1

1 2 LLG-Cryotubes, PP, sterile

NEW!

With star-shape in the screw cap, for automated capper/decapper.
External screw thread or internal screw thread. Temperature resistant down to -196°C. **Not appropriate for operations in liquid nitrogen.** With marking area, fill line and graduations printed on the vial. Safe and precise handling of biotechnology materials. Bar-code printed on each tube. DNase/RNase free. Vials and caps are autoclavable at 121°C.
Homogeneous conception:
- all made from polypropylene
- single-body, single-turn screw cap
Printed graduations for accurate measurements. Large white area for writing specimen identification. Sterile.

Packed in 2 bags of 50 tubes.

2

Capacity ml	Ext. diam. mm	Description	Thread	Height mm	PK	Cat. No.
1.2	12.6	self-standing	external	40.2	100	**9.401 160**
1.2	12.6	self-standing	internal	40.2	100	**9.401 161**
2.0	12.6	self-standing	external	45.6	100	**9.401 162**
2.0	12.6	self-standing	internal	48.2	100	**9.401 163**
2.0	12.6	without ring	external	44.5	100	**9.401 164**
2.0	12.6	without ring	internal	47.0	100	**9.401 165**
5.0	12.6	self-standing	external	87.6	100	**9.401 166**
5.0	12.6	without ring	internal	89.2	100	**9.401 167**
5.0	12.6	self-standing	internal	90.3	100	**9.401 168**

Fits in 10 x 10 Cryobox System 100™ 5026, Order No: 9.400 927

3

3 LLG-Insert cap disks for cryotubes, PP

NEW!

Cap-disk with star-shaped insert.. For colour-coding of cryotubes and quick identification of your samples.

Colour	PK	Cat. No.
blue	1000	**9.401 170**
white	1000	**9.401 171**
yellow	1000	**9.401 172**
pink	1000	**9.401 173**
red	1000	**9.401 174**
green	1000	**9.401 175**

4

5

4 5 Cryogenic tubes, PP

BRAND

Designed for storage of biological material, such as microorganisms, human and animal cells, etc. in the gas phase of liquid nitrogen.
Graduated, 12.5 mm o.d. Large frosted marking area and coloured cap inserts for easy sample identification.
Temperature stability to -196°C. gamma-ray sterile (SAL 10^{-6}) and autoclavable at 121°C (2 bar), according to DIN EN 285. Marked with the CE symbol according to the IVD Directive 98/79 EC.
Cryogenic vials are sterile, RNase-, DNase-, DNA- and endotoxin-free.

Capacity ml	Grad. up to ml	Description	Thread	Height mm	PK	Cat. No.
1.2	1.00	self-standing	external	41	1000	**6.801 655**
2.0	1.80	round-bottom	external	47	1000	**6.206 393**
2.0	1.80	self-standing	external	49	1000	**7.079 366**
3.0	3.00	self-standing	external	70	1000	**6.802 266**
4.0	3.60	self-standing	external	76	1000	**7.059 827**
5.0	4.50	self-standing	external	90	1000	**7.300 349**
1.2	1.00	self-standing	internal	41	1000	**7.300 557**
2.0	1.80	self-standing	internal	49	1000	**7.053 349**
2.0	1.80	round-bottom	internal	48	1000	**7.604 109**
4.0	3.60	round-bottom	internal	70	1000	**9.401 223**
4.0	3.60	self-standing	internal	71	1000	**9.401 224**
5.0	4.60	round-bottom	internal	90	1000	**7.610 567**

6

6 Cap coders, PP for Brand® cryogenic tubes

BRAND

Fit for all sizes

Colour	PK	Cat. No.
white	500	**7.200 575**
blue	500	**7.077 849**
red	500	**7.053 350**
green	500	**7.079 679**
yellow	500	**7.600 162**

Cryo labels - please see page 710.

1 Cryovials System 100, with external screw thread, PP

Thermo Scientific

With PE-HD screw cap and silicone gasket. External screw thread. Self-standing.
Increase storage capacity in mechanical and gaseous phase liquid nitrogen freezers.
The gasket prevents leakage in microcentrifuges (up to 8000xg), or during transport.
With writing area and graduations in white. Gamma radiation sterilized. One-handed operation possible.
In compliance to CE. DNAse/RNAse free. Pyrogen-free and non-cytotoxic. Supplied in packs as indicated.
Bar coded version available on request.

Capacity ml	Ext. diam. mm	Height mm	PK	Cat. No.
1.0	12	38	25	**9.400 912**
1.5	12	48	25	**9.400 913**

2 Cryovials with external screw thread, PP, sterile

Thermo Scientific

PP with PE-HD screw cap. External screw thread. Self-standing. Temperature resistant down to -196°C. Gamma radiation sterilised. Non-cytotoxic and pyrogen-free.
CE certified. DNAse/RNAse free. With marking area, fill line and graduations printed on the vial.
Bar coded version available on request.

Type	Capacity ml	Ext. diam. mm	Height mm	Description	PK	Cat. No.
5000	1.2	13.5	38	conical, sterile	25	**9.400 941**
5000	2.0	13.5	48	conical, sterile	25	**9.400 942**
5000	5.0	13.5	92	conical, sterile	10	**9.400 943**
5005	15.0	33.0	47	flat, sterile	75	**9.400 950**

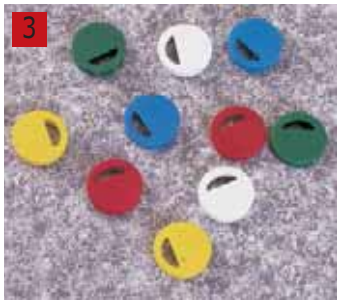
Also available in a larger pack size (1000 pc.).

3 Cap coders for cryovials, PS

Thermo Scientific

Coloured PS cap inserts.

Colour	PK	Cat. No.
white	100	**9.400 967**
yellow	100	**9.400 968**
blue	100	**9.400 969**
green	100	**9.400 970**
red	100	**9.400 971**



4 5 Nunc Cryotubes with External Thread, PP/PE

Thermo Scientific

Intended for cryogenic transportation and storage of biological material. Available in three different tube types: Round or conical bottom shape with starfoot or round without foot (= non free standing). Conform to the IATA requirements for the transport of diagnostic specimens and to the US pharmacopoeia USP Class VI. Packed in resealable zip lock bags with printed catalog no. and lot. no. Non-pyrogenic. Non-toxic. Sterile (SAL 10^{-6}). CE marked. Certified RNase- and DNase-free.
Material tubes: PP
Material screw caps: PE

Warning:
Do not use CryoTubes in the liquid phase of liquid nitrogen unless correctly sealed in Nunc CryoFlex™ Tubing (Cat. No. 4.009 142). Improper use may cause liquified nitrogen to be trapped inside the vial and lead to pressure build-up, resulting in possible explosion or biohazard release.

Capacity ml	Height mm	Ext. diam. mm	Description	PK	Cat. No.
1.0	41	12.5	Conical, starfoot and writing area	500	**6.078 305**
1.8	48	12.5	Round, starfoot and writing area	450	**6.054 658**
4.5	91	12.5	Round, starfoot and writing area	300	**6.302 247**
1.0	41	12.5	Conical, starfoot	2000	**4.009 087**
1.8	48	12.5	Round, starfoot	450	**6.803 016**
4.5	91	12.5	Round, starfoot	1200	**4.008 952**
1.0	30	12.4	Round, writing area*	500	**6.800 399**
1.8	44	12.4	Round, writing area*	500	**6.088 774**
-	-	-	CryoFlex™ Tubing, 500 x 14mm	300	**4.009 142**

* Closure design does not permit the use of Cryo Color Coders.

1

2

1 2 Nunc Cryotubes with Internal Thread, PP, sterile

NEW!

Thermo Scientific

Intended for cryogenic transportation and storage of biological material. Internal thread with a silicone gasket provides the best possible seal. Available in four different bottom shapes: Round with or without free standing and round or conical with starfoot. Conform to the IATA requirements for the transport of diagnostic specimens and to the US pharmacopoeia USP Class VI. Packed in resealable zip lock bags with printed catalog no. and lot. no. Non-pyrogenic. Non-toxic. Sterile (SAL 10^{-6}). CE marked.
Certified RNase- and DNase-free.
Material tube and screw cap: PP

Warning:
Do not use CryoTubes in the liquid phase of liquid nitrogen unless correctly sealed in Nunc CryoFlex™ Tubing (Cat. No. 4.009 142). Improper use may cause liquified nitrogen to be trapped inside the vial and lead to pressure build-up, resulting in possible explosion or biohazard release.

Capacity ml	Height mm	Ext. diam. mm	Description	PK	Cat. No.
1.8	48	12.5	Round and writing area	500	**6.052 729**
3.6	70	12.5	Round and writing area	400	**7.607 431**
4.5	92	12.5	Round and writing area	300	**7.607 632**
1.0	42	12.5	Conical, free standing and writing area	500	**7.600 059**
1.8	49	12.5	Round, free standing and writing area	450	**6.800 228**
1.0	42	12.5	Conical, starfoot and writing area	500	**6.054 193**
1.8	49	12.5	Round, starfoot and writing area	450	**6.302 598**
3.6	72	12.5	Round, starfoot and writing area	400	**6.200 843**
4.5	92	12.5	Round, starfoot and writing area	300	**6.302 596**
-	-	-	CryoFlex™ Tubing, 500 x 14mm	300	**4.009 142**

3

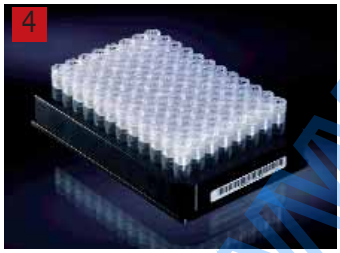
3 Cryo Color Coders for Nunc Cryotubes

Thermo Scientific

Use Nunc Cryo Color Coders as part of a versatile and comprehensive filing system. Fit all CryoTubes™ and are available in 10 different colours.

Colour	PK	Cat. No.
Red	500	**7.079 568**
Orange	2000	**9.401 272**
Brown	500	**7.630 646**
White	2000	**9.401 274**
Blue	2000	**9.401 275**
Green	2000	**9.401 276**
Magenta	500	**6.204 811**
Yellow	2000	**9.401 278**
Purple	500	**6.901 208**
Grey	500	**6.901 244**
Assorted colours	500	**7.200 519**

4



4 Cryobank Vials, black racks with 96 tubes

Thermo Scientific

Nunc CryoTube™ with unique low binding surface
- High sample recovery with low concentration samples
- CE marked for diagnostic use
- DNAse/RNAse free
- Non-pyrogenic (LAL-test)
- Non-toxic (USP class VI test)
- Conform to IATA requirements for the transport of diagnostic specimens

Capacity ml	Description	PK	Cat. No.
0.5	sterile	10	**4.008 838**
1.0	sterile	10	**4.008 843**

5

5 Miniboxes for CryoTubes™, PS

Thermo Scientific

Miniboxes made from High Impact Polystyrene (HIPS) are ideal for the transport of CryoTubes™. Available in two sizes.

For	PK	Cat. No.
5 CryoTubes™ 1.0-1.8ml	350	**9.390 600**
10 CryoTubes™ 1.0-1.8ml	200	**9.390 601**

1 LLG-Cryogenic storage boxes, standard, 136 x 136

Freezer and cryogenic storage boxes (CryoBoxes). 136 x 136mm square. For the storage of samples.
Made of freezing-resistant, water-repellent, coated cardboard. With lid. Colours as indicated.
Further colours available on request.

Int. height mm	Colour	PK	Cat. No.
32	white	1	**6.088 950**
32	blue	1	**6.802 293**
50	white	1	**9.401 000**
50	yellow	1	**9.401 002**
50	blue	1	**9.401 004**
50	green	1	**9.401 013**
50	red	1	**9.401 015**
75	white	1	**9.401 030**
75	yellow	1	**9.401 032**
75	blue	1	**9.401 034**
100	white	1	**9.401 040**
100	yellow	1	**9.401 042**
100	blue	1	**9.401 044**
130	white	1	**6.057 279**
130	red	1	**6.201 070**

2 LLG-Cryogenic storage boxes, plastic coated, 136 x 136

Freezer and cryogenic storage boxes (CryoBoxes). Made of cardboard, **plastic coated** without divider.
Dimensions: 136 x 136mm square. For the storage of samples. With lid. Further colours available on request.

Int. height mm	Colour	PK	Cat. No.
32	white	1	**6.802 214**
50	white	1	**6.080 130**
50	yellow	1	**6.077 876**
50	blue	1	**6.077 875**
50	green	1	**6.081 021**
50	red	1	**6.081 022**
75	white	1	**6.802 726**
75	blue	1	**6.260 006**
75	red	1	**6.260 007**
75	green	1	**6.260 008**
75	yellow	1	**6.260 009**
100	blue	1	**6.260 010**
130	white	1	**6.083 519**

3 LLG-Partition inserts for Cryoboxes, 136 x 136

For cryoboxes 136 x 136mm. With compartment heights and formats as indicated. Other sizes available on request.

Height mm	Array	PK	Cat. No.
25	6 x 6	1	**6.260 015**
25	9 x 9	1	**6.802 057**
25	10 x 10	1	**6.054 191**
25	12 x 12	1	**6.050 586**
25	14 x 14	1	**6.050 333**
30	4 x 4	1	**6.305 840**
30	5 x 5	1	**9.401 055**
30	6 x 6	1	**6.090 419**
30	7 x 7	1	**9.401 054**
30	8 x 8	1	**9.401 053**
30	9 x 9	1	**9.401 052**
30	10 x 10	1	**9.401 051**
30	12 x 12	1	**9.401 050**
30	13 x 13	1	**6.260 017**
30	14 x 14	1	**6.260 016**
40	4 x 4	1	**6.401 505**
40	5 x 5	1	**6.260 020**
40	6 x 6	1	**6.202 839**
40	7 x 7	1	**6.802 215**
40	8 x 8	1	**6.900 361**
40	9 x 9	1	**7.510 691**
40	10 x 10	1	**6.077 877**
65	5 x 5	1	**6.079 677**
65	6 x 6	1	**6.201 071**
65	8 x 8	1	**6.801 789**
65	9 x 9	1	**6.072 218**
65	10 x 10	1	**6.802 727**
65	12 x 12	1	**6.803 270**

1

1 LLG-Cryogenic storage boxes, standard, 133 x 133

Freezer and cryogenic storage boxes (CryoBoxes). Cardboard. Without internal dividers. Colour-coded, with lid. Dimensions: 133 x 133mm. For the storage of samples. Further colours available on request.

Int. height mm	Colour	PK	Cat. No.
32	white	1	**6.235 243**
50	yellow	1	**6.079 785**
50	blue	1	**6.079 786**
50	green	1	**6.079 787**
50	red	1	**6.079 788**
50	white	1	**6.090 495**
75	white	1	**6.087 345**
75	blue	1	**6.260 021**
100	white	1	**6.082 970**
130	white	1	**6.803 050**

Special sizes and colours available on request!

2

2 LLG-Cryogenic storage boxes, plastic coated, 133 x 133

NEW!

Freezer and cryogenic storage boxes (CryoBoxes). Made of cardboard, **plastic coated**. Without divider. Dimensions: 133 x 133mm square. For the storage of samples. With lid. Further colours available on request.

Int. height mm	Colour	PK	Cat. No.
32	white	1	**6.260 029**
32	red	1	**6.234 735**
32	blue	1	**6.802 431**
50	white	1	**6.082 701**
50	red	1	**6.081 654**
50	green	1	**6.084 538**
50	blue	1	**6.700 568**
75	white	1	**6.801 707**
75	yellow	1	**6.260 031**
75	green	1	**6.803 056**
75	blue	1	**9.698 776**
100	white	1	**6.260 032**
100	red	1	**9.698 787**
100	yellow	1	**9.698 789**
100	blue	1	**9.698 786**
100	green	1	**9.698 788**
130	white	1	**6.260 033**

Special sizes and colours available on request!

3

3 LLG-Partition inserts for Cryoboxes, 133 x 133

For cryoboxes 133 x 133mm. With compartment heights and formats as indicated. Other sizes available on request.

Height mm	Array	PK	Cat. No.
25	8 x 8	1	**6.260 034**
25	9 x 9	1	**6.078 412**
25	10 x 10	1	**6.081 029**
25	12 x 12	1	**7.610 545**
30	5 x 5	1	**7.606 811**
30	6 x 6	1	**6.260 037**
30	7 x 7	1	**6.260 036**
30	8 x 8	1	**6.082 702**
30	9 x 9	1	**6.081 879**
30	10 x 10	1	**6.075 820**
30	12 x 12	1	**6.260 035**
40	5 x 5	1	**6.260 044**
40	6 x 6	1	**6.260 043**
40	7 x 7	1	**6.260 042**
40	8 x 8	1	**6.803 043**
40	9 x 9	1	**6.260 041**
40	10 x 10	1	**6.260 040**
40	14 x 14	1	**6.260 039**
65	4 x 4	1	**6.079 079**
65	5 x 5	1	**6.260 046**
65	6 x 6	1	**6.206 129**
65	7 x 7	1	**6.260 045**
65	8 x 8	1	**6.206 130**
65	9 x 9	1	**6.206 131**

1 Cryo Code Card for partition inserts

NEW!

Ratiolab

For additional and long lasting marking of each place in any cryo-box (carton) with grids 9x9 or 10x10. The Cryo-Code-Card is made of temperature resistant fibre (-80°C) and has a water repellant coating. Simple to add into the box (fits sizes 133x133 or 136x136mm) and replace it.

Description	For vessels diam. mm	PK	Cat. No.
For partition inserts 9 x 9	12	10	**9.405 856**
For partition inserts 10 x 10	11	10	**9.405 857**

1

2 Cryogenic Cardboard Boxes, 145 x 145 and Partitions

NEW!

Heathrow Scientific

For storage of large samples and 15 and 50 ml tubes. One size box safely stores 15 and 50 ml tubes in LN_2 or mechanical freezers. Choose from two partitions for your tube size.

Description	Int. height mm	Colour	PK	Cat. No.
Box for 15 or 50 ml tubes, with lid	122	white	1	**6.254 570**
Partition for 16 x 50 ml tubes	122	white	1	**6.254 571**
Partition for 36 x 15 ml tubes	122	white	1	**6.254 572**

2

3 LLG-Cryogenic storage boxes, PP, autoclavable

With 81 places, 9x9 grid and numerical coded. Robust hinge with safe snap-on lid, stackable for safe transport. Minimised liquid retention. Guaranteed metal free. Temperature resistant from -130°C to +90°C, autoclavable at 121°C, 20 minutes. Dimensions: 140mm x 140mm x 60mm

Colour	Array	PK	Cat. No.
Magenta/clear	9 x 9	1	**9.405 800**
Black	9 x 9	1	**9.405 801**

3

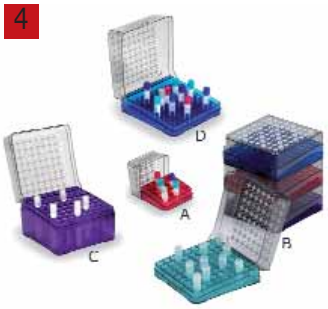
4 Cryogenic storage boxes Arctic Square®, PC, autoclavable

Heathrow Scientific

Safely store vials from -196 to +121°C for repeated use in mechanical freezers as well as liquid nitrogen. Boxes are designed with unique features to help the user orient, identify, and access vials with ease. The forward-sloped base and high-contrast, imprinted indexing on the transparent lid ensure quick visual orientation. Hinged lid allows easy one-handed access to samples. A built-in stop prevents the lid from swinging too far when the box is picked up by the lid, helping to prevent accidental spills. The 5 x 5 array box does not have hinged lid. All boxes include vent and drainage holes. Stackable. Autoclavable.

Colour	For tubes	Array	Dimensions (W x D x H) mm	Figure	PK	Cat. No.
red	up to 2.0 ml	5 x 5	76 x 76 x 53	A	1	**9.405 911**
purple	up to 5.0 ml	9 x 9	133 x 133 x 96	C	1	**9.405 912**
red, blue , green, purple	up to 2.0 ml	9 x 9	133 x 133 x 53	B	4	**9.405 913**
blue	up to 2.0 ml	10 x 10	133 x 133 x 53	D	1	**9.405 910**

4



5 Cryogenic boxes, PP, autoclavable, 133 x 133

Ratiolab

Polypropylene. 9 x 9 array. Resists ultra-low storage temperatures from -90°C up to +121°C. With grid numbers on the lid for reliable identification of individual samples. Box fits most stainless steel racks. Autoclavable

Height mm	Colour	PK	Cat. No.
52	natural	1	**9.405 890**
52	yellow	1	**9.405 892**
52	red	1	**9.405 894**
52	green	1	**9.405 896**
52	blue	1	**9.405 898**
52	black	1	**9.405 900**
75	natural	1	**9.405 891**
75	yellow	1	**9.405 893**
75	red	1	**9.405 895**
75	green	1	**9.405 897**
75	blue	1	**9.405 899**
75	black	1	**9.405 901**

5

1

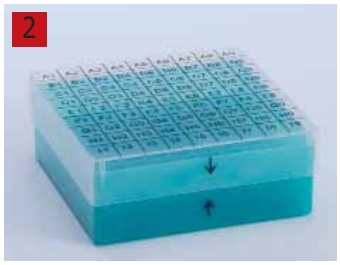
1 Cryogenic boxes, Type 5025, 5026, 5027, 5050, PC, autoclavable

Stable, autoclavable PC. With printed grid on lid for cryovials and similar tubes up to 13.5mm diameter. Temperature resistant from -196 to +121°C. With grid numbers for reliable identification of individual samples.

*Type 5050 is a plain box with transparent PC lid, without grid, used for storing tubes of various sizes. Supplied in packs as outlined below.
**Only for tubes up to 12.5 mm diameter.

Type	For tubes ml	Width mm	Length mm	Height mm	Array	PK	Cat. No.
SYSTEM 100™ 5026**	1/1.5	133	133	52	10 x 10	1	**9.400 927**
CryoBoxes™ 5025	1.2/2.0	76	76	52	5 x 5	1	**9.400 946**
CryoBoxes™ 5026	1.2/2.0	133	133	52	9 x 9	1	**9.400 947**
CryoBoxes™ 5027	5.0	133	133	95	9 x 9	1	**9.400 948**
Storage Box 5050*		133	133	52	1	1	**9.400 949**

2



2 Cryogenic boxes, PP, 81 well, autoclavable

No. of cells 9 x 9 = 81 cryovials. *Tenak*

Type	Width mm	Depth mm	Height mm	PK	Cat. No.
Blue	130	130	50	1	**9.698 708**
Green	130	130	50	1	**9.698 709**
Natural	130	130	50	1	**9.698 710**
Red	130	130	50	1	**9.698 711**
Yellow	130	130	50	1	**9.698 712**

3

3 Cryogenic boxes, PP, 81 well, autoclavable

Polypropylene box fits in standard freezer racks. Locate tubes is easily with moulded grid lines and a moulded reference point on the lid. Stores 1.5ml to 2.0ml microtubes under easy-open, friction-fit lid. Dimensions: 130mm x 130mm x 47mm. Autoclavable. *Heathrow Scientific*

Colour	PK	Cat. No.
natural	1	**9.193 983**
blue	1	**7.078 821**
green	1	**7.058 103**
pink	1	**7.058 102**
yellow	1	**7.078 822**
orange	1	**7.083 522**
blue, green, pink, yellow, orange	5	**9.193 984**

4

5

4 5 Cryogenic boxes, slip lid with adaptable height, PP, 133 x 133

Ratiolab

- Made from polypropylene
- Height adaptable from 50mm to 75mm, by turning the lid 90°.
- 9 x 9 array, 10 x 10 array
- Numerical coded places (except black box)
- Drain bores at the bottom for dew liquids
- Autoclavable, temperature resistant from -90°C to +121°C

Colour	Array	For tubes diam. mm	PK	Cat. No.
natural	9 x 9	13	5	**9.405 840**
yellow	9 x 9	13	5	**9.405 843**
red	9 x 9	13	5	**9.405 845**
green	9 x 9	13	5	**9.405 844**
blue	9 x 9	13	5	**9.405 842**
black	9 x 9	13	5	**9.405 846**
natural, yellow, red, green, blue	9 x 9	13	5	**9.405 841**
natural	10 x 10	11.5	5	**9.405 847**
yellow	10 x 10	11.5	5	**9.405 848**
red	10 x 10	11.5	5	**9.405 849**
green	10 x 10	11.5	5	**9.405 850**
blue	10 x 10	11.5	5	**9.405 851**
black	10 x 10	11.5	5	**9.405 852**
natural, yellow, red, green, blue	10 x 10	11.5	5	**9.405 855**

1 Microtube Storage Boxes, 50-/100-Well, PP

Autoclavable. Compact storage box has angled front slot for easy access to tubes. *Heathrow Scientific*
Rugged, polypropylene box has durable three-point hinges, snapping clasp for secure closure, moulded grid lines on lid, imprinted coordinates on bottom of base and imprinted and raised coordinates on tube wells. Ideal for sample or case study storage.Holds 1.5ml to 2.0ml microtubes.
Resist storage temperatures from -80°C up to +121°C.

1

no. of wells	Dimensions (l x w x h) mm	Colour	PK	Cat. No.
50	141 x 92 x 56	blue, green, purple, yellow, orange	5	**9.193 985**
50	141 x 92 x 56	natural	1	**6.243 162**
100	141 x 151 x 57	blue, green, purple, yellow, orange	5	**9.193 981**
100	141 x 151 x 57	natural	1	**6.206 710**

2 50-/100-Well cryogenic boxes, EPS

Inexpensive freezer storage. Lightweight 1.5ml to 2.0ml microtube racks are ideal for long-term studies or tube storage. Two-piece racks are constructed of expanded polystyrene (EPS) foam. Extra spacing between wells allows easy gripping with fingertips. Racks stack securely with nesting features on lid and base. *Heathrow Scientific*
Resist storage temperatures from -80°C up to +70°C. Not autoclavable.

2

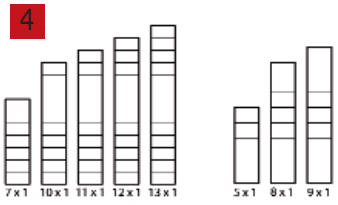
no. of wells	Dimensions (l x w x h) mm	PK	Cat. No.
50	210 x 100 x 71	1	**9.193 987**
100	336 x 95 x 73	1	**9.193 986**

3 4 Chest Freezers Racks, vertical

Stainless steel racks, suitable for all brands of chest freezer. For boxes up to 135 x 135mm.

3

4



Type	Height Box mm	Width mm	Depth mm	Height mm	PK	Cat. No.
7x1	approx. 53	140	141	390	1	**9.698 962**
10x1	approx. 53	140	141	557	1	**9.698 746**
11x1	approx. 53	140	141	613	1	**9.698 963**
12x1	approx. 53	140	141	669	1	**9.698 964**
13x1	approx. 53	140	141	724	1	**9.698 965**
5x1	approx. 78	140	141	406	1	**9.698 967**
8x1	approx. 78	140	141	649	1	**9.698 966**
9x1	approx. 78	140	141	730	1	**9.698 968**

5 Vertical cryobox racks, Type 5036

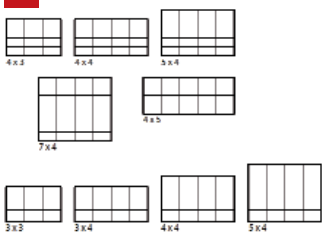
Stainless steel. With individual retainers to secure each box safely. *Thermo Scientific*

5

Type	Height Box mm	Shelves	Width mm	Depth mm	Height mm	PK	Cat. No.
5036	approx. 52	4	140	143	225	1	**9.400 953**
5036	approx. 52	9	140	143	502	1	**9.400 954**

1

2



1 2 Upright Freezer Racks

NEW!

Stainless steel racks, suitable for all brands of upright freezers. For boxes up to 135mm x 135mm.

Type	Height Box mm	Width mm	Depth mm	Height mm	PK	Cat. No.
2x3	approx. 75	140	423	164	1	**9.698 954**
6x4	approx. 50	140	562	331	1	**9.698 959**
4x4	approx. 78	556	140	326	1	**9.698 960**
5x4	approx. 78	556	140	407	1	**9.698 961**
4x4	approx. 53	556	140	225	1	**9.698 969**
4x3	approx. 53	418	140	225	1	**9.698 970**
5x4	approx. 53	556	140	280	1	**9.698 971**
7x4	approx. 53	556	140	392	1	**9.698 972**
4x5	approx. 53	695	140	225	1	**9.698 973**
5x3	approx. 53	418	140	280	1	**9.698 974**
3x4	approx. 78	556	140	245	1	**9.698 975**
3x3	approx. 78	418	140	245	1	**9.698 976**

3

3 Racks for upright freezers Arctic Squares®

Heathrow Scientific

Stainless steel. Fits most standard upright freezers. Overall rack size (H x W x D): 238 x 139 x 571mm. With four drawers to hold 16 boxes of 133 x 133 x 53mm.
Drawers feature a unique stop that when fully extended pivot down allowing for easy box access.
Freezer rack also includes a pull-out wire handle for easy removal off the shelf.
Polycarbonate drawer handles provide a user-friendly grip. Includes a slot and label for drawer/sample identification.

Type	PK	Cat. No.
Arctic Squares®	1	**9.193 980**

4

4 Cryoware marker set, Type 6313

Thermo Scientific

For durable labelling of cardboard, plastic and cloth material for use at ultra-low temperatures. Non-smudge and non-running. Removable with alcohol. Extra fine point.
Two packs available - 1 pack conatins one each red, green, black and blue marker while the other pack contains black markers only.

Type	Description	PK	Cat. No.
6313	Assorted	4	**9.400 978**
6313	Black	4	**9.400 979**

5

5 Cryo labels Rainbow

NEW!

Ratiolab

For customizing the white Cryo Boxes, the Rainbow Cryo labels are available in modern colors: red, yellow, green, blue, purple.
- temperature-resistant down to -150°C
- 50 labels per pack, divided into 5 colors, 10 pieces from each color

Type	Width mm	Height mm	PK	Cat. No.
Rainbow	200	40	50	**6.256 343**

6

6 Deep freeze labels Cryo-Babies®/Cryo-Tags®

Heathrow Scientific

Temperature resistant from -196°C to +150°C. All labels withstand freezer temperatures down to -196°C (liquid and vapor phase nitrogen), boiling water baths (100°C), autoclaving and moderate ovens (150°C). Chemically inert labels resist most organic solvents and caustic agents. They adhere to most plastics, glass and metals without cracking, peeling or degrading. Made with a flexible, polyfin label material and acrylic adhesive. This unique combination expands and contracts together with temperature fluctuations resulting in a strong adhesive bond. Convenient dispensing box assists in labeling individual tubes used in small experiments.
Easy to write on. PVC labels accept writing from most lab markers including solvent resistant pens.

Type	Dimensions (W x D) mm	Colour	For vessels	PK	Cat. No.
Cryo-Babies®	24 x 13	White	0.5ml tubes	1000	**9.100 030**
Cryo-Babies®	33 x 13	White	1.5/2.0ml tubes	1000	**9.100 031**
Cryo-Tags®	38 x 13	White	General application	1000	**9.100 032**

LLG-Temperature block *exact*, aluminium

NEW!

Suitable for both cooling and heating, universally usable, uniform temperature distribution within the block, ideal for all temperature-sensitive applications.

Aluminum blocks with conical compartments and closed bottom for easy and precise tempering of reaction tubes and PCR tubes. The precisely adapted shape of the borings and the closed bottom offer advantages compared with cylindrical drilled blocks with open bottom, such as much better heat transfer and temperature accuracy.
Made of a special aluminum alloy with high thermal conductivity. Identical temperature conditions for all samples.
Compact size, requiring little space. Suitable for 96-well plates, 8 or 12 strips and single tubes.
Ideal for working with 8- or 12-channel pipettes. Blocks for different tube sizes and combinations of tube sizes as indicated, all working steps in one block, holes closed at the bottom and tapered to fit perfectly the respective tube sizes and offer an optimum heat exchange.

1

9.409 015

2

9.409 017

Description	PK	Cat. No.
LLG-aluminum block, 96 x 0.2 ml PCR tubes + 6 x 1.5 ml tubes	1	**9.409 015** 1
LLG-aluminum block, 36 x 0.5 ml tubes + 11 x 1.5 ml tubes	1	**9.409 016**
LLG-aluminum block, 24 x 1.5 ml tubes	1	**9.409 017** 2
LLG-aluminum block, 24 x 2.0 ml tubes	1	**9.409 018**
LLG-aluminum block, 25 x 2.0ml Cryogenic tubes with round bottom	1	**9.409 006**
LLG-aluminum block, 12 x 15.0ml Centrifuge tubes	1	**9.409 008**

3 LLG-Temperature block "exact", aluminium, for crogenic tubes with rim, single-handed operation

NEW!

Simultaneous single-handed operation and cooling of cryogenic vials
The cryogenic tubes are fixed in the cavities with a pin so that they can be opened and closed with one hand.
Suitable for most cryogenic tubes with rim or notch such as LLG Labware. Cryogenic tubes are cooled by uniform temperature distribution in the block, ideal for temperature-critical work. The closed bottom of the block provides a much better temperature distribution and temperature accuracy over the block compared to blocks with open bottom.
Made of a special aluminum alloy with high thermal conductivity. Thus, the block has identical temperature conditions for all samples.

3

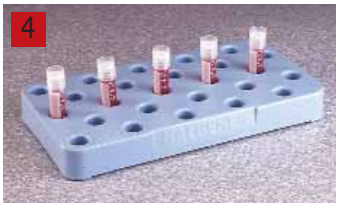
Description	PK	Cat. No.
LLG-Temperature block "exact", aluminium, 25 x 2.0ml Cryogenic tubes with tripod rim	1	**9.409 007**

Cryovial racks, PC

Thermo Scientific

Autoclavable. Space-saving. Choice of sizes to hold 25 or 50 cryovials of 1.2, 2.0 or 5ml capacities. With moulded identification numbers and letters. One-handed operation possible.

4



9.400 958

Aperture array qty.	Width mm	Length mm	Height mm	PK	Cat. No.
5 x 10	102	197	28	1	**9.400 944**
5 x 5, staggered	102	197	22	1	**9.400 958** 4

5 Floating cryovial racks, Type 5974, PP

Thermo Scientific

For 0.5 to 2.0ml test tubes and cryovials. Racks will float with a full load of filled tubes. With moulded identification numbers and letters.

5

Type	Description	For tubes ml	Array	Colour	Dimensions (W x D x H) mm	PK	Cat. No.
5974	Square	1.0/1.2/1.5/2.0	4 x 4	white	103 x 103 x 65	1	**9.400 982**
5974	Circular	1.0/1.2/1.5/2.0	8	white	66 dia.	4	**9.400 983**
5974	Circular	1.0/1.2/1.5/2.0	20	white	96 dia.	4	**9.400 984**

Further Racks - please see page 30.

1

1 Floating Tube Racks, PE

Polyethylene foam. Resist water absorption so racks can be washed and reused. Ideal for floating tubes in water baths, tubs, or beakers. Racks include detachable carrying handles, to easily lift samples out of baths.

Heathrow Scientific

Type	For tubes ml	Array	Colour	PK	Cat. No.
Diamond	50	4	green	5	**6.238 546**
Parallelogram	15	8	blue	5	**6.238 547**
Rectangle	1.5 to 2.0	24	yellow	5	**6.238 545**
Round	0.2/0.5/1.5 to 2	18	blue	5	**6.240 378**

2

2 Floating racks PrepSafe™ for microcentrifuge tubes, PP

Unique tabs protect your samples from loss and contamination. Place tubes in slots and slide under tabs to keep tubes in place and caps closed when under pressure, floating or submerged. Use in water baths, ice baths or on the benchtop period

Bel-Art Products

- Holds up to twelve 1.5ml or 2.0ml microcentrifuge tubes in numbered locations
- Raised handle for easy lifting without agitating samples; stable feet keep racks upright on the bench
- 95mm outer diameter fits most 1000ml beakers
- With removable vortexing attachment, this allows samples to be vortexed simultaneously
- Polypropylene construction. Steam autoclavable at 121°C .

Colour	PK	Cat. No.
Natural	1	**9.400 995**
Turquoise	1	**9.400 996**
Pink	1	**9.400 997**
Neon Yellow	1	**9.400 998**

3

Work

4

Store

3 4 Cryogenic box Work2Store™, PP

Reduce sample handling time and the need for several racks when working with samples for cold temperature storage. Patent-pending opening and closing mechanism allows the rack to expand, creating needed room for sample manipulation. Then simply collapse the rack back to its compact form and it is ready for the freezer. Temperature range -80 to 121°C.

Heathrow Scientific

- Clear lid locks the rack together for safe handling and transportation
- Wells have a center depression to stabilize conical tubes and a cryogenic vial lock for one handed cap removal
- Stackable, autoclavable and with alphanumeric well identification
- Will fit into standard 2" (52mm) freezer racking

Type	For tubes	Array	Dimensions open (W x D x H) mm	Dimensions closed (W x D x H) mm	PK	Cat. No.
Work2Store™	1.5/2.0 ml	64	310 x 128 x 33,5	133 x 133 x 53	1	**9.194 001**
Work2Store™ Rack Mini	0.2/0.5 ml	96/64	310 x 128 x 20	133 x 133 x 29	1	**9.194 009**

5

5 Cryogenic storage boxes Transformer™ Cube, PP

NEW!

For storage of large samples or 15 and 50 ml tubes. Robust, rugged polypropylene construction complete with two Snap-In grids for 16 x 15ml and 9 x 50ml tubes.
Holds tubes securely upright in deep grid wells. Locate tubes easily with numbering of inserts on lid, imprinted grid and first tube orientation. Use without grids for larger sized product storage. Fill with ice and use as a temporary low temperature workstation. Autoclavable. Dimensions: 125 x 125 x 129 mm. For temperatures from -80 to 121°C. Purple box with clear lid.

Heathrow Scientific

Type	PK	Cat. No.
Box with 2 inserts	1	**6.243 251**

Cryogenic storage tanks, B 2000 series

The B 2000 series is especially developed for storing of straws and cryo vials in ampoule holders.
The B 2000 series offers capacities of 216 to 1332 cryo ampoules with 2ml and 474 to 16400 x 0.25ml straws.
The B 2000 series long term storage tanks are especially suited to hold small amounts of samples.
Thanks to the small neck openings these storage tanks have holding times reaching 365 days. Supplied with canisters.
Accessories on request include: Canes for cryovials, rolling castors base, liquid level measuring rod, low filling level alarm.

1 Long term cryogenic storage tanks, B 2000 series

Cryo Diffusion

Type	Capacity	No. of vials	No. of straws	No. of canisters	Static holding time	Chamber dimensions (Diam. x H)	PK	Cat. No.
	L	2ml	0.25ml		Days	mm		
B 2002M	2.00		474	3	25	26x110	1	**9.524 506**
B 2003M	4.10		1560	6	42	37x110	1	**9.524 507**
B 2009M	10.50		1560	6	93	37x110	1	**9.524 508**
B 2011M	12.00	216	2700	6	133	37x270	1	**9.524 509**
B 2020M	21.70	216	2700	6	238	37x270	1	**9.524 510**
B 2020M	21.70	216	1560	6	238	37x110	1	**9.524 511**
B 2036M	35.90	216	2700	6	365	37x270	1	**9.524 512**
B 2036M	35.90	216	1560	6	365	37x110	1	**9.524 513**

2 Large capacity cryogenic storage tanks, B 2000 series

Cryo Diffusion

Type	Capacity	No. of vials	No. of straws	No. of canisters	Static holding time	Chamber dimensions - outside (Diam. x H)	PK	Cat. No.
	L	2ml	0.25ml		Days	mm		
B 2013-6	13.00		4920	6	59	66x110	1	**9.524 514**
B 2013-10	13.00		4920	10	59	44x110	1	**9.524 515**
B 2026	26.00		8200	10	104	66x110	1	**9.524 516**
B 2035	35.90	684	9840	6	211	66x270	1	**9.524 517**
B 2048-6	48.50	1332		6	180	94x270	1	**9.524 518**
B 2048-10	48.50	1332	16400	10	180	73x270	1	**9.524 519**

3 Cryogenic storage tanks, BR 2000 series with drawers

Cryo Diffusion

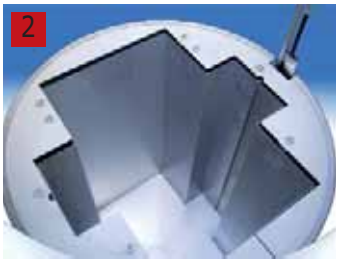
The BR 2000 series is especially developed for storing 750, 3600, 4500 and 6600 cryogenic vials (max. 2ml vials, 5ml vials on request) in cryo boxes.
Low vaporization thanks to their 215mm dia. neck (BR 2048: only 120mm).
The lightweight, aluminium design and low space requirements of these containers make them the most economical units in their class. Supplied with drawer fastener.
Features:
- large neck openings
- easy access to stored samples
- long Nitrogen retention times
- lightweight aluminium design
- 2 Year warranty

Available accessories on request: cryogenic boxes, castors, liquid level measuring rod, low filling level alarm, electronic filling level regulation.

Type	Capacity	No. of vials	No. of boxes	No. of racks	Static holding time	PK	Cat. No.
	Litres	2ml			Days		
BR 2048	48	750	5	6	179	1	**9.524 520**
BR 2100	100	3600	6	6	153	1	**9.524 521**
BR 2150	148	5400	9	6	227	1	**9.524 522**
BR 2200	197	6600	11	6	303	1	**9.524 523**

1

2



1 2 Cryogenic storage tanks, LO 2000 series with drawers

Cryo Diffusion

The LO 2000 series is specially developed for the storing of 4000(*), 8000(*) and 10400(*) cryo vials (*in liquid phase) (max. 2ml vials, 5ml vials on request) in cryo boxes. The large opening of 410mm (LO 2075) or 590mm gives easy access to the samples. The lightweight aluminium design and low space requirements of these containers make them the most economical units in their class. Supplied with drawer fastener.
Features:
- large neck openings
- easy access to stored samples
- long Nitrogen retention times
- inclusive castors for easy handling
- 2 Year warranty

The storage tanks LO 2000 series are also available for gas phase and dry storage (please see detailed image).

Accessories available on request: cryo boxes, liquid level measuring rod, low filling level alarm, electronic filling level regulation and storage inserts for dry storage.

Type	Capacity Litres	No. of vials 2ml	No. of boxes	No. of racks	Static holding time Days	Description	PK	Cat. No.
LO 2075 M	75	4000	10	4	30	without electronics	1	**9.524 500**
LO 2200 M	198	8000	10	8	40	without electronics	1	**9.524 501**
LO 2250 M	236	10400	12	8	47	without electronics	1	**9.524 502**
LO 2075 M	75	4000	10	4	30	with S170 electronics	1	**9.524 559**
LO 2200 M	198	8000	10	8	40	with S170 electronics	1	**9.524 560**
LO 2250 M	236	10400	12	8	47	with S170 electronics	1	**9.524 561**

3

3 Vapour Shipper containers BS 2000 series

Cryo Diffusion

Vapour Shipper containers BS 2000 series are designed for the safe transportation of biological samples at cryogenic (-150°C or colder) temperatures.
Fabricated from durable, lightweight aluminum, they employ a hydrophobic absorbent that contains the liquid nitrogen for "spill free" shipping. The absorbent also repels moisture and humidity, assuring the maximum holding time. This eliminates the necessity to dry units between uses.
A protective shipping case is available for all models. These containers may be used to ship your samples with a "non-hazardous" classification e.g. straws, cryo ampoules, bloodbags, thus reducing costs and helping to assure sample viability.
Availlable accessories on request: protective shipping case, temperature logger, holders for ampoules and blood bags.

Vapour Shipper containers BS 2000 series are in accordance with the IATA requirements.

Type	Capacity L	No. of vials 2ml	No. of straws 0.25ml	Static holding time Days	Neck diam. mm	Weight empty / full kg	PK	Cat. No.
BS 2002	2.00		190	23	35	3.3/4.8	1	**9.524 503**
BS 2004	5.20	114	1640	19	70	6.9/9.6	1	**9.524 504**
BS 2024	24.00	798	17220	11	215	15.6/22.6	1	**9.524 505**

4

4 Cryogenic liquid dewars L 2000 series

Cryo Diffusion

The L 2000 Series of cryogenic liquid dewars are so-called because of their universal acceptance in laboratories and medical facilities worldwide. These high-efficiency, super-insulated dewars are the most convenient, economical way to store and dispense liquid nitrogen. Types L 2025, L 2035, L 2050 and L 2100 can be fitted with pressurized dispensing devices to aid in the transfer of liquid nitrogen.
Accessories on request include: Transfer hose, phase separator, spare corks, pressurized dispensing device, liqiud level measuring rod, rolling castor base

Type	Capacity L	Evaporation rate L/ day	Neck diam. mm	Weight empty / full kg	Height mm	PK	Cat. No.
L 2002	2.0	0.08	35	2.7/4.3	402	1	**9.524 524**
L 2005	5.5	0.13	50	4.4/8.8	494	1	**9.524 525**
L 2012	12.4	0.14	50	8.1/18.1	600	1	**9.524 526**
L 2025	25.0	0.2	50	10/31	684	1	**9.524 527**
L 2035	35.0	0.25	50	13/41.5	591	1	**9.524 528**
L 2050	50.0	0.3	50	17/57.5	675	1	**9.524 529**
L 2100	100.0	0.8	50	32/113	1035	1	**9.524 530**

Castors for cryogenic liquid dewars

With 5 castors and 2 brakes. *Cryo Diffusion*

For	PK	Cat. No.
B 2048, BR 2048, L 2035, L 2050, L 2100	1	**9.524 531**
BR 2100, BR 2150	1	**9.524 532** 1

1

9.524 532

2 Plastic goblets for cryogenic dewars

Cryo Diffusion

Description	PK	Cat. No.
dia. 35mm, height 118mm	1	**9.524 533**
dia. 65mm, height 118mm	1	**9.524 534**
Cup "Marguerite"	1	**9.524 535**

2

3 Ampoule holders for cryogenic liquid dewars

Cryo Diffusion

For vials	Diam. mm	Height mm	PK	Cat. No.
6	11	45	1	**9.524 536**
6	12	45	1	**9.524 537**
5	12	55	1	**9.524 538**
2	12	75	1	**9.524 539**

3

4 Canisters, stainless steel for cryogenic dewars

Cryo Diffusion

Diam. mm	Height mm	For	PK	Cat. No.
30	120	BS 2002	1	**9.524 540**
66	270	BS 2004	1	**9.524 541**
26	110	B 2002	1	**9.524 542**
37	110	B 2003	1	**9.524 543**
37	110	B 2009	1	**9.524 544**
37	110	B 2011	1	**9.524 547**
66	110	B 2013/6	1	**9.524 548**
44	110	B 2013/10	1	**9.524 549**
37	270	B 2020**	1	**9.524 550**
37	110	B 2020*	1	**9.524 551**
66	110	B 2026	1	**9.524 552**
66	270	B 2035	1	**9.524 553**
94	270	B 2048/6	1	**9.524 554**
73	270	B 2048/10	1	**9.524 555**

* one level
**two levels

4

5 Auminum holder KryoCane™, Type 5015

For frozen storage of cryovials 1.2, 1.5 or 2.0ml. *Thermo Scientific*

Type	For	Length mm	PK	Cat. No.
5015	5 cryovials	290	1	**9.400 956**
5015	6 cryovials	300	12	**9.400 935**

5

6 Sleeve KryoSleeve™., Type 5016

Made of transparent PVC. For KryoCane™ aluminium vial holder. *Thermo Scientific*

Type	Length mm	PK	Cat. No.
5016	273	100	**9.400 957**

6

1 Dewar flasks, Type 4150, PE-HD

With vented, insulating PE-HD lid. PE covered handle. Unbreakable and completely safe for short term storage of ice water, dry ice solvents and liquid nitrogen. Also suitable for use as warming baths. Chemical-resistant, reinforced walls, filled with urethane foam, are temperature resistant from -196 to +100°C. 1, 2 and 4 litre flasks have a carrying handle. *Thermo Scientific*

Type	Capacity Litres	Top diam. mm	Int. height mm	PK	Cat. No.
4150	1	96	195	1	**9.031 961**
4150	2	122	231	1	**9.031 962**
4150	4	158	259	1	**9.031 964**
4150	10	198	396	1	**9.031 970**

2 3 4 5 Dewar vessels, cylindrcal, for CO_2 and LN_2

NEW!

DURAN®. DIN 12492. Cylindrical. With blue coated protective casing out of metal or structured aluminium casing. With lid. Carrying handles as indicated. *KGW*

Capacity l	Int. diam. mm	Int. height mm	Figure	With	PK	Cat. No.
10	200	350	a	Handle	1	**9.032 131**
10	200	350	d	Handle	1	**9.032 742**
14	200	500	a	Handle	1	**9.032 132**
14	200	500	d	Handle	1	**6.070 411**
21	250	480	c	Side grips	1	**9.032 133**
21	250	480	b	Side grips	1	**9.032 743**
28*	250	620	c	Side grips	1	**9.032 134**
28	250	620	b	Side grips	1	**6.300 165**
40*	280	650	c	Side grips	1	**9.032 135**
40	280	650	b	Side grips	1	**6.226 406**

*Linen bag included.

6 Dewar carrying flasks, cylindrical, for CO_2 and LN_2

DURAN®. DIN 12492. Cylindrical. With blue coated protective casing out of metal. With lid and aluminium carrying handle. *KGW*

Type	Capacity Litres	Int. diam. mm	Int. height mm	PK	Cat. No.
26 B	1	100	150	1	**9.032 726**
27 B	2	138	170	1	**9.032 727**
28 B	3	138	230	1	**9.032 728**
29 B	4	138	310	1	**9.032 729**

BE Type: Stainless steel casings, type 26 BE to 29 BE are available on request.

1 Dewar flasks, shallow form, for CO_2 and LN_2

DURAN®. DIN 12492. Dish-shaped. Generally for thermostatting round bottom flasks to a constant temperature as hot or cold baths. With structured aluminium casing and edge protection. Suitable for use with magnetic stirrers. *KGW*

Capacity ml	Int. diam. mm	Height mm	PK	Cat. No.
120	77	50	1	**9.032 422**
260	100	65	1	**9.032 423**
400	110	70	1	**9.032 425**
680	138	80	1	**9.032 426**
1600	170	110	1	**9.032 427**
3000	200	125	1	**6.075 807**

2 Dewar flasks, cylindrical, for CO_2 and LN_2

DURAN®. DIN 12492. Cylindrical. With blue coated protective casing made of metal. All vessels can also be supplied without casing, unsilvered or silvered with opposite viewing strips. Stoppers - please order separately. *KGW*

Capacity ml	Int. diam. mm	Ext. diam. mm	Int. height mm	PK	Cat. No.
100	40	56	90	1	**9.032 011**
200	40	56	170	1	**9.032 012**
300	47	60	190	1	**9.032 013**
500	57	70	210	1	**9.032 015**
800	67	80	240	1	**9.032 018**
1200	67	80	350	1	**9.032 019**
1000	77	95	235	1	**9.032 021**
1500	77	95	345	1	**9.032 022**
1500	90	115	245	1	**9.032 024**
2000	90	115	340	1	**9.032 025**
1500	100	120	240	1	**9.032 027**
2000	100	120	290	1	**9.032 028**
2500	110	130	290	1	**9.032 030**
4000	138	160	310	1	**9.032 033**

3 Chrome steel Dewar flasks

Nickel chromium steel, unbreakable, open top. With high-vacuum, permanent insulation. Temperature range -269 to +300°C. 5 year insulation guarantee.

Capacity Litres	Int. diam. mm	Ext. diam. mm	Int. height mm	PK	Cat. No.
1	85	107	206	1	**9.031 982**
1	100	122	157	1	**9.031 983**
2	100	122	285	1	**9.031 984**

4 Lid in cork for chrome steel Dewar flasks

Cork.

For	PK	Cat. No.
9.031 982	1	**9.031 972**
9.031 983 and 9.031 984	1	**9.031 973**

5 Dewar flasks, spherical, for LN2

DURAN®. DIN 12492. Spherical. Brushed aluminium casing with insulating lid and carrying handle. *KGW*

Capacity Litres	Neck diam. mm	Ext. diam. mm	PK	Cat. No.
1	30	175	1	**9.032 740**
3	60	225	1	**9.032 741**
5	60	260	1	**9.032 115**
10	65	330	1	**9.032 127**

1 Cryogenic freezers CRYO 170/CRYO 230, up to -152°C

NEW!

Arctiko

The CRYO FREEZER range features a dual cooling system which consists of two independent systems offering double security. In the unlikely event that one cooling system should fail, the second cooling system will maintain the freezer at -130°C. The cryogenic freezers offer a wide variety of research and long term storage applications for low temperature scientific experiments, preservation of cells, DNA, bone material, bacteria etc. It's the perfect choice for testing special material, ideal for hospitals, university laboratories or sanitation stations.

- Dual cooling system for double security
- Two independent compressor systems
- Visual and acoustic alarm
- Extremely Low Energy Consumption
- Adjustable high and low temperature alarm
- Probe and power failure alarm
- Contact for remote alarm
- Temperature chart recorder
- Battery back up
- LN2 back up
- 4 castors for easy handling
- Digital display
- Extremley low noise level
- Handle with lock
- Porthole for external temperature probes
- Power supply: 3 x 400V, 50/60Hz

Type	Capacity Litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	Weight kg	Temp. range max. °C	PK	Cat. No.
CRYO 170	173	500 x 500 x 705	1580 x 960 x 1090	310	-140 ... -150	1	**6.267 685**
CRYO 230	230	680 x 500 x 675	1600 x 840 x 1090	350	-140 ... -150	1	**6.267 686**

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6.267 847

Racks for Cryogenic freezers CRYO 170/CRYO 230

NEW!

