7. Heating and cooling technology Contents

Cooling	754
Cryogenic tubes	754
Cryogenic boxes	
Cryogenic racks	
Cryogenic accessories	
Biobanking	766
Cryogenic storage tanks	
Liquid nitrogen-Accessories	768
Dewar flasks	
Low and Ultra low temperature freezers	
Refrigerators and Freezers	
Refrigerators and Freezers ex protected	787
Ice machines	789
Transport boxes	790
Temperature regulators	796
Heating-Thermostats	796
Cooling-Thermostats	812
Circulator baths	821
Dynamic Temperature Control Systems.	826
Temperature Control Accessories	827
	000
	829
Water baths	829
Shaking water baths	836
Heating baths	839
Hotplates	841
Heating mantles	846
Temperature controllers, thermostats	851
Microwaves	852
Universal, Heating and Drying incubators	853
Vacuum drying incubators	862
Incubators	864
Cooling incubators	870
CO ₂ -Incubators	875
Shaking incubators	878
Thermoblocks	889
Test incubators	898
Overs Furnaces	002

7. Heating and cooling technology **Cooling/Cryogenic tubes**

Warning

Do not use CryoTubes in the liquid phase of liquid nitrogen unless correctly sealed. 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.

Products for nitrogen storage - please see page 768.





LLG-Cryotubes, PP, sterile



With star-shape in the screw cap, for automated capper/decapper. 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.

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

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





Insert cap disks for LLG cryotubes, PP

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



2 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°) and autoclavable at 121 °C (2 bar), according to DIN EN 285. Cryogenic vials are sterile, RNase-, DNase-, DNA- and endotoxin-free.

Description	Capacity	Grad. up to	Height	Thread	PK	Cat. No.
	ml	ml	mm			
self-standing	1.2	1.0	41	external	1000	6.801 655
round-bottom	2.0	1.8	47	external	1000	6.206 393
self-standing	2.0	1.8	49	external	1000	7.079 366
self-standing	3.0	3.0	70	external	1000	6.802 266
self-standing	4.0	3.6	76	external	1000	7.059 827
self-standing	5.0	4.5	90	external	1000	7.300 349
self-standing	1.2	1.0	41	internal	1000	7.300 557
self-standing	2.0	1.8	49	internal	1000	7.053 349
round-bottom	2.0	1.8	48	internal	1000	7.604 109
round-bottom	4.0	3.6	70	internal	1000	9.401 223
self-standing	4.0	3.6	71	internal	1000	9.401 224
round-bottom	5.0	4.6	90	internal	1000	7.610 567





Cap coders, PP for Brand® cryogenic tubes

For colour coding. Fit for all sizes.

BRAND

 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



Cryovials with external screw thread, PP

With screw cap, self-standing. Increase storage capacity in mechanical and gaseous phase liquid nitrogen freezers. With writing area and graduation. Gamma radiation sterilized. One-handed operation possible. DNAse/RNAse free. Pyrogen-free and non-cytotoxic.

SYSTEM 100: Cryovials for space-saving storage (10 \times 10 per box).

Thermo Scientific



Туре	Cover type	Description	Sterile	Capacity	Ext. diam.	Height	PK	Cat. No.
				ml	mm	mm		
5000	PP	silicone gasket, SYSTEM 100	+	1.0	12.0	38	500	4.675 510
5000	PP	silicone gasket, SYSTEM 100	+	1.5	12.0	48	500	4.675 511
5000	HDPE	sealing ring	+	1.2	13.5	38	500	4.675 512
5000	HDPE	sealing ring	+	2.0	13.5	48	500	4.675 513
5000	HDPE	sealing ring	+	5.0	13.5	92	250	4.675 514
5005* **	HDPE	without inlay	+	15.0	33.0	47	75	9.400 950

^{*}not DNase-/RNase-free

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

Colour Coders for Cryotubes Nalgene™, PS

Coloured PS cap inserts.

Thermo Scientific

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





Cryo labels - please see page 764.

^{**}Flat bottom

Cooling/Cryogenic tubes



1

Cryotubes Nunc 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. Pyrogen-free. Non-toxic. Sterile (SAL 10^{-6}). 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.

Description	Capacity	Ext. diam.	Height	PK	Cat. No.
	ml	mm	mm		
Conical, starfoot and writing area	1.0	12.5	41	2000	4.675 472
Round, starfoot and writing area	1.8	12.5	48	1800	4.675 471
Round, starfoot and writing area	4.5	12.5	91	1200	4.675 474
Conical, starfoot	1.0	12.5	41	2000	4.009 087
Round, starfoot	1.8	12.5	48	1800	4.675 478
Round, starfoot	4.5	12.5	91	1200	4.008 952
Round, writing area*	1.0	12.4	30	500	6.800 399

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





Cryotubes Nunc with Internal Thread, PP, sterile

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. Pyrogen-free. Non-toxic. Sterile (SAL 10-6). Certified RNase- and DNase-free.

Material tube and screw cap: PP





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.

Description	Capacity	Ext. diam.	Height	PK	Cat. No.
	ml	mm	mm		
Round and writing area	1.8	12.5	48.0	2000	4.675 469
Round and writing area	3.6	12.5	70.0	1600	4.675 480
Round and writing area	4.5	12.5	92.0	1200	4.675 481
Round, starfoot and writing area	1.8	12.5	49.0	1800	4.675 476
Round, starfoot and writing area	3.6	12.5	72.0	1600	4.675 473
Round, starfoot and writing area	4.5	12.5	92.0	1200	4.675 475
Round, free standing and writing area	1.8	12.5	49.0	1800	4.675 477
Round, starfoot	0.5	8.8	35.0	960	4.008 814
Round, starfoot	1.0	8.8	48.5	960	4.008 821
Conical, starfoot and writing area	1.0	12.5	42.0	2000	4.675 470
Conical, free standing and writing area	1.0	12.5	42.0	2000	4.675 479





5 Colour Coders for Cryotubes Nunc™, PC

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

Thermo Scientific

Colour	PK	Cat. No.
	500	
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

Cooling/Cryogenic boxes

Cryogenic vial racks, PC

Blue. Safe storage and transport of cryogenic vials.

Heathrow Scientific

- Drainage holes in each well
- Alphanumeric identification
- Temperature resistant up to -196 °C
- Autoclavable

Volume	Array	For tubes diam.	PK	Cat. No.
litres		mm		
2 - 5	50	12.9	4	6.238 908



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

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

Colour	Int.	PK	Cat. No.
	height		
	mm		
white	32	1	4.653 682
blue	32	1	6.269 788
red	32	1	6.269 789
green	32	1	6.269 790
white	50	1	6.080 130
yellow	50	1	6.077 876
blue	50	1	6.077 875
green	50	1	6.081 021
red	50	1	6.081 022
white	75	1	6.802 726
blue	75	1	6.260 006
red	75	1	6.260 007
green	75	1	6.260 008
yellow	75	1	6.260 009
white	100	1	6.237 840
blue	100	1	6.260 010
red	100	1	6.260 011
yellow	100	1	4.654 547
white	130	1	6.083 519



LLG-Partition inserts for Cryoboxes, 136 x 136

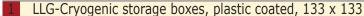
For cryoboxes 136 x 136 mm. With compartment heights and formats as indicated. Other sizes available on request.

Height	Array	For tubes diam.	РК	Cat. No.
mm		mm		
22	7 x 7	17.9	1	4.654 558
22	8 x 8	15.7	1	4.654 557
22	9 x 9	13.9	1	4.654 556
22	10 x 10	12.5	1	4.654 555
40	9 x 9	13.9	1	9.405 872
22	12 x 12	10.2	1	4.654 554
22	13 x 13	9.4	1	4.654 553
22	14 x 14	8.7	1	4.654 552
22	16 x 16	7.5	1	6.257 202
30	4 x 4	32.0	1	6.305 840
30	5 x 5	25.5	1	9.401 055
30	6 x 6	21.0	1	6.090 419
30	7 x 7	17.9	1	7.617 877
30	8 x 8	15.7	1	6.243 752
30	9 x 9	13.9	1	9.405 871
30	10 x 10	12.5	1	9.405 875
30	12 x 12	10.2	1	9.401 050
30	13 x 13	9.4	1	6.228 893
30	14 x 14	8.7	1	6.260 016
30	16 x 16	7.5	1	9.405 883
40	4 x 4	32.0	1	6.401 505
40	5 x 5	25.5	1	6.260 020
40	6 x 6	21.0	1	6.202 839
40	7 x 7	17.9	1	6.802 215
40	8 x 8	15.7	1	6.900 361
40	10 x 10	12.5	1	9.405 876
40	10 x 10 12 x 12	10.2	1	9.405 880
65	6 x 6	21.0	i	6.201 071
65	8 x 8	15.7	1	6.801 789
65	9 x 9	13.7	1	9.405 873
65	10 x 10	12.5	1	9.405 877
65	4 x 4	32.0	1	9.405 877
65	5 x 5	25.5	1	6.079 677



Cooling/Cryogenic boxes







Dimensions: 133 \times 133mm square. For the storage of samples. Made of cardboard, **plastic coated**. Without divider. With lid. Further sizes and colours available on request.

Colour	Int.	PK	Cat. No.
	height mm		
white	32	1	6.260 029
red	32	1	6.234 735
green	32	1	4.654 505
yellow	32	1	4.654 506
blue	32	1	6.802 431
white	50	1	6.082 701
red	50	1	6.081 654
green	50	1	6.084 538
yellow	50	1	6.260 091
blue	50	1	6.700 568
white	75	1	6.801 707
green	75	1	6.803 056
yellow	75	1	6.260 031
blue	75	1	9.698 776
white	100	1	6.260 032
red	100	1	9.698 787
green	100	1	9.698 788
yellow	100	1	9.698 789
blue	100	1	9.698 786
white	130	1	6.260 033



