC chest freezers) with reinforced standard insulation. These two performance levels will fulfil all of your requirements for short and long term sample storage.

Peek Line HFU-T upright freezers

- LCD touch screen display, intuitive operation
- Storage of events
- Vacuum panel insulation, storage capacity increased by 20%
- High performance operating modes providing outstanding uniformity or standard uniformity with energy savings of 15%
- USB and RS485 ports, 4 - 20mA outputs, dry contact

Performance, HFU-B upright and HFC chest models

- LED display
- Expanded polyurethane foam insulation, 127 mm thickness

Wide range of options and accessories available (racks, boxes, cryovials).

Model	Capacity (l)	Temperature (°C)	Display	Alarm	W×D×H ext. (mm)	Weight (kg)
Peek Line series upright models						
HFU300T	420	– 50...– 86	LCD touch screen	Yes + datalogging	690×955×1980	303
HFU400T	548				830×955×1980	332
HFU500T	680				970×955×1980	355
HFU600T	815				1110×955×1980	388
HFU700T	948				1250×955×1980	432
Performance series upright models						
HFU240B	368	– 50...– 86	LED	Yes	850×840×1980	323
HFU320B	489				850×940×1980	376
HFU400B	651				1040×940×1980	399
HFU600B	792				1190×940×1980	494
Performance series chest models						
HFC390	85	– 50...– 86	LED	Yes	724×759×1133	196
HFC1390	360				1829×848×1029	325
HFC1790	481				2225×859×1029	372
HFC2090	566				2438×848×1029	378

Type	Pk	Cat. No.
Peek Line series upright models		
HFU300T	1	**471-0856**
HFU400T	1	**471-0857**
HFU500T	1	**471-0858**
HFU600T	1	**471-0859**
HFU700T	1	**471-0860**
Performance series upright models		
HFU240B	1	**471-0932**
HFU320B	1	**471-0933**
HFU400B	1	**471-0934**
HFU600B	1	**471-0935**

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Type	Pk	Cat. No.
Performance series chest models		
HFC390	1	**471-0939**
HFC1390	1	**471-0936**
HFC1790	1	**471-0937**
HFC2090	1	**471-0938**

Upright freezer –86°C, Twin Guard™ Series
Panasonic

Temperature range: -50 to -86 °C

These ultra-low temperature freezers feature an innovative and reassuring "Dual Cooling" safety cooling system. Two compressors are controlled individually and provide a very stable temperature of -86 °C. In case of failure on one circuit, the other will keep the freezer at a temperature near -70 °C, preserving the samples until a maintenance action is completed. They are particularly suitable for storage at -86 °C to valuable biological products.

- Refrigeration system "Dual Cooling" with non-CFC refrigerants
- Insulation VIP PLUS™ performance by vacuum panels with a storage capacity increased by 30% for the same footprint of freezers with standard insulation
- Condenser unfiltered, more reliable and maintenance free
- Operation in ECO mode with reduced consumption by 15%; microprocessor control of the state of charge of the freezer, optimising the operation of two compressors while protecting the samples
- Intelligent interface with control panel at eye level, recording the latest data that can be transferred to a PC via an optional interface

Three passages wall Ø 17 mm
Contact for remote alarm
Door handle with lock

Model	MDF-U500VX	MDF-U700VX
Capacity (l)	519	728
Temperature (°C)	– 50...– 86	
Display	LED	
Alarm	Audible and visual	
Shelves/drawers	3/-	
Door lock	Yes	
Specifications	VIP insulation	
W×D×H int. (mm)	630×600×1380	870×600×1400
W×D×H ext. (mm)	770×870×1990	1010×870×2010
Weight (kg)	320	375

Type	Pk	Cat. No.
Twin Guard™ Series MDF-U500VXC -86 °C freezer	1	**471-0670**
Twin Guard™ Series MDF-U700VXC -86 °C freezer	1	**471-0930**

Upright freezers VIP™, -86 °C
Panasonic

Temperature range: -50 to -86 °C

Panasonic VIP™ ultra low temperature freezers represent the industry's most complete combination of refrigeration, control, alarm, monitoring and accessibility for product safety at -86 °C. Ideal for material storage in repositories, hospitals, clinics and research facilities, the VIP™ series are designed to significantly reduce energy consumption.

The Panasonic microprocessor control system is secure, easy to use and comprehensive. Setpoint, alarm parameters and self-diagnostic functions are accessed through a tamper-resistant keypad protocol. Control inputs are managed with convenient push-pad buttons on a unitised, sealed control overlay. The panel is door-mounted and angled for easy access.

- Patented VIP™ Vacuum Insulation Panel increasing interior volume by 30%
- Two interior doors, creating two independent compartments
- Microprocessor controlled
- Built-in temperature and power failure audible and visual alarms
- Door handle with latch locking system

Access ports for cables

On four castors and two adjustable feet

Models with options (recorder, CO_2-safety, drawerkit, ...) and large range of accessories are available on request (cryotube racks, drawers,...)

Model	MDF-U33V	MDF-U55V	MDF-U74V
Capacity (l)	334	519	728
Temperature (°C)	– 50...– 86		

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Display	LED		
Alarm	Audible and visual (power failure, temperature, door open)		
Shelves/drawers	3 (adjustable, stainless steel)		
Door(s)	3 (1 outer and 2 inner, insulated)		
Door lock	Yes		
Material	Painted steel		
Specifications	Cascade refrigeration system Control by microprocessor Temperature sensor: PT100 With 4 casters (2 leveling feet)		
W×D×H int. (mm)	490×600×1140	630×600×1380	870×600×1400
W×D×H ext. (mm)	670×870×1890	770×870×1990	1110×870×2010
Weight (kg)	258	290	340

Type	Pk	Cat. No.
Freezer –86°C VIP, MDF-U33V	1	**471-0423**
Freezer –86°C VIP, MDF-U55V	1	**471-0929**
Freezer –86°C VIP, MDF-U74V	1	**471-0607**

Upright freezers, -86 °C, MDF series
Panasonic

Temperature range: -50 to -86 °C

Integrated CFC-free ultra-low temperature (ULT) storage solution for biosafety, security and performance. Freezers comprise two compartments with independent steel-framed, foam injected insulated inner doors that prevent cool air leakage and dramatically enhance the insulation capability whilst reducing wall thickness.

- Non-toxic, non-flammable and environmentally friendly HFC refrigerant
- Microprocessor controlled, with built-in temperature/power failure audible and visual alarms
- Door handle with latch-locking system, can facilitate a padlock for extra security
- Access ports for cables, control panel with digital display
- Removable and washable filter reduces energy consumption and extends system life

Delivery information: All models are supplied with 3 stainless steel shelves (max. load 50 kg), 4 castors with 2 adjustable levelling feet, set of keys and a scraper. Storage capacity can be increased by use of widely available inventory boxes, which should be ordered separately.

Models with options on request (recorder, CO_2-safety, drawerkit, ...)

Large range of accessories available on request (cryotube racks, drawers,...)

Model	MDF-U3386S	MDF-U5386S	MDF-U7386S
Capacity (l)	333	483	668
Temperature (°C)	– 50...– 86		
Display	Digital		
Alarm	Audible and visual		
Door lock	Yes		
W×D×H int. (mm)	490×600×1140	630×600×1280	870×600×1280
W×D×H ext. (mm)	750×875×1850	890×867×1990	1130×867×1990
Weight (kg)	255	305	355

Type	Pk	Cat. No.
Upright freezer, MDF-U3386S	1	**471-0422**
Upright freezer, MDF-U5386S	1	**471-0717**
Upright freezer, MDF-U7386S	1	**471-0714**

Ultra-low temperature freezers, -86 °C, MDF chest models
Panasonic

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Temperature: -85 °C and -86 °C

Ideally suited for use in hospitals and laboratories, for long-term preservation and storage of blood, specimens and components and in various tests.

- Microprocessor control with digital display of the temperature
- Stainless steel interior, double insulation polyurethane walls
- Built-in temperature and power failure audible and visual alarms
- Door handle with latch locking system

Access ports for cables

On four castors and two adjustable feet

Models with options on request (recorder, CO_2-safety, drawerkit, ...)

Large range of accessories available on request (cryotube racks, drawers,...)

Model	MDF-C8V1	MDF-192	MDF-193	MDF-394	MDF-594	MDF-794
Capacity (l)	84	86		306	487	701
Temperature (°C)	–60...–80	–50...– 86				
Display	LED	Digital				
Alarm	Audible and visual					
Door(s)	2 (1 outer/1 inner)			4 (1 outer / 3 inner)		5 (1 outer / 4 inner)
Door lock	Yes					
Specifications	Insulation PUF 135 mm					
W×D×H int. (mm)	405×490×425	480×430×420		1120×520×530	1280×500×762	1840×500×762
W×D×H ext. (mm)	550×685×945	750×700×945		1860×800×945	2010×770×1070	2570×770×1070
Weight (kg)	67	120	121	248	305	335

Type	Pk	Cat. No.
Chest freezer, MDF-C8V1	1	**471-0421**
Chest freezer, MDF-192	1	**471-0026**
Chest freezer, MDF-193	1	**471-0618**
Chest freezer, MDF-394	1	**471-0620**
Chest freezer, MDF-594	1	**471-0736**
Chest freezer, MDF-794	1	**471-0420**

Chip ice makers
Ziegra Eismaschinen

Cabinet and bin made of stainless steel

Ice machines for small and moderate requirements with storage and other accessories, perfect for hospitals and laboratories. Ziegra ice has the ideal temperature of –0,5 °C, which means it never freezes together - even during prolonged storage, it always remains granular and free flowing. Chip ice is hygienic due to its closed water system and can be made from demineralised or tap water.

Two ice types available for every lab model:

Ziegra Standard-Ice melts slowly and is perfect for medical applications and preservation.

Ziegra Micro-Ice as an option, provides quick but gentle cooling to 0 °C, e.g. for test tubes or when added to liquids.

- The static evaporator prevents refrigerant leaks
- Different sizes of ice available; standard and micro (please state required size when ordering)
- Compact constructrion and low noise emission
- Automatic shut-down when the bin is full; automatic re-start when ice is removed

Ordering information: Four models - ZBE 70, 150, 250 and 350 do not have integrated bins. These need to be ordered separately. See ordering table below for details.

Delivery information: All installation fittings included.

Model	Max. production 24 hours (kg)	Bin capacity (kg)	W×D×H (mm)
Ice machines without container			
ZBE 70	70	-	700×600×610
ZBE 150	150		
ZBE 250	250		
ZBE 350	350		
Ice machines with integrated bin			
ZBE 30-10	30	10	400×500×710
ZBE 70-35	70	35	600×460×910
ZBE 70-100		100	700×700×1560
ZBE 110-35	110	35	600×460×910
ZBE 150-100	150	100	700×700×1660
ZBE 150-200		200	700×700×1960
ZBE 250-100	250	100	700×700×1560
ZBE 250-200		200	700×700×1960
ZBE 350-100	350	100	700×700×1660
ZBE 350-200		200	700×700×1960

Description	Pk	Cat. No.
Ice machines without container		
Ice machine ZBE 70 without storage bin* (UK-Plug)	1	**474-0128**
Ice machine ZBE 150 without storage bin* (UK-Plug)	1	**474-0122**
Ice machine ZBE 250 without storage bin* (UK-Plug)	1	**474-0124**
Ice machine ZBE 350n without storage bin* (UK-Plug)	1	**474-0126**
Ice machines with integrated bin		
Ice machine ZBE 30-10 with integrated storage bin (UK-plug)	1	**474-0075**
Ice machine ZBE 70-35 with integrated storage bin (UK-plug)	1	**474-0085**
Ice machine ZBE 70-100 with integrated storage bin (UK-plug)	1	**474-0083**
Ice machine ZBE 110-35 with integrated storage bin (UK-plug)	1	**474-0063**
Ice machine ZBE 150-100 with integrated storage bin (UK-plug)	1	**474-0065**
Ice machine ZBE 150-200 with integrated storage bin (UK-plug)	1	**474-0068**
Ice machine ZBE 250-100 with integrated storage bin (UK-plug)	1	**474-0071**
Ice machine ZBE 250-200 with integrated storage bin (UK-plug)	1	**474-0073**
Ice machine ZBE 350-100 with integrated storage bin (UK-plug)	1	**474-0079**
Ice machine ZBE 350-200 with integrated storage bin (UK-plug)	1	**474-0081**

Description	Pk	Cat. No.
Accessories		
Cleaning agent to remove lime scale in hoses and freezing units	250 ml	**474-1207**
Water filter 1 µm to reduce odours and calcification (very hard water requires a water softener)	1	**474-0108**
Exchange cartridge	1	**474-0109**
Ice storage bin, capacity 100 kg, 70×70×95 (W×D×H cm)	1	**474-0104**
Ice storage bin, capacity 200 kg, 70×70×136 (W×D×H cm)	1	**474-0105**
Pump for removal of meltwater	1	**474-0060**
Micro ice option	1	**474-0107**
Watercooled condenser	1	**474-0061**
Support frame for ZBE 30-10 models	1	**474-0076**
Support frame for ZBE 70-35 and ZBE 110-35 models	1	**474-0086**

* Ice storage bin must be ordered separately.

Ice flakers, self contained, AF and EF series

AF Series

The AF self contained ice flakers are air-cooled and manufactured from 304 stainless steel. All of the models are automatic and produce small irregular flakes of ice with an even melting rate. The flakes are easily moulded to fit into any shape. The ice flakers require a 19 mm 'washing machine' type tapped mains water supply, a correctly rated power supply and a 38 mm vented drain (ideally no higher than the base of the machine), within one metre of the machine's intended position.

- Integral ice flake storage bin
- Constructed of high grade stainless steel
- Small irregular flakes have an even melting rate
- Ideal for medical and laboratory use

EF Series

The new EF ice flakers share the same features and specifications as the AF models listed above, except that they are supplied with a built-in drain pump which provides simple drainage and easy installation. Please contact your local VWR sales office for further information.

Ordering information: Please contact VWR prior to purchase if connection to a de-ionised water supply is preferred. Please note that water filtration systems are available for these ice makers. They are designed to reduce unscheduled service calls associated with the equipment's internal water system, this includes lime scale build-up, corrosion, sediment, bacteria etc. Please contact VWR for full details.

Model	Water consumption (l)	W×D×H (mm)	Weight (kg)	Bin capacity (kg)	Max. production 24 hours (kg)
AF series					
AF 80	64	535×626×813**	51	25*	70
AF 103	75	592×622×1006**	63	30*	105
AF 124	91	950×605×795**	66	40*	120
AF 156	120	950×605×1006**	75	60*	150
AF 206	156		77		200
EF series					
EF 103	75	592×622×1006**	63	30*	105
EF 124	91	950×605×795**	66	40*	120
EF 156	120	950×605×1006**	75	60*	150
EF 206	156		77		200

Description	Pk	Cat. No.
AF series		
Ice flaker, AF 80	1	**474-1401**
Ice flaker, AF 103	1	**474-0110**
Ice flaker, AF 124	1	**474-0111**
Ice flaker, AF 156	1	**474-0112**
Ice flaker, AF 206	1	**474-0113**
EF series		
Ice flaker with waste drain pump, EF 103	1	**474-0129**
Ice flaker with waste drain pump, EF 124	1	**474-0130**
Ice flaker with waste drain pump, EF 156	1	**474-0131**
Ice flaker with waste drain pump, EF 206	1	**474-0132**

* Bin capacities are based on volumetric sizes of storage bins, actual capacity may be less due to ice 'pyramiding' as it falls into the bin.
** Add 120 mm for the legs, if required.

Dry ice makers, Snowpack

Convenient and rapid production of dry ice pellets from any cylinder of liquid CO_2.

- Economical and convenient

A 6,35 kg cylinder produces 30 pellets of 30 g or 2 pellets of 500 g

Delivery information: With free protective gloves.

Description	Ø×H (mm)	Pk	Cat. No.
Production of 30 g pellets	50×22	1	**474-0037**
Production of 500 g pellets	100×75	1	**474-0038**

VWR COLLECTION

Delivering high quality and superior performance

Please contact your local VWR sales office or go to vwr.com for the latest news and special offers

Dewar vessels, Agil series
Air Liquide

Stainless steel

For all applications covering a wide temperature range from -200 to +200 °C.

Lateral (Agil 0,5 to 1/L) and carrying handle (except Agil 0,5). Cork lids need to be ordered separately.

* Filled with liquid nitrogen at 20 °C, 1013 mb, stationary container and closed lid

Model	Agil 0,5	Agil 1	Agil 1/L large neck	Agil 2	Agil 3	Agil 6
Capacity (l)	0,5	1		2	3	6
Daily evaporation (l/day)	1*	0,9*	1,6*	1,1*	3,1*	2,9*
External Ø (mm)	87	107	122		200	
Internal Ø (mm)	65	85	100		185	
Overall height (mm)	203	231	177	312	190	300
Static holding time (h)	12	26	15	43	23	49
Temperature range	–200... +200 °C					

Description	Pk	Cat. No.
Dewar flask Agil 0,5	1	**478-3411**
Dewar flask Agil 1	1	**478-3412**
Dewar flask Agil 1/L, large neck	1	**478-3413**
Dewar flask Agil 2	1	**478-3414**
Dewar flask Agil 3	1	**478-3415**
Dewar flask Agil 6	1	**478-3416**

Description	For	Pk	Cat. No.
Accessories			
Cork lid	Agil 0,5	1	**478-3421**
Cork lid	Agil 1	1	**478-3422**
Cork lid	Agil 1/L + 2	1	**478-3423**
Cork lid	Agil 3 + 6	1	**478-3424**

Dewar vessels, cylindrical, type C and G-C
KGW-Isotherm

Dewar flask, type G-C

Dewar flask, type C

Silvered borosilicate glass, blue coated metal protective covering

For storage of liquid nitrogen, dry ice and other coolants.

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Model	Capacity	Daily evaporation (l/day)	Internal height (mm)	Internal Ø (mm)	Overall height (mm)	Temperature range
Dewar vessels, type C: cylindrical without cover						
00 C	100 ml	0,3	90	40	135	-200 ... +200 °C
1 C	300 ml	0,2	190	47	240	
3 C	500 ml	0,35	210	57	260	
6 C	800 ml		240	67	295	
7 C	1200 ml	0,3	350		395	
9 C	1000 ml	0,35	235	77	290	
12 C	1500 ml	0,5	245	90	300	
13 C	2000 ml		340		390	
15 C	1500 ml	0,7	240	100	300	
16 C	2000 ml	0,6	290		345	
18 C	2500 ml	0,7		110		
20 C	3000 ml	1,2	230	138	280	
S 21 C	4000 ml	1,0	310		375	
Dewar vessels, type G-C: cylindrical with side grip and without cover						
G 0 C	200 ml	0,2	170	40	215	-200 ... +200 °C
G 2 C	450 ml	0,25	270	47	310	
G 3 C	500 ml	0,35	210	57	260	
G 6 C	800 ml		240	67	295	
G 7 C	1200 ml	0,3	350		395	
G 9 C	1000 ml	0,35	235	77	290	
G 12 C	1500 ml	0,5	245	90	300	
G 13 C	2000 ml		340		390	
G 15 C	1500 ml	0,7	240	100	300	
G 16 C	2000 ml	0,6	290		345	

Description	Pk	Cat. No.
Dewar vessels, type C: cylindrical without cover		
Dewar flask 00 C	1	**478-0215**
Dewar flask 1 C	1	**478-4103**
Dewar flask 3 C	1	**478-4105**
Dewar flask 6 C	1	**478-4108**
Dewar flask 7 C	1	**478-0216**
Dewar flask 9 C	1	**478-4110**
Dewar flask 12 C	1	**478-4115**
Dewar flask 13 C	1	**478-4120**
Dewar flask 15 C	1	**478-4116**
Dewar flask 16 C	1	**478-4121**
Dewar flask 18 C	1	**478-4125**
Dewar flask 20 C	1	**478-4130**
Dewar flask S 21 C	1	**478-4131**
Dewar vessels, type G-C: cylindrical with side grip and without cover		
Dewar flask G 0 C	1	**478-0217**
Dewar flask G 2 C	1	**478-0221**
Dewar flask G 3 C	1	**478-0222**
Dewar flask G 6 C	1	**478-0223**
Dewar flask G 7 C	1	**478-0224**
Dewar flask G 9 C	1	**478-0225**
Dewar flask G 12 C	1	**478-4141**
Dewar flask G 13 C	1	**478-0218**
Dewar flask G 15 C	1	**478-0219**
Dewar flask G 16 C	1	**478-0220**

Large Dewar flasks, type C
KGW-Isotherm

Silvered borosilicate glass, blue coated metal protective covering

For storage and transport of liquid nitrogen, dry ice and other coolants.

- With insulated lid and handle

Model	30 C	31 C	32 C	33 C	34 C	35 C
Capacity (l)	7	10	14	21	28	40

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Daily evaporation (l/day)	0,45	0,4		0,6		0,9
Internal height (mm)	275	350	500	480	620	650
Internal Ø (mm)	200			250		280
Overall height (mm)	385	475	610	615	750	780
Temperature range	-200...+200 °C					

Description	Pk	Cat. No.
Large Dewar flask, 30 C	1	**478-4201**
Large Dewar flask, 31 C	1	**478-4202**
Large Dewar flask, 32 C	1	**478-4203**
Large Dewar flask, 33 C	1	**478-4204**
Large Dewar flask, 34 C	1	**478-4205**
Large Dewar flask, 35 C	1	**478-4206**

Dewars, Dilvac

A range of glass vacuum Dewars with a choice of protective outer, either blue stove-enamelled steel or stainless steel. The fully silvered borosilicate glass inner flask is manufactured to a high tolerance and is suitable for the storage of liquid gases and solid CO_2.

- Insulated lid
- Fold-down carrying handle
- Cushioned base

Dewars with blue steel outer and lid

Not suitable for transport

Dewars with blue steel outer lid and clip

Clip for securing the lid makes these Dewars suitable for transport

Dewars with stainless steel outer, lid and clips

- Clip for securing the lid makes these Dewars suitable for transport
- Stainless steel construction gives the outer strength and resistance to corrosion

Model	MS111	MS222	MS333	MS111C20036	MS222C20037	MS333C20038	200015	200017	200016	SS222
Capacity (l)	1	2	4,5	1	2	4,5	1	4,5	2	
Internal height (mm)	185	205	280	185	205	280	185	280	205	
Internal Ø (mm)	85	106	150	85	106	150	85	150	105	106
Ø×H (mm)	116*×228	142*×268	245*×445	116*×228	142*×268	245*×445	116*×228	245*×445	142*×268	

Description	Pk	Cat. No.
Dewars with blue steel outer and lid		
Enamelled steel container with handle and lid, MS111	1	**479-0495**
Enamelled steel container with handle and lid, MS222	1	**479-0496**
Enamelled steel container with handle and lidl, MS333	1	**479-0497**
Dewars with blue steel outer lid and clip		
Enamelled steel container with handle, lid and clip, MS111C200036	1	**479-0498**
Enamelled steel container with handle, lid and clip, MS222C200037	1	**479-0499**
Enamelled steel container with handle, lid and clip, MS333C200038	1	**479-0866**
Dewars with stainless steel outer, lid and clips		
Stainless steel container with handle, lid and clip, 200015	1	**479-0854**
Stainless steel container with handle, lid and clip, 200017	1	**479-0855**
Stainless steel container with handle, lid and clip, 200016	1	**479-0867**
Stainless steel container with handle, lid and clip, 200015	1	**478-0712**

* The external diameter refers to the container and does not include allowance for the handle bracket or clips.

Spherical Dewar flasks, type AL
KGW-Isotherm

Silvered borosilicate glass, brushed aluminium protective covering

For storage and transport of liquid nitrogen.

- With lid and handle

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Model	21 AL	22 AL	23 AL	24 AL
Capacity (l)	1	3	5	10
Daily evaporation (l/day)	0,2	0,4		0,6
External Ø (mm)	175	225	260	330
Internal height (mm)	235	305	350	380
Overall height (mm)	300	380	450	480

Description	Neck-Ø (mm)	Pk	Cat. No.
Spherical Dewar flask, 21 AL	30	1	**478-4411**
Spherical Dewar flask, 22 AL	60	1	**478-4413**
Spherical Dewar flask, 23 AL	60	1	**478-4415**
Spherical Dewar flask, 24 AL	65	1	**478-4420**

Dewar carrying flasks, type B
KGW-Isotherm

Silvered borosilicate glass, blue coated metal protective covering

For storage and transport of liquid nitrogen, dry ice and temperature-sensitive goods.

- Insulated lid held by two spring clips
- With aluminium handle

Safety note: A small hole must be drilled in the lid if dry ice or liquid nitrogen are to be stored with the lid in place.

Model	26 B	27 B	28 B	29 B
Capacity (l)	1	2	3	4
Daily evaporation (l/day)	1,2	1,9	1,6	1,4
Internal height (mm)	150	170	230	310
Internal Ø (mm)	100	138		
Overall height (mm)	215	245	305	385
Temperature range	-200...+200 °C			

Description	Pk	Cat. No.
Dewar carrying flask 26 B	1	**478-4301**
Dewar carrying flask 27 B	1	**478-4302**
Dewar carrying flask 28 B	1	**478-4303**
Dewar carrying flask 29 B	1	**478-4304**

Dewar flasks, type GSS
KGW-Isotherm

Stainless steel

For storage and transport of liquid nitrogen, dry ice and other coolants. They are vacuum insulated and have a temperature range from -200 to +200 °C.

- With side grip and transport handle

Model	GSS 500	GSS 1000	GSS 1000 W	GSS 2000	GSS 3000	GSS 6000
Capacity (l)	0,5	1		2	3	6
Daily evaporation (l/day)	1,0	0,9	1,6	1,1	3,1	2,9
External Ø (mm)	87	107	122		200	
Internal height (mm)	180	206	157	285	160	270
Internal Ø (mm)	65	85	100		185	
Overall height (mm)	203	231	177	312	190	300
Temperature range	-200...+200 °C					

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Description	Pk	Cat. No.
Dewar flask GSS 500	1	478-5431
Dewar flask GSS 1000	1	478-5432
Dewar flask GSS 1000 W	1	478-5433
Dewar flask GSS 2000	1	478-5434
Dewar flask GSS 3000	1	478-5435
Dewar flask GSS 6000	1	478-5436

For	Pk	Cat. No.
Lids		
GSS 500	1	478-5142
GSS 1000	1	478-5143
GSS 1000 W + GSS 2000	1	478-5144
GSS 3000	1	478-5146
GSS 6000	1	478-5145

Dish-shaped Dewar flasks, type SCH-CAL
KGW-Isotherm

Silvered borosilicate glass, structured aluminium protective covering

For tempering of round bottom flasks, cooling of small samples. They are vacuum insulated and silvered. Temperature range from -200 to +200 °C.

- Suitable as hot or cold bath
- Can be used on a magnetic stirrer
- The cover is anti-magnetic and stainless

Model	SCH 6 CAL	SCH 9 CAL	SCH 15 CAL	SCH 18 CAL	SCH 20 CAL	SCH 30 CAL	SCH 31 CAL	SCH 33 CAL
Capacity (l)	0,08	0,12	0,26	0,40	0,80	1,6	2,7	5,3
External Ø (mm)	80	95	120	130	160	205	230	280
Internal height (mm)	40	77	65	70	80	110	125	150
Internal Ø (mm)	67	50	100	110	138	170	200	250
Overall height (mm)	75	90	110	115	125	145	160	195
Temperature range	–200...+200 °C							

Description	Pk	Cat. No.
Dish-shaped Dewar flask, SCH 6 CAL	1	478-0226
Dish-shaped Dewar flask, SCH 9 CAL	1	478-4503
Dish-shaped Dewar flask, SCH 15 CAL	1	478-4505
Dish-shaped Dewar flask, SCH 18 CAL	1	478-4506
Dish-shaped Dewar flask, SCH 20 CAL	1	478-4507
Dish-shaped Dewar flask, SCH 30 CAL	1	478-4509
Dish-shaped Dewar flask, SCH 31 CAL	1	478-4510
Dish-shaped Dewar flask, SCH 33 CAL	1	478-4511

Dewar flasks, Nalgene®
Thermo Scientific

HDPE flask and cover

Shatterproof flasks for short term storage of ice water, dry ice solvent and liquid nitrogen.

- Double walls filled with urethane foam

Withstand temperatures from -196 to +100 °C

Vented insulated cover

With carrying handle (except 10 l model)

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Model	4150-1000	4150-2000	4150-4000	4150-9000
Capacity (l)	1	2	4	10
Internal height (mm)	195	231	295	396
Overall height (mm)	251	282	353	470
Temperature range	-196...+100 °C			

Description	Neck-Ø (mm)	Pk	Cat. No.
Dewar flask 4150-1000	96	1	**478-5401**
Dewar flask 4150-2000	122	1	**478-5402**
Dewar flask 4150-4000	158	1	**478-5404**
Dewar flask 4150-9000	198	1	**478-5410**

Liquid nitrogen Dewars for storage and transport, LD series

The LD series aluminium Dewars are specially designed for storage and transport (not on public roads) of liquid nitrogen and are ideal for most miscellaneous laboratory and industrial applications.

- Lightweight, reliable and robust
- Very easy to handle

The bigger units (LD-25, LD-35 and LD-50) are fitted with an NW50 Pneurop-flange for mounting a pressure head for LN_2 withdrawal.

The small LD-2M is fitted with a pouring spout.

Model	LD-5	LD-2M	LD-12	LD-25	LD-35	LD-50
Capacity (l)	5,5	2	12,4	25	35	50
Weight, empty (kg)	4,4	2,7	8,1	10	13	17
Ø×H (mm)	245×494	190×465	310×600	395×684	480×591	500×675

Description	Neck-Ø (mm)	Pk	Cat. No.
Dewar, LD-5	50	1	**478-0290**
Dewar, LD-2M	35	1	**478-0289**
Dewar, LD-12	50	1	**478-0291**
Dewar, LD-25	50	1	**478-0292**
Dewar, LD-35	50	1	**478-0293**
Dewar, LD-50	50	1	**478-0294**

Description	Pk	Cat. No.
Accessories		
Phase separator, Ø×H: 30×100 mm	1	**478-0316**
Standard flexible hose; 1,20 m, 2×female ¾" connections	1	**478-0315**
Standard flexible hose; 2 m, 2×female ¾" connections	1	**478-0371**
Standard flexible hose; 3 m, 2×female ¾" connections	1	**478-0372**

Cryogenic storage vessels, CSS and XSS series

The CSS series tanks offer storage for small to medium capacity applications. The XSS series offer similar benefits and have extended storage capacity.

The tanks, manufactured from aluminium alloy with fibreglass/epoxy neck. High vacuum, multilayered super insulation limits nitrogen evaporation.

The samples are placed in stainless steel canisters directly in the liquid nitrogen inside the vessel.