Arctiko

Type	Height Box mm	Dimensions (W x D x H) mm	PK	Cat. No.
CFR50-12	50	140 x 140 x 665	1	**6.267 847** 2
CFR75-08	75	140 x 140 x 629	1	**6.267 848**
CFR100-06	96	140 x 140 x 635	1	**6.267 849**

3

3 LLG-Laboratory Power Failure Detector

- Alarm is reported immediately visually and acoustically
- Reports alarm even for short power outages or for a period of at least 12 hours (can be switched off manually)
- Plug safety cover offers protection against accidentally pulling the plug
- Maximum total power of connected devices. 3500W power supply 230V 50Hz
- Suitable for European plugs
- Max. Rating 16 A
- With built-in battery

Scope of supply:
1 x power failure detector
2 x plug safety caps
2 x screws

Type	PK	Cat. No.
LLG-Laboratory Power Failure Detector	1	**6.255 819**

Ultra low temperature freezer, ULUF series up to -90°C

NEW!

Arctiko

Reliable and powerful upright freezer with extra storage capacity and a user friendly controller. Models with volumes from 7 litres up to 826 litres are available. Features as non-manipulative data logger and USB readout are just some of the features that come as standard in the ULUF series.

Features on ULUF series
- Low energy consumption
- Low noise level, low heat dissipation
- Insulated inner doors
- Castors
- Lock on door
- Ergonomic loading
- Heated door frame, heated vacuum valve
- 100% HCFC/CFC free
- Porthole for external temperature probes
- Single-compressor (ULUF 15, 65, 125, 450, 550, 750, 850) or two compressor systems as security in case of failure of a compressor.

Upon failure of a compressor, the temperature is maintained at -86°C by the second compressor at ULUF 490 and 890, for ULUF 750 at -70°C.

Controller features
- Temperature graph
- Micro processor controller with digital display
- Approx. 72 hours battery back up for alarms, loggings and temperature display in case of power cut
- Visual and acoustic alarm, adjustable high/low temperature alarm, power failure alarm, probe failure alarm, instrument failure alarm, open door alarm, contact for remote alarm, prepared for GSM alarm
- Prepared for connection of 2 additional probes
- Integrated data logger (software included)
- RS485/232 Interface
- Computer USB data read out
- Direct download/upload on/from USB memory stick
- Auto cycle if probe failure
- Ambient temperature display
- Shows all alarms as text (no codes)
- 3-level password protected
- Battery level indication
- Integrated memory
- Display text available in different languages

Accessories (optional):
- All freezers are available with stainless steel housing (on request)
- CO_2 back up
- GSM alarm module
- Racks and boxes
- Temperature chart recorder
- Drawer systems

Type	Capacity Litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	Weight kg	Temp. range max. °C	PK	Cat. No.
ULUF 15	7	150 x 143 x 310	400 x 630 x 665	55	-40...-90	1	**6.264 066**
ULUF 65	55	360 x 468 x 320	600 x 700 x 810	80	-40...-86	1	**9.699 310** 1
ULUF 125	115	360 x 493 x 530	950 x 725 x 810	100	-40...-86	1	**9.699 311** 2
ULUF 450	413	480 x 608 x 1415	720 x 885 x 2089	183	-40...-86	1	**9.699 312** 3
ULUF 550	585	680 x 608 x 1415	920 x 885 x 2089	215	-40...-86	1	**6.263 920**
ULUF 750	680	790 x 608 x 1415	1030 x 885 x 2089	354	-40...-86	1	**9.699 314** 4
ULUF 850	826	2 deparment each 480 x 608 x 1415	1492 x 885 x 2089	376	-40...-86	1	**9.699 315** 5
ULUF 490*	393	480 x 608 x 1415	720 x 885 x 2089	208	-40...-90	1	**9.699 318**
ULUF 890*	786	2 deparment each 480 x 608 x 1415	1492 x 885 x 2089	426	-40...-90	1	**9.699 319**

*Dual Cooling System: Increased safety due to 2 separate cooling systems.

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9.699 310

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9.699 314

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9.699 315

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9.699 320

Ultra low temperature freezer, ULTF series, up to -86°C

NEW!

Arctiko

The ULTF range shows that high performance freezing with focus on low energy consumption is the future. The range has been updated with our advanced Arctiko controller which ensures that all alarm and data logging features are included as standard. The ULTF range is produced with the true and original single compressor technology which ensures the lowest noise level available.

Features on ULTF series
- Single compressor
- Low energy consumption
- Low noise level
- Low heat dissipation
- 100% HCFC/CFC free
- Sub lids
- Castors and key lock
- Prepared porthole for external temperature probes

Controller features
- Temperature graph
- Micro processor controller with digital display
- Approx. 72 hours battery back up for alarms, loggings and temperature display in case of power cut
- Visual and acoustic alarm
- Adjustable high/low temperature alarm
- Power failure alarm
- Probe failure alarm
- Instrument failure alarm
- Open door alarm
- Contact for remote alarm
- Prepared for GSM Alarm
- Prepared for connection of 2 additional probes
- Integrated data logger
- RS485/232 Interface
- Direct upload of new software via USB memory stick
- Direct download of logged data on USB memory stick
- Auto cycle in case of probe failure
- Ambient temperature display
- Shows all alarms (displayed as text, no codes)
- 3-level password protected
- Battery level indication
- Integrated memory for 20 years
- Display text available in different languages

Accessories (optional):
- $C0_2$ back up
- GSM alarm module
- Temperature chart recorder
- Racks and boxes

Type	Capacity Litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	Weight kg	Temp. range max. °C	PK	Cat. No.
ULTF 80	71	390 x 390 x 450	552 x 648 x 850	53	-40...-86°C	1	**9.699 320** 1
ULTF 220	189	760 x 440 x 635	920 x 695 x 885	64	-40...-86°C	1	**9.699 321**
ULTF 320	284	1100 x 440 x 630	1262 x 698 x 885	76	-40...-86°C	1	**9.699 322**
ULTF 420	368	1400 x 440 x 630	1562 x 698 x 885	88	-40...-86°C	1	**9.699 323** 2

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9.699 323

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9.883 664

Ultra low temperature freezer, ULTRA.GUARD™ up to -86°C

BINDER

The Ultra low temperature freezer ULTRA.GUARD™ secures a long-term storage of samples at -86°C. ULTRA.GUARD™ is based on a multi-stage security concept, which offers everything that laboratory staff want from reliable operation to ease of use and system integration to the emergency exchange service. Voltage 230V 1N, ~50Hz.

- Temperature range: -40°C to -86°C
- GUARD.CONTROL opens the freezer by pressing a button
- GUARD.CONTROL RFID technology personalizes access and records user traffic
- DATA.SECURE Data logger with USB connection
- 5 year warranty

Shelves are included. Racks and boxes must be ordered separately.

Type	Capacity Litres	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Weight kg	Temp. range max. °C	PK	Cat. No.
UF V 500	483	900 x 935 x 1970	619 x 600 x 1300	320	-40 to -86°C	1	**9.883 663**
UF V 700	711	1200 x 935 x 1970	911 x 600 x 1300	360	-40 to -86°C	1	**9.883 664** 3

1 Portable freezer DP-80 CRYO PORTER, up to -80°C

NEW!

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Arctiko

The DP-80 ensures direct access to your samples at your desk. Transport your probes at -80°C e.g. with a car.

- Portable Freezer up to -80°C
- Stirling technology, no compressor, no refrigerant
- Temp. stability ±0.2°C
- Power connection 12V or 230V
- Max volume one aluminium block (please order separately)
- Can only be used with aluminium block

Temperature range:	0°C to -80°C
Dimensions exterior (WxDxH)	230 x 262 x 390mm
Power supply:	12/100 - 240 V 50/60 Hz
Weight:	10 kg

Description	PK	Cat. No.
DP-80 Cryo Porter	1	**6.262 040**
Aluminium Block, 40 wells for Vials, Cryotubes 1,8ml	1	**6.262 447**
Aluminium Block, 96 wells for PCR-tubes 0,2ml	1	**6.265 273**
Aluminium Block, 48 wellls PCR-tubes 0,5ml	1	**6.265 274**
Aluminium Block, 48 wells Sample-tubes 1,5ml	1	**6.265 275**
Aluminium Block, 40 wells, Cryotubes 2,0ml	1	**6.265 276**
Aluminium Block, one large compartment	1	**6.265 277**

Laboratory chest freezers up to -45°C

Liebherr

Liebherr's low temperature -45°C chest freezers are designed 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 freezers are the ideal solution. Offering supreme temperature stability as well as temperature uniformity within the units, they ensure the safe, cold storage of specimens, biological samples and other substances. The low temperature chest freezers are available in three sizes and are equipped with a precision digital controller, which guarantees maximum temperature accuracy. Having a volt-free contact and an RS 485 serial interface, Liebherr's low temperature chest freezers can also be connected to a central alarm and documentation system, which provides additional safety for the samples within the unit.

Features:

- Precision electronic controller with digital temperature display
- Interior light integrated in the lid
- Hygienic, easy-to-clean inner liner
- Profiled aluminium handle
- Reinforced lid hinges

Security package:

- Visual and audible temperature and lid-open alarm
- Visual power failure alarm when mains power returns
- Integrated data memory with min/max temperatures
- 1-point-calibration
- Volt-free contact for alarm forwarding to an external remote warning system
- RS 485 interface enabling external documentation
- Access port for an external temperature sensor
- Stop-frost-system to prevent the freezer from steaming up and easy opening
- Maximum temperature stability and consistency according to IEC 60068-3

Type	Capacity Litres	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Energy consumption kWh (24h)	Temp. range max. °C	PK	Cat. No.	
LGT 2325	215	1132 x 760 x 919	889 x 410 x 630	2.256	-10°C ... -45°C	1	**9.698 694**	2
LGT 3725	365	1373 x 808 x 919	1170 x 500 x 650	2.928	-10°C ... -45°C	1	**9.698 695**	3
LGT 4725	459	1648 x 808 x 919	1445 x 500 x 650	4.352	-10°C ... -45°C	1	**9.698 696**	4

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9.698 694

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9.698 695

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9.698 696

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1 Chest and Upright Freezers, up to -40/-80°C

GFL

Microprocessor controlled temperature regulation
The microprocessor controlled temperature regulator, with digital display of actual and set temperature values operates without maintenance and is shock-resistant. The regulator is battery-backed by constantly charged NiCd battery that maintains the display of the actual temperature and the alarm functions for 60 hours in the event of mains failure. During operation on the mains, the battery level and the set temperature can be checked by touch control. With RS-232 interface, compatible e.g. to the PC software labworldsoft®. Alternative data transfer formats, RS-422 and RS-485, are also available.

Energy-saving cooling unit
The maintenance-free cooling unit, equipped with hermetically sealed, high-performance compressors, ensures short cooling times. The refrigerant is non-flammable. The all around insulation comprises an up to 150mm thick, seamless and diffusion-protected foamed-in polyurethane layer.

Ex-proof inside cabinets
The inside cabinets are manufactured entirely out of stainless steel (material no 1.4301), are corrosion resistant and easy to clean. They are free from ignition sources, an extremely important aspect when storing low flash-point media and are ex-proof in accordance with BG-I 850-0, version 02/2009. The cooling air outlet is located at the front of the unit, meaning that explosive gases can not be drawn in. The magnetic sealing system reliably prevents freezing of the lid or door seals.

Controlled access
The lids and doors of the freezer units can be locked, a control panel provides controlled access through the use of a key-operated security switch.

Multiple alarm messages
All deep freezers include a potential-free, changeover contact for connection to an internal alarm system or to the central I&C system as standard. They are also provided with a connection for a piezoelectric buzzer. In the event of a fault an optical and audible alarm is issued. The cause for the fault is shown in the display as a defined code number. The limit values for alarms (1-20 K) for excess and under temperature can be set individually by the user. Optional suppressions of alarm messages can also be set by the user.

Powder-coated housing
The housings are made of powder-coated, electrolytically galvanized sheet steel. As standard, GFL deep freezers are mounted on double wheel, swivel castors, two of which can be locked, for transport to the place of use and for mobile applications (castors for the sub-counter Deep Freezers 6441 and 6481).

Accessories appropriate for the task at hand and storage system avaialble on request. Customised equipment available on request, for tasks that demand special solutions for storage.

Additional facilities such as safety cooling systems, manifolds for CO_2 safety cooling, water cooling, check log, set of drawers and shelves for freezers, storage system and special designs on request.

2

2 Chest Freezers up to -40°C/-85°C

GFL

All chest lids are balanced and easy to operate. Chest freezers with capacities of 220 to 500 litres are also equipped with additional insulating cover panels on the cabinet.

Type	Capacity Litres	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Weight kg	Rating kW	Temp. range °C	PK	Cat. No.
6340	70	836 x 685 x 1055	600 x 350 x 340	100	0.60	0 to -40	1	**9.699 340**
6341	30	700 x 600 x 905	500 x 305 x 200	70	0.60	0 to -40	1	**9.699 341**
6342	100	960 x 790 x 1080	710 x 440 x 340	180	0.60	0 to -40	1	**9.699 342**
6343	220	1450 x 870 x 1040	840 x 460 x 580	210	0.60	0 to -40	1	**9.699 343**
6344	300	1610 x 910 x 1060	1000 x 500 x 600	240	0.60	0 to -40	1	**9.699 344**
6345	500	2060 x 1000 x 1060	1440 x 580 x 600	310	1.20	0 to -40	1	**9.699 345**
6380	70	836 x 685 x 1055	600 x 350 x 340	120	1.20	-50 to -85	1	**9.699 380**
6381	30	700 x 600 x 905	500 x 305 x 200	90	1.20	-50 to -85	1	**9.699 381**
6382	100	960 x 790 x 1080	710 x 440 x 340	200	1.20	-50 to -85	1	**9.699 382**
6383	220	1450 x 870 x 1040	840 x 460 x 580	230	1.20	-50 to -85	1	**9.699 383**
6384	300	1610 x 910 x 1060	1000 x 500 x 600	260	1.20	-50 to -85	1	**9.699 384**
6385	500	2060 x 1000 x 1060	1440 x 580 x 600	330	1.20	-50 to -85	1	**9.699 385**

1 2 Upright Freezers up to -40°C/-85°C

GFL

Upright freezers of 300 litres and 500 litres are equipped with three inner compartments (H 353mm), each provided with an insulating door. Optional shelves can also be installed in the compartments. On request, the cabinet can also be equipped with a set of drawers instead of the inside compartments.

After removing the cover plate, the sub-counter Deep Freezers 6441 and 6481 can be built into a laboratory bench.

Type	Capacity Litres	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Weight kg	Rating kW	Temp. range °C	PK	Cat. No.
6441	96	900 x 770 x 890	430 x 430 x 510	140	0.45	0 to -40	1	**9.699 501**
6443	300	990 x 865 x 1940	600 x 450 x 1100	240	0.60	0 to -40	1	**9.699 503**
6445	500	990 x 1175 x 1940	600 x 760 x 1100	310	0.60	0 to -40	1	**9.699 504**
6481	96	900 x 770 x 890	430 x 430 x 510	150	0.90	-50 to -85	1	**9.699 502**
6483	300	990 x 865 x 1940	600 x 450 x 1100	270	1.20	-50 to -85	1	**9.699 495**
6485	500	990 x 1175 x 1940	600 x 760 x 1100	340	1.20	-50 to -85	1	**9.699 497**

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3 Laboratory refrigerators and freezers ES series, up to +1/-30°C

NEW!

Thermo Scientific

Designed for routine sample protection where laboratory space is limited.
Our new ES Series lab refrigerators, freezers and combination refrigerator/freezer are the ideal choice when there is limited space in the laboratory.
All ES Series models deliver the sample protection, performance, security and quality you have come to depend on from us:

- Integrated controller
- Digital temperature display
- High and low temperature alarms
- Standard door locks, lockable
- Low energy consumption
- Access ports
- CE marked
- Defrost type automatic for temperature range +1 ... +11°C and manual for temperature range -10 ... -30°C

3

Equipment

151R-AEV-TS/151R-AEW-TS: 3 shelves, 1 basket
288R-AEV-TS/288R-AEW-TS: 5 shelves, 1 basket
151F-AEV-TS/151F-AEW-TS: 3 shelves
232F-AEV-TS/232F-AEW-TS: 2 shelves, 3 baskets
263C-AEV-TS/263C-AEW-TS: 3 shelves, 2 half baskets (R) / 1 shelf 2 baskets (F)

Type	Capacity l	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Energy consumption kWh (24h)	Temp. range max. °C	PK	Cat. No.
151R-AEV-TS*	151	595 x 610 x 845	500 x 450 x 705	0,6	+1 ... +11	1	**9.536 211**
151R-AEW-TS**	151	595 x 610 x 845	500 x 450 x 705	0,6	+1 ... +11	1	**9.536 212**
288R-AEV-TS*	288	595 x 640 x 1565	480 x 445 x 1382	0,5	+1 ... +11	1	**9.536 213**
288R-AEW-TS**	288	595 x 640 x 1565	480 x 445 x 1382	0,5	+1 ... +11	1	**9.536 214**
151F-AEV-TS*	151	595 x 610 x 845	500 x 450 x 705	1,5	-10 ... -30	1	**9.536 215**
151F-AEW-TS**	151	595 x 610 x 845	500 x 450 x 705	1,5	-10 ... -30	1	**9.536 216**
232F-AEV-TS*	232	595 x 640 x 1565	437 x 430 x 1300	1,0	-10 ... -30	1	**9.536 217**
232F-AEW-TS**	232	595 x 640 x 1565	437 x 430 x 1300	1,0	-10 ... -30	1	**9.536 239**
263C-AEV-TS*	159 (R) / 109 (F)	545 x 610 x 1675	457 x 450 x 725 (R) / 408 x 415 x 670 (F)	0,9	+1 ... +11 (R) / -10 ... -30 (F)	1	**9.536 219**
263C-AEW-TS**	159 (R) / 109 (F)	545 x 610 x 1675	457 x 450 x 725 (R) / 408 x 415 x 670 (F)	0,9	+1 ... +11 (R) / -10 ... -30 (F)	1	**9.536 220**

*EU plug, **UK plug
(R) refrigerated area, (F) freeze area

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9.698 686

Laboratory refrigerators and freezers LKPv/LGPv with Profi electronic controller, up to -10°C

NEW!

Liebherr

The laboratory appliances incorporating Profi electronic controllers offer many advantages. High-grade materials, high-performance components and accurate workmanship right down to the last detail ensure the high quality of the Liebherr appliances. Wherever huge storing capacity is required the large-scale laboratory appliances with Profi electronic controller are the ideal solution.

Features:
- Dynamic cooling system
- Profi electronic controller with integrated real-time clock
- Castors, thereof two with brake
- Integrated, ergonomic handle
- Plastic-coated grid shelves and CNS inner liner
- Glass door (..23) with ceiling light (seperately switchable)
- Hot-gas defrost system for very short defrost cycles

Security package:
- Integrated data memory (Alarm events and temperature profile)
- Visual and audible temperature and door alarm
- Mains-independent power supply of the electronic controller
- Infrared and RS 485 interface enabling external documentation
- Volt-free contact for alarm forwarding to an external remote warning system
- Maximum temperature stability and consistency according to IEC 60068-3
- 3-point calibration
- Access port for an external temperature sensor
- Lock

Type	Capacity Litres	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Energy consumption kWh (24h)	Temp. range max. °C	PK	Cat. No.
LKPv 1423	1427	1430 x 830 x 2150	1250 x 700 x 1550	3,923	0 ... +16	1	**6.264 055**
LKPv 6523	601	700 x 830 x 2150	520 x 700 x 1550	2,731	0 ... +16	1	**9.698 395**
LKPv 1420	1427	1430 x 830 x 2150	1250 x 700 x 1550	2,297	-2 ... +16	1	**9.698 688**
LKPv 6520	601	700 x 830 x 2150	520 x 700 x 1550	1,775	-2 ... +16	1	**9.698 686** 1
LGPv 1420	1427	1430 x 830 x 2150	1250 x 700 x 1550	8,887	-10 ... -26	1	**9.698 693**
LGPv 6520	601	700 x 830 x 2150	520 x 700 x 1550	4,715	-10 ... -35	1	**9.698 692**
LKPv 8420	856	790 x 980 x 2150	620 x 850 x 1550	2,4	-2 ... +16	1	**9.698 697**
LGPv 8420	856	790 x 980 x 2150	620 x 850 x 1550	5,5	-10 ... -35	1	**9.698 698**

2

2 Laboratory refrigerators and freezers GPS series up to +1°C/-25°C

Thermo Scientific

Medium and large capacities designed for routine sample protection.
With capacities ranging from space-saving 400L to spacious 1400L, our new GPS Series lab refrigerators and freezers meet the demands of today's laboratory requirements. All models contain sample protection features designed for the rigorous demands of the laboratory environment.
- Integrated controller
- Digital temperature display
- High and low temperature alarms
- Standard door locks, lockable
- Standard casters
- Choice of glass or solid door (refrigerators only)
- Automatic defrost
- Access ports
- CE marked

Equipment
R400-/R700-/F400-/F700-: 3 shelves
R14X-/F14X-: 6 shelves

Type	Capacity Litres	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Energy consumption kWh (24h)	Temp. range max. °C	doors	PK	Cat. No.
R400-SAEV-TS*	400	600 x 600 x 1900	480 x 500 x 1150	3.1	+1 ... +11	solid	1	**9.536 221**
R400-SAEW-TS**	400	600 x 600 x 1900	480 x 500 x 1150	3.1	+1 ... +11	solid	1	**9.536 222**
R400-GAEV-TS*	400	600 x 600 x 1900	480 x 500 x 1150	3.6	+1 ... +11	glass	1	**9.536 223**
R700-SAEV-TS*	700	790 x 860 x 1980	600 x 660 x 1300	3.4	+1 ... +11	solid	1	**9.536 225**
R700-SAEW-TS**	700	790 x 860 x 1980	600 x 660 x 1300	3.4	+1 ... +11	solid	1	**9.536 226**
R700-GAEV-TS*	700	790 x 860 x 1980	600 x 660 x 1300	5.3	+1 ... +11	glass	1	**9.536 227**
R700-GAEW-TS**	700	790 x 860 x 1980	600 x 660 x 1300	5.3	+1 ... +11	glass	1	**9.536 228**
R14X-SAEV-TS*	1400	1400 x 800 x 1980	1300 x 660 x 1300	2.6	+1 ... +11	solid	1	**9.536 229**
R14X-SAEW-TS**	1400	1400 x 800 x 1980	1300 x 660 x 1300	2.6	+1 ... +11	solid	1	**9.536 230**
R14X-GAEV-TS*	1400	1400 x 800 x 1980	1300 x 660 x 1300	7.7	+1 ... +11	glass	1	**9.536 231**
R14X-GAEW-TS**	1400	1400 x 800 x 1980	1300 x 660 x 1300	7.7	+1 ... +11	glass	1	**9.536 232**
F400-SAEV-TS*	400	600 x 600 x 1900	480 x 500 x 1150	10.1	-12 ... -25	solid	1	**9.536 233**
F400-SAEW-TS**	400	600 x 600 x 1900	480 x 500 x 1150	10.1	-12 ... -25	solid	1	**9.536 234**
F700-SAEV-TS*	700	790 x 860 x 1980	600 x 660 x 1300	10.6	-12 ... -25	solid	1	**9.536 235**
F700-SAEW-TS**	700	790 x 860 x 1980	600 x 660 x 1300	10.6	-12 ... -25	solid	1	**9.536 236**
F14X-SAEV-TS*	1400	1400 x 800 x 1980	1300 x 660 x 1300	12.0	-12 ... -25	solid	1	**9.536 237**

*EU plug, **UK plug

Laboratory refrigerators LKv/LKUv, up to + 3°C and laboratory fridge-freezer LCv, up to +3/-30°C

NEW!

Liebherr

Wherever floor space is limited or under-worktop installation is planned, the laboratory refrigerators with Comfort electronic controllers are the ideal solution. The range comprises two freestanding (LKv) and two underworktop (LKUv) laboratory refrigerators, in each case with glass door and solid door versions. The temperature can be set from +3°C to +8°C. The forced-air cooling system in conjunction with the precision electronic controller ensures temperature consistency and uniform temperature distribution in the interior. The LCv 4010 laboratory fridge-freezer, which has two separately cooling circuits, further extends the range of compact laboratory appliances.

Features:
- Dynamic cooling system
- Precision electronic controller with digital temperature display
- Glass door (..12) with ceiling light (separately switchable)
- Convenient, clear view drawers (LCv 4010)
- Self-closing door with integrated lock

Security package:
- Visual and audible temperature and door alarm
- Visual power failure alarm when mains power returns
- Integrated data memory with min/max temperatures
- Volt-free contact for alarm forwarding to an external remote warning system
- RS 485 interface enabling external documentation
- Access port for an external temperature sensor
- Maximum temperature stability and consistency according to IEC 60068-3

Type	Capacity l	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Energy consumption kWh (24h)	Temp. range max. °C	PK	Cat. No.	
LKv 3913*	360	600 x 615 x 1840	440 x 435 x 1635	1,315	+3 ... +16	1	**7.940 344**	1
LKv 3910	360	600 x 615 x 1840	440 x 435 x 1635	0,846	+3 ... +16	1	**9.698 683**	2
LKUv 1613*	141	600 x 615 x 820	440 x 435 x 670	1,010	+3 ... +16	1	**9.698 699**	3
LKUv 1610	141	600 x 615 x 820	440 x 435 x 670	0,747	+3 ... +16	1	**9.698 680**	4
LCv 4010 fridge	254/	600 x 615 x 2000	440 x 435 x 1105	1,8	+3 ... +16	1	**7.627 795**	5
freezer	107		431 x 435 x 597		-9 ... -30			

*Glass door

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7.940 344

2

9.698 683

3

9.698 699

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9.698 680

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7.627 795

6 Refrigerator drawers AluCool® including dividers

H+H System

High quality aluminium drawers including frame on smooth-running wheels with pull-out stop. Includes flexible dividing system with card pockets. Depending on the specific need, the dividing system allows the storage of drugs, blood and plasma with a space saving of up to 30%. With a few simple steps, the flexible dividers are taken out and the drawer can be cleaned easily and hygienically.

Typ A:
FKS 1800/1802/2600 /2602/3600/3602; FKU 1800/1805; UKS 1800/1801/2600/2602/3600/3602/3650; FKEx 1800/2600/3600

Typ B:
FKUv 1610/1612/1660/1662; LKexv 3910; LKv 3910/3912; LKUexv 1610; LKUv 1610/1612

The AluCool® drawers can be retrofitted at any refrigerator - to save and optimise valuable space.
Tool-free assembly without damaging the refrigerator interior.

Division: 3 channels with 12 universal dividers. Width of the channels can be changed in 1cm steps.

6


Refrigerator internal dimensions (W x D) mm	Type	PK	Cat. No.
441 x 513	A	1	**9.698 980**
435 x 440	B	1	**9.698 981**

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1 2 Spark-free laboratory refrigerators

NEW!

AQUALYTIC

The German guidelines "Working Safely in Laboratories BG-I 850-0" stipulates that interior space must be explosion-protected where hazardous, explosive atmospheres can develop (for example, due to the presence of flammabel liquids). Such explosive atmospheres can be created by stored flammable liquids, for example.
The laboratory refrigerators by Aqualytic® meet these requirements. The interiors are free from sparking sources and are therefore explosion-proof. With glass shelves.
Variable temperature control from +1°C to 15°C. Temperature is continuously controlled by thermostat.
The digital temperature display enables the interior temperature to be easily read.

Capacity l	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Weight kg	Temp. range max. °C	PK	Cat. No.
160	600 x 600 x 860	513 x 441 x 702	41.00	+1 ... +15	1	**9.699 005**
220	600 x 610 x 1250	470 x 440 x 1062*	53.00	+1 ... +15	1	**9.699 006**
300	600 x 610 x 1640	470 x 440 x 1452*	64.00	+1 ... +15	1	**9.699 007**
490	750 x 730 x 1640	600 x 460 1452*	84.00	+1 ... +15	1	**9.699 008**

* with "fan stop" function, which switches the fan off when the door is opened.

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3 4 Spark-free laboratory refrigerators LKexv

NEW!

Liebherr

Laboratory refrigerators with dynamic cooling and spark-free interior.
Designed especially for storing explosive and highly flammable substances. The interiors of the LKexv models meet all the safety requirements of the EU Directive 94/9EC (ATEX 95).
The appliances excel with a large capacity and rugged design. The cooling temperature is continuously adjustable from +1°C to +15°C with the aid of the thermostat integrated in the control panel.
Features:
Flexible, hygienic interior, Glass shelves, Water tray, Lock, Reversible door hinges
- Certified according to ATEX 95

Type	Capacity Litres	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Energy consumption kWh (24h)	PK	Cat. No.
LKexv 2600	240	600 x 610 x 1250	470 x 440 x 1062	0.786	1	**6.264 468**
LKexv 3600	333	600 x 610 x 1640	470 x 440 x 1452	0.947	1	**7.671 880**
LKexv 5400	554	750 x 730 x 1640	600 x 560 x 1452	0.983	1	**6.262 810**

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9.698 685

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9.698 682

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7 Spark-free laboratory refrigerators and freezers LKexv/LKUexv/LGex/LGUex/LCexv with Comfort electronic controller

Liebherr

The range of laboratory appliances with Comfort electronic controllers comprises two refrigerators, two freezers and one frigde-freezer combination with spark-free interior, especially for storing explosive and highly flammable substances - for instance in the chemical industry or in special laboratories. The interiors of the appliances are in compliance with the safety requirements of the EU Directive 94/9/EC (ATEX 95) and have been tested by electro-suisse SEV, the ATEX conformity evaluation organisation.

- Dynamic cooling system (refrigerators), static cooling system (freezers)
- Precision electronic controller with digital temperature display
- Flexible, height-adjustable glass-shelves
- Convenient, clear view drawers (freezers)
- Self-closing door with integrated lock

- Visual and audible temperature and door alarm
- Visual power failure alarm when mains power returns
- Integrated data memory with min/max temperatures
- Volt-free contact for alarm forwarding to an external remote warning system
- RS 485 interface enabling external documentation
- Access port for an external temperature sensor
- Maximum temperature stability and consistency according to IEC 60068-3

Type	Capacity l	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Energy consumption kWh (24h)	Temp. range max. °C	PK	Cat. No.	
LKexv 3910	360	600 x 615 x 1840	440 x 435 x 1635	0,865	+3 ... +16	1	**9.698 685**	5
LKUexv 1610	141	600 x 615 x 820	440 x 435 x 670	0,863	+3 ... + 16	1	**9.698 682**	6
LGex 3410	310	600 x 615 x 1840	420 x 400 x 1587	1,309	-9 ... -30	1	**9.698 691**	
LGUex 1500	139	600 x 615 x 820	454 x 450 x 663	0,926	-9 ... -16	1	**9.698 690**	
LCexv 4010 fridge	254/	600 x 615 x 2000	440 x 435 x 1105	1,8	+3 ... +16	1	**9.698 677**	
freezer	107		431 x 435 x 597		-9 ... -30			

Precision and innovation for professional laboratory applications

- Menu-guided Profi electronic controller with user-friendly text display for precise temperature setting
- Visual and audible temperature-, door open- and power-failure alarms
- Integrated data-logger records alarm events and internal temperatures
- Integrated 12 Volt battery maintains data-logger and alarm functions of the electronic controller in case of mains power failure
- Infrared data transfer, RS 485 serial interface and volt-free contact for external temperature and alarm documentation
- 3-point calibration for high-precision temperature control

www.lab.liebherr.com

LIEBHERR

Quality, Design and Innovation

1

9.580 205

Flake ice maker with reservoir, air cooled, RF Series

Manitowoc

Due to its specific properties and large surface for rapid cooling, flake ice can be used in different areas of food production or laboratories and could be applied directly to the products to be cooled. In this particularly hygienic and economical method almost the total amount of used water is converted into ice. Manitowoc offers a variety of different ice flakers. Beside mountable devices with reservoir, there are modular ice machines with separate magazine and split units with external condenser.

- Vertical condenser cylinder with internal worm gear system
- HACCP compliant
- Energy-saving production
- Convenient door for easy access
- Separate power switch
- Ready to plug in
- Stainless Steel
- Warranty: 24 months, plus 12 months for parts
- Deionized water suitable as standard at no extra charge

Included: Adjustable stainless steel feet 110 to 150mm, water supply kit, drain kit, ice scoop.

Specifications

Cooling: Air (A)
Refrigerant: R 404 A
Power supply *: 230V, 50Hz
* Other voltages on request

Type	Output kg/24 hrs. up to kg	Rating W	Capacity kg	Dimensions (W x D x H) mm	Weight kg	PK	Cat. No.
RF 0244 A	82	703	18	500 x 660 x 842	71	1	**9.580 201**
RF 0266 A	82	703	27	500 x 660 x 952	76	1	**9.580 202**
RF 0385 A	151	1026	40	738 x 690 x 1003	102	1	**9.580 203**
RF 0399 A	151	1026	54	738 x 690 x 1172	109	1	**9.580 204**
RF 0644 A	312	3004	54	741 x 678 x 1167	117	1	**9.580 205** 1

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9.580 006

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9.580 045

Flake ice makers with/without reservoir, air-cooled

NEW!

Scotsman / HIBU

Manufactured under DIN ISO 9001 conditions. For solid, even, ice flakes. Hygienic, 0.5°C cold ice. With stainless steel outer casing and air-cooled compressor.

- AF models without drain pump
- EF models standard with drain pump. The drain pump allows an installation or set-up without any drainage height or distance problems. Place your ice maker just where it is needed even lower than the actual drain outlet.
- MF models without reservoir (please order separately).

Also available with water-cooled compressor. Alternative models availlable on request. A specially built model for laboratory-grade water is available on request.

2 year warranty.

Type	Output kg/24 hrs. up to kg	Capacity kg	Rating W	Width mm	Length mm	Height mm	PK	Cat. No.
Ice flake maker AF 80	70	25	330	626	535	933	1	**9.580 006** 2
Ice flake maker AF 103	108	30	400	622	592	1126	1	**9.580 040**
Ice flake maker AF 124	120	40	600	605	950	795	1	**9.580 041**
Ice flake maker AF156	160	60	650	605	950	1006	1	**9.580 042**
Ice flake maker AF 206	200	60	760	605	950	1006	1	**9.580 043**
Ice flake maker EF 103	108	30	400	622	592	1006	1	**9.580 045** 3
Ice flake maker EF 124	120	40	600	605	950	795	1	**9.580 046**
Ice flake maker EF 156	160	60	650	605	950	1006	1	**9.580 047**
Ice flake maker EF 206	200	60	760	605	950	1006	1	**9.580 048**
Ice flake maker MF 26*	120		500	533	560	525	1	**9.580 009**
Ice flake maker MF 36*	200		760	533	560	525	1	**9.580 016**
Reservoir B 193 for MF 26/MF 36		90		800	560	940	1	**9.580 010**
Reservoir B393 for MF 26/MF 36 incl. cover adapter		150		825	765	900	1	**9.580 049**
Conversion kit / Laboratory equipment for de-ionised water							1	**6.222 851**

* without reservoir

Scoops please see page 126.

1 Dry ice machines SnowPack®

Bürkle

Suitable for all European siphon carbon dioxide cylinders with valve (W 21.80 x 1¼" acc. to DIN 477, no. 6).

Applications: hospitals, universities, schools, laboratories, chemical industry, materials testing.
Examples of use: lowering the temperature in cooling baths or cold traps, pre-cooling tissue samples, ensuring safe transport or embedding biological substances, freezing blood and tissue samples, studies in chemistry, physics and materials technology, etc.

- Produces dry ice tablets at -79°C
- operates without power
- taint and odour free

Gassing period (per tablet): either 0.5min. or 1min approx.
Tablets per 22kg bottle (dependent on ambient temperature and pressure): either 90 or 16 pieces approx.


1

Tablet weight	Diam.	Height	PK	Cat. No.
g	mm	mm		
50	50	30	1	**9.253 006**
250	80	60	1	**9.253 008**

Cool packs Icecatch®

NEW!

Icecatch

Icecatch® cool packs for temperature sensitive products used in the pharmaceutical, biotech, medical and food industries. Icecatch® cool packs distinguish themselves through the following specific features:
- Reliable cold storage through the use of immobilised coolant
- For repeat usage due to the use of robust PA/PE film
- Disposal with the domestic trash due to the use of non-poisonous ingredients
- Unobjectionable use in the pharmaceutical and food industries
- Phase transition 0°C

Icecatch®-Gel
- Spreading of heat absorption around the 0°C range through the use of immobilised cooling gel
- Optimal price/heat absorption capacity relationship
- Filled with cooling gel

Icecatch®-Solid
- Maximum dimensional stability during the freezing process through the use of hard foam
- Filled with hard foam

Icecatch®-Solid Insulated 2 - 8°C
- A perfect cool pack in combination with our System packaging for the +2°C up to +8°C transport
- Maximum dimensional stability during the freezing process through the use of hard foam, coolant and integrated isolation layer
- Filled with hard foam and isolation layer

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9.695 000


3

9.695 007

Type	Description	Weight g	Dimensions (W x D x H) mm	PK	Cat. No.
Icecatch®-Gel	with cooling gel	90	90 x 110 x 20	120	**9.695 000** 2
Icecatch®-Gel	with cooling gel	170	90 x 150 x 20	80	**9.695 001**
Icecatch®-Gel	with cooling gel	230	90 x 180 x 20	60	**9.695 002**
Icecatch®-Gel	with cooling gel	460	140 x 190 x 30	32	**9.695 003**
Icecatch®-Gel	with cooling gel	690	140 x 240 x 40	24	**9.695 004**
Icecatch®-Solid	with hard foam/cool medium	500	195 x 130 x 20	27	**6.262 659**
Icecatch®-Solid	with hard foam/cool medium	630	105 x 180 x 40	12	**6.262 660**
Icecatch®-Solid	with hard foam/cool medium	850	105 x 230 x 38	15	**9.695 005**
Icecatch®-Solid	with hard foam/cool medium	1100	280 x 190 x 25	11	**9.695 006**
Icecatch®-Solid Insulated	with hard foam/cool medium and isolation layer	500	195 x 130 x 23	24	**9.695 008**
Icecatch®-Solid Insulated	with hard foam/cool medium and isolation layer	1100	280 x 190 x 30	10	**9.695 007** 3
Icecatch®-Solid Insulated	with hard foam/cool medium and isolation layer	1700	280 x 190 x 45	7	**9.695 009**

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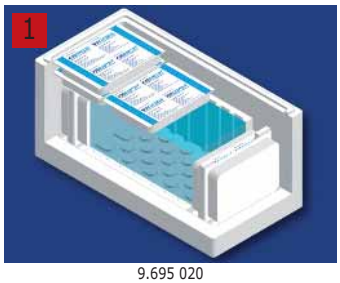
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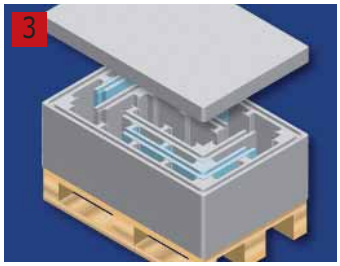
9.695 023

System packaging Icecatch® made of EPS

NEW!

Icecatch

This system solution, is a combination of a specific EPS Box and the cooling element Icecatch®-Solid Insulated (Cat-No. 9.695 007). It is the perfect medium for the transport of temperature sensitive products in the spectrum of +2°C up to +8°C.
In this solution there is no need of a combination of variably precondition cooling elements. By the use of an easily convertible packaging instruction the packaging process is simplified and wrong assembly is excluded.

- Easy handling, no "thawing", no additional isolation material
- Modular system in terms of temperature an run time requirements
- Prequalified system solution consisting of the EPS Box and Icecatch®-Solid Isolated 2°C - 8°C
- Immediate availability

Description	Dimensions (W x D x H) mm	Int. dimensions (W x D x H) mm	PK	Cat. No.
System packaging 15l/22l	670 x 390 x 385	380 x 230 x 175 / 550 x 230 x 175	1	**9.695 020** 1
System packaging 12.8l	365 x 270 x 250	305 x 210 x 200	1	**9.695 021** 2
System packaging 5.4l	365 x 270 x 240	305 x 210 x 85	1	**9.695 022**
System packaging 33l	11170 x 770 x 795	960 x 560 x 620	1	**9.695 023** 3

4


4 Isolating box with lid, Neopor®

Storopack Deutschland

Neopor® is characterised by its outstanding hot and cold thermal insulation properties (a further 20% over Styropor), its high compressive strength, shock absorbing properties, low weight and insensitivity to moisture. It also contains infrared absorbers and reflectors. Compared to conventional insulating materials, they diminish heat conductivity and lend the material its characteristic silver-grey color.

Description	Capacity	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	PK	Cat. No.
Isolating box with lid	12,5 l	350 x 350 x 300 mm	250 x 250 x 200 mm	1	**7.656 680**
Isolating baffle ring	6,2 l	350 x 350 x 100 mm	250 x 250 x 100 mm	1	**7.656 681**

5


5 Nalgene Freezing container Mr. Frosty, PC

Thermo Scientific

With 120mm diameter screw cap in blue PE-HD, vial holder made of white PE-HD. Suitable for 18 x 1.2/2.0ml cryovials. Foam interior. Cooling rate 1°C/min. Tubes can be easily removed. Each aperture has a moulded number for identification. Stackable.

Diam. mm	Height mm	For tubes ml	No. of tubes	PK	Cat. No.
117	86	1.0-2.0	18	1	**9.400 945**
117	151	3.6	12	1	**9.400 990**
117	151	4.5-5.0	12	1	**9.400 991**

6


6 Cool Containers True North®, PU

Heathrow Scientific

Rigid polyurethane container provides durability for chilling your temperature sensitive samples. Excellent insulation properties for ultra cold. Use with ice, dry ice and ice-salt slurries, etc. For low temperature use down to -196°C. Minimize evaporation loss with close fit lid. Easily remove with comfortable recessed knobs. Keyed lid and base fit together to conveniently store lid under base. With spout and ergonomic handles for safe handling. Stackable.

Capacity litres	Dimensions (l x w x h) mm	Colour	PK	Cat. No.
4	234 x 181*	black	1	**9.010 691**
1	267 x 195.5 x 114	green	1	**9.010 692**
4	381 x 254 x 182	blue	1	**9.010 693**
9	521 x 292 x 163	red	1	**9.010 694**

*(dia. x H)

Insulated container Magic Touch 2™

NEW!

Bel-Art Products

Superior insulating properties combined with high chemical resistance make Magic Touch 2™ laboratory ice buckets and pans compatible not only with wet ice, but also with ultra-low temperature materials including dry ice, ice-salt mixtures, dry ice solvent mixtures, or liquid nitrogen.
Their lightly textured non-slip finish and raised edge provides secure transport and a stylish look.

Expanded urethane icewares are
- lightweight
- durable
- non-sweating
- impervious to moisture and odors
- able to withstand a wide temperature range: -196°C to 100°C
- provided with a convenient pour spout, drip-proof rims and fill line
- furnished with perfect fitting lid
- easy and secure to stack because of a keyed lid and base

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9.010 632

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9.010 635

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9.010 636

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9.010 641

Type	Capacity L	Dimensions mm	Colour	PK	Cat. No.
Mini Ice Pan	1.0	(W x D x H) 183 x 183 x 116	blue	1	**9.010 632** 1
Mini Ice Pan	1.0	(W x D x H) 183 x 183 x 116	red	1	**9.010 633**
Midi Ice Pan	4.0	(W x D x H) 304 x 229 x 200	blue	1	**9.010 638**
Midi Ice Pan	4.0	(W x D x H) 304 x 229 x 200	red	1	**9.010 639**
Maxi Ice Pan*	9.0	(W x D x H) 420 x 303 x 200	blue	1	**9.010 640**
Maxi Ice Pan*	9.0	(W x D x H) 420 x 303 x 200	red	1	**9.010 641** 4
Handy Ice Bucket	2.5	(diam. x H) 268 x 164	blue	1	**9.010 634**
Handy Ice Bucket	2.5	(diam. x H) 268 x 164	red	1	**9.010 635** 2
N'Icer Ice Bucket	4.0	(diam. x H) 268 x 212	blue	1	**9.010 636** 3
N'Icer Ice Bucket	4.0	(diam. x H) 268 x 212	red	1	**9.010 637**

* without lid

Cryo-Safe™ Coolers

NEW!

Bel-Art Products

Use to protect samples on the bench, during transport, or in freezers with defrost cycle and fluctuating temperatures
Polycarbonate. A non-toxic freezing gel is isolated within the walls of the cooler, guaranteeing that labels or marks on the vials or tube are not damaged.
- The indexed and transparent (9.401 090, 9.401 091, 9.401 092) or gel-filled (9.401 093, 9.401 094) polycarbonate lid shows tube location and matches locations printed on the cooler
- Side handles (9.401 090, 9.401 091) or a wire handle for easy carrying
- Coolers can be stacked to save space and maximize freezer volume
- Rubber feet to prevent slipping
- All polycarbonate cooler body easy to clean

Store at -20°C for 24 hours prior to use — for -15°C-Cryo-Safe-Boxes
Store at -20°C for a few hours until the temperature of the cooler falls below 0°C — for -0°C-Cryo-Safe-Boxes

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9.401 090

6

9.401 094

Type	Array	Temperature-maintained	For tubes ml	Dimensions (l x w x h) mm	PK	Cat. No.
0°C-Cryo-Safe	12	≤ 0°C for 2.5 h	0.5ml, 1.5ml	151 x 108 x 125	1	**9.401 090** 5
-15°C-Cryo-Safe	12	≤ -15°C for 1 h	0.5ml, 1.5ml, 2.0ml	151 x 108 x 125	1	**9.401 091**
0°C-Cryo-Safe	12	≤ 0°C for 3 h	15ml	197 x 140 x 190	1	**9.401 092**
0°C-Cryo-Safe	32	≤ 0°C for 3 h	0.5ml, 1.5ml	243 x 157 x 146	1	**9.401 093**
-15°C-Cryo-Safe	32	≤ -15°C for 1.5 h	0.5ml, 1.5ml, 2.0ml	243 x 157 x 146	1	**9.401 094** 6

7 Labtop Cooler, Type 5115, 5116, DS5116

Thermo Scientific

The economical alternative for keeping samples and biochemical reagents cool at the workbench or for protecting against temperature fluctuations and power failure in refrigeration apparatus. With write-on, gridded lid. Lids fit one way to maintain the correct grid orientation. Robust, space-saving and stackable. With non-slip rubber feet. Can be used down to -135°C.
Adapters are also supplied for 0.5ml microtubes.

7

Type	Description	Aperture array qty.	Temperature-maintained on lab bench	PK	Cat. No.
5115	Clear lid, without gel, for 1.5 - 2.0ml tubes	12	≤-15°C up to 1 hr.	1	**9.400 929**
DS5116	Clear lid, without gel, for 1.5 - 2.0ml tubes	12	≤ 1°C up to 3.5 hrs.	1	**9.400 930**
5115	White lid, with gel, for 1.5 - 2.0ml tubes	32	≤-15°C up to 2 hrs.	1	**9.400 932**
DS5116	White lid, with gel, for 1.5 - 2.0ml tubes	32	≤ 1°C up to 5 hrs.	1	**9.400 933**

1

1 Immersion circulator

NEW!

PolyScience

Immersion circulator for all kinds of water baths. It clamps securely to both straight and curved tank walls.
The patented, closed housing protects the user and the heating element.
- Maximum working temperature 98°C
- Temperature stability ±0.07°C
- Suitable for tank capacities up to 20 liter
- Minimum working depth 7.5inch/19 cm
- Large LCD-display
- Display resolution 0.1°C
- Displays actual and set point temperature simultaneously
- Integral pump and heater protection
- Integrated timer form 5 minutes to 99 hours
- Integrated over-temperature protection
- Low liquid level protection
- Included clamp for straight and curved tank walls
- Maximum pressure 0.7 psi with a maximum pressure flow rate of 6.0 l/min.

Type	Temp. Stability	Pump max.	Dimensions (W x D x H)	PK	Cat. No.
	K	L/min / bar	mm		
Immersion circulator	0,07	11,9 / 0,12	97 x 109 x 358	1	**6.267 595**

2

2 Thermostatic controllers Optima™ T100/TC120

Grant

Combine with a plastic or stainless steel tank or with an accessory T-clamp for independent use.
The two general purpose heating circulators offer excellent temperature stability and uniformity with a cooling/heating range of 0°C to +100°C* (T100) and -15°C to +120°C* (TC120).

***For using at or below room temperature you need additional flow coolers C1G (9.920 765) or C2G (9.920 766).**

Features:
T100: visual alarm, 2 point recalibration, fixed over temperature cut-out
TC120: visual and audible alarm, timer, 2 point recalibration, adjustable over temperature cut-out, pump for external circulation

T Clamp: For attaching the thermostats to any vertical sided tank with a maximum wall thickness of 35mm for rectangular tanks, 30mm for circular tanks (300mm diameter), and a capacity of up to 50L.

Models with clamps available on request.

Specifications

Temperature range with stainless steel tank	
T100:	0°C to +100°C*
TC120:	-15°C to +120°C*
Stability/Uniformity (DIN 12876) at 70°C:	±0.05°C/±0.1°C
Setting resolution:	0.1°C
Display:	4 digit LED
No. of pre-set temperatures:	3
Recalibration points:	2
Heating power (230V):	1.3kW
Power supply (230V/50-60Hz):	1.4kW
TC120 only:	
Timer:	1 to 6000 mins
Pump max. pressure:	210mbar
Flow rate max.:	16l/min

Type	Description	PK	Cat. No.
T100	without pump	1	**9.699 630**
TC120	with pump	1	**9.699 631**
T clamp	-	1	**9.699 634**

1 Thermostatic controllers Optima™ TX150/TXF200

NEW!

Grant

1

Combine with a plastic or stainless steel tank or with an accessory T-clamp for independent use.
The two advanced heating circulators feature a modern, icon driven programming interface and full colour display. Cooling/heating range: -15°C to +150°C* (TX150) and -15°C to +200°C* (TXF200).
***For using at or below room temperature you need additional flow coolers C1G (9.920 765) or C2G (9.920 766).**

Features:
Visual and audible alarm, timer, 5 point recalibration, adjustable over temperature cut-out, pump, external probe, progammable, relay, menu system, program storage, USB port.

T Clamp: For attaching the thermostats to any vertical sided tank with a maximum wall thickness of 35mm for rectangular tanks, 30mm for circular tanks (300mm diameter), and a capacity of up to 50L.

Models with clamps available on request.

Specifications

Temperature range with stainless steel tank	
TX150:	-15°C to 150°C*
TXF200:	-15°C to 200°C*
Stability/Uniformity (DIN 12876) at 70°C:	±0.01°C/±0.05°C
Setting resolution:	0.1°C (0.01°C with Labwise)
Display:	QVGA TFT
Timer:	1 min to 99 hrs 59 mins
No. of pre-set temperatures:	3
Recalibration points:	5
Heating power (230V):	1.9kW
Power supply (230V/50-60Hz):	2.0kW
Interface:	USB and RS232
Pump max. pressure	
TX150:	310 mbar
TXF200:	530 mbar
Flow rate max.	
TX150:	18l/min
TXF200:	22l/min (adjustable)

Type	Programmable	PK	Cat. No.
TX150	remote via PC/labtop, 1 program / 30 segments	1	**9.699 632**
TXF200	direct via user interface or remote via PC/labtop, 10 programs / 100 segments	1	**9.699 633**
T clamp	-	1	**9.699 634**

Tanks Optima™ series, stainless steel

Grant

High efficiency stainless steel (ST) tanks (range -15°C to +200°C). Drain tap included on ST12, ST18, ST26, ST38. Raised feet for carrying repositioning and retort access.
Accessory polypropylene spheres or a lid must be used at temperatures between +60°C and +100°C. Above +100°C only a lid must be used.
Accessory cooling is required for temperatures below ambient. **Please order lid and PP spheres separately.**

Type	Capacity litres	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	PK	Cat. No.
ST5	5	180 x 330 x 200	150 x 300 x 150	1	**9.905 718** 2
ST12	12	330 x 360 x 215	300 x 325 x 150	1	**9.905 719**
ST18	18	330 x 540 x 215	300 x 505 x 150	1	**9.905 720** 3
ST26	26	330 x 540 x 265	300 x 505 x 200	1	**9.905 721**
ST38	38	330 x 730 x 260	300 x 690 x 200	1	**9.905 722** 4

2

9.905 718

3

9.905 720

4

9.905 722

Plastic and stainless steel tanks available on request

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1 Stirred thermostatic baths Optima™ series

Grant

Complete units including plastic or stainless steel bath, bridge mounting plate and thermostatic controller. For 220-240V, 50/60Hz.

- The two general purpose heating circulators offer excellent temperature stability and uniformity with a cooling/heating range of 0 to 100°C (T100) and -15°C to +120°C (TC120).
- The two advanced heating circulators feature a modern, icon driven programming interface and full color display. Cooling/heating range: -15°C to +150°C (TX150) and -15°C to +200°C (TXF200).
- Grant stirred baths and circulators provide a source of precision heating and cooling. Complete range of 32 models covers basic to more sophisticated needs, each model representing excellent value for money and featuring intuitive programming and accurate, safe temperature control.
- An accessory gabled hinged lid is available to reduce evaporation, avoid heat loss and avoid sample contamination.
- High efficiency stainless steel (ST) tanks (range -15°C to +200°C)
- A drain trap is included on the ST12, ST18, ST26 and ST38

Accessory polypropylene spheres or a lid must be used at temperatures between 60°C and 100°C. Above 100°C only a lid must be used. Accessory cooling is required for temperatures below ambient.

For using at or below room temperature you need additional flow coolers C1G (9.920 765) or C2G (9.920 766).