LLG Partition inserts for Cryoboxes, 133 x 133

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

22 9 x 9 13.0 1 6.3 22 10 x 10 12.0 1 6.3 22 12 x 12 9.8 1 4.6 30 4 x 4 30.8 1 6.3 30 5 x 5 24.5 1 7.0 30 6 x 6 20.3 1 6.3 30 7 x 7 17.3 1 9.0 30 8 x 8 15.0 1 9.0 30 9 x 9 13.0 1 6.0 30 10 x 10 12.0 1 6.0 30 12 x 12 9.8 1 6.0 40 4 x 4 30.8 1 4.0 40 5 x 5 24.5 1 6.0 40 6 x 6 20.3 1 6.0 40 7 x 7 17.3 1 9.0 40 8 x 8 15.0 1 9.0 40 9 x 9 13.0 1 9.0 40 9 x 9 13.0 1 9.0 40 9 x 9 13.0 1 9.0 40 10 x 10 12.0 1 9.0 65 3 x 3 <th>Height</th> <th>Array</th> <th>For tubes</th> <th>PK</th> <th>Cat. No.</th>	Height	Array	For tubes	PK	Cat. No.
22 8 x 8 15.0 1 4.0 22 9 x 9 13.0 1 6.3 22 10 x 10 12.0 1 6.3 22 12 x 12 9.8 1 4.0 30 4 x 4 30.8 1 6.3 30 5 x 5 24.5 1 7.0 30 6 x 6 20.3 1 6.3 30 7 x 7 17.3 1 9.0 30 8 x 8 15.0 1 9.0 30 9 x 9 13.0 1 6.0 30 10 x 10 12.0 1 6.0 30 12 x 12 9.8 1 6.0 40 4 x 4 30.8 1 6.0 40 5 x 5 24.5 1 6.0 40 5 x 5 24.5 1 6.0 40 7 x 7 17.3 1 9.0 40 8 x 8 15.0 1 9.0 40 8 x 8 15.0 1 9.0 40 9 x 9 13.0 1 9.0 65 3 x 3 41.2 1 4.0 65 5 x 5			diam.		
22 9 x 9 13.0 1 6.2 22 10 x 10 12.0 1 6.2 22 12 x 12 9.8 1 4.6 30 4 x 4 30.8 1 6.3 30 5 x 5 24.5 1 7.0 30 6 x 6 20.3 1 6.3 30 7 x 7 17.3 1 9.0 30 8 x 8 15.0 1 9.0 30 9 x 9 13.0 1 6.0 30 10 x 10 12.0 1 6.0 30 12 x 12 9.8 1 6.0 40 4 x 4 30.8 1 4.0 40 5 x 5 24.5 1 6.0 40 6 x 6 20.3 1 6.0 40 7 x 7 17.3 1 9.0 40 8 x 8 15.0 1 9.0 40 8 x 8 15.0 1 9.0 40 9 x 9 13.0 1 9.0 40 9 x 9 13.0 1 9.0 40 10 x 10 12.0 1 9.0 65 3 x 3 <th>mm</th> <th></th> <th>mm</th> <th></th> <th></th>	mm		mm		
22 10 x 10 12.0 1 6.2 22 12 x 12 9.8 1 4.6 30 4 x 4 30.8 1 6.3 30 5 x 5 24.5 1 7.6 30 6 x 6 20.3 1 6.3 30 7 x 7 17.3 1 9.6 30 8 x 8 15.0 1 9.6 30 9 x 9 13.0 1 6.1 30 10 x 10 12.0 1 6.1 30 12 x 12 9.8 1 6.1 40 4 x 4 30.8 1 4.1 40 5 x 5 24.5 1 6.2 40 6 x 6 20.3 1 6.2 40 7 x 7 17.3 1 9.0 40 8 x 8 15.0 1 9.0 40 9 x 9 13.0 1 9.0 65 3 x 3 41.2 1 4.0 65 4 x 4 30.8 1 6.2 65 5 x 5 24.5 1 6.2 65 5 x 5 24.5 1 6.2 65 5 x 5	22	8 x 8	15.0	1	4.654 512
22 12 x 12 9.8 1 4.4 30 4 x 4 30.8 1 6.3 30 5 x 5 24.5 1 7.4 30 6 x 6 20.3 1 6.3 30 7 x 7 17.3 1 9.4 30 8 x 8 15.0 1 9.6 30 9 x 9 13.0 1 6.4 30 12 x 12 9.8 1 6.3 40 4 x 4 30.8 1 4.4 40 5 x 5 24.5 1 6.3 40 7 x 7 17.3 1 9.6 40 7 x 7 17.3 1 9.6 40 9 x 9 13.0 1 9.6 65 3 x 3 41.2 1 4.6 65 4 x 4 30.8 1 <td< td=""><td>22</td><td>9 x 9</td><td>13.0</td><td>1</td><td>6.265 799</td></td<>	22	9 x 9	13.0	1	6.265 799
30 4 x 4 30.8 1 6.3 30 5 x 5 24.5 1 7.4 30 6 x 6 20.3 1 6.3 30 7 x 7 17.3 1 9.4 30 8 x 8 15.0 1 9.4 30 9 x 9 13.0 1 6.4 30 10 x 10 12.0 1 6.6 40 4 x 4 30.8 1 4.6 40 5 x 5 24.5 1 6.5 40 6 x 6 20.3 1 6.5 40 7 x 7 17.3 1 9.6 40 9 x 9 13.0 1 9.6 65 3 x 3 41.2 1 4.6 65 4 x 4 30.8 1 6.6 65 5 x 5 24.5 1 <td< td=""><td>22</td><td>10 x 10</td><td>12.0</td><td>1</td><td>6.265 800</td></td<>	22	10 x 10	12.0	1	6.265 800
30 5 x 5 24.5 1 7.6 30 6 x 6 20.3 1 6.3 30 7 x 7 17.3 1 9.4 30 8 x 8 15.0 1 9.6 30 9 x 9 13.0 1 6.0 30 10 x 10 12.0 1 6.0 30 12 x 12 9.8 1 6.0 40 4 x 4 30.8 1 4.0 40 5 x 5 24.5 1 6.0 40 6 x 6 20.3 1 6.0 40 7 x 7 17.3 1 9.0 40 8 x 8 15.0 1 9.0 40 9 x 9 13.0 1 9.0 40 9 x 9 13.0 1 9.0 40 10 x 10 12.0 1 9.0 65 3 x 3 41.2 1 4.0 65 4 x 4 30.8 1 6.0 65 5 x 5 24.5 1	22	12 x 12	9.8	1	4.653 626
30 6 x 6 20.3 1 6.3 30 7 x 7 17.3 1 9.6 30 8 x 8 15.0 1 9.6 30 9 x 9 13.0 1 6.0 30 10 x 10 12.0 1 6.0 40 4 x 4 30.8 1 4.1 40 5 x 5 24.5 1 6.2 40 6 x 6 20.3 1 6.2 40 7 x 7 17.3 1 9.0 40 8 x 8 15.0 1 9.0 40 9 x 9 13.0 1 9.0 40 10 x 10 12.0 1 9.0 65 3 x 3 41.2 1 4.0 65 4 x 4 30.8 1 6.0 65 7 x 7 17.3 1 9.0 65 7 x 7 17.3 1 9.0 65 8 x 8 15.0 1 9.0 65 8 x 8 15.0 1 <	30	4 x 4	30.8	1	6.260 038
30 7 x 7 17.3 1 9.0 30 8 x 8 15.0 1 9.0 30 9 x 9 13.0 1 6.0 30 10 x 10 12.0 1 6.0 30 12 x 12 9.8 1 6.0 40 4 x 4 30.8 1 4.0 40 5 x 5 24.5 1 6.0 40 6 x 6 20.3 1 6.0 40 7 x 7 17.3 1 9.0 40 8 x 8 15.0 1 9.0 40 9 x 9 13.0 1 9.0 40 10 x 10 12.0 1 9.0 65 3 x 3 41.2 1 4.0 65 4 x 4 30.8 1 6.0 65 5 x 5 24.5 1 6.0 65 7 x 7 17.3 1 9.0 65 7 x 7 17.3 1 9.0 65 8 x 8 15.0 1 9.0 65 9 x 9 13.0 1 9.0	30	5 x 5	24.5	1	7.606 811
30 8 x 8 15.0 1 9.0 30 9 x 9 13.0 1 6.0 30 10 x 10 12.0 1 6.0 30 12 x 12 9.8 1 6.0 40 4 x 4 30.8 1 4.0 40 5 x 5 24.5 1 6.0 40 6 x 6 20.3 1 6.0 40 7 x 7 17.3 1 9.0 40 8 x 8 15.0 1 9.0 40 9 x 9 13.0 1 9.0 40 10 x 10 12.0 1 9.0 65 3 x 3 41.2 1 4.0 65 4 x 4 30.8 1 6.0 65 5 x 5 24.5 1 6.0 65 7 x 7 17.3 1 9.0 65 7 x 7 17.3 1 9.0 65 8 x 8 15.0 1 9.0 65 9 x 9 13.0 1 9.0	30	6 x 6	20.3	1	6.265 798
30 9 x 9 13.0 1 6.0 30 10 x 10 12.0 1 6.0 30 12 x 12 9.8 1 6.0 40 4 x 4 30.8 1 4.0 40 5 x 5 24.5 1 6.0 40 6 x 6 20.3 1 6.0 40 7 x 7 17.3 1 9.0 40 8 x 8 15.0 1 9.0 40 9 x 9 13.0 1 9.0 40 10 x 10 12.0 1 9.0 65 3 x 3 41.2 1 4.0 65 4 x 4 30.8 1 6.0 65 5 x 5 24.5 1 6.0 65 7 x 7 17.3 1 9.0 65 8 x 8 15.0 1 9.0 65 8 x 8 15.0 1 9.0 65 9 x 9 13.0 1 9.0	30	7 x 7	17.3	1	9.698 773
30 10 x 10 12.0 1 6.0 30 12 x 12 9.8 1 6.0 40 4 x 4 30.8 1 4.1 40 5 x 5 24.5 1 6.0 40 6 x 6 20.3 1 6.0 40 7 x 7 17.3 1 9.0 40 8 x 8 15.0 1 9.0 40 9 x 9 13.0 1 9.0 65 3 x 3 41.2 1 4.0 65 4 x 4 30.8 1 6.0 65 5 x 5 24.5 1 6.0 65 6 x 6 20.3 1 6.0 65 7 x 7 17.3 1 9.0 65 8 x 8 15.0 1 9.0 65 9 x 9 13.0 1 9.0	30	8 x 8	15.0	1	9.698 772
30 12 x 12 9.8 1 6.3 40 4 x 4 30.8 1 4.6 40 5 x 5 24.5 1 6.3 40 6 x 6 20.3 1 6.3 40 7 x 7 17.3 1 9.6 40 8 x 8 15.0 1 9.6 40 9 x 9 13.0 1 9.6 65 3 x 3 41.2 1 4.6 65 4 x 4 30.8 1 6.6 65 5 x 5 24.5 1 6.2 65 7 x 7 17.3 1 9.6 65 7 x 7 17.3 1 9.6 65 8 x 8 15.0 1 9.6 65 9 x 9 13.0 1 9.6	30	9 x 9	13.0	1	6.081 879
40 4 x 4 30.8 1 4.4 40 5 x 5 24.5 1 6.2 40 6 x 6 20.3 1 6.3 40 7 x 7 17.3 1 9.0 40 8 x 8 15.0 1 9.0 40 9 x 9 13.0 1 9.0 40 10 x 10 12.0 1 9.0 65 3 x 3 41.2 1 4.0 65 4 x 4 30.8 1 6.0 65 5 x 5 24.5 1 6.0 65 7 x 7 17.3 1 9.0 65 8 x 8 15.0 1 9.0 65 9 x 9 13.0 1 9.0	30	10 x 10	12.0	1	6.075 820
40 5 x 5 24.5 1 6.3 40 6 x 6 20.3 1 6.3 40 7 x 7 17.3 1 9.6 40 8 x 8 15.0 1 9.6 40 9 x 9 13.0 1 9.6 65 3 x 3 41.2 1 4.6 65 4 x 4 30.8 1 6.6 65 5 x 5 24.5 1 6.6 65 6 x 6 20.3 1 6.6 65 7 x 7 17.3 1 9.6 65 8 x 8 15.0 1 9.6 65 9 x 9 13.0 1 9.6	30	12 x 12	9.8	1	6.260 035
40 6 x 6 20.3 1 6.2 40 7 x 7 17.3 1 9.6 40 8 x 8 15.0 1 9.6 40 9 x 9 13.0 1 9.6 40 10 x 10 12.0 1 9.6 65 3 x 3 41.2 1 4.6 65 4 x 4 30.8 1 6.6 65 5 x 5 24.5 1 6.6 65 6 x 6 20.3 1 6.7 65 7 x 7 17.3 1 9.6 65 8 x 8 15.0 1 9.6 65 9 x 9 13.0 1 9.6	40	4 x 4	30.8	1	4.654 519
40 7 x 7 17.3 1 9.0 40 8 x 8 15.0 1 9.0 40 9 x 9 13.0 1 9.0 40 10 x 10 12.0 1 9.0 65 3 x 3 41.2 1 4.0 65 4 x 4 30.8 1 6.0 65 5 x 5 24.5 1 6.0 65 6 x 6 20.3 1 6.0 65 7 x 7 17.3 1 9.0 65 8 x 8 15.0 1 9.0 65 9 x 9 13.0 1 9.0	40	5 x 5	24.5	1	6.260 044
40 8 x 8 15.0 1 9.0 40 9 x 9 13.0 1 9.0 40 10 x 10 12.0 1 9.0 65 3 x 3 41.2 1 4.0 65 4 x 4 30.8 1 6.1 65 5 x 5 24.5 1 6.1 65 6 x 6 20.3 1 6.2 65 7 x 7 17.3 1 9.0 65 8 x 8 15.0 1 9.0 65 9 x 9 13.0 1 9.0	40	6 x 6	20.3	1	6.260 043
40 9 x 9 13.0 1 9.0 40 10 x 10 12.0 1 9.0 65 3 x 3 41.2 1 4.0 65 4 x 4 30.8 1 6.0 65 5 x 5 24.5 1 6.0 65 6 x 6 20.3 1 6.0 65 7 x 7 17.3 1 9.0 65 8 x 8 15.0 1 9.0 65 9 x 9 13.0 1 9.0	40	7 x 7	17.3	1	9.698 783
40 10 x 10 12.0 1 9.0 65 3 x 3 41.2 1 4.0 65 4 x 4 30.8 1 6.0 65 5 x 5 24.5 1 6.0 65 6 x 6 20.3 1 6.0 65 7 x 7 17.3 1 9.0 65 8 x 8 15.0 1 9.0 65 9 x 9 13.0 1 9.0	40	8 x 8	15.0	1	9.698 782
65 3 x 3 41.2 1 4.6 65 4 x 4 30.8 1 6.0 65 5 x 5 24.5 1 6.0 65 6 x 6 20.3 1 6.0 65 7 x 7 17.3 1 9.0 65 8 x 8 15.0 1 9.0 65 9 x 9 13.0 1 9.0	40	9 x 9	13.0	1	9.698 781
65 4 x 4 30.8 1 6.6 65 5 x 5 24.5 1 6.2 65 6 x 6 20.3 1 6.2 65 7 x 7 17.3 1 9.4 65 8 x 8 15.0 1 9.4 65 9 x 9 13.0 1 9.4	40	10 x 10	12.0	1	9.698 780
65 5 x 5 24.5 1 6.6 65 6 x 6 20.3 1 6.6 65 7 x 7 17.3 1 9.0 65 8 x 8 15.0 1 9.0 65 9 x 9 13.0 1 9.0	65	3 x 3	41.2	1	4.654 521
65 6 x 6 20.3 1 6.7 65 7 x 7 17.3 1 9.4 65 8 x 8 15.0 1 9.4 65 9 x 9 13.0 1 9.4	65	4 x 4	30.8	1	6.079 079
65 7 x 7 17.3 1 9.1 65 8 x 8 15.0 1 9.1 65 9 x 9 13.0 1 9.1	65	5 x 5	24.5	1	6.260 046
65 8 x 8 15.0 1 9.0 65 9 x 9 13.0 1 9.0	65	6 x 6	20.3	1	6.206 129
65 8 x 8 15.0 1 9.0 65 9 x 9 13.0 1 9.0	65	7 x 7	17.3	1	9.698 793
	65	8 x 8	15.0	1	9.698 792
40 40 40 40 40 40 40 40 40 40 40 40 40 4	65	9 x 9	13.0	1	9.698 791
65 10 x 10 12.0 1 9.0	65	10 x 10	12.0	1	9.698 790
30 14 x 14 8.3 1 4.	30	14 x 14	8.3	1	4.654 514



Cryogenic Cardboard Boxes, 145 x 145 and Partitions

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. Colour white.