- Extremely low liquid nitrogen evaporation
- Lid is lockable with padlock (not included)
- The vessels are equipped with stainless steel canisters with hook for easy retrieval from the vessel

Canisters which are 270 mm high can hold two goblets or canes with 6 × 1,8 ml vials

Canisters which are 110 mm high can hold one goblet or 1/2 height canes with 3 × 1,8 ml vials

Certification: CE - Medical

Model	CSS-4/6	CSS-10/6	CSS-21/6	CSS-36/6	XSS-13/6	XSS-26/10	XSS/36/6	XSS-48/10
Capacity (l)	4,1	10,5	21,7	35,9	13	26	35,9	48,5
No. of canisters	6					10	6	10
Static holding time (days)	42 (without canister)	93 (without canister)	238 (without canister)	365 (without canister)	59 (without canister)	104 (without canister)	211 (without canister)	180 (without canister)
Weight, empty (kg)	4,2	6,4	9,8	16	8,7	11,2	14,7	17,1
Ø×H (mm)	245×433	368×455	395×673	480×652	380×450	480×482	480×688	500×707
Ø×H canisters (mm)	37×110		37×270		66×110		66×270	73×270

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Description	Neck-Ø (mm)	Pk	Cat. No.
CSS series; models with very low LN_2 consumption			
CSS-4/6	51	1	**478-0281**
CSS-10/6	51	1	**478-0282**
CSS-21/6	51	1	**478-0283**
CSS-36/6	51	1	**478-0284**
XSS series; models with low LN_2 consumption and increased storage capacity			
XSS-13/6	89	1	**478-0285**
XSS-26/10	89	1	**478-0286**
XSS-36/6	89	1	**478-0287**
XSS-48/10	119	1	**478-0288**

Description	Pk	Cat. No.
Accessories		
Roller base with 4 castors is extendable and can accommodate containers with an outside diameter of 360 to 490 mm, the maximum load on a smooth floor is 60 kg	1	**478-0301**
Roller base with 5 castors (2 equipped with brakes) is extendable and can accommodate containers with an outside diameter of 460 to 500 mm, the maximum load on a smooth floor is 120 kg	1	**478-0303**
Roller base with 5 castors (2 equipped with brakes) can accommodate containers with an outside diameter of 680 mm, the maximum load on a smooth floor is 250 kg	1	**478-0302**

Box storage system, BSS series

The tanks of the BSS series offer various solutions for storage of vials or straws in liquid or gaseous phase. They provide extremely good temperature uniformity, even with as little as 2 cm liquid nitrogen remaining above the rack insulator (or 5 cm above the bottom of BSS-5100).

The tanks, manufactured from aluminium alloy with fibreglass / epoxy neck and a high vacuum multilayered super insulation limits the nitrogen evaporation.

- Extremely good temperature uniformity
- The lid can also be padlocked shut, except on model BSS-5100 (padlock not included)

Certification: CE - Medical.

Ordering information: Stainless steel racks for standard type boxes (25, 81 or 100 tubes) are included.
For BSS-5100: Pie shaped drawers (for cryo-tubes) or canisters (for goblets and straws) must be ordered separately.

Accessories

S70-controller: Temperature read out (1 point), automatic filling procedure (up to desired LN_2 level), visible and audible alarms (high / low temperature and level, and time out fill error), 1 potential free contact (with programmable function) for external alarm.

The newly developed **S-170 controller** offers maximum sample security and many features: Automatic filling procedure, temperature measurement (via 2 probes), regulation of liquid nitrogen level, providing visual and audible alarms (low level alarm, low level fill, normal level stop fill, high level alarm), display of the position of the cover (open/closed), management of the "defog" function (for better visibility inside the vessel), RS485 interface enables complete management and control of the system via a PC (the software is included), 4 potential free contacts for connection to an in-house alarm system or to a telephone dialing system (4 different alarm functions can be transferred).

Model	BSS-750	BSS-3000	BSS-4800	BSS-5100	BSS-6000
Capacity (l)	48,5	100	148	75	197
No. of canisters	30		48	54 drawers	60
No. of test tube racks	6				
Static holding time (days)	180	155	227	30	303
Weight, empty (kg)	20,5	45	56	37	62
Ø×H (mm)	500×707	680×748	680×920	480×915	680×1076

Description	Neck-Ø (mm)	Pk	Cat. No.
BSS-750	119	1	**478-0274**
BSS-3000	215	1	**478-0279**
BSS-4800	215	1	**478-0280**
BSS-5100	215	1	**478-0275**
BSS-6000	410	1	**478-0367**

Description	Pk	Cat. No.
Accessories		
Plastic canisters, (Ø×H: 70×660 mm); each canister can hold 5 goblets (not included), with goblet lifter	1	**478-0324**
S70 controller, with temperature and level monitoring and auto-fill function for BSS-750	1	**478-0329**
S70 controller, with temperature and level monitoring and auto-fill function for BSS-3000	1	**478-0330**
S70 controller, with temperature and level monitoring and auto-fill function for BSS-4800	1	**478-0331**
S70 controller, with temperature and level monitoring and auto-fill function for BSS-6000	1	**478-0332**
S170 controller for BSS-750, with temperature monitoring and auto-fill function	1	**478-0352**
S170 controller for BSS-3000, with temperature monitoring and auto-fill function	1	**478-0353**
S170 controller for BSS-4800, with temperature monitoring and auto-fill function	1	**478-0354**
S170 controller for BSS-6000, with temperature monitoring and auto-fill function	1	**478-0355**
S170 controller for BSS-5100, with temperature monitoring and auto-fill function	1	**478-0356**

Liquid nitrogen storage vessels, TR
Air Liquide

Range of non-pressurised vessels used to store and transport liquid nitrogen.

Light alloy construction with composite material neck.

Model	TR 11	TR 21	TR 26	TR 35	TR 60	TR 100
Capacity (l)	12,2	21,5	26	33,6	60	99
Daily evaporation (l/day)	0,18		0,2	0,24	0,4	0,55
Static holding time (days)	67	119	130	140	150	180
Ø×H (mm)	308×584	388×605	388×669	468×655	468×869	510×986

Description	Neck-Ø (mm)	Pk	Cat. No.
LN_2 storage vessel, TR 11	50	1	**478-3112**
LN_2 storage vessel, TR 21	50	1	**478-3113**
LN_2 storage vessel, TR 26	50	1	**478-3114**
LN_2 storage vessel, TR 35	50	1	**478-3115**
LN_2 storage vessel, TR 60	50	1	**478-3116**
LN_2 storage vessel, TR 100	50	1	**478-3117**

Description	For	Pk	Cat. No.
Accessories for liquid nitrogen vessels, TR and TP			
Roller base, standard	Arpege 40/55/75, GT21/26/35/38/40, TR range and TP range	1	**479-0852**
Roller base, non magnetic	Arpege 40/55/75, GT21/26/35/38/40, TR range and TP range	1	**479-0853**

Liquid nitrogen storage vessels, TP
Air Liquide

Range of self-pressurised vessels used to store and draw off liquid nitrogen at low pressure. The operating head can be removed in a few seconds and is fitted with a pressure gauge and two safety valves.

- Liquid nitrogen is constantly available, simply by opening the valve

Light aluminium alloy construction.

Model	TP 35	TP 60	TP 100
Capacity (l)	35	60	98
Daily evaporation (l/day)	1		1,3
Internal height (mm)	580	815	945
Max. flow (l/min)	2,4	3,5	5,2
Max. pressure (bar)	0,5		
Static holding time (days)	35	60	75
Ø neck (mm)	50		
Ø×H (mm)	468×853	468×1080	510×1213

Description	Neck-Ø (mm)	Pk	Cat. No.
LN_2 storage vessel, TP 35	50	1	**478-3152**
LN_2 storage vessel, TP 60	50	1	**478-3150**
LN_2 storage vessel, TP 100	50	1	**478-3160**

Description	For	Pk	Cat. No.
Accessories for liquid nitrogen vessels, TR and TP			
Roller base, standard	Arpege 40/55/75, GT21/26/35/38/40, TR range and TP range	1	**479-0852**
Roller base, non magnetic	Arpege 40/55/75, GT21/26/35/38/40, TR range and TP range	1	**479-0853**

Liquid nitrogen storage vessels, GT
Air Liquide

Constructed of aluminium with super-insulation and resin neck

Long static hold time, designed to preserve large numbers of samples, essentially straws.

Model	GT 2	GT 9	GT 3	GT 9	GT 14/6	GT 26	GT 38	GT 40
Capacity (l)	2	9,3	3,7	9,3	13,5	26,7	37	40
Daily evaporation (l/day)	0,08	0,11			0,24	0,29	0,15	0,29
No. of canisters	3	6				9	6	10
No. of stages of goblets	1						2	
Static holding time (days)	25	84	33	84	57	90	245	140
Storage capacity of 2 ml vials - capacity (100 vials/box)	-						612	1200
Storage capacity of straws - 0,25 ml straws (max)	330	1560			4920	7380	9840	16400
Storage capacity of straws - 0,5 ml straws (max)	150	720			2170	3285	4380	7300
Ø×H (mm)	174×392	358×450						
Ø×H canisters (mm)	26×120	38×120			67×120	67×110	67×280	73×280

Description	Pk	Cat. No.
With plastic canisters		
LN_2 storage vessel, GT 2	1	**478-3228**
LN_2 storage vessel, GT 9	1	**478-3034**
With stainless steel canisters		
LN_2 storage vessel, GT 3	1	**478-3083**
LN_2 storage vessel, GT 9	1	**478-3085**
LN_2 storage vessel, GT 14/6	1	**478-3224**
LN_2 storage vessel, GT 26	1	**478-3213**
LN_2 storage vessel, GT 38	1	**478-3215**
LN_2 storage vessel, GT 40	1	**478-3216**

Description	For	Pk	Cat. No.
Accessories for liquid nitrogen vessels, TR and TP			
Roller base, standard	Arpege 40/55/75, GT21/26/35/38/40, TR range and TP range	1	**479-0852**
Roller base, non magnetic	Arpege 40/55/75, GT21/26/35/38/40, TR range and TP range	1	**479-0853**

Cryoconservation vessel, GT for dermatology
Air Liquide

Liquid nitrogen containers suitable for shipping, fitted with two canisters:

- Canister A: 50 mm high, suspended at the neck by a hook, frees the operator's hands, allowing handling without risk of burning, gives an indication of the level of liquid nitrogen still available
- Canister B: 25 mm high, similar design to the previous model, but offers a facility to continue treating patients whilst awaiting replenishments of liquid nitrogen.

Description	Capacity (l)	Pk	Cat. No.
GT 9 incl. 2 canisters	9	1	**478-3019**
GT 11 incl. 2 canisters	11	1	**478-3018**
GT 21 incl. 2 canisters	21	1	**478-3017**

Liquid nitrogen storage vessels, Arpege series

Air Liquide

Range of medium capacity vessels designed to preserve small biological samples.

- Special adapter racking systems for vials and straws for a structured storage
- Individual safety locking system for cryoboxes (Air Liquide patent)

Model	Arpege 40	Arpege 55	Arpege 70	Arpege 75	Arpege 110	Arpge 140	Arpge 170
Capacity (l)	40	55	72		116	144	172
Daily evaporation (l/day)	0,29	2,4	0,6	2,5	0,65		0,7
Static holding time (days)	140	23	130	29	193	222	246
Storage capacity 2 ml vials - size of boxes (mm)	76×76	Triangular drawers	133×133	Triangular drawers	133×133		
Storage capacity of 2 ml vials - capacity (100 vials/box)	750	3618	2000	4824	3600	4800	6000
Storage capacity of 2 ml vials - number of racks	6		4	6	4	6	
Storage capacity of 2 ml vials - number of stages	5	9	5	12	9	8	10
Storage capacity of 5 ml vials - capacity (100 vials/box)	-	1071	972	2142	4620 / 1620	1944	2430
Storage capacity of 5 ml vials - number of racks		21 canisters	4	21 canisters	4	6	
Storage capacity of 5 ml vials - number of stages		1	3	2	5	4	5
Storage capacity of bags - max. DF700 bags		24	-	48	-		
Storage capacity of straws - number of racks		21 canisters	4	21 canisters	4	6	
Storage capacity of straws - number of stages		3	2	4	3		4
Ø×H (mm)	467×735	468×755	586×738	468×930	586×962	683×911	683×1028

Description	Pk	Cat. No.
LN_2 storage vessel, Arpege 40, with standard storage system for cryoboxes, 2,0 ml tubes	1	**478-3250**
LN_2 storage vessel, Arpege 40	1	**478-3050**
LN_2 storage vessel, Arpege 55, with standard storage system for cryoboxes, 2,0 ml tubes	1	**478-3251**
LN_2 storage vessel, Arpege 55	1	**478-3075**
LN_2 storage vessel, Arpege 70, with standard storage system for cryoboxes, 2,0 ml tubes	1	**478-3252**
LN_2 storage vessel, Arpege 70	1	**478-3051**
LN_2 storage vessel, Arpege 75, with standard storage system for cryoboxes, 2,0 ml tubes	1	**478-3253**
LN_2 storage vessel, Arpege 75	1	**478-3076**
LN_2 storage vessel, Arpege 110, with standard storage system for cryoboxes, 2,0 ml tubes	1	**478-3254**
LN_2 storage vessel, Arpege 110	1	**478-3052**
LN_2 storage vessel, Arpege 140, with standard storage system for cryoboxes, 2,0 ml tubes	1	**478-3255**
LN_2 storage vessel, Arpege 140	1	**478-3053**
LN_2 storage vessel, Arpege 170, with standard storage system for cryoboxes, 2,0 ml tubes	1	**478-3256**
LN_2 storage vessel, Arpege 170	1	**478-3054**

Description	For	Pk	Cat. No.
Accessories for liquid nitrogen vessels, TR and TP			
Roller base, standard	Arpege 40/55/75, GT21/26/35/38/40, TR range and TP range	1	**479-0852**
Roller base, non magnetic	Arpege 40/55/75, GT21/26/35/38/40, TR range and TP range	1	**479-0853**
Accessories for liquid nitrogen storage vessels, Arpege series			
Electronic level indicator	Arpege 70	1	**478-3603**
Temperature display	Arpege 70	1	**478-3023**
Level sensor and temperature display	Arpege 70	1	**478-3630**
Level sensor and autofill	Arpege 70	1	**478-3621**
Level and temperature display and autofill	Arpege 70	1	**478-3631**
Electronic level indicator	Arpege 110	1	**478-3604**
Temperature display	Arpege 110	1	**478-3022**
Level sensor and temperature display	Arpege 110	1	**478-3632**
Level sensor and autofill	Arpege 110	1	**478-3622**
Level and temperature display and autofill	Arpege 110	1	**478-3633**
Electronic level indicator	Arpege 140	1	**478-3605**
Temperature display	Arpege 140	1	**478-3021**
Level sensor and temperature display	Arpege 140	1	**478-3634**
Level sensor and autofill	Arpege 140	1	**478-3623**
Level and temperature display and autofill	Arpege 140	1	**478-3635**

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Description	For	Pk	Cat. No.
Accessories for liquid nitrogen storage vessels, Arpege series			
Electronic level indicator	Arpege 55/75	1	**478-3602**
Electronic level indicator	Arpege 170	1	**478-3606**
Temperature display	Arpege 170	1	**478-3020**
Level sensor and temperature display	Arpege 170	1	**478-3636**
Level sensor and autofill	Arpege 170	1	**478-3624**
Level and temperature display and autofill	Arpege 170	1	**478-3637**
Level sensor and autofill	Arpege 55/75	1	**478-3620**
Level sensor and temperature display	Arpege 55/75	1	**478-3625**
Level and temperature display and autofill	Arpege 55/75	1	**478-3627**
Electronic level indicator	Arpege 40	1	**478-3601**
Temperature display	Arpege 40	1	**478-3024**
Level sensor and temperature display	Arpege 40	1	**478-3629**
Arpege 55/75	Arpege 55/75	20	**478-3029**
Holder aluminium for 2 ml tubes	Arpege 55	10	**479-3509**
Straws	Arpege	100	**478-0093**
Goblet for canister Ø 65 mm	Arpege 55/75	1	**479-0071**

Cryogenic storage in nitrogen vapour phase, Arpege series
Air Liquide

This range of Arpege storage vessels is designed to hold approx 10% of nitrogen in the liquid phase and remainder in the gaseous phase. Although the storage capacity is slightly reduced compared to the 100% liquid nitrogen filled versions, the handling of the samples and sample boxes is easier and safer. Many of the cryogenic tube/vial manufacturers recommend that their tubes are not stored in the liquid phase unless stored in protective canes or holders.

- Improves user safety and removes the risk of liquid nitrogen burns when handling samples and boxes
- No liquid in the racks making it easier to remove racks from container
- Minimises the possible risks of cross contamination through liquid nitrogen phase
- Daily evaporation rate similar to the liquid Arpege versions
- Range of products to meet storage requirements from 1600 up to 5400 2 ml vials

Note: It is important to ensure that the Arpege vapour phase vessels remain connected to a liquid nitrogen supply at all times.

Model	Arpege 70	Arpege 110	Arpege 140	Arpege 170
Storage capacity of 2 ml vials - capacity (100 vials/box)	1600	3200	4200	5400
Storage capacity of 2 ml vials - number of racks	4		6	
Storage capacity of 2 ml vials - number of stages	4	8	7	9
Storage capacity of 5 ml vials - capacity (100 vials/box)	648	1296	1458	1944
Storage capacity of 5 ml vials - number of racks	4		6	
Storage capacity of 5 ml vials - number of stages	2	4	3	4
Storage capacity of straws - 0,25 ml straws (max)	9520	19040	28560	57120
Storage capacity of straws - 0,5 ml CBS straws (max)	2380	4760	7140	10710
Storage capacity of straws - 0,5 ml straws (max)	3400	6800	10200	15300
Storage capacity of straws - number of racks	4		6	
Storage capacity of straws - number of stages	1	2		3

Description	Pk	Cat. No.
Arpege 70 vapour phase vessel with 2 ml racks, level indicator and automatic filling	1	**478-3616**
Arpege 70 vapour phase vessel with 2 ml racks, level indicator, automatic filling and temperature indicator	1	**478-3617**
Arpege 110 vapour phase vessel with 2 ml racks, level indicator and automatic filling	1	**478-3607**
Arpege 110 vapour phase vessel with 2 ml racks, level indicator, automatic filling and temperature indicator	1	**478-3608**
Arpege 140 vapour phase vessel with 2 ml racks, level indicator and automatic filling	1	**478-3610**
Arpege 140 vapour phase vessel with 2 ml racks, level indicator, automatic filling and temperature indicator	1	**478-3611**
Arpege 170 vapour phase vessel with 2 ml racks, level indicator and automatic filling	1	**478-3613**
Arpege 170 vapour phase vessel with 2 ml racks, level indicator, automatic filling and temperature indicator	1	**478-3614**

Storing systems and roller bases for Arpege
Air Liquide

Description	For	Pk	Cat. No.
Roller base	Arpege 140/170	1	**478-0466**
Rack, 4 levels for 2/5 ml vials	Arpege 75	1	**478-3030**
Rack, 5 levels for 1,2/2 ml vials	Arpege 40	6	**478-3056**

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Description	For	Pk	Cat. No.
Rack, 5 levels for 1,2/2 ml vials	Arpege 70	4	478-3057
Rack, 9 levels for 1,2/2 ml vials	Arpege 110	4	478-3058
Rack, 8 levels for 1,2/2 ml vials	Arpege 140	6	478-3059
Rack, 10 levels for 1,2/2 ml vials	Arpege 170	6	478-3060
Rack, 3 levels for 5 ml vials	Arpege 70	4	478-3061
Rack, 5 levels for 5 ml vials	Arpege 110	4	478-3062
Rack, 4 levels for 5 ml vials	Arpege 140	6	478-3063
Rack, 5 levels for 5 ml vials	Arpege 170	6	478-3064
Rack, 4 levels for 1,2/2 ml vials	Arpege 55	6	478-3077
Rack, 4 levels for 1,2/2 ml vials	Arpege 75	6	478-3078
Rack, 2 levels for straws	Arpege 70	4	478-3079
Rack, 3 levels for straws	Arpege 110	4	478-3080
Rack, 3 levels for straws	Arpege 140	6	478-3081
Rack, 4 levels for straws	Arpege 170	6	478-3082
Rack, 3 levels for 5 ml vials	Arpege 70	1	478-3038
Rack, 5 levels for 5 ml vials	Arpege 110	1	478-3040
Rack, 3 levels for straws	Arpege 110	1	478-3047
Rack, 5 levels for 1,2/2 ml vials	Arpege 40	1	478-3036
Rack, 5 levels for 1,2/2 ml vials	Arpege 70	1	478-3037
Rack, 9 levels for 1,2/2 ml vials	Arpege 110	1	478-3039
Rack, 8 levels for 1,2/2 ml vials	Arpege 140	1	478-3041
Rack, 4 levels for 5 ml vials	Arpege 140	1	478-3042
Rack, 10 levels for 1,2/2 ml vials	Arpege 170	1	478-3043
Rack, 5 levels for 5 ml vials	Arpege 170	1	478-3044
Rack, 2 levels for straws	Arpege 70	1	478-3046
Rack, 3 levels for straws	Arpege 140	1	478-3048
Rack, 4 levels for straws	Arpege 170	1	478-3049

Liquid nitrogen Dewar containers, LD series

The LD series Dewars are designed for storing and dispensing small amounts of liquid nitrogen.

- High performance; modern construction and advanced insulation materials assure high thermal efficiency
- Rugged construction; ribbed high strength aluminium body
- Easy operation; lightweight snap-on cap and neck tube assures tight closure and easy access, convenient larger handles

Accessories:

- Withdrawal device enables safe and convenient transfer of LN_2 at rates up to 8 l/minute - recommended for safe dispensing from LD25, LD35 and LD50 Dewars
- A mobile tipping stand is available for safe transport and pouring of LN_2 from LD25 only (not available for LD35, LD50 or Classic 25)

Ordering information: For details of the full range of accessories including replacement caps, transfer hoses and phase separators please contact the VWR sales office.

Model	LD4	LD5	LD10	Classic 25	LD25	LD35	LD50
Capacity (l)	4	5	10	25		35	50
Daily evaporation (l/day)	0,40*	0,77*	0,22*	0,21*	0,23*		0,41*
Static holding time (days)	10*	6*	45*	119*	109*	152*	122*
Weight, empty (kg)	3,0	3,1	6,6	8,6	10,5	16	17,6
Weight, full of LN_2 (kg)	6,2	7,2	14,7	28,9	30,8	44,3	58
Ø neck (mm)	30	142	51	51	64	64	64
Ø×H (mm)	193×432	193×445	290×597	394×582	396×655	475×668	475×823

Description	Pk	Cat. No.
LD4 Dewar	1	478-0443
LD5 Dewar	1	478-0444
LD10 Dewar	1	478-0440
Classic 25 Dewar	1	478-0398
LD25 Dewar	1	478-0441
LD35 Dewar	1	478-0442
LD50 Dewar	1	478-0445

Description	For	Pk	Cat. No.
Accessories			
Roller base, aluminium	Classic 25	1	478-0034
Roller base	HCL12, HC20, LD25, XTL8, XT20, 3K	1	478-0455
Roller base	HC34, HC35, LD35, LD50, LS750, VHC35, XT34	1	478-0048
Liquid withdrawal device with phase separator	LD25, LD35, LD50	1	478-0429
Mobile tipping stand	LD25	1	478-0035

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* Daily evaporation rate and static holding time are nominal. Actual rate may be affected by the nature of the content, atmospheric conditions, container history and manufacturing tolerances.

Liquid nitrogen refrigerators, HC and VHC series

The HC and VHC series refrigerators are designed for storing large quantities of a variety of materials at cryogenic temperatures. Temperatures generally range between –196 °C at the liquid surface and –184 °C under the closed necktube core.

- Large storage capacity with HCL12 designed only for straws
- Rugged construction; ribbed high strength aluminium body, magniformed necktube design, and durable paint
- Versatile storage system; convenient canister numbered index location ring and tapered internal spider
- Superior vacuum performance with three year warranty on vacuum and super insulation provides maximum holding times
- Security; optional low-level alarm is available with remote monitor and lockable lid

Ordering information: For details of the full range of accessories, please contact the VWR sales office.

For details of the full range of accessories, please contact the VWR Technical Office on 01342 337447.

Model	HCL12	HC20	HC34	HC35	VHC35
Daily evaporation (l/day)	0,20*	0,23*	0,17*	0,27*	
No. of canisters	6			10	6/7
Static holding time (days)	60*	87*	200*	130*	
Storage capacity of 2 ml vials - capacity (100 vials/box)	-	684**		1020**	1260**
Storage capacity of straws - 0,5 ml straws (max)	2940	5880		9800	9900
Weight, empty (kg)	9,8	12	16,1	17,7	17,2
Ø×H (mm)	396×482	396×615	478×668	478×681	
Ø×H canisters (mm)	70×127	70×279		67×279	94x279

Description	Pk	Cat. No.
LN_2 refrigerator, HCL12	1	**478-0391**
LN_2 refrigerator, HC20	1	**478-0397**
LN_2 refrigerator, HC34	1	**478-0418**
LN_2 refrigerator, HC35	1	**478-0420**
LN_2 refrigerator, VHC35	1	**478-0421**

Description	For	Pk	Cat. No.
Accessories			
127 mm canister	HCL12	1	**478-0557**
278 mm canister	HC20	1	**478-0568**
278 mm canister	HC34	1	**478-0558**
278 mm canister	VHC35	1	**478-0560**
Low level alarm	HC34 and HC20	1	**478-0052**
Low level alarm	VHC35, LS750	1	**478-0057**
Low level alarm	HC35	1	**478-0060**
Replacement cap/neck core	HCL12	1	**478-0556**
Replacement cap/neck core	HC20	1	**478-0567**
Replacement cap/neck core	HC34	1	**478-0054**
Replacement cap/neck core	HC35	1	**478-0061**
Replacement cap/neck core	VHC35	1	**478-0059**
Roller base	HCL12, HC20, LD25, XTL8, XT20, 3K	1	**478-0455**
Roller base	HC34, HC35, LD35, LD50, LS750, VHC35, XT34	1	**478-0048**

* Daily evaporation rate and static holding time are nominal. Actual rate may be affected by the nature of the content, atmospheric conditions, container history and manufacturing tolerances.
** 1,2 or 2,0 ml vial size with Ø 12,5 mm (internal thread) six vials per cane (no cryosleeve).

Liquid nitrogen refrigerators, LS series

The LS series refrigerators are uniquely designed for large vial capacity in convenient box-type storage racks together with exceptionally low evaporation rates. To comply with Medical Device Directive (MDD) CE 93 / 42 Class IIa Taylor Wharton has introduced the new CryoCE range to the LS series. All MDD models feature

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the M505CE controller which provides automatic filling and alarm features. For details, see the information for accessories in the K series cryostorage systems catalogue entry.

- LS750 holds 25 vials in 5×5 matrix boxes
- LS3000, LS4800, LS6000 hold vials in 10×10 matrix boxes
- Each refrigerator holds six racks with system index location ring and internal spider allows easy location and quick retrieval of samples
- For sample protection low liquid level alarms are available on all units
- 3 year warranty on vacuum

Ordering information: The LS3000 and LS6000 are also available with controllers which provide automatic filling and alarm features. Controllers are a factory fitted option. Retrofitting is not possible. Please contact your local VWR sales office for details.

Delivery information: All units are supplied complete with racks, boxes and neck core.

Model	LS750	LS3000	LS4800	LS6000
Daily evaporation (l/day)	0,27*	0,76*	0,85*	0,84*
Static holding time (days)	130*	106*	153*	194*
Storage capacity of 2 ml vials - capacity (100 vials/box)	750**	3000**	4800**	6000**
Weight, empty (kg)	17,7	31,8	40,9	55,0
Ø×H (mm)	478×681	683×731	683×892	683×991

Description	Pk	Cat. No.
LS750 refrigerator	1	**478-0495**
LS3000 refrigerator	1	**478-0494**
LS3000 refrigerator with MDD-Approval and M505CE controller	1	**478-0493**
LS4800 refrigerator	1	**478-0497**
LS6000 refrigerator	1	**478-0496**
LS6000 refrigerator with MDD-Approval and M505CE controller	1	**478-0491**

Description	For	Pk	Cat. No.
Accessories			
Low level alarm	LS3000	1	**478-0414**
Low level alarm	VHC35, LS750	1	**478-0057**
Low level alarm	LS4800	1	**478-0458**
Low level alarm	LS6000	1	**478-0459**
Roller base	HC34, HC35, LD35, LD50, LS750, VHC35, XT34	1	**478-0048**
Roller base	LS3000, LS4800, LS6000	1	**478-0064**

* The daily evaporation rate and static holding time are nominal. Actual rate may be affected by the nature of the content, atmospheric conditions, container history and manufacturing tolerances.
** 1,2 or 2,0 ml vial size with Ø 12,5 mm (internal thread).

Liquid nitrogen refrigerators, XT series

The XT series (extended time) of cryogenic refrigerators are designed for long-term storage of a variety of materials at cryogenic temperature.

- Narrow neck design gives low evaporation rate and long holding times for reduced running costs
- Rugged construction and three year warranty on vacuum
- Versatile storage system; convenient canister index locating ring and internal spider
- XTL3 and XTL8 versions feature a lower profile for more convenient transport and storage of straws
- Samples (1,2, 2,0 or 5,0 ml vials) are held on canes stored in canisters; straws can be stored in goblets in canisters
- XTL8 and XT34 include a tab on the lid for securing with a lock (lock not supplied)

Ordering information: For details of the full range of accessories including replacement caps/neck cores and canisters, please contact your local VWR sales office.

Delivery information: All units are supplied complete with canisters and neck core.

Model	XTL3	XTL8	XT10	XT21-AI	XT34
Capacity (l)	3	8	10	21	34
Daily evaporation (l/day)	0,11*	0,10*		0,095*	0,10*
No. of canisters	6				
Static holding time (days)	27*	80*	100*	221*	340*
Storage capacity of 2 ml vials - capacity (100 vials/box)	-		180**	210**	180**
Storage capacity of straws - 0,5 ml straws (max)	750		1500	1122	1500
Weight, empty (kg)	3,3	8,9	7,5	11,8	15,8
Ø neck (mm)	51			55,4	51
Ø×H (mm)	193×437	396×483	290×597	396×655	478×668
Ø×H canisters (mm)	38×127		38×279	41,9×279	38×279

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Description	Pk	Cat. No.
LN_2 refrigerator, XTL3	1	**478-0404**
LN_2 refrigerator, XTL8	1	**478-0423**
LN_2 refrigerator, XT10	1	**478-0392**
LN_2 refrigerator, XT21-AI	1	**478-0543**
LN_2 refrigerator, XT34	1	**478-0419**

Description	For	Pk	Cat. No.
Accessories			
Low level alarm	XT20, XT34	1	**478-0049**
Roller base	HCL12, HC20, LD25, XTL8, XT20, 3K	1	**478-0455**
Roller base	HC34, HC35, LD35, LD50, LS750, VHC35, XT34	1	**478-0048**

* Daily evaporation rate and static holding time are nominal. Actual rate may be affected by the nature of the content, atmospheric conditions, container history and manufacturing tolerances.
** Vials: 1,2 or 2,0 ml vial size with Ø 12,5 mm (internal thread); six vials per cane (no cryosleeve)/100 vials per box.