Please see article table for usable working space. External dimensions incl. controller.

Please order spheres and lids separately.

Type	Capacity	Temp. range	External dimensions (W x D x H)	Working space W x D x H	Material	PK	Cat. No.
	litres	max. °C	mm	mm			
T100-P5	5	Amb. +15 to +99	235 x 325 x 380	150 x 120 x 155	plastic	1	**9.699 640**
T100-P12	12	Amb. +5 to +99	350 x 415 x 380	280 x 210 x 155	plastic	1	**9.699 641**
T100-P18	18	Amb. +5 to +99	350 x 600 x 380	375 x 280 x 155	plastic	1	**9.699 642**
T100-ST5	5	Amb. +15 to +100	180 x 330 x 395	150 x 150 x 150	stainless steel	1	**9.699 643**
T100-ST12	12	Amb. +5 to +100[1]	330 x 360 x 415	300 x 205 x 150	stainless steel	1	**9.699 644**
T100-ST18	18	Amb. +5 to +100[1]	330 x 540 x 415	300 x 385 x 150	stainless steel	1	**9.699 645**
T100-ST26	26	Amb. +5 to +100[1]	330 x 540 x 465	300 x 385 x 200	stainless steel	1	**9.699 646**
T100-ST38	38	Amb. +5 to +100[1]	330 x 730 x 460	300 x 575 x 200	stainless steel	1	**9.699 647**
TC120-P5	5	Amb. +15 to +99	235 x 325 x 380	150 x 120 x 155	plastic	1	**9.699 648**
TC120-P12	12	Amb. +5 to +99	350 x 415 x 380	280 x 210 x 155	plastic	1	**9.699 649**
TC120-P18	18	Amb. +5 to +99	350 x 600 x 380	375 x 280 x 155	plastic	1	**9.699 650**
TC120-ST5	5	Amb. +15 to +120[1]	180 x 330 x 395	150 x 150 x 150	stainless steel	1	**9.699 651**
TC120-ST12	12	Amb. +5 to +120[1]	330 x 360 x 415	300 x 205 x 150	stainless steel	1	**9.699 652**
TC120-ST18	18	Amb. +5 to +120[1]	330 x 540 x 415	300 x 385 x 150	stainless steel	1	**9.699 653**
TC120-ST26	26	Amb. +5 to +120[1,2]	330 x 540 x 465	300 x 385 x 200	stainless steel	1	**9.699 654**
TC120-ST38	38	Amb. +5 to +120[1,2]	330 x 730 x 460	300 x 575 x 200	stainless steel	1	**9.699 655**
TX150-P5	5	Amb. +15 to +99	235 x 325 x 380	150 x 120 x 155	plastic	1	**9.699 656**
TX150-P12	12	Amb. +5 to +99	350 x 415 x 380	280 x 210 x 155	plastic	1	**9.699 657**
TX150-P18	18	Amb. +5 to +99	350 x 600 x 380	375 x 280 x 155	plastic	1	**9.699 658**
TX150-ST5	5	Amb. +15 to +150[1]	180 x 330 x 395	150 x 150 x 150	stainless steel	1	**9.699 659**
TX150-ST12	12	Amb. +5 to +150[1]	330 x 360 x 415	300 x 205 x 150	stainless steel	1	**9.699 660**
TX150-ST18	18	Amb. +5 to +150[1]	330 x 540 x 415	300 x 385 x 150	stainless steel	1	**9.699 661**
TX150-ST26	26	Amb. +5 to +150[1,2]	330 x 540 x 465	300 x 385 x 200	stainless steel	1	**9.699 662**
TX150-ST38	38	Amb. +5 to +150[1,2]	330 x 730 x 460	300 x 575 x 200	stainless steel	1	**9.699 663**
TXF200-P5	5	Amb. +15 to +99	235 x 325 x 380	150 x 120 x 155	plastic	1	**9.699 664**
TXF200-P12	12	Amb. +5 to +99	350 x 415 x 380	280 x 210 x 155	plastic	1	**9.699 665**
TXF200-P18	18	Amb. +5 to +99	350 x 600 x 380	375 x 280 x 155	plastic	1	**9.699 666**
TXF200-ST5	5	Amb. +15 to +200[1]	180 x 330 x 395	150 x 150 x 150	stainless steel	1	**9.699 667**
TXF200-ST12	12	Amb. +5 to +200[1]	330 x 360 x 415	300 x 205 x 150	stainless steel	1	**9.699 668**
TXF200-ST18	18	Amb. +5 to +200[1]	330 x 540 x 415	300 x 385 x 150	stainless steel	1	**9.699 669**
TXF200-ST26	26	Amb. +5 to +200[1,2]	330 x 540 x 465	300 x 385 x 200	stainless steel	1	**9.699 670**
TXF200-ST38	38	Amb. +5 to +200[1,2]	330 x 730 x 460	300 x 575 x 200	stainless steel	1	**9.699 671**

[1] Temperature range can be extended to 0°C with accessory cooling of flow cooler 9.920 765.
[2] Temperature range can be extended to -15°C with accessory cooling of flow cooler 9.920 766.

Lids for water baths Optima™ series

To help reduce evaporation, avoid heat loss and avoid sample contamination. *Grant*
Available in moulded plastic or stainless steel, flat or gabled with hinge as indicated.

Type	Description	Material	For	PK	Cat. No.
PL 5	Flat	Stainless steel	bath P 5	1	**9.699 085**
PL 12	Flat	Plastic	bath P 12	1	**9.699 086** 1
PL 18	Flat	Plastic	bath P 18	1	**9.699 087**
STL5	Flat	Stainless steel	bath ST5	1	**9.905 723**
STL12	Gabled with hinge	Stainless steel	bath ST12	1	**9.905 724** 2
STL26	Gabled with hinge	Stainless steel	bath ST26 and ST18	1	**9.905 725**
STL38	Gabled with hinge	Stainless steel	bath ST38	1	**9.905 726**

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9.699 086

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9.905 724

Accessories for water baths Optima™ series

NEW!

Drain syphon SY1: For the rapid draining of baths. *Grant*

Heat exchange coil CW5: For use with precision and general purpose stirred baths. Temperature range 2°C above coolant temperature. Coil diameter/l mm 77/55, pipe bore inlet/outlet 7mm.

PP spheres PS20: Between operating temperatures 60°C and 100°C and below room temperature a lid or layers of polypropylene spheres can be used. Above 100°C a lid must be used.

C1G refrigerated cooler:
For use with all stainless steel Optima™ baths ranging from 0°C to +40°C. For 220 - 240 V 50 Hz single phase supplies.

C2G refrigerated cooler:
For use with all stainless steel Optima™ baths ranging from -20°C to +40°C. A bath lid must be used at temperatures below 0°C, in order to achieve optimum performance. For 220 - 240 V 50 Hz single phase supplies.

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6.239 419

4

9.699 096

Type	PK	Cat. No.
PP spheres PS20	300	**6.239 419** 3
Drain syphon SY1	1	**9.699 096** 4
Heat exchange coil CW5	1	**9.920 764**
Refrigerated cooler C1G	1	**9.920 765**
Refrigerated cooler C2G	1	**9.920 766**

1

1 2 Baths and Circulators

The Huber circulators are split into two product lines, the Compatible Control models and the simpler MPC models. Both model lines represent classically constructed laboratory circulators with open baths. Baths and circulators for heating applications up to +300°C are available, as well as models for heating and cooling applications from -90°C to +200°C. Immersion or bridge circulators are suitable for thermal control of existing baths. The Ministat, the smallest cooling and heating circulator in the world, is the first choice for operation in fume-hoods or integrating into systems.

Circulators with Pilot ONE Controller
Models with Pilot ONE Controller convincing in practice with their highly precise temperature control and a professional range of functions even in the basic version. The electronic upgrade function "E-grade" allows a simple and low cost expansion of functions at any time. Operation is simple using large colour displays, an easily understandable menu and an individually customisable display. Models with the Pilot ONE have powerful pressure and suction pumps with continuously variable speed control for adjusting circulation to the bath in use. Further connections are available via the optional Com.G@te, e.g. RS232 and RS485, analogue interface 4 to 20mA or 0 to 10V, standby signal and programmable alarm.

2

Circulators using the MPC Controller
The functions of models with the low price MPC controller concentrate on the essentials. MPC models are suitable for numerous typical laboratory applications, such as temperature control of samples, analysis, materials testing, as well as the external temperature control of test equipment or experimental constructions. The machine achieves a temperature stability of ±0.05°C and are fitted with an over temperature and low fluid level protection. The safety systems are according to class III/FL (DIN 12876) for use with flammable fluids. All MPC machines are also available as "plus" versions with RS232 interface.

Advantages and Functions (model dependent):
- Working Temperatures from -90°C to +300°C
- Models for internal and external temperature control
- High heating and cooling powers up to 7kW
- Powerful controllable circulation pumps
- Function expansion with the E-grade system is available at any time
- High precision cascade temperature control
- Large and full colour 5.7" TFT touchscreen
- Programmer with calendar/clock function
- Extended range of languages including a selection of European and Asian
- Comprehensive warning and safety functions

:

3

3 Immersion circulators MPC®-E and CC®-E

Immersion circulators are the basis of many combinations of polycarbonate and stainless steel baths. Together with a cooling bath it is possible to get exact and reproducable temperatures down to -30°C. *Huber*

Temp. control range °C:	(-30) 25 to 200°C
Safety class:	FL, III
Heating capacity kW:	2kW
suction max. (CC®-E):	25L/min/0.4bar
suction max. (CC®-E xd):	15L/min/0.25bar
suction max. (MPC®-E):	17L/min/0.18bar
Immersion depth	
(CC®-E, MPC®-E):	150mm
(CC®-E xd):	195mm

Type	Temp. Stability	Pump max.	Dimensions (W x D x H)	PK	Cat. No.
	K	L/min / bar	mm		
MPC®-E	0.05*	20 / 0,2	132 x 153 x 312	1	**9.699 110**
CC®-E	0.01*	27 / 0,7	132 x 159 x 315	1	**9.859 201**
CC®-E xd	0.01*	20 / 0,5	132 x 159 x 360	1	**9.859 202**

*according to DIN 12876, measured in 12-litre stainless steel bath.

1 Thermostatic baths with polycarbonate tanks

Huber

The transparent polycarbonate baths are suitable for use up to 100°C. An immersion thermostat is mounted on the bath bridge for all models. With a pump adapter, this combination can also be used with external, closed applications. Models with the Pilot ONE controller have a variable speed pressure/suction pump and are therefore also suitable for external open applications.

Temperature max.:	100°C
Temp. Stability at 70°C to DIN12876	
MPC®-E:	0.05K
CC®-E:	0.02K
Safety class:	FL, III
Bath depth:	150mm

Type	Bath capacity	Bath opening	Pressure pump max.	Dimensions (W x D x H)	PK	Cat. No.
	L	mm	L/min bar	mm		
CC®-106A	6	130 x 110	27 / 0.7	147 x 307 x 330	1	**9.859 203**
MPC®-106A	6	130 x 110	20 / 0.2	147 x 307 x 330	1	**9.857 474**
CC®-108A	8	130 x 210	27 / 0.7	147 x 407 x 330	1	**9.859 204**
MPC®-108A	8	130 x 210	20 / 0.2	147 x 407 x 330	1	**9.857 476**
CC®-110A	10	130 x 310	27 / 0.7	147 x 507 x 330	1	**9.859 205**
MPC®-110A	10	130 x 310	20 / 0.2	147 x 507 x 330	1	**9.857 477**
CC®-112A	12	303 x 161	27 / 0.7	333 x 360 x 335	1	**9.859 206**
MPC®-112A	12	303 x 161	20 / 0.2	333 x 360 x 335	1	**9.857 478**
CC®-118A	18	303 x 321	27 / 0.7	333 x 520 x 335	1	**9.859 207**
MPC®-118A	18	303 x 321	20 / 0.2	333 x 520 x 335	1	**9.857 479**

2 Heating circulators with stainless steel baths

Huber

The insulated stainless steel baths are suitable for use up to 200°C. All models have a bridge-mounted CC-E and MPC-E immersion circulator. With a pump adapter, this combination can also be used with externally closed and externally open (with option level control) applications. Models with the Pilot ONE controller have a variable speed pressure/suction pump and are therefore also suitable for external open applications.

Stability to DIN 12876:	
CC® models:	0.02K
MPC® models:	0.05K
Max. temp.:	200°C
Safety class:	FL, III

Type	Bath capacity	Bath opening	Bath tank depth	Pressure pump max.	Dimensions (W x D x H)	PK	Cat. No.
	L	mm	mm	L/min bar	mm		
CC®-208B	8.5	230 x 127	150	27 / 0.7	290 x 350 x 375	1	**9.859 212**
MPC®-208B	8.5	230 x 127	150	20 / 0.2	290 x 350 x 375	1	**9.857 425**
CC®-212B	12	290 x 152	150	27 / 0.7	350 x 375 x 375	1	**9.859 208**
MPC®-212B	12	290 x 152	150	20 / 0.2	350 x 375 x 375	1	**9.857 426**
CC®-215B	15	290 x 152	200	27 / 0.7	350 x 375 x 425	1	**9.859 209**
MPC®-215B	15	290 x 152	200	20 / 0.2	350 x 375 x 425	1	**9.857 427**
CC®-220B	20	290 x 329	150	27 / 0.7	350 x 555 x 375	1	**9.859 210**
MPC®-220B	20	290 x 329	150	20 / 0.2	350 x 555 x 375	1	**9.857 428**
CC®-225B	25	290 x 329	200	27 / 0.7	350 x 555 x 425	1	**9.859 211**
MPC®-225B	25	290 x 329	200	20 / 0.2	350 x 555 x 425	1	**9.857 429**

3 Function upgrade for Huber circulators

E-grade - innovative activation keys for the functionality to suit your budget and process requirements *Huber*

Every application requires particular functions. If the circulator is to be used in a range of applications it will generally require greater functionality. The required functionality grows with the complexity of the application. The innovative „E-grade" has the answer. Models with the Pilot ONE Controller have a comprehensive range of functions suited to the classical temperature control applications. The E-grade allows the functionality to be extended at any time to suit new process requirements and budget. E-grade stands for electronic upgrade and it is simple to do: To extend the functionality a unit specific code is entered via the controller. This code is specific to the serial number of the unit and is either already entered at the factory for new units or it can be activated at a later date. The code is sent by email. There is no requirement for a hardware or software update.

Type	PK	Cat. No.
E-grade® "Exclusive"	1	**9.699 100**
E-grade® "Professional"	1	**9.699 101**

1 Heating circulators

NEW!

Huber

Good things come in small packages! Thanks to their low bath volumes the models CC-104A und MPC-104A (with polycarbonate bath) as well as the CC-202C and MPC-202C (with stainless steel bath) are especially suitable for controlling the temperature of small external applications. All models are fitted with rear mounted M16x1 pump connections as standard. Models with the Pilot ONE have a speed regulated pressure/suction pump. The temperature constancy, in accordance with DIN12876, is 0.02 K with the Compatible Control models and 0.05 K for the MPC models.
Models CC-202C and MPC-202C are fitted with an integrated cooling coil as standard. With the models CC-104A and MPC-104A the cooling coil is an optional extra.

Temperature range
CC®-104A/MPC®-104A: (15)25 to 100°C
CC®-202C/MPC®-202C: (-30)45 to 200°C
Temp. Stability to DIN 12876
CC® models: 0.02K
MPC® models: 0.05K
Safety class: FL, III
Bath depth: 150mm
Heating capacity: 2kW

Type	Bath opening	Dimensions (W x D x H)	Suction pump cap.	Pressure pump max.	PK	Cat. No.
	mm	mm	L/min bar	L/min bar		
CC®-104A	Ø 25	147 x 235 x 330	25/0.4	27/0.7	1	**9.859 213**
MPC®-104A	Ø 25	147 x 235 x 330	17/0.18	20/0.2	1	**7.638 719**
CC®-202C	Ø 25	178 x 260 x 355	25/0.4	27/0.7	1	**9.859 220**
MPC®-202C	Ø 25	178 x 260 x 355	17/0.18	20/0.2	1	**6.244 120**

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2

2 Heating bath circulators

NEW!

Huber

Heating bath circulators are suitable for temperatures up to 200°C or 300°C depending on model. The Compatible Control models have a continuously variable pressure and suction pump. The pump pressure can be controlled with an optional pressure sensor, and so can protect your valuable glass-ware from breakage. The machines are preferred and used for temperature control of externally connected applications. Additionally there is the ability to control the temperature of objects placed directly in the open bath.

Temperature control range
CC®-205B/MPC®-205B: (-30)45 ... 200°C
CC®-304B/CC®-308B/CC®-315B: (-20)28 ... 300°C
Safety class: FL, III
Stability to DIN 12876
CC®-205B/CC®-304B/CC®-308B/CC®-315B: 0.02K
MPC®-205B: 0.05K

Type	Bath capacity	Heating capacity	Dimensions (W x D x H)	Suction pump cap.	Pressure pump max.	PK	Cat. No.
	L	kW	mm	L/min bar	L/min bar		
CC®-205B	5.0	2.0	178 x 337 x 355	25 / 0.4	27 / 0.7	1	**9.859 221**
MPC®-205B	5.0	2.0	178 x 337 x 355	17 / 0.18	20 / 0.2	1	**6.244 121**
CC®-304B	5.0	2.0	210 x 335 x 392	22 / 0.4	33 / 0.7	1	**9.859 222**
CC®-308B	8.5 / 5.2*	3.0	242 x 404 x 392	22 / 0.4	33 / 0.7	1	**9.859 223**
CC®-315B	15 / 8.5*	3.0 / 4.0	335 x 382 x 433	22 / 0.4	33 / 0.7	1	**9.859 224**

*using displacement insert

1 Thermoregulators Economy ED, EH, TopTech MB, MA and ME

JULABO

For thermoregulation of bath tanks up to 50 litres. With bath attachment clamp for wall thicknesses up to 26mm or retort stand mounting using accessory rod.

Economy ED series
- Bright LED temperature display for actual and setpoint values, resolution 0.1°C
- Keypad for setpoint, switches automatically to the actual value
- PID1 temperature control
- Adjustable high temperature cut-out/dry-running protection (protection class 1 for non-flammable liquids, DIN 12876-1)

Economy EH series
- Enhanced temperature range up to 150°C
- Adjustable high temperature cut-out/dry-running protection (protection class 3 for flamable liquids, DIN 12876-1)

TopTech MB series
- Multi-Display (LED) for actual and setpoint values, warning/safety functions and pump stage
- PID2 temperature control with drift compensation
- ATC3 3-Point-Calibration
- Early warning system for low liquid level
- RS232 interface
- Adjustable high temperature cut-out/dry-running protection (protection class 1 for non-flammable liquids, DIN 12876-1)

TopTech MA series - as TopTech MB, but additionally with:
- PPC (Pump Pressure Control), electronically adjustable pump capacity
- Adjustable high temperature cut-out/dry-running protection (protection class 3 for flamable liquids, DIN 12876-1)

TopTech ME series - as TopTech MA, but additionally with:
- VFD Comfort Display, resolution 0.01°C
- Pt100 External sensor connection
- Programmer for 10 programme steps

Delivery without bath please order separately.

1

Type	Working Temp. range °C	Temp. stability ± °C	Pump max. L/min / bar	PK	Cat. No.
Economy ED	20 to 100	0.03	15 / 0.35	1	**9.858 003**
Economy EH	20 to 150	0.03	15 / 0.35	1	**9.858 000**
TopTech MB	20 to 100	0.02	10 / 0.12	1	**9.858 001**
TopTech MA	20 to 200	0.01	11-16 / 0.23-0.45	1	**9.858 110**
TopTech ME	20 to 200	0.01	11-16 / 0.23-0.45	1	**9.858 004**

2 Bath tanks for thermostatic controllers up to +150°C, stainless steel, insulated

NEW!

JULABO

Type	Capacity Litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	For Type	PK	Cat. No.
Bath tank 5	5	330 x 150 x150	380 x 190 x 180	ED, EH, MB, MA, ME	1	**6.100 661**
Bath tank 13	13	330 x 150 x150	380 x 190 x 180	ED, EH, MB, MA, ME	1	**6.100 662**
Bath tank 17	17	330 x 300 x 200	380 x 330 x 230	ED, EH, MB, MA, ME	1	**6.100 663**
Bath tank 19	19	500 x 300 x 150	560 x 330 x 180	ED, EH, MB, MA, ME	1	**6.100 664**
Bath tank 27	27	500 x 300 x 200	560 x 330 x 230	ED, EH, MA, ME	1	**6.100 665**
Bath tank 33	33	830 x 300 x 150	900 x 330 x 200	ED, EH, MA, ME	1	**6.100 666**
Bath tank 39	39	500 x 300 x 300	540 x 330 x 350	ED, EH, MA, ME	1	**6.100 667**

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1 Circulator Baths, Economy ED and TopTech MB series

JULABO

Open bath circulators only for lower temperature range tasks performed internally, directly in the bath. Working temperature ranges:
- with stainless steel bath tank: up to 100°C (without suffix)
- with Plexiglas bath tank up to 60°C (Suffix 'A')
- with Makrolon bath tank up to 100°C (Suffix 'M')

Economy ED series
- Bright LED temperature display for actual and setpoint values, resolution 0.1°C
- Keypad for setpoint, switches automatically to the actual value
- PID1 temperature control
- Adjustable high temperature cut-out/dry-running protection

TopTech MB series
- Multi-Display (LED) for actual and setpoint values, warning/safety functions and pump status
- PID2 temperature control with drift compensation
- ATC3 3-Point-Calibration
- Early warning system for low liquid level
- RS232 interface

Type	Working Temp. range °C	Temp. stability ± °C	Pump max. L/min / bar	Capacity L	PK	Cat. No.
Economy ED-5A/B *	20 to 60	0.03	15 / 0.35	5	1	**9.857 804**
Economy ED-7A/B *	20 to 60	0.03	15 / 0.35	7	1	**9.857 805**
Economy ED-5M/B *	20 to 100	0.03	15 / 0.35	5	1	**9.857 806**
Economy ED-13A	20 to 60	0.03	15 / 0.35	13	1	**9.858 028**
Economy ED-19A	20 to 60	0.03	15 / 0.35	19	1	**9.858 029**
Economy ED-13M	20 to 100	0.03	15 / 0.35	13	1	**9.857 807**
Economy ED-19M	20 to 100	0.03	15 / 0.35	19	1	**9.857 808**
Economy ED-13	20 to 100	0.03	15 / 0.35	13	1	**9.858 016**
Economy ED-19	20 to 100	0.03	15 / 0.35	19	1	**9.858 017**
Economy ED-27	20 to 100	0.03	15 / 0.35	27	1	**9.858 010**
TopTech MB-13A	20 to 60	0.02	10 / 0.12	13	1	**9.858 025**
TopTech MB-19A	20 to 60	0.02	10 / 0.12	19	1	**9.858 030**
TopTech MB-13	20 to 100	0.02	10 / 0.12	13	1	**9.858 011**
TopTech MB-19	20 to 100	0.02	10 / 0.12	19	1	**9.858 012**

* Cooling coil option not possible

2

2 Circulator baths, Economy ED, EH series and TopTech MB series

JULABO

Open bath circulator for internal and external temperature tasks directly in the bath. Additional pump connections for external temperature tasks. Working temperature ranges:
- with stainless steel bath tank: up to 100°C (without suffix)
- with Plexiglas bath tank up to 60°C (Suffix 'A')
- with Makrolon bath tank up to 100°C (Suffix 'M')

Economy ED series
- Bright LED temperature display for actual and setpoint values, resolution 0.1°C
- Keypad for setpoint, switches automatically to the actual value
- PID1 temperature control
- Adjustable high temperature cut-out/dry-running protection (protection class 1)

Economy EH series
- Extended temperature range up to +150°C
- Adjustable high temperature cut-out/dry-running protection (protection class 3)

TopTech MB series
- Multi-Display (LED) for actual and set-point values, warning/safety functions and pump status
- PID2 temperature control with drift compensation
- ATC3 3-Point-Calibration
- Early warning system for low liquid level
- RS232 interface

Type	Working Temp. range °C	Temp. stability ± °C	Pump max. L/min / bar	Capacity L	PK	Cat. No.
Economy ED-5A	20 to 60	0.03	15 / 0.35	5	1	**9.858 037**
Economy ED-5M	20 to 100	0.03	15 / 0.35	5	1	**9.857 812**
Economy ED-5	20 to 100	0.03	15 / 0.35	4.5	1	**9.858 032**
Economy EH-5	20 to 150	0.03	15 / 0.35	4.5	1	**9.858 036**
Economy EH-13	20 to 150	0.03	15 / 0.35	13	1	**9.858 056**
Economy EH-19	20 to 150	0.03	15 / 0.35	19	1	**9.858 057**
Economy EH-27	20 to 150	0.03	15 / 0.35	27	1	**9.858 058**
Economy EH-33	20 to 150	0.03	15 / 0.35	33	1	**9.858 059**
TopTech MB-5A	20 to 60	0.02	10 / 0.12	5	1	**9.858 034**
TopTech MB-7A	20 to 60	0.02	10 / 0.12	7	1	**9.858 035**
TopTech MB-5M	20 to 100	0.02	10 / 0.12	5	1	**9.857 820**
TopTech MB-5	20 to 100	0.02	10 / 0.12	4.5	1	**9.858 031**

Heating circulator baths, TopTech MA, ME series

JULABO

Principally for temperature control of external closed circuit systems. Smaller vessels can be thermoregulated directly in the bath tank. For working at lower temperature ranges the cooling coil is integrated. With stainless steel bathes.
For temperatures up to 200°C.

TopTech MA series
- Multi-Display (LED) for actual and setpoint values, warning/safety functions and pump status
- PID2, temperature control with drift compensation
- ATC3, 3-point calibration
- early warning system for low liquid level
- RS232 interface
- PPC (Pump Pressure Control), electronically adjustable pump capacity

TopTech ME series - as TopTech MA, but with additional:
- VFD Comfort Display, resolution 0.01°C
- Pt100 external sensor connection

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9.857 831

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9.857 833

Type	Working Temp. range °C	Temp. stability ± °C	Pump max. L/min / bar	Capacity L	PK	Cat. No.
TopTech MA-4	20 to 200	0.01	11-16 / 0.23-0.45	4.5	1	**9.858 111**
TopTech MA-6	20 to 200	0.01	11-16 / 0.23-0.45	6	1	**9.858 112**
TopTech MA-12	20 to 200	0.01	11-16 / 0.23-0.45	12	1	**9.858 113**
TopTech MA-26	20 to 200	0.01	11-16 / 0.23-0.45	26	1	**9.858 114**
TopTech ME-4	20 to 200	0.01	11-16 / 0.23-0.45	4.5	1	**9.857 831** 1
TopTech ME-6	20 to 200	0.01	11-16 / 0.23-0.45	6	1	**9.857 824**
TopTech ME-12	20 to 200	0.01	11-16 / 0.23-0.45	12	1	**9.857 832**
TopTech ME-26	20 to 200	0.01	11-16 / 0.23-0.45	26	1	**9.857 833** 2

3 Heating circulator baths HighTech HE, HL, SE, SL series

JULABO

Principally for temperature control of external systems. Models with pressure and suction pump generally have a higher capacity and can be used for larger and open circuit systems. Smaller vessels can be thermoregulated directly in the bath tank. For working at lower temperature ranges the cooling coil is integrated. With stainless steel bathes.
For temperatures up to 250/300°C.

HighTech HE, SE series
- Multi-Display (LED) for actual and setpoint values, warning/safety functions and pump status
- PID2, temperature control with drift compensation
- ATC3, 3-point calibration
- early warning system for low liquid level
- RS232 interface
- PPC (Pump Pressure Control), electronically adjustable pump capacity
- VFD Comfort Display, resolution 0.01°C
- Pt100 external sensor connection
- ICC (Intelligent Cascade Control), self-optimising temperature control
- powerful pressure and suction pump. Pressure 0.4 to 0.7 bar, Suction 0.2 to 0.4 bar

HighTech HL, SL series - as HighTech HE, SE, but with additional:
- LCD Dialogue Display for convenient interactive operation
- TCF Temperature Control Features to optimise control behaviour
- integral programmer for 6 x 60 programme steps
- connections for solenoid valve and HSP booster pump

3

Type	Working Temp. range °C	Temp. stability ± °C	Pump max. L/min / bar	Suction bar	Capacity L	PK	Cat. No.
HighTech HE-4	20 to 250	0.01	22-26 / 0.4- 0.7	0.2-0.4	4.5	1	**9.858 044**
HighTech SE-6	20 to 300	0.01	22-26 / 0.4- 0.7	0.2-0.4	6	1	**9.858 049**
HighTech SE-12	20 to 300	0.01	22-26 / 0.4- 0.7	0.2-0.4	12	1	**9.858 047**
HighTech SE-26	20 to 300	0.01	22-26 / 0.4- 0.7	0.2-0.4	26	1	**9.858 048**
HighTech HL-4	20 to 250	0.01	22-26 / 0.4- 0.7	0.2-0.4	4.5	1	**9.858 050**
HighTech SL-6	20 to 300	0.01	22-26 / 0.4- 0.7	0.2-0.4	6	1	**9.858 054**
HighTech SL-12	20 to 300	0.01	22-26 / 0.4- 0.7	0.2-0.4	12	1	**9.858 051**
HighTech SL-26	20 to 300	0.01	22-26 / 0.4- 0.7	0.2-0.4	26	1	**9.858 052**

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6.255 692

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9.721 067

Refrigerated circulators LTC 2/LTC 4

Grant

Versatile system for the laboratory, with a comprehensive specification to suit most low temperature applications.

- Optima™ digital thermostat for precise temperature control: LTC 2 assembled with TC 120, LTC 4 assembled with TX 150
- Cooling/heating range for -25 to 100°C for LTC 2 and -30 to +100°C for LTC 4
- Stability ±0.1°C
- Powerful integral pump; allows temperature-controlled fluid to be circulated to external devices (16L/min, 210mbar for LTC 2 and 18L/min, 310mbar for LTC 4)
- Easy to use rotary dial and two function keys

- Clear 4 digit display - easy to read from a distance for instant reassurance
- Visual alarm and countdown timer; alerts you when your attention is required
- User calibration facility for optimum accuracy at the required operating temperature
- Operating setpoint plus 3 adjustable preset temperatures for convenience
- Liquid protection and over-temperature cut-out
- Easy access to coolant reservoir for local cooling of tubes, bottles etc.
- Powerful efficient cooling, ozone-friendly refrigerant
- Dual-position bridge plate, ensures visibility/accessibility of the thermostat whilst optimising bench space
- Robust construction, corrosion resistant materials, stainless steel tank; durable in demanding environments
- 5°C thermostat on/off switch; stops tank freezing when operating with water

Type	Capacity	Temp. range	Heating power	Cooling capacity kW at 20/0/-20°C	Dimensions (W x D x H)	PK	Cat. No.
	litres	max. °C	W		mm		
LTC 2	5	-25 to +100	1300	0.25/0.14/0.035	230 x 410 x 610	1	**6.255 692** 1
LTC 4	20	-30 to +100	1900	0.90/0.50/0.18	390 x 490 x 730	1	**9.721 067** 2

3 Cooling circulators

Huber

Combinations of immersion circulators and insulated refrigeration baths are low-cost solutions for direct thermoregulation within the temperature range -20/-30°C to +200°C. The refrigeration baths operate with natural refrigerants. A pump adapter (optional) can be fitted for thermoregulation of externally closed applications. Models with the Pilot ONE controller have a variable speed pressure/suction pump and are therefore suitable for external open thermoregulation applications. The temperature stability is 0.02K for the Compatible Control models and 0.05K for the MPC models.
Items supplied: cooling thermostat, cooling bath of stainless steel

Type	Working Temp. range °C	Cooling capacity kW at 0/-10/-20°C	Bath capacity L	Bath opening mm	Dimensions (W x D x H) mm	Pump max. L/min / bar	PK	Cat. No.
CC®-K12	-20 ... +200	0.2/0.12/0.05	12	290 x 152	350 x 560 x 430	27 / 0.7	1	**9.859 227**
MPC®-K12	-20 ... +200	0.2/0.12/0.05	12	290 x 152	350 x 560 x 430	20 / 0.2	1	**9.857 407**
CC®-K15	-20 ... +200	0.2/0.12/0.05	15	290 x 152	350 x 560 x 430	27 / 0.7	1	**9.859 228**
MPC®-K15	-20 ... +200	0.2/0.12/0.05	15	290 x 152	350 x 560 x 430	20 / 0.2	1	**9.857 408**
CC®-K20	-30 ... +200	0.35/0.27/0.16	20	290 x 329	350 x 555 x 615	27 / 0.7	1	**9.859 229**
MPC®-K20	-30 ... +200	0.35/0.27/0.16	20	290 x 329	350 x 555 x 615	20 / 0.2	1	**9.857 409**
CC®-K25	-30 ... +200	0.35/0.27/0.16	25	290 x 329	350 x 555 x 615	27 / 0.7	1	**9.859 230**
MPC®-K25	-30 ... +200	0.35/0.27/0.16	25	290 x 329	350 x 555 x 615	20 / 0.2	1	**9.857 404**

3

1 Compatible Control Refrigeration Circulators K6

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Huber

The K6 models are compact refrigeration bath circulators for temperatures from -25 to 200°C. These units are a combination of a refrigerated bath and immersion circulator, in combination with an integrated pump they are suitable for external open (with level control) and closed applications. The CC-E immersion circulator with its suction/pressure pump is suitable to externally open and closed applications. The temperature stability is 0.02K for the Compatible Control models and 0.05K for the MPC models.

Safety class: FL, III
Heating capacity: 2kW
Pressure pump
CC®-K6/CC®-K6s: 27L/min/0.7 bar
MPC®-K6/MPC®-K6s: 20L/min/0.2 bar

Type	Temp. range max. °C	Bath capacity L	Bath opening mm	Cooling capacity kW at 0/-10/-20°C	Dimensions (W x D x H) mm	PK	Cat. No.
CC®-K6	-25 ... +200	4.5	140 x 120	0.15/0.1/0.05	210 x 400 x 546	1	**9.859 226**
MPC®-K6	-25 ... +200	4.5	140 x 120	0.15/0.1/0.05	210 x 400 x 546	1	**9.857 405**
CC®-K6s	-25 ... +200	4.5	140 x 120	0.21/0.15/0.05	210 x 400 x 546	1	**9.859 225**
MPC®-K6s	-25 ... +200	4.5	140 x 120	0.21/0.15/0.05	210 x 400 x 546	1	**9.857 406**

All units use natural refrigerant as standard.

2 Cooling circulator Variostat® for a variety of baths

2

Huber

This unique immersion circulator can thermoregulate a wide range of baths between -30°C and 150°C. This innovative construction allows the user ultimate flexibility. The circulation can be adjusted to suit the bath size using the stepless, variable speed suction/pressure pump. The pump can also be controlled with an optional pressure sensor for external applications.

Temperature stability to DIN 12876: 0.02K
Heating capacity: 1kW
Pump pressure max.: 27L/min/0.7bar
Max. suction: 20L/min/0.4bar

Type	Working Temp. range max. °C	Bath capacity L	Cooling capacity kW at 100/20/0/-20/-30°C	PK	Cat. No.
Variostat®	-30 ... +150	variable	0.3 / 0.3 / 0.2 / 0.12 / 0.03	1	**9.859 231**

3 Compact refrigerated circulators - Ministat®

3

Huber

Exceptionally compact and powerful, Ministats have been the smallest cooling circulators in the world since 1976. Their compact form allows them to be placed in small spaces, e.g. in a laboratory extraction hood. Compliance with DIN 12876, class 3 allows them to be used unsupervised in continual operation. The maximum ambient temperature is 40°C.
The powerful variable speed pressure/suction pump can thermoregulate objects in the bath or external applications. The maximum pressure can be controlled using an optional pressure sensor - VPC (Variable Pressure Control) - which protects delicate glassware. The small volume and high power of the Ministats means exceptionally rapid heating and cooling rates are achieved. Optional displacement inserts reduce the bath volume by approximately 50 % amplifying this effect and reducing moisture absorption in the thermal fluid. All models have Active Cooling Control for cooling power control at the maximum working temperature and an automatic cooling power regulation for energy saving operation and reduced heat dissipation into the lab.The bath opening is large enough to allow small objects to be thermoregulated within. All parts in contact with the thermal fluid are made of stainless steel or Polycarbonate. Ministats have the Pilot ONE with Plug & Play technology (proven since 1980). In the event of service the controller can be simply swapped. Using a data cable the Ministat can be remotely controlled. The Pilot ONE has a state of the art microprocessor controller and a high precision temperature measurement system for exact and reproducible temperature control. The functionality and TFT-display are supported by Easy Control.
Typical applications for the smallest cooling circulator in the world are external closed systems e.g. photometer, refractometer and viscosimeter.

Pump pressure max.: 27L/min/0.7bar
Max. suction: 20L/min/0.4bar

Type	Working Temp. range max. °C	Bath capacity L	Bath tank depth mm	Heating power W	Cooling capacity kW at 0/-20/-30°C	Dimensions (W x D x H) mm	PK	Cat. No.
Ministat® 125	-25 ... +150	2.75/1.3*	120	1000	0.21/0.05/--	225 x 370 x 429	1	**6.257 173**
Ministat® 125w	-25 ... +150	2.75/1.3*	120	1000	0.20/0.10/--	225 x 370 x 429	1	**9.859 232**
Ministat® 230	-40 ... +200	3.2/1.7*	135	2000	0.38/0.25/0.14	255 x 450 x 476	1	**9.859 233**
Ministat® 230w	-40 ... +200	3.2/1.7*	135	2000	0.38/0.25/0.14	255 x 450 x 476	1	**9.859 234**
Ministat® 240	-45 ... +200	4.9/2.8*	157	2000	0.55/0.35/0.125	300 x 465 x 516	1	**9.859 235**
Ministat® 240w	-45 ... +200	4.9/2.8*	157	2000	0.55/0.35/0.125	300 x 465 x 516	1	**9.859 236**

Temperature Stability to DIN 12876: 0.02 K
All units use natural refrigerant as standard.
*with displacement insert

1 Refrigeration Bath Circulators to -45°C

Huber

HUBER refrigerated bath circulators perform safe and repeatable heating and cooling tasks in the lab. 22 models covering the range -90 to 200°C with a selection of heating and cooling powers are available with air or water cooling (w). Natural refrigerants for environmentally friendly operation are available on request. A powerful variable speed pressure/suction pump allows the thermoregulation of objects directly in the bath or can be used to control external applications. The pump speed is stepless and when used in combination with an optional pressure sensor the maximum pressure can be controlled. VPC (Variable Pressure Control) ensures the best circulation and protects delicate glass apparatus from breakage caused by overpressure.
Small volume and high heating and cooling powers result in the shortest heating and cooling rates. Optional displacement inserts reduce the bath volume by half increasing this effect. Additionally the bath surface area is reduced, lowering moisture absorption. The optional calibration insert allows all HUBER refrigeration circulators to be used as calibration baths. The calibration insert ensures an even temperature distribution with a temperature stability of ±0.01K. All models have Active Cooling Control for cooling power control at the maximum working temperature and an automatic cooling power regulation for energy saving operation and reduced heat dissipation into the lab. Depending on the model carry handles or castors are fitted for easy transportation. The drain is located on the front of the unit to enable simple drainage of the bath. The cover plate is thermoregulated to avoid condensation. All models have the Pilot ONE with Plug & Play technology which can be simply swapped in the event of a service. The Pilot ONE can be used as a remote control (with data cable). The Pilot ONE is a high tech microprocessor based controller with a high precision measurement system for exact and reproducible results. The wide ranging functionality is supported by a large TFT display and simple operation. HUBER refrigeration circulators can be equipped with a Com.G@te to the NAMUR standard to enable integration in a process control system. Depending on the bath dimensions objects can be thermoregulated within the bath. Typical applications for these classics are the thermoregulation of externally closed systems, e.g. photometer, refractometer, viscosimeter, double-jacketed reactors and autoclaves. They are used in miniplants, kilo labs, for stock point measurement, for low temperature calibration, for petroleum tests and many more applications.

Option: Natural refrigerant available on request

Pump data

Max. pressure:	33L/min/0.7bar
Max. suction:	22L/min/0.4bar
Temp. stability acc. to DIN 12876:	0.02K

Type	Working Temp. range °C	Bath capacity L	Bath tank depth mm	Heating power W	Cooling capacity KW at 100/20/0/-20/-30/-40°C	PK	Cat. No.
CC®-405	-40 ... +200	5	150	1500	0.7 / 0.7 / 0.7 / 0.45 / 0.18 / 0.03	1	**9.859 237**
CC®-405w	-40 ... +200	5	150	1500	0.7 / 0.7 / 0.7 / 0.45 / 0.18 / 0.03	1	**9.859 238**
CC®-410	-45 ... +200	22 /8.5*	200	3000	0.8 / 0.8 / 0.8 / 0.5 / 0.15 / 0.1	1	**9.857 403**
CC®-410wl	-45 ... +200	22 /8.5*	200	3000	0.8 / 0.8 / 0.8 / 0.5 / 0.15 / 0.1	1	**9.859 243**
CC®-415	-40 ... +200	5	150	1500	1.2 / 1.2 / 1.0 / 0.6 / 0.2 / 0.05	1	**9.859 239**
CC®-415wl	-40 ... +200	5	150	1500	1.2 / 1.2 / 1.0 / 0.6 / 0.2 / 0.05	1	**9.859 240**

*with displacement insert

1

1 Refrigeration Bath circulators to -55°C

NEW!

1

Huber

Compact design and high cooling capacity at low temperatures.
Option: Natural refrigerant available on request

Heating capacity
CC®-505/CC®-505wl: 1.5kW
CC®-508 to CC®-525w: 3.0kW
Pump data CC®-505 to CC®-508w
Max. pressure: 33L/min/0.7bar
Max. suction: 22L/min/0.4bar
Pump data CC®-510 to CC®-525w
Max. pressure: 31L/min/0.6bar
Max. suction: 24L/min/0.35bar
Supply requirement
CC®-505 to CC®-508w: 230V/50Hz
CC®-510 to CC®-525w: 400V/50Hz
Temp. stability acc. to DIN 12876: ±0.02K

Type	Working Temp. range °C	Bath capacity L	Bath tank depth mm	Cooling capacity KW at 100/20/0/-20/-40°C	PK	Cat. No.
CC®-505	-50 ... +200	5	150	1,2 / 1,2/ 1,0 / 0,6 / 0,15	1	**9.859 241**
CC®-505wl	-50 ... +200	5	150	1,2 / 1,2/ 1,0 / 0,6 / 0,15	1	**9.859 242**
CC®-508	-55 ... +200	5	160	1,5 / 1,5 / 1,5 / 1,0 / 0,3	1	**9.857 402**
CC®-508w	-55 ... +200	5	160	1,5 / 1,5 / 1,5 / 1,0 / 0,3	1	**9.857 401**
CC®-510	-50 ... +200	26/15*	200	2,1 / 2,1 / 2,1 / 1,0 / 0,4	1	**9.859 256**
CC®-510w	-50 ... +200	18/11*	200	2,4 / 2,4 / 2,4 / 1,0 / 0,4	1	**9.859 245**
CC®-515	-55 ... +200	26/15*	200	3,3 / 3,3 / 3,3 / 1,6 / 0,6	1	**9.859 247**
CC®-515w	-55 ... +200	18/11*	200	3,3 / 3,3 / 3,3 / 1,6 / 0,6	1	**9.859 246**
CC®-520w	-55 ... +200	17/10*	200	5,0 / 5,0 / 5,0 / 3,0 / 1,5	1	**9.859 248**
CC®-525w	-55 ... +100	17/10*	200	7,0 / 7,0 / 5,0 / 3,0 / 1,5	1	**9.859 249**

*with displacement insert
Function version available by E-grade.

2 Refrigerated Bath Circulators to -90°C

2

Huber

The CC-805 is a low cost alternative for low temperature applications when low power is required.
Option: Natural refrigerant available on request

Pump data CC®-805/ CC®-902:
Max. pressure: 33L/min/0.7bar
Max. suction: 22L/min/0.4bar
Pump data CC®-820 to CC®-906w:
Max. pressure: 31L/min/0.6bar
Max. suction: 24L/min/0.35bar
Supply requirement: 400V 50Hz
CC®-805/CC®-902: 230V 50Hz
Temp. stability acc. to DIN 12876: 0.02K

Type	Working Temp. range °C	Bath capacity L	Bath tank depth mm	Cooling capacity KW at 100/20/0/-20/-40/-60°C	Heating power W	PK	Cat. No.
CC®-805	-80 ... +100	5	150	0.5 / 0.5 / 0.5 / 0.4 / 0.3 / 0.3	1500	1	**9.859 250**
CC®-820	-80 ... +100	17 / 10*	200	1.2 / 1.2 / 1.2 / 1.1 / 0.9 / 0.6	3000	1	**9.859 251**
CC®-820w	-80 ... +100	17 / 10*	200	1.2 / 1.2 / 1.2 / 1.1 / 0.9 / 0.6	3000	1	**9.859 252**
CC®-902	-90 ... +200	5	150	1.2 / 1.2 / 1.2 / 1.1 / 0.9 / 0.6	1500	1	**9.857 400**
CC®-905	-90 ... +200	26 / 15*	200	2.0 / 2.0 / 2.0 / 1.9 / 1.7 / 1.0	3000	1	**9.859 253**
CC®-905w	-90 ... +200	26 / 15*	200	2.0 / 2.0 / 2.0 / 1.9 / 1.7 / 1.0	3000	1	**9.859 254**
CC®-906w	-90 ... +200	30 / 19*	200	3.0 / 3.0 / 3.0 / 2.8 / 2.4 / 1.6	3000	1	**9.859 255**

*with displacement insert
Function version available by E-grade

1

1 Refrigerated circulator baths, Economy ED, EH series

JULABO

For temperature control of external closed circuit systems, such as photometers, refractometers, viscometers etc. Smaller objects can be thermoregulated directly in the bath tank.

Economy ED series
- bright LED temperature display for actual and setpoint values, resolution 0.1°C
- keypad for setpoint, switches automatically to the actual value
- PID1 temperature control
- adjustable high temperature cut-out/dry-running protection (protection class 1 for non-flammable liquids, DIN 12876-1)

Economy EH series
- extended temperature range up to +150°C
- adjustable high temperature cut-out/dry-running protection (protection class 3 for flamable liquids, DIN 12876-1)

Type	Working Temp. range °C	Temp. stability ± °C	Cooling capacity kW at 20/0/-20°C	Pump max. L/min / bar	Capacity L	PK	Cat. No.
Economy F12-ED	-20 to 100	0.03	0.16/0.1/0.02	15 / 0.35	4.5	1	**9.857 841**
Economy F25-ED*	-28 to 100	0.03	0.26/0.2/0.06	15 / 0.35	4.5	1	**9.858 062**
Economy F26-ED**	-28 to 100	0.03	0.26/0.2/0.06	15 / 0.35	4.5	1	**9.857 844**
Economy F34-ED	-30 to 100	0.03	0.45/0.32/0.14	15 / 0.35	20	1	**9.858 075**
Economy F12-EH	-20 to 150	0.03	0.16/0.1/0.02	15 / 0.35	4.5	1	**9.857 843**
Economy F25-EH	-28 to 150	0.03	0.26/0.2/0.06	15 / 0.35	4.5	1	**9.857 842**
Economy F32-EH	-35 to 150	0.03	0.45/0.39/0.15	15 / 0.35	8	1	**9.857 846**
Economy F33-EH	-30 to 150	0.03	0,5/0,32/0,12	15 / 0.35	16	1	**6.230 445**
Economy F34-EH	-30 to 150	0.03	0.45/0.32/0.14	15 / 0.35	20	1	**9.857 847**
Economy F38-EH	-35 to 80	0.05	0.92/0.66/0.32	15 / 0.35	45	1	**9.857 848**

* Compact units. **Low-profile design.

2

2 Refrigerated circulator baths TopTech MA, ME series

JULABO

For temperature control of external closed circuit systems, such as photometers, refractometers, viscometers etc. Smaller objects can be thermoregulated directly in the bath tank.

TopTech MA series - as TopTech MB, but additionally with:
- PPC (Pump Pressure Control), electronically adjustable pump capacity
- adjustable high temperature cut-out/dry-running protection (protection class 3 for flamable liquids, DIN 12876-1)

TopTech ME series - as TopTech MA, but additionally with:
- VFD Comfort Display, resolution 0.01°C
- Pt100 external sensor connection
- Programmer for 10 programme steps

Type	Working Temp. range °C	Temp. stability ± °C	Cooling capacity kW at 20/0/-20°C	Pump max. L/min / bar	PK	Cat. No.
TopTech F12-MA	-20 to 200	0.02	0.16/0.1/0.02	11-16 / 0.23-0.45	1	**9.858 115**
TopTech F25-MA	-28 to 200	0.02	0.26/0.2/0.06	11-16 / 0.23-0.45	1	**9.858 117**
TopTech FP40-MA	-40 to 200	0.02	0.68/0.5/0.32/0.004	11-16 / 0.23-0.45	1	**9.858 121**
TopTech FP50-MA	-50 to 200	0.02	0.9/0.8/0.5/0.16	11-16 / 0.23-0.45	1	**9.858 122**
TopTech F25-ME*	-28 to 200	0.01	0.26/0.2/0.06	11-16 / 0.23-0.45	1	**9.857 849**
TopTech F26-ME**	-28 to 200	0.01	0.26/0.2/0.06	11-16 / 0.23-0.45	1	**9.858 066**
TopTech F32-ME	-35 to 200	0.01	0.45/0.39/0.15	11-16 / 0.23-0.45	1	**9.857 857**
TopTech F33-ME	-30 to 200	0.01	0.50/0.32/0.12	11-16 / 0.23-0.45	1	**9.857 858**
TopTech F34-ME	-30 to 150	0.01	0.45/0.32/0.14	11-16 / 0.23-0.45	1	**9.857 859**
TopTech FP40-ME	-40 to 200	0.01	0.68/0.5/0.32/0.04	11-16 / 0.23-0.45	1	**9.857 862**
TopTech FP50-ME	-50 to 200	0.01	0.9/0.8/0.5/0.16	11-16 / 0.23-0.45	1	**9.857 863**

* Compact units. **Low-profile design.

1 Refrigerated circulator baths, HighTech HE, HL series

1

For temperature control of externally open and closed circuit systems. Smaller objects can be thermoregulated directly in the bath tank. *JULABO*

HighTech HE series - as TopTech ME, but additionally with:
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- powerful pressure and suction pump, capacity max. 1.1 bar, electronically adjustable

HighTech HL series - as HighTech HE, but additionally with:
- LCD Dialogue Display, backlit for convenient interactive operation
- TCF Temperature Control Features to optimise control behaviour
- programmer for 6 x 60 programme steps
- connections for solenoid valve and HSP booster pump

Type	Working Temp. range °C	Temp. stability ± °C	Cooling capacity KW at 20/0/-20/-30°C	Pump max. L/min / bar	PK	Cat. No.
HighTech F25-HE	-28 to 200	0.01	0.26/0.20/0.06	22-26 / 0.4-0.7	1	**9.858 063**
HighTech F32-HE	-35 to 200	0.01	0.45/0.39/0.15	22-26 / 0.4-0.7	1	**9.858 071**
HighTech F34-HE	-30 to 150	0.01	0.45/0.32/0.14	22-26 / 0.4-0.7	1	**9.857 867**
HighTech FP40-HE	-40 to 200	0.01	0.68/0.5/0.32/0.04	22-26 / 0.4-0.7	1	**9.858 455**
HighTech FP45-HE	-42 to 200	0.01	0.85/0.7/0.42/0.08	22-26 / 0.4-0.7	1	**9.858 458**
HighTech FP50-HE	-50 to 200	0.01	0.9/0.8/0.5/0.16	22-26 / 0.4-0.7	1	**9.858 456**
HighTech F32-HL	-35 to 200	0.01	0.45/0.39/0.15	22-26 / 0.4-0.7	1	**9.858 072**
HighTech FP35-HL	-35 to 150	0.01	0.45/0.39/0.15	22-26 / 0.4-0.7	1	**9.857 872**
HighTech F25-HL	-28 to 200	0.01	0.26/0.20/0.06	22-26 / 0.4-0.7	1	**9.858 064**
HighTech F33-HL	-30 to 200	0.01	0.50/0.32/0.12	22-26 / 0.4-0.7	1	**9.857 870**
HighTech FP40-HL	-40 to 200	0.01	0.68/0.5/0.32/0.04	22-26 / 0.4-0.7	1	**9.857 878**
HighTech FP45-HL	-42 to 200	0.01	0.85/0.7/0.42/0.08	22-26 / 0.4-0.7	1	**9.858 459**
HighTech FP50-HL	-50 to 200	0.01	0.9/0.8/0.5/0.16	22-26 / 0.4-0.7	1	**9.858 460**

2 Refrigerated circulator baths series Economy and HighTech

2

The new CF series offers compact refrigerated/heating circulators. With small overall dimensions the units can even be placed on a very small surface or within a complex installation. All models offer a heating capacity of 2kW and safety class 3 according to DIN12876-1. The maximum ambient temperature of +40°C as well as ventilated air cooling allow the units to be positioned very closely together, with other units or directly under a fume hood. Furthermore all the models feature pump connections for external temperature applications and a bath opening for temperature control of small objects directly in the circulator bath. Wetted parts are made of high quality stainless steel or plastic. The instruments incorporate reliable Microprocessor electronics offering high temperature stability as well as warning and safety functions. *JULABO*

Economy line CF30, CF40
- Ergonomic design and easy operation
- Compact dimensions require minimal space
- Splash-proof keypad
- Large, bright LED temperature display
- Precise PID temperature control
- RS232 interface for PC connection
- Adjustable high temperature cut-out
- Pump connections for external temperature applications
- Bath opening for temperature control of small objects in the bath

HighTech line CF31, CF41
Generally as Economy line but additionally with:
- Bright VFD display and interactive LCD dialogue display
- Highly precise ICC cascade temperature control
- RS232/RS485 interface for PC connection
- Electronically adjustable pump output
- External Pt100 sensor connection
- Integrated programmer with 6x60 program steps
- Early warning system for low liquid level
- 3-point calibration
- TCF Temperature Control Features

Type	Working Temp. range °C	Temp. stability ± °C	Cooling capacity kW at 20/0/-20°C	Pump max. L/min / bar	Suction bar	PK	Cat. No.
CF30	-30 to 150	0.03	0.32/0.25/0.15	15 / 0.35	-	1	**9.858 086**
CF40	-40 to 150	0.03	0.47/0.4/0.28	15 / 0.35	-	1	**9.858 087**
CF31	-30 to 200	0.02	0.32/0.25/0.15	22-26 / 0.4-0.7	0.2-0.4	1	**9.858 088**
CF41	-40 to 200	0.02	0.47/0.4/0.28	22-26 / 0.4-0.7	0.2-0.4	1	**9.858 089**

Further JULABO Refrigerated circulator baths for lower temperature ranges available on request.