Heathrow Scientific

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

LLG-Cryogenic storage boxes, PP, autoclavable



With 81 places, 9 x 9 grid and numerical coded. Robust hinge with safe snap-on lid, stackable for safe transport. Minimised liquid retention. Guaranteed metal free. Temperature resistant from -90 °C - +121 °C, autoclavable at 121 °C, opened, 20 minutes. Dimensions: 133 x 133 x 52 mm

Colour	Array	РК	Cat. No.
Magenta/clear	9 x 9	1 9	.405 800



Cryogenic Boxes true north® Flatpack

Reusable, economical and moisture resistant plastic. Made from polypropylene material. Easy self-assemble boxes shipped flat-packed saving space in the laboratory. More durable than card boxes as they are not susceptible to moisture. Significantly reduces the chance of mould. Suitable for repeated freezing and defreezing. Dividers included with the boxes.

Heathrow Scientific



2 Cryogenic Boxes true north® Flatpack, PP

Store down to temperatures of -80 °C.

Heathrow Scientific

For tubes	Colour	Dimensions (W x D x H)	Array	PK Cat. No.
ml		mm		
0.2	white	133 x 130 x 30	144	10 6.281 163
0.5	white	133 x 130 x 42	81	10 6.281 166
0.5	blue	133 x 130 x 42	81	10 6.281 167
1.5/2.0	white	133 x 130 x 51	81	10 6.281 158
1.5/2.0	blue	133 x 130 x 51	81	10 6.281 161
5.0	white	133 x 130 x 75	25	10 6.281 169
5.0	blue	133 x 130 x 75	25	10 6.281 170
15	white	145 x 147 x 120	36	10 6.281 172
15	blue	145 x 147 x 120	36	10 6.281 173
50	white	145 x 147 x 120	16	10 6.281 159
50	blue	145 x 147 x 120	16	10 6.281 160



4 Cryogenic storage boxes Arctic Square®, PC, autoclavable



Heathrow Scientific

Safely store vials from -196 to +121 $^{\circ}$ 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.



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

Cooling/Cryogenic boxes

1

Storage boxes, PC for cryogenic tubes



BRAND

Ratiolab

Ratiolab

Operating range: -196 °C to +121 °C (in gas phase of liquid nitrogen). Autoclavable at 121 °C (2 bar), according to DIN EN 285.

For tubes			Depth	Height	Aperture array	PK	Cat. No.
ml		mm	mm	mm	qty.		
1.2 and 2	internal / external	132	132	52	81	1	7.400 583
3, 4 and 5	external	132	132	95	81	1	7.071 111
1.2 and 2	internal	132	132	52	100	1	7.300 574



2 Cryogenic boxes, PP, 133 x 133



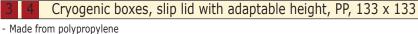
For cryogenic storage of cryotubes.

- 9 x 9 grid
- Grid numerically coded
- Removable grid inserts
- Hinge with safe snap-on lid
- Stackable
- Drain bores at the bottom for dew liquid
- Temperature resistant from -90 to 121 °C
- Autoclavable

Colour	Height	For tubes	PK	Cat. No.
	mm	ml		
natural	52	1.2 2	1	9.405 890
yellow	52	1.2 2	1	9.405 892
red	52	1.2 2	1	9.405 894
green	52	1.2 2	1	9.405 896
blue	52	1.2 2	1	9.405 898
black	52	1.2 2	1	9.405 900
natural	75	3 4	1	9.405 891
yellow	75	3 4	1	9.405 893
red	75	3 4	1	9.405 895
green	75	3 4	1	9.405 897
blue	75	3 4	1	9.405 899
black	75	3 4	1	9.405 901







Height adaptable from 50 mm to 75 mm, 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	For tubes diam.	Array	PK	Cat. No.
	mm			
natural	13	9 x 9	5	9.405 840
yellow	13	9 x 9	5	9.405 843
red	13	9 x 9	5	9.405 845
green	13	9 x 9	5	9.405 844
blue	13	9 x 9	5	9.405 842
black	13	9 x 9	5	9.405 846
natural, yellow, red, green, blue	13	9 x 9	5	9.405 841
natural	11.5	10 x 10	5	9.405 847
yellow	11.5	10 x 10	5	9.405 848
red	11.5	10 x 10	5	9.405 849
green	11.5	10 x 10	5	9.405 850
blue	11.5	10 x 10	5	9.405 851
black	11.5	10 x 10	5	9.405 852
natural, yellow, red, green, blue	11.5	10 x 10	5	9.405 855

Cryogenic Boxes, CryoBoxes™, PC



Thermo Scientific

Robust design, autoclavable. With printed grid on lid for cryovials and similar tubes up to 13.5 mm diameter (except type 5026: up to \emptyset 12.5 mm). 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.

Туре	For tubes	Dimensions (I x w x h)	Array	PK	Cat. No.
	ml	mm			
5026	1/1.5	133 x 133 x 52	10 x 10	1	9.400 927
5025	1.2/2.0	76 x 76 x 52	5 x 5	1	9.400 946
5026	1.2/2.0	133 x 133 x 52	9 x 9	1	9.400 947
5027	5.0	133 x 133 x 95	9 x 9	1	9.400 948
5050		133 x 133 x 52	1	1	9.400 949



Cryogenic boxes, 81 well, PP, autoclavable



The boxes are made of polypropylene and can be used in temperatures as low as -90 $^{\circ}$ C. The boxes are autoclavable at +121 $^{\circ}$ C for 20 minutes. The boxes have a fixed grid divider with 9x9 cells and are suited for 1.0 ml and 2 ml cryogenic vials. Cellcodes are printed on the lid for easy identification.

Туре	Dimensions (W x D x H)	PK	Cat. No.
	mm		
blue	130 x 130 x 50	1	9.698 708
green	130 x 130 x 50	1	9.698 709
natural	130 x 130 x 50	1	9.698 710
red	130 x 130 x 50	1	9.698 711
yellow	130 x 130 x 50	1	9.698 712



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 1.5 ml to 2.0 ml microtubes under easy-open, friction-fit lid.

Dimensions: 130 mm x 130 mm x 47 mm. Autoclavable.

Colour	PK	Cat. No.
		0.400.000
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
black	1	6.282 195
blue, green, pink, yellow, orange	5	9.193 984



Heathrow Scientific

Cooling/Cryogenic boxes



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

ØA 121 °C Heathrow Scientific

ISOLAB

Autoclavable. Compact storage box has angled front slot for easy access to tubes. 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 $1.5 \, \text{ml}$ to $2.0 \, \text{ml}$ microtubes. Resist storage temperatures from $-80 \, \text{to} +121 \, ^{\circ}\text{C}$.

Colour	Dimensions (I x w x h)	Array	PK	Cat. No.
	mm			
blue, green, purple, yellow, orange	141 x 92 x 56	50	5	9.193 985
natural	141 x 92 x 56	50	1	6.243 162
blue, green, purple, yellow, orange	141 x 151 x 57	100	5	9.193 981
natural	141 x 151 x 57	100	1	6.206 710
black	141 x 151 x 57	100	1	6.253 894

Microtube Storage Boxes, PC

Manufactured from polycarbonate with high mechanical strength and high temperature resistance between -196 to +121 $^{\circ}$ C. Uniquely designed to carry 81 cryo tubes in 9 x 9 array "Hedgehog" designed tube compartments holds the tube in their position firmly. Unique design with vent and drainage holes guarantees best, efficient air circulation. Forward slope base ensures quick visual orientation. Easily stackable for reducing storage space. Hinged lid with built-in stop allows easy one-handed access to tubes. Clear box lid enables easy identification of box content and protects the tubes from dust, moisture and other environmental effects. Alphanumerical index both on tube rows and the lid enables easy identification of tube positions. Box is supplied together with a disposable forceps, made from ABS, with fine end for easy handling and fast removal of tubes.

 Volume
 Colour (W x D x H)
 Dimensions (W x D x H)
 PK
 Cat. No.

 ml
 mm
 mm
 4.664 457
 5.0
 blue
 133 x 133 x 53
 1 4.664 457
 6.286 848







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. Resist storage temperatures from -80 °C up to +70 °C. Not autoclayable.

Heathrow Scientific





Cryoware marker set Nalgene™, Type 6313

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 contains one each red, green, black and blue marker while the other pack contains black markers only.

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

Cooling/Cryogenic racks-Cryogenic accessories

Chest Freezers Racks, vertical

Stainless steel racks, suitable for all brands of chest freezer. For boxes up to 136 x 136 mm.

Туре	Width	Depth	Height	Height Box	PK	Cat. No.
	mm	mm	mm	mm		
7 x 1	140	141	390	approx. 53	1	9.698 962
10 x 1	140	141	557	approx. 53	1	9.698 746
11 x 1	140	141	613	approx. 53	1	9.698 963
12 x 1	140	140	665	approx. 53	1	9.698 964
13 x 1	140	141	724	approx. 53	1	9.698 965
5 x 1	140	141	406	approx. 78	1	9.698 967
8 x 1	140	141	649	approx. 78	1	9.698 966
9 x 1	140	141	730	approx. 78	1	9.698 968



Upright Freezer Racks

Stainless steel racks, suitable for all brands of upright freezers. For boxes up to 136 mm x 136 mm.

Туре	Width	Depth	Height	Height Box	PK	Cat. No.
	mm	mm	mm	mm		
2 x 3	140	423	164	approx. 75	1	9.698 954
4 x 3	140	419	221	approx. 50	1	9.698 950
6 x 4	140	562	331	approx. 50	1	9.698 959
4 x 4	556	140	326	approx. 78	1	9.698 960
5 x 4	556	140	407	approx. 78	1	9.698 961
4 x 4	558	139	221	approx. 53	1	9.698 969
3 x 4	558	139	168	approx. 53	1	9.698 970
5 x 4	558	139	276	approx. 53	1	9.698 971
7 x 4	556	140	392	approx. 53	1	9.698 972
4 x 5	688	139	221	approx. 53	1	9.698 973
5 x 3	419	139	276	approx. 53	1	9.698 974
3 x 4	556	139	240	approx. 78	1	9.698 975
3 x 3	419	139	240	approx. 78	1	9.698 976



Racks for cryoboxes Arctic Squares®

Stainless steel. Fits most standard upright freezers.

Overall rack size (H x W x D): 238 x 139 x 571 mm.

With four drawers to hold 16 boxes of 133 x 133 x 53 mm.

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.

Туре	PK	Cat. No.
Arctic Squares®	1	9.193 980



Deep freeze labels TOUGH-SPOTS®

Pre-cut Peel-off round lables for 0.5 and 1.5/2.0 ml microcentrifuge tube tops.

Temperature resistant from -196 °C to 80 °C.

Easy to write on: PVC labels accept writing from most lab markers.

Convenient: Dispensing box assists in labeling individual tubes used in small experiments.

Colour	Diam.	For	PK	Cat. No.
		vessels		
	mm			
White	9.5	0.5 ml Tubes	1000	9.040 711
Blue	9.5	0.5 ml Tubes	1000	9.040 712
Green	9.5	0.5 ml Tubes	1000	9.040 713
Red	9.5	0.5 ml Tubes	1000	9.040 714
Yellow	9.5	0.5 ml Tubes	1000	9.040 715
Pink	9.5	0.5 ml Tubes	1000	6.267 506
Coffee	9.5	0.5 ml Tubes	1000	6.267 517
Orange	9.5	0.5 ml Tubes	1000	6.267 518
White	13.0	1.5/2.0 ml Tubes	1000	9.040 716
Blue	13.0	1.5/2.0 ml Tubes	1000	9.040 717
Green	13.0	1.5/2.0 ml Tubes	1000	9.040 718
Red	13.0	1.5/2.0 ml Tubes	1000	9.040 719
Yellow	13.0	1.5/2.0 ml Tubes	1000	9.040 720
Lavendel	13.0	1.5/2.0 ml Tubes	1000	6.287 530



Heathrow Scientific

Heathrow Scientific

ISOLAB

ISOLAB

7. Heating and cooling technology

Cooling/Cryogenic accessories



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

Temperature resistant from -196 °C to +150 °C. All labels withstand freezer Heathrow Scientific temperatures down to -196 °C (liquid and vapour phase nitrogen), boiling water baths, 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, polyolefin 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.