Liquid nitrogen cryostorage systems, K series

478-0399

478-0417, 478-0003

The K series cryogenic systems offer reliable liquid nitrogen storage with controllable temperatures down to –196 °C. The systems are ideal for liquid or vapour phase storage of samples. The combination of automatic filling, alarms, easy access to stored product and the Temperature Gradient Suppression System give excellent vapour phase storage temperature control and recovery. For full automation of the 10K, 24K and 38K, a controller is required.

- 3000 to 38 350 vial storage capacities
- Vapour or liquid phase storage systems
- Fully automated, microprocessor based controller options on 10K, 24K and 38K
- Three year warranty on vacuum

K series without inventory control system

Model 3 K: 48 litre, wide mouth container for easy access to "pie" shaped inventory control system. A low liquid level alarm is available, see below.

Models 10K and 24K: Large volume, stainless steel vessels housed in durable powder coated, castor mounted cabinets. Hinged lockable lid and automatic fill connections.

Model 38 K: Large capacity, rugged polished stainless steel vessel with 38 350 vial capacity. Automatic fill systems are easily mounted on the side of the vessel.

MDD versions of K series

Medical Device Directive MDD CE 93/42 Class IIa version are available in 10K, 24K and 38K range. All models feature the M505CE controller.

Accessories

Two autofill controllers are available; the CryoCon AF-1D (M550 series) and for those users who require data logging or temperature control there is the more advanced CryoCon AFT 3L (M505CE series).

- Automatic level control with 4 level monitoring points, extra low, normal, high and extra high
- Lid switch that controls automatic defog and quick chill
- Alarms for high temperature; sensor fault; failure of LN_2 supply; under/overfill; lid left open
- Remote alarm
- Manual fill stop/start

The more advanced CryoCon AFT-3L (M505CE series) also has additional features which include:

- 8000 data logging events and data download capability using RS232 and Cryodata software (please contact your local VWR sales office for details)
- User programmable temperature control in the vapour phase
- Password controlled access

Model	3K	10K	24K	38K
Daily evaporation (l/day)	2,5*	5*	7*	8*
Static holding time (days)	19*	33*	52*	74*
Storage capacity of 2 ml vials - capacity (100 vials/box)	3726***	10400***	24050***	38350***
Weight, empty (kg)	19,1	111	184	256
W×D×H ext. (mm)	-	587×775×1118	864×965×1118	-
Ø neck (mm)	356	533	787	991
Ø×H (mm)	391×754	-		1067×1245

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Description	Pk	Cat. No.
K series without inventory control system		
Cryostorage system, 3K	1	**478-0399**
Cryostorage system, 10K	1	**478-0003**
Cryostorage system, 24K	1	**478-0417**
Cryostorage system, 38K	1	**478-0422**
MDD versions of K series		
Cryostorage system 10K, with MDD approval	1	**478-0405**
Cryostorage system 24K, with MDD approval	1	**478-0406**
Cryostorage system 38K, with MDD approval	1	**478-0412**

Description	For	Pk	Cat. No.
Accessories			
CryoCon AFT-3L (M505CE)	10K, 24K	1	**478-0449**
CryoCon AFT-3L (M505CE), boxed version	38K	1	**478-0450**
CryoCon AF-1D (M550CE)	10K, 24K	1	**478-0453**
CryoCon AF-1D (M550CE), boxed version	38K	1	**478-0454**
Printer cable	CryoCon AFT-3L (M505CE)	1	**478-0451**
PC cable	CryoCon AFT-3L (M505CE)	1	**478-0452**

* The daily evaporation rate and the static holding time are nominal. Actual rate may be affected by the nature of the content, atmospheric conditions, container history and manufacturing tolerances.
**The capacity is based on container full of liquid up to 51 mm, below the lid.
*** Liquid phase: 2,0 ml vial size with Ø 12,5 mm (internal thread) when using the inventory control system described below.

Inventory control systems

Inventory control systems (ICS) for the K series to take vials, blood bags, 96-tube format systems or straws in either vapour or liquid phase.

Inventory control systems for model 3K

- Inventory control systems for liquid or vapour phase storage
- Lightweight anodised aluminium racks with optional dividers for 1,2 and 2,0 ml vials

Inventory control systems for 10K, 24K and 38K vessels

- Lightweight anodised aluminium racks with wide handle on top, containing 25 cell and 100 cell polycarbonate boxes for 1,2 or 2,0 ml vial size, 12,5 mm O.D. (internal thread)
- Leaf spring retains the box so there is no need for the external locating rod, making for easier removal of boxes

Ordering information: For details of the software for efficient data archiving and localisation of samples, and also blood bag systems and vapour phase insert frames please contact the VWR Technical Office.

Description	For	No. of racks	Rack shape	Shelves/drawers per rack	Storage phase	Vial capacity	Pk	Cat. No.
K-series Inventory control systems								
Inventory control system	3K	6*	Triangular wedge	6	Vapour	2484**	1	**478-0465**
Inventory control system	3K	6*	Triangular wedge	9	Liquid	3726**	1	**478-0464**
Inventory control system	10K	7*	Square	11	Vapour	8800	1	**478-0486**
Inventory control system	24K	17*	Square	11	Vapour	20350	1	**478-0484**
Inventory control system	24K	17*	Square	13	Liquid	24050	1	**478-0482**
Inventory control system	38K	28*	Square	13	Vapour	32450	1	**478-0481**
Inventory control system	38K	28*	Square	11	Liquid	38350	1	**478-0483**
LABS vapour inventory control systems								
Inventory control system	LABS 20K	14****	Square	13	Vapour	19500	1	**478-0490**
Inventory control system	LABS 40K	30	Square	13	Vapour	41600	1	**478-0487**
Inventory control system	LABS 80K	58****	Square	13	Vapour	79300	1	**478-0488**

* Racks for 100 vial boxes (127×127 mm) with vials 12,5 mm OD and internal thread.
** Plastic dividers required; see Accessories: Vapour phase two packs and liquid phase three packs

Liquid nitrogen, vapour phase cryostorage, LABS series

The Taylor Warton LABS 20K, LABS 40K, LABS 80K and LABS 94K refrigerators provide unique solutions to both short term and long term storage of large volumes of specimens with a capacity of up to 94 500 × 2 ml vials, a storage temperature near that of liquid nitrogen in the vapour phase at the top of the vessel and low nitrogen consumption. The bearing-free, easy to rotate turntable with aluminium dividers permits quick, convenient access to the stored material. The LABS 20K and LABS 40K have four low profile and lockable castors, whilst LABS 80K and 94K have five.

- Near LN_2 temperature at top rack in vapour phase
- All stainless steel inner and outer container with full super insulation wrap with flat table top convenient work surface
- Two-handle aluminium lid with durable polyurethane plug, hinged and lockable
- One low rise, foldable sure grip step (working height less than a 10K), LABS 94K has double step
- Five year warranty on vacuum, two year on controller

CryoCon level controller options

Two autofill controllers are available; the CryoCon AF-1D (M550 series) and for those users who require data logging or temperature control there is the more advanced CryoCon AFT-3L (M505CE series).

- Automatic level control with 4 level monitoring points, extra low, normal, high and extra high
- Lid switch that controls automatic defog and quick chill
- Alarms for high temperature, sensor fault, failure of LN_2 supply, under/overfill, lid left open
- Remote alarm
- Manual fill stop/start

The more advanced CryoCon AFT-3L (M505CE series) also has additional features which include:

- 8000 data logging events and data download capability using RS232 and Cryodata software (please contact VWR for details)
- User programmable temperature control in the vapour phase
- Password controlled access

MDD versions of LABS series

Medical Device Directive MDD CE 93/42 Class IIa versions are available, please contact us for details. All models feature the M505CE controller.

Ordering information: For details of the full range of accessories including replacement caps/neck cores, canisters and for efficient data archiving and localisation of samples please contact your local VWR sales office.

Model	LABS 20K	LABS 40K	LABS 80K	LABS 94K
Daily evaporation (l/day)	4*	4,5*	8*	
Storage capacity of 2 ml vials - capacity (100 vials/box)	19500**	41600**	79300**	94500**
Weight, empty (kg)	295	417	703	771
Ø neck (mm)	330	457	622	
Ø×H (mm)	864×1455	1143×1455	1511×1455	1511×1575

Description	Pk	Cat. No.
LABS cryostorage vessel with level controller but without inventory control system		
LABS 20K with CryoCon AF-1D (M550 series) controller	1	**478-0407**
LABS 20K with CryoCon AFT 3L (M505CE series) controller	1	**478-0408**
LABS 40K with CryoCon AF-1D (M550 series) controller	1	**478-0438**
LABS 40K with CryoCon AFT 3L (M505CE series) controller	1	**478-0409**
LABS 80K with CryoCon AF-1D (M550 series) controller	1	**478-0439**
LABS 80K with CryoCon AFT 3L (M505CE series) controller	1	**478-0410**
LABS 94K with CryoCon AF-1D (M550 series) controller	1	**478-0552**
LABS 94K with CryoCon AFT 3L (M505CE series) controller	1	**478-0551**
MDD versions of LABS series		
LABS 20K with CryoCon AFT 3L (M505CE series) controller with MDD approval	1	**478-0411**
LABS 40K with CryoCon AFT 3L (M505CE series) controller with MDD approval	1	**478-0424**
LABS 80K with CryoCon AFT 3L (M505CE series) controller with MDD approval	1	**478-0425**
LABS 94K with CryoCon AFT 3L (M505CE series) controller with MDD approval	1	**478-0550**

Description	For	Vial capacity	No. of racks	Storage phase	Rack shape	Pk	Cat. No.
LABS vapour inventory control systems							
Inventory control system	LABS 20K	19500	14****	Vapour	Square	1	**478-0490**
	LABS 40K	41600	30	Vapour	Square	1	**478-0487**
	LABS 80K	79300	58****	Vapour	Square	1	**478-0488**
Accessories							
Printer cable	CryoCon AFT-3L (M505CE)					1	**478-0451**
PC cable	CryoCon AFT-3L (M505CE)					1	**478-0452**

* The daily evaporation rate and the static holding time are nominal. Actual rate may be affected by the nature of the content, atmospheric conditions, container history and manufacturing tolerances.
** 1,2 or 2,0 ml vial size with Ø 12,5 mm (internal thread); 25 or 100 vials per box.
*** LN_2 capacity underneath the base plate.
**** Racks for 100 vial boxes (127×127 mm) with vials 12,5 mm O.D and internal thread.

Dry shippers, DS series

Dry shippers are used for the safe transportation of samples at cryogenic temperatures.

Hydrophobic absorbent material is fixed in the inner capacity of the vessel. After complete saturation of the material with liquid nitrogen, the vessels are ready to transport samples at cryogenic temperatures, without the risk of liquid nitrogen spilling, if the container is overturned.

• Safe transportation of samples

The model DS-24 can be equipped with removable absorbent cartridges to improve the holding time.

The shippers do not conform to International Air Transport Regulations (IATA) for transportation of infectious material.

Certification: CE - Medical

Model	DS-2	DS-5	DS-24
Capacity (l)	2	5,2	24
No. of canisters	1		7*
No. of test tube racks	-		1×6 boxes*
Static holding time (days)	23	19	11
Weight, empty (kg)	3,3	6,9	15,6
Ø×H (mm)	190×407	251×497	400×664

Description	Neck-Ø (mm)	Pk	Cat. No.
Dry shipper, DS-2	35	1	**478-0305**
Dry shipper, DS-2 including datalogger (2 years average duration)	35	1	**478-0358**
Dry shipper, DS-5	70	1	**478-0306**
Dry shipper, DS-5 including datalogger (2 years average duration)	70	1	**478-0359**
Dry shipper, DS-24	215	1	**478-0307**
Dry shipper, DS-24 including datalogger (2 years average duration)	215	1	**478-0360**

Description	For	Pk	Cat. No.
Removable cartridges for DS-24			
60 mm cartridge to enlarge the capacity of absorbed LN_2	DS-24	1	**478-0317**
120 mm cartridge to enlarge the capacity of absorbed LN_2	DS-24	1	**478-0318**
Extractor for cartridges	DS-24	1	**478-0319**
Protective flight case for DS, with foam protection inside			
Case with 4 mm foam protection inside	DS-2	1	**478-0308**
Case with 4 mm foam protection inside	DS-5	1	**478-0309**
Case with 7 mm foam protection inside	DS-24	1	**478-0310**
Accessories			
Phase separator, Ø×H: 30×100 mm		1	**478-0316**
Optional rack with 6 drawers, stainless steel for DS-24 without cartridge		1	**478-0333**
Optional rack with 5 drawers, stainless steel for DS-24 with 60 mm cartridge		1	**478-0334**
Optional rack with 4 drawers, stainless steel for DS-24 with 120 mm cartridge		1	**478-0335**
Optional rack with 3 drawers, stainless steel for DS-24 with 60+120 mm cartridge		1	**478-0336**
Standard flexible hose; 1,20 m, 2×female ¾" connections		1	**478-0315**
Standard flexible hose; 2 m, 2×female ¾" connections		1	**478-0371**
Standard flexible hose; 3 m, 2×female ¾" connections		1	**478-0372**
Replacement battery (recommended every 2 years)		1	**478-0362**

* DS-24 is delivered without canister, rack or cartridge (must be ordered separately). For details of the range contact your local VWR sales office.

Liquid nitrogen transport vessels, Voyageur
Air Liquide

Specially designed for transportation of biological products.

A porous substance absorbs the liquid nitrogen and preserves the samples in gaseous phase. The products are transported in total safety because the risk of liquid spillages is eliminated.

The Voyageur vessels comply with international regulations applicable to transportation of hazardous goods over land, by air and by rail.

Supplied with 2 canisters (except Voyageur plus).

Models with Thermory mobile; temperature traceability system (datalogger).

Model	Voyageur 2	Voyageur 5	Voyageur 12	Voyageur plus
Absorbed capacity (l)	1,35	4,8	10,5	7,2
Capacity (l)	1,75	6,5	15	20,6
Daily evaporation (l/day)	0,1	0,13	0,24	0,8

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No. of canisters	2				-	
No. of stages of goblets	1	2				
Static holding time (days)	13	37	44		9,5	
Storage capacity of 2 ml vials - capacity (100 vials/box)	-	84	252		500	
Storage capacity of 5 ml vials - capacity (100 vials/box)		42	126		162	
Storage capacity of bags - max. DF700 bags	-				6	
Storage capacity of straws - 0,25 ml straws (max)	220	1040	3280		-	
Storage capacity of straws - 0,5 ml straws (max)	100	400	1320			
Ø neck (mm)	30	50	80		215	215
Ø×H (mm)	174×395	248×550	308×570	308×570	356×575	
Ø×H canisters (mm)	26×120	41×280	71×280		-	

Description	Neck-Ø (mm)	Pk	Cat. No.
Voyageur 2	30	1	**478-3311**
Voyageur 5	50	1	**478-3312**
Voyageur 5 with Thermory mobile	50	1	**478-1002**
Voyageur 12	80	1	**478-3313**
Voyageur 12 with Thermory mobile	80	1	**478-1000**
Voyageur plus	215	1	**478-3314**
Voyageur plus with Thermory mobile	215	1	**478-1001**

Description	For	Pk	Cat. No.
Liquid nitrogen transport vessels, Voyageur			
Canister, bent	Voyageur 2	1	**478-0144**
Canister, straight	Voyageur 2	1	**478-0138**
Protective casing, plastic	Voyageur 2	1	**478-0000**
Canister, bent	Voyageur 5	1	**478-0145**
Canister, straight	Voyageur 5	1	**478-0146**
Protective casing, plastic	Voyageur 5	1	**479-0063**
Canister, bent	Voyageur 12	1	**478-0147**
Canister, straight	Voyageur 12	1	**478-0148**
Protective casing, plastic	Voyageur 12	1	**479-0064**
Holder for blood bags and derivatives	Voyageur plus	1	**478-3236**
Holder for blood bags DF700	Voyageur plus	1	**478-3045**
Protective casing, plastic	Voyageur plus	1	**479-0065**
Rack for boxes, 133×133×51 mm, 1 per vessel	Voyageur plus	1	**478-3234**
Rack for boxes, 75×75×51,3 mm, 3 per vessel	Voyageur plus	1	**478-3235**

Liquid nitrogen dry shippers, Cryo Express series

Cryo Express 'dry shippers' are designed to transport a variety of materials safely at cryogenic temperatures. They have replaceable absorbent material enabling easy cleaning of the shippers. Storage temperature inside the shipping cavity remains at a minimum of –150 °C until the liquid nitrogen evaporates from the absorbent material. If the unit is tipped over the absorbent material prevents a liquid spill.

- Advanced concept absorbent enables faster charging
- Complies with IATA regulations for shipping non-infectious samples
- Hard shell shipping case has shock resistant foam liner and hinged lid to provide extra protection in transit
- Compact, lightweight design with lockable lid
- Optional data logger

Data loggers and cables

Data loggers for the CXR100 and CX500/CXR500 refrigerators provide logging and non volatile storage of 4096 temperature measurements. The units comply with; 89/336/EEC (EMC Directive). RTCA D0160D Section 21.4, Radiated Emissions Cat B (for safe operation on board aircraft).

- Logging interval adjustable from 1 minute to 30 minutes
- Non-rechargeable lithium cell battery (minimum five year operation)
- PC interface for setting up, collection and analysis of data (PC cable and software required, but not supplied)
- Measuring range, -199 °C to +40 °C (accuracy ±3 °C)

Model	CXR500	CXR100
Absorbed capacity (l)	7,7	3,3
Daily evaporation (l/day)	0,60*	0,20*
Static holding time (days)	14*	16*
Storage capacity of 2 ml vials - capacity (100 vials/box)	500**	102**
Weight, empty (kg)	13,6	5,3
Weight, full of LN_2 (kg)	19,8	8,3
Ø×H (mm)	391×683	234×493

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Description	Pk	Cat. No.
Dry shippers		
CXR500 with rack for cryoboxes	1	**478-0499**
CXR500 with rack for blood bags	1	**478-0498**
CXR100 with canister for cryovials (in cryocanes)	1	**478-0427**

Description	For	Pk	Cat. No.
PC cable & software	M385CE, M382CE	1	**478-0446**
M382CE data logger	CXR100	1	**478-0447**
M385CE data logger	CXR500	1	**478-0448**
Shipping enclosure	CXR100	1	**478-0031**
Shipping enclosure	CXR500	1	**478-0426**
Absorbent replacement	CXR100/CXR500***	1	**478-0428**

* Daily evaporation rate and static holding time are nominal. Actual rate may be affected by the nature of the content, atmospheric conditions, container history and manufacturing tolerances.
** 1,2 or 2,0 ml vial size with Ø 12,5 mm (internal thread); 6 vials per cane (no cryosleeve)/100 vials per box.
*** Two required for CXR500.

Liquid nitrogen cylinders, CryoCyl

These non magnetic stainless steel cylinders are designed for LN_2 and argon applications. They can be connected permanently to the AF series sample storage tanks, or be used as LN_2 storage cylinders to fill smaller vessels. The standard pressure building kit ensures that LN_2 can be withdrawn on demand.

All models are provided with manometer, safety relief valve, fill and withdrawal valve (with standard connection for flexible hose) and vent valve. The float level indicator which is a standard for the CryoCyl-120 and -230 (not possible on CryoCyl-60), can be replaced with a level indicator with a digital display (also available on CryoCyl-60).

Accessories

Optional level gauge with display can be installed on the cylinder instead of the standard float lever indicator. This gives a precise and reliable indication of LN_2 in the cylinder.

Model	CryoCyl-60	CryoCyl-120	CryoCyl-230
Capacity (l)	58	120	230
Weight, empty (kg)	38	92	133
W×D×H ext. (mm)	-		685×725×1397
Ø×H (mm)	460×1000 (without gauge)	570×1205	-

Description	Pk	Cat. No.
LN_2 cylinder, CryoCyl-60	1	**478-0312**
LN_2 cylinder, CryoCyl-120	1	**478-0313**
LN_2 cylinder, CryoCyl-230	1	**478-0314**

Description	Pk	Cat. No.
Accessories		
Level gauge for CryoCyl-60	1	**478-0378**
Level gauge for CryoCyl-120	1	**478-0379**
Level gauge for CryoCyl-230	1	**478-0380**

Liquid nitrogen cylinders, low pressure, XL series

The Taylor Wharton XL series of low-pressure liquid gas cylinders are specifically designed for laboratory applications using LN_2. The XL-160, XL-180 and XL-240 allow for frequent usage, especially the pressure building models (which rapidly build pressure, thus reducing waiting time) and provide for larger on-site requirements. Ideal for use with the Taylor Wharton K-Series refrigerators.

- Polished heavy duty outer body
- Colour-coded relief valves for different pressure settings
- Rugged transportable units
- Castor-mounted for easy manoeuvrability (except XL-160)

Approved according to Transportable Pressure Equipment Directive 1999/36 EC

Ordering information: Medium and high pressure vessels are also available (for liquid or gaseous nitrogen, argon or oxygen) - please ask for details. For the full range of accessories please contact your local VWR office.

Model	XL-70PB	XL-120PB	XL-180PB	XL-240PB	XL-120	XL-160	XL-180	XL-240
Max. pressure (bar)	1,5							
Weight, empty (kg)	71	82	116	137	82	104	115	137
Weight, full of LN_2 (kg)	125	179	263	332	179	234	260	332
Ø×H (mm)	508×1065	508×1300	660×1280	660×1510	508×1300	508×1464	660×1280	660×1510

Description	Capacity (l)	Pk	Cat. No.
XL series low pressure cylinders with pressure building capability			
XL-70PB with 4 castors	67	1	**478-0430**
XL-120PB with 4 castors	120	1	**478-0432**
XL-180PB with 5 castors	181	1	**478-0434**
XL-240PB with 5 castors	240	1	**478-0436**
XL series low pressure cylinders without pressure building capability			
XL-120 with 4 castors	120	1	**478-0431**
XL-160	160	1	**478-0433**
XL-180 with 5 castors	180	1	**478-0435**
XL-240 with 5 castors	240	1	**478-0437**

Description	For	Pk	Cat. No.
Accessories			
Model 80 phase separator, ØxL: 35×70 mm	XL-70 - XL-240	1	**478-0393**
Model 82 phase separator, ØxL: 25×32 mm	XL-70 - XL-240	1	**478-0394**
Transfer hose, 1.8 m	XL-70 - XL-240	1	**478-0395**
Transfer hose, 1.2 m	XL-70 - XL-240	1	**478-0006**
Cylinder transport trolley	XL-160	1	**478-0416**
Square base (order with vessel - cannot be retrofitted)	XL-180, XL-240	1	**478-0460**

Dipper for liquid nitrogen

Safe and convenient dipper for removing small quantities of liquid nitrogen (LN_2) from Dewars or refrigerators.

Description	Capacity (ml)	Pk	Cat. No.
Dipper for liquid nitrogen	11	1	**478-0456**

Oxygen depletion monitor and warning alarm system

Protects against O_2 deficiency where personnel are at risk from nitrogen leakage.

- Audible and visual alarms on all modules to provide low and critically low oxygen warning
- Base unit cannot be turned off, giving additional security to user
- Battery powered with 24 months continuous operation with separate low battery warnings
- No mains connection needed, simply screws to the wall
- Optional battery power repeater module to provide LCD display locally and/or remotely

Description	Pk	Cat. No.
Cryogenic monitoring panel for use with monitoring O_2/temperature and valve status	1	**478-0553**
Base module, containing oxygen sensor, with battery	1	**479-0090**
Repeater module with battery for oxygen deletion monitor, LCD and 10 m connecting cable	1	**479-0091**

Description	Pk	Cat. No.
Accessories for Oxygen Depletion Monitor		
Beacon Alert Unit (Traffic Light) for highly visible display of safe levels of O_2	1	**478-0554**
CryoAlert emergency button to trigger alarms and cut off cryogenic liquid supply	1	**478-0555**
Replacement sensor/battery pack for oxygen deletion monitor	1	**478-0476**
Replacement battery pack for LCD repeater module	1	**478-0477**

Personal oxygen depletion monitor, GasPod

The GasPod is a robust and compact, personal oxygen monitor which monitors continuously the concentration of oxygen in the surrounding air and provides both visual and audible alarms should the detected concentration of oxygen fall below the preset low alarm levels or above the preset high alarm levels. The unit contains a long life two year oxygen sensor and battery pack that provides up to two years continuous operation. The oxygen concentration reading is suppressed in alarm condition to avoid user interpretation of safe levels (continuous reading available upon request*).

- Confidence heartbeat & service indication on LCD display with large clear indication for maximum user visibility
- Different audible, visual and vibration indications for two primary warning alarms and two critical alarm settings
- Rugged highly visible enclosure and durable clip to allow user to attach the GasPod securely to garments
- Simple automated push button calibration in fresh air
- Cannot be switched off to protect wearers at all times

Ordering information: * Unit can be supplied with continuous LCD reading, but this must be specified at time of order. Please contact your local VWR office for details.

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Alarm	LCD indication Vibrate at 18% O_2 Audible at preset O_2 levels (82 dB(A) at 100 mm)
Calibration	By push button adjustment in fresh air
Display	LCD
Display resolution	0,01%
Weight (g)	200
W×D×H (mm)	45×33×80

Description	Pk	Cat. No.
GasPod personal oxygen monitor	1	**478-0471**

Description	Pk	Cat. No.
Accessories		
**Service/calibration of GasPod including replacement of the sensor/battery pack	1	**478-0472**
**Service/calibration of GasPod (recommended at least every 12 months)	1	**478-0473**

** Please contact VWR for details.

Liquid nitrogen, low level alarms for Dewars

Low level alarms, easily fitted to any type or size of low pressure liquid nitrogen refrigerator, cryostat, vessel or Dewar flask. It continuously monitors levels of LN_2 and gives visual and audible warnings when LN_2 levels fall below the level set by the sensor position.

- Independent warning of sensor damage
- Remote alarm connection to in-house monitoring systems
- Sensor mounting kit required
- Adjustable sensor position
- 15 V power supply included

Ordering information: Purchase of alarm with probe assembly must be specified at the time of ordering Dewar or refrigerator. Prices include factory fitting only. Please contact your local VWR sales office for details of fitting alarm *in situ*.

Description	Pk	Cat. No.
Low LN_2 alarm without probe assembly for dewars and refrigerators	1	**478-0474**
Mounting kit for low alarm	1 KIT	**478-0475**

Measuring rod/dipstick for liquid nitrogen

A calibrated plastic measuring rod to clearly show the liquid nitrogen (LN_2) level in a Dewar in millimetres and inches.

Description	Pk	Cat. No.
Measuring rod, plastic	1	**478-0457**

E-BUSINESS

More than just a webshop for all of your laboratory needs

Please visit us at vwr.com

Cryogenic vials

PP vial and closure, sterile

Designed for the storage of biological material, human or animal cells, at temperatures as low as -196 °C (but should be used only in the gas phase of liquid nitrogen).

- Certified RNase-, DNase-, pyrogen- and DNA-free
- With graduation and marking area

Round bottom vials can be centrifuged up to 17 000×g

Capacity (ml)	Base	Ø ext.×H (mm)	Pk	Cat. No.
With external thread and lip seal				
1,2	Self standing	12,5×41	1.000	**479-1219**
2,0	Round bottom	12,5×46	1.000	**479-1235**
2,0	Self standing	12,5×48	1.000	**479-1220**
5,0	Self standing	12,5×90	1.000	**479-1236**
With internal thread and silicone O-ring				
1,2	Self standing	12,5×41	1.000	**479-1261**
2,0	Round bottom	12,5×48	1.000	**479-1263**
2,0	Self standing	12,5×49	1.000	**479-1262**
4,0	Round bottom	12,5×70	1.000	**479-1265**
4,0	Self standing	12,5×72	1.000	**479-1264**
5,0	Round bottom	12,5×90	1.000	**479-1266**
With external thread, lip and red silicone O-ring				
1,2	Self standing	12,5×43	1.000	**479-1207**
2,0	Round bottom	12,5×48	1.000	**479-1209**
2,0	Self standing	12,5×49	1.000	**479-1208**
3,0	Self standing	12,5×72	1.000	**479-1210**
4,0	Self standing	12,5×76	1.000	**479-1217**
5,0	Self standing	12,5×93	1.000	**479-1218**
With internal thread and white silicone O-ring				
1,2	Self standing	12,5×41	1.000	**479-1254**
2,0	Round bottom	12,5×48	1.000	**479-1258**
2,0	Self standing	12,5×49	1.000	**479-1256**
4,0	Round bottom	12,5×70	1.000	**479-1255**
4,0	Self standing	12,5×72	1.000	**479-1260**
5,0	Round bottom	12,5×90	1.000	**479-1259**
5,0	Self standing	12,5×92	1.000	**479-1257**
With external thread and white silicone O-ring				
1,2	Self standing	12,5×43	1.000	**479-1238**
2,0	Round bottom	12,5×48	1.000	**479-1240**
2,0	Self standing	12,5×49	1.000	**479-1239**
3,0	Self standing	12,5×72	1.000	**479-1251**
4,0	Self standing	12,5×76	1.000	**479-1252**
5,0	Self standing	12,5×93	1.000	**479-1253**
10,0	Self standing	17,0×84	500	**479-1237**

Coloured Capinsert™ for cryogenic vials

PP

Inserts fit precisely into the cap of the cryogenic vial for colour identification.

* Set: Assortment of white, blue, red, green and yellow (100 of each)

Colour	Pk	Cat. No.
Amber	500	**479-0809**
Blue	500	**479-0814**
Green	500	**479-0812**
Grey	500	**479-0808**
Lilac	500	**479-0807**
Orange	500	**479-0806**
Pink	500	**479-0804**
Red	500	**479-0813**
Violet	500	**479-0805**
White	500	**479-0815**
Yellow	500	**479-0811**
Set	500	**479-0810**

Sleeves for CryoCanes®

PVC

Protects cryocanes during handling and storage.

Length (mm)	Pk	Cat. No.
275	100	**211-0229**

Cryogenic tubes, CryoTubes™, Nunc™
Thermo Scientific

PP tubes with PP screw cap and white writing area, sterile

Developed for storage of cell cultures, bacteria and other samples at extremely low temperatures. Suitable for use in freezers as well as in gaseous and liquid nitrogen*.

Non toxic, non pyrogenic, CE marked for IVD.

Conform to IATA regulations for the air transportation of biological samples.

*** Warning**

Do not use CryoTubes™ in the liquid phase of liquid nitrogen unless correctly sealed in Nunc CryoFlex™ tubing. Improper use may cause entrapment of liquefied nitrogen inside the vial and lead to pressure build up, resulting in possible explosion or biohazard release.