1

1 Unichiller® in alternative bench-top or tower housing formats

Huber

Unichillers are intelligent chillers which are used mainly as an environmentally friendly and economic alternative to tap water for process cooling. Low temperatures increase efficiency and recovery rates in condensation processes. In contrast to tap water a set-point can be selected between -10/-20°C to 40°C and controlled with a temperature stability of ±0.5°C. The product range includes 27 air cooled and 26 water cooled models, with cooling powers from 0.3kW to 50kW. Most models can be factory fitted with a heater if required. Housings are made of stainless steel to ensure long life. Compact, value-for-money units are available in classic look with cooling powers up to 2.5kW for cooling applications in the lab. Models from Minichiller to Unichiller 025w are suitable for on or under the lab bench. The proven Huber tower housing models offer power with small footprints. These models are fitted with the exchangeable Pilot ONE controller and are used in both research and production. The range of cooling powers available is from 0.3kW to 50kW. Unichillers with an optional heating become powerful process ciculators (additional charge on request).

2

2 Chillers, Minichiller®

Huber

Small, robust and cost effective with its stainless steel casing. The Minichiller is the smallest Unichiller in the world. Minichillers are available with air or water-cooled refrigeration systems, illuminated level indicator, overflow and drain on the front. The filling port is on the top of the unit. All models use natural refrigerants as standard.

Supply req.: 230V 50/60Hz
Dimensions (WxDxH): 225mm x 360mm x 380mm

Type	Working Temp. range °C	Pump max. L/min / bar	Cooling capacity kW at 15/0/-10°C	PK	Cat. No.
Minichiller®*	-20 ... +80	20 / 0.2	0.3/0.2/0.14	1	**9.857 717**
Minichiller® w*	-20 ... +80	20 / 0.2	0.3/0.2/0.14	1	**9.857 592**

*Also available as "plus" version.
(plus=RS232/serial with the LAI commands G,v,L; (SpyLight compatible)

3

3 Unichiller®, bench-top

NEW!

Huber

Unichillers are intelligent chillers which can be used as an environmentally friendly and economic alternative to tap water for process cooling. Low temperatures increase efficiency and recovery rates in gas condensation processes. In contrast to tap water a desired setpoint can be selected between -10/-20°C to 40°C and controlled with a temperature stability of ±0.5°C. The product range includes 27 air cooled and 26 water cooled models, with cooling powers from 0.3kW to 50kW. Most models can be factory fitted with a heater. The casings are made of high quality stainless steel to ensure long life.

With the exception of the two models Unichiller 006Tw-MPC and Unichiller 009Tw-MPC all units can be factory fitted with optional heating and independent over-temperature protection. Increasing the maximum working temperature to 100°C and the temperature stability to ±0.2K. The new construction allows constant operation in ambient temperatures up to 40°C. The water-cooled models are especially quiet and require little cooling water even at full cooling power. Despite the increasing costs of water the ROI is exceptionally short. All models with maximum pump pressure of 2.5bar have an adjustable bypass and a pressure gauge.

All Unichillers are also available as "plus" version (plus=RS232/serial with the LAI commands G,v,L; (SpyLight compatible). Unichiller 003-MPC and Unichiller 006-MPC uses natural refrigerant as standard, for all other models available on request.

Type	Working Temp. range °C	Supply req., 50 Hz V	Pump max. L/min / bar	Cooling capacity kW at 15/0/-10°C	PK	Cat. No.
Unichiller® 003-MPC®	-5 ... +40	230	20 / 0,2	0.28/0.2/-	1	**7.639 971**
Unichiller® 006-MPC®	-20 ... +40	230	33 / 0,7	0.6/0.5/0.35	1	**7.656 640**
Unichiller® 007-MPC®	-20 ... +40	230	25 / 2,5	0.7/0.55/0.4	1	**9.857 659**
Unichiller® 010-MPC®	-20 ... +40	230	25 / 2,5	1.0/0.8/0.5	1	**9.857 361**
Unichiller® 012-MPC®	-20 ... +40	230	25 / 2,5	1.2/1.0/0.7	1	**9.857 362**
Unichiller® 012w-MPC®	-20 ... +40	230	25 / 2,5	1.2/1.0/0.7	1	**9.857 363**
Unichiller® 015-MPC®	-20 ... +40	230	25 / 2,5	1.5/1.0/0.7	1	**9.857 364**
Unichiller® 015w-MPC®	-20 ... +40	230	25 / 2,5	1.5/1.0/0.7	1	**9.857 365**
Unichiller® 022-MPC®	-10 ... +40	230	25 / 2,5	2.2/1.6/1.0	1	**9.857 366**
Unichiller® 022w-MPC®	-10 ... +40	230	25 / 2,5	2.2/1.6/1.0	1	**9.857 367**
Unichiller® 025-MPC®	-10 ... +40	230	25 / 2,5	2.5/2.0/1.2	1	**9.857 369**
Unichiller® 025w-MPC®	-10 ... +40	230	25 / 2,5	2.5/2.0/1.2	1	**9.857 370**

1 Unichiller® (bench top) with water cooled refrigeration

Huber

The models Unichiller 006Tw-MPC® and Unichiller 009Tw-MPC® have a footprint of only 230 x 280mm and are therefore suitable for installation in laboratory furniture or in extract hoods. The water-cooled chillers emit almost no heat and require minimal amounts of cooling water. All models use natural refrigerant as standard.

Pump capacity max. 30L/min, pressure max. 0.7bar
Supply requirements: 230V/50Hz

Type	Working Temp. range °C	Cooling capacity kW at 15/0/-10/-20°C	Dimensions (W x D x H) mm	PK	Cat. No.
Unichiller® 006Tw-MPC®	-20 ... +40	0,6/0,45/0,4/0,25	230 x 280 x 540	1	**9.857 050**
Unichiller® 006Tw-MPC® plus*	-20 ... +40	0,6/0,45/0,4/0,25	230 x 280 x 540	1	**9.857 317**
Unichiller® 009Tw-MPC®	-25 ... +40	0,6/0,7/0,4/0,2	230 x 280 x 540	1	**9.857 053**
Unichiller® 009Tw-MPC® plus*	-25 ... +40	0,6/0,7/0,4/0,2	230 x 280 x 540	1	**9.857 318**

*with RS232 interface

1

2 Unichiller® (tower housing) with air cooled refrigeration

NEW!

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 in all Huber chillers ensures low operating costs and reduced usage of valuable fresh water. Huber circulating chillers are a resource saving solution with a quick return on investment.
Optional: Natural refrigerant available on request

Type	Working Temp. range °C	Pump max. L/min / bar	Cooling capacity kW at 15/0/-10/-20°C	Dimensions (W x D x H) mm	PK	Cat. No.
Unichiller® 017T	-10 ... +40	25 / 3.0	1.7 / 0.9 / 0.4 / --	450 x 510 x 1230	1	**9.859 301**
Unichiller® 020T	-20 ... +40	25 / 3.0	2.0 / 2.0 / 1.5 / 0.8	450 x 510 x 1230	1	**9.859 302**
Unichiller® 025T	-10 ... +40	25 / 3,0	2.5 / 1.2 / 0.6 / --	450 x 510 x 1230	1	**9.859 303**
Unichiller® 040T	-10 ... +40	26 / 3.0	4.0 / 2.5 / 1.5 / --	500 x 552 x 1451	1	**9.859 304**
Unichiller® 045T	-20 ... +40	26 / 3.0	4.5 / 4.5 / 2.9 / 1.5	500 x 552 x 1451	1	**9.859 305**
Unichiller® 055T	-10 ... +40	57/ 5.6	5.5 / 3.0 / 1.3 / --	600 x 632 x 1610	1	**9.859 306**
Unichiller® 060T	-20 ... +40	80 / 5.6	6.0 / 6.0 / 3.9 /2.0	600 x 632 x 1610	1	**9.859 307**
Unichiller® 080T	-10 ... +40	84 / 5.6	8.0 / 4.8 / 2.5 / --	600 x 790 x 1614	1	**9.859 308**

2

3 Unichiller® (tower housing) with water cooled refrigeration

NEW!

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 in all Huber chillers ensures low operating costs and reduced usage of valuable fresh water. Huber circulating chillers are a resource saving solution with a quick return on investment.
Option: Natural refrigerant available on request

Type	Working Temp. range °C	Pump max. L/min / bar	Cooling capacity kW at 15/0/-10/-20°C	Dimensions (W x D x H) mm	PK	Cat. No.
Unichiller® 017Tw	-10 ... +40	25 / 3,0	1,7 / 0,9 / 0,4 / --	400 x 440 x 1230	1	**9.859 317**
Unichiller® 020Tw	-20 ... +40	25 / 3,0	2,0 / 2,0 / 1,5 / 0,8	400 x 440 x 1230	1	**9.859 318**
Unichiller® 025Tw	-10 ... +40	25 / 3,0	2,5 / 1,2 / 0,6 / --	400 x 440 x 1230	1	**9.859 319**
Unichiller® 030Tw	-20 ... +40	26 / 3,0	3,0 / 3,0 / 2,0 / 1,0	400 x 440 x 1230	1	**9.859 320**
Unichiller® 040Tw	-10 ... +40	26 / 3,0	4,0 / 2,5 / 1,5 / --	400 x 440 x 1230	1	**9.859 321**
Unichiller® 055Tw	-10 ... +40	57/ 5,6	5,5 / 4,0 /2,0 / --	500 x 552 x 1261	1	**9.859 314**
Unichiller® 060Tw	-20 ... +40	80 / 5,6	6,0 /6,0 / 3,8 / 2,1	500 x 552 x 1261	1	**9.859 315**
Unichiller® 080Tw	-10 ... +40	84 / 5,6	8,0 / 4,65 / 2,35 / --	500 x 552 x 1261	1	**9.859 316**

3

1

1 Beer Force-Ageing-Test Bath BFT®5

Huber

We offer special air cooled circulator for the Beer Force-Ageing-Test. It is equipped with a programmer for the change between 0°C/40°C and 0°C/60°C in a 24 hour cycle.
Casings and bath parts are made of stainless steel.

Dimensions (WxDxH): 460 x 710 x 911mm

Type	Working Temp. range °C	Bath opening mm	Bath tank depth mm	Heating power W	Cooling capacity kW at 20 °C	PK	Cat. No.
BFT®5	-40 ... +80	350 x 410	270	2000	1.2	1	**9.857 399**

2

9.698 528

Compact Recirculating Cooler, F-Series

NEW!

JULABO

- Environmentally friendly operation with low energy consumption
- No side vents, instruments can be placed right next to other equipment
- All wetted parts made of stainless steel or high grade plastic
- Large, bright LED display
- Compact design and small foot print
- Splash-proof keypad
- Drain tap
- Easy filling

Type	Working Temp. range °C	Temp. stability ± °C	Cooling capacity kW at 20/0/-10°C	Pressure bar	Flow rate L / min.	PK	Cat. No.
F250	-10 to +40	0.50	0,25/0,18/0,09	0,35	15	1	**9.698 525**
F500	0 to +40	0.50	0,5/0,25	0,5	24	1	**9.698 528** 2
F1000	0 to +40	0.50	1,0/0,35	1,0	23	1	**9.698 526**

3

3 Flow coolers, FL series

JULABO

- Working temperature range covers -20°C to +40°C, the temperature stability of the PID control is ±0.5°C
- splash-proof keypad with integral mains switch
- large, bright LED display
- reliable Microprocessor PID temperature control
- filling level indicator
- powerful immersion pumps, suitable for continuous operation
- permissible temperature within return line: +80°C max.
- easy filling from the top with hinged protective lid
- low liquid level protection with visual and audible alarm signal
- stainless steel bath tanks
- removable venting grille for cleaning of the condenser
- front drain
- no side vents
- RS232 interface for PC connection
- Ingress protection class acc. to IEC 529: IP21
- pressure indicator
- adjustable bypass for pump pressure

Type	Working Temp. range °C	Temp. stability ± °C	Cooling capacity kW at 20/0/-10°C	Pressure bar	Flow rate L / min.	PK	Cat. No.
FL300	-20 to 40	0.50	0.3/0.2/0.15	0,35	15	1	**9.698 530**
FL601	-20 to 40	0.50	0.6/0.4/0.33	1,0	23	1	**9.698 531**
FL1201	-20 to 40	0.50	1.2/0.9/0.6	1,0	23	1	**9.698 532**
FL1203	-20 to 40	0.50	1.2/0.8/0.5	0,5-3,0	40	1	**9.698 533**
FL1701	-20 to 40	0.50	1.7/1.1/0.85	1,0	23	1	**9.698 534**
FL1703	-20 to 40	0.50	1.7/1.0/0.75	0,5-3,0	40	1	**9.698 535**
FL2503	-20 to 40	0.50	2.5/1.5/1.2	0,5-3,0	40	1	**9.698 536**
FL2506	-15 to 40	0.50	2.5/1.0/0.3	0,5-6,0	60	1	**9.698 537**
FL4003	-20 to 40	0.50	4.0/2.4/1.5	0,5-3,0	40	1	**9.698 538**
FL4006	-20 to 40	0.50	4.0/1.9/0.9	0,5-6,0	60	1	**9.698 539**
FL7006	-20 to 40	0.50	7.0/5.1/3.0	0,5-6,0	60	1	**9.698 540**
FL11006	-20 to 40	0.50	11.0/7.5/5.0	0,5-6,0	60	1	**9.698 541**
FL20006	-20 to 40	0.50	20.0/10/6	0,8-6,0	80	1	**9.698 550**

IMPRESSIVE ...

SMALL AND POWERFUL

Petite Fleur®
meets Grande Fleur®

- Working temperatures: -40 °C to +200 °C
- Incredibly compact dimensions
- Unique thermodynamics
- Highest cooling power density [w/l]
- Brilliant 5,7" touchscreen controller
- Ethernet, RS232 and USB interfaces
- Natural refrigerant propane R290

-125...+425°C

Petite Fleur and Grande Fleur are the smallest temperature control systems in the Unistat range. Thanks to their compact form, the units can be operated in confined spaces, for example laboratory fume hoods. Both models are predestined for the temperature control of small and medium sized research reactors.

huber
high precision thermoregulation

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1

1 Petite Fleur® and Grande Fleur® - the small Tangos®

NEW!

Huber

The small Tangos mark the entry level into the world of Unistats. The compact dimensions and unique thermodynamics make the Petite Fleur and Grande Fleur ideal for precise temperature control of research reactors. As for all Unistats also the Petite/Grande Fleur models have unique thermodynamic properties. In a direct comparison to other devices in this price class the systems stand alone when it comes to the highest temperature control speed. All models are extremely space saving, simple to operate and can be used flexibly at working temperatures of -40 to +200°C. All units use natural refrigerant as standard.

Temperature stability at -10°C:	0.01K
Temperature adjustment and indication:	digital
Internal temperature sensor:	Pt100
Interface digital:	Ethernet, USB (Host und Device), RS232
Alarm message:	optic, acoustic, relay
Heating power:	1.5kW
Refrigeration machine:	
Petite Fleur®/Petite Fleur®-eo/Grande Fleur®/ Grande Fleur-eo®:	air cooled, natural refrigerant
Petite Fleur® w/Grande Fleur w®:	water cooled, natural refrigerant
Circulation pump:	33 l/min (Petite Fleur®); 38 l/min (Grande Fleur®)
Max. delivery	
Max. delivery pressure	0.9bar
Net weight Petite Fleur®:	45kg
Net weight Grande Fleur®:	55kg
Power supply:	230V 1~ 50Hz
Protection class:	IP20
Min./max. ambient temperature:	5°C/40°C

Type	Working Temp. range max. °C	Cooling capacity kW at 200/20/0/-20/-40°C	Dimensions (W x D x H) mm	PK	Cat. No.
Petite Fleur®	-40 ... +200	0,48/0,48/0,45/0,27/0,04	260 x 450 x 504	1	**9.859 170**
Petite Fleur® w	-40 ... +200	0,48/0,48/0,45/0,27/0,04	260 x 450 x 504	1	**9.859 171**
Petite Fleur®-eo*	-40 ... +200	0,48/0,48/0,45/0,27/0,04	260 x 450 x 504	1	**6.258 888**
Grande Fleur®	-40 ... +200	0,60/0,60/0,60/0,35/0,04	295 x 540 x 565	1	**7.672 072**
Grande Fleur® w	-40 ... +200	0,60/0,60/0,60/0,35/0,04	295 x 540 x 565	1	**9.859 257**
Grande Fleur®-eo*	-40 ... +200	0,60/0,60/0,60/0,35/0,04	295 x 540 x 565	1	**9.859 258**
Grande Fleur® w-eo*	-40 ... +200	0,60/0,60/0,60/0,35/0,04	295 x 540 x 565	1	**9.859 259**

*for external open applications

2

2 Dynamic Temperature Control Systems Unistat®

The dynamic thermoregulation of the Unistat line introduced a revolution in fluid temperature control. Unistats are the ideal solution for fast and highly exact thermal control of external applications, e.g. reactors, autoclaves, miniplants, pilot systems, reaction calorimeters or distillation systems. In comparison to classical circulators Unistats are convincing in their unique thermodynamics for highly exact and reproducible results. The Unistat technology thereby guarantees to always have the shortest heating and cooling times as well as a large temperature range without bothersome fluid changes. There are over 60 models to choose from with cooling powers from 0.7kW to 130kW. What ever the application, Unistats provide professional scale-up offering the same stable process conditions from the development lab to production systems. Unistat temperature control systems make use of a professional range of functions for all requirements. The facilities encompass a colour touchscreen display, with comfortable menu guidance and a real-time graphics display of temperature progress, as well as an intelligent cascade temperature control and high performance speed controlled circulation pump. This is rounded off with a programmer, a ramp function, calendar start, customisable user menus, sensor calibration as well as analogue and digital interfaces.

Advantages and Functions:
- Working temperatures from -125°C to +425°C
- Previously unachievable performance
- Highly acurate, intelligent temperature control
- Maximum process stability and reproducability
- The fastest heating and cooling rates
- High Cooling Power from 0.7 to 130kW
- Large temperature range without fluid change
- Increased thermal fluid life
- Incredibly compact
- Brilliant 5.7" TFT-touchscreen with graphic display
- 2x USB (Host and Device), Ethernet and RS232 interface

Software upgrades for Huber Circulators - please see page 737.

1 Temperature control systems, Unistat® to -55°C

NEW!

1

Huber

Unistats are predestined for applications in process and chemical engineering, such as temperature control of reactors, autoclaves, miniplant/pilot systems, reactor blocks and calorimeters. Unistat temperature control systems with their unique thermodynamics provide highly accurate and reproducible results, guaranteeing the shortest heating and cooling times and a wide temperature range without fluid change. Environmentally and economically Unistats stand out, offering natural refrigerants and an efficient energy management system for reduced operating costs.

Heating capacity
Unistat® tango®/ tango® wl/405/405w/410w: 1.5/3.0kW
Unistat® 410: 3.0kW
Unistat® 425/425w: 2.0kW
Unistat® 430/430w: 4.0kW
Unistat® 510/510w: 6.0kW

Type	Working Temp. range °C	Pump max. L/min / bar	Cooling capacity kW at 250/200/100/0/-20/-40°C	PK	Cat. No.
Unistat® tango®	-45 ... +250	55 / 0.9*	0.7 / 0.7 / 0.7 / 0.7 / 0.4 / 0.06	1	**9.859 101**
Unistat® tango® wl	-45 ... +250	55 / 0.9*	0.7 / 0.7 / 0.7 / 0.7 / 0.4 / 0.06	1	**9.859 102**
Unistat® 405	-45 ... +250	55 / 0.9*	1.0 / 1.0 / 1.0 / 1.0 / 0.6 / 0.15	1	**9.859 108**
Unistat® 405w	-45 ... +250	55 / 0.9*	1.3 / 1.3 / 1.3 / 1.3 / 0.7 / 0.15	1	**9.859 107**
Unistat® 410w	-45 ... +250	55 / 0.9*	1.7 / 2.5 / 2.5 / 1.5 / 0.8 / 0.2	1	**9.859 126**
Unistat® 425	-40 ... +250	105 / 1.5**	2.0 / 2.0 / 2.0 / 2.5 / 1.8 / 0.2	1	**9.859 116**
Unistat® 425w	-40 ... +250	105 / 1.5**	2.8 / 2.8 / 2.8 / 2.5 / 1.9 / 0.2	1	**9.859 117**
Unistat® 430	-40 ... +250	90 / 1.7**	3.5 / 3.5 / 3.5 / 3.5 / 2.2 / 0.3	1	**9.859 118**
Unistat® 430w	-40 ... +250	90 / 1.7**	3.5 / 3.5 / 3.5 / 3.5 / 2.2 / 0.3	1	**9.859 119**
Unistat® 510	-50 ... +250	105 / 1.5**	5.3 / 5.3 / 5.3 / 5.3 / 2.8 / 0.9	1	**9.857 299**
Unistat® 510w	-50 ... +250	105 / 1.5**	5.3 / 5.3 / 5.3 / 5.3 / 2.8 / 0.9	1	**9.859 120**

*Integrated pressure control VPC
**VPC pressure control via optional bypass

2 Temperature control systems, Unistat® to -85°C

NEW!

2

Huber

Heating capacity
Unistat® 705/705w: 1.5/3.0kW
Unistat® 815/815w: 2.0kW
Safety class: FL, III
Supply requirements: 230/400V 50Hz (705/705w)
400V 50Hz (815/815w)

Dimensions (WxDxH)
Unistat® 705/705w: 425 x 400 x 720mm
Unistat® 815/815w: 460 x 604 x 1465mm

Type	Working Temp. range °C	Pump max. L/min / bar	Cooling capacity kW at 250/200/100°C	Cooling capacity kW at 0/-20/-40/-60/-80°C	PK	Cat. No.
Unistat® 705	-75 ... +250	55 / 0.9	0.6 / 0.6 / 0.6	0.65 / 0.6 / 0.6 / 0.3 / --	1	**9.859 105**
Unistat® 705w	-75 ... +250	55 / 0.9	0.6 / 0.6 / 0.6	0.65 / 0.6 / 0.6 / 0.3 / --	1	**9.859 106**
Unistat® 815	-85 ... +250	40 / 0.9	1.3 / 1.3 / 1.3	1.5 / 1.5 / 1.4 / 1.2 / 0.2	1	**9.859 121**
Unistat® 815w	-85 ... +250	40 / 0.9	1.5 / 1.5 / 1.5	1.5 / 1.5 / 1.4 / 1.2 / 0.2	1	**9.859 122**

Integraded VPC pressure control.

1

1 High temperature circulators Unistat® up to 425°C

NEW!

Huber

High-precision and space saving temperature control up to +425°C. The new high temperature thermostats of the Unistat range set new standards in safety, easy operation, and rapid, dynamic temperature control. The minimal internal volume allows the shortest heat-up times to be achieved. The working life and properties of the thermal fluid are also protected, by avoiding direct contact between the hot fluid and atmosphere. The high temperature Unistats are suitable for temperature control applications up to +425°C, e.g. a double jacketed reaction vessel (reactor), and pilot plants, as well as the semiconductor Industry and high temperature distillation. They are suitable for maintaining constant high temperatures, or to contain an exothermic reaction at high temperature.

Safety class: FL, III

Type	Temp. range max. °C	Heating capacity kW	Dimensions (W x D x H) mm	Supply req., 50 Hz V	Cooling capacity kW at 400/300/200/100°C	PK	Cat. No.
Unistat® TR401	+50 ... +400	3.0/9.0	288 x 379 x 890	230/400	-- / -- / -- / --	1	**6.258 173**
Unistat® TR401w HT	+50 ... +400	3.0/9.0	288 x 379 x 890	230/400	10.0 / 10.0 / 10.0 / 10.0	1	**9.857 315**
Unistat® TR402	+80 ... +425	3.0/9.0	288 x 332 x 870	230/400	-- / -- / -- / --	1	**9.859 125**
Unistat® T305	+65 ... +300	3.0/6.0	425 x 250 x 631	230/400	-- / -- / -- / --	1	**9.859 109**
Unistat® T305 HT	+65 ... +300*	3.0/6.0	425 x 250 x 631	230/400	--/ 3.2 / 2.3 / 0.6	1	**9.859 110**
Unistat® T305w HT	+65 ... +300	3.0/6.0	425 x 250 x 631	230/400	-- / 10.0 / 10.0 / 10.0	1	**9.859 111**
Unistat® T320w HT	+65 ... +300	12.0	460 x 554 x 1332	400	-- / 10.0 / 10.0 / 6.0	1	**9.859 113**
Unistat® T330w HT	+65 ... +300	24.0	460 x 554 x 1332	400	-- / 10.0 / 10.0 / 6.0	1	**9.859 115**
Unistat® T340w HT	+65 ... +300	48.0	600 x 704 x 1517	400	-- / 10.0 / 10.0 / 6.0	1	**9.859 124**
Unistat® T402	+80 ... +425	3.0/6.0	505 x 400 x 765	230/400	-- / -- / -- / --	1	**9.857 316**

* Lowest working temperature 15K above ambient temperature.

2

9.857 916

Highly Dynamic Temperature Control Systems Presto A30/A40/W40

NEW!

JULABO

The models of JULABO's new Presto generation set new standards for highly dynamic temperature control systems. They represent the optimal solution for highly precise external temperature control applications. The instruments feature extremely short heat-up and cool-down times, wide working temperature ranges and maximum performance with minimum dimensions. All models have an interactive touch screen for easy, menu-guided operation. The pump pressure is adjustable and displayed on the screen. Analog and a number of digital interfaces permit laboratory automation. Typical applications are temperature control of jacketed reactor vessels, reactor systems, autoclaves, distillations, pilot plants, semiconductor industries.

The advantages of PRESTO models:
- Extremely short heat-up and cool-down times
- Powerful circulating pump with adjustable pump pressure
- Wide working temperature ranges without change of thermal fluid
- Large TFT touch screen for interactive operation
- Digital and analog interfaces
- Handles and castors allow for easy set-up
- Low filling volume
- Small dimensions

3

9.857 917

Specifications

Temperature stability:	±0.01...0.05°C
Pump capacity	
Flow rate:	
A30	25L/min
A40/W40/A80/W80	16-40L/min
Pressure:	
A30	0.5bar
A40/W40/A80/W80	0.3 to 1.7bar

Type	Working Temp. range °C	Cooling capacity kW at 20 °C	Heating capacity kW	Dimensions (W x D x H) mm	PK	Cat. No.
A 30	-30 ... + 250	0,5	2.7	242 x 583 x 612	1	**9.857 915**
A 40	-40 ... + 250	1,2	2.7	323 x 583 x 662	1	**9.857 916** 2
W 40	-40 ... + 250	1,2	2.7	323 x 583 x 662	1	**9.857 917** 3
A 80	-80 ... + 250	1,2	1.8	430 x 650 1258	1	**9.857 918**
W 80	-80 ... + 250	1,2	1.8	430 x 650 1258	1	**9.857 919**
A 80t	-80 ... + 250	1,2	3.4	430 x 650 1260	1	**9.857 920**
W 80t	-80 ... + 250	1,2	3.4	430 x 650 1260	1	**9.857 921**

1 Beakers, glass, jacketed, type T

DURAN®. For heating and cooling liquids. Thermostatting liquid is circulating between the double walls of the beaker jacket. With glass olives (O.D. 12mm) for thermostat hoses. Coolant ram pressure: 0.5bar at maximum, operating temperature: +300°C at maximum. Special sizes available on request.

KGW

Capacity ml	Int. diam. mm	Ext. diam. mm	Int. height mm	PK	Cat. No.
250	55	70	115	1	**9.032 371**
600	77	95	135	1	**9.032 373**
2000	112	135	200	1	**9.032 376**

2 Beakers, glass, jacketed wiht PTFE-Olive, type T-GL

DURAN®. For heating and cooling liquids. Thermostatting liquid is circulating between the double walls of the beaker jacket. With glass-screw connections GL14 with PTFE olives (O.D. 9mm, T-GL2000 with GL18 and O.D. 10mm) for thermostat hoses. Coolant ram pressure: 0.5bar at maximum, operating temperature: +120°C at maximum. Special sizes available on request.

KGW

Capacity ml	Neck thread GL	Int. diam. mm	Ext. diam. mm	Int. height mm	PK	Cat. No.
250	14	55	70	115	1	**9.032 372**
600	14	77	95	135	1	**9.032 374**
2000	18	112	135	200	1	**9.032 377**

3 Hoses, metal

Insulated hoses of metal ensure the highest operational safety of your temperature control circuit. The high quality hoses offer the best heat transfer with optimum flow characteristics, hence reducing the power loss in external temperature control applications. The hoses are firmly screwed to the temperature control machine and the external application.

Huber

Type	Ext. diam. mm	Temp.-working range °C	Length cm	PK	Cat. No.
NW 12 M16 x 1	33	-50 to 200	100	1	**9.857 214**
NW 12 M16 x 1	33	-50 to 200	150	1	**9.857 215**
NW 12 M16 x 1	33	-50 to 200	200	1	**9.857 216**
NW 12 M16 x 1	33	-50 to 200	300	1	**9.857 217**
NW 12 M16 x 1	44	-100 to 350	100	1	**9.857 121**
NW 12 M16 x 1	44	-100 to 350	150	1	**9.857 122**
NW 12 M16 x 1	44	-100 to 350	200	1	**9.857 045**
NW 12 M16 x 1	44	-100 to 350	300	1	**9.857 124**
NW 12 M24 x 1.5	44	-100 to 350	100	1	**9.857 218**
NW 12 M24 x 1.5	44	-100 to 350	150	1	**6.229 781**
NW 12 M24 x 1.5	44	-100 to 350	200	1	**9.857 219**
NW 12 M24 x 1.5	44	-100 to 350	300	1	**9.857 220**
NW 12 M24 x 1.5	56	-120 to 400	100	1	**9.857 046**
NW 12 M24 x 1.5	56	-120 to 400	150	1	**9.857 047**
NW 12 M24 x 1.5	56	-120 to 400	200	1	**9.857 048**
NW 12 M24 x 1.5	56	-120 to 400	300	1	**9.857 049**
NW 20 M30 x 1.5	56	-100 to 350	100	1	**9.857 125**
NW 20 M30 x 1.5	56	-100 to 350	150	1	**9.857 126**
NW 20 M30 x 1.5	56	-100 to 350	200	1	**9.857 127**
NW 20 M30 x 1.5	56	-100 to 350	300	1	**9.857 128**
NW 25 M38 x 1.5	63	-100 to 350	100	1	**9.857 129**
NW 25 M38 x 1.5	63	-100 to 350	150	1	**9.857 130**
NW 25 M38 x 1.5	63	-100 to 350	200	1	**9.857 131**
NW 25 M38 x 1.5	63	-100 to 350	300	1	**9.857 132**

1

1 Thread adapters

Huber

Type	PK	Cat. No.
M16x1 male - M16x1 male	1	9.857 176
M16x1 female - M16x1 female	1	9.857 177
M16x1 male - G½ male	1	9.857 178
M16x1 male - G½ female	1	9.857 179
M16x1 female - R½ male	1	9.857 180
M16x1 female - G½ female	1	9.857 181
M16x1 male - G¾ female	1	9.857 182
M16x1 female - G¾ female	1	9.857 183
M16x1 female - M30x1.5 male	1	9.857 184
M16x1 male - M30x1.5 male	1	9.857 185
M16x1 male - M30x1.5 female	1	9.857 186
M24x1.5 female - M16x1 male	1	6.227 404
M24x1.5 female - ¾ NPT female	1	9.857 209
M24x1.5 male - M16x1 female	1	9.857 210
M24x1.5 male - R½ female	1	9.857 211
M24x1.5 female - R½ male	1	9.857 212
M24x1.5 male - M24x1.5 male	1	9.857 213
M30x1.5 male - M30x1.5 male	1	9.857 187
M30x1.5 female - G3/8 male	1	9.857 188
M30x1.5 male - G½ male	1	9.857 189
M30x1.5 male - R½ female	1	9.857 190
M30x1.5 female - G½ male	1	9.857 191
M30x1.5 female - G½ female	1	9.857 192
M30x1.5 male - G¾ male	1	9.857 193
M30x1.5 male - R¾ female	1	9.857 194
M30x1.5 female - ¾ NPT male	1	9.857 208
M30x1.5 female - G¾ female	1	9.857 195
M30x1.5 male - G1 male	1	9.857 196
M30x1.5 female - G1 female	1	9.857 197
M30x1.5 male - M38x1.5 female	1	9.857 201
R½ female - R½ female	1	9.857 198
R½ female - ¾ NTP female	1	9.857 199
M38x1.5 female - 1 NPT male	1	9.857 200
M38x1.5 female - R¾ male	1	9.857 202

Further thread adapters available on request

2

2 Accessories M16x1

NEW!

Huber

Accessories	PK	Cat. No.
Hose connector NW 8	1	9.857 145
Hose connector NW 12	1	9.857 146
Blank Plug	1	9.857 147
Nut	1	9.857 148
Micro hose connector NW 3.2	1	9.857 149
Adaptor 90°	1	9.857 150
Ball valve*	1	9.857 151
Ball valve**	1	6.264 110
2-way Header	1	9.857 152
3-way Header	1	9.857 153
4-way Header	1	9.857 154
5-way Header	1	9.857 206
2-way Valve System*	1	9.857 155
3-way Valve System*	1	9.857 156
4-way Valve System*	1	9.857 157
5-way Valve System*	1	9.857 207

*Temperature range: -20 to +140°C (max. 6 bar at +140°C)
**Temperature range: -60 to +200°C (max. 20 bar at +175°C)

1 Thermal fluids

Huber thermal fluids are recommended because they have the best possible thermodynamic and environmental characteristics. Safe reliable operation relies on compliance with safety standards to ensure optimal results.

Huber

Description	Type	Capacity litres	Temp. range °C	PK	Cat. No.
Thermal fluid MinOil	P20.190.40	5	+20 bis +190	1	**6.201 643**
Thermal fluid MinOil	P20.190.40	20	+20 bis +190	1	**6.239 618**
Thermal fluid SilOil	P20.275.50	5	+20 bis +275	1	**6.201 670**
Thermal fluid SilOil	P20.275.50	10	+20 bis +275	1	**6.203 535**
Thermal fluid SilOil	M20.195/235.20	5	-20 bis +195/235	1	**6.306 078**
Thermal fluid SilOil	M20.195/235.20	10	-20 bis +195/235	1	**6.250 420**
Thermal fluid SilOil	M40.165.10/200.10	5	-40 bis +165/200	1	**6.250 278**
Thermal fluid SilOil	M40.165.10/200.10	10	-40 bis +165/200	1	**6.304 378**
Thermal fluid SilOil	M60.115.05/200.05	5	-60 bis +115/200	1	**6.201 255**
Thermal fluid SilOil	M60.115.05/200.05	10	-60 bis +115/200	1	**6.225 263**
Thermal fluid SilOil	M90.055.03	5	-90 bis +55	1	**7.615 661**
Thermal fluid SilOil	M90.055.03	10	-90 bis +55	1	**6.202 172**

Further thermal fluids available on request

2 Thermal fluid DW-Therm

DW-Therm is a mixture of isometric triethoxysilanes and has been developed for hydraulically sealed systems.

Huber

- temperature range from -90°C to +200°C (hydraulically sealed systems)
- excellent stability at high temperatures
- low viscosity at low temperatures
- low volatility and pleasant odour
- easy handling (no creeping like silicone oils)
- good compatibility with silicone oils
- insoluble in water and environmentally friendly
- not classified as dangerous goods, no known toxicity

Specifications

Appearance and odour:	transparent, colourless or yellow liquid with characteristic odour
Silane content:	99%
Viscosity:	2.0 - 2.2 mm² /sec at 20°C
Density:	0.88g/cm³ at 15°C
Boiling range	228 - 235°C
Solidification at:	-137°C
Flash point:	101°C
Ignition temperature:	265°C
Usage:	closed systems

Description	Type	Capacity Litres	Temp. range °C	PK	Cat. No.
Thermal fluid DW-Therm	M90.200.02	10	-90 to +200°C	1	**6.201 320**

Thermal fluid DW-Therm HT

DW-Therm HT is a mixture of partially hydrogenated terphenyls. It is for use exclusively in high temperature Unistats.

Huber

- temperature range from +20°C to +340°C (hydraulically sealed systems)
- long lifetime at high temperatures under inert atmosphere: 3-4 years
- good thermal properties for heat transfer
- high thermal oxidation stability
- nontoxic

Specifications

Appearance:	clear, orange coloured liquid
Silane content:	99.5% partially hydrogenated naphtalenes
Viscosity:	51 mm²/sec at 20°C
Density:	1.043 g/cm³ at 20°C
Initial boiling point:	approx. 352°C
Solidification point:	-33°C
Flash point:	approx. 190°C
Ignition temperature:	approx. 385°C
Usage:	closed systems

Description	Type	Capacity Litres	Temp. range °C	PK	Cat. No.
Thermal fluid DW-Therm HT	P20.340.32	5	+20 ... +340	1	**6.204 286**
Thermal fluid DW-Therm HT	P20.340.32	10	+20 ... +340	1	**6.222 503**

1 2 Water Baths, PolyScience

NEW!

PolyScience

The PolyScience water baths are characterized by a user-friendly display, high precision, simple operation and an excellent price-performance ratio. The inclined display makes the readability and usage very comfortable. Easy to use Digital Temperature controller features three temperature pre-sets for one-touch selection of frequently used set-points plus a user settable high limit alarm that alerts if the bath temperature exceeds pre-set limits.

- Displays actual and set point temperature simultaneously
- Three push-button pre-sets for frequently used temperatures
- Integrated timer
- Calibration capability
- Five Reservoir sizes from 2 to 28 litres
- Reservoir drain (10, 20 and 28 liter baths)
- Primary and automatic safety thermostats.
- Stainless steel tank with hinged gable lid
- 3.25" illuminated LCD-Display
- Maximum Ambient Temperature: 40°C
- Sample tray included
- Temperature Range: Ambient + 5°C
- Temperature Uniformity ±0.2°C
- Temperature Stability: ±0.1°C

An optional high rise lid allows the interference-free placement of media bottles or flasks into the General Purpose Water Bath. For example: 4 x 1 litre flasks will fit into a 10 litre bath with the lid fully closed. These lids are available on request.

Type	Volume litres	Power consumption W	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
Water Bath, digital	2	120	99 x 109 x 152	229 x 267 x 305	1	**6.267 596**
Water Bath, digital, shallow	2	360	274 x 127 x 65	368 x 267 x 305	1	**6.268 105**
Water Bath, digital	5	360	274 x 127 x 152	368 x 267 x 305	1	**6.267 597**
Water Bath, digital	10	1000	269 x 295 x 152	393 x 432 x 305	1	**6.267 598**
Water Bath, digital	20	1400	432 x 241 x 152	572 x 445 x 305	1	**6.267 599**
Water Bath, digital	28	1400	432 x 241 x 203	546 x 415 x 358	1	**6.267 800**

1

2

3

3 LLG- Floating pellets, PP

NEW!

Pellets with 20mm diameter. Can cover 0.1m².
Protect against evaporation and fast temperature loss. Decrease hazardous vapors.
Resistant against most acids, bases, solvents and mineral oils.
Temperature stable up to +100°C.

Description	PK	Cat. No.
Floating pellets	250	**6.266 611**

Now available - PolyScience Digital Water Baths.

View set and actual temperature simultaneously.

Monitor and access samples with the clear, hinged lid.

Easily move bath with integrated handles.

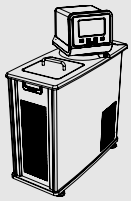
USES 1/3* LESS ELECTRICITY

Save time with rapid heat up.

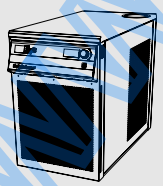
Built-in timer.

*Compared to previous models.

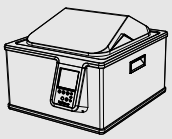
Circulating Water Baths



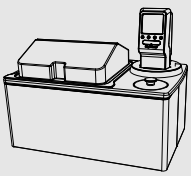
Recirculating Chillers



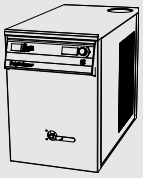
Non-Stirred Water Baths



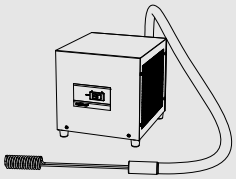
Application Specific Products



Non-Refrigerated Coolers



Low Temperature Coolers



Also from PolyScience

the leader in liquid Temperature Control Solutions® since 1963.

PolyScience®
Temperature Control Solutions

1

1 Basic digital water baths JB Academy

NEW!

Grant

An ideal choice for schools and colleges requiring a basic simple-to-use quality water bath. Base tray included as standard. A great value range consisting of three models.

- Ambient + 5°C to 95°C
- Unique Set and Forget™ technology, fast heat-up, reliable temperature control
- Stability ±0.5°C
- Simple, intuitive controls, quick and easy to set temperature
- Practical front panel lock, disables front panel controls preventing unintentional temperature changes
- 3 year warranty

Type	Volume litres	Rating kW	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
JBA5	5	0.35	281 x 131 x 132	335 x 215 x 200	1	**9.905 875**
JBA12	12	0.80	306 x 281 x 132	360 x 365 x 225	1	**9.905 876**
JBA18	18	1.40	281 x 485 x 132	335 x 570 x 275	1	**9.905 877**

2

2 Digital water baths JB Nova

NEW!

Grant

General purpose water baths with stable temperature control, simple controls and fast heat up. A choice of four models with a base tray and lid included as standard.

- Ambient +5°C to 95°C
- Unique Set and Forget™ technology, fast reliable temperature control
- Stability ±0.5°C
- Simple, intuitive controls, quick and easy to set temperature
- Drain tap on 12L, 18L and 26L baths
- Practical front panel lock - disables front panel controls preventing unintentional temperature changes
- 3-year warranty

Type	Volume litres	Rating kW	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
JBN5	5	0.35	281 x 131 x 132	335 x 215 x 200	1	**9.905 870**
JBN12	12	0.80	308 x 281 x 132	360 x 380 x 225	1	**9.905 871**
JBN18	18	1.40	281 x 485 x 132	335 x 590 x 275	1	**9.905 872**
JBN26	26	1.40	278 x 481 x 182	335 x 590 x 275	1	**9.905 873**

3

3 Unstirred water baths SUB Aqua Pro series, digital

NEW!

Grant

High quality and excellent temperature stability, in a value-for-money package designed to meet the needs of the world`s researchers. The SUB Aqua Pro range is composed of eight models, including shallow and dual baths.

- Three programmable temperature presets
- Drain tap on SUB Aqua 12 Pro,18 Pro, 26 Pro and 34 Pro
- Front panel lock-out
- Countdown timer with audible buzzer
- Ambient +5°C to 99°C operation
- Stability ±0.2°C
- Digital PID control for quick heat-up and precision control throughout the temperature range
- User-settable sample protection and fixed thermal cut-out
- High grade stainless steel tanks
- Wide range of tanks sizes and accessory options to suit different requirements

Available as 120V or 230V.

Type	Volume litres	Rating kW	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
SUB Aqua 2 Pro	2	0.25	131 x 117 x 132	185 x 200 x 200	1	**9.905 860**
SUB Aqua 2s Pro	2	0.35	289 x 139 x 47	335 x 215 x 150	1	**9.905 861**
SUB Aqua 5 Pro	5	0.35	281 x 131 x 132	335 x 215 x 200	1	**9.905 862**
SUB Aqua 12 Pro	12	0.80	306 x 281 x 132	360 x 380 x 225	1	**9.905 863**
SUB Aqua 18 Pro	18	1.05	281 x 485 x 132	335 x 590 x 275	1	**9.905 864**
SUB Aqua 26 Pro	26	1.05	278 x 481 x 182	335 x 590 x 275	1	**9.905 865**
SUB Aqua 34 Pro	34	1.30	281 x 635 x 180	335 x 770 x 275	1	**9.905 866**
SUB Aqua Dual Pro	5 & 12	1.15	281 x 131 x 132 & 306 x 281 x 132	545 x 380 x 225	1	**9.905 867**

1 Water baths, TW series

JULABO

- microprocessor technology with PID temperature control
- bright Multi-Display (LED) indicates five different temperature values
- splash-proof mains switch, built into a plastic membrane keypad
- easy-to-use controls
- timer for selecting desired operating period
- RS232 interface provided
- comprehensive range of accessories

Bath lid not included.

Type	Capacity Litres	Working Temp. range °C	Temp. stability ± °C	Heating power W	Bath opening mm	Bath tank depth mm	PK	Cat. No.
TW2	2	20 to 99.9	0.2	1000	150 x 130	110	1	**6.207 044**
TW8	8	20 to 99.9	0.2	2000	230 x 270	140	1	**9.906 424**
TW12	12	20 to 99.9	0.2	2000	350 x 270	140	1	**9.906 425**
TW20	20	20 to 99.9	0.2	2000	500 x 300	180	1	**9.906 426**

2 Lids for Water baths, TW series

NEW!

JULABO

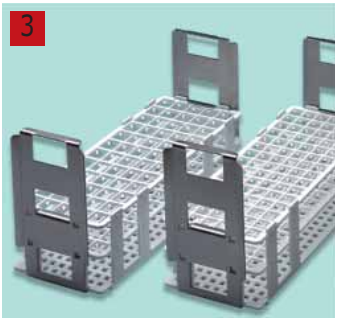
One-piece moulded, transparent Makrolon® lids with handle and hinges.

For	Width mm	Depth mm	Height mm	PK	Cat. No.
TW2	170	160	160	1	**6.229 213**
TW8	290	320	160	1	**9.906 398**
TW12	400	320	160	1	**9.906 399**
TW20	560	350	170	1	**9.906 401**

3 Racks for Water baths, TW series

JULABO

Test tube racks.



For	Description	PK	Cat. No.
TW2	24 test tubes, 16/17 mm dia.	1	**6.238 821**
TW8/TW12/TW20	60 test tubes, 16/17 mm dia.	1	**9.906 431**
TW8/TW12/TW20	90 test tubes, 12/13 mm dia.	1	**9.906 432**
TW8/TW12/TW20	90 microlitre vessels, 11/12 mm dia.	1	**9.906 433**
TW8/TW12/TW20	21 test tubes, 30/31mm dia.	1	**9.906 434**

4 LLG- Floating pellets, PP

NEW!

Pellets with 20mm diameter. Can cover 0.1m².
Protect against evaporation and fast temperature loss. Decrease hazardous vapors.
Resistant against most acids, bases, solvents and mineral oils.
Temperature stable up to +100°C.

Description	PK	Cat. No.
Floating pellets	250	**6.266 611**

1

1 Incubation/Inactivation Water Baths

Water Baths for incubations and inactivations of cultures *GFL*

Models 1002-1005/1008/1012/1013

Microprocessor controlled temperature regulation. Temperature display and setting digitally via LED display in 0.1°C increments. Temperature constancy ±0.1°C, temporal at 50°C.

Temperature range from approx. 5°C above ambient temperature to 99.9°C; after installation of a water level regulator 1919 (accessory) from approx. 3°C above tap water temperature to 99.9°C.

Short heating-up times. Electronic overtemperature cut-out, 4°C above set temperature and electromechanical >130°C. Electronic monitoring of the temperature regulator. In case of failure the cause of the fault is shown on the display. Soft touch keys with clear symbols. Interior (bath interior and heating element, cover frame, lid and perforated floor) made of stainless steel. Standard equipment includes lid and perforated floor*.
Tip-up, insulating lid with inner chamber, no dripping back of condensate into the vessels. Corrosion-resistant outer housing is made of electrolytically galvanized sheet steel, powder-coated. Drain cock at the back. The units are tested according to the German Equipment Safety Law and have the CE mark. Electrical connection: 230 volt/50...60 Hz (other voltages available on request).

Model 1005

Especially suitable for warming medical hot packs. *Water bath 1005 is supplied without perforated floor if the rack for hot packs 1923 (accessory) is ordered.

Models 1012/1013

The circulation system ensures an optimal temperature uniformity throughout the whole bath. An electric motor with rotary magnet is flanged to the bath floor. Its torque is transmitted to a PTFE coated stirring magnet in the bath. The stirring magnet forces the water into the centre of the bath and then evenly back again.

Type	Capacity Litres	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Power W	Weight kg	PK	Cat. No.
1002	7	340 x 395 x 255	245 x 200 x 145	1000	9.0	1	**9.905 902**
1003	14	500 x 440 x 255	400 x 245 x 145	1500	12.5	1	**9.905 903**
1004	21	700 x 440 x 255	600 x 245 x 145	1500	16.7	1	**9.905 904**
1005	40	510 x 490 x 445	410 x 296 x 315	1500	20.7	1	**9.905 905**
1008	20	500 x 440 x 325	400 x 245 x 205	1500	14.7	1	**9.905 908**
1012	7	340 x 395 x 325	245 x 200 x 145	1000	10.6	1	**9.905 912**
1013	14	500 x 440 x 325	400 x 245 x 145	1500	14.6	1	**9.905 913**

Table of racks held by water baths 1002-1013

GFL

Bath model	Max. number of rack types held Rack 1920	Rack 1921	Rack 1922	Rack 1923	Rack 1942
1002	4	4	4	-	1
1003/1008	8	8	8	-	2
1004	12	12	12	-	3
1005	9	9	9	1	2
1012	4	4	4	-	1
1013	8	8	8	-	2

2

9.905 970

Stainless steel. 1920/1921/1922. Max height: 185mm.

Type	Description	PK	Cat. No.
1920	With 20 apertures, each 18 mm diameter	1	**9.905 970** 2
1921	With 5 apertures, each 31 mm diameter	1	**9.905 971**
1922	With 20 apertures each 13 mm diameter	1	**9.905 972**

3

3 Water Level Regulator

NEW!

GFL

Accessory **for Shaking Water Baths 1083, 1086, 1092 and for Water Baths 1002 to 1013.**
Adjustable, to maintain a desired level of water and to cool **Shaking Water Bath 1083 and Water Baths 1002-1013** (from approx. 3°C above tap water temperature).

Type	PK	Cat. No.
1919	1	**9.905 986**

1 Steam Bath 1023

For gentle steaming work using Erlenmeyer flasks, bottles, etc. Bath, cover frame and perforated floor above the heating element are made of stainless steel. *GFL*
Temperature range from approx. 5°C above ambient to boiling point, with temperature control by thermostat. Heating element protected by overtemperature cut-out. The adjustable water level regulator at the back of the unit and the set of rings are supplied as standard.
With removable, square cover (W 265mm x L 265mm) accommodating a 9-part set of rings, in heat-resistant plastic, which can be split. The aperture diameter can be adjusted in approx. 20mm steps (min. 32.5/max. 173.5mm). The bath housing is made of powder coated, electrolytically galvanized sheet steel. Mains supply 230V 50/60 Hz, 1.0kW (Other voltages available on request).
The unit is tested according to the German Equipment Safety Law and has the CE mark.

Type	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	Capacity Litres	Power W	Weight kg	PK	Cat. No.
1023	240 x 240 x 120	342 x 400 x 180	7	1000	9	1	**9.905 923**

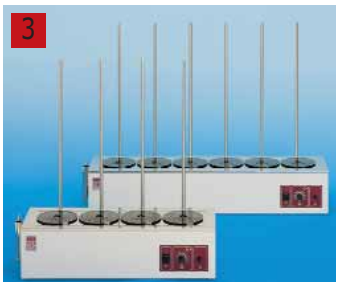
Inserts and support rod for water bath 1023 on request..

2 Water Baths for Fume Hoods 1031 and 1032

Special baths for gentle steaming work with Erlenmeyer flasks, bottles, etc., also suitable for use in fume hoods. Bath, removable recessed lid with holes and perforated floor above the heating element made of stainless steel. *GFL*
Temperature range from approx. 5°C above ambient to boiling point, with thermostatic temperature controller. Heating element protected by over-temperature cut-out. The apertures in the lid are covered by sets of rings in heat-resistant plastic. The adjustable water level regulator at the right-hand side of the unit is included. The units are tested according to the German Equipment Safety Law and have the CE mark. Electrical connection: 230V/50/60Hz (other voltages on request).

Type	Apertures with sets of rings	Top diam. mm	External dimensions (W x D x H) mm	Power W	Working height mm	Weight kg	PK	Cat. No.
1031	6	91	430 x 300 x 155	1500	100	6.1	1	**9.905 931**
1032	8	111	670 x 300 x 155	1500	100	8.2	1	**9.905 932**

3 Multiple Water Baths 1041 and 1042



For gentle steaming work with Erlenmeyer flasks, bottles, etc. Bath interior, frame with apertures and perforated floor above the heating element made of stainless steel. *GFL*
Temperature range from approx. 5°C above ambient to boiling point, with thermostatic temperature control. Heating element protected by overtemperature cut-out. The 131mm dia. apertures in the frame are covered by sets of rings in heat resistant plastic. With stainless steel support rod, 600mm x 12mm L x diameter behind each opening, for securing vessels. A water level regulator is included on the left-hand side of the bath. Working height 90mm. The units are tested according to the German Equipment Safety Law and have the CE mark.
Electrical connection: 230 Volt/50/60Hz (other voltages available on request).