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





Deep freeze labels

Manufactured from polyfiber grade flexible paper with acrylic resin adhesive back.

This unique combination expands and retracts together with temperature fluctuations and

always guarantees a strong adhesive bond. Chemically inert, resists to water, moisture and most organic solvents and caustic agents. Can be used between -196 to +80 °C temperature range.

Sticks to any clean surface including PTFE coated surfaces without cracking, peeling and degrading. Peels off without leaving any sticky residue. Recommended to be used on tube caps with different diameters. Supplied as white color or pack of 6 different colors matching the universal hazard color codes (yellow for chemical reactivity, blue for health hazards, green for safety, red for flammability, orange tape for biohazard and white for

Diam.	Colour	For vessels	PK	Cat. No.
mm		vesseis		
9.5	white	0.5 ml Tubes	1000	6.286 763
9.5	yellow, blue, green, red, orange, white	0.5 ml Tubes	6000	6.286 764
13.0	white	1.5/2.0 ml Tubes	1000	6.286 765
13.0	yellow, blue, green, red, orange, white	1.5/2.0 ml Tubes	6000	6.286 766
19.0	white	15 ml Tubes	500	6.286 767
25.0	white	50 ml Tubes	500	6.286 768



Label Dispenser for Deep freeze labels

Perfect organizer for fast and efficient use of labels. Manufactured from clear acrylic and holds 6 label box. Drop the label box in the label dispenser and feed the paper through

the slot. The writing surface enables easy and clean writing on the label. The sharp cutting edge helps to tear off the labels. A weighted base with nonskid pads prevents sliding or lifting. The article is delivered without pen.





LLG-Temperature block exact, aluminium

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.



Array	Dimensions (W x D x H)	PK Cat. No.
	mm	
96 x 0.2 ml PCR tubes + 6 x 1.5 ml tubes	118 x 89 x 24	1 9.409 015 4
36 x 0.5 ml tubes + 11 x 1.5 ml tubes	180 x 79 x 24	1 9.409 016
24 x 1.5 ml tubes	115 x 89 x 34	1 9.409 017 5
24 x 2.0 ml tubes	115 x 89 x 34	1 9.409 018
25 x 2.0 ml Cryogenic tubes with round bottom	197 x 99 x 32	1 9.409 006
12 x 15.0 ml Centrifuge tubes	75 x 89 x 38	1 9.409 008

Cryogenic items - please see our chapter 7.

Cooling/Cryogenic accessories

Cryovial racks Nalgene™, PC



Thermo Scientific

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



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

Floating cryovial racks Nalgene™, Type 5974, PP

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

Thermo Scientific



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

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 lift samples out of baths easily.

Heathrow	Scientific



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

4 Cryogenic storage boxes Transformer™ Cube, PP



Heathrow Scientific

For storage of large samples or 15 and 50 ml tubes. Robust, rugged polypropylene construction complete with two Snap-In grids for 16×15 ml and 9×50 ml 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: $125 \times 125 \times 129$ mm. For temperatures from -80 to 121 °C. Purple box with clear lid.



Туре	PK	Cat. No.
Box with 2 inserts	1	6.243 251

7. Heating and cooling technology Cooling/Biobanking

4.658 426

Storage tubes Matrix™ with 2D barcode and screw cap, sterile

For storage in the gas phase of liquid nitrogen. Screw cap tubes Matrix[™] with 2D code for sample storage up to gas phase of liquid nitrogen. SBS format with 8x12 grid allows both manual and automated storage. The 2D screw cap tubes can be picked and sorted by a robot.

Thermo Scientific

Capacity	Description	Package	PK Cat. No.
		contents	
ml			
0.2	in barcoded rack	5 racks of 96	480 4.658 426
0.5	in barcoded rack	5 racks of 96	480 4.658 412
0.5	in barcoded rack, with white patch	5 racks of 96	480 4.658 413
0.5	2D and linear barcode, in barcoded rack	5 racks of 96	480 4.658 414
0.5	in barcoded rack, brown, with red cap	5 racks of 96	480 4.658 415
1.0	in barcoded rack	5 racks of 96	480 4.658 398
1.0	in barcoded rack, with white patch	5 racks of 96	480 4.658 399
1.0	2D and linear barcode, in barcoded rack	5 racks of 96	480 4.658 400
1.0	in barcoded rack, brown, with red cap	5 racks of 96	480 4.658 401



Storage tubes Matrix™ with 2D barcode and coloured screw cap, sterile

For storage in the gas phase of liquid nitrogen.

Thermo Scientific

Thermo Scientific



Capacity	Colour	Description	Package contents	PK Cat. No.
ml	Cover			
0.5	blue	in barcoded rack	5 racks of 96	480 4.658 416
0.5	grey	in barcoded rack	5 racks of 96	480 4.658 417
0.5	purple	in barcoded rack	5 racks of 96	480 4.658 418 2
0.5	red	in barcoded rack	5 racks of 96	480 4.658 419
0.5	white	in barcoded rack	5 racks of 96	480 4.658 420
0.5	yellow	in barcoded rack	5 racks of 96	480 4.658 425
1.0	blue	in barcoded rack	5 racks of 96	480 4.658 402
1.0	grey	in barcoded rack	5 racks of 96	480 4.658 403
1.0	purple	in barcoded rack	5 racks of 96	480 4.658 404
1.0	red	in barcoded rack	5 racks of 96	480 4.658 405
1.0	white	in barcoded rack	5 racks of 96	480 4.658 406
1.0	yellow	in barcoded rack	5 racks of 96	480 4.658 407 3

Empty racks for storage tubes can be found in our webshop.



8-channel Decapper for screw cap tubes

Process a full rack of Thermo Scientific™ Matrix™ or Thermo Scientific™ Nunc™ tubes in less than one minute with this ergonomic, manual capper/decapper. The Thermo Scientific™ 8-Channel Screw Cap Capper/Decapper is designed to cap tubes to the optimal tor

Scientific™ 8-Channel Screw Cap Capper/Decapper is designed to cap tubes to the optimal torque to maintain sample integrity and prevent sample loss during storage. The 8-channel Capper/Decapper is a practical addition to benchtop processing of screw top storage tubes.

- Improves processing throughput of manual procedures with automated column-wise decapping and capping in just four seconds
- Ensures reproducibility by capping all tubes to the optimal torque level specified for the tube
- Allows anyone in the lab to cap or decap tubes with a light weight, easy-to-use and ergonomic design
- Stand allows easy storage of removed caps during sample processing steps
- Virtually always available for use with long battery life and quick recharge time

For tubes	PK	Cat. No.
Matrix™ ScrewTop (0.5 ml, 1.0 ml)	1	7.659 021
Matrix™ ScrewTop (0.2 ml), Nunc Cryobank (0.5 ml, 1.0 ml, 1.8 ml, 2.0 ml, 5.0 ml)	1	4.658 357

Capping Systems Matrix™ SepraSeal

For open tubes without screw cap.

Thermo Scientific™ Matrix™ SepraSeal tube sealing solutions complement the innovative line of Thermo Scientific Matrix 2D and non-2D coded storage tubes. Available in a range of formats, colors and sterility, there is a sealing option to meet a range of application and storage requirements.

Enhanced Materials

- Made of an advanced thermoplastic elastomer that offers excellent chemical resistance and low vapor transmission rates
- Elastomer ensures sealing performance will not degrade, even after multiple cap piercings

Sample Access Options

- Designed for storage down to -20 °C, Matrix SepraSeal mats are available in sterile, nonsterile, solid, or pre-split, in a range of colors for quick visual sample identification
- Solid seals can be removed for sample access with the Matrix SepraSeal cap removal tool
- For applications involving repetitive sample access, a pre-split Matrix SepraSeal can be pierced by automated liquid handling equipment, requiring very little pressure, while maintaining seal integrity with self sealing closure

Application Flexibility

- Individual tube capping or apply 96 caps at once
- Supplied in mats of 96 caps each, sealing is secure and consistent every time when applied with the Thermo Scientific SuperSealer



Cover type	Description	Package	PK	Cat. No.
		contents		
Natural	non-sterile	10 mats of 96	960	6.251 983
Blue	non-sterile	10 mats of 96	960	4.658 359
Green	non-sterile	10 mats of 96	960	4.658 360
Grey	non-sterile	10 mats of 96	960	4.658 361
Purple	non-sterile	10 mats of 96	960	4.658 362
Red	non-sterile	10 mats of 96	960	4.658 363
Yellow	non-sterile	10 mats of 96	960	4.658 364
Natural	sterile	10 mats of 96	960	4.658 300
Blue	sterile	10 mats of 96	960	4.658 365
Green	sterile	10 mats of 96	960	4.658 366
Grey	sterile	10 mats of 96	960	4.658 367
Purple	sterile	10 mats of 96	960	4.658 368
Red	sterile	10 mats of 96	960	4.658 369
Yellow	sterile	10 mats of 96	960	4.658 370
Natural	non-sterile, pre-slit	10 mats of 96	960	6.253 949
Blue	non-sterile, pre-slit	10 mats of 96	960	6.253 981
Green	non-sterile, pre-slit	10 mats of 96	960	6.253 980
Grey	non-sterile, pre-slit	10 mats of 96	960	4.658 371
Purple	non-sterile, pre-slit	10 mats of 96	960	4.658 374
Red	non-sterile, pre-slit	10 mats of 96	960	6.253 979
Yellow	non-sterile, pre-slit	10 mats of 96	960	6.253 982
Natural	sterile, pre-slit	10 mats of 96	960	6.254 687
Blue	sterile, pre-slit	10 mats of 96	960	4.658 375
Green	sterile, pre-slit	10 mats of 96	960	4.658 376
Grey	sterile, pre-slit	10 mats of 96	960	4.658 377
Purple	sterile, pre-slit	10 mats of 96	960	4.658 378
Red	sterile, pre-slit	10 mats of 96	960	4.658 379
Yellow	sterile, pre-slit	10 mats of 96	960	4.658 380
Natural	sterile, pre-slit	1 bag of 500	500	4.658 312
	Cap Removal Tool	-	1	6.254 390

2D Barcode Reader VisionMate™ ST for single tubes

The Thermo Scientific™ VisionMate™ ST Barcode Reader is a compact single tube reader used for instant scanning of individual 2D barcoded tubes into any file or database application. Simple plug-and-play installation via automatically installed USB port allows simple and easy set up. USB working temperature: 4 to 30 °C.

- Instant read time
- Simple to install and use
- For individual sample retrieval
- Export via comma-separated variable file, Microsoft® Excel™, XML, COM port, ODBC or TCP socket
- Supported Barcode Type: any Thermo Scientific 2D Barcoded Storage Tube as well as virtually any other tube with high contrast 2D codes

Туре	Dimensions (W x D x H)	Weight	PK	Cat. No.
	mm	kg		
VisionMate™ ST	111 x 87 x 70	0.8	1	6.268 861



1 **6.268 861** E & OE.

Cooling/Cryogenic storage tanks-Liquid nitrogen-Accessories





Liquid nitrogen container BIO GT, aluminium



KGW

For storage and transport of biological materials.

- Super-insulation foil in the vacuum space
- Low evaporation rate
- Transport handle
- With vacuum valve
- Loose lied-on plug
- Canister made of stainless steel

Туре	Capacity	External dimensions (Ø x H)	No. of vials	No. of straws	No. of canisters	Static holding time	PK	Cat. No.
	L	mm	2ml	0.25 ml		Days		
GT 2K *	2.0	174 x 392		330	3	25	1	4.672 667
GT 3	3.7	250 x 405		1560	6	33	1	9.524 383
GT 11	12.2	308 x 630	180	3120	6	130	1	9.524 386
GT 21	21.0	388 x 660	180	3120	6	225	1	7.982 553
GT 26	26.7	468 x 460		7380	9	90	1	9.524 392
GT 38	37.0	468 x 715	612	9840	6	245	1	9.524 393
GT 40	40.0	468 x 710	1200	16400	10	140	1	9.524 394

Canister made of plastic



Liquid nitrogen container, aluminium



For storage and transport of liquid nitrogen.

- Super-insolation foil in the vacuum space
- Low evaporation rate
- Vacuum valve
- Small-flange KF NW 50
- Loosely resting plug

Туре	Capacity	External dimensions (Ø x H)	Evaporation rate	Weight empty/full	Static holding time	PK	Cat. No.
	L	mm	L/ day	kg	Days		
ALU 10	12.0	305 x 550	0.2	6 / 14	67	1	6.256 041
ALU 26	26.0	388 x 670	0.2	14 / 35	130	1	6.257 855
ALU 35	34.0	468 x 655	0.24	16 / 43	140	1	6.238 955
ALU 60	60.0	468 x 870	0.4	21.5 / 70	150	1	6.235 695

Accessories for liquid nitrogen container made of aluminium

	_	1.4
ĸ	U	VV

		NOW.
Description	PK	Cat. No.
Transfer siphon EKI incl. safety valve, manometer, pressure reduction valve made of stainless steel,	1	6.234 251
fluid valve made of stainless steel, clamp and O-ring		
Transfer tube made of stainless steel, 1.5 m	1	7.621 719
Transfer tube with phase separator	1	6.234 252
Screw coupling for pipes (OD 8 mm)	1	6.226 301
Screw adapter	1	6.226 302
Clamp for KF NW 50	1	6.234 253
O-ring KF NW 50 with centering	1	6.234 254



CryoStor Storage Cane 6-fold Aluminium

- For frozen storage of cryovials.