Capacity (ml)	Base	Ø ext.×H (mm)	Cap colour	Pk	Cat. No.
Internal thread with silicone O-ring, sterile					
1,0**	V	12,5×42	Clear	500	**479-6840**
1,0***	V	12,5×42	Clear	500	**479-6842**
1,8	U	12,5×48	Clear	500	**479-6837**
1,8**	U	12,5×49	Clear	450	**479-6841**
1,8***	U	12,5×49	Clear	450	**479-6843**
3,6	U	12,5×70	Clear	400	**479-6838**
3,6***	U	12,5×72	Clear	400	**479-6844**
4,5	U	12,5×92	Clear	300	**479-6839**
4,5***	U	12,5×92	Clear	300	**479-6845**
Internal thread with silicone O-ring, without caps, non sterile					
1,8	U	12,5×48	—	2.500	**479-6852**
3,6	U	12,5×70	—	1.500	**479-1159**
External thread, sterile					
1,0	U	12,4×30	Clear	500	**479-6816**
1,0***	V	12,5×41	Clear	500	**479-6846**
1,0* ***	V	12,5×41	Clear	500	**479-6849**
1,8	U	12,4×44	Clear	500	**479-6853**
1,8***	U	12,5×48	Clear	450	**479-6847**
1,8* ***	U	12,5×48	Clear	450	**479-6850**
4,5***	U	12,5×91	Clear	300	**479-6848**
4,5* ***	U	12,5×91	Clear	300	**479-6836**

* without writing area
** free standing
*** starfoot

Colour coders for cryovials, CryoColorCode, Nunc™
Thermo Scientific

Colour coded inserts for the cap with inscription area.

Notch to remove tube or CryoColorCodes.

Colour	Pk	Cat. No.
Amber	2.000	**479-6817**
Assorted	2.000	**479-6824**
Blue	500	**479-6859**
Green	500	**479-6860**
Grey	2.000	**479-6834**
Orange	500	**479-6861**
Pink	2.000	**479-6833**
Red	2.000	**479-6830**
Violet	2.000	**479-6835**
White	2.000	**391-8514**
Yellow	2.000	**479-6831**

Storage canes for cryotubes CryoLine™, Nunc™
Thermo Scientific

Aluminium

For six cryotubes of 1,2 or 1,8 ml; four cryotubes of 3,6 ml or three cryotubes of 4,5 ml.

Length: 280 mm

Can be marked with colour code tabs.

Description	Length (mm)	Pk	Cat. No.
Storage canes for cryotubes	280	50	**479-0021**

Cryotubes Stor-It™, Nunc™
Thermo Scientific

PP, with PE screw cap

- Free standing tubes with starfoot
- External thread

With writing area.

Caps and vials packed separately.

Attention: Not recommended for use in the liquid phase of nitrogen.

Description	Capacity (ml)	Base	Ø ext.×H (mm)	Pk	Cat. No.
With writing area and graduations	1,8	Round bottom	12,5×48	1.800	**391-8342**
With writing area and graduations	4,5	Round bottom	12,5×91	1.200	**391-8343**

Storage vials, Nunc™
Thermo Scientific

High purity PPCO (PP copolymer) vial, PE screw cap, sterile

Excellent for centrifugation and storage of PCR reagents, restriction enzymes and other diagnostic and biochemical reagents or samples. Available in 0,5 and 2,0 ml sizes with frosted writing area; furthermore 2,0 ml size have graduations at 0,5 and 1,0 ml.

- Leakproof screw closure even without an O-ring
- One full turn removes the closure, giving easy access to contents

Can be centrifuged to a max. of 13 000 ×g.

Can be used from -40 to +95 °C.

Capacity (ml)	Ø ext.×H (mm)	Pk	Cat. No.
0,5	13×49	500	**391-8348**
2,0	13×49	500	**391-7589**

Storage tubes, Nunc™
Thermo Scientific

Virgin Class VI medical grade PP

Tubes and rack are ideal for both lower-throughput benchtop use and high-throughput automation use. Permanently bonded, unique 2D barcode laser-etched onto the base of the tube to securely identify and track samples.

- All barcodes are checked against the database of previously assigned codes to prevent duplicates
- Every tube is leak tested
- Externally threaded single-piece caps with moulded-in gaskets that cannot be over-tightened manually or with automated capping tools
- DNA-, DNase-, RNase- and endotoxin-free
- Temperature resistant from -180 to +121 °C
- With graduations and white patch for manual marking

Description	Capacity (ml)	Pk	Cat. No.
2D barcoded tubes, with caps, in universal latch rack, sterile, with white patch and graduations	1,8	480	**479-1196**
Tubes without barcode, with caps, in universal latch rack, sterile, with white patch and graduations	1,8	480	**479-1197**
2D barcoded tubes, with caps, bulk, sterile, with white patch and graduations	1,8	480	**479-1198**
Tubes without barcode, with caps, bulk, sterile, with white patch and graduations	1,8	480	**479-1199**

For tubes (ml)	No. of holes	Pk	Cat. No.
Racks for 48 storage tubes, Nunc™			
1,8	48 (8×6)	10	**479-1195**

IVD

Cryobank vials and Bank-It™, Nunc™
Thermo Scientific

Designed for low temperature storage of biological materials and automated handling.

The vials are clicked into the low profile microplate format rack to allow automatic manipulation and automated transport without the risk of losing samples. The cap is designed with a socket to allow automated manipulation through a click of the screwdriver (included) into the cap.

- DNase- and RNase-free
- Non toxic according to USP class VI test

Conform to IATA requirements for the transport of diagnostic specimens, UN packing instruction 602 and 650.

Cryobank vials have low protein adsorption surface for storage of cells and proteins, sterile.

Bank-It™ for low DNA adsorption surface for storage of DNA.

The 2D coded articles can be read by a suitable barcode reader.

Description	Capacity (ml)	Pk	Cat. No.
Cryobank vials, 2D coded, sterile, racked	0,5	960	**479-0588**
Cryobank vials, 2D coded, sterile, racked	1,0	960	**479-0592**
Cryobank vials, uncoded, sterile, racked	0,5	960	**479-0589**
Cryobank vials, uncoded, sterile, racked	1,0	960	**479-0593**
Cryobank vials, uncoded, sterile, racked (include black manual screwdriver)	0,5	192	**479-0581**
Bank-It™, 2D coded, racked (include black manual screwdriver)	0,5	960	**479-0590**
Bank-It™, 2D coded, racked (include black manual screwdriver)	1,0	960	**479-0594**
Bank-It™, uncoded, racked (include black manual screwdriver)	0,5	960	**479-0591**

Description	Pk	Cat. No.
Accessories		
Small black screwdriver	1	**479-6854**

Cryogenic vials, Nalgene®
Thermo Scientific

PPCO with HDPE screw cap

For storage in the vapour phase of liquid nitrogen.

• Self standing and easy to open with one hand

Non sterile, without graduations or white marking area, not autoclavable.

Closures and vials are packed separately.

Capacity (ml)	Ø ext.×H (mm)	Pk	Cat. No.
1,2	13,5×38,1	1.000	**479-0007**
2,0	13,5×48,3	1.000	**479-0008**

Cryogenic vials, Nalgene®
Thermo Scientific

PPCO with HDPE screw cap, sterile

For storage in the vapour phase of liquid nitrogen.

• Self standing and easy to open with one hand
• With graduations and white marking area
• DNase- and RNase-free

Non pyrogenic and non cytotoxic.

CE certified (Directive 98/79/EC).

Capacity (ml)	Ø ext.×H (mm)	Pk	Cat. No.
Sterile, 25/bag			
1,2	13,5×38,1	500	**479-3221**
2,0	13,5×48,3	500	**479-3222**
5,0	13,5×92,0	250	**479-3223**
Sterile, bulk packed, assembled			
1,2	13,5×38,1	1.000	**479-0009**
2,0	13,5×48,3	1.000	**479-0010**

Cryovials, System 100™, Nalgene®
Thermo Scientific

PPCO, with silicone O-ring, sterile

Vials for 23% increased storage capacity in mechanical and vapour phase freezers.

• Leakproof performance in a microcentrifuge (8000 ×g) and during shipment or transport
• White marking area
• With graduations and fill line

Radiation sterilised, non cytotoxic and non pyrogenic.

Capacity (ml)	Ø ext.×H (mm)	Pk	Cat. No.
1,0	12×38	500	**479-3224**
1,5	12×48	500	**479-3225**

Vial closure colour coders, Nalgene®
Thermo Scientific

PS

For cryovials closures (479-3221 to 3225/479-0009+479-0010). Provide quick identification.

Colour	Pk	Cat. No.
Blue	100	**479-3283**
Green	100	**479-3284**
Red	100	**479-3285**
White	100	**479-3280**
Yellow	100	**479-3282**

CryoSleeve™, Nalgene®
Thermo Scientific

PVC

Sleeve encloses aluminium canes with cryotubes for protection during handling and storage.

Length (mm)	Pk	Cat. No.
273	100	**479-3260**

Holders for cryotubes, CryoCane™, Nalgene®
Thermo Scientific

Aluminium

Can be marked with colour code tabs.

Description	For	Length (mm)	Pk	Cat. No.
Holders for cryotubes	5 vials 1,0; 1,2; 1,5 and 2,0 ml	290	12	**479-3261**
Holders for cryotubes	6 vials 1,0; 1,2; 1,5; 2,0 and 5,0 ml	300	12	**479-3262**

Storage tubes, low volume, 2D barcoded, Matrix®
Thermo Scientific

Virgin Class VI medical grade PP

For storage in virtually any laboratory condition, from room temperature through the vapour phase of liquid nitrogen. A permanently bonded, unique 2D barcode is laser-etched onto the base of every tube for secure identification and sample tracking.

- All barcodes are checked against the database of previously assigned codes to prevent duplicates
- Every tube is leak tested
- Internally threaded single-piece caps with moulded-in gaskets that cannot be over-tightened manually or with automated capping tools
- Free from DNA, RNAse, DNAse and endotoxins
- Temperature resistant from -180 to +121 °C

Description	Capacity (ml)	Base	Pk	Cat. No.
2D barcoded tubes, with caps, bulk, 1 bag of 480 tubes, sterile	0,2	V bottom	480	**479-1193**
2D barcoded tubes, with caps, racked, 5 racks per case ,sterile	0,2	V bottom	480	**479-1194**

Cryogenic vial with screw closure, Nalgene®
Thermo Scientific

PPCO, HDPE screw closure, sterile

For storage of solid specimens. For use in mechanical freezers only.

- Wide mouth, easy access to sample
- Unlined closure

Non pyrogenic and non cytotoxic

Capacity (ml)	Ø ext.×H (mm)	Pk	Cat. No.
15	33×47	75	**479-0006**

Cryogenic vials
Corning®

PP, sterile

Withstand temperatures to –196 °C.

- Larger writing area
- Black graduations

Vials can be colour coded with cap inserts.

Sterilised by gamma radiation, certified non pyrogenic.

Description	Capacity (ml)	Base	Cap colour	Pk	Cat. No.
With internal thread					
Self standing	1,2	Conical bottom	Orange	500	**734-1834**
Self standing	2	Round bottom	Orange	500	**734-1835**
Not self standing	2	Round bottom	Orange	500	**734-1836**
Self standing	2	Round bottom	Orange	250	**734-4196**
Self standing	2	Round bottom	Assorted	500	**479-1187**
Self standing	2	Round bottom	Yellow	500	**479-1188**
Self standing	2	Round bottom	Blue	500	**479-1189**
Self standing	2	Round bottom	Green	500	**479-1190**
Self standing	2	Round bottom	Red	500	**479-1191**
Self standing	2	Round bottom	White	500	**479-1192**
Not self standing	4	Round bottom	Orange	500	**734-1837**
Self standing	4	Round bottom	Orange	500	**734-1838**
Not self standing	5	Round bottom	Orange	500	**734-1839**
Self standing	5	Round bottom	Orange	500	**734-1853**
With external thread					
Self standing	1,2	Conical bottom	Orange	500	**734-1854**
With plug seal cap	2	Round bottom	Orange	500	**734-1826**
Self standing	2	Round bottom	Orange	500	**734-1855**
Not self standing	2	Round bottom	Orange	500	**734-1856**
Self standing	4	Round bottom	Orange	500	**734-1857**
Self standing	5	Round bottom	Orange	500	**734-1858**

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Colour	Pk	Cat. No.
Cap inserts, PP		
Assorted	500	**734-1840**
Blue	500	**479-3001**
Red	500	**479-3002**
Green	500	**479-3003**
White	500	**479-3000**
Yellow	500	**479-3004**

Cryogenic tubes
Brand

PP, graduated

Designed for storage of biological material, such as microorganisms, human and animal cells, etc. in the gaseous phase of liquid nitrogen.

- Large frosted marking area and coloured cap inserts for easy sample identification
- Temperature stability to -196 °C and autoclavable at 121 °C (2 bar), acc. DIN EN 285
- Cryogenic tubes are sterile, RNase-, DNase-, DNA- and endotoxin-free
- Marked with the CE symbol according to the IVD Directive 98/79 EC
- Tubes without ring stands can be centrifuged at up to an RCF of 14 000×g

Self-standing

Capacity (ml)	Ø ext.×H (mm)	Pk	Cat. No.
With external thread			
1,2	12,5×41	1.000	**479-1201**
2,0*	12,5×47	1.000	**479-1202**
2,0	12,5×49	1.000	**479-1203**
3,0	12,5×70	1.000	**479-1204**
4,0	12,5×76	1.000	**479-1205**
5,0	12,5×90	1.000	**479-1206**
With internal thread			
1,2	12,5×41	1.000	**479-1211**
2,0	12,5×49	1.000	**479-1212**
2,0*	12,5×48	1.000	**479-1213**
4,0*	12,5×70	1.000	**479-1214**
4,0	12,5×71	1.000	**479-1215**
5,0*	12,5×90	1.000	**479-1216**

*with round bottom

Cryogenic vials, CryoELITE™
Wheaton

Low binding, cryogenic grade virgin PP

Ideal for protection of samples during transportation and demanding freeze-thaw handling. Thermal resistance from –196 to +121 °C.

- Optional 2D data matrix barcode inserts for traceability and automated scanning
- Lot certified RNase-, DNase- and endotoxin-free
- With or without writing area
- Round bottom vials can be centrifuged up to 17 000×g

Description	Capacity (ml)	Base	Ø ext.×H (mm)	Cap colour	Pk	Cat. No.
Free standing, internal thread						
With writing area	1,2	Conical bottom, free standing	12×40	Natural	500	**479-0978**
With writing area	2	Conical bottom, free standing	12×50	Natural	1.000	**479-0897**
Without writing area	2	Conical bottom, free standing	12×50	Natural	1.000	**479-0898**
With writing area	2	Conical bottom, free standing	12×50	White	500	**479-0900**
With writing area	2	Conical bottom, free standing	12×50	Red	500	**479-0901**
With writing area	2	Conical bottom, free standing	12×50	Pink	500	**479-0902**
With writing area	2	Conical bottom, free standing	12×50	Yellow	500	**479-0903**
With writing area	2	Conical bottom, free standing	12×50	Green	500	**479-0904**
With writing area	2	Conical bottom, free standing	12×50	Blue	500	**479-0905**
With writing area	2	Conical bottom, free standing	12×50	Natural	500	**479-0899**
With writing area	3	Conical bottom, free standing	12×63	Natural	500	**479-0979**
With writing area	4	Conical bottom, free standing	12×77	Natural	500	**479-0980**
With writing area	5	Conical bottom, free standing	12×91	Natural	500	**479-0981**

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Description	Capacity (ml)	Base	Ø ext.×H (mm)	Cap colour	Pk	Cat. No.
Free standing, external thread						
With writing area	1,2	Conical bottom, free standing	12×37	Natural	500	**479-0974**
With writing area	2	Conical bottom, free standing	12×49	Natural	1.000	**479-0895**
Without writing area	2	Conical bottom, free standing	12×49	Natural	1.000	**479-0896**
With writing area	2	Conical bottom, free standing	12×49	White	500	**479-0868**
With writing area	2	Conical bottom, free standing	12×49	Red	500	**479-0870**
With writing area	2	Conical bottom, free standing	12×49	Pink	500	**479-0871**
With writing area	2	Conical bottom, free standing	12×49	Yellow	500	**479-0872**
With writing area	2	Conical bottom, free standing	12×49	Green	500	**479-0873**
With writing area	2	Conical bottom, free standing	12×49	Blue	500	**479-0874**
With writing area	2	Conical bottom, free standing	12×49	Natural	500	**479-0869**
With writing area	3	Conical bottom, free standing	12×63	Natural	500	**479-0975**
With writing area	4	Conical bottom, free standing	12×78	Natural	500	**479-0976**
With writing area	5	Conical bottom, free standing	12×93	Natural	500	**479-0977**

Tissue vials, CryoELITE™
Wheaton

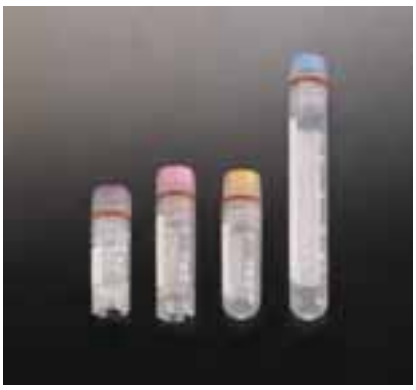
Made from low binding, cryogenic grade virgin PP that meets the USP Class VI classification

Designed specifically for tissue collection, transport and storage to provide excellent protection. Different from cells and biofluids, tissue specimens have particular requirements for cryogenic storage. These uniform vials are able to maintain sample integrity while maximising storage capacity and organisation. They feature a wide mouth opening and high integrity closure.

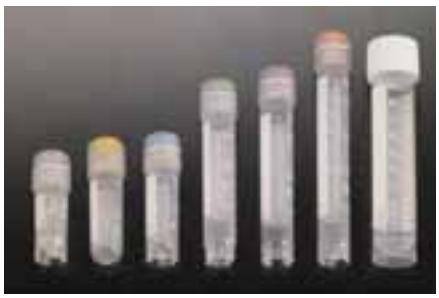
- Designed specifically for tissue sections, suitable for long term storage in vapour phase of liquid nitrogen
- Cap seal exceeds DOT and IATA regulations ensuring ultimate protection of samples
- Lot certified, RNase-, DNase- and endotoxin-free and non pyrogenic assurance for sample integrity
- Temperature range: –196 to +121 °C
- Stippled vial surface for easier handling and writability

Capacity (ml)	Base	Ø ext.×H (mm)	Cap colour	Pk	Cat. No.
5	Flat bottom	23×24	White	250	**479-2012**

Cryogenic vials, Cryovial®
Simport



With internal thread and silicone O-ring



With external thread and silicone washer seal

PP vial and closure, sterile

Designed for the storage of biological material, human or animal cells, at temperatures as low as -196 °C (but should be used only in the gas phase of liquid nitrogen).

- Certified RNase-, DNase-, pyrogen- and DNA-free
- With graduations and marking area

Round bottom vials can be centrifuged up to 17 000 ×g

Capacity (ml)	Base	Ø ext.×H (mm)	Pk	Cat. No.
With internal thread and silicone washer seal				
1,2	Self standing	12,5×41	1.000	**720-1003**
2,0	Self standing	12,5×49	1.000	**720-1004**
2,0	Round bottom	12,5×48	1.000	**720-1005**

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Capacity (ml)	Base	Ø ext.×H (mm)	Pk	Cat. No.
With internal thread and silicone washer seal				
4,0	Round bottom	12,5×70	1.000	**720-1006**
4,0	Self standing	12,5×72	1.000	**479-0085**
5,0	Round bottom	12,5×90	1.000	**479-0096**
With external thread and silicone washer seal				
1,2	Self standing	12,5×42	1.000	**720-1000**
2,0	Round bottom	12,5×47	1.000	**479-0083**
2,0	Self standing	12,5×49	1.000	**720-1001**
3,0	Self standing	12,5×71	1.000	**525-0210**
4,0	Self standing	12,5×77	1.000	**479-0084**
5,0	Self standing	12,5×91	1.000	**720-1002**
10,0	Self standing	17×84	500	**479-0082**

Colour	Pk	Cat. No.
CapInsert™ cap inserts for Cryovial® tubes		
White	500	**479-4531**
Blue	500	**479-4532**
Red	500	**479-4533**
Green	500	**479-4534**
Yellow	500	**479-4535**
Assorted colours	500	**479-4542**
Tan	500	**479-4536**
Grey	500	**479-4537**
Lilac	500	**479-4538**
Violet	500	**479-4540**
Pink	500	**479-4541**

Workstation racks for cryogenic vials

PP

A universal locking system locks the vials in each well, so you can easily unscrew them with one hand.

- Alphanumeric identification of each well
- Strong handles make it easy and safe to carry
- Supported by five anti-slip rubber feet, stackable

For (ml)	No. of holes	W×D×H (mm)	Colour	Pk	Cat. No.
1 - 5	50 (5×10)	205×103×26	Lilac	4	**479-0803**

Rack for cryogenic vials

PC, autoclavable

Withstands both cryogenic freezing and autoclaving.

- With numeric index of the holes
- Moulded tabs in the bottom of each well to secure vials in place for easier opening and closing
- Ribbed grips make handling with gloves easier

For (ml)	No. of holes	W×D×H (mm)	Colour	Pk	Cat. No.
(Ø 12,5 mm) 1 - 5	50 (5×10)	199×104×24,5	Blue	1	**211-0139**

Rack for cryogenic vials, Nalgene®
Thermo Scientific

PC, autoclavable

Allows single handed vial manipulation, bottom of each well interlocks with base of vial.

For 5×10 cryovials outer-Ø 13,5 mm

For (ml)	No. of holes	W×D×H (mm)	Colour	Pk	Cat. No.
1,0/1,2/1,5/2,0/5,0	50 (5×10)	193×102×28	Clear/White	1	**479-3229**

Rack for cryogenic vials, Nunc™
Thermo Scientific

Polyphenyleneoxide, autoclavable

Allows one handed operation when used with starfoot vials.

For (ml)	No. of holes	W×D×H (mm)	Colour	Pk	Cat. No.
0 - 4,5 (Ø 12,5 mm)	40 (4×10)	202×102×18	Blue	15	**391-8531**

Freezing module, CoolCell®

Consistent -1 °C/min cell freezing without alcohol

Achieve a consistent -1 °C/min freeze rate without the use of any hazardous solvents with CoolCell®. The Solid State Core (SSC) and insulated design precisely balance heat removal during freezing to ensure repeatable, constant cooling all the way down to cryogenic storage temperature. Cleaner, greener, easier to use. Unlike alcohol coolers, no warming of nearby freezer samples. Transportable without cold hands when frozen.

- No alcohol
- Eliminate the expense and disposal of isopropanol
- Unbreakable even at cryogenic temperatures
- No stuck lids, no frozen fingers, no maintenance
- Fast recycle time

Description	For	Colour	Pk	Cat. No.
CoolCell® SV10	6 "serum" style injectable vials 10 ml	Purple	1	**479-1012**
CoolCell® SV2	12 "serum" style injectable vials 2 ml	Purple	1	**479-0991**
CoolCell®	12 screw cap 1 ml and 2 ml cryovials	Purple	1	**479-0492**
CoolCell® FTS30	30 screw cap 1 ml and 2 ml cryovials	Purple	1	**479-0987**
CoolCell® FTS30	30 screw cap 1 ml and 2 ml cryovials	Green	1	**479-0988**
CoolCell® FTS30	30 screw cap 1 ml and 2 ml cryovials	Orange	1	**479-0989**
CoolCell® FTS30	30 screw cap 1 ml and 2 ml cryovials	Pink	1	**479-1157**

Description	For	Colour	Pk	Cat. No.
Accessories				
Replacement FTS30 Vial Module	-	—	10	**479-0992**

Freezing containers, CoolCell® LX

CoolCell® LX and 5 ml LX cell freezing containers provide consistent, controlled-rate, highly reproducible -1 °C per minute alcohol-free cell freezing when used in a -80 °C freezer. With the elimination of alcohol, freezing results are highly reproducible. CoolCell® containers are unbreakable, open easily when frozen, and are not cold to the touch when frozen. Enhanced design features include beveled junction between base and lid to allow quicker opening once frozen, numbered vial wells for easy sample identification, and exposed vial tops when container is open allowing for faster removal of vials for placement onto dry ice or liquid nitrogen.

CoolCell® LX holds 12 each 1 or 2 ml vials and CoolCell® 5 ml LX holds 12 each 3,5 to 5 ml vials. The unique materials and solid core design ensures no variability and equal or better post-thaw cell viability than alcohol-based cell freezing containers.

- No pre-cooling required
- No waiting between freeze cycles
- -1 °C/minute freeze rate for all cells
- No on-going cost or maintenance

For	No. of holes	Type	Colour	Pk	Cat. No.
12 wells, 1 or 2 ml cryovials	12	CoolCell® LX	Purple	1	**479-1178**
12 wells, 1 or 2 ml cryovials	12	CoolCell® LX	Green	1	**479-1179**
12 wells, 1 or 2 ml cryovials	12	CoolCell® LX	Orange	1	**479-1180**
12 wells, 1 or 2 ml cryovials	12	CoolCell® LX	Pink	1	**479-1181**
12 wells, 3,5 - 5 ml cryovials	12	CoolCell® 5 ml LX	Purple	1	**479-1182**

Cooling workstation, CoolBox™ XT/2XT

CoolBox™ XT and 2XT provides over 16 hours of ice-free, power-free cooling to a variety of laboratory samples. The modular CoolBox™ XT and 2XT sample cooling stations allow you to design a workstation that perfectly fits your specific needs. To complete your CoolBox™ XT and 2XT workstation choose a CoolRack® tube module or a CoolSink® Plate module to fit your application. The internal patent-pending dual-phase XT Cooling Core provides the cooling source - no electricity or batteries are needed - making the unit very versatile and portable. Available in four colours.

Samples in tubes or plates stay a uniform 0,5 to 4 °C for over 16 hours with the XT Cooling Core. For frozen samples, load the optional XT Freezing Core into the CoolBox™ XT base and samples will stay at -20 to 0 °C for over 8 hours.

Extension collars for CoolBox™ XT workstations: Place between the base and original collar to extend the height of the ice-free workstation and enable the use of taller CoolRack® sample tube modules and taller tubes, including 3, 4, and 5 ml cryovials in CoolRack® CF modules, 15 ml and 50 ml centrifuge tubes in CoolRack® 15 ml or CoolRack® 50 ml modules and blood collection tubes in CoolRack® V-series blood tube modules. Magnetized on both top and bottom for a secure connection to the base and original collar. Available in four colours and 2 sizes to fit all CoolBox™ XT and CoolBox™ 2XT workstations.

For	No. of holes	Type	Pk	Cat. No.
CoolBox XT and 2XT systems				
-	-	CoolBox™ XT system, purple	1	**216-0945**
-	-	CoolBox™ XT system, green	1	**216-0946**
-	-	CoolBox™ XT system, orange	1	**216-0947**
-	-	CoolBox™ XT system, pink	1	**216-0948**
-	-	CoolBox™ 2XT system, purple	1	**216-0949**
-	-	CoolBox™ 2XT system, green	1	**216-0950**
-	-	CoolBox™ 2XT system, orange	1	**216-0951**
-	-	CoolBox™ 2XT system, pink	1	**216-0952**
-	-	XT cooling core, 0,5 to 4 °C	1	**216-0953**
-	-	XT freezing core, -20 to 0 °C	1	**216-0954**
Automation-friendly (AF) sample modules				
1,5 or 2 ml microfuge tubes, 15 wells and 48 wells for PCR strips	60	CoolRack® XT	1	**216-0955**
0,2 ml PCR plate, strip, wells, tubes	96	CoolRack® XT	1	**216-0956**
2 ml cryogenic vials or FACS tubes	24	CoolRack® XT	1	**216-0957**
1,5 or 2ml microfuge tubes	24	CoolRack® XT	1	**216-0958**
96-well flat bottom plate	1	CoolSink® XT	1	**216-0959**
96-well round bottom plate	1	CoolSink® XT	1	**216-0960**
384-well plate	1	CoolRack® XT	1	**216-0961**

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For	No. of holes	Type	Pk	Cat. No.
CoolBox™ XT and 2XT automation-friendly workstations				
One 96-well plate	96	CoolBox™ XT, workstation with one CoolRack® XT PCR96, for PCR plate preparation	1	**216-0968**
6 strip wells and 12 microtubes (1,5 or 2,0 ml)	48+12	CoolBox™ XT, workstation with one CoolRack® XT M-PCR, for PCR sample preparation in strip wells	1	**216-0970**
CoolRack® XT PCR96 for PCR plate/ strip wells/tubes CoolRack® XT M24 for 24 microtubes (1,5 or 2,0 ml)	96+24	CoolBox™ 2XT, double-capacity workstation with one CoolRack® XT PCR96 and one CoolRack® XT M24, for PCR sample preparation	1	**216-0971**
24 cryovials (1,0 or 2,0 ml)	24	CoolBox™ XT, workstation with one CoolRack® XT CFT24, features gripping" wells for one-hand tube manipulation, for tissue culture, snap-freezing "	1	**216-0973**
24 microtubes (1,5 or 2,0ml)	24	CoolBox™ XT, workstation with one CoolRack® XT M24, for enzyme storage, snap-freezing, DNA precipitation or other applications	1	**216-0974**

Description	Colour	Pk	Cat. No.
Extension collar for CoolBox™ XT and 2XT			
Extension collar for CoolBox™ XT	Green	1	**479-1300**
Extension collar for CoolBox™ XT	Orange	1	**479-1301**
Extension collar for CoolBox™ XT	Pink	1	**479-1302**
Extension collar for CoolBox™ XT	Purple	1	**479-1299**
Extension collar for CoolBox™ 2XT	Green	1	**479-1304**
Extension collar for CoolBox™ 2XT	Orange	1	**479-1305**
Extension collar for CoolBox™ 2XT	Pink	1	**479-1306**
Extension collar for CoolBox™ 2XT	Purple	1	**479-1303**

VWR COLLECTION

SELECTED FOR YOU

Cryo 1 °C freezing container

Container PC, closure and vial holder HDPE, foam insert

Non mechanical device that uses isopropyl alcohol and a mechanical freezer to provide cooling rate of –1 °C per minute. Ideal for successful cell cryopreservation and recovery.

- Floating rigid insert prevents vials from contamination
- Withstands repeated use; labelled with step by step instructions
- Holds up to 18 cryogenic vials (1; 1,2; 1,5 and 2 ml)

Description	I-Ø×H (mm)	No. of holes	Pk	Cat. No.
Cryo 1 °C freezing container	86×117	18	1	**479-0640**

Freezing containers, Mr. Frosty, Nalgene®
Thermo Scientific

PC container with blue HDPE lid, white HDPE tube holder and foam insert

Ensures the critical, repeatable 1 °C/minute cooling rate, required for successful cell cryopreservation and recovery. Low cost, easy to use, requiring only isopropyl alcohol and mechanical freezer.