Type	Apertures with sets of rings	Top diam. mm	External dimensions (W x D x H) mm	Power W	Working height mm	Weight kg	PK	Cat. No.
1041	4	131	682 x 232 x 190	1000	90	12.0	1	**9.905 941**
1042	6	131	982 x 232 x 190	1500	90	16.0	1	**9.905 942**

Water baths WNB/WNE

A combination of high-grade, anti-corrosion stainless steel and state-of-the-art technology. Two performance classes available: "Basic" and "Excellent", tuned to varying requirements and applications.
Basic: the water bath for routine processes, with integral timer adjustable from 1min. up to 99.59 hrs, and with delayed switch-on and programmable hold time.
Excellent: with enhanced features for overtemperature protection, liquid level monitoring and continuous, long-term tests using two high-grade Pt100 sensors. The integral timer range is from 1 min. up to 999 hrs and allows a setpoint-dependent hold time to be programmed, in addition to all the Basic-level features. Audible alarms for overtemperature, low liquid level and programme end make operation even more convernient.

Interior - Heating Concept:
- easy-to-clean, grade 1.4301 (ASTM 304), laser-welded, stainless steel interior, reinforced by deep drawn ribbing
- corrosion-proof, large-area heating surface on 3 sides of the tank

1

1 Water baths WNB

Memmert

Control:
- microprocessor PID-temperature controller with integral autodiagnostic system and fault indicator
- solid state switching unit
- one, class A, 4-wire Pt100 sensor
- integral digital timer from 1 min. to 99.59 hours for:

Continuous operation
Wait (delayed On for continuous and limited timed operation)
Hold
- digital display (LED) of set and actual temperature and of (remaining) programme time
- LEDs for indication of programme status

Overtemperature protection (dual):
- if an overtemperature condition occurs due to a fault, heating is switched off at approx. 10°C above the set temperature (fixed value)
- an independent, mechanical, TB class 1 temperature limiter switches the heating off at approx. 30°C above max. bath temperature

With textured, grade 1.4301 (ASTM 304), corrosion resistant, stainless steel housing.

Without covers - please order separately.
Specifications

Working-temperature range: at least 5°C above ambient temperature up to +95°C with additional boiling mode (+100°C)
Setting temperature-range: +10°C up to +95°C and boiling mode
Power supply: 230V, 50/60Hz; 115 V, 50/60 Hz no extra cost

Type	Capacity Litres	Internal dimensions (W x D x H) mm	Housing (W x D x H) mm	Weight kg	Power consumption W	PK	Cat. No.
WNB7	7	240 x 210 x 140	468 x 356 x 238*	11	1200	1	**9.906 581**
WNB10	10	350 x 210 x 140	578 x 356 x 238*	13	1200	1	**9.906 582**
WNB14	14	350 x 290 x 140	578 x 436 x 238*	15	1800	1	**9.906 583**
WNB22	22	350 x 290 x 220	578 x 436 x 296*	17	2000	1	**9.906 584**
WNB29	29	590 x 350 x 140	818 x 516 x 238*	24	2400	1	**9.906 585**
WNB45	45	590 x 350 x 220	818 x 516 x 296*	26	2800	1	**9.906 586**

* High with flat cover.

2

2 LLG- Floating pellets, PP

NEW!

Pellets with 20mm diameter. Can cover 0.1m².
Protect against evaporation and fast temperature loss. Decrease hazardous vapors.
Resistant against most acids, bases, solvents and mineral oils.
Temperature stable up to +100°C.

Description	PK	Cat. No.
Floating pellets	250	**6.266 611**

1 2 3 4 Water baths WNE

Memmert

Control:
- fuzzy-supported, PID microprocessor controller with integral autodiagnostic system and fault indication
- solid state switching unit
- 2 class A , 4-wire Pt100 sensors, mutually monitoring and controlling the performance at the same temperature value
- digital timer from 1 min to 999 hours for:

On (continuous operation)
Delayed On
Hold, or set temperature-dependent Hold, with fixed dwell time
- digital display (LED) of all set parameters, such as temperature, time and alarm values
- calibration facility on controller
- with audible and visual alarms at programme end, as input keypress confirmation and if low liquid level occurs (heating is switched off automatically)

Triple Overtemperature Protection:
- in case of overtemperature due to a fault, the heating is switched off at approx. 10°C above the set temperature (fixed value)
- independent, protection class 3.1, TWW electronic overtemperature controller, or protection class 2, TWB overtemperature limiter, are adjustable in set-up menu by the user
- class 1, TB mechanical temperature limiter switches the heating off at approx. 30°C above max. bath temperature
- set value display resolution: 0.1°C below 99.9°C, 1°C above 100°C

Textured, grade 1.4301 (ASTM 304), corrosion resistant stainless steel housing

Without lids - please order separately.

Specifications:

Working-temperature range:	at least 5°C above ambient up to +95°C with additional boiling mode (+100°C)
Setting temperature-range:	+10°C up to +95°C and boiling mode
Power supply:	230V, 50/60Hz; 115 V, 50/60 Hz no extra cost

Type	Capacity Litres	Internal dimensions (W x D x H) mm	Housing (W x D x H) mm	Weight kg	Power consumption W	PK	Cat. No.
WNE7	7	240 x 210 x 140	468 x 356 x 238*	11	1200	1	**9.906 591**
WNE10	10	350 x 210 x 140	578 x 356 x 238*	13	1200	1	**9.906 592**
WNE14	14	350 x 290 x 140	578 x 436 x 238*	15	1800	1	**9.906 593**
WNE22	22	350 x 290 x 220	578 x 436 x 296*	17	2000	1	**9.906 594**
WNE29	29	590 x 350 x 140	818 x 516 x 238*	24	2400	1	**9.906 595**
WNE45	45	590 x 350 x 220	818 x 516 x 296*	26	2800	1	**9.906 596**

*High with flat cover.

1

2

3

4

Accessories for all Memmert Water baths and Oil baths

NEW!

Stainless steel flat cover with openings and ring sets. Stainless steel gabled cover. *Memmert*

Shaking device:
Shaking device including support frame (for racks or support basket with perforated mounting shelf) for use in water baths, shaking speed 35-160 strokes per minute (horizontal back/forth movement) requires special gabled cover

Peltier Cooling Device CDP115
For precise operation with temperatures starting from +10°C. The temperature is controlled via the electronic controller of the waterbath with a precision of ±0.1 K
Easy fitting to bath by snap-on-technology, suitable for all tank sizes.
Power supply: 230 V, 50/60 Hz or 115 V, 60 Hz (please state in case of order)
Effective cooling capacity: 115W
Pumping capacity of circulation pump for coolant: 600ml/min.

Type	For Volume l	Well format	Diam. mm	PK	Cat. No.
Flat cover for water baths / oil baths	7	1	147	1	**9.906 530**
Flat cover for water baths / oil baths	10	3	107	1	**9.906 531**
Flat cover for water baths / oil baths	14	6	87	1	**9.906 532**
Flat cover for water baths / oil baths	22	6	87	1	**9.906 533**
Flat cover for water baths / oil baths	29	8	107	1	**9.906 534**
Flat cover for water baths / oil baths	45	8	107	1	**9.906 537**
Gabled cover for water baths / oil bath	7			1	**9.906 550**
Gabled cover for water baths / oil bath	10			1	**9.906 551**
Gabled cover for water baths / oil bath	14			1	**9.906 552**
Gabled cover for water baths / oil bath	22			1	**9.906 553**
Gabled cover for water baths / oil bath	29			1	**9.906 554**
Gabled cover for water baths / oil bath	45			1	**9.906 555**
Special gabled cover for WNB/WNE29/45	29/45			1	**6.228 924**
Special gabled cover for WNB/WNE14/22	14/22			1	**6.306 619**
Constant level device for WNB / WNE / WPE				1	**9.906 650**
CDP115 Peltier Cooling Device				1	**9.906 651**
Bottom grid for model WNB/WNE/ONB7				1	**6.302 001**
Bottom grid for model WNB/WNE/ONB10				1	**7.076 000**
Bottom grid for model WNB/WNE/ONB22				1	**7.076 101**
Bottom grid for model WNB/WNE/ONB29				1	**7.083 478**
Bottom grid for model WNB/WNE/ONB45				1	**6.801 467**
Shaking device	29/45			1	**6.228 923**
Shaking device	14/22			1	**7.075 941**

Accessories for shaking waterbath are available on request.

1

1 Water bath protection agent for water baths and shaking water baths

ProAquaTop prevents the formation of algae, bacteria, and mould. 4ml per litre of water required. Replacement of the bath water is indicated by fading of the blue colouration. *GFL*
Please use biocides safely. Always read labels and product information before use.

Type	Volume ml	PK	Cat. No.
1910	200	1	**9.905 957**
1911	3 x 200	3	**9.905 958**
1912	6 x 200	6	**9.905 959**

2

2 Water bath preservative liquid Aqua Stabil

- Prevents build-up of algae and bacteria in bath tanks providing hygienic operation *JULABO*
- No contamination of the tank or immersion thermostat components
- Economical - only 2 ml of Aqua Stabil is required for every 1 litres of water
- Remains effective for weeks, as shown by colour indicator.

Capacity ml	PK	Cat. No.
100 ml bottle	1	**9.858 040**

Shaking water baths LSB Aqua Pro

NEW!

1

Grant

- Reliable linear shaking mechanism for consistent results
- Excellent temperature stability and uniformity of ±0.1°C
- Simple controls, clear, bright display
- Set and Forget™ technology - fast heat-up accurate temperature control
- Extensive choice of trays for a wide variety of vessels. Trays sold separately
- Discreet magnetically coupled shaking mechanism maximises working area
- Advanced dry start/run dry protection - prevents costly service repairs

6.264 684

Minimum working depth:	60mm
Temperature range:	ambient +5 to 99°C
Display:	LED
Linear shaking speed:	20 to 200rpm (depending on load)
Shaking speed display resolution:	1rpm
Linear shaking stroke length:	20mm
Timer:	1 to 999min
Drain tap:	yes
Supply voltage:	220-230V

Type	Capacity L	External dimensions (W x D x H) mm	Dimensions Shaking trays (D x W) mm	PK	Cat. No.
LSB12	12.0	360 x 380 x 275	240x 235	1	**6.264 684** 1
LSB18	18.0	335 x 565 x 275	420x 235	1	**6.264 685**

2 Shaking water bath OLS 26 Aqua Pro

NEW!

2

Grant

A combined orbital/linear shaking bath for ultimate flexibility and usability. Combined orbital/linear motion in one bath, simply rotate tray carrier 180°

- Excellent temperature stability and uniformity of ±0.1°C
- Adjustable shaking speed/intensity for application optimisation
- Set and Forget™ technology - fast heat-up accurate temperature control
- Extensive choice of trays for a wide variety of vessels. Trays sold separately
- Includes adjustable high temp cut-off/alarm, countdown timer, presets, calibration facility and dry start/run dry protection
- Discreet magnetically coupled shaking mechanism maximises working area

Tank size:	26l
Minimum working depth:	70mm
Temperature range:	ambient +5 to 99°C (0 to 99°C with accessory cooling)
Uniformity:	±0.1°C
Stability:	±0.1°C
Display:	2 x LED (individual displays & controls for temperature and shaking speed)
Orbital and Linear shaking speed:	20 to 200rpm (depending on load)
Orbital shaking radius:	9mm
Shaking speed display resolution:	1rpm
Linear shaking stroke length:	18, 28 & 36mm
Shaking tray area:	380 x 235mm
Timer:	1 to 999min
Drain Tap:	yes
Supply voltage:	220-230V

Type	PK	Cat. No.
OLS 26	1	**6.264 683**

3 Shaking water bath lids

NEW!

3

Grant

Lids for shaking water baths aqua pro range. For use at temperatures above 60°C and below room temperature.

Type	For	Material	PK	Cat. No.
LS200	OLS26	stainless steel	1	**9.905 809**
LU14	LSB12	stainless steel	1	**9.905 771**
LU28	LSB18	stainless steel	1	**9.905 772**
AQL12	LSB12	polycarbonate	1	**6.236 450**
AQL26	OLS26, LSB18	polycarbonate	1	**6.255 638**

1

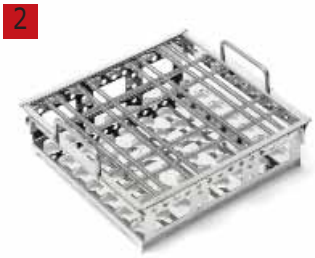
1 Accessories for shaking water baths

NEW!

Grant

Type	For	PK	Cat. No.
Refrigerated immersion cooler CC26	OLS26	1	**6.264 808**
Cooling coil CW26	OLS26	1	**6.264 809**
Spring clamp SC-25	25ml flask	1	**6.264 810**
Spring clamp SC-50	50ml flask	1	**6.264 811**
Spring clamp SC-100	100ml flask	1	**6.264 812**
Spring clamp SC-250	250ml flask	1	**6.264 813**
Spring clamp SC-500	500ml flask	1	**6.264 814**
Spring clamp SC-1000	1000ml flask	1	**6.264 815**
Holder SH	deep well plate	1	**6.264 816**
Spare kit, 10 short and 6 long springs	for use with universal tray	1	**6.264 817**

2



2 Versatile trays for shaking water bath

NEW!

Grant

Versatile stainless steel tray. Designed to accommodate a variety of vessels. Adjustable spring configuration for maximum flask capacity.

Type	For	PK	Cat. No.
TU12	LSB12	1	**6.264 687**
TU18	LSB18	1	**6.264 688**
TU26	OLS26	1	**6.264 686**

3

6.264 690

Test tube tray for shaking water baths

NEW!

Grant

Test tube tray for shaking water baths. Compatible with H1 test tube racks.

Type	For	PK	Cat. No.
Test tube tray	OLS26	1	**6.264 689**
Test tube tray	LSB12	1	**6.264 690**
Test tube tray	LSB18	1	**6.264 691**

3

4

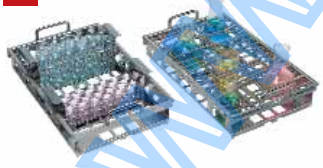
4 Plain trays for shaking water baths Series OLS/LSB

NEW!

Grant

Type	For	PK	Cat. No.
Flask tray	OLS26	1	**6.264 695**
Flask tray	LSB12	1	**6.264 696**
Flask tray	LSB18	1	**6.264 697**
Base tray	LSB12	1	**6.264 698**
Base tray	OLS26/LSB18	1	**6.264 699**

5



5 Test tube racks for shaking water bath, SR series

NEW!

Grant

Type H1-series test tube racks. Stainless steel, 200 x 75mm. The OLS 26 holds up to 5 SR racks, LSB12 holds up to 3 SR racks and LSB18 holds up to 5 SR racks. Choice of 7 variants to accommodate different tube diameters and microtubes.

Type	For tubes	PK	Cat. No.
Test tube rack SR-10	48 x 10mm tubes	1	**6.264 800**
Test tube rack SR-13	44 x 13mm tubes	1	**6.264 801**
Test tube rack SR-16	24 x 16mm tubes	1	**6.264 802**
Test tube rack SR-19	21 x 19mm tubes	1	**6.264 803**
Test tube rack SR-25	12 x 25mm tubes	1	**6.264 804**
Test tube rack SR-30	10 x 30mm tubes	1	**6.264 805**
Test tube rack SR-SE	119 x 0,5ml microtubes	1	**6.264 806**
Test tube rack SR-LE	48 x 1,5ml microtubes	1	**6.264 807**

1 Shaking Water Bath 1083

With Reciprocating Motion. *GFL*
Universally applicable for shaking tasks that require exactly reproducible temperatures.
For gentle mixing or vigorous shaking. Microprocessor controlled temperature regulation. Temperature display and setting via LED display in 0.1°C increments. Temperature range approx. 5°C above ambient to +99.9°C, alternatively after installation of water level regulator 1919 (accessory) approx. 3°C
above tap water temperature to +99.9°C.
Optimum temperature distribution throughout the whole bath interior.
Overtemperature cut-out: electronic, 4°C above set temperature, and electro-mechanical >130°C. Electronic monitoring of the temperature controller. Maintenance-free and durable shaking device, electronically controlled and continuously adjustable from 10 to 250rpm, with soft-start. Constant shaking frequency, independent of load, even when in continuous operation. All parts in contact with water made of stainless steel. No dripping back of condensate into the vessels due to double-walled insulating lid with internal gable. Corrosion-resistant housing is made of powder-coated, electrolytically galvanized sheet steel. Accessories to accept various kinds of vessels are quickly and safely attachable to the shaking device. Easily removable shaking rack. A drain tap is provided to empty the bath.
Tested according to the German Equipment Safety Law and CE marked.

Specifications

External dimensions (WxDxH):	715 x 520 x 330mm
Internal dimensions (WxDxH):	450 x 300 x 160mm
Usable capacity:	20 litres
Usable bath height:	190mm
Net/gross weight:	28/32kg
Shaking motion:	Reciprocating, can be switched on/off
Temperature constancy (temporal):	±0.1°C
Temperature display:	Digital LED
Overtemperature cut-out:	electronic 4°C above set temperature, and electro-mechanical > 130°C
Shaking frequency:	10 to 250rpm.
Shaking amplitude:	22mm
Supply requirements:	230V 50/60Hz, 1.5kW (alternative voltage models are available, details on request)

Type	PK	Cat. No.
1083	1	**9.905 983**

2 Shaking Water Bath 1086

Generally as model 1083, but with digital display of temperature and shaking frequency. *GFL*
Cooling coil supplied as standard. Tested according to the German Equipment Safety Law and CE marked.

Technical Specification

Shaking speed display:	Digital LED
Net/gross weight:	30/34kg
Shaking amplitude:	22mm

Type	PK	Cat. No.
1086	1	**9.905 984**

3 Shaking Water Bath 1092

Generally as model 1086, but with orbital motion. Cooling coil supplied as standard. *GFL*
Tested according to the German Equipment Safety Law and CE marked.

Technical Specification

External dimensions (WxDxH):	635 x 505 x 400mm
Internal dimensions(WxDxH):	450 x 300 x 160mm
Usable capacity:	20 litres
Temperature range:	approx. 5°C above ambient to +80°C, with water level regulator approx. 3°C above tap water temperature to +80°C
Net/gross weight:	35/40kg
Shaking motion:	Orbital, can be switched on/off
Shaking amplitude:	14mm dia.

Type	PK	Cat. No.
1092	1	**9.905 985**

1 Water Level Regulator

NEW!

GFL

Accessory **for Shaking Water Baths 1083, 1086, 1092 and for Water Baths 1002 to 1013.**
Adjustable, to maintain a desired level of water and to cool **Shaking Water Bath 1083 and Water Baths 1002-1013** (from approx. 3°C above tap water temperature).

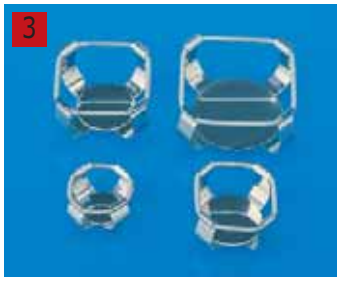
Type	PK	Cat. No.
1919	1	**9.905 986**

2 Tray type 3960

GFL

Accessory for **Shaking Water Baths 1083, 1086 and 1092.**
Stainless steel, with holes to accept clamps for Erlenmeyer flasks, holder for reaction vessels 3926 and test tube racks 3924 and 3925. The tray has two handles that reach above the waters surface, for easy inserting and removing from the bath.

Type	PK	Cat. No.
3960	1	**9.837 960**



3 Clamps for Erlenmeyer Flasks

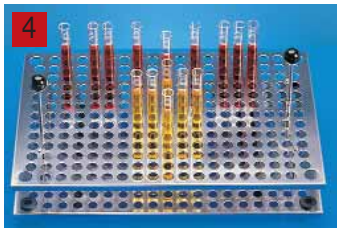
NEW!

GFL

Accessory for **Shaking Water Baths 1083, 1086 and 1092**.
Stainless steel, to be screwed onto **shaking tray 3960**. Supplied complete with fixing material (see also shaking shakers and incubators).

Type	For flasks ml	Max. number per tray	PK	Cat. No.
3983	25	52	1	**9.837 983**
3984	50	33	1	**9.837 984**
3985	100	22	1	**9.837 985**
3986	200	15	1	**9.837 986**
3987	250 to 300	13	1	**9.837 987**
3988	500	10	1	**9.837 988**
3989	1000	6	1	**9.837 989**

Type 3989 raised lid required (on request).

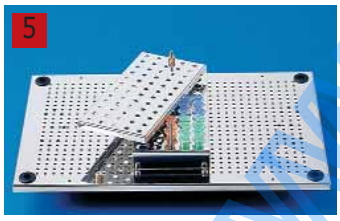


4 Test tube racks

GFL

Accessory for **Shaking Water Baths 1083, 1086 and 1092**.
Stainless steel, with two handles for easy insertion and removal from the bath.

Type	For neck diam. mm	Max. no. plates	PK	Cat. No.
3920	16/17, max. length 180mm	243	1	**9.837 966**
3921	31	63	1	**9.837 967**
3922	12, max. length 180mm	372	1	**9.837 968**



5 Holder 3926

GFL

Accessory for **Shaking Water Baths 1083, 1086 and 1092.**
Holder for 58 reaction vessels 1.5ml to 2.0ml, made of stainless steel. With float protection, can be screwed onto **shaking tray 3960**. Max. 3 holders per tray.

Type	PK	Cat. No.
3926	1	**9.905 990**

6 Test Tube Racks 3924 and 3925

GFL

Accessory for **Shaking Water Baths 1083, 1086 and 1092**. Stainless steel. The holding device can be tilted by an angle of 90°, equipped with springs for secure support. It can be screwed onto **shaking tray 3960**.

Type 3924: e.g. for 15ml Falcon tubes, max. 20 tubes x 12 to 17mm dia., max. 4 racks per tray.
Type 3925: e.g. for 50ml Falcon tubes, max. 12 tubes x 25 to 29mm dia., max. 3 racks per tray.

Type	PK	Cat. No.
3924	1	**9.905 996**
3925	1	**9.905 997**

1 Shaking water baths, SW series

JULABO

For simultaneous heating and shaking of samples, e.g. incubations, hybridizations etc.
Reciprocal motion.
- microprocessor technology with PID temperature control
- bright Multi-Display (LED) indicates five different temperature values and shaking speed
- splash-proof mains switch, built into plastic membrane keypad
- easy-to-use controls
- timer for selecting desired operating period
- RS232 interface provided
- shaking frequency 20 to 200 strokes/min., with 15mm stroke
- removable shaking carriage
- model SW23 has an internal circulation pump giving enhanced temperature stability

Bath lid not included.

Type	Capacity Litres	Working Temp. range °C	Temp. stability ± °C	Heating power W	Bath opening mm	Bath tank depth mm	PK	Cat. No.
SW22	20	20 to 99.9	0.2	2000	500 x 300	180	1	**9.906 383**
SW23	20	20 to 99.9	0.02	2000	500 x 300	180	1	**9.906 384**

2 Shaking water baths, SW 22, SW 23, accessories

JULABO

Type	PK	Cat. No.
Hinged Makrolon®-lid	1	**9.906 401**
Constant level device/cooling set	1	**9.906 402**

3 Trays for Erlenmeyer flasks

JULABO

Type	PK	Cat. No.
Tray for 32 x 50ml Erlenmeyer flasks	1	**9.906 386**
Tray for 15 x 200ml Erlenmeyer flasks	1	**9.906 387**
Tray for 11 x 250 to 300ml Erlenmeyer flasks	1	**9.906 388**
Tray for 8 x 500ml Erlenmeyer flasks	1	**9.906 389**

4 Spring clips for erlenmeyer flasks

JULABO

For	PK	Cat. No.
10 ml flasks	1	**9.906 410**
25 ml flasks	1	**9.906 411**
50 ml flasks	1	**9.906 412**
100 ml flasks	1	**9.906 413**
200 to 250 ml flasks	1	**9.906 414**
300 ml flasks	1	**9.906 415**
500 ml flasks	1	**9.906 416**
1000 ml flasks	1	**9.906 417**
Tray for spring clips to hold Erlenmeyer flasks as required	1	**9.906 390**

5 Test tube trays

JULABO

For	PK	Cat. No.
240 test tubes, 16/17 mm Ø	1	**9.906 420**
360 test tubes, 12/13 mm Ø	1	**9.906 421**
360 microlitre vessels, 30 x 11/12 mm Ø	1	**9.906 422**
84 test tubes, 30 mm Ø	1	**9.906 423**

Water bath protection agent please see page 766.

1

HB 1500

2

HB 1500-S

1 2 Heating bath HB 1500/HB 1500-S

Heju

The heating bath HB 1500 is developed for varied tasks. As bath filling water, oils and sand is used. Different sizes are deliverable! The device has an integrated temperature controller with microprocessor. It is freely programmable and has also self optimization function and rampfunction!
- Microprocessor controller with 4-digits 7-segment display, 10 mm high, green,
- With selfoptimization and rampfunction
- Measurement and control range +20.0 to +250.0°C
- On-Off switch is light up green
- Setting of heat power from 1 to 99%
- Irreversible rapid shut-down when reaching the security temperature

Heating bath HB 1500-S
Equipment such as HB 1500, also with safety on separate microprocessor controller and an internal temperature sensor. Exceeding the safety temperature, the heating is switched off completely.
The over-temperature shutdown >10K + reference deleted.

Type	Internal dimensions (Ø x H) mm	External dimensions (W x D x H) mm	Capacity Litres	Power W	Weight kg	PK	Cat. No.
HB 1500	200 x 130	290 x 270 x 275	2	1500	5.8	1	**9.234 512**
HB 1500	240 x 150	360 x 290 x 275	4	2000	6.5	1	**9.234 511**
HB 1500	280 x 180	370 x 320 x 285	8	2000	7.5	1	**9.234 510**
HB 1500-S	200 x 130	290 x 270 x 275	2	1500	5.8	1	**9.234 515**
HB 1500-S	240 x 150	360 x 290 x 275	4	2000	6.5	1	**9.234 514**
HB 1500-S	280 x 180	370 x 320 x 285	8	2000	7.5	1	**9.234 513**

3

3 Oil baths, ONE

Memmert

Interior - Heating Concept:
- easy-to-clean, grade 1.4301 (ASTM 304), laser-welded, stainless steel interior, reinforced by deep drawn ribbing
- corrosion-proof, large-area heating surface on 3 sides of the tank

Control:
- fuzzy-supported PID microprocessor controller with integral autodiagnostic system and fault indication
- solid state switch unit
- 2 x class A, 4-wire, Pt100 sensors, mutually monitoring and controlling performance at the same temperature
- digital timer from 1 min to 999 hours for:

On (continuous operation)
Delayed On
Hold, or set temperature-dependent Hold with fixed dwell time
- digital display (LED) of all set parameters, such as temperature, time and alarm values
- Calibration facility on controller
- audible and visual alarms at programme end, as keypress input acknowledgement and in the case of low liquid level (heating is switched off automatically)

Triple Overtemperature Protection:
- in the case of overtemperature due to fault the heating is switched off at approx. 10°C above the set temperature (fixed value)
- independent, class 2, TWB electronic overtemperature limiter
- class 1, TB mechanical temperature limiter switching the heating off at approx. 30°C above max. bath temperature
- set value display resolution: 0.1°C below 99.9°C, 1°C above 100°C

Textured, grade 1.4301 (ASTM 304), corrosion resistant, stainless steel housing.
Without covers - please order separately.

Specifications:

Temperature range:	at least 5°C above ambient up to +200°C
Setting temperature range:	+20°C up to +200°C
Power supply:	230V, 50/60Hz; 115 V, 50/60 Hz no extra cost

Type	Capacity Litres	Internal dimensions (W x D x H) mm	Housing (W x D x H) mm	Weight kg	Power consumption W	PK	Cat. No.
ONE7	7	240 x 210 x 140	468 x 356 x 238*	11	1200	1	**9.906 601**
ONE10	10	350 x 210 x 140	578 x 356 x 238*	13	1200	1	**9.906 602**
ONE14	14	350 x 290 x 140	578 x 436 x 238*	15	1800	1	**9.906 603**
ONE22	22	350 x 290 x 220	578 x 436 x 296*	17	2000	1	**9.906 604**
ONE29	29	590 x 350 x 140	818 x 516 x 238*	24	2400	1	**9.906 605**
ONE45	45	590 x 350 x 220	818 x 516 x 296*	26	2800	1	**9.906 606**

*High with flat cover

Accessories - please see page 766.

1 Heating baths HB 10

IKA

- Water- and oil heating bath for tempering of liquids
- Heating power 1350W
- Particularly suited for operation with the rotary evaporator RV 10
- Optimized bath shape for quick heating
- Integrated carrying handles for safe handling
- Adjustable safety circuit, for a safe switch-off in the case of errors
- Protection against dry running
- High-quality recyclable materials
- Digital display makes for easy operation
- Temperature controlled by micro controller
- IR interface for communication with the rotary evaporator RV 10 digital/control
- Choice of operating modes:

A: clear regulation of all parameters
B: a fixable safety temperature setting avoids unintentional readjustments
C: fixable set- and safety temperatures

Specifications

Heating output:	1350W
Temperature range:	ambient to 180°C
Setting accuracy:	±1K
Offset:	±1K
Material:	stainless steel (AISI 304)
Useful volume:	3L
Ext./int. height:	185/134mm
Dimensions (WxDxH):	295 x 265 x 190mm
Weight:	3kg
Protection class DIN EN 60529:	IP 21

Tested to DIN EN IEC 61010-1.

Type	PK	Cat. No.
HB 10	1	**6.258 322**

1

2 Heating baths HBR4 digital

IKA

A digital heating bath characterised by:

- digital display for set, actual, and overtemperature safety as well as stirring speed
- Fuzzy Logic electronic control
- integral magnetic stirring drive to circulate
the bath heating liquid, enhancing heat distribution in the bath

Specifications

Heating output:	1000W
Temperature range:	ambient to 200°C
Setting accuracy:	±1K
Offset:	±1K
Speed range:	150 to 800rpm
Material:	stainless steel (AISI 304)
Useful volume:	4L
Ext./int. diameters:	250mm/200mm
Ext./int. height:	250mm/160mm
Weight:	4.4kg
Protection class DIN EN 60529:	IP21

Tested to DIN EN IEC 61010-1.

Type	PK	Cat. No.
HBR 4 digital	1	**9.906 106**
HBR 4 digital UK	1	**4.007 964**

2

3 4 Accessories for HB 10/HBR 4 baths

IKA

Type	PK	Cat. No.
Set of rings H 240 *	1	**9.906 121**
Intermediate base H 159 **	1	**9.906 125**

* For HB 4 basic digital bath.
** Allows insertion of vessels into the bath HB R 4, without affecting the stirrer motion.

3

4

1 Sand baths

Gestigkeit

For continuous operation. Electrical sand baths with thermostatic temperature control and separate power controller for performance adjustment to the heating requirements.
Anodised aluminium alloy hotplate. Excellent uniform temperature distribution over the entire heating surface. Asbestos free. The sand bath frame is tightly screwed onto the hotplate so that the sand is in direct contact with the hotplate. Useful depth 50mm. Stainless steel controller housing, with painted central section. Height-adjustable feet. Connection cable approximately 1.7m. With earthed plug for 230V supplies up to 3300W. A 400V 3-phase model is also available.

Type	Temp. range max. °C	Weight kg	Rating W	Dimensions (W x D x H) mm	Supply requirements V	PK	Cat. No.
ST 72	50 to 300	14.0	2200	360 x 360 x 220	230	1	**9.645 814**
ST 82	50 to 300	21.0	2850	514 x 364 x 220	230	1	**9.645 815**
ST 92-2	50 to 300	28.0	4000	592 x 442 x 220	230	1	**9.645 816**
ST 92-3	50 to 300	28.0	4000	592 x 442 x 220	400 (3-ph.)	1	**9.645 820**

2 Heating bath liquid, BASF

Buddeberg

Use:
BASF heating bath liquid can be used continuously as a heating medium up to approx. 170°C. Higher temperatures (below flash point) are possible, but will result in rapid darkening. The low pour point allows the bath liquid also to be used as a cooling medium. Mixtures with 10% to 30% water have proved best for this.

The crucial advantages of BASF heating bath liquid compared to the oils or other organic liquid mainly used are:
- accidental spillage of water into the bath does not lead to dangerous spitting at temperatures over 100°C, as the water dissolves in the heating bath liquid and subsequently evaporates safely
- BASF heating bath liquid can easily be rinsed away with water which eases cleaning of laboratory equipment, e.g. distillation flasks, and also bench or floor if the bath liquid is accidentally spilled.
- BASF heating bath liquid does not foam when mixed with water.

Viscosity on addition of water:
BASF heating bath liquid is quite viscous at ambient or low temperatures, and therefore sometimes difficult to dispense. The addition of 10-20% water reduces the viscosity and enables easier handling. If the mixture is then heated to 100°C, the water evaporates without boiling. Further heating is only shortly delayed by this. Before next heating, water can be added again.

Water solubility: BASF heating bath liquid can be mixed with water in any ratio. The hardness of the water has no effect on the bath liquid.

Chemical character:	Modified, polyvalent, aliphatic alcohol
Appearance:	Clear, colourless or lightly coloured liquid
Storage time:	When stored for long periods the product may become darker.
(unlimited at present knowledge)	This does not affect the performance of the product.
Density:	approx. 1.15g/cm³
Flashpoint	
to DIN 51758:	> 200°C
to DIN 51794:	approx. 255°C
Water solubility:	Heating bath liquid, BASF is miscible with water in each ratio. No susceptibility to water hardness in mixed water.

Container	PK	Cat. No.
5 litres	1	**9.906 200**

Hotplate induction Ceran®

NEW!

Housing made of stainless steel, brushed and polished, in a unique Softline Design, Schott Ceran® cooking surface. Adjustable power control with power-saving or power control in 9 steps (*Touch Control*). Two-circle HiLight technique, thus extra large heating zone (dia. 210mm) can be activated. Thermal shutdown and automatic cooking system. Residual heat indicator and warning light. Temperature range (empty): 0 to approx. 460°C.

Specifications:

One unit provides heat outputs of:	
1. Heating area:	dia. 140mm, 1000W
2. Heating area:	dia. 210mm, 2200W
Small heating area of the double cooking plate	dia. 140mm, 1200W
Supply requirements:	230 V

Type	Dimensions (W x D x H) mm	PK	Cat. No.	
Single hotplate Ceran®	305 x 410 x 75	1	**9.645 510**	1
Single hotplate Ceran® *Touch Control*	305 x 410 x 75	1	**9.645 511**	2
Double Cooking Plate Ceran®	550 x 310 x 65	1	**6.261 651**	3

1

9.645 510

2

9.645 511

3

6.261 651

4 Hotplate induction Ceran®

NEW!

- casing made of brushed stainless steel in softline design
- Schott Ceran® cooking surface, superior and easy to clean
- with superior induction technology, pot recognition
- safe, user-friendly and extremely energy-saving
- temperature selection in 21 levels in steps of 10°C from 60°C (keeping warm) up to 260°C
- power selection in 9 levels, powerboost (2200 W) for additional performance
- timer up to 99 minutes, automatic switch-off and signal tone
- electronic regulation via touch control sensors
- integrated safety functions, overheating protection
- indicators for residual heat, standby and power-on

4

Specifications:

heating zone:	80 - 200 mm Ø
weight:	3.5 kg
power supply:	230 V ~ 2200 W

Type	Dimensions (W x D x H) mm	PK	Cat. No.
Hotplate induction Ceran®	305 x 410 x 75	1	**7.672 290**

5 Laboratory hotplates, SLK 12

5

Optimised for all-round use *SI Analytics*

The new laboratory hotplate SLK 12 with its pronounced characteristics meets high demands in quality and robustness. Even in very rough environments one can count on its dependability.

- The pore-free glass-ceramics surface (easy-to-clean) is highly resistant against chemical influences and temperature fluctuations.
- The glass-ceramics surface has a high infrared permeability and hence is exceptional economic saving energy and time.
- The heating surface is throughout planar and offers not heated border areas. This allows the vessel to be heated partially or completely removed off the hotplate.
- High-quality, unpainted and non sensitive stainless steel casing.
- Heating area with two zones (230V) for small and bigger vessels.
- Indicator LED for residual heat for safe operation.
- An optional compressed air connection allows operation in highly aggressive environment.

Type	Heated zone mm	Rating W	Dimensions (W x D x H) mm	Weight kg	PK	Cat. No.
SLK 12	Ø 180	1700	330 x 300 x 73	4.5	1	**9.645 616**

Boiling chips - please see page 595.

1

6.252 739

2

7.656 840

3

BioCote

3 Hotplates, analogue, US150/UC150

NEW!

Stuart

- Flashing "Hot" warning light for temperature above 50°C, mains independent
- Accurate temperature control with LED setting scale
- Compact space saving design
- Space saving integral fitting for a retort rod
- Can be used with SCT1 digital temperature controller

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. Heating area: 120 x 120mm

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 700W element gives rapid heating and ensures even temperature distribution across the whole surface of the plate.

With BioCote, silver-based, antimicrobial protection.

Specifications

Plate dimensions:	150 x 150mm
Weight:	2.2kg
Power supply:	230V, 50Hz
Protection class:	IP 32

Type	Max. temp. °C	Power W	Dimensions (W x D x H) mm	PK	Cat. No.
UC 150	450	500	172 x 248 x 122	1	**6.252 739** 1
US 150	325	700	172 x 248 x 120	1	**7.656 840** 2
Digital contact thermometer SCT1				1	**9.645 342**
Retort rod SR1, 600mm x 12mm diam.				1	**9.645 335**

4

5

BioCote

4 5 Hotplates, analogue, Stuart CB300 and CB500

Stuart

Energy regulator control with glass ceramic top plate and 'hot' warning lamp which illuminates when the plate temperature exceeds 50°C. For 230V 50/60 Hz single phase supplies. With BioCote, silver-based, antimicrobial protection. Maximum temperature as indicated.

Type	Max. temp. °C	Hot-plate mm	Weight kg	Rating W	Internal dimensions (W x D x H) mm	PK	Cat. No.
CB300	450	300 x 300	6.00	1200	320 x 370 x 120	1	**9.645 338**
CB500	375	500 x 300	12.00	2250	520 x 360 x 130	1	**9.645 316**

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7

BioCote

6 7 Hotplates, analogue, Stuart SB 300 and SB 500

Stuart

Maximum temperature 300°C. Energy regulator control with cast aluminium/silicon alloy top plate and 'hot' warning lamp which illuminates when the plate temperature exceeds 50°C. The 300mm x 300mm top plate model has a retort rod mounting at the rear of the housing. With BioCote, silver-based, antimicrobial protection.

Model	**SB 300**
Top plate:	300 x 300mm
Overall WxDxH:	320 x 370 x 120mm
Weight:	6kg
Power:	600W
Model	**SB 500**
Top plate:	500 x 300mm
Overall WxDxH:	520 x 360 x 130mm
Weight:	12kg
Power:	1500W

As described. For 230V 50/60 Hz single phase supplies.

Type	PK	Cat. No.
SB300	1	**9.645 331**
SB500	1	**9.645 317**

E & OE.

3 Hotplates digital, SD 300 and SD 500

Stuart

Maximum temperature 300°C. Digital setting and control of plate temperature with 1°C resolution and cast aluminium/silicon alloy top plate. The 300 x 300mm top plate model has a retort rod mounting at the rear of the housing. With BioCote, silver-based, antimicrobial protection.

Model	**SD300**
Top plate:	300 x 300mm
Overall (WxDxH):	320 x 370 x 105mm
Weight:	6kg
Power:	600W
Model	**SD500**
Top plate:	500 x 300mm
Overall (WxDxH):	520 x 360 x 130mm
Weight:	12kg
Power:	1500W

For 230V 50/60 Hz single phase supplies.

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9.645 320

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9.645 321

Type	Hot-plate mm	PK	Cat. No.	
SD300	300 x 300	1	**9.645 320**	1
SD500	300 x 500	1	**9.645 321**	2

3

BioCote

Hotplates C-MAG HP 4/C-MAG HP 7/C-MAG HP 10

IKA

Made of glass ceramic which offers excellent chemical resistance.
- fixed safety circuit of 550°C
- Hot Top indicator: Hot surface warning to prevent burns
- exact temperature setting via digital display (LED)
- digital error code display
- raised control panel for protection against spilt liquids

C-MAG HP 7, C-MAG HP 10 additionally:
adapter according to DIN 12878 for connecting a contact thermometer, e.g. ETS-D5, enables precise temperature control

4

9.720 496

Specifications

Heating function	
Temperature display:	digital
Heat output	
C-MAG HP 4:	250W
C-MAG HP 7:	1000W
C-MAG HP 10:	1500W
Heating rate (1 litre H_2O)	
C-MAG HP 4:	2.5K/min
C-MAG HP 7/HP 10:	5K/min
Temperature range:	50 to 500°C
Setting accuracy:	±10K
Safety circuit fixed:	550°C
Control accuracy with sensor	
C-MAG HP 4:	-
C-MAG HP 7/HP 10:	ETS-D5/±0.5 K
Heating plate	
Material:	glass ceramic
Dimensions	
C-MAG HP 4:	100 x 100mm
C-MAG HP 7:	180 x 180mm
C-MAG HP 10:	260 x 260mm

Tested to DIN EN IEC 61010-1.

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9.720 497

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9.720 498

Type	Dimensions (W x D x H) mm	Weight kg	PK	Cat. No.	
C-MAG HP 4	150 x 260 x 105	3	1	**9.720 496**	4
C-MAG HP 7	220 x 330 x 105	5	1	**9.720 497**	5
C-MAG HP 10	300 x 415 x 105	6	1	**9.720 498**	6

Optional accessories: HP 7 and HP 10 additionally: Electronical thermometer ETS-D5

1

1 High-performance hotplates

With thermostatic temperature control. CERAN® glass ceramic material is highly resistant to breakage and changes in temperature, free from distortion, permeable to infrared light and highly acid-resistant. Bench-top instrument with built-in controller. SR model - with separate controller for wall mounting can be supplied on request.

Gestigkeit

Type	Hot-plate mm	Temp. range max. °C	Rating W	Dimensions (W x D x H) mm	Weight kg	Supply requirements V	PK	Cat. No.
11 A	280 x 280	50 to 500	2000	290 x 410 x 100	5.5	230	1	**9.645 711**
22 A	280 x 430	50 to 500	3000	290 x 560 x 100	6.5	230	1	**9.645 712**
33 A	430 x 430	50 to 500	4400	440 x 560 x 100	9.0	400 (3ph.)	1	**9.645 714**
44 A	580 x 430	50 to 500	5700	590 x 560 x 100	11.5	400 (3ph.)	1	**9.645 715**

2

2 High-performance hotplate

High-performance CERAN® glass ceramic hotplate with circular heating area 145mm diameter, stainless steel housing, power controller (adjustable 10% to 100%) and integral temperature monitor.

Gestigkeit

Type	Hot-plate mm	Temp. range max. °C	Rating W	Dimensions (W x D x H) mm	Weight kg	Supply requirements V	PK	Cat. No.
CT 10	175 x 175	500	1200	200 x 290 x 85	2.6	230	1	**9.645 740**

3

3 Precision hotplate, PZ 44

Automatic, precise regulation of temperatures between 20 and 450°C. Digital presetting and temperature display. Three power levels (825W, 1650W and 3300W) can be set and an additional electronic power controller (adjustable 10% to 100 %) is provided. At 825W and 3300 W settings the entire plate surface is heated. At 1650W setting only the right hand side of the plate is heated. As a result of heat conduction, the temperature from the right hand side to the left edge of the plate varies by approx. 40%. Built-in relay allows direct connection of electronic contact thermometers. With solid, flat, low-distortion, cast GG15 alloy. Switching differential ±1K.

Gestigkeit

Type	Hot-plate mm	Temp. range max. °C	Rating W	Dimensions (W x D x H) mm	Weight kg	Supply requirements V	PK	Cat. No.
PZ 44	290 x 440	20 to 450	3300	320 x 470 x 190	23.0	230*	1	**9.645 744**

* 400 V, 3-ph. versions are also available on request

Precision hotplate, PZ 44, accessories

Gestigkeit

Type	PK	Cat. No.
Cable with plug for temperature safety device, timer switch, contact thermometer	1	**9.645 747**
Temperature safety device for 82, 128, 156, 170, 182, 212, 228, 254 °C please state when ordering	5	**9.645 748**

1 Hotplates

Gestigkeit

For continuous operation. Electric hotplates with thermostatic temperature control and separate power controller for performance adjustment to the heating requirements.
Anodised aluminium alloy hotplate. Excellent uniform temperature distribution over entire heating surface. Asbestos free. Stainless steel housing, with painted central section. Height-adjustable feet. Mains cable approximately 1.7m. With earthed plug for 230V supplies up to 3300W. A 400V 3-phase model is also available.

Type	Hot-plate mm	Temp. range max. °C	Rating W	Dimensions (W x D x H) mm	Weight kg	Supply requirements V	PK	Cat. No.
HT 02	300 x 300	50 to 300°C	1800	312 x 312 x 170	11.0	230	1	**9.645 781**
HT 12	350 x 350	50 to 300°C	2200	358 x 358 x 170	13.0	230	1	**9.645 782**
HT 22	350 x 500	50 to 300°C	2850	514 x 364 x 170	19.0	230	1	**9.645 785**
HT 32-230	430 x 580	50 to 300°C	4000	592 x 442 x 170	26.0	230	1	**9.645 786**
HT 32-400	430 x 580	50 to 300°C	4000	592 x 442 x 170	26.0	3x400	1	**9.645 787**

2 Precision hotplates, PZ-series

Gestigkeit

For continuous operation. Provide extremely accurate, uniform temperatures, even in plate corners and on edges. Polished anodised aluminium heating surface.
Microprocessor-controlled temperature controller with temperature setting up to 99.9 in 0.1°C steps, over 99.9 in 1°C steps. Actual temperature displayed continuously. With separate power controller for performance adjustment to the heating requirements from 10 to 100%. Built-in relay allows direct connection of electronic contact thermometers. Adjustable temperature monitor from 50 to 300°C (with PZ 28-1, 30 to 110°C) to prevent excess temperatures.

Type	Hot-plate mm	Temp. range max. °C	Rating W	Dimensions (W x D x H) mm	Weight kg	Supply requirements V	PK	Cat. No.
PZ 28-1	200 x 280	20 to 110	500	210 x 300 x 135	7.0	230	1	**9.645 827**
PZ 28-2	200 x 280	20 to 300	1100	210 x 300 x 135	7.0	230	1	**9.645 828**
PZ 35	350 x 350	20 to 300	2200	365 x 365 x 155	14.0	230	1	**9.645 824**
PZ 60	610 x 160	20 to 300	2000	620 x 200 x 155	12.0	230	1	**9.645 829**

Precision hotplates, PZ-series, accessories, PZ 28, 35, 60

Gestigkeit

As described.

Type	PK	Cat. No.
SK 85 to Cable for contact thermometer	1	**9.645 831**
ST 12 to Support rod 12 mm D. (PZ 60 only)	1	**9.645 832**
HK 3 to Holder for contact thermometer	1	**9.645 833**

3 Multiple hotplate systems behrotest®

Behr

Multiple hotplate systems, 360 W, with individually adjustable heating controls and indidicator lights.

Type	Description	PK	Cat. No.
HB 4	4 hotplates with metal protective grills, 94mm dia., 53cm width	1	**9.645 590**
HB 6	6 hotplates with metal protective grills, 94mm dia., 76cm width	1	**9.645 591**
HB 8	8 hotplates with metal protective grills, 94mm dia., 90cm width	1	**9.645 594**
HBS 4	Holder for HB 4 incl. 4 support rods	1	**9.645 592**
HBS 6	Holder for HB 6 incl. 6 support rods	1	**9.645 593**
HBS 8	Holder for HB 8 incl. 8 support rods	1	**9.645 595**

1

1 Standard heating mantles series KM-G

LabHEAT®-Heating mantles for flasks, round bottom. Flexible glass yarn heating element, outer jacket in glass silk, with diam. 60mm bottom out-let from 500ml, max. heating element temperature 450°C, 1.5m power supply (earthed) cable with heating-zone switch and RCD (residual current detection), nominal voltage 230V AC.

SAF Wärmetechnik

Capacity ml	Flask diam. mm	Rating W	Heating zones	PK	Cat. No.
25	41	65	1	1	**9.642 401**
50	51	75	1	1	**9.642 402**
100	64	120	1	1	**9.642 403**
250	85	180	2	1	**9.642 404**
500	105	250	2	1	**9.642 405**
1000	131	450	2	1	**9.642 406**
2000	166	600	2	1	**9.642 407**
3000	185	800	2	1	**9.642 408**
4000	207	900	2*	1	**9.642 409**
5000	223	1200	2*	1	**9.642 410**
6000	236	1400	2*	1	**9.642 411**
10000	279	2000	2*	1	**9.642 412**
20000	345	2200	2*	1	**9.642 413**

Heating mantles with other specifications available on request.
*with 4 heating zones available on request

2

2 Standard heating mantles series KM-GH

LabHEAT®-Heating mantles for flasks, round bottom. Designed identical to series KM-G, but the heating element is made of heat-resistant quartz yarn and permits a maximum temperature up to 900°C; 1.5m power supply (earthed) cable with heating-zone switch and RCD (residual current detection); nominal voltage 230V AC.

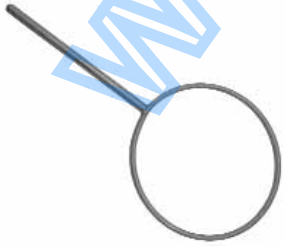
SAF Wärmetechnik

Capacity ml	Flask diam. mm	Rating W	Heating zones	PK	Cat. No.
100	64	200	1	1	**9.642 440**
250	85	300	2	1	**9.642 441**
500	105	500	2	1	**9.642 442**
1000	131	750	2	1	**9.642 443**
2000	166	1200	2	1	**9.642 444**
4000	207	1800	2	1	**9.642 445**
6000	236	2500	2	1	**9.642 446**

Heating mantles with other specifications available on request.

3

4



3 4 Accessories for Standard heating mantles

LabHEAT® - Accessories made of stainless steel (1.4301) for higher stability or to integrate within support wall. The heating mantles are able to be suspended on its four clips.

SAF Wärmetechnik

Description	For mantle ml	PK	Cat. No.
Tripod	100	1	**9.642 600**
Tripod	250	1	**9.642 601**
Tripod	500	1	**9.642 602**
Tripod	1000	1	**9.642 603**
Tripod	2000	1	**9.642 604**
Tripod	3000	1	**9.642 605**
Tripod	4000	1	**9.642 606**
Tripod	5000	1	**9.642 607**
Tripod	6000	1	**9.642 608**
Tripod	10000	1	**9.642 609**
Tripod	20000	1	**9.642 610**
Support ring	25	1	**9.642 620**
Support ring	50	1	**9.642 621**
Support ring	100	1	**9.642 622**
Support ring	250	1	**9.642 623**
Support ring	500	1	**9.642 624**
Support ring	1000	1	**9.642 625**
Support ring	2000	1	**9.642 626**
Support ring	3000	1	**9.642 627**
Support ring	4000	1	**9.642 628**

1 Metal-cased heating mantles series KM-M, without controller

LabHEAT® - Heating mantles for flasks, round bottom. Flexible glass yarn heating element in plastic coated, chemical-resistant metal housing with built-in power-on and heating zone switch; max. heating element temperature 450°C; 1.5m power supply (earthed) cable and RCD (residual current detection); nominal voltage 230V AC.

SAF Wärmetechnik

Capacity ml	Flask diam. mm	Rating W	Heating zones	PK	Cat. No.
50	51	55	1	1	**9.642 500**
100	64	100	1	1	**9.642 501**
250	85	150	2	1	**9.642 502**
500	105	200	2	1	**9.642 503**
1000	131	300	2	1	**9.642 504**
2000	166	500	2	1	**9.642 505**
3000	185	600	2	1	**9.642 506**
4000	207	750	2	1	**9.642 507**
5000	223	860	2	1	**9.642 508**
6000	236	1000	2	1	**9.642 509**
10000	279	1400	2	1	**9.642 510**
20000	345	2000	2	1	**9.642 511**

Serial heating units and Heating mantles with other specifications available on request.

2 Metal-cased heating mantles series KM-ME, with controller

LabHEAT® - Heating mantles for flasks, round bottom. Flexible glass yarn heating element in plastic coated, chemical-resistant metal housing with built-in power-on and heating zone switch, **in addition equipped with a controller** which allows a continuous adjustment of the heater power; max. heating element temperature 450°C; 1.5m power supply (earthed) cable and RCD (residual current detection); nominal voltage 230V AC.

SAF Wärmetechnik

Capacity ml	Flask diam. mm	Rating W	Heating zones	PK	Cat. No.
50	51	55	1	1	**9.642 520**
100	64	100	1	1	**9.642 521**
250	85	150	2	1	**9.642 522**
500	105	200	2	1	**9.642 523**
1000	131	300	2	1	**9.642 524**
2000	166	500	2	1	**9.642 525**
3000	185	600	2	1	**9.642 526**
4000	207	750	2	1	**9.642 527**
5000	223	860	2	1	**9.642 528**
6000	236	1000	2	1	**9.642 529**
10000	279	1400	2	1	**9.642 530**
20000	345	2000	2	1	**9.642 531**

Heating mantles with other specifications available on request.