Thermo Scientific

- Also suitable for tubes protected with Thermo Scientific™ CryoFlex™ tubing
- Compatible with colour coders that attach to the end of the cane and can be written on

Length	PK	Cat. No.
mm		
290	50	6.084 320



Aluminium holder Nalgene™ CryoCane™, Type 5015

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

Thermo Scientific

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

Sleeve Nalgene™ CryoSleeve™, Type 5016

Made of transparent PVC. For KryoCane™ aluminium vial holder.

Thermo Scientific

Туре	Length	PK	Cat. No.
	mm		
5016	273	100	9.400 957



Dewar flasks Nalgene™, Type 4150, HDPE

With vented, insulating HDPE 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

Туре	Capacity	Top diam.	Int. height	PK	Cat. No.
	Litres	mm	mm		
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



3 Dewar flasks, shallow form, for CO₂ and LN₂

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

KGW



Capacity	Int. diam.	Height	PK	Cat. No.
ml	mm	mm		
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

Dewar carrying flasks, cylindrical, for CO₂ and LN₂

DURAN®. DIN EN ISO 16496. Cylindrical design with insulated lid, held by two spring clips and aluminium carrying handle. For cooling, storage and transport of small samples of temperature-sensitive goods e.g. with liquid nitrogen (LN₂) or dry ice (CO₂). When storing liquid nitrogen (LN₂) or CO₂ a hole (diam. approx. 2 mm) in centre of the lid is necessary that no overpressure can arise in the vessel.

Type B: blue-coated metal cover Type BE: stainless steel cover

Туре	Capacity	Int. diam.	Int. height	PK	Cat. No.
	Litres	mm	mm		
26 B	1	100	150	1	9.032 726 4
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
26 BE	1	100	150	1	9.032 736
27 BE	2	138	170	1	9.032 737
28 BE	3	138	230	1	9.032 738
29 BE	4	138	310	1	9.032 739



Cooling/Dewar flasks

1 2 3 4 Dewar vessels, cylindrical, for CO₂ and LN₂

DURAN®. DIN 12492. Cylindrical. Borosilicate glass 3.3. With blue coated protective casing out of metal or structured aluminium casing. Large opening. With insulated lid. Carrying handles as indicated. For cooling and storage of temperature-sensitive goods e.g. with dry ice (CO_2). When storing liquid nitrogen (LN_2) a hole (diam. approx. 2 mm) in centre of the lid is necessary.

KGW

Capacity	Int.	Int.	Figure	With	PK	Cat. No.
	diam.	height				
I	mm	mm				
10	200	350	а	Handle	1	9.032 131
10	200	350	d	Handle	1	9.032 742
14	200	500	а	Handle	1	9.032 132
14	200	500	d	Handle	1	6.070 411
21	250	480	С	Side grips	1	9.032 133
21	250	480	b	Side grips	1	9.032 743
28*	250	620	С	Side grips	1	9.032 134
28	250	620	b	Side grips	1	6.300 165

^{*}Linen bag included.













Dewar flasks, cylindrical, for CO₂ and LN₂

DURAN®. DIN EN ISO 16496. 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

Туре	Capacity	Int.	Int.	PK	Cat. No.
	ml	diam. mm	height mm		
00 C	100	40	90	1	9.032 011
0 C	200	40	170	1	9.032 012
1 C	300	47	190	1	9.032 013
2 C	450	47	270	1	9.032 014
3 C	500	57	210	1	9.032 015
4 C	750	57	310	1	9.032 016
5 C	1250	57	500	1	9.032 017
6 C	800	67	240	1	9.032 018
7 C	1200	67	350	1	9.032 019
9 C	1000	77	235	1	9.032 021
10 C	1500	77	345	1	9.032 022
11 C	2100	77	500	Í	9.032 023
12 C	1500	90	245	1	9.032 024
13 C	2000	90	340	Í	9.032 025
14 C	3200	90	600	1	9.032 026
15 C	1500	100	240	1	9.032 027
16 C	2000	100	290	1	9.032 028
17 C	4000	100	600	1	9.032 029
18 C	2500	110	290	1	9.032 030
19 C	5000	110	600	1	9.032 031
20 C	3000	138	230	1	9.032 032
S 21 C	4000	138	310	1	9.032 033
S 22 C	8000	138	600	1	9.032 034

6.070 548

6.090 309

Dewar flasks, cylindrical, with side grip

DURAN®. DIN EN ISO 16496.

2000

1500

2000

2500

4000

G13C

G15C

G16C

G18C

GS21C

With blue coated protective casing out of metal and side grip.

90

100

100

110

138

Capacity Int. Ext. Int. PK Cat. No. diam. diam. height ml mm mm mm G0C 7.200 338 40 56 170 G1C 300 47 60 190 6.803 703 6.800 771 500 G3C 57 210 70 G6C 800 67 240 6.083 078 80 1000 6.053 660 G9C 95 235 77 G7C 1200 67 80 350 6.078 740 1500 6.059 732 G10C 95 345 77 G12C 1500 90 115 245 6.076 560

340

240

290

290

310



2 Chrome steel Dewar flasks

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

115

120

120

130

160

Capacity	Tubing i.d.	Int. height	PK	Cat. No.
		_		
0.5	mm	mm		0.004.004
0.5	180	79	1	9.031 981
1.0	88	207	1	9.031 982
1.0	103	158	1	9.031 983
2.0	103	286	1,	9.031 984
3.0	159	189	1	9.031 985
6.0	269	189	1	9.031 986







3 Lid in cork for chrome steel Dewar flasks

Cork.

For	PK	Cat. No.
0.01/0.034.004	1	0.021.071
0,9 (9.031 981)	1	9.031 971
1,0 (9.031 982)	1	9.031 972
1,0-2,0 (9.031 983 + 9.031 984)	1	9.031 973
3,0-6,0 (9.031 985 + 9.031 986)	1	9.031 975



4 Dewar flasks, spherical, for LN₂

 ${\tt DURAN}^{\circledast}.$ DIN 16496. Spherical. Brushed aluminium casing with insulating lid and carrying handle.

K	U	V	Į

Capacity	Neck diam.	Ext. diam.	PK	Cat. No.
Litres	mm	mm		
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



Arctiko

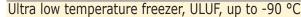
7. Heating and cooling technology

Cooling/Low and Ultra low temperature freezers





9.699 310



- 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
- Premade porthole for external temperature probes (diam. 11 mm)
- Single-compressor (ULUF 15, 65, 125, 450, 550) or two compressor systems (ULUF 750) as security in case of failure of a compressor.

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 on request): Racks and boxes, CO2 backup system, GSM alarm module, cryo gloves, water cooled condensers.

5 year warranty on the compressor.



Туре	Capacity	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Temp. range	Weight	PK Cat. No.
	Litres	mm	mm	max. °C	kg	
ULUF 15	7	400 x 630 x 665	150 x 143 x 310	-9040	55	1 6.264 066
ULUF 65	55	600 x 700 x 810	360 x 468 x 320	-8640	80	1 9.699 310 1
ULUF 125	115	950 x 725 x 810	360 x 493 x 530	-8640	100	1 9.699 311 2
ULUF 450-2M	393	720 x 885 x 1990	480 x 608 x 1345	-8640	175	1 6.266 243
ULUF 550-2M	556	920 x 885 x 1990	680 x 608 x 1345	-8640	203	1 7.983 050
ULUF 750-2M*	646	1030 x 885 x 1989	790 x 680 x 1345	-8640	254	1 6.290 902

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



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



The ultra-low freezers are suitable for the stable long-term storage of sensitive samples and guarantee a constant low temperature. The ultra-low freezers are designed for -90 °C, but can be used in a temperature range from -40 °C to -90 °C.

- Climate-neutral refrigerants R-290 and R-170
- Interior completely made of stainless steel
- Powerful cascade compression refrigeration machine
- Efficient thermal insulation through vacuum insulation panels
- Removable interior doors made of stainless steel
- 3 flexibly positionable shelves made of stainless steel
- Water cooling (depending on variant)
- Optical and acoustic alarms

Specifications

Temperaturrange: -90 ... -40 °C 2 x Ø 28 mm, rear Port hole: Interface: Ethernet 230 V/50 Hz Power supply: 5 years Warranty:

Туре	Description	Capacity	External dimensions (W x D x H)	Internal dimensions (W x D x H)	PK	Cat. No.
		Litres	mm	mm		
UFV500	Standard	477	826 x 938 x 1966	606 x 605 x 1300	1	4.668 590
UFV700	Standard	700	1110 x 938 x 1966	890 x 605 x 1300	1	4.664 563
UFV500	With water cooling	477	826 x 938 x 1966	606 x 605 x 1300	1	4.668 591
UFV700	With water cooling	700	1110 x 938 x 1966	890 x 605 x 1300	1	6.275 022

Cooling/Low and Ultra low temperature freezers

Ultra low temperature Upright Freezers, ULT Series, up to -86 °C



Nordiclab ApS



Supreme stability, reliability, user-friendliness and small dimensions make these freezers the perfect choice for use inside the lab. For temporary to long term storage. Low power consumption, natural refrigerant, cyclopentane insulation combined with recyclable materials,

makes these freezers very environmental friendly. The unit is easy to install. Due to the small footprint, transport through all standard sized doors is possible. In combination with a low weight, it is also easy to move around. The material is galvanized and pre-coated steel on the outside and stainless steel on the inside.

- Temperature logger with USB port
- Data logging 35.000 Entries
- Battery Backup for min. 48 h
- Digital controller with display
- High/low temperature alarm
- Door alarm
- Contact for remote alarm
- Porthole for external probe & CO2 backup Ø12 mm
- Eco-friendly, HCFC-free Nature R refrigerant

Extended exchange warranty - in warranty cases which cannot be quickly solved onsite the client receives a new unit.

Racks must be ordered separately.

Specifications

Adjustable shelves, stainless steel: 2 (5 for U250) Internal humidity: <5 % Temperature probes: 1/PT 1000

57 dB (64 dB for U250) Noise level: Power consumption 24/h: 6.2 kWh (12.8 kWh for U250)

230 V/50 Hz Power supply:

External Weight PK Cat. No. Type Capacity Internal Temp. dimensions dimensions range (WxDxH) (WxDxH) Litres max. °C mm mm kg 4.672 428 ULT U100, under bench 595 x 630 x 830 430 x 425 x 625 60 -86 ... -60 **ULT U250** 435 x 370 x 1420 600 x 630 x 2055 -86 ... -60 4.672 429 1

N

4.672 429

Ultra low temperature Chest Freezers, ULT Series, up to -86 °C



Nordiclab ApS



Freezer for temporary to longer term storage or daily use. Ideal where space is limited, but the user still needs a regular storage capacity. Low power consumption, natural refrigerant, cyclopentane insulation combined with recyclable materials, makes these freezers very environmental friendly. The unit is easy to install. Due to the small footprint, transport through all standard sized doors is possible. The freezer also has four castors, which makes it very mobile. The material is galvanized and pre-coated steel on the outside and precoated white steel on the inside.

- Digital controller with display
- Audible and visual alarm
- High/low temperature alarm
- Contact for remote alarm
- Battery Backup 48 h
- Porthole for external probe & CO2 backup Ø12 mm
- Eco-friendly, HCFC-free Nature R refrigerant

Extended exchange warranty - in warranty cases which cannot be quickly solved onsite the client receives new unit.

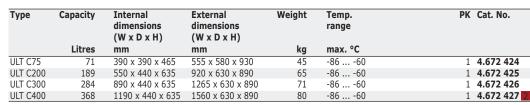
Racks must be ordered separately.

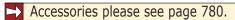
Specifications

Internal humidity: <5 % 1/PT 1000 Temperature probes: Noise level: 55 dB

Power consumption 24/h (kWh): 5.1 (C75), 5.3 (C200), 8.1 (C300), 9.1 (C400)

Power supply: 230 V/50 Hz







4.672 427

7. Heating and cooling technology Cooling/Low and Ultra low temperature freezers

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

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.

Arctiko

- 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, probe and 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 30 years
- Display text available in different languages

5 year warranty on the compressor.

Туре	Capacity	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Temp. range	Weight	PK Cat. No.
	Litres	mm	mm	max. °C	kg	
ULTF 80	71	552 x 648 x 850	390 x 390 x 450	-8640	53	1 9.699 320 1
ULTF 220	189	920 x 695 x 885	760 x 440 x 635	-8640	64	1 9.699 321
ULTF 320	284	1262 x 698 x 885	1100 x 440 x 630	-8640	76	1 9.699 322
ULTF 420	368	1562 x 698 x 885	1400 x 440 x 630	-8640	88	1 9.699 323 2





Cooling/Low and Ultra low temperature freezers

Freezer boxes B35-50/B35-85, up to -85 °C

The cold boxes are small benchtop units for cooling and freezing in all laboratories. Due in particular to its compact space-saving design and the low-noise cooling unit, the cold box is suitable for direct use in the workplace.