Labelled with detailed, step by step instructions.

For 12 cryogenic tubes of 3,6; 4,5 or 5,0 ml or 18 cryogenic tubes 1,0; 1,2; 1,5 or 2,0 ml.

Containers stack and if alcohol-filled, may be stored at room temperature, saving valuable freezer space.

Diameter: 117 mm

Closure size: 120 mm

For	Pk	Cat. No.
18 cryogenic tubes (1,0 - 2,0 ml)	1	**479-3200**
12 cryogenic tubes (3,6 ml)	1	**479-0966**
12 cryogenic tubes (4,5 - 5,0 ml)	1	**479-0967**

Cooling and thawing racks, CoolRack® systems

CoolRack® M90

CoolRack® CF45 + ThermalTray™

ThermalTray™ 479-0272

Consistent sample management from –150 to +100 °C

A modular system of racks and trays to warm or cool samples quickly and consistently. These items are also designed for use with the CoolBox™ systems for prolonged storage or transport of samples at fridge or freezer temperatures with an option for –78 °C when used with dry ice. Applications include enzyme reactions, FACS, RNA and protein isolation.

CoolRack®

The CoolRack® provides consistent repeatable sample treatment when cooling, freezing and thawing. The thermo conductive tube racks transmit heat 300 times faster than water or ice providing efficient and exact control of sample temperature. All the tubes in the rack experience identical cooling or warming conditions and will remain at the same temperature as the source. The CoolRack® can be used with liquid nitrogen, dry ice, ice and water baths.

- Ideal for snap freezing, thawing or incubating
- Easy to organise and identify samples as labels remain dry and legible
- No more cross contamination issues from samples drowning or floating in the cooling media
- Range of racks to fit microcentrifuge tubes, cryotubes, 12×75 mm FACS tubes, PCR tubes and multiwell assay plates
- The PF (profile-fit) modules provide faster, safer, more consistent snap freezing than direct immersion into dry ice/EtOH

ThermalTray™

The ThermalTray™ provides a stable platform for supporting the CoolRack® modules in liquid temperature media (ice bath, water bath, LN_2) and conduct heat between the samples and the temperature source, whilst keeping the rack and samples dry, clean and stable.

- More than 10 hours cooling at 0 to 4 °C with one pan of ice
- 37 °C incubation in a water bath without sample immersion

Type	Description	Pk	Cat. No.
CoolRack®			
CoolRack® M15	Holder for 15 microcentrifuge tubes, 1,5/2 ml	1	**479-0293**
CoolRack® M15-PF	Holder with profile fit wells for 15 microcentrifuge tubes, 1,5/2 ml	1	**479-0295**
CoolRack® M30	Holder for 30 microcentrifuge tubes, 1,5/2 ml	1	**479-0276**
CoolRack® M30-PF	Holder with profile fit wells for 30 microcentrifuge tubes, 1,5/2 ml	1	**479-0296**
CoolRack® M90	Holder for 90 microcentrifuge tubes, 1,5/2 ml	1	**479-0275**
CoolRack® M961D	Holder with array index for 96 microcentrifuge tubes, 1,5/2 ml	1	**479-0277**
CoolRack® 96×0,5 ml	Holder for 0,5 ml 2D barcode tubes	1	**479-1298**
CoolRack® CF15	Holder for 15 cryo/FACS tubes (12×75 mm)	1	**479-0294**
CoolRack® CFT30	Thermo-conductive tube holder for 30 cryo/ FACS tubes (12×75 mm).	1	**479-0494**
CoolRack® CF45	Holder for 45 cryo/FACS tubes (12×75 mm)	1	**479-0278**
CoolRack® modules for tall tubes (requires extension collar e.g. 479-1299)			
CoolRack® 15 ml	Holder for 9×15 ml centrifuge tubes	1	**479-0957**
CoolRack® 50 ml	Holder for 4×50 ml centrifuge tubes	1	**479-0958**
CoolRack® VS13	Holder for 9× blood tubes (13×75 mm)	1	**479-0961**
CoolRack® V13	Holder for 9× blood tubes (13×100 mm)	1	**479-0959**
CoolRack® V16	Holder for 9× blood tubes (16×100 mm)	1	**479-0960**
ThermalTray™			
ThermalTray™ HP	Platform high profile, 280×150×100 mm	1	**479-0272**
ThermalTray™ LP	Platform medium profile, 280×150×50 mm	1	**479-0273**

Cooling boxes, CoolBox™ 30 and Coolbox™ MP

Ice-free sample tube and plate cooling and freezing systems

CoolBox™ is an ice-free benchtop cooler for sample tubes and plates. Re-usable cooling or freezing cartridges keep the thermo-conductive CoolRack® tube holders cold for hours. Samples stay cold (0,5 to 4,0 °C) or frozen (-20 to -10 °C) for up to 10 hours with ±0,1 °C temperature variance between wells. Use for iceless cooling/freezing in applications such as PCR set up, enzymatic assays, cell culture, and others.

Pre-freeze cartridges in -20 °C freezer, place in CoolBox™, and place the CoolRack® or CoolSink® tube or plate holder on top. Use also with dry ice (instead of cartridges) for snap-freezing tissues, viruses or proteins. Versatile, compact, portable.

- Constructed out of highly durable, non absorbent cross linked dense polyethylene foam
- Cooling and freezing cartridges are compact and can be frozen and stored in a freezer
- To extend cooling and freezing, replace spent cartridge in the CoolBox™ with a frozen one from the freezer
- Clean with aqueous detergents, alcohol, bleach or acid/base viricides
- Excellent resistance to fluid absorption, surface abrasion, and rust

CoolBox™ 30 base includes the base and lid, blue cooling cartridge, red stage for wet or dry ice, insulator pad, without CoolRack® tube modules. Coolbox™ MP comes with base, lid and one blue cooling cartridge, without CoolRack® plate modules. Additional cooling or freezing cartridges and modules are available separately.

Description	For	Colour	Pk	Cat. No.
CoolBox™ 30 base without module				
CoolBox™ 30	Tube cooling	Purple	1	**479-0399**
CoolBox™ 30	Tube cooling	Green	1	**479-0928**
CoolBox™ 30	Tube cooling	Orange	1	**479-0927**
CoolBox™ 30	Tube cooling	Pink	1	**479-1296**
CoolBox™ 30 tube cooling system with module				
CoolBox™ 30 system with CoolRack® M30	1,5 - 2 ml microcentrifuge tubes (30 wells)	Blue	1	**479-0469**
CoolBox™ 30 system with CoolRack® M-PF30	1,5 ml conical microcentrifuge tubes (30 profile fit wells)	Blue	1	**479-0490**
CoolBox™ 30 system with CoolRack® CFT30	1 ml or 2 ml cryogenic vials (30 wells)	Blue	1	**479-0965**
CoolBox™ MP base without module				
CoolBox™ MP	Microplate cooling	Purple	1	**479-0949**
CoolBox™ MP	Microplate cooling	Green	1	**479-0936**
CoolBox™ MP	Microplate cooling	Orange	1	**479-0935**
CoolBox™ MP	Microplate cooling	Pink	1	**479-1297**
CoolBox™ MP plate cooling system with module				
CoolBox™ MP system with CoolRack® XT PCR 96	One 96-well PCR plate, strip wells or 200 µl tubes	Blue	1	**479-0950**
CoolBox™ MP system with CoolRack® XT PCR 384	One 384-well PCR plate	Blue	1	**479-0951**
CoolBox™ MP system with CoolSink® XT 96F	One 96-well flat-bottom plate	Blue	1	**479-0952**
CoolBox™ MP system with CoolRack® XT 96U	One 96-well u-bottom plate	Blue	1	**479-0953**
Cartridges				
Freezing cartridge, reusable -12 °C	CoolBox™ 30	Green	3	**479-0467**
Cooling cartridge, reusable +2 °C	CoolBox™ 30	Blue	3	**479-0468**
Cooling cartridge, reusable +2 °C	CoolBox™ MP	Blue	1	**479-0956**

Description	Pk	Cat. No.
CoolRack®		
Holder for 30 microcentrifuge tubes, 1,5/2 ml	1	**479-0276**
Holder with profile fit wells for 30 microcentrifuge tubes, 1,5/2 ml	1	**479-0296**
Thermo-conductive tube holder for 30 cryo/ FACS tubes (12×75 mm).	1	**479-0494**

PCR-Cooler
Eppendorf

Cools sensitive samples for more than one hour at 0 °C.

- In universal 96-well format for 0,2 ml PCR-tube strips, plates and single tubes
- A colour change from violet to pink or dark blue to light blue shows when the temperature has exceeded 7 °C

Description	Pk	Cat. No.
PCR-Cooler 0,2 ml blue	1	**479-1162**
PCR-Cooler 0,2 ml pink	1	**479-1161**
PCR-Cooler 0,2 ml Starter-Set (1xpink, 1xblue)	1 SET	**479-1160**

Labtop coolers

479-0642

–20 °C mini labtop cooler PC, non toxic gel

The –20 °C mini labtop cooler holds 12×0,5 or 1,5 ml microcentrifuge tubes at below –20 °C for over 1 hour. Ideal for bench top use or transport. Wire handle secures top while carrying. Filled with non toxic gel. Prior to use, place in –25 °C freezer for at least 24 hours, store at –25 °C between use.

–20 °C maxi labtop cooler PC, non toxic gel

The –20 °C maxi labtop cooler, holds 32×0,5 or 1,5 ml microcentrifuge tubes at below –20 °C for over 1 hour. Suitable for bench top use or transport. Wire handle secures top while carrying. Cooler and lid filled with non toxic gel. Store at –25 °C between use.

–20 °C labtop cooler PC, non toxic gel

The –20 °C labtop cooler maintains temperatures between –20 °C and –15 °C for up to four hours. Holds 20× 1,5 or 2,0 ml microcentrifuge tubes or cryovials. Inserts included hold 0,2 to 0,5 ml microcentrifuge tubes. Printed grid, keyed lid, locking handle, non skid feet. Store at –25 °C between use.

Description	No. of holes	Pk	Cat. No.
–20 °C mini labtop cooler	12	1	**479-0642**
–20 °C maxi labtop cooler	32	1	**479-0641**
–20 °C labtop cooler	20	1	**479-0643**

Mini coolers
Brand

PC, filled with non toxic gel

The Mini coolers are designed to protect a wide range of solutions (enzymes, DNA, RNA, cell suspensions) by helping to maintain freezer temperatures on the lab bench.

Model	Mini cooler, red (479-1241)	Mini cooler, yellow (479-1242)	Mini cooler, white (479-1243)
For	0,5 to 2,0 ml tubes		
No. of holes	12		
Temperature (°C)	0	–20	–70

Description	Pk	Cat. No.
Mini cooler, maintains the temperature at 0 °C during 60 minutes, red	1	**479-1241**
Mini cooler, maintains the temperature at –20 °C during 45 minutes, yellow	1	**479-1242**
Mini cooler, maintains the temperature at –70 °C during 45 minutes, white	1	**479-1243**

Labtop coolers, Nalgene®
Thermo Scientific

Labtop coolers –20 °C

PC, blue

Lower section filled with a non toxic gel, with handle.

471-0000/471-0001: Will maintain a temperature below –15 °C for up to 2 hours.

Sixteen inserts included convert 1,5 ml holes to accept either 0,5 or 0,2 ml tubes.

Labtop coolers 0 °C

PC, green

Lower section filled with a non toxic gel, with handle.

479-3461: Will maintain a temperature below 1 °C for up to 5 hours, gel-filled white lid.

479-3460: Will maintain a temperature below 1 °C for up to 3,5 hours, non-filled clear lid.

471-0002/-0003: Will maintain a temperature below 1 °C for up to 3,5 hours, non-filled clear lid.

Sixteen inserts included convert 1,5 ml holes to accept either 0,5 or 0,2 ml tubes.

For (ml)	No. of holes	W×D×H (mm)	Pk	Cat. No.
Labtop coolers –20°C				
0,2 - 2	3×4	151×108×125	1	**471-0000**
0,2 - 2	4×8	243×157×146	1	**471-0001**
Labtop coolers 0 °C				
Ø 12 - 13 mm	3×4	197×140×190	1	**471-0002**
Ø 16 - 17 mm	3×4	197×140×190	1	**471-0003**
0,2 - 2 ml	3×4	151×108×125	1	**479-3460**
0,2 - 2 ml	4×8	243×157×146	1	**479-3461**

Quick Chill™ unit, Nalgene®
Thermo Scientific

PC, non-toxic insulating solution

For rapid chilling of biological samples. Can be used repeatedly for up to 45 minutes. It will chill up to 2 ml of alcohol-based solutions to –20 °C in less than 3 minutes or up to 2 ml of water-based solutions to 0 °C in less than 4 minutes.

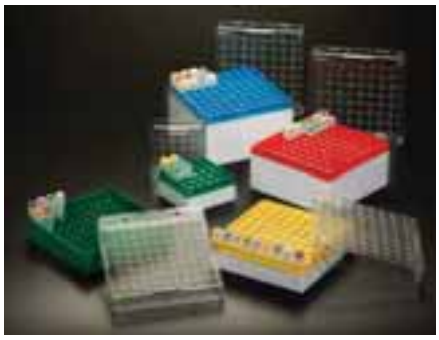
- No direct contact between tubes and insulating solution so labels and markings won't come off
- Stackable and have non-slip rubber feet

For 12 (3×4) microtubes of 1,5 or 0,5 ml.

W×D×H: 151×108×125 mm

Pk	Cat. No.
1	479-5160

Cryoboxes



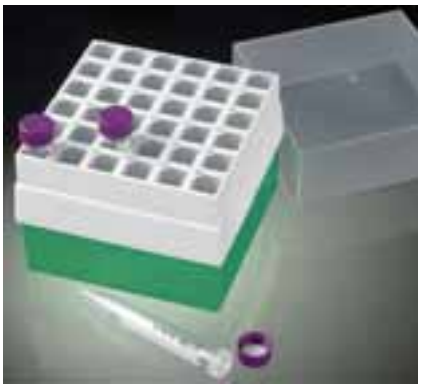
PC, autoclavable

Can be used from –190 to +121 °C.

- Transparent cover with numeric grid and key to prevent misalignment
- Coloured grid or base

W×D×H ext. (mm)	Compartments	Colour	Description	Pk	Cat. No.
76×76×52	5×5	Blue	Cryotubes 1 - 2 ml	8	479-0470
76×76×52	5×5	Green	Cryotubes 1 - 2 ml	8	479-0471
76×76×52	5×5	Red	Cryotubes 1 - 2 ml	8	479-0472
76×76×52	5×5	Yellow	Cryotubes 1 - 2 ml	8	479-0473
133×133×52	9×9	Blue	Cryotubes 1 - 2 ml	4	479-0474
133×133×52	9×9	Green	Cryotubes 1 - 2 ml	4	479-0475
133×133×52	9×9	Red	Cryotubes 1 - 2 ml	4	479-0476
133×133×52	9×9	Yellow	Cryotubes 1 - 2 ml	4	479-0477
133×133×95	9×9	Blue	Cryotubes 3 - 5 ml	5	479-0482
133×133×95	9×9	Green	Cryotubes 3 - 5 ml	5	479-0483
133×133×95	9×9	Red	Cryotubes 3 - 5 ml	5	479-0484
133×133×95	9×9	Yellow	Cryotubes 3 - 5 ml	5	479-0485
133×133×52	10×10	Blue	Cryotubes 1 - 2 ml	4	479-0486
133×133×52	10×10	Green	Cryotubes 1 - 2 ml	4	479-0487
133×133×52	10×10	Red	Cryotubes 1 - 2 ml	4	479-0488
133×133×52	10×10	Yellow	Cryotubes 1 - 2 ml	4	479-0489
133×133×81	9×9	Blue	Cryotubes 3 - 4 ml	3	479-0891
133×133×81	9×9	Green	Cryotubes 3 - 4 ml	3	479-0892
133×133×81	9×9	Red	Cryotubes 3 - 4 ml	3	479-0893
133×133×81	9×9	Yellow	Cryotubes 3 - 4 ml	3	479-0894

Cryo boxes for centrifuge tubes, 15 or 50 ml



PP, autoclavable

Perfect for long-term storage of samples

- With labelled zone and numerical reference grid
- Clear cover
- Autoclavable (+121 °C), temperature resistant to –90 °C

W×D×H ext. (mm)	Description	For tubes (ml)	Pk	Cat. No.
138×138×126	for 36 tubes with lid	15	2	**212-0043**
138×138×126	for 16 tubes with lid	50	2	**479-0079**

CryoBoxes with hinged lid for 1 ml to 5 ml cryovials , TruCool®

Laminated cardboard

TruCool® Cryoboxes have a hinged lid that remains attached which ensures lid is placed on correctly and markings are in sync with samples. Lid is easy to open, even when frozen and stays attached to the base minimising risk of contamination. Boxes have a white patch on the front for markings or barcode. Made from laminated cardboard, waterproof and durable. Includes 81-place adjustable plastic grid or 100-place plastic grid which can be removed if needed. Dual indexing system: 1 to 81 grid on the top and inside cover, A to I and 1 to 9 column and row indexing around the inner and outer edge of box.

- Designed for repeated freezing and thawing in vapor-phase liquid nitrogen
- Standard boxes available in 6 colours
- Available in 2 heights, 5,2 cm and 9,2 cm to accommodate 1 to 5 ml cryotubes

Dimensions: 133,3×133,3×51 mm or 133,3×133,3×92 mm (L×W×H)

W×D×H ext. (mm)	Compartments	Colour	Pk	Cat. No.
For 1 ml or 2 ml Cryotubes, 81-place grid				
133,3×133,3×51	81	White	5	**479-1350**
133,3×133,3×51	81	White	50	**479-1357**
133,3×133,3×51	81	Blue	5	**479-1351**
133,3×133,3×51	81	Blue	50	**479-1358**
133,3×133,3×51	81	Green	5	**479-1352**
133,3×133,3×51	81	Green	50	**479-1359**
133,3×133,3×51	81	Orange	5	**479-1354**
133,3×133,3×51	81	Orange	50	**479-1360**
133,3×133,3×51	81	Purple	5	**479-1355**
133,3×133,3×51	81	Purple	50	**479-1361**
133,3×133,3×51	81	Pink	5	**479-1356**
133,3×133,3×51	81	Pink	50	**479-1362**
133,3×133,3×51	81	Multicolour	5	**479-1353**
For 1 ml or 2 ml Cryotubes, 100-place grid				
133,3×133,3×51	100	Green	5	**479-1363**
133,3×133,3×51	100	Green	50	**479-1365**
133,3×133,3×51	100	Purple	5	**479-1364**
133,3×133,3×51	100	Purple	50	**479-1366**
For 5 ml Cryotubes, 81-place grid				
133,3×133,3×92	81	Green	6	**479-1371**
133,3×133,3×92	81	Green	30	**479-1373**
133,3×133,3×92	81	Purple	6	**479-1372**
133,3×133,3×92	81	Purple	30	**479-1374**

Cryoboxes, Nunc™
Thermo Scientific

Cardboard

With grid insert.

W×D×H ext. (mm)	Compartments	For (ml)	Colour	Pk	Cat. No.
75×75×51	5×5	CryoTubes™ 1,0 - 1,8	White	24	**479-0020**
132×132×51	9×9	CryoTubes™ 1,0 - 1,8	White	6	**391-7644**
132×132×51	9×9	CryoTubes™ 1,0 - 1,8	White	48	**391-7642**
132×132×75	9×9	CryoTubes™ 3,6 - 4,5	White	30	**391-7643**
145×145×51	10×10	CryoTubes™ 1,0 - 1,8	White	42	**479-0015**
145×145×75	10×10	CryoTubes™ 3,6 - 4,5	White	30	**479-0016**

Cryoboxes, Max-100 Cryostore™, Nunc™
Thermo Scientific

PC with PE coated cardboard divider

Cover with printed sample identification grid.

W×D×H ext. (mm)	Compartments	For (ml)	Pk	Cat. No.
132×132×52	10×10	Cryovials 1,0 - 1,8	24	**391-8527**
132×132×78	10×10	Cryovials 3,6	4	**479-0271**

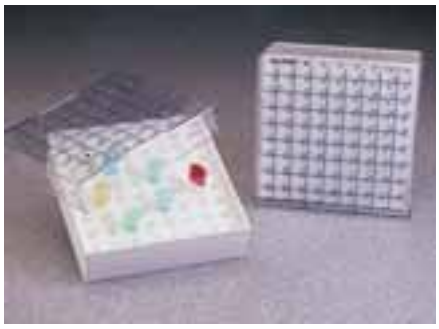
Miniboxes for CryoTubes™ vials, Nunc™
Thermo Scientific

High impact PS

Ideal for transport of cryovials CryoLine™.

Compartments	For (ml)	Pk	Cat. No.
5	CryoTubes™ 1,0 - 1,8	350	**391-8840**
10	CryoTubes™ 1,0 - 1,8	200	**391-8845**

Cryoboxes, Nalgene®
Thermo Scientific



PC with foam insert, autoclavable

For temperature storage of cryovials from –150 to +121 °C (not in liquid phase of liquid nitrogen).

Transparent lid with printed grid permits viewing of contents and are keyed to prevent misalignment.

Accepts writing with cryo-markers.

W×D×H ext. (mm)	Compartments	For (ml)	Pk	Cat. No.
133×133×52	9×9	Microcentrifuge tubes 0,2	4	**525-0050**
133×133×52	9×9	Microcentrifuge tubes 0,5	4	**525-0051**
133×133×52	8×8	Microcentrifuge tubes 1,5	4	**479-0012**

Cryoboxes, Nalgene®
Thermo Scientific

White PC, autoclavable

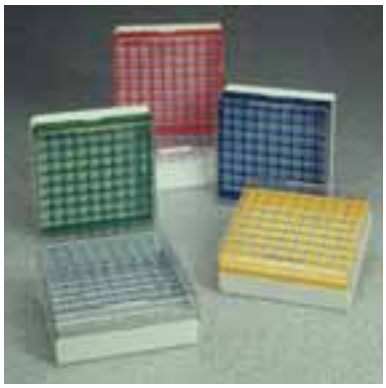
For ultra-low temperature storage of cryovials from –196 to +121 °C.

Transparent lid with printed grid permits viewing of contents and is keyed to prevent misalignment.

Accepts writing with cryo-markers.

W×D×H ext. (mm)	Compartments	For (ml)	Pk	Cat. No.
76×76×52	5×5	Cryogenic vials 1,2 and 2,0	8	**479-3311**
133×133×52	9×9	Cryogenic vials 1,2 and 2,0	4	**479-5131**
133×133×95	9×9	Cryogenic vials 5,0	4	**479-0011**

Cryoboxes, coloured, Nalgene®
Thermo Scientific



PC, autoclavable

For storage of cryovials from –196 to +121 °C. Colours match cryogenic vial colour coders.

Transparent lid with grid allows easy viewing of contents.

Set: Assortment with 4 boxes of each colour (Red, Yellow, Green, Blue, Grey and White).

W×D×H ext. (mm)	Compartments	For (ml)	Colour	Pk	Cat. No.
133×133×52	9×9	Cryovials 1,0 - 2,0	Blue	4	**479-0060**
133×133×52	9×9	Cryovials 1,0 - 2,0	Green	4	**479-0059**
133×133×52	9×9	Cryovials 1,0 - 2,0	Grey	4	**479-0061**
133×133×52	9×9	Cryovials 1,0 - 2,0	Red	4	**479-0057**
133×133×52	9×9	Cryovials 1,0 - 2,0	Yellow	4	**479-0058**
133×133×52	9×9	Cryovials 1,0 - 2,0	Set	24	**479-0062**

Cryobox, System 100™
Thermo Scientific

PC, autoclavable

Designed for ultra-low temperature storage of System 100™ cryotubes or other similar size, externally or internally threaded vials. For temperatures of –196 to +121 °C.

Transparent lid has printed grid and is keyed to prevent misalignment.

W×D×H ext. (mm)	Compartments	For	Pk	Cat. No.
133×133×52	10×10	System 100™ cryotubes	1	**479-3314**

Cryoboxes
Corning®

PC, autoclavable

Designed for use with most cryogenic vials.

- Reusable
- Ridges on the sides of the box make them easier to hold while wearing gloves
- Transparent lid with numeric grid

Compartments	For (ml)	Pk	Cat. No.
9×9	Cryovials 1 - 2	10	**734-1877**
9×9	Cryovials 4 - 5	10	**734-1878**
10×10	Cryovials 1 - 2 *	10	**734-1879**

*Accepts internally threaded cryogenic vials only

Microtube storage boxes
Heathrow Scientific

PP

Secure storage for microtube and cryogenic vials. 50-well microtube storage boxes for smaller storage requirements of 1,5/2,0 ml microtubes or cryogenic vials. 100-well microtube storage boxes for larger storage requirements of 1,5/2,0 ml microtubes or cryogenic vials.

- High transparency, but with a strong identifying colouration, with a distinctive wave design
- Uniform wells with location ID. Capacity indicated on the outside of the box
- Durable snap clasp for secure closure
- Autoclavable

Delivery information: Assorted colour pack contains one of each colour: Blue, green, pink, yellow and orange.

W×D×H ext. (mm)	Compartments	Colour	Pk	Cat. No.
142×92×56	50 (5×10)	Natural	5	**525-0565**
142×92×56	50 (5×10)	Assorted	5	**525-0566**
142×151×57	100 (10×10)	Natural	5	**525-0567**
142×151×57	100 (10×10)	Assorted	5	**525-0575**

Cryoboxes

PP, autoclavable

- Transparent hinged lid (coloured base)
- Gridded removable insert, with numeric coding
- Outflow holes at the bottom
- Stackable

W×D×H ext. (mm)	Compartments	For (ml)	Colour	Pk	Cat. No.
133×133×52	9×9	Cryovials 1,2 - 2,0	Translucent	1	**479-5165**
133×133×52	9×9	Cryovials 1,2 - 2,0	Yellow	1	**479-5166**
133×133×52	9×9	Cryovials 1,2 - 2,0	Red	1	**479-5167**
133×133×52	9×9	Cryovials 1,2 - 2,0	Green	1	**479-5168**
133×133×52	9×9	Cryovials 1,2 - 2,0	Blue	1	**479-5169**
133×133×75	9×9	Cryovials 3 -4	Translucent	1	**479-5175**
133×133×75	9×9	Cryovials 3 -4	Yellow	1	**479-5176**
133×133×75	9×9	Cryovials 3 -4	Red	1	**479-5177**
133×133×75	9×9	Cryovials 3 -4	Green	1	**479-5178**
133×133×75	9×9	Cryovials 3 -4	Blue	1	**479-5179**

Cryoboxes
Heathrow Scientific

PP

Feature moulded grid lines on the lid, coordinates imprinted on the base and a moulded reference point on the lid.

W×D×H ext. (mm)	Compartments	For	Colour	Pk	Cat. No.
128×128×45	81 (9×9)	1,5 or 2,0 ml microcentrifuge tubes	Pink	1	**212-8902**
128×128×45	81 (9×9)	1,5 or 2,0 ml microcentrifuge tubes	Yellow	1	**212-8904**

VWR COLLECTION

SELECTED FOR YOU

Cryostorage boxes and dividers

Boxes and dividers are constructed from durable fibreboard with a protective, moisture-repellant coating. Liquid nitrogen (LN_2) freezer boxes feature slots for safe LN_2 drainage and reduced LN_2 consumption. Mechanical freezer boxes do not feature slots and cannot be used with LN_2.

Boxes with dividers feature a lid printed with a numbered grid for superior inventory control. Boxes without dividers can accommodate dividers (sold separately) for 16 to 100 places. Fibreboard dividers can fit in any 127x127 mm LN_2 cryogenic or mechanical freezer box.

W×D×H ext. (mm)	Compartments	Type	Pk	Cat. No.
Liquid nitrogen cryogenic freezer boxes with drain slots				
70×70×47,6	25	-	1	**478-0248**
127×125×47,6	100	-	1	**478-0247**
Mechanical cryogenic freezer boxes with or without dividers				
127×127×47,6	81	With dividers	1	**478-0249**
127×127×51	-	Without dividers	1	**478-0239**
127×127×73	-	Without dividers	1	**478-0240**
Fibreboard dividers				
125×125×25,4	16	-	12	**478-0252**
125×125×25,4	25	-	12	**478-0253**
125×125×25,4	49	-	1	**478-0243**
125×125×25,4	49	-	12	**478-0254**
125×125×25,4	64	-	1	**478-0244**
125×125×25,4	64	-	12	**478-0255**
125×125×25,4	81	-	1	**478-0245**
125×125×25,4	81	-	12	**478-0256**
125×125×25,4	100	-	1	**478-0246**
125×125×25,4	100	-	12	**478-0257**

Cryoboxes, 133x133 mm, with grid divider

Cryo-resistant fibreboard/cardboard, White

For storage of cryovials at low temperatures.

- Water-repellent for longer durability
- Complete with 9×9 cell dividers
- For tubes up to 13 mm O.D.

W×D×H ext. (mm)	Compartments	Pk	Cat. No.
133×133×50*	9×9	1	**479-0695**
133×133×75*	9×9	1	**479-0696**
133×133×100*	9×9	1	**479-0697**

*Height stated is the interior height

Cryoboxes, 133x133 mm

Cryo resistant fibreboard/cardboard

For storage of cryovials at low temperatures.

- Water repellent for longer durability
- Various combinations possible with different dividers (to be ordered separately)
- Available in 3 different heights and 5 colours

W×D×H ext. (mm)	Compartments	For	Colour	Height (mm)	For tube Ø (mm)	Pk	Cat. No.
Cryoboxes							
133×133×50*	-	-	White	-	-	1	**479-0668**
133×133×50*	-	-	Blue	-	-	1	**479-0669**
133×133×50*	-	-	Red	-	-	1	**479-0670**
133×133×50*	-	-	Green	-	-	1	**479-0671**
133×133×50*	-	-	Yellow	-	-	1	**479-0672**
133×133×75*	-	-	White	-	-	1	**479-0673**
133×133×75*	-	-	Blue	-	-	1	**479-0674**
133×133×75*	-	-	Red	-	-	1	**479-0675**
133×133×75*	-	-	Green	-	-	1	**479-0676**
133×133×75*	-	-	Yellow	-	-	1	**479-0677**
133×133×100*	-	-	White	-	-	1	**479-0678**
133×133×100*	-	-	Blue	-	-	1	**479-0679**
133×133×100*	-	-	Red	-	-	1	**479-0680**
133×133×100*	-	-	Green	-	-	1	**479-0681**
133×133×100*	-	-	Yellow	-	-	1	**479-0682**
Grid Dividers							
-	7×7	boxes 50 mm height	—	30	17	1	**479-0683**
-	7×7	boxes 75 mm height	—	40	17	1	**479-0687**
-	7×7	boxes 100 mm height	—	65	17	1	**479-0691**
-	8×8	boxes 50 mm height	—	30	15	1	**479-0684**
-	8×8	boxes 75 mm height	—	40	15	1	**479-0688**
-	8×8	boxes 100 mm height	—	65	15	1	**479-0692**
-	9×9	boxes 50 mm height	—	30	13	1	**479-0685**
-	9×9	boxes 75 mm height	—	40	13	1	**479-0689**
-	9×9	boxes 100 mm height	—	65	13	1	**479-0693**
-	10×10	boxes 50 mm height	—	30	12	1	**479-0686**
-	10×10	boxes 75 mm height	—	40	12	1	**479-0690**
-	10×10	boxes 100 mm height	—	65	12	1	**479-0694**

*Height stated is the interior height

Cryoboxes, 136x136 mm

Cryo resistant fibreboard/cardboard

For storage of cryovials at low temperatures.