3 Metal-cased heating mantles series KM-MPE for different sized round bottom flasks

LabHEAT®-Heating mantles for flasks, round bottom. Designed and technical identical to series KM-ME, but can be used **for round flasks of three different sizes,** max. heating element temperature 450°C; 1.5m power supply (earthed) cable and RCD (residual current detection); nominal voltage 230V AC.

SAF Wärmetechnik

Capacity ml	Flask diam. mm	Rating W	Heating zones	PK	Cat. No.
50 to 250	51 to 85	160	3	1	**9.642 540**
250 to 1000	85 to 131	350	3	1	**9.642 541**
1000 to 3000	131 to 185	700	3	1	**9.642 542**

Serial heating units and Heating mantles with other specifications available on request.

4 Stirred heating mantles LabHEAT® KM-MER series

LabHEAT® - Heating mantles for flasks, round bottom. Designed and technical identical to series KM-ME, but **in addition equipped with a magnetic stirrer**; rotational frequency up to 1600rpm max. heating element temperature 450°C, 1.5m power supply (earthed) cable and RCD (residual current detection); nominal voltage 230V AC.

SAF Wärmetechnik

Capacity ml	Flask diam. mm	Rating W	Heating zones	PK	Cat. No.
100	64	100	1	1	**9.642 545**
250	85	150	2	1	**9.642 546**
500	105	200	2	1	**9.642 547**
1000	131	300	2	1	**9.642 548**

Serial heating units and Heating mantles with other specifications available on request.

1

1 Support clamp KM-SK

LabHEAT®-Accessories for metal-cased heating mantles and serial heating unit to fix support rods up to diameter 13mm or to integrate the metal-cased heating mantles within support wall.

SAF Wärmetechnik

Type	PK	Cat. No.
KM-SK	1	**9.642 630**

2

2 Glass fibre-insulated heating tapes series KM-HT-BS30

LabHEAT®-Heating tapes. No protection against ingress of water; with inner metal protective braiding and glass fibre insulation; product dimensions 30 x 5mm; min. bending radius > 15mm; max. heating element temperature 450°C; preterminated with 1.0m cold end; nominal voltage 230V AC.

SAF Wärmetechnik

Length cm	Heating power W	PK	Cat. No.
50	125	1	**9.642 720**
100	250	1	**9.642 721**
150	375	1	**9.642 722**
200	500	1	**9.642 723**
250	625	1	**9.642 724**
300	750	1	**9.642 725**
400	1000	1	**9.642 726**
500	1250	1	**9.642 727**
700	1500	1	**9.642 728**
1000	2000	1	**9.642 729**

Other lenghts and other specifications available on request.

3

3 Glass fibre-insulated heating cables series KM-HC-G

LabHEAT®-Heating cables. No protection against ingress of water; glass fibre insulation without protective braiding; outer diameters dia. 3.5 to 4.5mm; min. bending radius > 5mm; max. heating element temperature 450°C; preterminated with 2 x 1.5m cold end; nominal voltage 230V AC.

SAF Wärmetechnik

Length cm	Heating power W	PK	Cat. No.
50	75	1	**9.642 750**
100	150	1	**9.642 751**
150	225	1	**9.642 752**
200	300	1	**9.642 753**
250	375	1	**9.642 754**
300	450	1	**9.642 755**
400	600	1	**9.642 756**
500	750	1	**9.642 757**
600	900	1	**9.642 758**

Other lenghts and other specifications available on request.

4

4 Power controller KM-L116 for heating mantles

LabHEAT®-regulator for heating mantles. Electromechanical; infinitely variable control over power outlet; plastic housing (H x W x D) 55mm x 65mm x 120mm; switching power max. 2990W (13A); 1.5m power supply (earthed) cable with plug.

SAF Wärmetechnik

Type	PK	Cat. No.
KM-L116	1	**9.642 660**

5

5 Laboratory regulator series KM-RX1000

LabHEAT®-regulator. Freely configurable electronical temperature regulator with two displays indicating the desired and actual values. Pt-100 or thermocouples for temperatures up to 1200°C, metal housing (H x W x D) 75mm x 205mm x 140mm with fixed support clamp, switching power max. 2300W (10A), 1.5m power supply (earthed) cable with plug. Nominal voltage 230V AC.

SAF Wärmetechnik

Type	Sensor / Alarm connetion	PK	Cat. No.
KM-RX 1001	Socket / Socket	1	**7.619 815**
KM-RX 1004	Clamps / Clamps	1	**9.642 654**

E & OE.

1 Temperature sensors for Laboratory regulator series KM-RX1000

LabHEAT®-sensors. Suitable for temperature control and KM-KM-RX1001 RX1004 with permanently attached cable, with or without diode plug. *SAF Wärmetechnik*

KM-TP2: Pt100, up to 400°C, sheated element V2A, dia. 4 x 50mm, 2.0m cable
KM-TPG: Pt100, up to 250°C, glass tube, dia. 6 x 400mm, 1.5m cable
KM-TNS: NiCr-Ni, up to 1200°C, rod sensor in Inconell, dia. 1.5 x 300mm, 2.0m cable
KM-TNF: NiCr-Ni, up to 400°C, flat sensor, 0.4 x 15 x 400mm, 1.5m cable

Type	Connection	For	PK	Cat. No.
KM-TP2	with diode plug	KM-RX1001	1	**7.619 816**
KM-TPG	with diode plug	KM-RX1001	1	**9.642 674**
KM-TNS	with diode plug	KM-RX1001	1	**6.237 998**
KM-TNF	with diode plug	KM-RX1001	1	**6.236 355**
KM-TP2	without diode plug	KM-RX1004	1	**9.642 672**
KM-TPG	without diode plug	KM-RX1004	1	**9.642 673**
KM-TNS	without diode plug	KM-RX1004	1	**9.642 671**
KM-TNF	without diode plug	KM-RX1004	1	**9.642 670**

Further models available on request.

2 Electronic heating mantles, EM series

Polypropylene outer case is resilient and chemically- resistant. Highly efficient in heating up to an element temperature of 450°C. The flexible heating element is suspended in a thermal insulating cartridge to provide maximum heat transfer with minimum risk of flask breakage. Even at full power output, the exterior remains "cool-to-touch" due to good heating element insulation. All heating mantles have support clamp for rods of up to 12mm diameter, and are double fused, with earth (ground) screen to protect the user from electric shocks. Available as 220-240 V 50/60 Hz models; spare heater cartridges are available on request. *Electrothermal*

For flasks ml	Width mm	Depth mm	Height mm	Power W	PK	Cat. No.
100	175	260	127	60	1	**9.643 033**
250	175	260	127	150	1	**9.643 034**
500	238	310	145	200	1	**9.643 035**
1000	238	310	145	300	1	**9.643 036**
2000	350	400	190	500	1	**9.643 037**
3000	350	400	190	500	1	**9.643 038**
5000	350	400	190	800	1	**9.643 039**

3 Electronic multi-size heating mantles, spill-proof, EMX series

Solid stainless steel liner, which protects against fluid spills and is easy to clean, with central aperture to accommodate round-bottom and pear-shaped flask and 60° funnels. Polypropylene outer case is resilient and chemically- resistant. Highly efficient in heating up to an element temperature of 450°C. Even at full power output, the exterior remains "cool-to-touch" due to good heating element insulation. All heating mantles have support clamp for rods of up to 12mm diameter, and are double fused, with earth (ground) screen to protect the user from electric shocks. Available as 220-240 V 50/60 Hz models; spare heater cartridges are available on request. *Electrothermal*

For round bottom flasks, pear-shaped flasks and 60° funnels (Mantle is open at the bottom).

For flasks ml	Width mm	Depth mm	Height mm	Power W	PK	Cat. No.
500 to 1000	238	310	145	245	1	**9.643 081**
2000 to 5000	350	400	190	600	1	**9.643 083**

4 Electronic multi-size heating mantles, V-shaped, EMV series

Solid, with mesh stainless steel liner, which protects against fluid spills, with central aperture to accommodate round-bottom and pear-shaped flask and 60° funnels. Polypropylene outer case is resilient and chemically- resistant. Highly efficient in heating up to an element temperature of 450°C. Even at full power output, the exterior remains "cool-to-touch" due to good heating element insulation. All heating mantles have support clamp for rods of up to 12mm diameter, and are double fused, with earth (ground) screen to protect the user from electric shocks. Available as 220-240 V 50/60 Hz models; spare heater cartridges are available on request. *Electrothermal*

For round bottom flasks, pear-shaped flasks and 60° funnels (Mantle is open at the bottom).

For flasks ml	For funnel diam. mm	Dimensions (W x D x H) mm	Power W	PK	Cat. No.
10 to 50	50 to 100	175 x 260 x 127	60	1	**9.643 072**
100 to 250	75 to 100	175 x 260 x 127	150	1	**9.643 073**
500 to 1000	100 to 200	238 x 310 x 145	300	1	**9.643 074**
1000 to 5000 *	200 to 300	350 x 400 x 190	800	1	**9.643 075**

* With 2 circuits, 1 x 300, 1 x 500 W.

1

1 Electronic stirrer mantles, EMA series

Electrothermal

Built-in adjustable heater control up to an element temperature of 450°C and magnetic stirring control up to approx. 520rpm with auto-reverse facility and automatic stirrer bar trap; the stirrer unit has an independent power supply. Polypropylene outer case is resilient and chemically-resistant. Even at full power output, the exterior remains "cool-to-touch" due to good heating element insulation. All heating mantles have support clamp for rods of up to 12mm diameter, and are double fused, with earth (ground) screen to protect the user from electric shocks. Available as 220-240 V 50/60 Hz models; spare heater cartridges are available on request.

For flasks ml	Width mm	Depth mm	Height mm	Power W	PK	Cat. No.
50	175	260	133	80	1	**9.643 122**
100	175	260	133	80	1	**9.643 123**
250	175	260	133	170	1	**9.643 124**
500	238	310	157	220	1	**9.643 125**
1000	238	310	157	320	1	**9.643 126**
2000	350	400	197	520	1	**9.643 127**

2

2 Power controller, Voltron 20

Alternating current resistance controller with interference suppressor for variable, no-power-loss control of hotplates, heating tapes, soldering irons, light bulbs, infrared radiators etc., control range 25V to 225V. With single throw on/off potentiometer and shielded fuse holder for safe fuse replacement away from the internal circuit. Fitted with interference suppressor in accordance with EN standard.

Type	Power W	PK	Cat. No.
Voltron 20	2000	1	**9.725 094**

3

3 Contact thermometers, accessory relay TST-tr

Heju

With Schuko power output socket and discrete control circuit. Plastic housing insulated to VDE. Automatic on/off switch. Will not function unless a contact thermometer is plugged in. Switch status display. Dimensions (WxDxH) 120mm x 80mm x 85mm. Switching capacity 220V 10A.

Type	Description	PK	Cat. No.
TST tr		1	**9.234 253**
TST tr	for electronical contact thermometers	1	**9.234 254**

4

4 Temperature controllers, TEMPAT®-D

For controlling temperature of heating coils, hotplates, ovens, infrared radiators and water baths. TEMPAT®-D has a 10mm high, LED display which can even be seen in dark rooms and allows monitoring of actual temperature at any time. Set point can be entered via a 3 or 4 figure coding switch with 1°C resolution. Built-in sensor breakdown fuse, switching interval display and Xp trimmer to adjust variable gain amplification between 0 and 10K. Sensor connection is via a plug-in socket.

Appropriate temperature sensor please order separately.
If no temperature sensor is ordered, a loose plug is supplied.

Specifications

Input:	230V, 50/60Hz
Switching capacity:	2300W, 10A
Connection, appliance:	1.20M long connection cable with impact resistant plug
Consumer load:	earthed schuko socket, other plug-in connections in accordance with Swiss or French/Belgian standards, for example can be supplied at additional cost.
Housing:	Polycarbonate plastic, gray
Dimensions:	188mm x 110mm x 70mm
On/off switch:	via dipole luminous rocker switch
Probe connection:	via socket
Contact assignment Pt100:	1 and 2
Contact load:	1 + 3
Accuracy:	±1% from measuring range value

For	Temp. range °C	PK	Cat. No.
Probe Pt100	0 ... 400	1	**9.725 381**
Probe Fe-CuNi	0 ... 600	1	**9.725 382**
Probe NiCr-Ni	0 ... 1200	1	**9.725 383**

1 Probe for temperature controllers, TEMPAT®

All probes with 2m connecting cable and plug.

Type	Diam. mm	Length mm	PK	Cat. No.
Probe Pt100	1,6*	250	1	**9.725 320**
Probe Pt100	2,0*	250	1	**9.725 321**
Probe Pt100	2,5*	250	1	**9.725 378**
Probe Pt100	3,0*	250	1	**7.601 585**
Glass-probe Pt100	2,5	250	1	**9.725 322**
Glass-probe Pt100	3,0	250	1	**9.725 323**
Probe Fe-CuNi	1,5**	250	1	**9.725 394**
Probe NiCr-Ni	1,5**	250	1	**9.725 395**

* probe tube stainless steel 4301.
**mantle of austenitic stainless steel.

2 Power controller, VOLTRON-PLUS F

Alternating current controller for variable and no-loss control of resistive and inductive power devices with the following additional features:
- On/off luminous rocker switch, dipole switching, 10 A (4)
- IC controlled, hysteresis free
- Quiet running
- Anti-interference grade N
- Fast-blow fuse
- Protected fuse holder
- Power-on indicator lamp

Specifications

Voltage:	220-235V, 50/60Hz
Switching capacity:	Max. 2000VA
Switching current:	Max. 10A
Electronics:	Phase controls
Regulating range:	0 to 235V a.c.
Dimensions:	150 x 80 x 55mm
Weight:	0.7kg

Type	PK	Cat. No.
VOLTRON-PLUS F	1	**9.725 363**

1 Microwave SEVERIN MW 9721, silver/black

NEW!

Sonepar

- wattage: approx.700 W
- interior capacity: approx. 20 l
- power continuously variable, (by time or weight)
- 30 minute timer with acoustic signal
- turntable dia. approx. 24.5 cm
- heat resistant housing
- Dimensions (WxDxH) : 452 x 352 x 262mm

Type	PK	Cat. No.
SEVERIN MW 9721	1	**4.656 048**

1

2 Microwave SEVERIN MW 7864

NEW!

Freestanding with cavity capacity of 23L. Digital multi-function display, microwave, grill and convection separately or combined switchable. Microwave power: 800W, max. Grill power: 1200W. Preheat function to 190°C for convection, defrost by weight or time, Quick start button for instant full power, 10 different automatic cooking programs, grill grate with two selectable levels, child-proof lock. Dimensions (WxDxH): 495 x 415 x 295mm. Diameter turntable: 270mm.

Type	PK	Cat. No.
SEVERIN MW 7864	1	**9.106 785**

2

3 Microwave Severin MW 7873

- wattage: approx. 900 W
- interior capacity: approx. 30 l
- interior height: approx. 210mm, suitable for 800 ml Erlenmeyer flask
- turntable dia. approx. 315 mm
- Dimensions (WxDxH) : 510 x 430 x 305mm
- 5 steps selectable
- power continuously variable, (by time or weight)
- 35 minute timer with acoustic signal

Type	PK	Cat. No.
Severin MW 7873	1	**7.672 991**

3

LLG LABWARE

Good quality! Great value!

www.llg-labware.com

1

9.869 708

1 Universal Ovens UN/UF and UNplus/UFplus

The heating and drying oven generation with the unique ControlCOCKPIT for a quick and intuitive operation.
For a multitude of applications, ideally at temperatures above +50°C.
Standard equipment:
- PID microprocessor control with integrated auto-diagnostic system
- Interior made of stainless steel No. 1.4031 (ASTM 304) with all-round deep-drawn ribs to integrate the large-area heating with ceramic-metal sheath
- Structured stainless steel housing, scratch-resistant, robust and durable; rear of zinc-plated steel
- High-temperature connectors on the rear of the appliance for single-phase power connection according to country specific systems and IEC standards
- Internal data logger with a storage capacity of at least 10 years
- German, English, French, Spanish language settings available on the ControlCOCKPIT
- Digital backwards counter with target time setting adjustable between 1 minute and 99 days
- The SetpointWAIT function guarantees that the process time does not start until the set temperature is reached at all measuring points - optional for temperature values recorded by the freely positionable Pt100 sensors inside the chamber.
- Adjustment of three calibration values for temperature and additional appliance specific parameters directly at the ControlCOCKPIT

Type designation: plus = Models with TwinDISPLAY

Specifications

Type designation:	N = Natural convection, F = Forced air circulation
Working- temperature range:	at least 5°C (UN/UNplus) at least 10°C (UF/UFplus) above ambient temperature up to +300°C
Setting temperature range:	+20 up to +300°C
Setting accuracy:	up to 99.9°C: 0.1°C/from 100°C: 0.5°C
Power supply:	230 V, 50/60 Hz (sizes 30 - 260), 115 V, 50/60 Hz no extra cost; 400 V (sizes 450 - 1060)

2

9.869 697

Universal Ovens UN and UF

NEW!

Memmert

SingleDISPLAY: ControlCOCKPIT with one TFT colour display
- Available parameters on the ControlCOCKPIT: Temperature (Celsius or Fahrenheit), fan speed, exhaust air flap position, programme time, time zones, summertime/wintertime
- One temperature sensor Pt100 DIN class A in a 4-wire circuit
- AtmoCONTROL software for reading out, managing and organising the data logger via Ethernet interface (temporary trial version can be downloaded). USB stick with AtmoCONTROL software available as accessory (on demand)
- Ethernet interface on the rear of the appliance for reading out the protocol log and for online logging
- Double overtemperature protection: Electronic temperature monitoring with freely adjustable monitoring temperature with option A6 TWW/TWB (protection class 3.1 or 2), mechanical temperature limiter TB acc. to DIN 12880

Type	Internal volume	Int. dimensions (W x D x H)	Housing (W x D x H)	Shelf support ribs/shelves	Power consumption	Weight	PK	Cat. No.
	litres	mm	mm		W	kg		
UN30	32	400 x 250* x 320	585 x 434** x 704	3 / 1	1600	45	1	**9.869 681**
UN55	53	400 x 330* x 400	585 x 514** x 784	4 / 1	2000	57	1	**9.869 682**
UN75	74	400 x 330* x 560	585 x 514** x 944	6 / 2	2500	66	1	**9.869 683**
UN110	108	560 x 400* x 480	745 x 584** x 864	5 / 2	2800	74	1	**9.869 684**
UN160	161	560 x 400* x 720	745 x 584** x 1104	8 / 2	3200	96	1	**9.869 685**
UN260	256	640 x 500* x 800	824 x 684** x 1183	9 / 2	3400	110	1	**9.869 686**
UN450	449	1040 x 600* x 720	1224 x 784** x 1247	8 / 2	5800	161	1	**9.869 687**
UN750	749	1040 x 600* x 1200	1224 x 784** x 1726	14 / 2	7000	217	1	**9.869 688**
UF30	32	400 x 250* x 320	585 x 434** x 704	3 / 1	1600	45	1	**9.869 697** 2
UF55	53	400 x 330* x 400	585 x 514** x 784	4 / 1	2000	57	1	**9.869 698**
UF75	74	400 x 330* x 560	585 x 514** x 944	6 / 2	2500	66	1	**9.869 699**
UF110	108	560 x 400* x 480	745 x 584** x 864	5 / 2	2800	74	1	**9.869 700**
UF160	161	560 x 400* x 720	745 x 584** x 1104	8 / 2	3200	96	1	**9.869 701**
UF260	256	640 x 500* x 800	824 x 684** x 1183	9 / 2	3400	110	1	**9.869 702**
UF450	449	1040 x 600* x 720	1224 x 784** x 1247	8 / 2	5800	161	1	**9.869 703**
UF750	749	1040 x 600* x 1200	1224 x 784** x 1726	14 / 2	7000	217	1	**9.869 704**
UF1060	1060	1040 x 850* x 1200	1224 x 1035** x 1726	14 / 1	7000	252	1	**6.266 314**

Power supply at 230 V, 50/60 Hz, model sizes 450, 750 and 1060 at 400 V and 3 x 220 V without neutral, 50/60 Hz
Type designation: N = Natural convection, F = Forced air circulation
* Minus 39 mm for fan
**Depth without door handle, please add 56 mm

Universal ovens UNplus and UFplus

NEW!

1

Memmert

9.869 708

TwinDISPLAY: ControlCOCKPIT with two colour TFT displays

- Available parameters on the ControlCOCKPIT: Temperature (Celsius or Fahrenheit), fan speed, exhaust air flap position, programme time, time zones, summertime/ wintertime
- Two Pt100 sensors DIN class A in a 4-wire circuit for mutual monitoring, taking over functions in case of an error
- AtmoCONTROL software on a USB stick for programming, managing and transferring programmes via Ethernet interface or USB port
- HeatBALANCE function for application specific adjustment of heat output distribution (balance) between the upper and lower heating groups in an adjustment range between -50 % and +50 % (not valid for model size 30)
- ControlCOCKPIT with USB port for uploading programmes, reading out protocol logs, activating the User-ID function
- Displaying of already logged protocol data on the ControlCOCKPIT (max 10.000 values correspond to approx. 1 week)
- Ethernet interface on the rear of the appliance for reading out the protocol log and for uploading programmes and for online logging
- Multiple overtemperature protection: Electronic temperature monitoring TWW/TWB (protection class 3.1 or 2 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/undertemperature

Type	Internal volume	Int. dimensions (W x D x H)	Housing (W x D x H)	Shelf support ribs/shelves	Power consumption	Weight	PK	Cat. No.
	litres	mm	mm		W	kg		
UN30plus	32	400 x 250* x 320	585 x 434** x 704	3 / 1	1600	45	1	**9.869 689**
UN55plus	53	400 x 330* x 400	585 x 514** x 784	4 / 1	2000	57	1	**9.869 690**
UN75plus	74	400 x 330* x 560	585 x 514** x 944	6 / 2	2500	66	1	**9.869 691**
UN110plus	108	560 x 400* x 480	745 x 584** x 864	5 / 2	2800	74	1	**9.869 692**
UN160plus	161	560 x 400* x 720	745 x 584** x 1104	8 / 2	3200	96	1	**9.869 693**
UN260plus	256	640 x 500* x 800	824 x 684** x 1183	9 / 2	3400	110	1	**9.869 694**
UN450plus	449	1040 x 600* x 720	1224 x 784** x 1247	8 / 2	5800	161	1	**9.869 695**
UN750plus	749	1040 x 600* x 1200	1224 x 784** x 1726	14/2	7000	217	1	**9.869 696**
UF30plus	32	400 x 250* x 320	585 x 434** x 704	3 / 1	1600	45	1	**9.869 705**
UF55plus	53	400 x 330* x 400	585 x 514** x 784	4 / 1	2000	57	1	**9.869 706**
UF75plus	74	400 x 330* x 560	585 x 514** x 944	6 / 2	2500	66	1	**9.869 707**
UF110plus	108	560 x 400* x 480	745 x 584** x 864	5 / 2	2800	74	1	**9.869 708** 1
UF160plus	161	560 x 400* x 720	745 x 584** x 1104	8 / 2	3200	96	1	**9.869 709**
UF260plus	256	640 x 500* x 800	824 x 684** x 1183	9 / 2	3400	110	1	**9.869 710**
UF450plus	449	1040 x 600* x 720	1224 x 784** x 1247	8 / 2	5800	161	1	**9.869 711**
UF750plus	749	1040 x 600* x 1200	1224 x 784** x 1726	14/2	7000	217	1	**9.869 712**
UF1060plus	1060	1040 x 850* x 1200	1224 x 1035** x 1726	14/1	7000	252	1	**9.869 713**

*Power supply at 230 V, 50/60 Hz, model sizes 450, 750 and 1060 at 400 V and 3 x 220 V without neutral, 50/60 Hz
Type designation: N = Natural convection, F = Forced air circulation, plus = models with TwinDISPLAY
* Minus 39 mm for fan
**Depth without door handle, please add 56 mm

Glass door for Universal ovens

NEW!

Full-sight glass door (3 insulating glass) for UN, UNplus, UF, UFplus series.

Memmert

Type	PK	Cat. No.
B0 30	1	**6.257 761**
B0 55	1	**9.868 131**
B0 75	1	**6.263 335**
B0 110	1	**6.259 301**
B0 160	1	**9.868 132**
B0 260	1	**9.868 133**
B0 450	1	**9.868 134**
B0 750	1	**9.868 135**
B0 1060	1	**9.868 136**

For further accessories please see page 799.

1

1 Drying oven E28 series

BINDER

Robust, space-saving, low-profile ovens with mechanical and adjustable chamber ventilation.
- temperature range: 60°C to 230°C
- hydraulic thermostat temperature control
- chamber ventilation valve
- timer 0 to 120min
- available with, or without, overheat cut-out (Class 1)

Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	Description	PK	Cat. No.
E 28	28	400 x 250 x 280	580 x 425 x 405	without overheat cut out	1	**9.883 543**
E 28*	28	400 x 250 x 280	580 x 425 x 405	with overheat cut out	1	**9.883 544**

* with overheat cut-out TB (Class 1)

2

9.883 545

Heating ovens, ED, FD, FED series

BINDER

Diversity for all types of thermal, whether efficient drying, long-term controlled elevated temperatures or sterilization tasks for homogeneous temperature distribution: a BINDER oven and heating chamber is up to any tasks thanks to its wide temperature range.
- Fast, even tempering
- Wide temperature range

ED Series: Drying ovens with gravity convection. Perfectly suited for routine drying and sterilisation applications up to 300°C.

FD Series: Drying ovens with forced convection. The right choice when it comes to fast drying and sterilization.

FED Series: Heating chambers with forced convection. The multi-talented unit with advanced control functions.

Euqipment:
- Electronically controlled APT.line™ preheating chamber assuring temperature accuracy and reproducible results
- Temperature range from 5°C above ambient temperature to 300°C
- Independent adjustable temperature safety device class 2 (DIN 12880), with visual temperature alarm
- Optional RS 422 Interface for APT-COM™ Data Control System communication software

3

9.883 555

Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
ED 23	20	222 x 300 x 330	435 x 520 x 495	1	**9.883 529**
ED 23*	20	222 x 300 x 330	435 x 520 x 495	1	**9.883 530**
ED 53	53	400 x 350 x 400	635 x 575 x 620	1	**9.883 545** 2
ED 53*	53	400 x 350 x 400	635 x 575 x 620	1	**9.883 548**
ED 115	115	600 x 420 x 480	835 x 645 x 705	1	**9.883 546**
ED 115*	115	600 x 420 x 480	835 x 645 x 705	1	**9.883 549**
ED 240*	240	800 x 520 x 600	1035 x 745 x 825	1	**9.883 550**
ED 400*	400	1000 x 520 x 800	1235 x 765 x 1025	1	**9.883 551**
ED 720*	720	1000 x 620 x 1200	1235 x 865 x 1530	1	**9.883 552**
FD 23	20	222 x 300 x 330	435 x 520 x 495	1	**9.883 808**
FD 53	53	400 x 340 x 400	635 x 575 x 620	1	**9.883 800**
FD 115	115	600 x 410 x 480	835 x 645 x 705	1	**9.883 801**
FD 240	240	800 x 510 x 600	1035 x 745 x 825	1	**9.883 802**
FED 53*	53	400 x 340 x 400	635 x 575 x 620	1	**9.883 553**
FED 115*	115	600 x 410 x 480	835 x 645 x 705	1	**9.883 554**
FED 240*	240	800 x 510 x 600	1035 x 745 x 825	1	**9.883 555** 3
FED 400*	400	1000 x 510 x 800	1235 x 765 x 1025	1	**9.883 803**
FED 720*	720	1000 x 610 x 1200	1235 x 865 x 1530	1	**9.883 804**

* with RS 422

4

4 Safety drying ovens, FDL

BINDER

A safety drying oven from BINDER ensures the perfect test result of your solvent-based paints and coatings, absolute temperature precision even with high ventilation.
- Defined solvent quantity according to EN 1539
- Electronically controlled APT.line™ preheating chamber
- Temperature range: from 5°C above ambient temperature to 300°C
- Independent adjustable temperature safety device class 2 (DIN 12880), with visual temperature alarm
- RS 422 interface for use with APT-COM™ DataControlSystem communication software

Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
FDL 115	115	600 x 435 x 435	835 x 685 x 800	1	**9.883 580**

Thermo Scientific™ Heratherm™ Ovens
Efficient, Safe, Easy

The Thermo Scientific™ Heratherm™ series provide bench-top models with 60, 100 or 180 l as well as floor models with 400 or 750 l chamber volume and 3 different fittings, each optionally with gravity- or mechanical convection.

- Very high energy efficiency, environmentally friendly materials (reduced use of formaldehyde), reduced heat emission
- Programmable timer
- Small footprint
- Flexible shelf system doubles the number of shelves and therefore the footprint
- Very good spatial and temporal temperature stability
- Automatic visual and acoustic over-temperature alarm
- Very low temperatures at outer wall
- Easy to read vacuum fluorescent display
- Intuitive user interface for setting temperature
- Easy cleaning due to edgeless fabrication

Heratherm™ General Protocol:
Perfect for routine daily work from 10 to 250°C. Chambers made from corrosion-resistant st. steel with rounded corners. Timer, mechanical exhaust vent as well as 2 shelves are incl. as standard.
Heratherm™ Advanced Protocol:
For a greater flexibility and accuracy of temperature values. With V2A st. steel interior, works up to 330°C at highly stable temperatures. Digital timer for daily or weekly On/OFF cycles. Up to 10 cycles can be stored and combined as ramps. Fan speed and air valve can be integrated into ramp programming. Selectable quick start function allows for extremely fast heating.
Heratherm™ Advanced Protocol Security:
Additional to equipment of the Advanced Protocol series: under-temperature alarm for improved sample protection. With door lock and door alarm to prevent disruption and allow for safe cultures for a long time. Optional auto-dry function deactivates oven when the samples are dry. The V2A inner chamber can be supplemented by a st. steel outer housing for pharmaceutical and clinical applications.

Specifications
Power supply: 230 V, 60 Hz
Temperature range: 10 to 250°C (General Protocol/Advanced Protocol floor models)
10 to 330°C (Advanced Protocol benchtop models/Advanced Protocol Security)

1 Heratherm™ General Protocol Ovens

Thermo Scientific™ Heratherm™ General Protocol ovens are perfect for routine daily work, providing the ideal heating and drying solution for your applications.

Thermo Scientific

- Low energy consumption
- Built in timer
- Excellent footprint/volume ratio
- Tabletop models in 3 sizes (60L, 100L, 180L), floor models in 2 sizes (400L, 750L)
- Inner chambers made from corrosion-resistant stainless steel with rounded corners for easy cleaning
- Large, easy to view vacuum fluorescent display
- Simple, microprocessor-based touch button controls
- Doors can be opened over 180° making these units easy to access
- Automatic overtemperature alarm system to protect samples
- Gravity convection units are designed to protect delicate samples while offering temperature uniformity of ±4°C with temperature stability of ±0.4°C at 150°C
- Mechanical convection models provide a temperature uniformity of ±3.3°C with temperature stability of ±0.3°C at 150°C
- The exhaust vent can be used as an access port for an external temperature sensor
- Lockable casters for easy mobility and stability (floor models only)
- All Heratherm™ ovens come standard with a RS232 data interface

1

Type	Internal volume litres	Description	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
OGS60	65	Convection Gravity	328 x 415 x 480	530 x 565 x 720	1	**4.009 206**
OGS100	105	Convection Gravity	438 x 414 x 580	640 x 565 x 820	1	**4.009 207**
OGS180	176	Convection Gravity	438 x 589 x 680	640 x 738 x 920	1	**4.009 208**
OGS400	419	Convection Gravity	544 x 590 x 1307	778 x 770 x 1545	1	**9.534 156**
OGS750	774	Convection Gravity	1004 x 590 x 1307	1261 x 770 x 1545	1	**9.534 159**
OGS750-3P	774	Convection Gravity	1004 x 590 x 1307	1261 x 770 x 1545	1	**9.534 161**
OMS60	66	Convection Mechanical	354 x 368 x 508	530 x 565 x 720	1	**4.009 209**
OMS100	104	Convection Mechanical	464 x 368 x 608	640 x 565 x 820	1	**4.009 210**
OMS180	179	Convection Mechanical	464 x 543 x 708	640 x 738 x 920	1	**4.009 211**

1 2 Heratherm™ Advanced Protocol Ovens

Thermo Scientific

As well as incorporating all the benefits of Thermo Scientific™ Heratherm™ General Protocol ovens, the Heratherm™ Advanced Protocol range boasts additional features providing even more flexibility, accuracy and dependability.

- Sophisticated timer extends the automation options available to the user: turn on or off after a pre-set time, choose between a recurring weekly timer or run oven based on the 24 hour clock
- Highest level of temperature uniformity
- Exceptionally low energy consumption - 60 litre models just need 170W (gravity convection) and 275W (mechanical convection) per hour to maintain 150°C
- Adjustable fan speed for application related airflow
- Programmable controller for temperature ramps and dwells (store up to 10 programs with 10 discrete steps, features electronically controlled fan speed and damper position)
- Access port allows the introduction of sensors for independent data monitoring
- A simple calibration routine ensures temperature accuracy over time
- Boost function enables rapid heating up - no need to run the oven 24/7 (tabletop models only)
- Optional stainless steel exterior

Specifications

Temperature range: 10 to 330°C
Power supply: 230 V/50 Hz

Type	Internal volume litres	Description	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
OGH60	61	Convection Gravity	328 x 389 x 480	530 x 565 x 720	1	**4.009 212**
OGH60 SS*	61	Convection Gravity	328 x 389 x 480	530 x 565 x 720	1	**4.009 215**
OGH100	99	Convection Gravity	438 x 389 x 580	640 x 565 x 820	1	**4.009 213**
OGH100 SS*	99	Convection Gravity	438 x 389 x 580	640 x 565 x 820	1	**4.009 216**
OGH180	168	Convection Gravity	438 x 564 x 680	640 x 738 x 920	1	**4.009 214**
OGH180 SS*	168	Convection Gravity	438 x 564 x 680	640 x 738 x 920	1	**4.009 217**
OMH60	62	Convection Mechanical	354 x 343 x 508	530 x 565 x 720	1	**4.009 218**
OMH60 SS*	62	Convection Mechanical	354 x 343 x 508	530 x 565 x 720	1	**4.009 221**
OMH100	97	Convection Mechanical	464 x 343 x 608	640 x 565 x 820	1	**4.009 219**
OMH100 SS*	97	Convection Mechanical	464 x 343 x 608	640 x 565 x 820	1	**4.009 222**
OMH180	170	Convection Mechanical	464 x 518 x 708	640 x 738 x 920	1	**4.009 220**
OMH180 SS*	170	Convection Mechanical	464 x 518 x 708	640 x 738 x 920	1	**4.009 223**
OMH400	396	Convection Mechanical	544 x 545 x 1335	778 x 770 x 1545	1	**9.534 157**
OMH400 SS	396	Convection Mechanical	544 x 545 x 1335	778 x 770 x 1545	1	**9.534 158**
OMH750	731	Convection Mechanical	1004 x 545 x 1335	1261 x 770 x 1545	1	**9.534 162**
OMH750 SS	731	Convection Mechanical	1004 x 545 x 1335	1261 x 770 x 1545	1	**9.534 163**
OMH750-3P	731	Convection Mechanical	1004 x 545 x 1335	1261 x 770 x 1545	1	**9.534 165**

*Stainless steel housing.

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2

1 Heratherm™ Advanced Protocol Security Ovens

1

Thermo Scientific

The Thermo Scientific™ Heratherm™ Advanced Protocol Security portfolio combines the benefits of the Advanced Protocol line with an extra layer of security for applications where process reliability and sample protection are paramount.

Additional security features provide peace of mind for precious samples:
- Auto-dry function deactivates oven when the samples are dry, saving energy (optional sample temperature sensor is required to utilize this feature)
- Standard overtemperature alarm and an additional undertemperature alarm
- Door lock prevents disruption, tampering or accidental opening
- Door alarm notifies the operator when door is left open accidentally
- Socket for independent sample sensor (option): When connected, exact sample temperature is shown on display for additional peace of mind

Specifications
Temperature range: 10 to 330°C
Power supply: 230 V/50 Hz

Type	Internal volume litres	Description	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
OGH60-S	61	Convection Gravity	328 x 389 x 480	530 x 565 x 720	1	**4.009 224**
OGH60-S SS*	61	Convection Gravity	328 x 389 x 480	530 x 565 x 720	1	**4.009 227**
OGH100-S	99	Convection Gravity	438 x 389 x 580	640 x 565 x 820	1	**4.009 225**
OGH100-S SS*	99	Convection Gravity	438 x 389 x 580	640 x 565 x 820	1	**4.009 228**
OGH180-S	168	Convection Gravity	438 x 564 x 680	640 x 738 x 920	1	**4.009 226**
OGH180-S SS*	168	Convection Gravity	438 x 564 x 680	640 x 738 x 920	1	**4.009 229**
OMH60-S	62	Convection Mechanical	328 x 343 x 508	530 x 565 x 720	1	**4.009 230**
OMH60-S SS*	62	Convection Mechanical	328 x 343 x 508	530 x 565 x 720	1	**4.009 233**
OMH100-S	97	Convection Mechanical	438 x 343 x 608	640 x 565 x 820	1	**4.009 231**
OMH100-S SS*	97	Convection Mechanical	438 x 343 x 608	640 x 565 x 820	1	**4.009 234**
OMH180-S	170	Convection Mechanical	464 x 518 x 708	640 x 738 x 920	1	**4.009 232**
OMH180-S SS*	170	Convection Mechanical	464 x 518 x 708	640 x 738 x 920	1	**4.009 235**

*Stainless steel housing.

Accessories for Heratherm™ Ovens

Thermo Scientific

Description	For	PK	Cat. No.
Shelf incl. 2 shelf supports	OGS60, OGH60, OGH60 SS, OGH60-S, OGH60-S SS	1	**4.009 236**
Shelf incl. 2 shelf supports	OGS100, OGH100, OGH100 SS, OGH100-S, OGH100-S SS	1	**4.009 237**
Shelf incl. 2 shelf supports	OGS180, OGH180, OGH180 SS, OGH180-S, OGH180-S SS	1	**4.009 238**
Shelf incl. 2 shelf supports	OMS60, OMH60, OMH60 SS, OMH60-S, OMH60-S SS	1	**4.009 239**
Shelf incl. 2 shelf supports	OMS100, OMH100, OMH100 SS, OMH100-S, OMH100-S SS	1	**4.009 240**
Shelf incl. 2 shelf supports	OMS180, OMH180, OMH180 SS, OMH180-S, OMH180-S SS	1	**4.009 241**
Kit for stacking 60L units	OGS60, OGH60, OGH60 SS, OGH60-S, OGH60-S SS, OMS60, OMH60, OMH60 SS, OMH60-S, OMH60-S SS	1	**4.009 246**
Kit for stacking 100L units	OGS100, OGH100, OGH100 SS, OGH100-S, OGH100-S SS, OMS100, OMH100, OMH100 SS, OMH100-S, OMH100-S SS	1	**4.009 247**
Kit for stacking 180L units	OGS180, OGH180, OGH180 SS, OGH180-S, OGH180-S SS, OMS180, OMH180, OMH180 SS, OMH180-S, OMH180-S SS	1	**4.009 248**
Support stand with castors	OGS60, OGH60, OGH60 SS, OGH60-S, OGH60-S SS, OMS60, OMH60, OMH60 SS, OMH60-S, OMH60-S SS	1	**4.009 249**
Support stand with castors	OGS100, OGH100, OGH100 SS, OGH100-S, OGH100-S SS, OMS100, OMH100, OMH100 SS, OMH100-S, OMH100-S SS	1	**4.009 250**
Support stand with castors	OGS180, OGH180, OGH180 SS, OGH180-S, OGH180-S SS, OMS180, OMH180, OMH180 SS, OMH180-S, OMH180-S SS	1	**4.009 251**
Wire mesh shelf	OGS750 / OMH750	1	**9.534 167**
Wire mesh shelf	OMH750 3PH / IMH750-S	1	**9.534 168**
Silicone-free Viton sealing	400L Modelle	1	**9.534 171**
Silicone-free Viton sealing	750L Modelle	1	**9.534 172**

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9.537 928

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2 Vacuum drying ovens VO

Memmert

Lean perfection, top precision. The Memmert vacuum ovens, based on state-of-the art technology, have been optimised to fulfil the most stringent demands, beyond merely vacuum control. In addition to direct heating of the shelves and digital control of the vacuum depth (adjustable from 10 mbar to 1100 mbar) these vacuum ovens have a weekly programmer and daily schedule function, protocol timer for temperature and pressure profiles of up to 40 ramps. The 8-digit, alphanumeric display (selection of language via set-up) makes programming easy and is also used for visualizing data during operation. The standard model is delivered with pump control for optimised rinsing procedures for the pump membranes as well as signal output for pump on/off, one thermoshelf made of aluminium, eloxadised, with works calibration certificate for +160°C at 20 mbar pressure, two connectors for thermoshelves, USB port, software "Celsius" as well as MEMoryCard. An internal datalogging memory with a capacity of 1024kB provides tamper-proof, storage and output of GLP-compliant, archive documentation of all relevant data. For total safety, a multi-level overtemperature protection system is provided, with audiovisual alarm system, protection class 3.1 microprocessor temperature monitor for over- and undertemperature, and additional integral Automatic Safety Function ASF for high and low temperature limits, automatically monitoring the set temperature and warning by an alarm when there is a temperature-related malfunction. Switching off the heating of the thermoshelf concerned when the temperature is exceeded. In addition, the VO series has a TB class 1 mechanical temperature control unit which activates when the actual temperature exceeds 10°C above the set value.

Proven Memmert quality: premium stainless steel for housing and interior. Interior hermetically welded, material 1.4404 (ASTM 316L). Safety glass door with spring-loaded safety glass on inside and anti-splinter screen ESG on outside of door

Working-temperature range:	from + 20°C up to +200°C from 5°C above ambient
Setting temperature range:	+20°C up to +200°C
Power supply:	230 V, 50/60 Hz

Type	Description	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	Weight kg	PK	Cat. No.
VO200	incl. 1 thermoshelf, max. 2 connections ** for thermoshelves in the rear	29	385 x 250 x 305	550 x 400* x 600	55	1	**9.537 928** 1
VO400	incl. 1 thermoshelf, max. 2 connections ** for thermoshelves in the rear	49	385 x 330 x 385	550 x 480* x 680	83	1	**9.537 929**
VO500	incl. 1 thermoshelf, max. 2 connections ** for thermoshelves in the rear	101	545 x 400 x 465	710 x 550* x 760	110	1	**9.537 932**

*Depth without door handle, please add 38 mm
**with standard equipment

Accessories for Vacuum ovens VO

Option inert gas inlet: Programmable and digitally controlled inlet for inert gas with flow rate reduction *Memmert*

Premium module: The premium module comprises the inert gas inlet, one printer interface, extra connectors for thermoshelves, one for VO200, two for VO400/500, an additional thermoshelf for model size 400/500 and a drip tray.

Description	PK	Cat. No.
Vacuum pump module cabinet without pump for VO200	1	**9.537 933**
Vacuum pump module cabinet without pump for VO400	1	**9.537 934**
Vacuum pump module cabinet without pump for VO500	1	**9.537 935**
Chemically resistant vacuum pump, capacity 34 Nl/min for VO200	1	**9.537 936**
Chemically resistant vacuum pump, capacity 60 Nl/min for VO400/500	1	**9.537 937**
Thermoshelf, aluminium, eloxadised material 3.3547 (ASTM B209) for VO200	1	**9.537 938**
Thermoshelf, aluminium, eloxadised material 3.3547 (ASTM B209) for VO400	1	**9.537 939**
Thermoshelf, aluminium, eloxadised material 3.3547 (ASTM B209) for VO500	1	**9.537 940**
Thermoshelf stainless steel, material 1.4404 (ASTM 316L) for VO200	1	**6.071 767**
Thermoshelf stainless steel, material 1.4404 (ASTM 316L) for VO400	1	**9.537 941**
Thermoshelf stainless steel, material 1.4404 (ASTM 316L) for VO500	1	**6.225 112**
Option inert gas inlet	1	**9.537 942**
Premium module for VO200	1	**9.537 944**
Premium module for VO400	1	**9.537 945**
Premium module for VO500	1	**9.537 946**

1 Vacuum drying ovens, VD, VDL series

BINDER

The standard when it comes to gentle drying: Vacuum drying ovens from BINDER dry without residues, without incrustations or oxidation. In addition, they have a reliable safety concept.
- Safe work with one-of-a-kind safety concept
- Fast, condensation-free drying processes
- Homogeneous sample trying in a vacuum

VD Series: Vacuum drying oven for non-flammable solvents. A BINDER vacuum drying oven is the first choice when it comes to efficient drying using homogeneous temperature distribution in a vacuum.

VDL Series: Safety vacuum drying oven for flammable solvents. For a VDL series vacuum drying oven, safety is the top priority, even flammable solvents can be gently dried.

Equipment:
- Electronically controlled APT.line™ preheating chamber
- Temperature range from 15°C above ambient temperature to 200°C
- Independent adjustable temperature safety device class 2 (DIN 12880), with visual temperature alarm
- Interface RS 422 for APT-COM™ DataControlSystem communication software
- Spring-mounted safety glass panel with shatter protection
- VDL safety concept: Pressure control device for heating activated <125mbar,
- Over pressure capsuled instrument panel with compressed air connection and maintenance unit, flame protection gasket
- 2 patented, flexible aluminum expansion racks
- Also available as complete system with module and vacuum pump

Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
VD 23	23	285 x 295 x 285	515 x 500 x 655	1	**9.883 540**
VD 53	53	400 x 340 x 400	635 x 550 x 775	1	**9.883 541**
VD 115	115	506 x 460 x 506	740 x 670 x 900	1	**9.883 542**
VDL 23	23	285 x 295 x 285	515 x 500 x 655	1	**9.883 531**
VDL 53	53	400 x 340 x 400	635 x 550 x 775	1	**9.883 532**
VDL 115	115	506 x 460 x 506	740 x 670 x 900	1	**9.883 533**

2 Compact vacuum oven, VT 6025

Thermo Scientific

For the gentle and rapid drying or heat treatment of temperature sensitive substances and components in the electronics, pharmacy, cosmetics and biochemistry fields. With double glazed safety glass door window, very low external casing temperature, freely adjustable overheat cut-out with separate temperature sensor, Kelvitron® microprocessor controlled temperature controller and pull-out, non-tilting shelves with end stops.

External dimensions (WxDxH):	480mm x 450mm x 600mm
Internal dimensions (WxDxH):	300mm x 307mm x 275mm
Interior volume:	25L
Usable height above shelf:	120mm
Nominal temperature:	200°C
Ultimate vacuum:	1 x 10^{-2} mbar
Power supply:	230V 50/60Hz
System of protection:	IP 20

Type	PK	Cat. No.
Basic model	1	**9.883 480**
With stainless steel vacuum ball valve, inert gas connection, seamlessly welded chamber and DN25 vacuum connection	1	**9.883 482**
As above, with additional digital pressure display and recorder connection	1	**9.883 483**
As above, with digital pressure display, recorder connection, Digicon®S with analogue interface 0 to 20 mA / 0 to 10 V	1	**9.883 484**

Options for vacuum drying oven VT 6025

Thermo Scientific

Description	PK	Cat. No.
Fine control valve	1	**9.883 485**
Works calibration certificate, single point calibrated at 150°C in centre of chamber and at absolute pressure 50 mbar.	1	**9.883 486**
Insert set with pair of corner supports	1	**9.883 488**

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1 Vacuum oven 6000

Thermo Scientific

For the careful, rapid drying and heat treatment of temperature sensitive substances and components in the electronics, pharmaceutical, cosmetic and biochemical industries.
With electro-polished and internally welded, rectangular chamber made of 1.4571 stainless steel and silicone door seal. Also features analogue pressure display, stainless steel ball valve to control vacuum, rapid air ventilation valve, inert gas connection with pressure relief safety valve for controlled chamber purging and corrosion resistant vacuum fittings. Small flange (DN 25 KF) vacuum fittings are positioned on the rear panel of the cabinet. A overheat cut-out (Class 2) is supplied as standard. 53L models are supplied with two shelves, 128L models are supplied with three shelves.

Type M, with heated jacket, range up to 200°C.
Heat is conducted from the heated chamber through the shelves to the sample. The shelves are removeable.
With Kelvitron® microprocessor temperature controller.

Type P, with heated shelves, range up to 300°C (up to 400°C on request).
Tubular heating elements in the shelves heat the sample directly, providing rapid heat-up and processing times.
With individual shelf temperature control, a common temperature value is set for all plates. With Digicon® electronic temperature controller.

Options for VT 6000:
- Inert gas connection
- Digital pressure display
- Pressure controller with electronic valve
- Viton door seal - Timers
- Digital sample temperature display
- Variety of temperature controllers
- Analogue interface
- Maximum temperature 400°C.
- Interface connection for central monitoring
- Temperature documentation
- Calibration certificate

Shelves - further options available on request. Fully equipped vacuum pump control station vacucenter 1 available as an accessory for Vacutherm 6060 and 6130 ovens. Choice of 3 different vacuum pumps available according to operating conditions.

Type	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Internal volume litres	PK	Cat. No.
VT 6060 M	744 x 570 x 576	415 x 371 x 345	53	1	**9.883 511**
VT 6130 M	895 x 750 x 720	495 x 529 x 489	128	1	**9.883 512**
VT 6060 P	744 x 570 x 576	415 x 371 x 345	53	1	**9.883 513**
VT 6130 P	895 x 750 x 720	495 x 529 x 489	128	1	**9.883 514**
VT 6060 M-BL	744 x 570 x 576	415 x 371 x 345	53	1	**9.883 521**
VT 6130 M-BL	895 x 750 x 720	495 x 529 x 489	128	1	**9.883 522**
VT 6060 P-BL	744 x 570 x 576	415 x 371 x 345	53	1	**9.883 523**
VT 6130 P-BL	895 x 750 x 720	495 x 529 x 489	128	1	**9.883 524**

Accessories for vacuum drying cabinets 6000

Thermo Scientific

Description	PK	Cat. No.
Sample tray, aluminium 2mm, HXDXW = 30x415x460mm for VT 6130	1	**4.009 784**
Sample tray, stainless steel 1.5mm, HXDXW = 30x415x460mm for VT 6130	1	**4.009 785**
Sample tray, aluminium 2mm, HXDXW = 30x295x380mm for VT 6060	1	**4.009 786**
Flame filter for vacuum tubing	1	**7.024 635**
Insert with support bracket for VT 6060 M	1	**7.024 658**
Insert with support bracket for VT 6130 M	1	**7.024 659**
Sample tray, stainless steel 1.5mm, HXDXW = 30x295x380mm for VT 6060	1	**7.077 915**
Floor stand 780mm for T/UT 6060, ST/SUT 6060, B 6060 or VT 6060 M/P-BL	1	**9.534 066**
Floor stand 780mm for T/UT 6120, ST/SUT 6120 or B 6120	1	**9.534 068**
Vacuum connection set, stainless steel, for tubing, 10 mm	1	**9.883 489**

Accessories for vacuum drying oven 6000

Thermo Scientific

Description	PK	Cat. No.
Interface cable, 3m (9-pole) + adapter (9- to 25-pole)	1	**4.009 783**
Temperature controller Eurotherm 2404/P4 with RS422/485	1	**4.010 053**
Chamber, PTFE-coated VT 6060 M	1	**4.010 065**
Chamber, PTFE-coated VT 6130 M	1	**4.010 066**
Weekly program timer, mechanical for FT 6060-6200	1	**7.024 984**
Weekly program timer, digital for FT 6030, 6420-6760	1	**7.025 086**
Digicon with analogue interface 200C VT6060M/6130	1	**7.025 112**
Digicon with analogue interface 300C VT6060P/6130	1	**7.025 113**
Digicon with analogue interface 400C, 6060P	1	**7.025 114**
Digicon with analogue interface 400C, 6130P	1	**7.025 115**
Daily program timer, mechanical, crystal controlled	1	**7.025 119**
Interface RS232 for VT with temperatur controller Kelvitron T	1	**7.076 456**
Temperatur controller Eurotherm 2404/P4 with RS232	1	**7.510 157**
Temperatur controller Thermicon P	1	**9.867 403**
24 Hour Timer, 20h at 60Hz	1	**9.867 405**
Digital pressure display with recorder output 0-1 V	1	**9.883 402**
Digital pressure control with magnetic valve + recorder output 0-1 V	1	**9.883 403**
Viton door gasket for VT6060 M/P	1	**9.883 404**
Viton door gasket for VT6130 M/P	1	**9.883 405**
Digital load temperature monitoring, VT	1	**9.883 406**
Alarm Monitoring Connection	1	**9.883 414**
Chamber, round corners, 1.4571 VT6060M	1	**9.883 416**
Chamber, round corners, 1.4571 VT6060P	1	**9.883 417**
Chamber, round corners, 1.4571 VT6130M	1	**9.883 418**
Chamber, round corners, 1.4571 VT6130P	1	**9.883 419**
Rated temperature 400ºC for VT6060P	1	**9.883 421**
Rated temperature 400ºC for VT6130P	1	**9.883 422**

1 Vacuum pump cabinet Vacucenter 1

Thermo Scientific

This vacuum pump cabinet can be used with VT 6060 and VT 6130 vacuum drying ovens. It carries the vacuum pump (we offer three different pumps for a broad range of applications) and includes a central power supply and a main switch for both oven and pump.

Specifications

Nominal voltage:	V3N 400, 50/60Hz
Max power rating	
MD12H:	3.37kW
HMD 4C:	3.20kW
Dimensions (W x H x D):	895 x 65 x 900mm
Weight	
MD12H:	88 kg
HMD 4C:	80 kg
Protection class:	1
System of protection:	IP 20

Type	Flow rate m³ / hr.	PK	Cat. No.
with diaphragm pump MD12H	9.6	1	**9.883 431**
with diaphragm pump HMD 4C	3.0	1	**9.883 432**

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Vacuum pumps please see page 971.