Fryka-Kältetechnik

- Vacuum-Insulation: large interior space with small external dimensions and low power consumption
- Extremely low noise refrigeration unit
- Models with temperature range -85 °C with two-stage cascade refrigeration system
- with natural refrigerants (R-290, R-170)
- Interior made of high quality stainless steel
- Interior without fittings allows easy cleaning and disinfection
- Side air vent, so suitable for installation directly on walls
- Bushing (diameter 10 mm), e.g. for temperature monitoring with external sensors
- Maximum safety, due to mains-independent alarm, battery lasting approx. 72 hours
- Visual and audible signal
- Microprocessor-controlled with membrane keyboard and easy-to-read LED display
- Potential-free contact for connection to an external alarm system
- RS485 interface
- 100 mV/K-output for connection to a temperature recording system
- Lockable insulating door with door frame heating and double magnetic seal with additional sealing surface
- Stackable unit, max. 2 units

Cold boxes B35 //logg:

- Touchscreen control with color display and integrated data logger for full traceability
- User-friendly menu structure, remote access via network/internet
- Real-time display of the temperature profile and further values
- Recording the temperature profiles and alarm events
- Integrated memory with up to 12 years memory capacity
- Data for transfer to PC can be read out via USB interface
- Ethernet interface (RJ45)

Stainless steel shelf B 35-RS: 5 drawers, each for 6 standard cryoboxes (135 x 135 x 52 mm).

Extra gaps for optimal, uniform and rapid cooling of the entire frozen product (please order separately).

Specifications

Control accuracy: ±1 K

Ambient temperature: +12 to +30 °C 230 V/50 Hz Power supply:

Туре	Capacity	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Weight	Temp. range	PK Cat. No.
	Litres	mm	mm	kg	max. °C	
B 35-50	35	425 x 300 x 280	580 x 765 x 540	65	-5010	1 6.284 402
B 35-50 //logg	35	425 x 300 x 280	580 x 765 x 580	65	-5010	1 6.284 403
B 35-85	35	425 x 300 x 280	580 x 765 x 540	81	-8550	1 7.982 609
B 35-85 //logg	35	425 x 300 x 280	580 x 765 x 580	81	-8550	1 6.284 404 2
Shelf B 35-RS						1 6.284 406







FRYKA

COOLING AND FREEZING UP TO

-80.0 -50.0 FRYKA FOR OVER MADE

Cooling and freezing of gases, liquids and solids

FRYKA Kältetechnik

Robust and durable technology, sophisticated functions as well as a particularly simple handling: All that makes FRYKA recirculating chillers and freezers the first choice in many segments of modern research and industry.

GERMANY

www.fryka.de

7. Heating and cooling technology Cooling/Low and Ultra low temperature freezers

Underbench freezers TUS 50-100/TUS 80-100, up to -80 °C

The freezers have a usable space of 100 litres and can be used for cooling and freezing in industrial and scientific laboratories. Particularly due its compact, space-saving design with low-noise cooling unit, the underbench freezer is suitable for use directly under or even on the desk at work.

Fryka-Kältetechnik

- Vacuum-Insulation: large interior space with small external dimensions and low power consumption
- Extremely low noise refrigeration unit
- Models with temperature range -80 °C: with two-stage cascade refrigeration system
- With natural refrigerants (R-290, R-170)
- Interior made of high quality stainless steel
- Bushing (diameter 19 mm), e.g. for temperature monitoring with external sensors
- Maximum safety, due to mains-independent alarm, battery lasting approx. 72 hours
- Visual and audible signal
- Microprocessor-controlled with membrane keyboard and easy-to-read LED display
- Potential-free contact for connection to an external alarm system
- RS485 interface
- 100 mV/K-output for connection to a temperature recording system
- Lockable insulating door with door frame heating and double magnetic seal with additional sealing surface
- One Inlaid grille included
- Optionally available: Four fixed rollers, two with a brake, H: 805 mm.
 Stainless steel shelf TS 100-RS (alternative to Inlaid grille): For 81 standard cryoboxes.
 Nine drawers, each for nine standard cryoboxes. Extra gaps for optimum, uniform and rapid cooling of all the refrigerated items.

Underbench freezers TUS 50-100/TUS 80-100 //logg:

- Touchscreen control with color display and integrated data logger for full traceability
- User-friendly menu structure, remote access via network/internet
- Real-time display of the temperature profile and further values
- Recording the temperature profiles and alarm events
- Integrated memory with up to 12 years memory capacity
- Data for transfer to PC can be read out via USB interface
- Ethernet interface (RJ45)

Specifications

Control accuracy: ±1 k

Ambient temperature: +12 to +30 °C Power supply: 230 V/50 Hz

Туре	Capacity	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Weight	Temp. range	PK Cat. No.
	Litres	mm	mm	kg	max. °C	
TUS 50-100	100	450 x 450 x 500	950 x 730 x 750	120	-5010	1 6.284 408
TUS 50-100 //logg	100	450 x 450 x 500	950 x 730 x 750	120	-5010	1 6.284 409
TUS 80-100	100	450 x 450 x 500	950 x 730 x 750	120	-8050	1 6.284 410 1
TUS 80-100 //logg	100	450 x 450 x 500	950 x 730 x 750	120	-8050	1 6.284 411 2
Shelf TS 100-RS						1 6.284 416
Inlaid grille (additional)						1 6.284 419



6.284 410





Cooling/Low and Ultra low temperature freezers

Chest freezers TT 50-90/TT 85-90, up to -85 °C



Fryka-Kältetechnik

The chest freezers are used successfully in the laboratory as well as in industry due to their compact design, their technical properties and their reliability. The use of vacuum insulation panels (VIP), enables a extensive interior space with compact external dimensions. The interior is made of high-grade stainless steel.

Models with temperature range -85 °C have a two-stage cascade refrigeration system for high performance and high safety. A bushing (diameter 19 mm) enables temperature monitoring with external sensors.

- Extremely quiet cooling unit, with natural refrigerants (R-290, R-170)
- Visual and acoustic alarm signal
- Lockable cover latch with lever action
- Microprocessor-controlled adjustment with membrane keyboard and LED display
- Independant alarm system, with battery capacity for approx. 72 hours
- Interface (RS485)

TT 50-90 logg/TT 85-90 logg:

- Touchscreen control with color display and integrated data logger
- Remote access via network/internet
- Real-time display of the temperature profile and further values
- Recording the temperature profiles and alarm events
- Integrated memory with up to 12 years memory capacity
- Data for transfer to PC can be read out via USB interface
- Ethernet interface (RJ45)

Specifications

Ambient temperature: 12 ... 30 °C
Control accuracy: ±0.5 K
Power supply: 230 V/50 Hz

Туре	Capacity	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Weight	Temp. range	PK Cat. No.
	Litres	mm	mm	kg	max. °C	
TT 50-90	90	590 x 430 x 370	760 x 710 x 880	92	-5010	1 6.284 420
TT 50-90 logg	90	590 x 430 x 370	760 x 710 x 880	92	-5010	1 6.284 421
TT 85-90	90	590 x 430 x 370	760 x 710 x 880	110	-8550	1 6.284 422
TT 85-90 logg	90	590 x 430 x 370	760 x 710 x 880	110	-8550	1 6.284 423 1

TT 90-RC stainless steel shelf for TT 50-90/TT 85-90



Extra gaps ensure optimal, uniform and rapid cooling of all the refrigerated items.

Fryka-Kältetechnik

- For storage of 6 standard cryoboxes (135 x 135 x 52 mm) per shelf
- 12 shelves possible per chest

Туре	PK	Cat. No.
Stainlass steal shalf TT 00-DC	1	6 284 424





Cooling/Low and Ultra low temperature freezers

Ultra low temperature freezers HDE/TDE series, to -86 °C

NEW

Thermo Scientific

Environmentally friendly, energy-saving freezers with a temperature range from -50 to -86 °C.

- Maximum 24 minutes temperature recovery time after door opening
- Ergonomic design
- Very quiet operation below 53 dB (A)
- Compatible with most racking systems
- Natural refrigerants based on hydrocarbons
- Water-blown foam insulation: avoids harmful emissions and reduces long-term propellant outgassing
- Capacity for 300-600 boxes depending on model
- Intuitive touch-screen operation with display of all relevant data
- Data logger function with secure cloud storage option and smartphone connection

Herafreeze™ HDE models with 5 interior doors and 5 compartments for inserts < 24 cm height TDE models with 4 interior doors and 4 compartments for units < 30 cm height





Туре	For	Capacity	Internal dimensions (W x D x H)	External dimensions (W x D x H)	PK	Cat. No.
		Litres	mm	mm		
HDE 30086 FV	300 x 5 cm boxes	422	452 x 719 x 1301	584 x 977 x 1981	1	6.311 317
HDE 40086 FV	400 x 5 cm boxes	549	588 x 719 x 1301	719 x 977 x 1981	1	4.668 935
HDE 50086 FV	500 x 5 cm boxes	682	730 x 719 x 1301	864 x 977 x 1981	1	6.311 315
HDE 60086 FV	600 x 5 cm boxes	816	873 x 719 x 1301	1006 x 977 x 1981	1	4.668 936
TDE 30086 FV	300 x 5 cm boxes	422	452 x 719 x 1301	584 x 977 x 1981	1	4.668 937
TDE 40086 FV	400 x 5 cm boxes	549	588 x 719 x 1301	719 x 977 x 1981	1	4.668 938
TDE 50086 FV	500 x 5 cm boxes	682	730 x 719 x 1301	864 x 977 x 1981	1	4.668 939
TDE 60086 FV	600 x 5 cm boxes	816	873 x 719 x 1301	1006 x 977 x 1981	1	4.668 940 2

Upright Freezers LT/XLT Series, up to -65 °C

Freezer for temporary to longer term storage or daily use. Ideal where space is limited, but the user still needs a regular storage capacity. The unit is easy to install.

Due to the small footprint, transport through all standard sized doors is possible.

The freezer also has four castors with brakes, which makes it very mobile.

The material is galvanized and pre-coated steel on the outside, stainless steel on the inside and cyclopentane for efficient insulation.

- Temperature logger with USB port
- Data logging 35.000 Entries
- Battery Backup 48 h
- Digital controller with display
- High/low temperature alarm
- Door alarm
- Contact for remote alarm
- Porthole for external probe & CO2 backup Ø12 mm
- Integrated lock
- Eco-friendly, HCFC-free Nature R refrigerant (MLT U250 with HCFC-free R290 refrigerant)
- ISO 9001, 14001 & 18001 OHSAS Certified

Extended exchange warranty - in warranty cases which cannot be quickly solved onsite the client receives a new unit.

Racks must be ordered separately.

Specifications

Adjustable shelves, stainless steel: Internal humidity: <5 % 1/PT 1000 Temperature probes:

60 dB (57 dB for MLT U250) Noise level: Power consumption 24/h: 6.25 kWh (5.3kWh for LT U250)

Power supply: 230 V/50 Hz

•							
Туре	Capacity	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Weight	Temp. range	PK	Cat. No.
	Litres	mm	mm	kg	max. °C		
MLT U250	236	440 x 430 x 1439	600 x 690 x 2055	115	-3015	1	4.672 443
LT U250	236	420 x 370 x 1420	600 x 690 x 2055	115	-4510	1	4.672 442
XLT U250	221	420 x 370 x 1420	600 x 690 x 2055	120	-6530	1	4.672 436 3





4.672 436

E & OE. 779

NEW

Nordiclab ApS

Cooling/Low and Ultra low temperature freezers



4.672 437

Chest Freezers LT/XLT Series, up to -65 °C



Nordiclab ApS

Freezer for temporary to longer term storage or daily use. Ideal where space is limited, but the user still needs a regular storage capacity. The unit is easy to install.

Due to the small footprint, transport through all standard sized doors is possible. The freezer also has four castors (XLT C75 without castors, with legs), which makes it very mobile. The material is galvanized and pre-coated steel on the outside, precoated white steel on the inside and cyclopentane for efficient insulation.

- Digital controller with display
- Audible and visual alarm
- High/low temperature alarm
- Porthole for external probe & CO2 backup Ø12 mm
- Integrated lock
- Eco-friendly, HCFC-free Nature R refrigerant at -65 °C and HCFC-free R290 refrigerant at -45 °C
- ISO 9001, 14001 & 18001 OHSAS Certified

Extended exchange warranty - in warranty cases which cannot be quickly solved onsite the client receives a new unit.

Racks must be ordered separately.