- Water repellent for longer durability
- Various combinations possible with different dividers (to be ordered separately)
- Available in 3 different heights and 5 colours

W×D×H ext. (mm)	Compartments	For	Colour	Height (mm)	For tube Ø	Pk	Cat. No.
Cryoboxes							
136×136×50*	-	-	White	-		1	**479-0698**
136×136×50*	-	-	Blue	-		1	**479-0699**
136×136×50*	-	-	Red	-		1	**479-0700**
136×136×50*	-	-	Green	-		1	**479-0701**
136×136×50*	-	-	Yellow	-		1	**479-0702**
136×136×75*	-	-	White	-		1	**479-0703**
136×136×75*	-	-	Blue	-		1	**479-0704**
136×136×75*	-	-	Red	-		1	**479-0705**
136×136×75*	-	-	Green	-		1	**479-0706**
136×136×75*	-	-	Yellow	-		1	**479-0707**
136×136×100*	-	-	White	-		1	**479-0708**
136×136×100*	-	-	Blue	-		1	**479-0709**
136×136×100*	-	-	Red	-		1	**479-0710**
136×136×100*	-	-	Green	-		1	**479-0711**
136×136×100*	-	-	Yellow	-		1	**479-0712**

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W×D×H ext. (mm)	Compartments	For	Colour	Height (mm)	For tube Ø	Pk	Cat. No.
Grid dividers							
-	7×7	boxes 50 mm height	—	30	16	1	**479-0716**
-	7×7	boxes 75 mm height	—	40	16	1	**479-0720**
-	7×7	boxes 100 mm height	—	65	16	1	**479-0724**
-	8×8	boxes 50 mm height	—	30	14	1	**479-0715**
-	8×8	boxes 75 mm height	—	40	14	1	**479-0719**
-	8×8	boxes 100 mm height	—	65	14	1	**479-0723**
-	9×9	boxes 50 mm height	—	30	13	1	**479-0714**
-	9×9	boxes 75 mm height	—	40	13	1	**479-0718**
-	9×9	boxes 100 mm height	—	65	13	1	**479-0722**
-	10×10	boxes 50 mm height	—	30	12	1	**479-0713**
-	10×10	boxes 75 mm height	—	40	12	1	**479-0717**
-	10×10	boxes 100 mm height	—	65	12	1	**479-0721**

*Height stated is the interior height

Cryoboxes, Origami

Cardboard

The Origami is a new developed cryobox concept. The box consists of a lid and a bottom which is delivered "Plano". Simply follow the instructions on the lid, 1-2-3 and you have a stable, high quality cryobox.

- Inexpensive to buy, inexpensive to ship, space saving in the laboratory
- Available in the most popular formats with a height of 50 mm
- Square shape 134×134 mm, to fit into all storage rack systems

W×D×H ext. (mm)	Compartments	For	Type	Pk	Cat. No.
134×134×50	-	-	Box without grid divider	100	**479-1173**
134×134×50	10×10	Tubes max. 12,3 mm Ø	Box with grid divider	100	**479-1174**
134×134×50	9×9	Tubes max. 13,8 mm Ø	Box with grid divider	100	**479-1175**
134×134×50	8×8	Tubes max. 15,5 mm Ø	Box with grid divider	100	**479-1176**
134×134×50	7×7	Tubes max. 17,8 mm Ø	Box with grid divider	100	**479-1177**

Cryoboxes, 133x133 mm

Cryo resistant cardboard

For storage of cryovials at low temperatures.

- Various combinations possible with different inserts

Height stated is the interior height.

Supplied with lid.

Grid insert to be ordered separately.

W×D×H ext. (mm)	Compartments	Colour	Height (mm)	For tube Ø (mm)	Pk	Cat. No.
Cryoboxes, standard						
133×133×32	-	White	-	-	1	**479-0300**
133×133×32	-	Blue	-	-	1	**479-0304**
133×133×32	-	Red	-	-	1	**479-0308**
133×133×32	-	Green	-	-	1	**479-0306**
133×133×32	-	Yellow	-	-	1	**479-0302**
133×133×130	-	White	-	-	1	**479-0340**
133×133×130	-	Blue	-	-	1	**479-0344**
133×133×130	-	Red	-	-	1	**479-0348**
133×133×130	-	Green	-	-	1	**479-0346**
133×133×130	-	Yellow	-	-	1	**479-0342**
Cryoboxes, plastic coated						
133×133×32	-	White	-	-	1	**479-0301**
133×133×32	-	Blue	-	-	1	**479-0305**
133×133×32	-	Red	-	-	1	**479-0309**
133×133×32	-	Green	-	-	1	**479-0307**
133×133×32	-	Yellow	-	-	1	**479-0303**
133×133×50	-	White	-	-	1	**479-0311**
133×133×50	-	Blue	-	-	1	**479-0315**
133×133×50	-	Red	-	-	1	**479-0319**
133×133×50	-	Green	-	-	1	**479-0317**
133×133×50	-	Yellow	-	-	1	**479-0313**
133×133×75	-	White	-	-	1	**479-0321**
133×133×75	-	Blue	-	-	1	**479-0325**
133×133×75	-	Red	-	-	1	**479-0329**
133×133×75	-	Green	-	-	1	**479-0327**
133×133×75	-	Yellow	-	-	1	**479-0323**

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W×D×H ext. (mm)	Compartments	Colour	Height (mm)	For tube Ø (mm)	Pk	Cat. No.
Cryoboxes, plastic coated						
133×133×100	-	White	-	-	1	**479-0331**
133×133×100	-	Blue	-	-	1	**479-0335**
133×133×100	-	Red	-	-	1	**479-0339**
133×133×100	-	Green	-	-	1	**479-0337**
133×133×100	-	Yellow	-	-	1	**479-0333**
133×133×130	-	White	-	-	1	**479-0341**
133×133×130	-	Blue	-	-	1	**479-0345**
133×133×130	-	Red	-	-	1	**479-0349**
133×133×130	-	Green	-	-	1	**479-0347**
133×133×130	-	Yellow	-	-	1	**479-0343**
Dividers for cryoboxes						
	5×5	—	25	23	1	**479-0358**
	5×5	—	30	23	1	**479-0368**
	5×5	—	40	23	1	**479-0378**
	5×5	—	65	23	1	**479-0388**
	6×6	—	25	19	1	**479-0357**
	6×6	—	30	19	1	**479-0367**
	6×6	—	40	19	1	**479-0377**
	6×6	—	65	19	1	**479-0387**
	7×7	—	25	16	1	**479-0356**
	8×8	—	25	14	1	**479-0355**
	9×9	—	25	13,5	1	**479-0154**
	10×10	—	25	12	1	**479-0353**
	12×12	—	25	9	1	**479-0352**
	12×12	—	30	9	1	**479-0362**
	12×12	—	40	9	1	**479-0372**
	12×12	—	65	9	1	**479-0382**
	13×13	—	25	8	1	**479-0351**
	13×13	—	30	8	1	**479-0361**
	13×13	—	40	8	1	**479-0371**
	13×13	—	65	8	1	**479-0381**
	14×14	—	25	7	1	**479-0350**
	14×14	—	30	7	1	**479-0360**
	14×14	—	40	7	1	**479-0370**
	14×14	—	65	7	1	**479-0380**

Cryoboxes, 136x136 mm

Cryo resistant cardboard

For storage of cryovials at low temperatures.

- Various combinations possible with different inserts

Height stated is the interior height.

Supplied with lid.

Grid insert to be ordered separately.

W×D×H ext. (mm)	Compartments	Colour	Height (mm)	For tube Ø (mm)	Pk	Cat. No.
Cryoboxes, standard						
136×136×32	-	White	-	-	1	**479-0100**
136×136×32	-	Blue	-	-	1	**479-0104**
136×136×32	-	Red	-	-	1	**479-0108**
136×136×32	-	Green	-	-	1	**479-0106**
136×136×32	-	Yellow	-	-	1	**479-0102**
136×136×130	-	White	-	-	1	**479-0140**
136×136×130	-	Blue	-	-	1	**479-0144**
136×136×130	-	Red	-	-	1	**479-0148**
136×136×130	-	Green	-	-	1	**479-0146**
136×136×130	-	Yellow	-	-	1	**479-0142**
Cryoboxes, plastic coated						
136×136×32	-	White	-	-	1	**479-0101**
136×136×32	-	Blue	-	-	1	**479-0105**
136×136×32	-	Red	-	-	1	**479-0109**
136×136×32	-	Green	-	-	1	**479-0107**
136×136×32	-	Yellow	-	-	1	**479-0103**
136×136×50	-	White	-	-	1	**479-0111**
136×136×50	-	Blue	-	-	1	**479-0115**
136×136×50	-	Red	-	-	1	**479-0119**
136×136×50	-	Green	-	-	1	**479-0117**
136×136×50	-	Yellow	-	-	1	**479-0113**
136×136×75	-	White	-	-	1	**479-0121**
136×136×75	-	Blue	-	-	1	**479-0125**

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W×D×H ext. (mm)	Compartments	Colour	Height (mm)	For tube Ø (mm)	Pk	Cat. No.
Cryoboxes, plastic coated						
136×136×75	-	Red	-	-	1	**479-0129**
136×136×75	-	Green	-	-	1	**479-0127**
136×136×75	-	Yellow	-	-	1	**479-0123**
136×136×100	-	White	-	-	1	**479-0131**
136×136×100	-	Blue	-	-	1	**479-0135**
136×136×100	-	Red	-	-	1	**479-0139**
136×136×100	-	Green	-	-	1	**479-0137**
136×136×100	-	Yellow	-	-	1	**479-0133**
136×136×130	-	White	-	-	1	**479-0141**
136×136×130	-	Blue	-	-	1	**479-0145**
136×136×130	-	Red	-	-	1	**479-0149**
136×136×130	-	Green	-	-	1	**479-0147**
136×136×130	-	Yellow	-	-	1	**479-0143**
Dividers for cryoboxes						
-	7×7	—	25	up to 16,5	1	**479-0156**
-	8×8	—	25	up to 14,5	1	**479-0155**
-	10×10	—	25	up to 11,0	1	**479-0153**
-	10×10	—	30	up to 11,0	1	**479-0163**
-	12×12	—	25	up to 9,0	1	**479-0152**
-	12×12	—	30	up to 9,0	1	**479-0162**
-	12×12	—	40	up to 9,0	1	**479-0172**
-	12×12	—	65	up to 9,0	1	**479-0182**
-	13×13	—	25	up to 8,5	1	**479-0151**
-	13×13	—	30	up to 8,5	1	**479-0161**
-	13×13	—	40	up to 8,5	1	**479-0171**
-	13×13	—	65	up to 8,5	1	**479-0181**
-	14×14	—	25	up to 7,5	1	**479-0150**
-	14×14	—	30	up to 7,5	1	**479-0160**
-	14×14	—	40	up to 7,5	1	**479-0170**
-	14×14	—	65	up to 7,5	1	**479-0180**

Microtube box
Heathrow Scientific

Expanded PS

Suitable for long-term freezer storage. With lid.

Extra spacing between wells allows easy selection of tubes.

Stackable

W×D×H ext. (mm)	Compartments	For	Pk	Cat. No.
336×95×73	100	Microtubes 1,5 - 2,0	10	**211-3512**

VWR COLLECTION

SELECTED FOR YOU

Racks for cryoboxes

Cardboard

Economical, coated cardboard racks for upright freezers.

- Stable and long lasting
- Lightweight - the 20 compartment rack weighs 1,1 kg without boxes
- For cryoboxes 50 mm height

Compartments	W×D×H ext. (mm)	Pk	Cat. No.
Racks without cryoboxes			
16 (4×4)	562×139×225	1	**479-1169**
20 (5×4)	562×139×285	1	**479-0882**
24 (6×4)	562×139×331	1	**479-1171**
Racks with standard white cardboard cryoboxes with 9×9 cell dividers			
16 (4×4)	562×139×225	1	**479-1170**
20 (5×4)	562×139×285	1	**479-0883**
24 (6×4)	562×139×331	1	**479-1172**

Racks for cryoboxes

211-0231

Stainless steel, with handles

Horizontal racks fit cryoboxes up to 133×133 mm.

Compartments	W×D×H ext. (mm)	Cryobox height (mm)	Pk	Cat. No.
12 (3×4)	556×140×245	75	1	**211-0230**
16 (4×4)	556×140×225	50	1	**211-0231**

Racks for cryoboxes, Nalgene®
Thermo Scientific

Stainless steel

Retainers hold each box securely but separately and allow fast retrieval of one box and immediate return to rack.

Vertical

- 479-3351, 479-3352: for cryoboxes with 5×5 cryotubes
- 212-8117, 212-8118: for standard cryoboxes
- 479-3356, 479-3357: for cryoboxes with 5 ml tubes and Mr. Frosty

Horizontal

- Fit most upright freezer compartments
- For standard cryoboxes of 133×133×51 mm
- With two lateral handles

Delivery information: Supplied without cryoboxes.

Compartments	W×D×H ext. (mm)	Pk	Cat. No.
Vertical			
4	83×84×225	1	**479-3351**
9	83×84×502	1	**479-3352**
4	140×143×225	1	**212-8117**
9	140×143×502	1	**212-8118**
4	140×143×406	1	**479-3356**
7	140×143×705	1	**479-3357**
Horizontal			
12 (3×4)	143×444×225	1	**212-8119**
16 (4×4)	143×590×225	1	**212-8120**

Racks for chest freezers, Classic

Stainless steel

The racks are an economical storage system. They will fit into any chest freezer and can be used with all standard cryoboxes.

- Racks for different box heights are available
- The cryoboxes are secured with a locking rod
- Can be used with all chest freezer brands

Cryoboxes should be ordered separately.

Compartments	W×D×H ext. (mm)	Pk	Cat. No.
Racks for cryoboxes 32 mm height			
8	140×140×288	1	**479-1307**
10	140×140×360	1	**479-1308**
12	140×140×432	1	**479-1309**
14	140×140×504	1	**479-1310**
15	140×140×540	1	**479-1311**

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Compartments	W×D×H ext. (mm)	Pk	Cat. No.
Racks for cryoboxes 32 mm height			
16	140×140×576	1	**479-1312**
18	140×140×648	1	**479-1313**
20	140×140×720	1	**479-1314**
Racks for cryoboxes 50 mm height			
3	140×140×170	1	**479-0646**
5	140×140×280	1	**479-0647**
6	140×140×335	1	**479-0648**
7	140×140×390	1	**479-0649**
8	140×140×445	1	**479-0644**
9	140×140×500	1	**479-0645**
10	140×140×555	1	**479-0650**
11	140×140×610	1	**479-0651**
12	140×140×665	1	**479-0653**
13	140×140×720	1	**479-0666**
Racks for cryoboxes 75 mm height			
2	140×140×166	1	**479-0652**
3	140×140×246	1	**479-0654**
4	140×140×326	1	**479-0655**
5	140×140×406	1	**479-0656**
6	140×140×486	1	**479-0657**
7	140×140×551	1	**479-0658**
8	140×140×629	1	**479-0660**
9	140×140×726	1	**479-0661**
Racks for cryoboxes 85 mm height			
7	140×140×607	1	**479-0659**
8	140×140×693	1	**479-0667**
Racks for cryoboxes 100 mm height			
3	140×140×320	1	**479-0662**
4	140×140×425	1	**479-0663**
5	140×140×530	1	**479-0664**
6	140×140×635	1	**479-0665**

Racks for cryoboxes, standard type

479-0749 rear view

479-0749 front view

Stainless steel

For upright freezers. The racks are a inexpensive storage system. They will fit into any freezer and can be used with all standard cryoboxes. Measure the inside height and depth of your freezer when choosing the right rack.

- Racks for three different box heights are available
- Can be used with all freezer brands
- Fits for all standard cryoboxes

Ordering information: Delivered without cryoboxes

Stainless steel safety spring lock

The safety spring lock is used to prevent the cryoboxes from sliding out when pulling the rack in and out the freezer. Simply place the spring lock on the lid of the cryobox and push the cryobox in the rack. The spring will come out together with the crybox when pulling it out.

- Can be used when there is a gap between the cryobox and the shelf from 1 to 6 mm
- For classic and budget racks or any other rack brand with a similar design
- Withstand temperatures below –200 °C

Compartments	W×D×H ext. (mm)	Pk	Cat. No.
Racks for cryoboxes 50 mm height			
9 (3×3)	139×419×168	1	**479-0730**
12 (4×3)	139×419×221	1	**479-0731**
15 (5×3)	139×419×276	1	**479-0732**
12 (3×4)	139×558×168	1	**479-0733**
16 (4×4)	139×558×221	1	**479-0734**

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Compartments	W×D×H ext. (mm)	Pk	Cat. No.
Racks for cryoboxes 50 mm height			
20 (5×4)	139×558×276	1	**479-0735**
24 (6×4)	139×558×331	1	**479-0736**
28 (7×4)	139×558×386	1	**479-0737**
15 (3×5)	139×697×168	1	**479-0738**
20 (4×5)	139×697×221	1	**479-0739**
25 (5×5)	139×697×276	1	**479-0740**
30 (6×5)	139×697×331	1	**479-0741**
Racks for cryoboxes 75 mm height			
6 (3×2)	139×280×240	1	**479-0742**
6 (2×3)	139×419×160	1	**479-0743**
9 (3×3)	139×419×240	1	**479-0744**
12 (4×3)	139×419×320	1	**479-0745**
8 (2×4)	139×558×160	1	**479-0746**
12 (3×4)	139×558×240	1	**479-0747**
16 (4×4)	139×558×320	1	**479-0748**
20 (5×4)	139×558×400	1	**479-0749**
10 (2×5)	139×697×160	1	**479-0750**
15 (3×5)	139×697×240	1	**479-0751**
20 (4×5)	139×697×320	1	**479-0752**
Racks for cryoboxes 100 mm height			
6 (2×3)	139×419×210	1	**479-0753**
8 (2×4)	139×558×210	1	**479-0754**
12 (3×4)	139×558×315	1	**479-0755**
10 (2×5)	139×697×210	1	**479-0756**
15 (3×5)	139×697×315	1	**479-0757**
Racks for cryoboxes 130 mm height			
6 (2×3)	140×420×268	1	**479-1315**
8 (2×4)	140×558×268	1	**479-1316**
9 (3×3)	140×420×401	1	**479-1317**
12 (3×4)	140×558×401	1	**479-1318**
10 (2×5)	140×696×268	1	**479-1319**
15 (3×4)	140×696×401	1	**479-1320**

Description	Pk	Cat. No.
Accessories		
Safety spring lock	10	**479-0850**
Safety spring lock	100	**479-0851**

Sliding shelf racks for cryoboxes, Comfort

Stainless steel

For upright freezers. These racks insure a more ergonomical operating process. In the sliding shelf rack the cryoboxes are placed in drawers. This increases the flexibility. Measure the inside height and depth of you freezer when choosing the right rack.

- Racks for five different box heights are available
- Can be used with all freezer brands
- Fits for all standard cryoboxes

Ordering information: Delivered without cryoboxes

Compartments	W×D×H ext. (mm)	Pk	Cat. No.
Racks for cryoboxes 50 mm height			
9 (3×3)	140×421×171	1	**479-0758**
12 (3×4)	140×558×171	1	**479-0761**
12 (4×3)	140×421×228	1	**479-0759**
15 (3×5)	140×688×171	1	**479-0766**
15 (5×3)	140×421×285	1	**479-0760**
16 (4×4)	140×558×228	1	**479-0762**
20 (4×5)	140×688×228	1	**479-0767**
20 (5×4)	140×558×285	1	**479-0763**
24 (6×4)	140×558×340	1	**479-0764**

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Compartments	W×D×H ext. (mm)	Pk	Cat. No.
Racks for cryoboxes 50 mm height			
28 (7×4)	140×558×398	1	**479-0765**
25 (5×5)	140×688×285	1	**479-0768**
30 (6×5)	140×688×340	1	**479-0769**
Racks for cryoboxes 75 mm height			
6 (2×3)	140×421×164	1	**479-0770**
8 (2×4)	140×558×164	1	**479-0773**
9 (3×3)	140×421×246	1	**479-0771**
10 (2×5)	140×688×164	1	**479-0777**
12 (3×4)	140×558×246	1	**479-0774**
12 (4×3)	140×421×328	1	**479-0772**
15 (3×5)	140×688×246	1	**479-0778**
16 (4×4)	140×558×328	1	**479-0775**
20 (4×5)	140×688×328	1	**479-0779**
20 (5×4)	140×558×410	1	**479-0776**
Racks for cryoboxes 100 mm height			
6 (2×3)	140×421×214	1	**479-0780**
9 (3×3)	140×421×315	1	**479-1321**
8 (2×4)	140×558×214	1	**479-0781**
12 (3×4)	140×558×315	1	**479-0782**
10 (2×5)	140×688×214	1	**479-0783**
15 (3×5)	140×688×315	1	**479-0784**

Racks for centrifuge tube cryoboxes

Stainless steel, sliding shelf

For upright freezers. The racks are specially designed for use with boxes for centrifuge tubes. Boxes with exterior dimensions up to H×W 132×137 mm, the length can in principle be as long as the shelf.

- Sliding shelf rack design
- Can be used with all freezer brands
- For boxes 130 mm height

Ordering information: Delivered without cryoboxes

Compartments	W×D×H ext. (mm)	Cryobox height (mm)	Pk	Cat. No.
6 (2×3)	140×420×268	130	1	**479-0845**
8 (2×4)	140×558×268	130	1	**479-0846**
12 (3×4)	140×558×401	130	1	**479-0847**
10 (2×5)	140×696×268	130	1	**479-0848**
15 (3×5)	140×696×401	130	1	**479-0849**

Racks for centrifuge tube cryoboxes

Stainless steel

For chest freezers. The racks are specially designed for use with boxes for centrifuge tubes, boxes with exterior dimensions up to H×W 132×137 mm.

- Boxes secured with locking rod
- Can be used with all freezer brands
- For boxes 130 mm height

Ordering information: Cryoboxes must be ordered separately.

Compartments	W×D×H ext. (mm)	Pk	Cat. No.
2	140×140×270	1	**479-0841**
3	140×140×404	1	**479-0842**
4	140×140×536	1	**479-0843**
5	140×140×669	1	**479-0844**

Racks for chest freezers, Comfort

Stainless steel

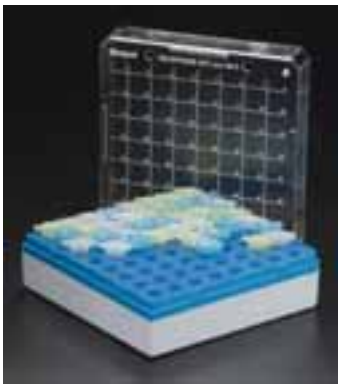
The racks are an economical storage system for chest freezers.

- Can be used with all brands of freezers
- Suitable for all standard cryoboxes
- The racks have spring locks mounted on each shelf to secure the cryoboxes
- Suitable for cardboard, polypropylene and polycarbonate cryoboxes

Half box racks 50 mm height. The racks can be used with boxes with a footprint of max. 83×83 mm, typically with the 5×5 cryobox.

Compartments	W×D×H ext. (mm)	Pk	Cat. No.
Racks for cryoboxes 50 mm height			
3	140×140×170	1	**479-0785**
5	140×140×280	1	**479-0786**
6	140×140×335	1	**479-0787**
7	140×140×390	1	**479-0788**
8	140×140×445	1	**479-0789**
9	140×140×500	1	**479-0790**
10	140×140×555	1	**479-0791**
11	140×140×610	1	**479-0792**
12	140×140×665	1	**479-0793**
13	140×140×720	1	**479-0794**
14	140×140×775	1	**479-1185**
15	140×140×832	1	**479-1186**
Half box racks 50 mm height			
9	83×83×500	1	**479-0861**
10	83×83×555	1	**479-0862**
11	83×83×610	1	**479-0863**
12	83×83×665	1	**479-0864**
13	83×83×720	1	**479-0865**
14	83×83×775	1	**479-1183**
15	83×83×832	1	**479-1184**

Cryostorage boxes for microcentrifuge tubes



PS, white/transparent with blue polyurethane foam insert

Ideal for holding up to 64 tubes from 0,5 ml to 2 ml. A transparent cover allows the user to see the contents and is aligned in a specific orientation. The surface accepts writing with markers for better inventory control.

- Boxes have a usable range of –90 to +80 °C
- Boxes are stackable for space saving in freezers, refrigerators and lab counters
- Being printed with a series of squares (numbered 1 to 64)

For (ml)	Colour	Pk	Cat. No.
0,5/1,5/2,0	Blue/White	4	**720-0503**

Vertical autoclaves, VAPOUR-line

The housing is made from powder coated steel

VAPOUR-Line autoclaves are ideal for different laboratory applications, such as: Liquids in open or slightly closed vessels, instruments and solids, unwrapped and waste sterilisation.

All VAPOUR-Line 80 and 135 models generate steam directly in the chamber. Heating elements are situated under the base of the chamber so there is no contact between them and feed water, ensuring long element lifetime and preventing contamination by spilt waste, broken bottles or similar. The elements are protected from overheating by a temperature limiter.

VAPOUR-Line 80M and 135M models are equipped with an effective air cooling system for liquid sterilisation. This speeds cooling time by up to 40% compared to standard models.

- Equipped as standard with sterile filter for the chamber venting
- Microprocessor controller with 10 pre-programmed protocols (5 prerecorded freely modifiable and 5 protected by code)
- TÜV approved safety locking mechanism and thermal lock according to EN DIN 61010-2-43 with flexible sensor reference probe
- Air removal by gravity (except M models)
- Integrated exhaust steam condensation, water cooled and temperature controlled
- Integrated memory chip for storing up to 150 cycles (later printout possible)
- RS485 interface

Model	VAPOUR- line 80/80M	VAPOUR- line 135/135M
Capacity (l)	80	135
Temperature (°C)	98...138	
Heating power (W)	3000	3×2000
Voltage (V)	230	380 (3 phase)
Internal Ø×H (mm)	410×600	500×660
W×D×H ext. (mm)	740×915×600	840×965×700
Weight (kg)	155/165	195/205

Description	Pk	Cat. No.
Basic units		
Vertical autoclave, VAPOUR-Line 80, UK-plug	1	**481-0690**
Vertical autoclave, VAPOUR-Line 135, UK-plug	1	**481-0692**
Air cooled units		
Vertical autoclave, VAPOUR-Line 80 M, UK-plug, with integrated cooling system	1	**481-0694**
Vertical autoclave, VAPOUR-Line 135 M, UK-plug, with integrated cooling system	1	**481-0696**

Description	Pk	Cat. No.
Accessories		
Stacking basket 400×300 mm (Ø×height) for 80/80M models (max 2)	1	**481-0698**
Waste bucket: 400×300 mm (Ø×height) for 80/80M models (max.1)	1	**481-0699**
Wire mesh basket with closed bottom: 400×245 mm (Ø×height) for 80/80M models (only in the lower part)	1	**481-0702**
Stacking basket 485×300 mm (Ø×height) for 135/135 M models (max. 2)	1	**481-0700**
Waste bucket: 485×300 mm (Ø×height) for 135/135 M models (max. 1)	1	**481-0701**
Wire mesh basket with closed bottom: 495×245 mm (Ø×height) for 135/135 M models (only in the lower part)	1	**481-0703**
Exhaust steam collecting tank (requires installation), for all models	1	**481-0704**
Printer	1	**481-0697**

Top Loading VAPOUR-Line^{eco} autoclaves

Inside pressure vessel and outside structure made in AISI 304 stainless steel mirror finished grade

Easy to use, automatic, flexible, reliable and convenient autoclave for all standard laboratory procedures with some special features as F_0 calculation and liquid sterilisation with flexible thermoprobe (for 50 litre model).

- User friendly programmer, instructions printed on the front panel
- Easy to install, easy to use and maintain
- Fully automatic with GLP special functions
- Reliable: 10 years warranty against perforating corrosion
- Customisable programs
- Safety: ABS insulating lid with vertical position lock – temperature dependent lid lock
- Flexible PT100 thermoprobe for *eco* 50 (fixed for *eco* 25), can be positioned in liquid load (max 50 ml recommended)

Conform to European PED regulations, CE mark. IQ, OQ, PQ documentation available on request.

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Model	VAPOUR-Line^{eco} 25	VAPOUR-Line^{eco} 50
Capacity (l)	25	50
Material	Stainless steel 304	
Temperature (°C)	134	
Max. pressure (bar)	2,1	
Voltage (V)	230	380 (3 phase)
Internal Ø×H (mm)	250×450	320×600
W×D×H ext. (mm)	550×540×1005	550×570×1005
Weight (kg)	45	60

Description	Pk	Cat. No.
Autoclave, vertical, VAPOUR-Line^{eco} 25, with 5 personal programs, can hold 1× Ecobox-25 or 2× Ecobox-25-Mini	1	**481-0671**
Autoclave, vertical, VAPOUR-Line^{eco} 25, with printer, with 5 personal programs, can hold 1× Ecobox-25 or 2× Ecobox-25-Mini	1	**481-0708**
Autoclave, vertical, VAPOUR-Line^{eco} 50, with 7 personal programs, can hold 2× Ecobox-50 or 3× Ecobox-50-Mini	1	**481-0665**

Description	Pk	Cat. No.
Accessories		
Data printer	1	**481-0673**
Ecobox-25 basket: (Ø×h): 240×420 mm, in stainless steel AISI 304 (max. loading: 1 basket)	1	**710-0887**
Ecobox-25-Mini: (Ø×h): 240×210 mm, in stainless steel AISI 304 (max. loading: 2 baskets)	1	**481-0669**
Ecobox-50-basket: (Ø×h): 310×285 mm, in stainless steel AISI 304 (max. loading: 2 baskets)	1	**481-0672**
Ecobox-50-mini basket: (Ø×h): 310×190 mm in stainless steel AISI 304 (max. loading: 3 baskets)	1	**481-0668**

Autoclaves, LABOKLAV 25
SHP

In stainless steel, chamber door made from heat-proof safety glass.