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1 Incubators IN/IF and INplus/IFplus

The incubator generation with the unique ControlCOCKPIT for a quick and intuitive operation.
For the gentle heating of organic chamber loads. The heating and control system are especially optimised for low temperatures of up to +80°C.
Standard equipment:
- PID microprocessor control with integrated auto-diagnostic system
- Interior made of stainless steel, material 1.4301 (ASTM 304) with all-round deep-drawn ribs to integrate the large-area heating with ceramic-metal sheath
- Structured stainless steel housing, scratch-resistant, robust and durable; rear of zinc-plated steel
- High-temperature connectors on the rear of the appliance for single-phase power connection according to country specific systems and IEC standards
- Internal data logger with a storage capacity of at least 10 years
- German, English, French, Spanish language settings available on the ControlCOCKPIT
- Digital backwards counter with target time setting adjustable between 1 minute and 99 days
- The SetpointWAIT function guarantees that the process time does not start until the set temperature is reached at all measuring points - optional for temperature values recorded by the freely positionable Pt100 sensors inside the chamber.
- Adjustment of three calibration values for temperature and additional appliance specific parameters directly at the ControlCOCKPIT

Type designation: plus = Models with TwinDISPLAY

Specifications

Type designation:	N = Natural convection, F = Forced air circulation
Working-temperature range:	at least 5°C (IN/INplus), at least 10°C (IF/IFplus) above ambient temperature to +80°C
Setting temperature range:	+20°C to +80°C
Setting accuracy:	0.1°C
Power supply:	230 V, 50/60 Hz; 115 V, 50/60 Hz no extra cost

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9.537 961

Incubators IN and IF

SingleDISPLAY: ControlCOCKPIT with one TFT colour display *Memmert*
- Available parameters on the ControlCOCKPIT: Temperature (Celsius or Fahrenheit), fan speed, exhaust air flap position, programme time, time zones, summertime/wintertime
- One temperature sensor Pt100 DIN class A in a 4-wire circuit
- AtmoCONTROL software for reading out, managing and organising the data logger via Ethernet interface (temporary trial version can be downloaded). USB stick with AtmoCONTROL software available as accessory (on demand)
- Ethernet interface on the rear of the appliance for reading out the protocol log and for online logging
- Double overtemperature protection: Electronic temperature monitoring with freely adjustable monitoring temperature, with option A6 TWW/TWB (protection class 3.1 or 2), mechanical temperature limiter TB acc. to DIN 12880

Type	Internal volume	Int. dimensions (W x D x H)	Shelf support ribs/shelves	Housing (W x D x H)	Power consumption	Weight	PK	Cat. No.
	litres	mm		mm	W	kg		
IN30	32	400 x 250* x 320	3 / 1	585 x 434** x 704	1600	48	1	**9.537 961** 2
IN55	53	400 x 330* x 400	4 / 1	585 x 514** x 784	1000	57	1	**9.537 962**
IN75	74	400 x 330* x 560	6 / 2	585 x 514** x 944	1250	66	1	**9.537 963**
IN110	108	560 x 400* x 480	5 / 2	745 x 584** x 864	1400	76	1	**9.537 964**
IN160	161	560 x 400* x 720	8 / 2	745 x 584** x 1104	1600	96	1	**9.537 965**
IN260	256	640 x 500* x 800	9 / 2	824 x 684** x 1183	1700	110	1	**9.537 966**
IN450	449	1040 x 600* x 720	8 / 2	1224 x 784** x 1247	1800	161	1	**9.537 967**
IN750	749	1040 x 600* x 1200	14 / 2	1224 x 784** x 1726	2000	217	1	**9.537 968**
IF30	32	400 x 250* x 320	3 / 1	585 x 434** x 704	1600	48	1	**9.537 977**
IF55	53	400 x 330* x 400	4 / 1	585 x 514** x 784	1000	57	1	**9.537 978**
IF75	74	400 x 330* x 560	6 / 2	585 x 514** x 944	1250	66	1	**9.537 979**
IF110	108	560 x 400* x 480	5 / 2	745 x 584** x 864	1400	76	1	**9.537 980**
IF160	161	560 x 400* x 720	8 / 2	745 x 584** x 1104	1600	96	1	**9.537 981**
IF260	256	640 x 500* x 800	9 / 2	824 x 684** x 1183	1700	110	1	**9.537 982**
IF450	449	1040 x 600* x 720	8 / 2	1224 x 784** x 1247	1800	161	1	**9.537 983**
IF750	749	1040 x 600* x 1200	14 / 2	1224 x 784** x 1726	2000	217	1	**9.537 984**

Type designation: N = Natural convection, F = Forced air circulation
* Minus 39 mm for an air vent in centre of rear panel
**Depth without door handle, please add 56 mm

Incubators INplus and IFplus

NEW!

Memmert

9.537 990

TwinDISPLAY: ControlCOCKPIT with two TFT colour displays

- Available parameters on the ControlCOCKPIT: Temperature (Celsius or Fahrenheit), fan speed, exhaust air flap position, programme time, time zones, summertime/wintertime
- Two Pt100 sensors DIN class A in a 4-wire circuit for mutual monitoring, taking over functions in case of an error
- AtmoCONTROL software on a USB stick for programming, managing and transferring programmes via Ethernet interface or USB port
- HeatBALANCE function for application specific adjustment of heat output distribution (balance) between the upper and lower heating groups in an adjustment range between -50 % and +50 % (not valid for model size 30)
- ControlCOCKPIT with USB port for uploading programmes, reading out protocol logs, activating the User-ID function
- Displaying of already logged protocol data on the ControlCOCKPIT (max 10.000 values correspond to approx. 1 week)
- Ethernet interface on the rear of the appliance for reading out the protocol log and for uploading programmes and for online logging
- Multiple overtemperature protection: Electronic temperature monitoring TWW/TWB (protection class 3.1 or 2 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/undertemperature alarm

Type	Internal volume	Int. dimensions (W x D x H)	Shelf support ribs/shelves	Housing (W x D x H)	Power consumption	Weight	PK	Cat. No.
	litres	mm		mm	W	kg		
IN30plus	32	400 x 250* x 320	3 / 1	585 x 434** x 704	1600	48	1	**9.537 969**
IN55plus	53	400 x 330* x 400	4 / 1	585 x 514** x 784	1000	57	1	**9.537 970**
IN75plus	74	400 x 330* x 560	6 / 2	585 x 514** x 944	1250	66	1	**9.537 971**
IN110plus	108	560 x 400* x 480	5 / 2	745 x 584** x 864	1400	76	1	**9.537 972**
IN160plus	161	560 x 400* x 720	8 / 2	745 x 584** x 1104	1600	96	1	**9.537 973**
IN260plus	256	640 x 500* x 800	9 / 2	824 x 684** x 1183	1700	110	1	**9.537 974**
IN450plus	449	1040 x 600* x 720	8 / 2	1224 x 784** x 1247	1800	161	1	**9.537 975**
IN750plus	749	1040 x 600* x 1200	14 / 2	1224 x 784** x 1726	2000	217	1	**9.537 976**
IF30plus	32	400 x 250* x 320	3 / 1	585 x 434** x 704	1600	48	1	**9.537 985**
IF55plus	53	400 x 330* x 400	4 / 1	585 x 514** x 784	1000	57	1	**9.537 986**
IF75plus	74	400 x 330* x 560	6 / 2	585 x 514** x 944	1250	66	1	**9.537 987**
IF110plus	108	560 x 400* x 480	5 / 2	745 x 584** x 864	1400	76	1	**9.537 988**
IF160plus	161	560 x 400* x 720	8 / 2	745 x 584** x 1104	1600	96	1	**9.537 989**
IF260plus	256	640 x 500* x 800	9 / 2	824 x 684** x 1183	1700	110	1	**9.537 990**
IF450plus	449	1040 x 600* x 720	8 / 2	1224 x 784** x 1247	1800	161	1	**9.537 991**
IF750plus	749	1040 x 600* x 1200	14 / 2	1224 x 784** x 1726	2000	217	1	**9.537 992**

Type designation: N = Natural convection, F = Forced air circulation, plus = Models with TwinDISPLAY
* Minus 39 mm for fan
**Depth without door handle, please add 56 mm

Accessories for Universal ovens and Incubators

NEW!

Memmert

Stainless steel grids max. loading: 30kg for sizes 30 - 260: 20 kg, sizes 450 + 750: 30 kg, UF1060 and UF1060plus: 60 kg

Type	For	Description	PK	Cat. No.
E28884	for model size 30	stainless steel grid	1	**9.537 203**
E20164	for model size 55 und 75	stainless steel grid	1	**6.231 512**
E20165	for model size 110 und 160	stainless steel grid	1	**6.232 433**
E28891	for model size 260	stainless steel grid	1	**9.537 204**
E20182	for model size 450 und 750	stainless steel grid	1	**6.222 688**
B32550	for model size UF1060 und 1060plus	stainless steel grid	1	**6.266 337**

Additional stainless steel shelves are available on request

Special equipment for Universal ovens and Incubators

NEW!

Memmert

Type	Description	PK	Cat. No.
D00125	IQ/OQ document, with works test data incl. temperature distribution survey for one free-selectable temperature value, for 9 measuring points to DIN 12880:2007-05 for model 30, PQ check list as support for validation by customer	1	**9.867 756**
D00127	IQ/OQ document, with works test data incl. temperature distribution survey for one free-selectable temperature value, for 27 measuring points to DIN 12880:2007-05 for model 55 - 1060, PQ check list as support for validation by customer	1	**9.867 757**
E29778	USB User ID Stick (only for units with TwinDISPLAY)	1	**6.257 480**
E06192	USB Ethernet adapter	1	**9.867 717**
E06189	Ethernet connection cable 5 m for computer interface	1	**9.867 758**
E29780	USB stick with documentation Software AtmoCONTROL and operating instructions for products with SingleDISPLAY (for units with TwinDISPLAY included as standard)	1	**9.867 759**

Thermo Scientific Heratherm Microbiological Incubators
Efficient, Safe, Easy

Thermo Scientific Heratherm™ microbiological incubators are available in four different models, providing three different incubator airflow technologies in a choice of six sizes.

Heratherm Compact Incubator
The most compact unit of the Heratherm microbiological incubator family has an 18L capacity, ideal for personalized workspace.

Heratherm General Protocol Incubators
Designed for routine applications in pharmaceutical, medical, food and research laboratories.

Heratherm Advanced Protocol Incubators
Exceptional temperature performance for demanding applications.

Heratherm Advanced Protocol Security Incubators
Incorporates additional safety features for ultimate sample protection.

Safe
- Safe view of samples through internal glass door, without impact on temperature
- Safe conditions with superior temperature uniformity
- Safe containment with automatic alarm for temperature deviations

Easy
- Easy temperature setting with intuitive user interface
- Easy to remove shelf system
- Easy to clean interior with rounded corners
- Easy to read large display

Efficient
- Efficient small footprint to optimize benchtop space
- Conveniently stackable without the need for tools or stacking kits
- Efficient utilization of interior with flexible shelf system

1 2 Heratherm General Protocol Microbiological Incubators

Thermo Scientific Heratherm General Protocol incubators have been designed for your routine applications in pharmaceutical, medical, food and research laboratories.

Thermo Scientific

- Gravity convection provides gentle air flow and minimal drying out
- Corrosion resistant stainless steel chamber (AISI 430)
- Intuitive user interface for easy temperature setting
- Large vacuum fluorescent display for easy reading
- Safe view of samples through internal glass door, without impact on temperature
- Automatic overtemperature alarm
- Easy to remove "One Click" - shelf system
- Easy to clean interior with rounded corners
- Efficient small footprint to optimize benchtop space
- Efficient utilization of interior with flexible shelf system
- Tabletop models conveniently stackable without the need for tools or stacking kits
- Lockable casters for easy mobility and stability (floor models only)

Specifications

Temperature range: ambient +5°C to 75°C
Power supply: 230 V/50/60 Hz

Type	Internal volume litres	Description	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
IGS60	75	General Protocol	354 x 414 x 508	530 x 565 x 720	1	**4.009 191**
IGS100	117	General Protocol	464 x 414 x 608	640 x 565 x 820	1	**4.009 192**
IGS180	194	General Protocol	464 x 589 x 708	640 x 738 x 920	1	**4.009 193**
IGS400	405	General Protocol	544 x 569 x 1307	778 x 770 x 1545	1	**9.534 150**
IGS750	747	General Protocol	1004 x 569 x 1307	1261 x 770 x 1545	1	**9.534 153**

1

2

1 Heratherm Advanced Protocol Microbiological Incubators

1

Thermo Scientific

Thermo Scientific Heratherm Advanced Protocol incubators provide exceptional temperature performance for demanding applications.

- Dual convection for application versatility-fan speed adjustable from 0 to 100%
- Advanced digital timer for daily or weekly ON/OFF cycles
- Easy to clean, corrosion-resistant stainless-steel interior (AISI 304)
- Broad temperature range from 5°C above ambient to 105°C-suitable for drying applications
- Temperature uniformity of ±0.6 (Fan off) and between ±0.2°C and ±0.4C (Fan full speed) (measured at 37°C)
- Temperature stability of ±0.1°C (measured at 37°C)
- Intuitive user interface for setting temperature
- Large, easy to read vacuum fluorescent display
- Internal glass door allows sample viewing without impacting temperature
- Exceptionally small footprint

Specifications

Temperature range: ambient +5°C to 105°C

Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
IMH60	66	354 x 368 x 508	530 x 565 x 720	1	**4.009 194**
IMH100	104	464 x 368 x 608	640 x 565 x 820	1	**4.009 195**
IMH180	178	4648 x 543 x 70	640 x 738 x 920	1	**4.009 196**
IMH60 SS*	66	354 x 368 x 508	530 x 565 x 720	1	**4.009 200**
IMH100 SS*	104	464 x 368 x 608	640 x 565 x 820	1	**4.009 201**
IMH180 SS*	178	464 x 543 x 708	640 x 738 x 920	1	**4.009 202**

2 Heratherm Advanced Protocol Security Incubators

2

Thermo Scientific

Thermo Scientific Heratherm Advanced Protocol Security incubators incorporate additional safety features for ultimate sample protection.

- Lockable incubator door for restricted access
- Audible alarm if the door is left open accidently
- Automatic over- and under temperature alarm
- 140°C decontamination, contaminating microorganisms are reduced to a minimum, comparable to sterilisation, within a six hour cycle. No need for separate autoclaving of interior fittings. Certified by an accredited microbiological institute.

Specifications

Temperature range: ambient +5°C to 105°C
Power supply: 230V, 50/60Hz

Type	Internal volume litres	Description	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
IMH60-S	66	DUAL convection	354 x 368 x 508	530 x 565 x 720	1	**4.009 197**
IMH100-S	104	DUAL convection	464 x 368 x 608	640 x 565 x 820	1	**4.009 198**
IMH180-S	178	DUAL convection	464 x 543 x 708	640 x 738 x 920	1	**4.009 199**
IMH60-S SS*	66	DUAL convection	354 x 368 x 508	530 x 565 x 720	1	**4.009 203**
IMH100-S SS*	104	DUAL convection	464 x 368 x 608	640 x 565 x 820	1	**4.009 204**
IMH180-S SS*	178	DUAL convection	464 x 543 x 708	640 x 738 x 920	1	**4.009 205**
IMH400-S	381	Mechanical convection	544 x 569 x 1335	778 x 770 x 1545	1	**9.534 151**
IMH400-S SS	381	Mechanical convection	544 x 569 x 1335	778 x 770 x 1545	1	**9.534 152**
IMH750-S	702	Mechanical convection	1004 x 569 x 1335	1261 x 770 x 1545	1	**9.534 154**
IMH750-S SS	702	Mechanical convection	1004 x 569 x 1335	1261 x 770 x 1545	1	**9.534 155**

*Stainless steel housing.

Accessories for Heratherm Microbiological Incubators

Thermo Scientific

Description	PK	Cat. No.
Wire mesh shelf for 60L Incubators including 2 shelf supports, 338mm x 336mm	1	**4.009 239**
Wire mesh shelf for 100L Incubators including 2 shelf supports, 448mm x 336mm	1	**4.009 240**
Wire mesh shelf for 180L Incubators including 2 shelf supports, 448mm x 511mm	1	**4.009 241**
Kit for stacking 60L units	1	**4.009 246**
Kit for stacking 100L units	1	**4.009 247**
Kit for stacking 180L units	1	**4.009 248**
Perforated stainless steel insert for all 400 litre Incubators	1	**9.534 169**
Perforated stainless steel insert for all 750 litre Incubators	1	**9.534 170**
Silicone free viton door sealing for all 400 litre Incubators	1	**9.534 171**
Silicone free viton door sealing for all 750 litre Incubators	1	**9.534 172**

1

1 Thermo Scientific™ Heratherm™ Compact Incubator

Thermo Scientific

The most compact unit of the Heratherm™ microbiological incubator family has an 18L capacity, ideal for personalized workspace.
- Minimal footprint for space restricted lab areas
- Temperatures at or below ambient
- High temperature accuracy
- Internal light facilitates sample observartion

Specifications

Temperature range:	17 to 40°C
Convection technology:	Mechanical convection
Temperature deviation at 37°C (spatial):	±1.2°C
Temperature deviation at 37°C (over time):	±0.2°C
Footprint:	0.12m²
Chamber volume:	approx. 18l
Dimensions chamber (W x H x D):	180 x 310 x 290mm
Dimensions, external (W x H x D):	260 x 415 x 470mm
Number of shelves:	2 (incl. in delivery)/max. 3
Max. shelf load:	2kg
Power supply/max. current:	45W/0.45 - 0.85A
Weight:	7.2kg

Description	PK	Cat. No.
Heratherm™ Compact Incubator	1	**4.009 190**
Additonal shelf	1	**4.009 256**

2

2 Hybridisation Incubator 7601

GFL

For exact hybridisations of DNA and RNA probes with nucleic acid on filter paper and for incubations of protein blots with antibodies. The small quantity of hybridisation liquid that is required enables the user to work with high concentrations of probes or antibodies. Other applications are also possible. Instead of the removable rotating rack, the Incubator's interior can be equipped with up to five, non-tilt and pull-out, trays (accessories). The unit carries the CE mark.
- microprocessor-controlled temperature regulation. Temperature range: approx. 8°C above ambient to +99.9°C, Temperature constancy (temporal): ±0.5°C. Temperature setting and display: digital - LED, in 0.1°C increments.
- the ventilator ensures optimum temperature distribution throughout the cabinet interior
- overtemperature cut-out: electronical, with visual alarm at 4°C above the set temperature, and electro-mechanical > 130°C. Electronic monitoring.
- variable rotating rack for up to 8 hybridisation bottles 51mm dia. or 16 hybridisation bottles 32mm dia. Rack rotation speed: 10 per minute, fixed
- soft-touch keys with clear symbols
- clear view of the interior cabinet through a large 16mm thick, heat-insulating, acrylic glass window
- key to switch on two 25 W cabinet lamps temporarily
- interior parts of rotating rack made of stainless steel
- two clip wheels with 8 spring clips (type 7937) and 4 hybridisation bottles (type 7945) are included as standard
- housing: electrolytically galvanized sheet steel
- WxDxH (internal): 400 x 330 x 380mm W x D x H (external): 585 x 630 x 650mm
- supply requirements: 230V 50/60Hz, 650W (other voltages are available - details on request)
- weight: 45kg

Type	PK	Cat. No.
7601	1	**9.535 601**

3

3 Clip Wheel for Hybridisation Incubator 7601

GFL

Clip wheel 7940. Stainless steel, with holes for spring clips. Two clip wheels are included. Two more clip wheels can be inserted to double the capacity of shorter vessels.

Type	PK	Cat. No.
7940	1	**9.535 640**

1 Spring Clips for Hybridisation Incubator 7601

Spring clips 7935, 7936, 7937. To attach hybridisation bottles onto the clip wheels. *GFL*
Two spring clips are required for each bottle. The required fixings are supplied with each clip.
Eight spring clips 7937 are in the standard scope of supply.

Type	For diam. mm	PK	Cat. No.
7935	32 (16/32) *	1	**9.535 635**
7936	38 (8/16) *	1	**9.535 636**
7937	51 (8/16) *	1	**9.535 637**

* Maximum number of clips per clip plate/number of clips required.

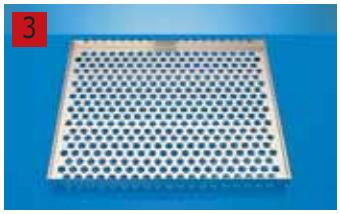
2 Special Hybridisation Bottles

Accessories for Hybridisation Incubator 7601 (see also GFL Tube Roller Incubator 4020). *GFL*
Borosilicate glass, with plastic screw cap perforated with 0.5mm centre hole for pressure compensation (also available unperforated on request).

Type	Diam. mm	Length mm	Max. bottles per rack	PK	Cat. No.
7943	32	273	16	1	**9.535 643**
7944	38	273	8	1	**9.535 644**
7945	51	273	8	1	**9.535 645**

3 Perforated Tray for Hybridisation Incubator 7601

Perforated tray 7914. Stainless steel, can only be used instead of the rotating rack, max. five trays. *GFL*



Type	PK	Cat. No.
7914	1	**9.535 614**

4 5 Mini Incubator 4010 and Mini Tube Roller Incubator 4020

Both models are well suited for incubations that require exactly reproducible temperatures in standard and research laboratory applications. *GFL*
Mini Incubator 4010: also suitable for warming and drying of samples.
Mini Tube Roller Incubator 4020: also suitable for hybridisations that require exactly reproducible temperatures.
Compact, little space required for versatile applications directly on the workbench. Lift-up, transparent acrylic covers permit a clear view of the cultures in the interior cabinet. The units carry the CE mark.
- microprocessor-controlled temperature regulation, temperature range: approx. 8°C above ambient to +60°C, temperature constancy (temporal at 40°C): ±0.2°C
- temperature setting and display: digital - LED, in 0.1°C increments
- fan ventilation ensures optimum temperature distribution throughout the cabinet interior
- electronic monitoring of the temperature controller, electronic overtemperature cut-out, with visual alarm at 4°C above the set value, and electro-mechanical >135°C
- soft-touch keys with clear symbols
- Outer casings made of powder-coated, electrolytically galvanized sheet steel
- W/D/H (outside): 280/510/280
- Mains supply: 230 V 50/60 Hz/Type 4010: 330 W, Type 4020: 360 W (other are voltages on request)
- Net/gross weight: 4010 9.9/11.8kg, 4020 11.8/13.7kg

Mini Incubator 4010: Perforated tray and bottom tray made of stainless steel.
Mini Tube Roller Incubator 4020: Removable bottle rotating device, made of stainless steel, to accept hybridisation bottles from 32mm to 76mm dia. (can be placed individually or in pairs, even with different diameters - the outer axles can be placed into pre-fabricated seats without the use of tools). Even results and high resolutions of the detections even when in continuous use due to its constant frequency of 12rpm.
Special hybridisation bottles for Tube Roller Incubator 4020: see Hybridisation Incubator 7601 (accessories).

Type	Internal dimensions (W x D x H) mm	Max. load kg	Capacity Litres	Movement type	Speed rpm	PK	Cat. No.
Mini incubator 4010	230 x 310 x 170	5	12	-	-	1	**9.535 605**
Mini roller incubator 4020	230 x 300 x 140	3	10	rotating	12, fixed	1	**9.535 607**

1

1 Incubator, mechanical control, B 28 series

BINDER

Robust, small, space-saving unit with mechanical controller and adjustable ventilation for accurate and reliable incubation.

- temperature range: 30°C to 70°C
- Adjustable air vent
- Inner glass door
- Available with, or without, overheat cut-out (Class 1)
- Internal volume: 28L
- External dimensions: 580 x 425 x 405mm
- Internal dimensions: 400 x 250 x 280mm

Type	Description	PK	Cat. No.
B28	without cut-out	1	**9.883 556**
B28*	with cut-out	1	**9.883 557**

* with overheat cut-out TB (Class 1)

2

2 Incubators, BD, BF series and refrigerated incubators, KB series

BINDER

BINDER incubators and refrigerated incubators stand for optimal incubation and for results that are reproducible in every routine test, even under high batch throughputs in long-term operation.
- Safe and reproducible incubation
- Disinfection routine at 100°C
- Broad range of products and applications

Serie BD: Incubators with gravity convection. The specialist for incubating organisms, as well as microbiological heating and conditioning.

Serie BF: Incubators with forced convection. It shines with its homogeneity and quick recovery times, even under a full load and high throughput.

Serie KB: Refrigerated incubators with forced convection. Safe incubation at high ambient temperatures. Additional options and a weekly programming function make it very versatile.

3

9.883 570

Equipment:
- Electronically controlled APT.line™ preheating chamber
- Temperature range: from 5°C above room temperature to 100°C (BD/BF), -5°C to 100°C (KB)
- Independent temperature safety device class 3.1 (DIN 12880) with optical and audible temperature alarm
- RS 422 interface for use with APT-COM™ DataControlSystem communication software
- Inner glass door

Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
BD 23	20	222 x 277 x 330	435 x 520 x 495	1	**9.883 599**
BD 53	53	400 x 330 x 400	635 x 575 x 620	1	**9.883 605**
BD 115	115	600 x 400 x 480	835 x 645 x 705	1	**9.883 606**
BD 240	240	800 x 500 x 600	1035 x 745 x 825	1	**9.883 607**
BD 400	400	1000 x 500 x 800	1235 x 765 x 1025	1	**9.883 603**
BD 720	720	1000 x 600 x 1200	1235 x 865 x 1530	1	**9.883 604**
BF 53	53	400 x 330 x 400	635 x 575 x 620	1	**6.206 495**
BF 115	115	600 x 400 x 480	835 x 645 x 705	1	**6.902 328**
BF 240	240	800 x 500 x 600	1035 x 745 x 825	1	**6.224 050**
BF 400	400	1000 x 500 x 800	1235 x 765 x 1025	1	**6.203 549**
BF 720	720	1000 x 600 x 1200	1235 x 865 x 1530	1	**9.883 625**
KB 23	20	222 x 277 x 330	435 x 600 x 620	1	**9.883 528**
KB 53	53	400 x 330 x 400	635 x 665 x 840	1	**9.883 568**
KB 115	115	600 x 400 x 480	835 x 730 x 1025	1	**9.883 569**
KB 240	240	650 x 485 x 785	930 x 880 x 1460	1	**9.883 570** 3
KB 400	400	650 x 485 x 1270	930 x 880 x 1945	1	**9.883 571**
KB 720	720	970 x 576 x 1250	1255 x 970 x 1925	1	**9.883 572**

Cooling incubators, KT series

NEW!

1

BINDER

The energy-efficient solution for gentle incubation tasks.
The KT combines outstanding performance with impressive energy efficiency and environmental friendliness.
The KT incubator is state-of-the-art in application and protects the samples.

9.883 633

Features:
Energy efficient, environmentally friendly and secure
Disinfection at 100°C
Broad range of applications

Applications:
- Microbiology, genetics, zoology
- Food and beverage industry
- Hygiene, medicine and forensics
- Pharmaceuticals & cosmetics

Equipment:
- APT.line™ preheating chamber technology with Peltier cooling system and conventional heating
- Electronically controlled temperature range of 4°C to 100°C
- BINDER controller with monochrome 5.7 inch LCD monitor and pushbutton/rotary knob
- Independent temperature safety device class 3.1 (DIN 12880) with visual and audible alarm
- Ethernet interface
- Inner glass door made of safety glass
- 2 shelves made of stainless steel
- Units are stackable
- BINDER test confirmation

Type	Internal volume litres	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	PK	Cat. No.
KT 53	52	660 x 695 x 635	400 x 334 x 400	1	**9.883 634**
KT 115	102	860 x 720 x 715	600 x 355 x 480	1	**9.883 633** 1

2 Thermostatic cabinets

NEW!

AQUALYTIC

The incubators from AQUALYTIC® are designed for continuous tempering for different applications, mainly for the determination of BOD, the storage of wastewater samples and the determination of enzymatic activity.
The temperature range is +2°C up to +40°C and can be regulated in steps of 0.1°C. Temperature tolerance is defined with ±1°C respectively ±0.5°C (at 20°C). Low engergy consumption due to reinforced isolation. The interior of the cabinets is equipped with sockets for connecting stirrers. There are 4 models available with standard doors from 135 to 445 litres net capacity, and 2 models with glass doors with 140 and 255 litres net capacity. Illuminated LED display with actual/setpoint display.

Specifications

Coolant:	R134a
Fan:	Axial, delivery rate 320m³/h
Power supply:	220-230V/50Hz

Description	Capacity l	PK	Cat. No.
With metal door, 3 metal racks + 1 bottom grid + 4 sockets	135	1	**9.699 142**
With metal door, 3 metal racks + 1 bottom grid + 5 sockets	175	1	**9.699 143**
With metal door, 4 metal racks + 1 bottom grid + 7 sockets	255	1	**9.699 144**
With metal door, 4 metal racks + 1 bottom grid + 9 sockets	445	1	**9.699 145**
With glass door, 3 metal racks + 1 bottom grid + 4 sockets	140	1	**9.699 146**
With glass door, 4 metal racks + 1 bottom grid + 7 sockets	256	1	**9.699 147**

2

1

9.538 012

Storage cooled chamber, IPS

Memmert

Sample storage incubating and cooling in the food industry, medicine, the cosmetics industry, or pharmaceutics the storage cooled incubators with Peltier elements heat and cool seamlessly with one system.

Working-temperature range/setting temperature range: + 14°C to +45°C.
With gentle, fan-assisted, air circulation via Peltier fan.
Further equipment see IPP models

Type	Internal volume	Internal dimensions (W x D x H)	Shelf support ribs/shelves	External dimensions (W x D x H)	Weight	PK	Cat. No.
	litres	mm		mm	kg		
IPS260	256	640 x 500* x 800	9/2	824 x 774** x 1186	113	1	**9.538 011**
IPS750	749	1040 x 600* x 1200	14/2	1224 x 874** x 1726	230	1	**9.538 012**

* Minus 10 mm for fan - Peltier
**Depth without door handle, please add 38mm

2

2 Peltier incubators IPP and IPPplus

The incubator generation with the unique ControlCOCKPIT for a quick and intuitive operation. Heating and cooling seamlessly with one system thanks to Peltier technology. Environmentally friendly and energy-saving. Vibration-free and extremely quiet.
Standard equipment:
- PID microprocessor control with integrated auto-diagnostic system
- Interior of stainless steel material 1.4301 (ASTM 304) with all-round deep-drawn ribs to integrate the large-area heating with ceramic-metal sheath
- Structured stainless steel housing, scratch-resistant, robust and durable; rear of zinc-plated steel
- High-temperature connectors on the rear of the appliance for single-phase power connection according to country specific systems and IEC standards
- Internal data logger with a storage capacity of at least 10 years
- German, English, French, Spanish language settings available on the ControlCOCKPIT
- Digital backwards counter with target time setting adjustable between 1 minute and 99 days
- The SetpointWAIT function guarantees that the process time does not start until the set temperature is reached at all measuring points - optional for temperature values recorded by the freely positionable Pt100 sensors inside the chamber.
- Adjustment of three calibration values for temperature and additional appliance specific parameters directly at the ControlCOCKPIT

Type designation: plus = Models with TwinDISPLAY

Specifikations

Working temperature range without light:	0 (max. 25°C below ambient) to +70°C
Working temperature range with light:	+10 to +40°C
Setting temperature range:	0 to +70°C
Setting accuracy:	0.1°C
Power supply:	230 V, 50/60 Hz; 115 V, 50/60 Hz no extra cost

3

9.538 002

Peltier incubators IPP

Memmert

SingleDISPLAY: ControlCOCKPIT with one TFT colour display
- Available parameters on the ControlCOCKPIT: Temperature (Celsius or Fahrenheit), fan speed, exhaust air flap position, programme time, time zones, summertime/wintertime
- One temperature sensor Pt100 DIN class A in a 4-wire circuit
- AtmoCONTROL software for reading out, managing and organising the data logger via Ethernet interface (temporary trial version can be downloaded). USB stick with AtmoCONTROL software available as accessory (on demand)
- Ethernet interface on the rear of the appliance for reading out the protocol log and for online logging
- Double overtemperature protection: Electronic temperature monitoring with freely adjustable monitoring temperature with option A6 TWW/TWB (protection class 3.1 or 2), mechanical temperature limiter TB acc. to DIN 12880

Type	Internal volume	Internal dimensions (W x D x H)	Shelf support ribs/shelves	External dimensions (W x D x H)	Weight	PK	Cat. No.
	litres	mm		mm	kg		
IPP30	32	400 x 250* x 320	3 / 1	585 x 524** x 704	40	1	**9.538 001**
IPP55	53	400 x 330* x 400	4 / 1	585 x 604** x 784	52	1	**9.538 002**
IPP110	108	560 x 400* x 480	5 / 2	745 x 674** x 864	78	1	**9.538 003**
IPP260	256	640 x 500* x 800	9 / 2	824 x 774** x 1183	114	1	**9.538 004**
IPP750	749	1040 x 600* x 1200	14 / 2	1224 x 874** x 1726	230	1	**9.538 005**

* Minus 10 mm for fan - Peltier
**Depth without door handle, please add 56 mm

Peltier incubators IPPplus

NEW!

Memmert

TwinDISPLAY: ControlCOCKPIT with two TFT colour displays

- Available parameters on the ControlCOCKPIT: Temperature (Celsius or Fahrenheit), fan speed, exhaust air flap position, programme time, time zones, summertime/wintertime
- Two Pt100 sensors DIN class A in a 4-wire circuit for mutual monitoring, taking over functions in case of an error
- AtmoCONTROL software on a USB stick for programming, managing and transferring programmes via Ethernet interface or USB port
- HeatBALANCE function for application specific adjustment of heat output distribution (balance) between the upper and lower heating groups in an adjustment range between -50 % and +50 % (not valid for IPP110plus)
- ControlCOCKPIT with USB port for uploading programmes, reading out protocol logs, activating the User-ID function
- Displaying of already logged protocol data on the ControlCOCKPIT (max 10.000 values correspond to approx. 1 week)
- Ethernet interface on the rear of the appliance for reading out the protocol log and for uploading programmes and for online logging
- Multiple overtemperature protection: Electronic temperature monitoring TWW/TWB (protection class 3.3 or 2 resp. 3.3 for units with active cooling) 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/undertemperature

Type	Internal volume	Internal dimensions (W x D x H)	Shelf support ribs/shelves	External dimensions (W x D x H)	Weight	PK	Cat. No.
	litres	mm		mm	kg		
IPP30plus	32	400 x 250* x 320	3 / 1	585 x 524** x 704	40	1	**9.538 006**
IPP55plus	53	400 x 330* x 400	4 / 1	585 x 604** x 784	52	1	**9.538 007**
IPP110plus	108	560 x 400* x 480	5 / 2	745 x 674** x 864	78	1	**9.538 008**
IPP260plus	256	640 x 500* x 800	9 / 2	824 x 774** x 1183	114	1	**9.538 009** 1
IPP750plus	749	1040 x 600* x 1200	14 / 2	1224 x 874** x 1726	230	1	**9.538 010**

Type designation: plus = Models with TwinDISPLAY
*Minus 10 mm for fan - Peltier
**Depth without door handle, please add 56mm

1

9.538 009

1

9.538 017

Cooled incubators with compressor cooling ICP

NEW!

Memmert

The cooled incubator generation with the unique ControlCOCKPIT for a quick and intuitive operation. Ideal at temperatures around zero and below.
For rapid and precise alternation between heating up and cooling down times in ramp operation. Extraordinarily quiet.

Standard equipment:
- PID microprocessor control with integrated auto-diagnostic system
- Interior stainless steel, material 1.4301 (ASTM 304)
- Structured stainless steel housing, scratch-resistant, robust and durable; rear of zinc-plated steel
- High-temperature connectors on the rear of the appliance for single-phase power connection according to country specific systems and IEC standards
- Internal data logger with a storage capacity of at least 10 years
- German, English, French, Spanish language settings available on the ControlCOCKPIT
- Digital backwards counter with target time setting adjustable between 1 minute and 99 days
- The SetpointWAIT function guarantees that the process time does not start until the set temperature is reached at all measuring points - optional for temperature values recorded by the freely positionable Pt100 sensors inside the chamber.
- Adjustment of three calibration values for temperature and additional appliance specific parameters directly at the ControlCOCKPIT
- mounted on lockable castors

TwinDISPLAY: ControlCOCKPIT with two TFT colour displays
- Available parameters on the ControlCOCKPIT: Temperature (Celsius or Fahrenheit), fan speed, exhaust air flap position, programme time, time zones, summertime/wintertime
- Two Pt100 sensors DIN class A in a 4-wire circuit for mutual monitoring, taking over functions in case of an error
- AtmoCONTROL software on a USB stick for programming, managing and transferring programmes via Ethernet interface or USB port
- ControlCOCKPIT with USB port for uploading programmes, reading out protocol logs, activating the User-ID function
- Displaying of already logged protocol data on the ControlCOCKPIT (max 10.000 values correspond to approx. 1 week)
- Ethernet interface on the rear of the appliance for reading out the protocol log and for uploading programmes and for online logging
- Multiple overtemperature protection: Electronic temperature monitoring TWW/TWB (protection class 3.3 or 2) 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/undertemperature alarm

Specifikations

Working temperature range:	- 12 to +60°C (ICP55: 0 to +60°C)
Setting temperature range:	- 12 to +60°C (ICP55: -5 to +60°C)
Setting accuracy:	0.1°C
Power supply:	230 V, 50/60 Hz; 115 V, 50/60 Hz at extra cost

Type	Internal volume	Shelf support ribs/shelves	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Weight	PK	Cat. No.
	litres		mm	mm	kg		
ICP55	53	4/1	400 x 330* x 400	585 x 514** x 1153	89	1	**9.538 013**
ICP110	108	5/2	560 x 400* x 480	745 x 584** x 1233	113	1	**9.538 014**
ICP260	256	9/2	640 x 500* x 800	824 x 684** x 1552	157	1	**9.538 015**
ICP450	449	8/2	1040 x 600* x 720	1224 x 784** x 1613	217	1	**9.538 016**
ICP750	749	14/2	1040 x 600* x 1200	1224 x 784** x 1950	249	1	**9.538 017** 1

* Minus 30 mm for fan
**Depth without door handle, please add 56 mm

1 2 Refrigerated incubators BK 800

Thermo Scientific

The BK 800 refrigerated incubator offering a temperature range from 3 to 40°C and a chamber volume of 220 liters is suitable for sample and chemical storage, microbiological sample testing, water pollution testing and biochemical oxygen demand protocols at or below ambient temperature. Furthermore it is applicable for determination of food expiration date and shelf-life testing of food and cosmetics. Easy-to-use soft touch control panel, built in rear wheels.

- Energy efficient
- Interiors are easy to clean due to rounded edges and to disinfect, minimising the potential for contamination of samples
- Fully configurable: internal sockets accommodate stirrers and other equipment inside that can be time-controlled for defined cycles

External dimensions (WxDxH):	467 x 435 x 1260 mm
Internal dimensions (WxDxH):	560 x 570 x 1480 mm
Internal capacity:	220L
Supply requirements:	230V /50Hz

Type	PK	Cat. No.
Refrigerated incubator BK 800	1	**4.010 028**
Additional shelf	1	**4.010 029**

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3 Cooled incubators, BK 6160

Thermo Scientific

With Kelvitron® K microprocessor controlled 3-point control system. temperature range: 0 to 50°C. Thermo Jacket around the chamber ensures uniform heating. Stainless steel chamber. Samples are protected from drying out by the remote positioning of the cooling coil outside the chamber, preventing de-humidification. The virtually continuous automatic defrosting unit minimises ice build-up in the cooling system and reduces heat into the chamber, eliminating downtime for defrosting. With overtemperature controller (TWW in accordance with DIN 12880, class 3.1) and two shelves.

External dimensions (WxDxH):	744mm x 725mm x 920mm
Internal dimensions (WxDxH):	607mm x 585mm x 470mm
Internal capacity:	166L
Supply requirements:	230V /50Hz

Type	PK	Cat. No.
BK 6160 with Kelvitron® K	1	**9.536 241**
BK 6160 with Kelvitron® KP, with t/T programming (10 steps)	1	**9.536 242**
BK 6160 with KKL with Kelvitron® KL	1	**9.536 243**

3

Accessories for cooled incubators, BK 6160

Thermo Scientific

Type	PK	Cat. No.
RS 232 interface, including Kelvilog documentation software	1	**9.536 245**
Connection for central monitoring	1	**9.536 251**
Tubular cable port with 4 vent plugs 19 mm Ø	1	**9.536 248**
Pt 100 sensor for connecting to external temperature recorder*	1	**9.536 249**
Stainless steel shelf with 2 supports	1	**9.534 095**
Fan in chamber	1	**9.536 246**

* Requires tubular cable port.

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9.867 732

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9.867 733

CO_2 Incubators INCOmed

Memmert

For cell cultivation and for in-vitro fertilisation, the precision and reliability are of crucial importance. The classification as class IIa medical device confirms that the INCOmed models comply with the basic safety requirements of the European Medical Devices Directive 93/42/EEC.

Standard equipment

Ventilation and Control:
- uniform atmosphere and temperature distribution owing to enclosed non-turbulent ventilation system in working chamber
- adaptive, fuzzy-supported multifunctional digital microprocessor PID-controller
- integral fault diagnostics on temperature, CO_2 and humidity limit control
- 2 x Class A , 4-wire circuit, Pt100 sensors mutually monitoring and maintaining the performance at the same temperature value
- digital 7-day programme timer with real time clock, precise minute setting
- digital display (LED) of all set parameters, such as temperature, weekdays, time, CO_2, humidity and set-up values
- language to be chosen in setup
- CO_2 supply via sterile filter
- digital electronic CO_2 control with automatic zeroing (infrared measuring system)
- CO_2-supply being interrupted upon door opening
- digital display of set and actual values (LED 0.1°C resolution) of temperature and CO_2-concentration
- integral humidity limit control (88 to 97%) with digital display of relative humidity - setting accuracy 1%
- non-volatile, programme memory
- chip card (STERICard) for sterilization of working chamber with fixed cycle (4 hours/160°C) without removal of sensors and mountings

Heating Concept:
- large-area multi-function heating system on four sides incl. additional door and back heating to avoid condensation
- incl. works calibration certificate for +37°C

Multiple Overtemperature Protection:
- with audible and visual alarm in case of over-/undertemperature and over-/under-CO_2,open door and empty gas cylinder
- independently working, digitally adjustable electronic overtemperature controller TWW protection class 3.1
- additional adjustable Auto-Safety-Function "ASF" for over- and undertemperature automatically following the set value at a preset tolerance range
- mechanical temperature limiter TB class 1 switching the heating off at approx. 10°C above max. oven temperature

Textured Stainless Steel Casing:
- fully insulated stainless steel door with double locking and 4-point adjustment
- inner glass door with opening (8mm dia.) to take gas samples
- zinc-plated, steel rear panel

Interior:
- easy-to-clean interior, made of stainless steel, reinforced by deep drawn ribbing, material no. 1.4301, hermetically welded

Temperature Range: from +20°C (however at least 8°C above ambient) up to +50°C
Power supply: 230V, 50/60Hz; 115 V, 50/60 Hz no extra cost

Type	Internal dimensions/housing (WxHxD) mm
INCO108med	560 x 480 x 400*/710 x 778 x 550**
INCO153med	480 x 640 x 500*/630 x 938 x 650**
INCO 246med	640 x 640 x 600*/790 x 938 x 750**

* Minus 25 mm for fan
** Depth without door handle, please add 38 mm

Type	Internal volume litres	Shelf support ribs	Shelves	Stainless steel water dishes	Rating W	Weight kg	PK	Cat. No.
INCO108med basic model	108	4*	2*	1*	1000	70	1	**9.867 732** 1
INCO53med basic model	153	6*	3*	1*	1500	80	1	**9.867 733** 2
INCO246med basic model	246	6*	3*	2**	2000	110	1	**9.867 734**
INCO108med with Premium-Modul T5	108	4*	2*	1*	1000	70	1	**9.867 703**
INCO153med with Premium-Modul T5	153	6*	3*	1*	1500	80	1	**9.867 704**
INCO246med with Premium-Modul T5	246	6*	3*	2**	2000	110	1	**9.867 705**

*full width
**half width

Accessories for CO_2 Incubators INCOmed

1

Memmert

Comfort module:
two gas connections with quick release connectors, automatic switch-over gas cylinders (impossible in combination with O_2 module)
Hygiene module:
electropolished interior, seamlessly welded by laser
Communication module:
USB interface, "Celsius" standard software for the control and logging of temperature, CO_2; O_2 (with O_2 module) and relative humidity; internal log memory 1024 kB as ring memory for all setpoint values, actual values, errors, settings with real time and date: logging approx. 3 months at 1 min. logging interval; parallel printer interface for all PCL3-compatible printers
CO_2 module:
extended CO_2 range from 0 to 20%
Premium module:
includes Comfort, Hygiene, Communication and CO_2 module (impossible in combination with O_2 module)
Humidity module:
active microprocessor control for humidifying and dehumidifying (40 - 97% rh), incl. digital indication and auto-diagnostic system; humidity supply with distilled water (from an external tank) , dehumidifying via sterile filter; (standard humidity limit control and water dishes are omitted)
O_2 module:
control of oxygen concentration by N2 inlet, adjustment range 1% bis 20% O_2, setting accuracy 0.1%

Combination O_2 module with Comfort and Premium module impossible

9.867 702

Type	Description	PK	Cat. No.
B00325 INCO108med	Additional stainless steel shelf, full width	1	**9.867 707**
B00321 INCO153med	Additional stainless steel shelf, full width	1	**9.867 708**
B03813 INCO246med	Additional stainless steel shelf, full width	1	**9.867 748**
B02787 INCO108med	Additional stainless steel shelf, full width	1	**9.867 709**
B02784 INCO153med	Additional water tray, full width	1	**9.867 710**
B02786 INCO246med	Additional water tray, half width	1	**9.867 711**
E02087	CO_2 Pressure reduction valve (DIN 8546), incl. gas-cylinder monitor	1	**9.867 755**
E06162	N_2 Pressure reduction valve (DIN EN ISO 2503) incl. gas-cylinder-bottle monitor, for O_2 module	1	**9.867 712**
B04459	HEPA Interior filter	1	**9.867 731**
E04337	Additional Steri-Card (only for interior-sterilization)	1	**9.867 702** 1
W6	RS232 interface instead of USB	1	**9.867 722**
T1	Comfort module for INCO108/153/246med	1	**9.867 735**
T2	Hygiene module for INCO108med	1	**9.867 736**
T2	Hygiene module for INCO153med	1	**9.867 737**
T2	Hygiene module for INCO246med	1	**9.867 738**
T3	Communication module for INCO108med	1	**9.867 739**
T3	Communication module for INCO153med	1	**9.867 740**
T3	Communication module for INCO246med	1	**9.867 741**
T4	CO_2 module for INCO108med	1	**9.867 742**
T4	CO_2 module for INCO153med	1	**9.867 743**
T4	CO_2 module for INCO246med	1	**9.867 744**
T5	Premium module for INCO108med	1	**9.867 745**
T5	Premium module for INCO153med	1	**9.867 746**
T5	Premium module for INCO246med	1	**9.867 747**
T6	O_2 module for INCO108, 153, 246med	1	**9.867 749**
K7	Active humidity control microprocessor for INCO108/153/246med	1	**9.867 706**
F7	Entry port in the rear, heated, with silicone stopper, 40 mm inner diameter	1	**9.867 750**

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1 CO_2 incubators, C Series

BINDER

The BINDER C is the fitting partner for routine applications for cell cultivation, contamination-free due to hot-air sterilisation at 180°C, reliable pH-stable thanks to the drift-free FPI infrared measuring system, high temperature precision with excellent dynamic and no risk of condensation even in high humidity.

Equipment:
- Air jacket system assuring temperature accuracy and excellent cell growth
- Temperature range from 7°C above ambient up to 50°C
- Water pan with built-in condensation control maintains dry interior walls
- Standard-compliant hot air sterilisation at 180°C (DIN 58947)
- Seamless deep-drawn inner chamber made of stainless steel with integrated shelf support system
- Drift-free infrared CO_2 measurement system
- Microprocessor with LED display for temperature and CO_2 concentration
- Independent temperature safety device class 3.1 (DIN 12880) with optical and audible temperature alarm
- Gas mixing head
- Interior volume 150L

Type	Description	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
C 150	right hinged door	500 x 500 x 600	680 x 815 x 820	1	**9.883 720**
C 150	left hinged door	500 x 500 x 600	680 x 815 x 820	1	**9.883 721**
2 C 150	incl. stacking adapter, right hinged door	500 x 500 x 600	680 x 815 x 1785	1	**9.883 722**
2 C 150	incl. stacking adapter, left hinged door	500 x 500 x 600	680 x 815 x 1785	1	**9.883 723**

2

2 CO_2 incubators, CB series with sterilizable sensor

NEW!

BINDER

- VENTAIR™ air jacket system
- Temperature range: 7°C above room temperature up to 60°C

BINDER controller with LCD color display for simultaneous display of all important parameters (temperature, % CO_2, % O_2 concentration, humidity) and user-friendly push button/rotary knob
- Intuitive menu guidance
- Electronic chart recorder
- Variety of options for graphic display of process parameters
- Real-time clock
- **Standard-compliant hot air sterilization at 180°C with sterilizable built-in CO_2 sensor**
- Drift-free infrared CO_2 measurement system
- CO_2 introduction through patented gas mixing nozzle
- ANTI.PLENUM Design to avoid contamination of critical fixtures
- Permadry™, double pan humidification system with defined condensation site for condensate-free interior walls
- Seamless deep-drawn inner chamber made of stainless steel with round corners and integrated shelf support system
- Electronic error self-diagnostic system with visual and audible alarms, as well as potential-free contact for central monitoring
- Independent temperature safety device class 3.1 (DIN 12880) with visual and audible temperature alarm
- Tightly-fitted inner glass door made of safety glass
- Ethernet interface for communication software
- APT-COM™ DataControlSystem
- Three perforated shelves made of stainless steel
- Stackable units with new flat stacking adapter
- Door lock
- BINDER test certificate

Type	Internal volume litres	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Weight kg	PK	Cat. No.
CB 60	53	580 x 550 x 720	400 x 330 x 400	60.00	1	**9.883 738**
CB 160	150	680 x 715 x 920	500 x 500 x 600	107.00	1	**9.883 739**
CB 220	210	740 x 715 x 1070	560 x 500 x 750	121.00	1	**9.883 740**
CB 60 UL	53	580 x 550 x 720	400 x 330 x 400	60.00	1	**9.883 741**
CB 160 UL	150	680 x 715 x 920	500 x 500 x 600	107.00	1	**9.883 742**
CB 220 UL	210	740 x 715 x 1070	560 x 500 x 750	121.00	1	**9.883 743**
CB 60*	53	580 x 550 x 720	400 x 330 x 400	60.00	1	**9.883 744**
CB 160*	150	680 x 715 x 920	500 x 500 x 600	107.00	1	**9.883 745**
CB 220*	210	740 x 715 x 1070	560 x 500 x 750	121.00	1	**9.883 746**
CB 60 UL*	53	580 x 550 x 720	400 x 330 x 400	60.00	1	**9.883 747**
CB 160 UL*	150	680 x 715 x 920	500 x 500 x 600	107.00	1	**9.883 748**
CB 220 UL*	210	740 x 715 x 1070	560 x 500 x 750	121.00	1	**9.883 749**

*gas tight, divided glass blind and divided drawers

1 2 3 Shaking Incubators 3031, 3032 and 3033 with Orbital Motion

GFL

Specialising in gentle mixing as well as vigorous shaking, GFL Shaking Incubators are used for applications that require exactly reproducible orbital motions and temperatures of up to +70°C, e.g. incubations, fermentations, homogenisations, chemical and biochemical reactions, enzyme and tissue studies, as well as for bacterial culture. The units carry the CE mark.
Incubation time, temperature and shaking frequency regulation are microprocessor-controlled. Fast and exact temperature setting, exact reproducibility of set values.

- built-in RS232 serial interface for remote control of measurement and control tasks via PC, compatible with PC software programme e.g. labworldsoft®
- temperature range: from 8°C above ambient to +70°C. Serial cooling coil for operation below ambient temperature. Operation with cooling coil: +20°C to +70°C (dependent on cooling media and ambient temperature)
- temperature constancy (temporal): ±0.2°C
- soft-touch keys with clear symbols
- setting and display of temperature (in 0.1°C increments), shaking frequency and incubation time: digital - LED.
- optimum temperature distribution throughout the cabinet interior with a ventilator
- electronic monitoring of the temperature controller. Over-temperature cut-out: electronical/dependent on the set value, to protect the test substances, and electro-mechanically, to protect the unit. Under-temperature cut-out: electronical, max. 9.9°C below set temperature.
- shaking motion: orbital, can be switched on and off.
- silent and robust shaking mechanism with gentle start-up.
- Incubation time: 1 minute to 999:59 hours
- the microprocessor-controlled timer continuously displays the remaining period of the incubation process and triggers an audible alarm at the finish
- Maximum load 3031/3032/3033: 12kg/12kg/20kg
- Supply requirements: 230V 50/60 Hz, 0.8kW (other voltages are available on request)

Type 3031:
Lift-up, transparent acrylic cover. Volume/capacity: approx. 46 litres/1 shaking tray. Outer casing made of heavy-duty ABS and powder-coated, electrolytically galvanized sheet steel. The aluminium shaking platform includes four plastic pins to accept a shaking tray or a universal mount (accessories).
- shaking frequency: 20 to 250rpm max.