Specifications

Baskets: 1 (3 for LT C500 and XLT C300/C500/4 for XLT C400)

Internal humidity: <5 %

Temperature probes: 1/PTC at -45 °C/1/PT 1000 at -65 °C

Noise level: 55 dB Power supply: 230 V/50 Hz

Туре	Capacity	Internal dimensions	External dimensions	Weight	Temp. range	PK	Cat. No.
		(W x D x H)	(W x D x H)				
	Litres	mm	mm	kg	max. °C		
LT C150	133	350 x 440 x 635	720 x 630 x 890	51	-4510	1	4.672 437 1
LT C200	189	550 x 440 x 635	920 x 630 x 890	65	-4510	1	4.672 438
LT C300	284	890 x 440 x 635	1260 x 630 x 890	71	-4510	1	4.672 439
LT C400	368	1190 x 440 x 635	1560 x 630 x 890	80	-4510	1	4.672 440
LT C500	476	1290 x 500 x 640	1660 x 690 x 890	108	-4510	1	4.672 441
XLT C75	71	390 x 390 x 465	555 x 580 x 900	48	-6530	1	4.672 430
XLT C150	133	350 x 440 x 635	720 x 630 x 890	56	-6530	1	4.672 431
XLT C200	189	550 x 440 x 635	920 x 630 x 890	65	-6530	1	4.672 432
XLT C300	284	890 x 440 x 635	1260 x 630 x 890	71	-6530	1	4.672 433
XLT C400	268	1190 x 440 x 635	1560 x 630 x 890	80	-6530	1	4.672 434
XLT C500	476	1290 x 500 x 640	1660 x 690 x 890	108	-6530	1	4.672 435

Racks for Upright and Chest Freezers and Ultra low temperature Freezers, LT/XLT/ULT Series



Nordiclab ApS

Туре	Dimensions (W x D x H)	No. of racks	Boxes/ Racks	Height Box	PK	Cat. No.
	mm	rucks	Rucks	mm		
VIT CZE LUT CZE		-	2			4 672 445
XLT C75, ULT C75	140 x 140 x 445	5	8	50		4.672 445
XLT C75, ULT C75	140 x 140 x 406	5	5	75	1	4.672 448
XLT C75, ULT C75	140 x 140 x 425	5	4	100	1	4.672 451
ULT U100	420 x 416 x 590	1	74	50	1	4.672 458
ULT U100	420 x 416 x 590	1	45	75	1	4.672 461
ULT U100	420 x 416 x 590	1	33	100	1	4.672 463
LT C150-500, XLT C150-500, ULT C200-400	140 x 140 x 335	3	6	50	1	4.672 444
LT C150-500, XLT C150-500, ULT C200-400	140 x 140 x 610	6	11	50	1	4.672 446
LT C150-500, XLT C150-500, ULT C200-400	140 x 140 x 326	3	4	75	1	4.672 447
LT C150-500, XLT C150-500, ULT C200-400	140 x 140 x 629	6	8	75	1	4.672 449
LT C150-500, XLT C150-500, ULT C200-400	140 x 140 x 320	3	3	100	1	4.672 450
LT C150-500, XLT C150-500, ULT C200-400	140 x 140 x 530	6	5	100	1	4.672 452
LT U250, XLT U250, ULT U250	135 x 280 x 225	3	8	50	1	4.672 453
LT U250, XLT U250, ULT U250	135 x 280 x 275	12	10	50	1	4.672 457
LT U250, XLT U250, ULT U250	135 x 280 x 160	3	4	75	1	4.672 459
LT U250, XLT U250, ULT U250	135 x 280 x 240	12	6	75	1	4.672 460
LT U250, XLT U250, ULT U250	135 x 280 x 210	15	4	100	1	4.672 462

Cooling/Low and Ultra low temperature freezers

Mini-Freezer KBT 08-51, up to -50 °C

The mini-freezers are the ideal solution for chilling material samples directly at the workplace.

Fryka-Kältetechnik

- Electronic temperature control with LED display, 2 controls available
- Refrigeration unit: low noise, air-cooled, low maintenance
- with natural refrigerant R-1270
- Housing parts made of high quality stainless steel
- Insulated stainless steel hinges and hinged lid with magnetic seal
- Ram protection ring going over and under

ST71 control

- Electronic temperature control with LED display
- Optical and acoustic alarm

ST100 control

- Microprocessor-controlled, with membrane keyboard and easy-to-read LED display
- Protection against unintentional activation
- Alarm system that is separate from the mains, with battery capacity for approx. 72 hours
- Display of the maximum temperature reached in the interior area during the fault
- RS485 interface, potential-free contact for connection to an external alarm system and 100 mV/K output
- Optical and acoustic alarm

Specifications

Temperature range: -50 ... -30 °C Control accuracy: ±1 K Capacity: RΙ 12 ... 30 °C Ambient temperature: Dimensions, internal (W x D x H): 150 x 300 x 200 mm Dimensions, external (W x D x H): 360 x 490 x 570 mm

Weight: 36 kg 230 V/50 Hz Power supply:

Туре	PK	Cat. No.
Mini-Freezer KBT 08-51 with ST71 control	1	6.284 427
Mini-Freezer KBT 08-51 with ST100 control	1	4.671 415
Mini-Freezer KBT 08-51 with ST100 control and convection	1	4.671 416

Laboratory refrigerators and freezers LKPv/LGPv with professional electronic controller, up to -2 °C/-35 °C

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.

- 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

Туре	Capacity	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Energy consumption	Temp. range	PK	Cat. No.
	Litres	mm	mm	kWh (24 h)	max. °C		
LKPv 6523	597	700 x 830 x 2160	533 x 650 x 1500	1.564	0 16	1	9.698 395
LKPv 1423	1361	1430 x 830 x 2160	1236 x 650 x 1500	2.246	0 16	1	6.264 055
LKPv 6520	597	700 x 830 x 2160	533 x 650 x 1550	1.361	-2 16	1	9.698 686
LKPv 8420	856	790 x 980 x 2160	620 x 850 x 1550	1.652	-2 16	1	9.698 697
LKPv 1420	1361	1430 x 830 x 2160	1236 x 650 x 1550	1.956	-2 16	1	9.698 688
LGPv 1420	1361	1430 x 830 x 2160	1236 x 650 x 1550	7.271	-269	1	9.698 693
LGPv 6520	697	700 x 830 x 2160	533 x 650 x 1550	3.745	-359	1	9.698 692
LGPv 8420	856	790 x 980 x 2160	620 x 850 x 1550	4.761	-359	1	9.698 698





Thermo Scientific

7. Heating and cooling technology

Cooling/Low and Ultra low temperature freezers



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

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:

- with EU plug and UK adapter
- Integrated controller
- Digital temperature display
- High and low temperature alarms
- Standard door locks, lockable
- Low energy consumption
- Access ports
- Defrost type automatic for temperature range +1 to +10 °C and manual for temperature range -19 to -21 °C

Equipment

98F-AEV-TS: 3 drawers

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

1 shelf 2 baskets (F)

Туре	Capacity	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Energy consumption	Temp. range	PK	Cat. No.
	1	mm	mm	kWh (24 h)	°C		
98F-AEV-TS	98	599 x 658 x 850	420 x 440 x 650	0.4	-1825	1	6.315 197
232F-AEV-TS	232	595 x 640 x 1570	440 x 430 x 1300	1.0	-1825	1	9.536 239
288R-AEV-TS	288	595 x 634 x 1570	480 x 445 x 1382	0.5	1 11	1	9.536 213
263C-AEV-TS	159 (R) /	545 x 600 x 1680	457 x 450 x 725 (R) /	0.9	1 11 / -1030	1	9.536 219
	109 (F)		408 x 415 x 670 (F)				
263C-AXV-TS	159 (R) /	545 x 600 x 1680	457 x 450 x 725 (R) /	0.9	1 11 / -1220	1	6.265 834
	109 (F)		408 x 415 x 670 (F)				

(R) refrigerated area, (F) freeze area





Biomedical freezers FLEXA LFE, up to -25 °C



Freezers with flexible interior, adjustable shelves and high temperature stability. Ideal for storing biological and medical samples.

Arctiko

- With natural refrigerant R-290
- Static cooling
- Digital controller
- LED display with touch operation
- Visual/acoustic alarm when door is open
- Alarm at over/under temperature and temperature sensor failure
- Lockable door
- Selectable door stop

Scope of supply LFE 110: Freezer, 3 adjustable shelves (2 x regular size, 1 x small), 1 basket

Scope of supply LFE 360: Freezer, 5 adjustable shelves (regular size), 1 basket

Specifications

Temperature range: -15 ... -25 °C
Power supply: 230 V, 50/60 Hz

Туре	Capacity	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Weight	Energy consumption	PK Cat. No.
	I	mm	mm	kg	kWh (24 h)	
LFE 110®	107	460 x 410/230*x 680	600 x 600 x 835	45	1.1	1 4.667 926 2
LFE 360®	356	440 x 500/311* x 1690	600 x 700 x 1865	97	3.2	1 4.667 927

^{*} Depth at bottom of device

Accessories - please see page 785.

Cooling/Low and Ultra low temperature freezers

Cold box B 30-20, up to -20 °C

Compact desktop cold box for cooling and freezing for all laboratories. Due to the low-noise cooling unit, the cold box can be used directly in the workplace. The space-saving box has an insulating glass pane in the door, so that the cooling material can be observed during freezing. Fryka-Kältetechnik

- Extremely low noise refrigeration unit
- Microprocessor-controlled with membrane keyboard and easy-to-read LED display
- with natural refrigerant R-1270
- Interior made of high quality stainless steel
- Interior without fittings allows easy cleaning and disinfection
- Bushing (diameter 10 mm), e.g. for temperature monitoring with external sensors
- Lockable door with insulating glass, door frame heating and double magnetic seal with additional lip
- Stackable unit, max. 3 boxes

Stainless steel shelf B 30-RS: 4 drawers, each for 4 standard cryoboxes. Drawer size (W x D x H): 300 x 280 x 52 mm. Extra gaps for optimal, uniform and rapid cooling of the entire frozen product (please order separately).

Specifications

Temperature range: -20 to +10 °C Control accuracy: ±1 K Capacity: 30 I Ambient temperature: +12 to +30 °C Dimensions, internal (W x D x H): 360 x 350 x 230 mm 530 x 700 x 460 mm Dimensions, external (W x D x H):

Weight: 42 kg 230 V/50 Hz Power supply:

Description	PK	Cat. No.
Cold box B 30-20	1	6.284 401
Shelf B 30-RS	1	6.284 405

High-Performance refrigerators and freezers TSX series

The TSX Series high performance refrigerators and freezers are designed for the storage of media, reagents and other laboratory products. V-drive increases compressor speed to quickly restore temperature after door openings. Thermo Scientific

- Whisper quiet with a sound level of 52 dBA
- Natural refrigerants (R290)
- Compatible with wireless monitoring systems and remote alarm contacts
- Audible and optical alarm
- GMP Clean Room Class A/ISO 6 (ISO EN 14644-1) compatible with appropriate pre-install preparation
- Four 2" casters, the front two are lockable
- Self-closing door with 90° stop
- Optional chart recorders available

High performance freezers TSX Series, up to -35 °C

NEV

Thermo Scientific

- TSX 5030 FV is equipped with 2 doors - With auto defrost

Specifications

-35 ... -15 °C Temperature range: 230 V, 50 Hz Power supply:

Туре	Capacity	External dimensions (W x D x H)	Internal dimensions (W x D x H)	No. of shelves	PK Cat. No.
	- 1	mm	mm		
TSX 1230 FV	326	619 x 790 x 1854	508 x 554 x 1331	4	1 4.671 810
TSX 2330 FV	650	711 x 962 x 1994	610 x 723 x 1473	4	1 4.672 628
TSX 3030 FV	827	864 x 962 x 1994	762 x 723 x 1473	4	1 6.312 076
TSX 5030 FV	1447	1435 x 962 x 1994	1334 x 723 x 1473	8	1 4.672 629 2



Cooling/Low and Ultra low temperature freezers





High-Performance plasma freezers TSX series, up to -35 °C



Thermo Scientific

- With auto defrost
- Meets AABB and FDA requirements for the storage of plasma
- Fully extendable stainless steel drawers
- Standard factory-installed chart recorder

Specifications

Temperaturrange: -35 ... -15 °C Power supply: 230 V, 50 Hz

Туре	Description	Capacity	External dimensions (W x D x H)	Internal dimensions (W x D x H)	PK Cat. No.
		I	mm	mm	
TSX 1230 LV	1 door and 7 drawers	326	619 x 790 x 1854	508 x 554 x 1331	1 4.672 643
TSX 2330 LV	1 door and 7 drawers	650	711 x 962 x 1994	610 x 723 x 1473	1 4.672 644 1
TSX 3030 LV	1 door and 7 drawers	827	864 x 962 x 1994	762 x 723 x 1473	1 4.672 645
TSX 5030 LV	2 doors and 14 drawers	1447	1435 x 962 x 1994	1334 x 724 x 1473	1 4.672 646





High-Performance enzyme freezers TSX series, up to -25 °C



Thermo Scientific

- Without auto defrost
- Cold wall convection cooling
- With enzyme bins

Specifications

Temperaturrange: -25 ... -15 °C Power supply: 230 V, 50 Hz

Туре	Description	Capacity	External dimensions (W x D x H)	Internal dimensions (W x D x H)	PK Cat. No.
		I	mm	mm	
TSX 2320 EV	9 shelves, 45 bins	650	711 x 990 x 1994	610 x 723 x 1473	1 4.672 647 2
TSX 3020 EV	9 shelves, 54 bins	827	864 x 990 x 1994	762 x 723 x 1473	1 4.672 648





High-Performance lab refrigerators TSX Series, up to +2 °C

NEW

With glass door or solid door.