These compact bench top units with a 25 litre useable chamber offers a large capacity and the performance of a big autoclave. The unit has a chamber door and a transparent front cover made from resistant safety glass, LED chamber illumination and coloured lighting to visualise the cycle progress. No feed water or waste water connection required, fan for fast cooling on some models, the user has only to plug it in and start.

- Integrated steam generator with dry heating elements, their lifetime is increased when not immersed in water
- Fully automatic closing system with thermal locking device to avoid over-boiling and to protect the operator
- Front cover from transparent safety glass and process illumination (LED); blue, red, green
- Sensor as standard which measures the temperature inside the bottles for liquids sterilisation
- RS232 and RS485 interface

Fully compliant with DIN 58951 and TRB 402 (thermo locking device)

Model	LABOKLAV 25 B	LABOKLAV 25 M	LABOKLAV 25 V	LABOKLAV 25 MV
Capacity (l)	25 (5×1 laboratory flasks, up to 5 kg instruments)			
Material	Housing: Powder coated. Front cover: Transparent safety glass. Chamber: Stainless steel, lid made from temperature proof safety glass. Process illumination (LED): Blue, red and green.			
Temperature (°C)	95 – 138			
Heating power (W)	2000			
Max. pressure (bar)	2,8 /-1			
Internal Ø×H (mm)	265×465			
W×D×H ext. (mm)	440×660×540			
Weight (kg)	65			

Description	Pk	Cat. No.
Autoclave LABOKLAV 25 B basic unit with integrated water tank with manual filling	1	**481-0397**
Autoclave LABOKLAV 25 M with fast cooling system and integrated water tank with manual filling	1	**481-0398**
Autoclave LABOKLAV 25 V with vacuum system and integrated water tank with manual filling	1	**481-0399**
Autoclave LABOKLAV 25 MV with fast cooling system and vacuum system; with integrated water tank with manual filling	1	**481-0400**

Autoclaves, LABOKLAV
SHP

LABOKLAV 55-195: 3 colours

LABOKLAV 80 installed as horizontal unit

Stainless steel 316L chamber and housing

A completely new concept allows the installation of the unit as either front or top loader. Deciding on horizontal or vertical is no longer the question with SHP autoclaves. No matter if installed horizontally or vertically, the units remain the same. Even at a later stage the unit can be changed from vertical to horizontal installation or vice versa without the need for big technical changes (contact VWR for details). When set up as horizontal units they are even stackable.

The newly developed integrated steam generator separates the heating elements from the water; the result is a much longer life span of heating elements. Low in energy consumption due to optimised size of steam generator in relation to chamber volume.

Units with cooling or vacuum options are supplied with full double jacket made from the same material as the chamber. During the cooling cycle, deionised water is circulated around the double jacket to ensure a fast and reliable cooling of sensitive media. There is no consumption of cooling deionised water, it returns to the storage tank which has an integral heat exchanger. During the drying cycle the jacket is filled with steam to support the drying of the vacuum unit.

- Automatic feed water pump
- Fully automatic closing system and thermal locking device to protect the operator
- Reference sensor as standard which measures the temperature inside the bottles
- Microprocessor control with 22 programs that can be adjusted by the operator to optimise the process (code protected)
- RS485 interface
- Three colours available: Light grey/blue, light grey/red, light grey/green (please indicate the desired colour when ordering)
- All models are equipped with a cooling system to ensure steam is cooled prior to evacuation, thus ensuring drain protection

Autoclaves for use in the laboratory, in full compliance with: DIN 58950 (pharmaceutical applications), DIN 58951 (laboratory applications), pressure Device Directive 97/23/EU, IEC 61010 - 2 - 43 (thermal locking device).

Model	Capacity (l)	Temperature (°C)	Max. pressure (bar)	Internal Ø×H (mm)	W×D×H ext. (mm)	Weight (kg)
Horizontal autoclaves						
LABOKLAV 55, horizontal	55	98 – 138	2,8	410×460	740×765×600	115
LABOKLAV 80, horizontal	80			410×610	740×915×600	155
LABOKLAV 100, horizontal	100			410×760	740×1065×600	185
LABOKLAV 135, horizontal	135			500×660	840×965×700	195
LABOKLAV 160, horizontal	160			500×760	840×1065×700	210
LABOKLAV 195, horizontal	195			500×990	840×1215×700	245
Vertical autoclaves						
LABOKLAV 55, vertical	55	98 – 138	2,8	410×460	740×600×765	115
LABOKLAV 80, vertical	80			410×610	740×600×915	155
LABOKLAV 100, vertical	100			410×760	740×600×1065	185
LABOKLAV 135, vertical	135			500×660	840×700×965	195
LABOKLAV 160, vertical	160			500×760	840×700×1065	210
LABOKLAV 195, vertical	195			500×990	840×700×1215	245

Description	Pk	Cat. No.
Horizontal autoclaves		
Autoclave LABOKLAV 55-B, horizontal, basic unit	1	**481-0401**
Autoclave LABOKLAV 55-M, horizontal, with integrated fast recooling	1	**481-0403**
Autoclave LABOKLAV 55-MS, horizontal, with integrated fast recooling and counter pressure	1	**481-0405**
Autoclave LABOKLAV 55-MSL, horizontal, with integrated fast recooling, counter pressure and additional fan	1	**481-0407**
Autoclave LABOKLAV 55-V, horizontal, with vacuum system	1	**481-0409**
Autoclave LABOKLAV 55-MV, horizontal, with vacuum system and integrated fast recooling	1	**481-0411**
Autoclave LABOKLAV 55-MSV, horizontal, with vacuum system, integrated fast recooling and counter pressure	1	**481-0413**
Autoclave LABOKLAV 55-MSLV, horizontal, with vacuum system, integrated fast recooling, counter pressure and additional fan	1	**481-0415**
Autoclave LABOKLAV 80-B, horizontal, basic unit	1	**481-0417**

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Description	Pk	Cat. No.
Horizontal autoclaves		
Autoclave LABOKLAV 80-M, horizontal, with integrated fast recooling	1	481-0419
Autoclave LABOKLAV 80-MS, horizontal, with integrated fast recooling and counter pressure	1	481-0421
Autoclave LABOKLAV 80-MSL, horizontal, with integrated fast recooling, counter pressure and additional fan	1	481-0423
Autoclave LABOKLAV 80-V, horizontal, with vacuum system	1	481-0425
Autoclave LABOKLAV 80-MV, horizontal, with vacuum system and integrated fast recooling	1	481-0427
Autoclave LABOKLAV 80-MSV, horizontal, with vacuum system, integrated fast recooling and counter pressure	1	481-0429
Autoclave LABOKLAV 80-MSLV, horizontal, with vacuum system, integrated fast recooling, counter pressure and additional fan	1	481-0431
Autoclave LABOKLAV 100-B, horizontal, basic unit	1	481-0433
Autoclave LABOKLAV 100-M, horizontal, with integrated fast recooling	1	481-0435
Autoclave LABOKLAV 100-MS, horizontal, with integrated fast recooling and counter pressure	1	481-0629
Autoclave LABOKLAV 100-MSL, horizontal, with integrated fast recooling, counter pressure and additional fan	1	481-0438
Autoclave LABOKLAV 100-V, horizontal, with vacuum system	1	481-0440
Autoclave LABOKLAV 100-MV, horizontal, with vacuum system and integrated fast recooling	1	481-0442
Autoclave LABOKLAV 100-MSV, horizontal, with vacuum system, integrated fast recooling and counter pressure	1	481-0444
Autoclave LABOKLAV 100-MSLV, horizontal, with vacuum system, integrated fast recooling, counter pressure and additional fan	1	481-0446
Autoclave LABOKLAV 135-B, horizontal, basic unit	1	481-0448
Autoclave LABOKLAV 135-M, horizontal, with integrated fast recooling	1	481-0450
Autoclave LABOKLAV 135-MS, horizontal, with integrated fast recooling and counter pressure	1	481-0452
Autoclave LABOKLAV 135-MSL, horizontal, with integrated fast recooling, counter pressure and additional fan	1	481-0454
Autoclave LABOKLAV 135-V, horizontal, with vacuum system	1	481-0456
Autoclave LABOKLAV 135-MV, horizontal, with vacuum system and integrated fast recooling	1	481-0458
Autoclave LABOKLAV 135-MSV, horizontal, with vacuum system, integrated fast recooling and counter pressure	1	481-0460
Autoclave LABOKLAV 135-MSLV, horizontal, with vacuum system, integrated fast recooling, counter pressure and additional fan	1	481-0462
Autoclave LABOKLAV 160-B, horizontal, basic unit	1	481-0464
Autoclave LABOKLAV 160-M, horizontal, with integrated fast recooling	1	481-0466
Autoclave LABOKLAV 160-MS, horizontal, with integrated fast recooling and counter pressure	1	481-0468
Autoclave LABOKLAV 160-MSL, horizontal, with integrated fast recooling, counter pressure and additional fan	1	481-0470
Autoclave LABOKLAV 160-V, horizontal, with vacuum system	1	481-0472
Autoclave LABOKLAV 160-MV, horizontal, with vacuum system and fast recooling	1	481-0474
Autoclave LABOKLAV 160-MSV, horizontal, with vacuum system, fast recooling and counter pressure	1	481-0476
Autoclave LABOKLAV 160-MSLV, horizontal, with vacuum system, fast recooling, counter pressure and additional fan	1	481-0478
Autoclave LABOKLAV 195-B, horizontal, basic unit	1	481-0480
Autoclave LABOKLAV 195-M, horizontal, with integrated fast recooling	1	481-0482
Autoclave LABOKLAV 195-MS, horizontal, with integrated fast recooling and counter pressure	1	481-0484
Autoclave LABOKLAV 195-MSL, horizontal, with integrated fast recooling, counter pressure and additional fan	1	481-0486
Autoclave LABOKLAV 195-V, horizontal, with vacuum system	1	481-0488
Autoclave LABOKLAV 195-MV, horizontal, with vacuum system and integrated fast recooling	1	481-0490
Autoclave LABOKLAV 195-MSV, horizontal, with vacuum system, integrated fast recooling and counter pressure	1	481-0492
Autoclave LABOKLAV 195-MSLV, horizontal, with vacuum system, integrated fast recooling, counter pressure and additional fan	1	481-0494
Vertical autoclaves		
Autoclave LABOKLAV 55-B, vertical, basic unit	1	481-0402
Autoclave LABOKLAV 55-M, vertical, with integrated fast recooling	1	481-0404
Autoclave LABOKLAV 55-MS, vertical, with integrated fast recooling and counter pressure	1	481-0406
Autoclave LABOKLAV 55-MSL, vertical, with integrated fast recooling, counter pressure and additional fan	1	481-0408
Autoclave LABOKLAV 55-V, vertical, with vacuum system	1	481-0410
Autoclave LABOKLAV 55-MV, vertical, with vacuum system and integrated fast recooling	1	481-0412
Autoclave LABOKLAV 55-MSV, vertical, with vacuum system, integrated fast recooling and counter pressure	1	481-0414
Autoclave LABOKLAV 55-MSLV, vertical, with vacuum system, integrated fast recooling, counter pressure and additional fan	1	481-0416
Autoclave LABOKLAV 80-B, vertical, basic unit	1	481-0418
Autoclave LABOKLAV 80-M, vertical, with integrated fast recooling	1	481-0420
Autoclave LABOKLAV 80-MS, vertical, with integrated fast recooling and counter pressure	1	481-0422
Autoclave LABOKLAV 80-MSL, vertical, with integrated fast recooling, counter pressure and additional fan	1	481-0424
Autoclave LABOKLAV 80-V, vertical, with vacuum system	1	481-0426
Autoclave LABOKLAV 80-MV, vertical, with vacuum system and integrated fast recooling	1	481-0428
Autoclave LABOKLAV 80-MSV, vertical, with vacuum system, integrated fast recooling and counter pressure	1	481-0430
Autoclave LABOKLAV 80-MSLV, vertical, with vacuum system, integrated fast recooling, counter pressure and additional fan	1	481-0432
Autoclave LABOKLAV 100-B, vertical, basic unit	1	481-0434
Autoclave LABOKLAV 100-M, vertical, with integrated fast recooling	1	481-0436
Autoclave LABOKLAV 100-MS, vertical, with integrated fast recooling and counter pressure	1	481-0437
Autoclave LABOKLAV 100-MSL, vertical, with integrated fast recooling, counter pressure and additional fan	1	481-0439
Autoclave LABOKLAV 100-V, vertical, with vacuum system	1	481-0441
Autoclave LABOKLAV 100-MV, vertical, with vacuum system and integrated fast recooling	1	481-0443
Autoclave LABOKLAV 100-MSV, vertical, with vacuum system, integrated fast recooling and counter pressure	1	481-0445
Autoclave LABOKLAV 100-MSLV, vertical, with vacuum system, integrated fast recooling, counter pressure and additional fan	1	481-0447
Autoclave LABOKLAV 135-B, vertical, basic unit	1	481-0449
Autoclave LABOKLAV 135-M, vertical, with integrated fast recooling	1	481-0451
Autoclave LABOKLAV 135-MS, vertical, with integrated fast recooling and counter pressure	1	481-0453
Autoclave LABOKLAV 135-MSL, vertical, with integrated fast recooling, counter pressure and additional fan	1	481-0455
Autoclave LABOKLAV 135-V, vertical, with vacuum system	1	481-0457
Autoclave LABOKLAV 135-MV, vertical, with vacuum system and integrated fast recooling	1	481-0459
Autoclave LABOKLAV 135-MSV, vertical, with vacuum system, integrated fast recooling and counter pressure	1	481-0461
Autoclave LABOKLAV 135-MSLV, vertical, with vacuum system, integrated fast recooling, counter pressure and additional fan	1	481-0463
Autoclave LABOKLAV 160-B, vertical, basic unit	1	481-0465
Autoclave LABOKLAV 160-M, vertical, with integrated fast recooling	1	481-0467

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Description	Pk	Cat. No.
Vertical autoclaves		
Autoclave LABOKLAV 160-MS, vertical, with integrated fast recooling and counter pressure	1	**481-0469**
Autoclave LABOKLAV 160-MSL, vertical, with integrated fast recooling, counter pressure and additional fan	1	**481-0471**
Autoclave LABOKLAV 160-V, vertical, with vacuum system	1	**481-0473**
Autoclave LABOKLAV 160-MV, vertical, with vacuum system and fast recooling	1	**481-0475**
Autoclave LABOKLAV 160-MSV, vertical, with vacuum system, fast recooling and counter pressure	1	**481-0477**
Autoclave LABOKLAV 160-MSLV, vertical, with vacuum system, fast recooling, counter pressure and additional fan	1	**481-0479**
Autoclave LABOKLAV 195-B, vertical, basic unit	1	**481-0481**
Autoclave LABOKLAV 195-M, vertical, with integrated fast recooling	1	**481-0483**
Autoclave LABOKLAV 195-MS, vertical, with integrated fast recooling and counter pressure	1	**481-0485**
Autoclave LABOKLAV 195-MSL, vertical, with integrated fast recooling, counter pressure and additional fan	1	**481-0487**
Autoclave LABOKLAV 195-V, vertical, with vacuum system	1	**481-0489**
Autoclave LABOKLAV 195-MV, vertical, with vacuum system and integrated fast recooling	1	**481-0491**
Autoclave LABOKLAV 195-MSV, vertical, with vacuum system, integrated fast recooling and counter pressure	1	**481-0493**
Autoclave LABOKLAV 195-MSLV, vertical, with vacuum system, integrated fast recooling, counter pressure and additional fan	1	**481-0495**

Description	Pk	Cat. No.
Accessories		
Hoist to remove baskets or buckets from the LABOKLAV 55 to 195 (vertical versions)	1	**481-0381**
Roller castors for LABOKLAV 55 to 195, vertical versions only	4	**481-0376**
Special Durham tube program	1	**481-0377**
Special steam pot program	1	**481-0378**
Special injections program	1	**481-0379**
IQ/OQ documents	1	**481-0396**
Software for the visualisation, printing and storage of all relevant process data, software can be used in a network	1	**481-0496**
Printer for the documentation of all relevant process parameters, for LABOKLAV 55 to 195	1	**481-0380**
Conductivity meter for LABOKLAV for cartridges 2000/2800/4000	1	**481-0517**
Stand for LABOKLAV 55 horizontal	1	**481-0383**
Stand for LABOKLAV 80 horizontal	1	**481-0384**
Stand for LABOKLAV 100 horizontal	1	**481-0385**
Stand for LABOKLAV 135 horizontal	1	**481-0386**
Stand for LABOKLAV 160 horizontal	1	**481-0387**
Stand for LABOKLAV 195 horizontal	1	**481-0390**
Transport system for LABOKLAV 135 to 160 horizontal	1	**481-0388**
Transport system for LABOKLAV 195 horizontal	1	**481-0389**
Colour variants: blue/grey, red/grey, green/grey	1	**481-0391**
Green/grey version	1	**481-0392**
Blue/grey version	1	**481-0393**
Red/grey version	1	**481-0394**
Housing made from stainless steel	1	**481-0395**
Compressor LABOKLAV 55-135	1	**481-0497**
Compressor LABOKLAV 160-195	1	**481-0498**
Cartridge 1500, for demineralised water, pressure-tight in stainless steel	1	**481-0520**
Cartridge for demineralised water production, 2000 pressure-tight, in stainless-steel	1	**481-0499**
Cartridge 2800, for demineralised water production, pressure-tight, in stainless-steel	1	**481-0515**
Cartridge 4000, for demineralised water production, pressure-tight, stainless-steel	1	**481-0516**
Plastic cartridge for conductivity meter 425 for LABOKLAV	1	**481-0518**
Refill cartrige 425	1	**481-0519**
Basket 290×370×145 mm for LABOKLAV 100 horizontal	1	**481-0521**
Basket 290×450×145 mm for LABOKLAV 55 horizontal	1	**481-0522**
Basket 290×600×145 mm for LABOKLAV 80 horizontal	1	**481-0523**
Basket 375×600×150 mm for LABOKLAV 160 and 195 horizontal	1	**481-0524**
Basket 375×600×150 mm for LABOKLAV 135 horizontal	1	**481-0525**
Basket Ø 400×150 mm for LABOKLAV 55 to 100 vertical	1	**481-0526**
Basket Ø 400×250 mm for LABOKLAV 55 to 100 vertical	1	**481-0527**
Basket Ø 400×300 mm for LABOKLAV 55 to 100 vertical	1	**481-0528**
Basket Ø 500×150 mm for LABOKLAV 135 to 195 vertical	1	**481-0529**
Basket Ø 500×255 mm for LABOKLAV 135 to 195 vertical	1	**481-0530**
Basket Ø 500×300 mm for LABOKLAV 135 to 195 vertical	1	**481-0531**
Basket Ø 400×300 mm closed bottom for LABOKLAV 55 to 100 vertical	1	**481-0541**
Basket Ø 500×300 mm closed bottom for LABOKLAV 135 to 100 vertical	1	**481-0542**
Lid for stainless steel bucket for LABOKLAV 55 to 100	1	**481-0538**
Lid for stainless steel bucket for LABOKLAV 135 to 195	1	**481-0540**
Tray 290×370×145 mm for LABOKLAV 100 bench top	1	**481-0532**
Tray 290×450×145 mm for LABOKLAV 55 bench top	1	**481-0533**
Tray 290×600×145 mm for LABOKLAV 80 bench top	1	**481-0534**
Tray 375×320×150 mm for LABOKLAV 160 and 195 bench top	1	**481-0535**
Tray 375×600×150 mm for LABOKLAV 135 bench top	1	**481-0536**
Bucket Ø 400×300 mm in stainless steel for LABOKLAV 55 to 100	1	**481-0537**
Bucket Ø 500×300 mm in stainless steel for LABOKLAV 135 to 195	1	**481-0539**
Insert with 4 trays for LABOKLAV 25	1	**481-0630**

Autoclaves, horizontal and vertical, D-Line series

Tuttnauer

2840 EL-D, horizontal

3840 ELV-D, vertical

The chamber is constructed of long lasting 316L/Ti grade stainless steel with superior corrosion resistance; the generator is made from stainless steel.

Choosing the right steam steriliser depends on several considerations; load diversity, frequency of use, available services and load volumes. The Tuttnauer line of vertical and bench top sterilisers for the life sciences successfully meets the challenges posed today in laboratories and research institutes.

Safety features: A safety device prevents the operator from opening the door when chamber is pressurised; steam is not allowed to enter the chamber when the door is open; a cycle cannot start if the door is open or not properly locked; the door will not open until the temperature is below a specified safe level.

Double independent monitoring: The combined electronic and mechanical monitoring guarantees accurate results. The operator has two independent means to monitor temperature and pressure.

Tuttnauer's D-Line models use multicolour display technology. The User Interface (UI) has been redesigned with the following considerations; multicolour display for easier reading, colour is used to indicate the stage of the cycle, easy operation, built-in view of historical cycle data, graphical display of temperature and pressure trend graphs.

- The autoclaves are designed for easy servicing allowing maintenance access to all components
- The microprocessor control system offers enhanced monitoring and control
- Programs are designed to treat all load types including liquids, instruments and waste
- All programs are fully customisable to suit the specific needs and requirements of the end user

Reduced cycle times with optional fast cooling:

Tuttnauer's accelerated cooling technology reduces cycle time and protects the load by minimising its exposure to high temperatures. Rapid cooling typically reduces cooling time by as much as 75%.

Fan assisted cooling:

An additional feature that further enhances the cooling stage is the optional radial ventilator. The fan circulates the hot air, inside the chamber, transferring the heat to the cooled chamber walls or cooling coils. The overall chamber and load temperature rapidly drops.

Efficient air removal by optional vacuum:

The vacuum pump is optional and if not selected the gravity displacement air removal method is used. Fractioned pre-vacuum air removal eliminates air pockets from all load types and maximises steam penetration. A pre-vacuum pump removes the air from the chamber. This allows for complete air removal with more efficient steam penetration throughout the entire load.

Optional bio-hazardous waste sterilisation:

The Tuttnauer line of advanced laboratory autoclaves supplies a full sterilisation solution for the treatment of bio-hazardous waste. The autoclaves can be supplied with an optional exhaust filtration system. During the air removal stage, prior to sterilisation, all effluent is passed through a biological filter that provides an extra level of protection. During the sterilisation phase, condensate does not leave the autoclave chamber. It is removed only after the sterilisation phase is complete. The laboratory staff and environment are therefore protected from contamination.

Complete drying by optional steam generator

The optional integral steam generator for the vertical autoclave models, provides readily available steam that is fed to the coil that surrounds the chamber. Based on the combined operation of heat provided by the steam generator and vacuum air removal, the leftover moisture will quickly evaporate from the chamber. This results in a faster, more effective cycle, prevents the formation of condensate and guarantees that even the most difficult loads such as textiles, porous loads, hollow instruments and pipette tips will dry.

Model	Capacity (l)	Internal Ø×H (mm)	W×D×H ext. (mm)	Weight (kg)
Horizontal autoclaves				
2840 EL-D	28	280×400	530×630×440	55
3840 EL-D	52	380×400	720×765×540	78
3850 EL-D	65	380×500		81
5075 EL-D	160	500×750	860×1120×740	190
3870 EL-D	85	380×690	720×940×540	98
5050 EL-D	110	500×500	860×890×740	171

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Vertical autoclaves				
2840 ELV-D	31	280×460	540×440×980	80
3840 ELV-D	52	380×410	730×540×1000	83
3850 ELV	65	380×490		85
3870 ELV-D	85	380×690		100
5050 ELV-D	110	500×500	870×770×860	171
5075 ELV-D	160	500x750	870×770×1090	190

Description	Pk	Cat. No.
Horizontal autoclaves		
Autoclave, front loading, 2840 EL-D	1	**481-0555**
Autoclave, front loading, 3840 EL-D	1	**481-0561**
Autoclave, front loading, 3850 EL-D	1	**481-0567**
Autoclave, front loading, 5075 EL-D	1	**481-0585**
Autoclave, front loading, 3870 EL-D	1	**481-0573**
Autoclave, front loading, 5050 EL-D	1	**481-0579**
Vertical autoclaves		
Autoclave, top loading, 2840 ELV-D	1	**481-0558**
Autoclave, top loading, 3840 ELV-D	1	**481-0564**
Autoclave, top loading, 3850 ELV	1	**481-0570**
Autoclave, top loading, 3870 ELV-D	1	**481-0576**
Autoclave, top loading, 5050 ELV-D	1	**481-0582**
Autoclave, top loading, 5075 ELV-D	1	**481-0588**

Description	Pk	Cat. No.
Accessories		
Air exhaust filtration for bio-hazardous waste, for horizontal models	1	**481-0543**
Air exhaust filtration for bio-hazardous waste, for vertical models	1	**481-0544**
Radial ventilator in chamber, to improve rapid cooling system for models: 3840, 3850, 3870	1	**481-0549**
Radial ventilator in chamber, to improve rapid cooling system for models: 5050, 5075	1	**481-0550**
Vacuum system for models: 2840	1	**481-0591**
Vacuum system for models: 3840, 3850, 3870, 5050, 5075	1	**481-0592**
Thermal printer	1	**481-0683**

Autoclaves, Priorclave Compact

Compact 40 bench top and Compact 60 floor standing or bench top autoclaves for the low volume user, with flexible operation usually only available in larger autoclave units. This flexibility is delivered by the TACTROL™ microprocessor control system, specially developed for laboratory autoclaves, with progamming ranging from simple cycles to fully featured multi-program operation with logged records. All Priorclaves come complete with Biomaster antimicrobial coating, helping improved laboratory hygiene; it is effective against all bacteria and fungi including MRSA and therefore helps minimise the risk of cross contamination.

- Operation from standard single phase, 13 amp socket (UK)
- Quickseal series II single action closure
- Fan assisted cooling
- Timed free steaming for improved air removal
- Media warming and delayed start allow the user to have media ready to pour at the start of the day

Maximum temperature: 138 °C (2,5 bar)

Top loading Compact 60 mounted on lockable castors.

Vacuum models: Complete with pulsed free steaming, pre- and post cycle vacuum and five program memory.

Delivery information: Front loading models supplied with two stainless steel shelves, top loading models with two stainless steel baskets.

Model	PS/MID/C40	PS/MID/C60	PS/MID/H60	PS/MVA/C40	PS/MVA/C60	PS/MVA/H60
Capacity (l)	40	60		40	60	
Material	Stainless steel, Grade 316L and Biomaster anti-microbial surface coating					
Heating power (W)	3000					
Max. pressure (bar)	2,5					
Internal Ø×H (mm)	350×420	350×625		350×420	350×625	
W×D×H ext. (mm)	520×610×640	472×620×900	520×815×640	695×610×640	472×790×900	695×815×640
Weight (kg)	70	85		75	90	

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Description	Pk	Cat. No.
Non-vacuum models		
Autoclave, Compact 40, front loading, PS/MID/C40	1	**481-0154**
Autoclave, Compact 60, top loading, PS/MID/C60	1	**481-0155**
Autoclave, Compact 60, front loading, PS/MID/H60	1	**481-0655**
Compact autoclaves vacuum models		
Autoclave, Compact 40, front loading, PS/MVA/C40	1	**481-0156**
Autoclave, Compact 60, top loading, PS/MVA/C60	1	**481-0157**
Autoclave, Compact 60, front loading, PS/MVA/H60	1	**481-0656**

Description	Pk	Cat. No.
Accessories		
Accelerated heating option 30 A, 6 kW * (requires 3 phase supply)	1	**481-0134**
Load sensed process timing *	1	**481-0135**
Vacuum drying option * (vacuum models only)	1	**481-0654**
Mesh basket, stainless steel for Compact 40	1	**481-0136**
Stainless steel discard container for Compact 40	1	**481-0137**
Stainless steel discard container for Compact 60	1	**481-0144**
Tactrol™ 5 program memory * (non vacuum models only)	1	**481-0139**
Tactrol™ 10 program memory *	1	**481-0138**
Tactrol™ cycle record printer *	1	**481-0140**
External USB port	1	**481-0768**

* These items are best ordered with the autoclave. Although they can be retrofitted, a chargeable site visit will be required.

Autoclaves, medium capacity, Priorclave

These versatile autoclaves are fully equipped for use in laboratories throughout the food, drink, dairy, health and pharmaceutical industries and offer a wide range of options and accessories to further improve their performance to suit individual load types. This flexibility is enhanced by the TACTROL™ microprocessor control system, specially developed for laboratory autoclaves, with progamming ranging from simple cycles to fully featured multi-program operation with logged records. All Priorclaves come complete with Biomaster antimicrobial coating, helping improved laboratory hygiene; it is effective against all bacteria and fungi including MRSA and therefore helps minimise the risk of cross contamination.

- 500 mm chamber diameter to increase useable load capacity and reduce loading height on top loading models
- Quickseal II single action closure
- Fan assisted cooling
- Timed free steaming for improved air removal
- Media warming and delayed start allow the user to have media ready to pour at the start of the day

Maximum temperature: 138 °C (2,5 bar)

Mounted on lockable castors.

Non-vacuum models

Ideal for all standard traditional laboratory sterilisation procedures. Water fill is manual; during the cycle condensate leaves the vessel via a silicone tube that is connected to a heat resistant bottle. Ideal for use with media or liquid loads.

Vacuum models

- Automatic pulsed free steaming to improve temperature distribution and enhance steam penetration
- Vacuum cooling to decrease cycle time
- 5 program memory

All vacuum models require mains water supply for pump operation

Delivery information: Top loading models supplied with two or three stainless steel baskets (depending on model). Front loading models with two stainless steel shelves.
Note: The installation of these models to a **vented,** sealed drain is strongly recommended and is a requirement of BS2646 when sterilising waste loads. Power supply required: 415 V, 15 A, 50 Hz, 10,5 kW, three phase with neutral and earth.

Model	QCS EH100	QCS EH150	QCS EV100	QCS EV150	QVA EH100	QVA EH150	QVA EH100	QVA EV150
Capacity (l)	100	150	100	150	100	150	100	150
Max. pressure (bar)	2,5							
Internal Ø×H (mm)	500×535	500×740	500×500	500×720	500×535	500×740	500×500	500×720

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W×D×H ext. (mm)	740×905×1535	740×1135×1535	660×840×840	660×840×1020	740×905×1535	740×1135×535	960×840×840	960×840×1020
Weight (kg)	190	208	147	165	195	213	157	175

Model	Description	Pk	Cat. No.
Non-vacuum models			
QCS/EH100	Autoclave, QCS EH100, front loading	1	**481-0158**
QCS/EH150	Autoclave, QCS EH150, front loading	1	**481-0159**
QCS/EV100	Autoclave, QCS EV100, top loading	1	**481-0160**
QCS/EV150	Autoclave, QCS EV150, top loading	1	**481-0161**
Vacuum models			
QVA/EH100	Autoclave QVA EH100, front loading	1	**481-0285**
QVA/EH150	Autoclave QVA EH150, front loading	1	**481-0286**
QVA/EV100	Autoclave QVA EV100, top loading	1	**481-0287**
QVA/EV150	Autoclave QVA EV150, top loading	1	**481-0288**

Description	Pk	Cat. No.
Accessories		
2 year warranty (including installation and six-monthly maintenance visits)	1	**481-0284**
Load sensed process timing *	1	**481-0135**
Post cycle vacuum drying for top loading models **	1	**481-0151**
Post cycle vacuum drying for front loading models **	1	**481-0152**
Tactrol™ 5 program memory * (non vacuum models only)	1	**481-0139**
Stainless steel discard container for front loading models	1	**481-0145**
Tactrol™ cycle record printer *	1	**481-0140**
Stainless steel discard container for top loading models	1	**481-0146**
Automatic water fill system *	1	**481-0766**

* These items are best ordered with the autoclave. Although they can be retrofitted, a site visit from a service engineer will be required with an associated extra charge.
** Vacuum models only. These options must be ordered with the autoclave and cannot be retrofitted.