Type 3032 (one-door design)/**Type 3033** (two-door design):
Acrylic window panels. Volume: approx. 45L/approx. 150L, capacity: 2 shaking trays (for vessel heights > 150 mm/180 mm: 1 shaking tray). Outer casing in powder-coated, electrolytically galvanized sheet steel. Interior cabinet, the insides of the doors and the shaking platform are stainless steel. The frame, permitting the use of two shaking trays, is included. A fluorescent lamp for interior illumination is separated from the interior cabinet by a diffusing screen.
- Shaking speed type 2032: 20 to max. 250rpm
- Shaking speed type 3033: 20 to max. 250rpm, if only bottom tray is fitted, max. 200rpm, if both trays are fitted


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Type	Amplitude mm	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	Max. kg	Weight kg	PK	Cat. No.
3031	30	450 x 450 x 280	525 x 665 x 570	12	38.50	1	**9.837 926**
3032	25	450 x 300 x 320	710 x 650 x 710	12	70.00	1	**9.837 927**
3033	25	674 x 540 x 430	930 x 890 x 820	20	135.00	1	**9.837 929**

4 Trays for Shaking Incubators

NEW!

GFL

Tray 3966 for Shaking Incubator 3031 and GFL Shakers 3011 to 3018
Stainless steel, 450mm x 450mm. With holes to accept clamps for Erlenmeyer flasks and other acessories.

Tray 3970 for Shaking Incubator 3032
Stainless steel, 450mm x 300mm. With holes to accept clamps for Erlenmeyer flasks and other acessories.

Tray 3980 for Shaking Incubator 3033 and GFL Shakers 3019 to 3020
Anodised aliminium, 670mm x 537mm. With holes to accept clamps for Erlenmeyer flasks and other acessories.


4

Type	For Type	PK	Cat. No.
Tray 3966	3031 / 3011 to 3018	1	**9.837 936**
Tray 3970	3032	1	**9.837 990**
Tray 3980	3033 / 3019 / 3020	1	**9.837 980**

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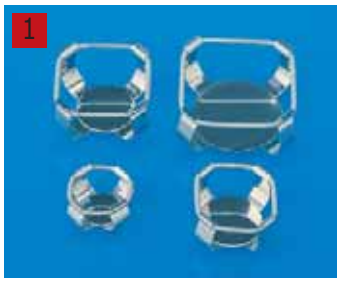

1 Clamps for Erlenmeyer Flasks

NEW!

GFL

Clamps for Shaking Incubators 3031/3032/3033 with orbital motion, to be screwed onto **trays 3966, 3970 and 3980**. Made of stainless steel.
Complete with fixing material (see also GFL Shakers 3005 to 3020).

Type	For flasks ml	Clips required shaker Model 3966	Clips required shaker Model 3970	Clips required shaker Model 3980	PK	Cat. No.
3983	25	79	52	99	1	**9.837 983**
3984	50	49	33	99	1	**9.837 984**
3985	100	36	22	50	1	**9.837 985**
3986	200	22	15	26	1	**9.837 986**
3987	250-300	16	13	26	1	**9.837 987**
3988	500	12	10	26	1	**9.837 988**
3989	1000	9	6	12	1	**9.837 989**
3990	2000		3	9	1	**9.837 991**

3032 (Shaking tray 3970): Clamps for 300ml and larger: 1 tray only can be used
3033 (Shaking tray 3980): Clamps for 1000ml and larger: 1 tray only can be used

Other clamps on request

Other Accessories for GFL Shaking Incubators (Test Tube Rack, Holding Frame for a test plate, Non-slip Rubber Mat, Universal Mount) see GFL Shakers, page 472.

Shaking Incubators ES-20/ES-80

Grant

Stable and reliable orbital shaker-incubator for vigorous or even mixing and incubation of samples in a variety of flasks and vessels. For Life Sciences, suitable for growing cell cultures in flasks, extracting tissue samples at physiological, temperatures, and sample preparation processes, mixing of biological liquids as well as the incubation and cultivation of biological liquids, growing e-coli, bioluminescence preparation.

- Variable speed: 50 to 250rpm
- Digital control of time, temperature and shaking speed for accuracy and repeatability
- Display 2-line 16 character LCD
- Interchangeable platforms for shaking/incubating different vessels (please order separately)

Specifications

Speed range:	50 to 250rpm
Temperature range ES-20:	+25 to 42°C
Temperature range ES-80:	+25 to 80°C
Temperature setting resolution:	0.1°C
Stability:	±0.5°C
Shaking movement:	orbital
Orbit ES-20:	10mm
Orbit ES-80:	20mm
Continuous operation ES-20:	720hrs
Continuous operation ES-80:	168hrs
Timer:	1min to 96hrs
Load capacity ES-20:	2.5kg
Load capacity ES-80:	8kg
Power supply:	230V 50/60Hz
Supply requirements:	230V 50/60Hz

Type	Dimensions (W x D x H) mm	PK	Cat. No.
ES-20	340 x 340 x 435	1	**6.251 451** 2
ES-80	590 x 525 x 510	1	**9.721 056** 3

2

6.251 451

3

9.721 056

More shaking incubators, please see page 1260.

Accessories for Shaking Incubators ES-20/ES-80

NEW!

Grant

Type	Description	For Type	PK	Cat. No.
P12-100	Platform with clamps for 12 x 100ml flasks / 150ml beakers	ES-20	1	**9.721 023** 1
PP-4	Flat platform with non slip rubber mat	ES-20	1	**9.721 022**
P6-250	Platform with clamps for 6 x 250ml flasks / 400ml beakers	ES-20	1	**9.721 024**
PUP-12	Universal platform	ES-20	1	**9.721 021** 2
P16-88	Platform with spring holders for 88 tubes up to 30mm	ES-20	1	**9.721 049** 3
PP-400	Flat platform with non slip rubber mat	ES-80	1	**9.721 060**
P30-100	Platform with clamps for 30 x 100 ml flasks	ES-80	1	**9.721 061**
P16-250	Platform with clamps for 16 x 250 ml flasks	ES-80	1	**9.721 062**
P9-500	Platform with clamps for 9 x 500 ml flasks	ES-80	1	**9.721 063**
P6-1000	Platform with clamps for 6 x 1000 ml flasks	ES-80	1	**9.721 064**

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9.721 023

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9.721 021

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9.721 049

4 Benchtop Shaking Incubator 222DS

NEW!

Labnet

The Benchtop Shaking Incubator is a combination of a shaker and a temperature chamber, designed for shaking and heat treatment of sensitive samples. It replaces two devices, reduces time and space needed. It is very suitable for biochemistry, microbiology and medicine laboratories in which thermal and shaking treatment of samples is a daily used routine.

- High temperature working range.
- Can be used in cold rooms too.
- Digital readout of all parameters - read temporary or preset RPM, temperature, time, acceleration.
- Parameter changes while the device is running (except timer).
- Last parameter values reside in the memory even if the device was switched off.
- Precisely adjusted and maintained temperature regulation within 0.5°C of absolute deviation from the set temperature.
- HOLD and STEP time function with 1 minute resolution.
- Easy interchangeable platforms.
- Lid sensor.

Univeral attachement please order separately.

Specifications

Temperature range:	+5°C to 70°C
Precision:	±0.5°C
Speed range:	20 to 300rpm
Timer:	1 min - 99 hours or continuous
Platform size:	300 x 300 mm
Supply requirements:	230 V, 50 Hz

4

Type	Amplitude	External dimensions (W x D x H)	Weight	PK	Cat. No.
	mm	mm	kg		
222DS	19.0	370 x 530 x 400	19.50	1	**6.259 079**
Universal attachement		300 x 300		1	**6.259 080**

Block thermostats please see page 1298.

KS 3000 i control/KS 3000 ic control

IKA

Innovatively designed, compact incubator shaker to safely allow unattended operation in a temperature-controlled environment. The unit has a large LED display for speed, temperature and timer. An integrated PID temperature control allows the use of PT 1000 temperature sensors to assure highly accurate temperature control. The electronically controlled incubator comes equipped with RS 232 and USB ports for PC interface. All functions can be controlled and documented using labworldsoft® (software sold separately).

- Controls with antimicrobial coating for reduction of bacteria
- Junction box in the workspace for connection of an additional temperature sensor, e.g. PT 1000 (included with delivery)
- Wide range of attachments allows for using almost all shapes and sizes of vessels
- Unit stops automatically when hood is lifted
- Collecting tray with drain hose on rear of the unit
- Electronic timer
- Error code display

KS 3000 ic control additionally with built-in cooler for connection to an external cooling unit.

Specifications

Shaking movement:	orbital
Orbit:	20mm
Max. shaker weight (with attachment):	7.5kg
Motor rating input/output:	45/10W
Power consumption:	1.120W
Speed:	10 to 500rpm
Timer:	1s to 999h
Speed display:	LED
Heater power:	1000W
Temperature range KS 3000 i:	RT +5°C to +80°C
Temperature range KS 3000 ic:	RT -10°C to +80°C
Temperature stability (200ml H_2O at target T=37°C, RT 25°C):	±0.1K
Temperature range (inlet T>3°C) for KS 3000 ic:	+12 to +80°C
Dimensions (WxDxH):	465 x 695 x 430mm
Protection class acc. to DIN EN 60529:	IP 30
Interface:	RS 232, USB
Power supply:	230V, 50/60Hz

Type	PK	Cat. No.
KS 3000 i control	1	**9.837 881**
KS 3000 i control UK	1	**9.837 883**
KS 3000 i control CH	1	**9.837 884**
KS 3000 ic control	1	**9.837 882**
KS 3000 ic control UK	1	**9.837 885**
KS 3000 ic control CH	1	**9.837 886**

9.837 882

1 Incubator Shaker KS4000i control

IKA

Innovative incubator shaker design allowing unattended operation in a temperature-controlled environment.
- large LED display for speed and time settings
- controls with antimicrobial coating for reduction of bacteria
- integrated PID temperature control (two Pt1000 temperature sensors can be used)
- socket in the work area for connection of an additional temperature sensor e.g. PT1000.60 (included in delivery)
- electronic temperature and speed control
- electronic timer switch: 0 to 999h (set by the minute or by the hour)
- optional built-in cooler for connection to an external cooling unit e.g. KV600
- unit switches off automatically if disturbed
- unit stops automatically when hood is lifted
- collecting tray for spillages with draining tube at rear of unit
- all functions can be controlled and documented using labworldsoft® software
- attachments not included - Please order accessories as required

1

Specifications

Shaking movement:	orbital
Orbit:	20mm
Max. shaker weight (with attachment):	20kg
Motor rating input/output:	82/24W
Power consumption:	1120W (at 230V)
Operating time:	continuous
Speed range:	10 to 500rpm
Timer switch (select minutes/hours):	0 to 999 h/continuous
Heater power:	1000W
Temperature range:	RT +5°C to 80°C
Temperature stability (200 ml H_2O at target T = 37°C, RT 25°C):	0.1K
Recirculating cooler:	additional cooling function for KS 4000 ic
Dimensions (WxDxH):	580 x 750 x 525mm
Space required (W x D):	600 x 600mm
Weight:	55kg
Permissible ambient temperature:	15 to 32°C
Protection class acc. to DIN EN 60529:	IP30
Interface:	RS232
Supply requirements:	230V 50/60Hz

Tested to DIN EN IEC 61010-1.

Type	PK	Cat. No.
KS 4000 i control	1	**9.837 890**
KS 4000 i control UK	1	**4.008 075**
KS 4000 ic control*	1	**9.837 891**
KS 4000 ic control* UK	1	**4.008 077**

*with built-in cooler

Accessories for Incubator Shaker KS4000i control

IKA

AS 4000.1 Universal attachment
For various types of vessels. Infinitely variable clamping rolls allow universal adaptation to various vessels.
Included with delivery: 1 x AS 1.400 Basic holder, 6 x AS 1.401 Clamping roll, 12 x AS 1.402 Fastening screw

AS 4000.2 Fixing clip attachment
For shaking flasks, Erlenmeyer flasks and bottles with a round crosssection (without fixing clips).
Number of fixing clips (volume): 50 x AS 2.1(25ml), 48 x AS 2.2 (50ml), 25 x AS 2.3 (100ml), 16 x AS 2.4 (250ml), 12 x AS 2.5 (500ml), 7 x AS 2.6 (1000 ml)

AS 4000.3 Dish attachment
For smooth shaking operations in the low viscosity range, e.g. for cell cultures, nutrient media in Petri dishes, culture bottles and vessels with a low centre of gravity. With integrated slip-resistant foil (PP).

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9.837 894

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9.837 893

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9.837 892

Type	Description	Weight g	Dimensions Set-up plate (W x D) mm	PK	Cat. No.
AS 4000.1	Universal attachment	3200	360 x 410	1	**9.837 894** 2
AS 1.402	Fastening screw*			1	**9.837 897**
AS 4000.2	Fixing clip attachment	2650	430 x 430	1	**9.837 893** 3
AS 4000.3	Dish attachment	800	430 x 430	1	**9.837 892** 4
STICKMAX	Adhesive mat		200 x 200	1	**6.236 293**

*Spare parts for universal attachment.

1

1 MaxQ 4450 Compact Benchtop Incubated Shakers, orbital

Thermo Scientific

- Holds up to 4 x 1L flasks.
- Requires minimal bench space.
- Choose between two temperature ranges, 5°C above ambient to 80°C or 5°C below ambient to 80°C.
- Clear lid lets you view samples without disturbing internal temperature
- Triple eccentric drive handles heavy loads, provides uniform agitation and continuous 24-hour operation, even at high speeds.
- Monitor and control chamber temperature range with ±0.1°C accuracy and ±0.5°C uniformity at 37°C.
- View speed, operating time and temperature simultaneously on three individual LED displays.
- Visual/audible alarms alert you to temperature deviations. Heat turns off if temperature deviates ±1°C of set point.
- Soft start feature eliminates sudden starts and stops, splashing of vessel contents or wetting of flask closure.
- Retains parameters during power failure and restarts unit automatically after power is restored.
- Over-temperature safety feature with independent thermostat provides additional backup by controlling heat if main temperature controller fails.
- Safety interlock stops platform motion when lid is opened.
- 5 year warranty and 10 year on drive mechanism.

Also available with analog operating system.

Specifications

Speed range, rpm:	15 to 500 ±1 rpm digital 40 to 400 ±1 rpm analog
Temperature range:	±0.1°C accuracy at 37°
Operating time:	0.1 hour to 999 hours or 0.1 minute to 999 minutes
Dimensions (L x W x H):	691mm x 358mm x 401mm
Supply requirements:	240V, 50/60 Hz

Description	Temp. range °C	Load max. kg	Amplitude mm	PK	Cat. No.
Benchtop Incubated Shaker, mini analog	RT +5°C - 80°C	15.9	19.0	1	**4.011 052**
Benchtop Incubated Shaker with Cooling Coil, mini analog	RT -5°C - 80°C	15.9	19.0	1	**4.011 053**
Benchtop Incubated Shaker, digital	RT +5°C - 80°C	15.9	19.0	1	**4.011 063**
Benchtop Incubated Shaker with Cooling Coil, digital	RT -5°C - 80°C	15.9	19.0	1	**4.011 064**

2

2 MaxQ 5000 Incubated and Refrigerated Floor Shakers, orbital

Thermo Scientific

- Combines Incubated/Refrigerated Temperatures with an Orbital Shaker for Large Capacity Applications
- Spacious chamber holds four 6L flasks
- Wide temperature range, 10°C above ambient to 60°C on incubated models and 15°C below ambient to 60°C on refrigerated models
- Easy-access drain system with quick disconnect fitting permits easy clean up of spills
- Drip pan under platform contains spills
- Foot pedal opens lid for hands free operation
- Retractable foot casters allow easy positioning in the lab
- Observe flask contents without opening the door through a large viewing window
- Access ports for probes, thermocouples or sensors provided through side of cabinet wall
- Triple eccentric drive handles heavy loads, provides uniform agitation and continuous 24-hour operation, even at high speeds.
- View speed, operating time and temperature simultaneously on three individual LED displays.
- Unbalanced load sensor stops platform motion when excess vibration is detected and visual/audio alarms signal until condition is corrected.
- Soft start feature eliminates sudden starts and stops, splashing of vessel contents or wetting of flask closure.
- Retains parameters during power failure and restarts unit automatically after power is restored.
- Over-temperature safety feature with independent thermostat provides additional backup by controlling heat if main temperature controller fails.
- 5 year warranty and 10 year on drive mechanism.

Also available with analog operating system.

Specifications

Speed range, rpm:	15 to 500 ±1rpm digital 40 to 400 ±1rpm analog
Temperature accuracy:	±0.1°C accuracy at 37°
Operating time:	0.1 hour to 999 hours or 0.1 minute to 999 minutes
Dimensions (L x W x H):	813mm x 1041mm x 1041mm
Supply requirements:	240V, 50/60 Hz

Description	Load max. kg	Amplitude mm	Temp. range °C	PK	Cat. No.
Incubated Floor Shaker, analog	34.0	25.4	RT +10°C - 60°C	1	**4.011 054**
Incubated and Refrigerated Floor Shaker, analog	34.0	25.4	RT -15°C - 60°C	1	**4.011 055**
Incubated Floor Shaker, digital	34.0	25.4	RT +10°C - 60°C	1	**4.011 065**
Incubated and Refrigerated Floor Shaker, digital	34.0	25.4	RT -15°C - 60°C	1	**4.011 066**

1 MaxQ 6000 Incubated and Refrigerated Stackable Shakers, orbital

Thermo Scientific

- Available in incubated or refrigerated models.
- Units can be stacked two high on the floor with the stacking kit accessory.
- Two adjustable-height shelves provide added storage.
- Large viewing window and internal light offer sample visibility.
- View temperature, speed and time simultaneously on three individual displays.
- Door can be hinged from the right or left by the user for convenient placement in lab.
- Triple eccentric drive handles heavy loads, provides uniform agitation and continuous 24-hour operation, even at high speeds.
- Visual/audible alarms alert you to temperature deviations. Heat turns off if temperature deviates ±1°C of set point.
- Shaker shut down and visual/audible alarms signal if unit operates ±10% of set speed, preventing shaker from moving.
- Unbalanced load sensor stops platform motion when excess vibration is detected visual/audio alarms signal until condition is corrected.
- Soft start feature eliminates sudden starts and stops, splashing of vessel contents or wetting of flask closure.
- Retains parameters during power failure and restarts unit automatically after power is restored.
- Over-temperature safety feature with independent thermostat provides additional backup by controlling heat if main temperature controller fails.
- Safety interlock stops shaking motion when the door is open.
- 5 year warranty and 10 year on drive mechanism.

Specifications

Speed range:	15rpm to 300rpm ±1rpm (stacked) 15rpm to 500rpm ±1rpm (unstacked)
Temperature	
Floor Shaker:	10°C above ambient to 80°C
Refrigerated Floor Shaker:	15°C below ambient to 80°C
Timer:	0.1 hr. up to 999 hr. or 0.1 to 999 min.
Power supply	
Floor Shaker:	240V 50/60Hz, 4.5A, 1100W
Refrigerated Floor Shaker:	240V 50/60Hz, 7A, 1500W
Dimensions (L x W x H):	838 x 699 x 1029 mm

Description	Load max. kg	Amplitude mm	PK	Cat. No.
Stackable Incubated Floor Shaker, digital	15.9	19.0	1	**4.011 067**
Stackable Incubated and Refrigerated Floor Shaker	15.9	19.0	1	**4.011 068**

2 Universal Platform for MaxQ Shaker

Thermo Scientific

For	Dimensions (W x D) mm	PK	Cat. No.
MaxQ 2000 / 4450	280 x 330	1	**4.009 327**
MaxQ 2000	460 x 610	1	**4.009 329**
MaxQ 2000 / 4000 und MaxQ 6000	460 x 460	1	**4.009 330**
MaxQ 3000	760 x 460	1	**4.009 331**
MaxQ 3000 / 5000	760 x 460	1	**4.010 227**
MaxQ 3000	910 x 610	1	**4.010 228**
MaxQ 8000	750 x 460	1	**4.009 494**

3 Clamps for MaxQ Shaker (except MaxQ 8000)

Thermo Scientific

Description	PK	Cat. No.
Clamps for Microplate/Deep-well plate	1	**4.009 340**
Clamps for Erlenmeyer Flask 10ml	1	**4.010 229**
Clamps for Erlenmeyer Flask 25ml	1	**4.009 332**
Clamps for Erlenmeyer Flask 50ml	1	**4.010 230**
Clamps for Erlenmeyer Flask 125ml	1	**4.009 333**
Clamps for Erlenmeyer Flask 250ml	1	**4.010 231**
Clamps for Erlenmeyer Flask 300ml	1	**4.009 334**
Clamps for Erlenmeyer Flask 500ml	1	**4.010 232**
Clamps for Erlenmeyer Flask 1000ml	1	**4.010 233**
Clamps for Erlenmeyer Flask 2000ml	1	**4.009 335**
Clamps for Erlenmeyer Flask 4000ml	1	**4.009 336**
Clamps for Erlenmeyer Flask 6000ml	1	**4.009 337**
Clamps for Low Form Culture Flask 2500ml	1	**4.009 338**
Clamps for Fernbach Flask 2800ml	1	**4.009 339**

1

1 MaxQ 8000 Incubated and Refrigerated Stackable Shakers

Thermo Scientific

Can be Stacked Two to Three High on the Floor for Space Savings

- Choose from two temperature ranges to fulfill a number of molecular biology applications.
- HEPA filter ensures air inside the chamber remains clean and reduces cross contamination improving culturing conditions.
- Slide out platform provides convenient 100% sample access.
- Crevice-free Type 304 stainless steel chamber with coved corners and built-in drain keeps spills within the work area and promotes easy cleaning.
- Chamber is tall enough to accommodate 2L Erlenmeyer flasks.
- Top platform height is under 61.0 in. (154.9 cm) when units are stacked three high, ensuring ease-of-use and convenient accessibility.
- Easy to clean platforms are constructed of 5/16 in., heavy duty brushed anodized aluminum, which does not chip or rust.
- Large viewing window and internal xenon light allow sample visibility minimizing the need to open the chamber door.
- Electronic components and HEPA filter are easily accessed from the front of the unit, eliminating the need to move the shaker during regular maintenance or service.
- 5 year warranty and 10 year on drive mechanism.

For a complete system order:
1. Shaker, 2. Platform, 3. Clamps

Specifications

Speed range:	speed ranges from 25rpm to 400rpm ±1rpm
Temperature range:	±0.15°C
Operating time:	5 min. to 199 hours and 59 min.
Dimensions (L x W x H):	605 x 846 x 300 mm
Supply requirements:	240V, 50/60 Hz

Type	Temp. range °C	Load max. kg	Amplitude mm	PK	Cat. No.
MaxQ 8000 Incubated shaker	10°C above ambient to 60°C	16.1	25.4	1	**4.011 070**
MaxQ 8000 Refrigerated shaker	5°C or 20°C below ambient to 60°C	16.1	25.4	1	**4.011 071**

2

2 Racks for MaxQ Shaker

Thermo Scientific

Racks for	Size mm	Description	Colour	PK	Cat. No.
Test Tube Racks - Full Size	10-13	6x12	red	1	**4.010 234**
Test Tube Racks - Full Size	14-16	6x12	orange	1	**4.009 342**
Test Tube Racks - Full Size	17-20	4x10	white	1	**4.009 344**
Test Tube Racks - Full Size	21-25	4x10	blue	1	**4.009 346**
Test Tube Racks - Full Size	26-30	3x8	green	1	**4.009 348**
Microcentrifuge, 1.5ml - Full Size		8x12	blue	1	**4.009 350**
Test Tube Racks - Half Size	10-13	6x6	red	1	**4.009 341**
Test Tube Racks - Half Size	14-16	6x6	red	1	**4.009 343**
Test Tube Racks - Half Size	17-20	4x5	white	1	**4.009 345**
Test Tube Racks - Half Size	21-25	4x5	blue	1	**4.009 347**
Test Tube Racks - Half Size	26-30	3x3	green	1	**4.009 349**
Microcentrifuge, 1.5ml - Half Size		4x6	white	1	**4.009 351**

3

3 Adhesive Flask Mat for MaxQ Shakers

Thermo Scientific

Our Adhesive Flask Mat is an alternative to flask clamps for securing odd shaped objects such as bottles, volumetric flasks and test tube racks to a shaker platform. Simply place the 23cm x 23cm Adhesive Flask Mat on an anodised aluminum or stainless steel shaker platform and secure the vessel to it. It will hold Erlenmeyer flasks as large as 4L that contain 2L of media at speeds up to 250rpm.
The mat is not suitable for use in water baths.

- Easy-to-view samples. The white background makes it easy to determine when to harvest your samples
- Simple to clean. Can be restored to like new condition by wiping with alcohol
- Long lasting. Months of use without losing adhesive properties

Description	PK	Cat. No.
Flask Mat 23cm x 23cm	1	**4.009 506**

E & OE.

Constant Climate Chambers HPP

NEW!

Memmert

The constant climate chamber generation with the unique ControlCOCKPIT for a quick and intuitive operation.
Perfectly suited for stability tests, storage in controlled environment and conditioning.
Energy efficient and maintenance free.

1

9.868 022

Standard equipment:
- PID microprocessor control with integrated auto-diagnostic system
- Interior stainess stel 1.4301 (ASTM 304),deep-drawn
- Structured stainless steel housing, scratch-resistant, robust and durable; rear of zinc-plated steel
- High-temperature connectors on the rear of the appliance for single-phase power connection according to country specific systems and IEC standards
- Internal data logger with a storage capacity of at least 10 years
- German, English, French, Spanish language settings available on the ControlCOCKPIT
- Digital backwards counter with target time setting adjustable between 1 minute and 99 days
- The SetpointWAIT function guarantees that the process time does not start until the set temperature is reached at all measuring points - optional for temperature values recorded by the freely positionable Pt100 sensors inside the chamber.
- Adjustment of three calibration values for temperature and additional appliance specific parameters directly at the ControlCOCKPIT, for example relative humidity
- mounted on lockable castors

TwinDISPLAY: ControlCOCKPIT with two TFT displays
- Two high-resolution TFT colour displays with touch-sensitive buttons for selection of functions
- Available parameters on the ControlCOCKPIT: Temperature (Celsius or Fahrenheit), fan speed, exhaust air flap position, programme time, relative humidity, time zones, summertime/wintertime
- Two Pt100 sensors DIN class A in a 4-wire circuit for mutual monitoring, taking over functions in case of an error
- AtmoCONTROL software on a USB stick for programming, managing and transferring programmes via Ethernet interface or USB port
- HeatBALANCE function for application specific adjustment of heat output distribution (balance) between the upper and lower heating groups in an adjustment range between -50 % and +50 % (not valid for HPP110)
- ControlCOCKPIT with USB port for uploading programmes, reading out protocol logs, activating the User-ID function
- Displaying of already logged protocol data on the ControlCOCKPIT (max 10.000 values correspond to approx. 1 week)
- Ethernet interface on the rear of the appliance for reading out the protocol log and for uploading programmes and for online logging
- Multiple overtemperature protection: Electronic temperature monitoring TWW/TWB (protection class 3.1 or 2 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/undertemperature alarm

Specifications

Working-temperature range without light	0 (max. 25°C below ambient) to +70°C
Working-temperature range with light	+15 to +40°C
Setting temperatur range	0 to +70°C
Setting accuracy temperature	0.1°C
Adjustment range humidity without light	rh 10 to 90%
Adjustment range humidity with light	rh 10 to 85%
Setting accuracy humidity	0.5 % rh
Power supply	230 V, 50/60 Hz; 115 V, 50/60 Hz at no extra cost

Type	Capacity	Internal dimensions (W x D x H)	Shelf support ribs/shelves	Housing (W x D x H)	Weight	Rating	PK	Cat. No.
	l	mm		mm	kg	W		
HPP110	108	560 x 400* x 480	5/2	745 x 674** x 864	77	650	1	**9.868 021**
HPP260	256	640 x 500* x 800	9/2	824 x 774** x 1183	122	820	1	**9.868 022** 1
HPP750	749	1040 x 600* x 1200	14/2	1224 x 874** x 1726	208	1200	1	**9.868 023**

* Minus 10 mm for fan
**Depth without door handle, please add 56mm

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6.263 247

Constant Climate Chambers HPP750life for keeping mice

NEW!

Memmert

Ventilation and Control
- forced ventilation by Peltier fan
- 2 fresh air inlets (40 mm Ø) in the rear at the bottom, can be closed with stopper
- 1 exhaust air outlet in the rear at the top (80 mm Ø) with fan, to control the air exchange rate, adjustable in 10 % steps (max. air exchange rate 38 times/h)
- adaptive multifunctional digital PID-microprocessor controller with 2 highdefinition TFT-colour displays
- integral fault diagnostics for temperature and humidity control
- 2 Pt100 sensors Class A in 4-wire-circuit, mutually monitoring and taking over the performance at the same temperature value
- digital timer adjustable from 1 minute to 99 days
- parameters adjustable on ControlCOCKPIT: temperature (Celsius or Fahrenheit), relative humidity, programme time, time zones, summertime/wintertime
- SetpointWAIT function - the process time does not start until the set temperature is reached
- AtmoCONTROL software on a USB stick for programming, managing and transferring programmes via Ethernet interface or USB port
- heating and cooling performance distribution by individual control of the Peltier elements in the upper and lower row
- HeatBALANCE function for adapting the distribution of the heating performance of the upper and lower heating circuit from -50 % to +50 %
- setting of languages on ControlCOCKPIT: German/English/Spanish/French
- resolution of display for setpoint and actual temperature values 0.1°C
- calibration facility directly at ControlCOCKPIT for three freely selectable temperature values, 2-point calibration for humidity: 20 and 90 % rh
- programme stored in case of power failure
- including works calibration certificate for +30°C/45 % rh

Humidifying and dehumidifying system
- active humidifying and de-humidifying adjustable from 10 - 90 % rh with digital display of relative humidity
- resolution of display 0.1 %, setting accuracy 0.5 %
- dehumidification by means of compressed air for safe and stable humidity values in compliance with GV Solas guidelines
- humidity supply with distilled water from external tank by self-priming pump
- humidification by hot steam generator
- dehumidification by cold trap using the Peltier technology

Multiple Overtemperature Protection
- with audible and visual alarm
- over- and undertemperature monitor TWW, protection class 3.3 or adjustable temperature limiter TWB, protection class 2, selectable on display
- additionally integrated over- and undertemperature protection "ASF", automatically following the setpoint value at a preset tolerance range; alarm in case of overor undertemperature, heating function is switched off in case of overtemperature, cooling function in case of undertemperature

Textured Stainless Steel Casing
- fully insulated stainless steel doors with 2-point locking (compression door lock)
- inner glass doors
- rear zinc-plated steel
- on lockable castors

Interior - Heating Concept
- energy-saving Peltier heating-/cooling system integrated in the rear (heat pump principle)
- 2 special stainless steel grids, reinforced, each with 2 LED light strips, adjustable in 1 % steps (5.500 K cold white or 2.700 K warm white)
- max. loading of chamber: 200 kg

Temperature range:
- from 0°C to +70°C
- from +5°C to +40°C with light

Type	Capacity	Internal dimensions (W x D x H)	Housing (W x D x H)	Weight	Rating	Shelf support ribs/shelves	PK	Cat. No.
	l	mm	mm	kg	W			
HPP750life	749	1040 x 600 x 1200	1224 x 874 x 1726	208	1200	4/2	1	**6.263 247** 1

Constant climate chambers, KBF/KBF P/KBF LQC series

BINDER

The BINDER constant climate chambers for long-term stable temperature/humidity/light simulation in one chamber. They are ideal for norm-compliant work according to ICH guidelines and work independent of water supply. Their special feature: climate and light tests can be performed at the same time in on chamber.

- Long-term stabile test conditions
- Independent of the water supply
- one-stop solution: Temperature/humidity/light simulation in one chamber

KBF Series: Constant climate chambers. The specialist for reliable stability testing.
KBF P Series: Constant climate chambers with ICH-compliant illumination. The ICH-compliant illumination device with BINDER Q1B Synergy Light™ makes it the expert for reliable photostability testing.
KBF LQC Series: Constant climate chambers with additional photometry. The constant climate chamber with Light Quantum Control is ideal for advanced photostability testing with precision light measurement.

Equipment:
- Electronically controlled APT.line™ preheating chamber with cooling system
- 2 variable position illumination cassettes (KBF P)
- Temperature range 0°C to 70°C (without humidity and illumination)
- Humidity range 10% to 80% RH (without illumination cassettes)
- MCS controller with 25 storable programs of 100 sections each for a maximum of 500 program segments
- Electronically controlled humidification and dehumidification system with capacitive humidity sensor
- Inner glass door with seal
- Independent temperature safety device class 3.1 (DIN 12880) with optical and audible temperature alarm
- Access port with silicone plug diam. 30mm, left side
- Ethernet interface for communication software APT-COM™ DataControlSystem

Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
KBF 115	115	600 x 351 x 483	885 x 650 x 1050	1	**9.883 630** 2
KBF 240	240	650 x 485 x 785	930 x 800 x 1460	1	**9.883 582**
KBF 720	700	973 x 576 x 1250	1255 x 890 x 1925	1	**9.883 579**
KBF P 240	240	650 x 485 x 785	930 x 880 x 1460	1	**9.883 583**
KBF P 720	700	973 x 576 x 1250	1255 x 890 x 1925	1	**9.883 584** 1
KBF LQC 240	240	650 x 485 x 785	930 x 800 x 1460	1	**6.236 223**
KBF LQC 720	720	973 x 576 x 1250	1255 x 890 x 1925	1	**6.236 224**

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9.883 584

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9.883 630

Constant climate chambers, KMF series

NEW!

BINDER

The KMF is the specialist for unconditionally reliable stress testing and precise maintenance of constant test conditions.
It has particularly large power reserves and an extremely broad climate range: from
- 10°C to +100°C. It works condensation-free up to 90% r. H. These features make the KMF unique in its class.

Stable test conditions up to 85°C/85% r. H.
Optimal ratio of usable space and footprint
Applications:
- Plastics Industry, Packaging Industry, Automotive

Equipment:
- Temperature range from -10°C to 100°C
- Humidity range 10 % to 98 % r. H.
- MCS controller which can store 25 programs of 100 sections each for a maximum of 500 program segments
- User-friendly LCD color screen
- Easy-to-read menu guide
- Integrated electronic chart recorder
- Variety of options for the graphic display of process parameters
- Real-time clock
- Electronically controlled humidification and dehumidification system with capacitive humidity sensor
- Inner glass door
- Independent temperature safety device class 3.1 (DIN 12880) with visual and audible alarm
- Access port with silicone plug Ø 30 mm, left side
- Complete safety connection kit for water supply and drainage, up to 1m in height
- Ethernet interface for communication software APT-COM™ DataControlSystem
- Shelf, stainless steel
- Four casters, two with brakes (KMF 240/720)

Type	Internal volume litres	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	PK	Cat. No.
KMF 115	102	885 x 650 x 1050	600 x 351 x 483	1	**6.254 841**
KMF 240	247	930 x 800 x 1460	650 x 485 x 785	1	**9.883 628** 3
KMF 720	700	1255 x 890 x 1925	973 x 576 x 1250	1	**9.883 629**

3

9.883 628

Material test chambers, FP and M series

BINDER

The material test chambers from BINDER are highly precise and have a wide temperature range, as well as comprehensive programming options, with which you can customise ramps, profiles and processes.
- The specialists for demanding heating profiles
- Adjustable high air change rate

FP Series: Material test chamber with forced convection. For complex temperature testing.
M Series: Material test chambers with individual programming. Temperatures up to 300°C, high-performance fan and individual programming make it the first choice in material testing and aging testing.

- Electronically controlled APT.line™ preheating chamber assuring temperature accuracy and reproducible results
- Temperature range from 5°C above ambient temperature to 300°C
- Independent adjustable temperature safety device class 2 (DIN 12880), with visual temperature alarm
- RS 422 interface for use with APT-COM™ DataControlSystem communication software

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9.883 710

2

9.883 565

Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
FP 53	53	400 x 340 x 400	635 x 575 x 620	1	**9.883 710** 1
FP 115	115	600 x 410 x 480	835 x 645 x 705	1	**9.883 711**
FP 240	240	800 x 510 x 600	1035 x 745 x 825	1	**9.883 712**
FP 400	400	1000 x 510 x 800	1235 x 765 x 1025	1	**9.883 713**
FP 720	720	1000 x 610 x 1200	1235 x 865 x 1530	1	**9.883 714**
M 53	53	400 x 340 x 400	635 x 575 x 780	1	**9.883 563**
M 115	115	600 x 410 x 480	835 x 645 x 865	1	**9.883 564**
M 240	240	800 x 510 x 600	1035 x 745 x 985	1	**9.883 565** 2
M 400	400	1000 x 510 x 800	1235 x 765 x 1185	1	**9.883 566**
M 720	720	1000 x 610 x 1200	1235 x 865 x 1695	1	**9.883 567**

Climate chambers with illumination, KBW, KBWF series

BINDER

Homogeneous lighting conditions with constant temperature and humidity conditions, the BINDER climate chambers. The responsive humidification system, the high-performance cooling and uniform light distribution ensure optimal growth conditions.

- Homogeneous light distribution
- Natural growth conditions
- KBWF: Temperature, humidity & light in one unit

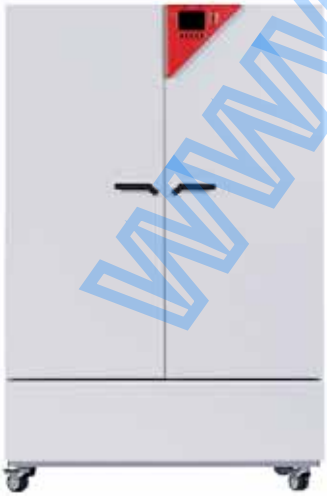
KBW Series: The KBW confidently meets all demands for optimal lighting and temperature conditions for precisely defined processes.
KBWF Series: The perfect combination of heat or cold, humidity and light in one chamber: The BINDER KBWF.

Equipment:
- Electronically controlled APT.line™ preheating chamber
- Temperature range 0°C to 70°C (without humidity and illumination)
- Humidity range 10% to 80% RH (without illumination)
- 2 variable position illumination cassettes each with 5 daylight fluorescent illumination tubes
- MCS controller for temperature, humidity, and lighting control with 25 storable programs of 100 sections each for a maximum of 500 program segments, for programming of day/night cycles
- Integrated electronic chart recorder
- Controlled humidification and dehumidification system with capacitive humidity sensor
- Independent temperature safety device class 3.1 (DIN 12880) with optical and audible temperature alarm
- Access port with silicone plug diam. 30mm, left side
- RS 422 interface for communication software APT-COM™ DataControlSystem

3

9.883 535

4



9.883 576

Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
KBW 240	247	650 x 485 x 785	925 x 800 x 1460	1	**9.883 573**
KBW 400	400	650 x 485 x 1270	925 x 800 x 1945	1	**9.883 535** 3
KBW 720	698	970 x 576 x 1270	1255 x 887 x 1925	1	**9.883 574**
KBWF 240	247	650 x 485 x 785	930 x 800 x 1460	1	**9.883 575**
KBWF 720	720	973 x 576 x 1250	1255 x 890 x 1925	1	**9.883 576** 4

Muffle furnaces series LE 1/11 - LE 14/11

Nabertherm

- Tmax 1100°C, 1050°C working temperature
- Heating from both sides with heating elements in quartz tubes
- Multi-layer fibreboard insulation within the furnace
- Housing manufactured from high-grade textured stainless steel
- Folding door which can be used as a clipboard
- Exhaust air outlet in the furnace rear wall
- Silent, solid-state power control relay
- R6 controller supplied with models LE1 - LE4 with adjustable target temperature. Models LE6 and LE14 available with controller B150 (one ramp, one holding time, delayed start time) or optionally with controller P300 (9 programmes each with 4 ramps and holding times).
- Controller mounted in side space (LE1 - LE4 space saving under the door)

Optional:
- Chimney
- Chimney with fan or catalyser
- Temperature limiter

1

9.764 543

2

9.764 538

Type/Controller	Capacity litres	Rating kW	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	Weight kg	PK	Cat. No.
LE 1/11/R6	1	1.5	90 x 115 x 110	250 x 265 x 340	10.00	1	**9.764 543** 1
LE 2/11/R6	2	1.8	110 x 180 x 110	275 x 380 x 350	10.00	1	**9.764 537**
LE 4/11/R6	4	1.8	170 x 200 x 170	335 x 400 x 410	15.00	1	**9.764 538** 2
LE 6/11/B150	6	1.8	170 x 200 x 170	510 x 400 x 320	18.00	1	**9.764 539**
LE 6/11/P300	6	1.8	170 x 200 x 170	510 x 400 x 320	18.00	1	**9.764 540**
LE 14/11/B150	14	2.9	220 x 300 x 220	555 x 500 x 370	25.00	1	**9.764 541**
LE 14/11/P300	14	2.9	220 x 300 x 220	555 x 500 x 370	25.00	1	**9.764 542**

3 Muffle furnaces L 1/12 - L 40/11 series

Nabertherm

- Tmax 1100°C or 1200°C
- Ceramic heating plates with built-in heating wire, easy to replace
- Hardened vacuum-fibre, high-resistance muffle
- Housing manufactured from high grade stuctured stainless steel
- Double-walled housing for low surface temperature and high stability
- Available with folding door (L) which can be used as a clipboard or without additional charge with a lift gate (LT), where the hot side will be averted from the user
- Adjustable air inlet in the door
- Exhaust air outlet in the furnace rear wall
- Silent electronic relay
- Controller B180 with adjustable ramp holding temperature and holding time or controller P330 with 9 programmes each with 4 ramps and holding times, PC interface.

3

Type/Controller	Capacity litres	Rating kW	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	Weight kg	PK	Cat. No.
L 1/12/R6	1	1.5	90 x 11 x 110	250 x 265 x 340	10.00	1	**9.764 508**
L3/11/B180	3	1.2	160 x 140 x 100	380 x 370 x 420	20.00	1	**6.059 769**
L5/11/B180	5	2.4	200 x 170 x 130	440 x 470 x 520	35.00	1	**6.092 769**
L9/11/B180	9	3.0	230 x 240 x 170	480 x 550 x 570	45.00	1	**6.302 391**
L15/11/B180	15	3.6	230 x 340 x 170	480 x 660 x 570	55.00	1	**6.056 446**
L24/11/B180	24	4.5	280 x 340 x 250	560 x 660 x 650	75.00	1	**6.206 861**
L3/11/P330	3	1.2	160 x 140 x 100	380 x 370 x 420	20.00	1	**9.764 503**
L5/11/P330	5	2.4	200 x 170 x 130	440 x 470 x 520	35.00	1	**9.764 505**
L9/11/P330	9	3.0	230 x 240 x 170	480 x 550 x 570	45.00	1	**9.764 509**
L15/11/P330	15	3.6	230 x 340 x 170	480 x 660 x 570	55.00	1	**9.764 507**
L24/11/P330	24	4.5	280 x 340 x 250	560 x 660 x 650	75.00	1	**9.764 504**
L40/11/P330	40	6.0	320 x 490 x 250	600 x 790 x 650	95.00	1	**9.764 506**

Other models available on request.

Safety gloves, heat protection - please see page 223.

1

1 Laboratory muffle furnaces M 104 and M 104 G

Thermo Scientific

- Environmentally friendly and economical
- Reliable solution for routine high temperature applications
- Recommended for Chemical analysis, Annealing loss determination, Materials testing and Ashing processes
- Easy handling and loading via tilting door that also protects users from hot inside surface
- Standard model equipped with electronic controller, digital display and upper limit cut-out; deluxe models available with electronic or programmable controller, timer, and exhaust fan
- M104G models feature glazed annealing muffle for use in analytical processes requiring extreme purity

Type	Description	PK	Cat. No.
M 104	Basic version with Digicon® and upper limit cut-out	1	**9.764 185**
M 104	With Digicon®, upper limit cut-out and 24 hour timer	1	**9.764 186**
M 104	With Digicon®, upper limit cut-out, 24-hour-timer and exhaust fan	1	**9.764 187**
M 104	With Thermicon® P and upper limit cut-out	1	**9.764 188**
M 104	With Thermicon® P, upper limit cut-out and exhaust fan	1	**9.764 189**
M 104	With adjustable fresh air supply	1	**7.079 801**
M 104	Economy version with Digicon®, excluding upper limit cut-out	1	**7.024 558**
M 104 G	Digicon®, 24 hour timer, glazed muffle	1	**9.764 195**
M 104 G	Digicon® with adjustable fresh air supply	1	**4.009 791**
M 104 G	Digicon® 24 hour timer, exhaust fan, glazed muffle	1	**9.764 196**
M 104 G	Thermicon®, glazed muffle	1	**9.764 197**
M 104 G	Thermicon® P, exhaust fan, glazed muffle	1	**9.764 198**
M 104 G	Thermicon® P, with adjustable fresh air supply	1	**4.009 809**

2

2 Laboratory chamber furnaces, K114-series

Thermo Scientific

Extremely short heating and recovery times
Annealing chamber made of ceramic fiber for rapid heat-up and recovery times.
Accurate temperature control
Outstanding temperature distribution and control ensure efficient operation.
Ideal for use in crowded laboratory
Compact size, excellent insulation and patented safety door mechanism.
Common application areas
Uses include materials testing, burning and rapid heat processes.

Type	Description	PK	Cat. No.
K 114	Basic version with Digicon® and upper limit cut-out	1	**9.764 231**
K 114	With Digicon®, upper limit cut-out and 24 hour timer	1	**9.764 232**
K 114	With Thermicon® P and upper limit cut-out	1	**9.764 233**
K 114	With adjustable fresh air supply (for incinerating processes)	1	**4.009 788**
K 114	Economy version with Digicon®, excluding upper limit cut-out	1	**9.764 235**
K 114	with Digicon® and exhaust fan	1	**4.009 781**
K 114	with Thermicon® P and exhaust fan	1	**4.009 790**

Accessories for M 104/M 104 G and K 114 high-temperature muffle furnaces

Thermo Scientific

Type	PK	Cat. No.
Exhaust flue	1	**9.764 191**
Tray	1	**9.764 192**

3

3 Muffle furnaces, M110-series

Thermo Scientific

- Economical operation: high quality fiber insulation ensures low energy consumption
- Even heat distribution: two-shell design, outstanding insulation and heating element arrangement give even heat distribution with minimal fluctuation.
- Rugged and flexible for all types of lab applications. Including heating of metals and drying at high temperatures.
- All basic models come with Digicon controller and upper limit cut-out

Type	Description	PK	Cat. No.
M 110	Basic version with Digicon® and upper limit cut-out	1	**9.764 210**
M 110	With Digicon®, upper limit cut-out and 24 hour timer	1	**4.009 808**
M 110	Basic version with Digicon®, upper limit cut-out, exhaust fan and flue	1	**9.764 213**
M 110	With Digicon®, upper limit cut-out, 24 hour timer and exhaust fan	1	**4.009 806**
M 110	With Thermicon® P and upper limit cut-out	1	**9.764 211**
M 110	With Thermicon® P, upper limit cut-out, exhaust fan and flue	1	**9.764 212**
	Exhaust flue	1	**9.763 381**
	Tray	1	**9.763 382**

Ashing/Burn off furnaces LV 3/11 - LVT 15/11

1

9.764 575

The models LV 3/11 - LVT 15/11 are especially designed for ashing in the laboratory. *Nabertherm*
A special air intake and exhaust system allows air exchange of more than 6 times per minute. Incoming air is preheated to ensure a good temperature uniformity.

- Tmax 1100°C
- Heating from two sides by ceramic heating plates
- Ceramic heating plates with integral heating element which is safeguarded against fumes and splashing, and easy to replace
- Highly durable, high-performance cured vacuum fiber module lining
- Housing made of sheets of textured stainless steel
- Dual shell housing for low external temperatures and stability
- Optional flap door (LV) which can be used as work platform or lift door (LVT) with hot surface facing away from the operator
- Solid state relays provide for low noise operation
- Air exchange of more than 6 times per minute
- Good temperature uniformity due to preheating of incoming air

Type/ Controller	Capacity litres	Rating kW	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
LV 3/11/B180	3	1.2	160 x 140 x 100	380 x 370 x 750	1	**6.239 505**
LV 5/11/B180	5	2.4	200 x 170 x 130	440 x 470 x 850	1	**6.228 436**
LV 9/11/B180	9	3.0	230 x 240 x 170	480 x 550 x 900	1	**6.204 399**
LV 15/11/B180	15	3.6	230 x 340 x 170	480 x 650 x 900	1	**6.235 585**
LV 3/11/P330	3	1.2	160 x 140 x 100	380 x 370 x 750	1	**9.764 575** 1
LV 5/11/P330	5	2.4	200 x 170 x 130	440 x 470 x 850	1	**6.233 889**
LV 9/11/P330	9	3.0	230 x 240 x 170	480 x 550 x 900	1	**9.764 576**
LV 15/11/P330	15	3.6	230 x 340 x 170	480 x 650 x 900	1	**9.764 577**
LVT 3/11/B180	3	1.2	160 x 140 x 100	380 x 370 x 750	1	**9.764 578**
LVT 5/11/B180	5	2.4	200 x 170 x 130	440 x 470 x 850	1	**9.764 580**
LVT 9/11/B180	9	3.0	230 x 240 x 170	480 x 550 x 900	1	**6.232 352**
LVT 15/11/B180	15	3.6	230 x 340 x 170	480 x 650 x 900	1	**6.235 611**
LVT 3/11/P330	3	1.2	160 x 140 x 100	380 x 370 x 750	1	**9.764 579**
LVT 5/11/P330	5	2.4	200 x 170 x 130	440 x 470 x 850	1	**6.256 163**
LVT 9/11/P330	9	3.0	230 x 240 x 170	480 x 550 x 900	1	**6.255 458**
LVT 15/11/P330	15	3.6	230 x 340 x 170	480 x 650 x 900	1	**6.235 610**

2 High-temperature chamber furnaces with SiC rod heating HTC/HTCT 01/14 - 08/16 series

2

These powerful laboratory muffle furnaces are available for temperatures up to 1400°C, 1500°C, or 1600°C. The durability of the SiC rods in periodic use, in combination with their high heating speed, make these furnaces to all-rounders in the laboratory. Heating times of 40 minutes to 1400°C can be achieved, depending on the furnace model and the conditions of use. *Nabertherm*

- Tmax 1400°C, 1500°C, or 1600°C
- Working Temperature 1550°C (for models HTC ../16), increased wear and tear of heating elements must be expected in case of working at higher temperatures
- Model HTCT 01/16 with single phase connection
- High-quality fiber material, selected for the working temperature
- Housing made of sheets of textured stainless steel
- Dual shell housing for low external temperatures and high stability
- Optional flap door (HTC) which can be used as work platform or lift door (HTCT) with hot surface facing away from the operator (HTCT 01/.. only with lift door)
- Switching system with solid-state-relays, power tuned to the SiC rods
- Controller P330 as standard with 9 programmes each with 4 ramps and holding times, PC interface
- Easy replacement of heating rods

Type/ Controller	Temp. max. °C	Capacity L	Rating kW	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
HTCT 03/14	1400	3.0	9.0	120 x 210 x 120	400 x 535 x 530	1	**9.764 582**
HTCT 08/14	1400	8.0	13.0	170 x 290 x 170	450 x 620 x 570	1	**6.252 321**
HTCT 03/15	1500	3.0	9.0	120 x 210 x 120	400 x 535 x 530	1	**9.764 584**
HTCT 08/15	1500	8.0	13.0	170 x 290 x 170	450 x 620 x 570	1	**9.764 585**
HTCT 01/16	1600	1.5	3.5	110 x 120 x 120	340 x 300 x 460	1	**9.764 586**
HTCT 03/16	1600	3.0	9.0	120 x 210 x 120	400 x 535 x 530	1	**9.764 587**
HTCT 08/16	1600	8.0	13.0	170 x 290 x 170	450 x 620 x 570	1	**9.764 588**
HTC 03/14	1400	3.0	9.0	120 x 210 x 120	400 x 535 x 530	1	**6.222 778**
HTC 08/14	1400	8.0	13.0	170 x 290 x 170	450 x 620 x 570	1	**9.764 589**
HTC 03/15	1600	3.0	9.0	120 x 210 x 120	400 x 535 x 530	1	**9.764 590**
HTC 08/15	1600	8.0	13.0	170 x 290 x 170	450 x 620 x 570	1	**9.764 591**
HTC 03/16	1600	3.0	9.0	120 x 210 x 120	400 x 535 x 530	1	**6.235 199**
HTC 08/16	1600	8.0	13.0	170 x 290 x 170	450 x 620 x 570	1	**9.764 592**

1 Rapid incinerator

Gestigkeit

For individual and series incineration of solids and liquids. Upper platform with 8 openings of 34mm diameter, for porcelain crucibles up to 50mm diameter. Upper platform and housing made of stainless steel.
With 120 minute timer with audible signal after timed period and separate continuous operation switch.
A safety switch switches the mains supply off/on automatically on opening/closing the incinerator chamber.
With 1.5 metre cable and earthed plug.

Type SVR/E
With electronic temeprature control which allows stepless heating adjustment from 10 to 100%. Complete for use.

Type SVD 95
With digital temperature adjustment and display. Complete for use.

Type	Temp. range max. °C	Rating W	Dimensions (W x D x H) mm	Weight kg	Supply requirements V	PK	Cat. No.
SVR/E	950	2500	450 x 310 x 180	7.0	230	1	**9.884 140**
SVD 95	950	2500	450 x 310 x 180	7.0	220	1	**9.884 141**

1

Spare parts for Rapid incinerator

Gestigkeit

Type EH 400
Complete, built-in heating element; Weight 1.6kg, for SVR/E.
Type EH 95
Complete, built-in heating element and integral thermocouple, for SVD 95.

Type	PK	Cat. No.
Heating element EH 400 for SVR/E	1	**9.884 142**
Heating element EH 95 for SVD 95	1	**9.884 143**