Autoclaves, large chamber, Priorclave

The ideal solution to the autoclaving needs of most laboratories these autoclaves are ideally suited for use in a wide range of sterilising applications such as media preparation, liquids and diluent, waste, glassware, instruments and apparatus. They are extensively used within many industries including food, drink, dairy, pharmaceutical, agricultural, education, healthcare, research establishments and industry. All Priorclaves come complete with Biomaster antimicrobial coating, helping improved laboratory hygiene; it is effective against all bacteria and fungi including MRSA and therefore helps minimise the risk of cross contamination.

The Q63 combines a single action Quickseal II door with a 630 mm diameter chamber. This provides a fast heating, cylindrical chamber with a relatively small footprint and high loading 320 litre capacity. Available in either electrically or steam heated, gravity or vacuum cycle and with full range of accessories to suit specific applications.

All models are fitted with the Tactrol™ microprocessor control system. After setting your required operating parameters press the start button for a fully automatic cycle. The control panel shows cycle status with digital readouts of temperature and time that can be viewed simultaneously. Temperature and time settings are fully adjustable within the operating range of the autoclave.

The autoclave door is fully interlocked for safety with a special safety gate mechanism, which cracks the gasket seal allowing any residual pressure to safely escape. A thermal cooling lock, preventing the door from being opened until the contents have cooled to a safe temperature, is also fitted along with a pressure interlock. A safety blow down valve and a low water level sensor to guard against boil-dry conditions (electrically heated models) afford further protection.

- Large diameter chamber giving 20% more loading area than conventional models
- Complete with thermocouple entry and test ports
- Forced air cooling as standard helping to reduce cycle times
- Automatic timed free steaming as standard for improved air removal and sterilising performance
- Delayed start and media warming function as standard for ready to pour media at the start of the day

Electrical requirements for the PS/Q63/EH320 and PS/QVA/EH320: 3 phase, 400V, 18 kW, 30 A.

Pressure vessels are fully CE marked and insurance approved to the European PED 97/23/EC. The autoclaves fully conform to BS2646-1993, BS5500 Cat.3, and EMC directives, amongst others. The installation of these models to a vented, sealed drain is strongly recommended and is a requirement of BS2646 when sterilising waste loads.

Other options like stainless steel discard container, false floor for discard container and post cycle vacuum drying are also available. Please contact your local VWR sales office for further information.

Delivery information: Supplied with two, full width, non-tipping stainless steel shelves.

Model	EH 320
Capacity (l)	320
Material	Stainless steel Grade 316 L, frame and panels are epoxy coated, treated with Biomaster anti-bacterial agent, which is effective against all bacteria and fungi
Max. pressure (bar)	2,4
Shelves	2 (in stainless steel)
Internal Ø×H (mm)	630×1025
W×D×H ext. (mm)	760×1310×1525
Weight (kg)	300

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Description	Pk	Cat. No.
Autoclave, front loading, large chamber, PS/Q63/EH320 (electrically heated model)	1	**481-0634**
Autoclave, front loading, large chamber, PS/QVA/EH320 (direct steam heated)	1	**481-0635**

Description	Pk	Cat. No.
Accessories		
2 year warranty (including installation and six-monthly maintenance visits)	1	**481-0284**
Load sensed process timing *	1	**481-0135**
Tactrol™ 5 program memory * (non vacuum models only)	1	**481-0139**
Tactrol™ cycle record printer *	1	**481-0140**
External USB port	1	**481-0768**

* These items should be ordered with the autoclave. Although they can be retrofitted, a site visit from a service engineer will be required with an associated extra charge.
** These options must ordered with the autoclave - they cannot be retrofitted.

Autoclaves, large capacity, Priorclave

These autoclaves combine a huge internal capacity with a small floor area and are ideally suited for use in a wide range of sterilising applications such as media preparation, liquids and diluent, waste, glassware, instruments and apparatus. They are extensively used within many industries, including food, drink, dairy, pharmaceutical, agricultural, education, healthcare, research establishments and industry. All Priorclaves come complete with Biomaster antimicrobial coating, helping improved laboratory hygiene; it is effective against all bacteria and fungi including MRSA and therefore helps minimise the risk of cross contamination.

All models are fitted with the Tactrol™ microprocessor control system. After setting the required operating parameters the user pushes the start button for a fully automatic cycle. The control panel shows cycle status with digital readouts of temperature and time that can be viewed simultaneously. Temperature and time settings are fully adjustable within the operating range of the autoclave.

All autoclave doors are fully interlocked for safety with a special safety handwheel mechanism, which cracks the gasket seal allowing any residual pressure to safely escape. A thermal cooling lock, preventing the door from being opened until the contents have cooled to a safe temperature, is also fitted along with a pressure interlock. Operation up to a maximum of 138 °C (2,5 Bar).

A safety blow-down valve and a low water level sensor to guard against boil-dry conditions (electrically heated models) afford further protection.

- Compact design EH230 and EH350 models will fit through a standard door
- Simple, hand wheel door closure (with patented Priorclave safety mechanism)
- Fan assisted cooling
- Timed free steaming for improved air removal
- Media warming and delayed start allow the user to have media ready to pour at the start of the day

Electrical installation requirements: 3 Phase, 400 V, 21 kW, 30 A (EH230 and EH350), 400 V, 32,5 kW, 45 A (EH450), 400 V, 42 kW, 60 A (EH700)

Pressure vessels are fully CE marked and insurance approved to the European PED 97/23/EC. The autoclaves fully conform to BS2646-1993, BS5500 Cat.3, and EMC directives, amongst others. The installation of these models to a **vented**, sealed drain is strongly recommended and is a requirement of BS2646 when sterilising waste loads.

Delivery information: Supplied with two full width, non-tipping stainless steel shelves.

Model	EH230 RSC	EH350 RSC	EH450 RSC	EH700 RSC
Capacity (l)	230	350	450	700
Shelves	2			
W×D×H ext. (mm)	760×1025×1630	760×1325×1630	855×1325×1785	855×1780×1785
W×D×H chamber (mm)	580×600×600	580×900×600	675×900×755	675×1360×755
Weight (kg)	560	650	770	950

Description	Pk	Cat. No.
Autoclave, front loading, EH230 RSC	1	**481-0142**
Autoclave, front loading, EH350 RSC	1	**481-0289**
Autoclave, front loading, EH450 RSC	1	**481-0514**
Autoclave, front loading, EH700 RSC	1	**481-0290**

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Description	Pk	Cat. No.
Accessories		
2 year warranty (including installation and six-monthly maintenance visits)	1	**481-0284**
Load sensed process timing *	1	**481-0135**
Stainless steel discard container for EH450/700. Container dimensions 625×265×190 mm (w×d×h)	1	**481-0280**
Tactrol™ 5 program memory * (non vacuum models only)	1	**481-0139**
Stainless steel discard container for EH230/350. Container dimensions 560×290×190 mm (w×d×h)	1	**481-0141**
Tactrol™ cycle record printer *	1	**481-0140**
Post cycle drying, EH230/350 models **. The water fill system and the air intake filter device are included as part of this option	1	**481-0282**
External USB port	1	**481-0768**
Post cycle drying, EH450/700 models **. The water fill system and the air intake filter device are included as part of this option	1	**481-0283**
Stainless steel wire mesh basket for EH450/700 models (w×d×h: 650×290×190 mm)	1	**481-0279**
Stainless steel wire mesh basket for EH230/350 models (w×d×h: 560×290×190 mm)	1	**481-0133**

* These items should be ordered with the autoclave. Although they can be retrofitted, a site visit from a service engineer will be required with an associated extra charge.
** These options must ordered with the autoclave - they cannot be retrofitted.

Autoclaves, Touchclave®-Lab 'K' series

'K' series models are designed to operate using either a steam generator situated beneath the chamber, or via the customer's own direct steam supply. This arrangement maximises the usable chamber volume and provides a clean, unencumbered chamber, free from heaters and water.

All models incorporate an easy-glide vertical sliding door and all models (except special pass-through versions) have been designed to fit through a standard width door. Unless the autoclave door is properly closed and locked, the cycle cannot be started. At the end of the cycle, the door will not be released until both temperature and pressure have reached safe pre-set levels.

- Eight program touch screen control system
- Internal data archiving for up to 5000 cycles (depending on configuration)
- Water jacketed chamber for exceptional cooling efficiency
- Water conservation system and exhaust condensate
- Integral silent air compressor

Touchclave® touch screen systems

Touchclave®-Lab sterilisers are equipped with a control system which incorporates a powerful PLC combined with an easy to use touch screen through which all commands, cycle data, program data and alarms are inputted and displayed. Touchclave® touch screen systems incorporate a self-diagnostic function which will highlight any abnormality in the cycle. As an option, a modem can be fitted to the control system which will allow LTE's technical team to view real-time cycle data from a remote location, enabling them in many cases to advise quickly on operational issues, thus minimising possible down-time.

Note: A full range of options and accessories are available for these units, including: automatic leak-rate cycle, remote archiving, modem link, volt-free contacts, chart recorders, stainless steel baskets, Morrison discard containers, and loading trolleys. Please enquire for further information.

Model	TC/150/KE	TC/200/KE	TC/300/KE	TC/360/KE	TC/450/KE
W×D×H ext. (mm)	720×1100×1815	720×1200×1815	720×1350×1815	850×1500×1815	850×1750×1815
Capacity (l)	150	200	300	360	450
Shelves	2				
Weight (kg)	400	480	650	700	760
W×D×H chamber (mm)	500×500×600		600×500×1000	600×600×1000	600×600×1250

Description	Pk	Cat. No.
Autoclave, front loading, Touchclave TC/150/KE, (integral steam generation)	1	**481-0295**
Autoclave, front loading, Touchclave TC/200/KE, (integral steam generation)	1	**481-0333**
Autoclave, front loading, Touchclave TC/300/KE, (integral steam generation)	1	**481-0336**
Autoclave, front loading, Touchclave TC/360/KE, (integral steam generation)	1	**481-0650**
Autoclave, front loading, Touchclave TC/450/KE, (integral steam generation)	1	**481-0651**

Autoclaves, Touchclave®-Lab 'F' series

The Touchclave®-Lab 'F' models have been designed to offer a good level of standard features at a more affordable price. In this range, steam is generated within the chamber, therefore water inside the chamber needs to be topped up periodically, either manually or automatically. Low-level water sensors will prevent the cycle from starting should there be insufficient water. All models are fitted with castors and will fit through standard doors.

All 'F' models fitted with a vacuum system must be connected to a suitable water supply and drain.

- Fully interlocked vertical "easy-glide" sliding door, prevented from opening unless the safe load temperature has been reached and the pressure has dropped to atmospheric
- Air cooling fans allow operation in areas where water and drainage are not available
- Touch screen multi-program control system (for more information on the Touchclave® touch screen systems, please refer to the 'K' series
- Internal data archiving (up to 5000 cycles on an internal flash card)
- Six bar built-in silent air compressor

Note: A full range of options and accessories are available for this autoclave, including automatic leak-rate cycle, remote archiving, modem link, volt-free contacts, chart recorders, stainless steel baskets, Morrison discard containers and loading trolleys. These items are factory fitted and must be specified at the time of ordering the autoclave, please visit the VWR website or enquire for further information.

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Model	TC/150/F1	TC/200/F1	TC/300/F1	TC/360/F	TC/450/F
Capacity (l)	150	200	300	360	450
Shelves	2				
W×D×H ext. (mm)	720×1100×1815	720×1200×1815	720×1350×1815	850×1500×1815	850×1750×1815
W×D×H chamber (mm)	500×500×600	500×660×600	500×1000×600	600×1000×600	600×1250×600
Weight (kg)	370	450	720	660	720

Description	Pk	Cat. No.
Autoclave, front loading, Touchclave®-Lab TC/150/F1 (in-chamber steam generation)	1	**481-0356**
Autoclave, front loading, Touchclave®-Lab TC/200/F1 (in-chamber steam generation)	1	**481-0299**
Autoclave, front loading, Touchclave®-Lab TC/300/F1 (in-chamber steam generation)	1	**481-0335**
Autoclave, front loading, Touchclave®-Lab TC/360/F (in-chamber steam generation)	1	**481-0648**
Autoclave, front loading, Touchclave®-Lab TC/450/F (in-chamber steam generation)	1	**481-0649**

Autoclaves, Touchclave®-R series

The Touchclave®-R range of cylindrical-chambered autoclaves has been designed with a large range of standard features not seen before on this type of steriliser. These features ensure high productivity and performance, short cycle times, versatility and the reliability demanded by the busy laboratory.

Submerged heaters within the chamber generate steam. The chamber water can be topped up periodically, either manually or automatically. A fully automatic water fill system can be fitted to all models, allowing the chamber to be topped up after each cycle either with or without operator intervention. Sensors prevent the cycle from starting or continuing if there is insufficient water.

- Simple 'push-n-seal' door with pneumatic seal ensures a perfect seal every time
- Touch screen multi-program control system
- Air ballast to prevent container breakage and spillage
- Dynamic in-chamber load cooling maximises cycle efficiency
- Load-sensed process timer ensuring sterilisation starts at the right time

Note: A full range of options and accessories are available for these units, including internal and remote archiving, modem link, stainless steel baskets and Morrison discard containers. These items are factory fitted and must be specified at the time of ordering the autoclave, please visit the VWR website or enquire for further information.

Model	TCR/120/H1	TCR/120/V1	TCR/160/H1	TCR/160/V1	TCR/40/H1	TCR/60/H1	TCR/60/V1
Capacity (l)	120		160		40	60	
Shelves	2	1	2	1			
Internal Ø×H (mm)	500×610		500×825		350×415	350×625	
W×D×H ext. (mm)	700×1170×1680	890×650×1200	700×1170×1680	890×650×1200	580×720×710	550×970×1400	710×540×1000
Weight (kg)	260	265	290	185	120	205	210

Description	Pk	Cat. No.
Front loading autoclave, Touchclave®-R, TCR/120/H1	1	**481-0346**
Top loading autoclave, Touchclave®-R, TCR/120/V1	1	**481-0348**
Front loading autoclave, Touchclave®-R, TCR/160/H1	1	**481-0349**
Top loading autoclave, Touchclave®-R, TCR/160/V1	1	**481-0350**
Front loading bench top autoclave, Touchclave®-R, TCR/40/H1	1	**481-0351**
Front loading autoclave, Touchclave®-R, TCR/60/H1	1	**481-0353**
Top loading autoclave, Touchclave®-R, TCR/60/V1	1	**481-0355**

Autoclave, benchtop, Labclave 23

The Labclave 23 is a low-cost 23 litre laboratory autoclave from LTE Scientific. It has been designed to offer effective and fast sterilisation of many laboratory load types including fluids, discard, glassware and instruments. Taking up a floor area of just 460×395 mm, Labclave 23 has to be one of the most compact and versatile units available.

Flexible control system: Labclave 23 comes with 8 preset programs covering the most popular sterilisation cycles. In addition, a 'free cycle' is also provided, allowing the user to set their own specific cycle parameters quickly and easily.

Four types of cooling method are available on the Labclave 23:

- Slow cooling, no vacuum; exhaust valve is permanently closed during cooling
- Slow cooling, vacuum; exhaust valve opens at atmospheric pressure at which point the vacuum pump initiates
- Fast cooling, no vacuum; exhaust valve is open during cooling
- Fast cooling, vacuum; exhaust valve is open and vacuum pump is on during cooling

Safety: Labclave 23 is fitted with pressure, temperature and timed door safety systems, ensuring that the door cannot be opened until the chamber has reached atmospheric pressure and 90 °C. A low water protection device is also fitted.

- Complete record of every cycle is produced on the built in thermal printer
- Cooled condensate is discharged directly to drain if required, although a waste container is provided as standard
- The ingenious door closure system seals and locks the door at the push of a button

Model	Labclave 23
Capacity (l)	23

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Temperature (°C)	121...135
Shelves	1 integrated basket in grade 304L stainless steel
Cycle time (min)	10/15/20
Internal Ø×H (mm)	236×530
W×D×H ext. (mm)	460×395×930
Weight (kg)	55

Description	Pk	Cat. No.
Autoclave, top loading, Labclave 23 (8 pre-set program cycles + 1 free cycle)	1	**481-0633**

Autoclave, VWR® VAPOUR-Line *Lite*

AISI 304 stainless steel housing, easy to maintain and disinfect, aluminium inner chamber and ABS insulating lid with locking system.

- Microprocessor controlled automatic thermal regulation
- Digital temperature and sterilisation time display
- Automatic ventilation valve and electronic temperature cut-off safety protection system
- Reinforced heating element and PT100 probe
- Automatic sterilisation programs
- Available with or without integrated printer

Instructions are GLP and EN 17205 compliant.

Ordering information: Basket not supplied, please order separately.

Model	VWR® VAPOUR-Line *Lite*	VWR® VAPOUR-Line *Lite P*
Capacity (l)	23	
Material	Exterior: stainless steel AISI 304 Interior: aluminium	
Temperature (°C)	121 (max)	
Internal Ø×H (mm)	310×290	
External Ø×H (mm)	470×580	
Weight (kg)	13,250	

Description	Pk	Cat. No.
Bench top vertical autoclave, VWR® VAPOUR-Line *Lite*	1	**481-0667**
Bench top vertical autoclave, with integrated printer, VWR® VAPOUR-Line *Lite P*	1	**481-0666**

Description	Pk	Cat. No.
Accessories		
LITEbox basket: (Ø×h): 280×260, with transporting handle, in stainless steel	1	**481-0670**

Autoclave, field, Field-Koch

The Field-Koch cylindrical chamber autoclave has a single wall, die cast alloy structure. The units have a pressure gauge, a safety valve, lid locking system, an automatic breather valve and an automatic pressure regulator valve.

- Ideal for field use, can be used with any heat source, even a naked flame
- Conforms to WHO and UNICEF specifications

Model	Field-Koch
Max. pressure (bar)	1 (at 121 °C)
Weight (kg)	4,5
Capacity (l)	19,5
External Ø×H (mm)	430×480
Internal Ø×H (mm)	300×260

Description	Pk	Cat. No.
Autoclave, Field-Koch	1	**481-0224**

Description	Pk	Cat. No.
Accessories		
LITEbox basket: (Ø×h): 280×260, with transporting handle, in stainless steel	1	**481-0670**

Sterilising autoclaves
CertoClav

Aluminium alloy

The compact CertoClav can be used in even the smallest laboratory. Everything that is constantly needed can therefore be sterilised at the workplace; cultures, glass containers, metal, rubber, textile and steam resistant synthetic materials.

The natural flow of steam generated by the round chamber, and the design of the steam release cock, guarantee effective venting, the prerequisite of perfect sterilisation of hollow and cylindrical shaped items.

CV-EL models: With four operating temperatures/pressures: 115 °C/0,7 bar; 121 °C/1,3 bar; 125 °C/1,4 bar; 140 °C/2,7 bar

Multicontrol models: Microprocessor operated and freely programmable; two fixed and seven free programmes. Fractionated venting. Separate control unit with digital display and RS232 serial interface.

Delivery information: Supplied with instrument tray and tripod in aluminium.

Model	CV-EL 12 L GS	CV-EL 18 L GS	Multicontrol 12 L	Multicontrol 18 L
Temperature (°C)	140			
Heating power (W)	1,9			
Internal Ø×H (mm)	240×260	240×400	240×260	240×400
Weight of control unit (kg)	-		1,6	
W×D×H of control unit (mm)			240×160×90	
Capacity (l)	12	18	12	18
Max. pressure (bar)	2,7			
Weight (kg)	6,1	7,7		9,3

Description	Pk	Cat. No.
Autoclave CV-EL 12 L GS	1	**481-0076**
Autoclave CV-EL 18 L GS	1	**481-0077**
Autoclave - Multicontrol 12 L	1	**481-0078**
Autoclave - Multicontrol 18 L	1	**481-0079**

Description	Pk	Cat. No.
Accessories		
Wire basket with handle, stainless steel 18/8, Ø×H 210×180 mm	1	**481-0080**

Autoclaves, Prestige Classic Media

The Classic Media bench top autoclaves offer a safe, compact and affordable means of sterilising liquids and media; they are ideal for a variety of laboratory processes.

These top loading autoclaves have a built in safety mechanism that prevents them being opened until the temperature inside has fallen to a safe level. The fully automatic "Set and forget" technology allows the user, after loading the equipment and setting the program, to relax with no need for constant supervision.

- Eliminates risk of cross contamination
- Simple, one-step operation to start the cycle
- Built-in interlock safety mechanism prevents opening until the temperature inside is safe and controlled cooling process
- Special in-built sofware ensures exact temperatures are reached for the correct duration, every time
- One year unlimited parts warranty (excluding gaskets), plus ten year warranty on pressure vessel

Fully complies with Medical Devices Directive 93/42/EEC and with BS 3970 Part 4. Pressure vessel complies with ESCHLE.

Delivery information: Supplied with UK plug (13 amp, 240 volt power supply) and basket.

Model	Prestige Classic Media 9 l	Prestige Classic Media 12 l
Capacity (l)	9	12
Temperature (°C)	121	
Max. pressure (bar)	1,05	
Timer (min)	22	
Shelves	1 basket	
Cycle time (min)	22	
Internal Ø×H (mm)	210×228	210×318
External Ø×H (mm)	340×335	340×420
Weight (kg)	3,8	4,3

Description	Pk	Cat. No.
Autoclave 9 l, Prestige Classic Media Interlock	1	**481-0657**
Autoclave 12 l, Prestige Classic Media Interlock	1	**481-0658**

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Description	Pk	Cat. No.
Accessories		
Test indicator strips 126 °C	50	**481-0112**
Additional basket	1	**481-0659**
Sealing gasket (silicone)	4	**481-0660**

Maximum load weight (unwrapped): 3 kg for 9 litre model; 4 kg for 12 litre model.
Maximum instrument length: 200 mm for 9 litre model; 290 mm for 12 litre model.

Autoclaves, Prestige Classic

The Classic is a light, compact, portable and robust top loading autoclave.

- Simple, one-step operation to start the cycle
- Two chamber sizes available, standard (9 l) or extended (12 l)
- Supplied with all standard accessories, including basket
- Option with pressure gauge also available, please enquire for details

Fully complies with Medical Devices Directive 93/42/EEC and with BS 3970 Part 4. Pressure vessel complies with ESCHLE.

Model	Classic 126		Classic 134
Capacity (l)	9	12	9
Heating power (W)	230/50 - 60		
Cycle time (min)	22		20
Internal Ø×H (mm)	210×236	210×328	210×236
Weight (kg)	4,5		5,6
Temperature (°C)	126		134

Description	Pk	Cat. No.
Autoclave, portable, top loading, Standard Classic 126	1	**481-0104**
Autoclave, portable, top loading, Extended Classic 126	1	**481-0105**
Autoclave, portable, top loading, Standard Classic 134	1	**481-0361**

Description	Pk	Cat. No.
Accessories		
Sealing gasket (silicone)	4	**481-0660**

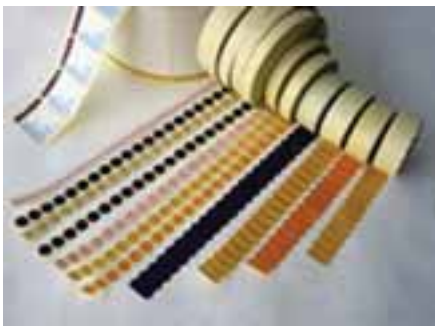
Autoclave deodorant

This autoclave deodorant improves the working environment and neutralises odours associated with autoclaving. The capsule releases its contents automatically as the autoclave heats up.

- Easy to use

Description	Pk	Cat. No.
Accessories		
Eucalyptus and mint fragrance	100	**320101.100**
Apple fragrance	100	**320201.100**
Lemon fragrance	100	**320301.100**
Floral fragrance	100	**320401.100**
Peach fragrance	100	**320501.100**

Ethylene oxide sterilisation indicators



The discs are available in a variety of blank or printed versions.

Sterilisation occurs on exposure to ethylene oxide (ETO).

The 489-0097 indicator changes colour from purple to green when exposed to ETO.

The 489-0098 indicator carries the text: "Green is ETO exposed".

Packaging: Roll of 5000 labels

Description	Ø (mm)	Pk	Cat. No.
Circular labels for ethylene oxide sterilisation, colour changes when exposed to ETO	12,5	1 Roll	**489-0097**
Circular labels for ethylene oxide sterilisation, text becomes visible when exposed to ETO	12,5	1 Roll	**489-0098**

Gamma/beta ray sterilisation indicators

The discs are available in a variety of blank or printed versions.

The 489-0099 and 489-0005 indicators turn from yellow to red after exposure to gamma/beta rays.

The 489-0004 indicator carries the text: "Red is Gamma exposed".

Packaging: Roll of 5000 labels

Description	Length	Width (mm)	Ø (mm)	Pk	Cat. No.
Circular discs	-	-	12,5	1 Roll	**489-0099**
Rectangular labels for metal clips	26	12	-	1 Roll	**489-0005**
Square labels	14	14	-	1 Roll	**489-0004**

Steam sterilisation indicators

Steam sterilisation. The labels change colour from pink to dark brown after sterilisation.

Packaging: Roll of 5000 labels

Description	Ø (mm)	Pk	Cat. No.
Circular labels - steam sterilisation indicators	12,5	1 Roll	**489-0100**

Autoclave tapes

White adhesive crepe tape, for use in standard autoclaves

Reveals the word "autoclaved" after 15 minutes of exposure at +121 °C.

Clean removal from the autoclaved object.

Description	Length (m)	Width (mm)	Pk	Cat. No.
Indicator tape "AUTOCLAVED", yellow	12,7	12,5	1 Roll	**489-1311**
Indicator tape "AUTOCLAVED", yellow	12,7	19,05	1 Roll	**489-1312**
Indicator tape "AUTOCLAVED", yellow	12,7	25,4	1 Roll	**489-0108**

Dry heat indicator tapes
Kartell

Adhesive tape

Specially designed for dry heat sterilisation (20 minutes at 120 °C, 10 minutes at 125 °C or 5 minutes at 135 °C). Colour change from white to brown.

Description	Length (m)	Width (mm)	Pk	Cat. No.
Adhesive tapes for dry heat sterilisation	50	19	1 Roll	**489-1410**

Tapes, adhesive sterilisation
3M Medical

The colour of the sensitive ink changes after sterilisation. The adhesive tape indicates that the expected temperature was reached during the sterilisation process.

Description	Length (m)	Width (mm)	Pk	Cat. No.
Dry heat sterilisation adhesive tape	55	19	1 Roll	**804-0226**
Steam sterilisation adhesive tape	55	13	1 Roll	**489-0109**

Sterilisation indicators
Südpack Medical

Tapes indicators by dry heat sterilisation.

The tape (ethylene oxide) changes from white to black after 3,5 minutes at 134 °C.

Dry heat steriliser tape (poupinel) changes from green to different shades of brown after a period at a temperature between 155 and 180 °C.

Description	Length (m)	Width (mm)	Pk	Cat. No.
Tape	50	19	1 Roll	**489-0046**
Tape for ethylene oxide	50	19	50 m	**489-0045**

Steam indicator tape, Comply™
3M Medical

Indicator tapes are Class 1 process indicators used for exposure monitoring which assures the operator handling the processed items that the pack has been exposed to the sterilisation process without the need to open the pack or check load control records. Optional tape dispensers are available for easy dispensing of indicator tapes.

- Chemical process indicator changes colour when exposed to the steam sterilisation process to provide assurance that the packs were processed without the need to open the pack
- Versatile tape adheres to all types of wraps
- Allows the user to write on tapes

Description	Length (m)	Width (mm)	Pk	Cat. No.
Steam indicator tape, Comply™	55	18	1 Roll	**817-0118**
Steam indicator tape, Comply™	54	24	1 Roll	**489-0107**

Autoclave indicator tape

Crepe paper coated with a dry natural rubber based adhesive for steam sterilisation.

- Good adhesion on wrap made with cellulose fibres
- Good resistance to sterilisation process
- Indicator colour change: from green to brown/black

Products must be stored in their original packaging, in dry and cool areas away from humidity.
It's recommended to use the tape within 2 years after manufacturing.

Conformity ISO 11140-1, CE Mark.

Description	Length (mm)	Width (mm)	Pk	Cat. No.
Autoclave indicator tape	50	19	48	**116-0425**
Autoclave indicator tape	50	24	36	**116-0426**

Sterilising pans, Nalgene®
Thermo Scientific

PP

For repeated autoclaving of instruments and labware.

- Heavy duty construction
- Extra strong rims

W×D×H (mm)	Capacity (l)	Pk	Cat. No.
159×260×64	2	1	**489-2140**
159×260×105	2,8	1	**489-2141**
260×324×70	3,1	1	**489-2142**
257×324×108	5	1	**489-2143**

Sterilising pans, Nalgene®
Thermo Scientific

PP

For drying and sterilising instruments and labware, collecting and washing soiled lab equipment.

- Rolled edges for extra stiffness
- Handles for easy carrying

W×D×H (mm)	Capacity (l)	Pk	Cat. No.
311×361×143	9,5	1	**489-2120**
435×543×130	14,2	1	**489-2121**

Sterilising pan, Nalgene®
Thermo Scientific

PP with cover

Allows pipettes to be fully immersed in disinfectant.

- Cover minimises spillage of hazardous materials
- Resistant to aggressive disinfectants
- Can also be used to sterilise labware instruments and utensils
- Stackable

Meets OSHA Standard 29 CFR (Part 1910.1030) for use as protection against blood-borne pathogens.

W×D×H (mm)	Pk	Cat. No.
152 x 456 x 67	1	**489-2110**

Autoclaving baskets, Nalgene®
Thermo Scientific

PP

These autoclavable baskets are designed for holding labware during autoclaving and washing.

- Smooth surfaces will not scratch plastic or glass
- Provides airflow for venting and drying
- Three sizes available
- Nestable for storage

Colour: White

Capacity (l)	W×D×H (mm)	Pk	Cat. No.
2	123×105×154	1	**489-2150**
4,7	168×156×178	1	**489-2151**
12,3	230×223×239	1	**489-2152**