Thermo Scientific

- Bright, LED interior lighting
- Heat-free defrost for maximum temperature uniformity

Specifications

2 ... 8 °C Temperaturrange: Power supply: 230 V, 50 Hz

Туре	Description	Capacity	External dimensions (W x D x H)	Internal dimensions (W x D x H)	No. of shelves	PK Cat. No.	•
		1	mm	mm			
TSX 1205 GV	With glass door	326	619 x 775 x 1854	508 x 554 x 1331	4	1 4.672 63	30
TSX 2305 GV	With glass door	650	711 x 962 x 1994	610 x 723 x 1473	4	1 4.672 6 3	31 3
TSX 3005 GV	With glass door	827	864 x 947 x 1994	762 x 723 x 1473	4	1 4.672 63	32
TSX 4505 GV	With double sliding glass door	1297	1435 x 931 x 1994	1334 x 724 x 1473	8	1 4.672 63	33
TSX 5005 GV	With 2 glass doors	1447	1435 x 962 x 1994	1334 x 724 x 1473	8	1 4.672 6 3	34
TSX 1205 SV	With solid door	326	619 x 790 x 1854	508 x 554 x 1331	4	1 4.672 63	35
TSX 2305 SV	With solid door	650	711 x 962 x 1994	610 x 723 x 1473	4	1 4.672 6 3	36
TSX 3005 SV	With solid door	827	864 x 962 x 1994	762 x 723 x 1473	4	1 4.672 6 3	37
TSX 5005 SV	With 2 solid doors	1447	1435 x 962 x 1994	1334 x 724 x 1473	8	1 4.672 6	38

Cooling/Refrigerators and Freezers

Laboratory refrigerators GPS series up to +1 °C

Medium and large capacities designed for routine sample protection. With capacities ranging from space-saving 400 L to spacious 1400 L, our new GPS Series lab refrigerators meet the demands of today's laboratory requirements. All models contain sample protection features designed for the rigorous demands of the laboratory environment.

- With EU plug and UK adapter
- Integrated controller
- Digital temperature display
- High and low temperature alarms
- Standard door locks, lockable
- Standard casters
- Choice of glass or solid door
- Automatic defrost
- Access ports

Equipment

R400/R700: 3 shelves R14X: 6 shelves Thermo Scientific



Туре	Capacity	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Energy consumption	Temp. range	doors	PK	Cat. No.
	Litres	mm	mm	kWh (24 h)	max. °C			
R400-SAEV-TS	400	600 x 600 x 1900	480 x 500 x 1150	3.1	1 11	solid	1	9.536 221
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-GAEV-TS	700	790 x 860 x 1980	600 x 660 x 1300	5.3	1 11	glass	1	9.536 227
R14X-SAEV-TS	1400	1400 x 800 x 1980	1300 x 660 x 1300	2.6	1 11	solid	1	9.536 229
R14X-GAEV-TS	1400	1400 x 800 x 1980	1300 x 660 x 1300	7.7	1 11	glass	1	9.536 231

Biomedical refrigerators FLEXA LRE/PRE, up to 2 °C

Refrigerators with flexible interior, adjustable shelves and high temperature stability. Ideal for storing biological and medical samples.

- Environmentally friendly refrigerant

- Convection cooling
- Digital controller
- LED display with touch operation
- Visual/acoustic alarm when door is open
- Alarm at over/under temperature and temperature sensor failure
- Lockable door
- Selectable door stop

LRE models: With LED interior lighting

PRE models: With LED interior lighting and glass doors

Scope of supply LRE/PRE 120: Refrigerator, 3 adjustable shelves (2 x regular size, 1 x small), 1 basket

Scope of supply LRE/PRE 440: Refrigerator, 5 adjustable shelves (regular size), 1 basket

Specifications

Temperature range: 2 ... 8 °C 230 V, 50/60 Hz Power supply:

Туре	Capacity	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Weight	Energy consumption	PK Cat. No.
	I	mm	mm	kg	kWh (24 h)	
LRE 120®	117	480 x 410/240* x 690	600 x 600 x 835	51	0.9	1 4.667 920
LRE 440®	437	475 x 500/341* x 1723	600 x 700 x 1865	93	1.9	1 4.667 921
PRE 120®	117	480 x 410/240* x 690	600 x 600 x 835	51	1.2	1 4.667 924 Z
PRF 440®	437	475 x 500/365* x 1723	600 x 700 x 1865	105	2.3	1 4 667 925

^{*} Depth at bottom of device

Accessories for laboratory refrigerators and freezers LR/LF series

Arctil	k
/ 1/ СС//	`

Туре	PK	Cat. No.
Stainless steel grid for LF 660-2/700/1400, incl. carrier	1	6.270 299
Plastic grid for LR/LF/LFF/PR/PF 660/700/1400 incl. carrier	1	7.971 172
Plastic grid for LF 300, incl. carrier	1	7.971 324

E & OE. **785**





Arctiko



Liebherr

7. Heating and cooling technology

Cooling/Refrigerators and Freezers

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

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.

- Dynamic cooling system
- Precision electronic controller with digital temperature display
- Glass door (..13) 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

Туре	Capacity	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Energy consumption	Temp. range	PK Cat. No.
	1	mm	mm	kWh (24 h)	max. °C	
LKv 3913*	386	601 x 618 x 1840	440 x 435 x 1635	1.315	3 16	1 7.940 344 1
LKv 3910	361	601 x 618 x 1840	440 x 435 x 1635	0.846	3 16	1 6.313 863
LKUv 1613*	152	601 x 618 x 820	440 x 435 x 670	1.010	3 16	1 9.698 699 2
LKUv 1610	142	601 x 618 x 820	440 x 435 x 670	0.747	3 16	1 9.698 680
LCv 4010	254/107	601 x 618 x 2000	440 x 441 x 1105 / 433 x 435 x 597	1.8	3 16 / -309	1 7.627 795 4











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 1 cm steps.

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

Cooling/Refrigerators and Freezers-Refrigerators and Freezers ex protected

Pharmacy refrigerators MK, up to +2 °C

Liebherr pharmaceutical refrigerators compliant with DIN 58345 safely store high-quality preparations and sensitive medications at all times. This is achieved by a combination of precise electronic controls, highly effective insulation, an optimised forced-air cooling system, and premium-quality workmanship.

Liebherr

- Maintenance of an operating temperature from +2 °C to +8 °C, visual and audible warning installation for high and low temperature
- Can be used in ambient temperatures from +10 °C to +35 °C
- Noise emission less than 48 dB(A)
- Visual and audible power failure alarm for at least 12 h
- Safety thermostat to avoid temperatures below +2 °C
- Mechanical resistance of internal fittings at least 100 kg/m²
- Lockable door optionally made of steel or insulating glass



Туре	Capacity	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Energy consumption	Temp. range	Weight	PK Cat. No.
	I I	mm	mm	kWh (24 h)	°C	kg	
MKUv 1610-21	109/142	601 x 618 x 820	440 x 435 x 670	0.747	5	39	1 6.283 386
MKUv 1613-20*	109/152	601 x 618 x 820	440 x 435 x 670	1.010	5	45	1 6.283 865
MKv 3910-21	280/361	601 x 618 x 1840	440 x 435 x 1635	0.846	5	68	1 6.283 694
MKv 3913-20*	278/386	601 x 618 x 1840	440 x 435 x 1635	1.315	5	85	1 6.283 866 1

^{*}with insulating glass door with switchable LED illumination

LLG-Laboratory Power Failure Detector

- Immediate visual and acoustic alarm
- Alarm can sound for short power outages, or for larger periods of at least 12 hours (can be switched off manually).
- Plug safety cover offers protection against accidental disconnection of 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



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

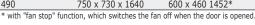


Spark-free laboratory refrigerators, up to +1 °C

The German guidelines "Working Safely in Laboratories BG-I 850-0" stipulates that interior space must be xplosion-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 Lovibond® 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.

- Spark-free according to BG-I 850-0
- Dynamic cooling system
- 1 °C to 15 °C, continuously adjustable
- Digital temperature display
- High energy efficiency
- Robust materials
- Lockable

Capacity	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Temp. range	Weight	PK	Cat. No.
I	mm	mm	max. °C	kg		
160	600 x 600 x 860	513 x 441 x 702	+1 +15	41	1	9.699 005
220	600 x 610 x 1250	470 x 440 x 1062*	+1 +15	53	1	9.699 006
300	600 x 610 x 1640	470 x 440 x 1452*	+1 +15	64	1	9.699 007
490	750 x 730 x 1640	600 x 460 1452*	+1 +15	84	1	9.699 008







7. Heating and cooling technology Cooling/Refrigerators and Freezers ex protected

Spark-free laboratory refrigerators LKexv, up to +1 °C

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. Certified according to ATEX 95.





Features: Flexible, hygienic interior, Glass shelves, Water tray, Lock, Reversible door hinges.

Туре	Capacity	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Energy consumption	PK	Cat. No.
	Litres	mm	mm	kWh (24 h)		
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 1641	470 x 440 x 1452	0.947	1	7.671 880
LKexv 5400	554	750 x 729 x 1640	600 x 560 x 1452	0.983	1	6.262 810



Spark-free laboratory refrigerators and freezers MediLine with comfort electronic controller, up to 3 °C/-30 °C

Refrigerators and freezers specially designed for the storage of explosive and highly flammable substances. With comfort electronics and spark-free interior. The interiors of the units meet the safety requirements of the EU Directive 94/9/EC (ATEX 95) and are tested by the ATEX conformity assessment body electro-suisse (SEV).



- Precision electronic controller with digital temperature display
- Self-closing door with integrated lock
- Visual and audible temperature and door alarm
- Visual power failure alarm as well as sensor defect alarm
- Integrated data memory with min/max temperatures
- Alarm forwarding to an external remote warning system
- RS 485 Interface for external documentation
- 1-point calibration
- Maximum temperature stability and consistency according to IEC 60068-3
- Access port for an external temperature sensor

Cooling units LKexv/LKUexv

- With dynamic cooling system
- Flexible, height-adjustable glass shelves

Freezers LGex/LGUex/LCexv

- With static cooling system
- Convenient and comfortable drawers
- Model LCexv 4010 equipped with 2 doors

Туре	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Temp. range	Plug type	PK Cat. No.
	mm	mm	max. °C		
LKexv 3910	601 x 618 x 1840	440 x 435 x 1635	3 16	EU	1 9.698 685 2
LKUexv 1610	601 x 618 x 820	440 x 435 x 670	3 16	EU	1 9.698 682
LGex 3410	601 x 618 x 1840	420 x 400 x 1587	-309	EU	1 9.698 691
LGUex 1500	601 x 618 x 820	454 x 450 x 663	-269	EU	1 9.698 690
LCexv 4010	601 x 618 x 2003	440 x 441 x 1105 /	3 16 /	EU	1 9.698 677





1

Flake ice maker with reservoir, UFP series, air cooled



MANITOWOC®

For fast, HACCP-compliant production of various quantities of compact, granular ice flakes for MANITOWO laboratories, the chemical industry and food production. The ice is produced by a vertical stainless steel evaporator and transported by a worm gear to the head of the cylinder, pressed and broken into the desired size. For the production of up to 153 kg of ice per day.

The new refrigerant R290 meets the requirements of the latest EU regulations, reduces energy consumption by up to 30 %, has no ozone depletion potential and only a very low global warming potential.

- Robust stainless steel evaporator
- Easy ice removal
- Suitable for demineralised water
- Closed system for optimum hygiene
- Environmentally friendly refrigerant
- Air-cooled
- Depending on model, has storage capacities from 20 to 55 kg
- Stainless steel housing
- Easy to clean
- Height-adjustable feet from 110 to 150 mm
- Comfortable and safe operation
- Low energy consumption

Scope of supply: Flake ice maker with height-adjustable stainless steel feet,

ice shovel, water inlet and outlet set

Specifications

Refrigerant: R290
Permissible ambient temperature: 10 ... 43 °C
Power supply: 230 V, 50 Hz

Туре	Output kg/24 hrs.	Rating	Capacity	Dimensions (W x D x H)	Weight	PK	Cat. No.
	up to kg	W	kg	mm	kg		
UFP 0244 A	113	470	20	500 x 660 x 843	67	1	4.667 960
UFP 0200 A	113	470	30	500 x 660 x 843	76	1	4.667 961
UFP 0388 A	153	700	40	738 x 690 x 1070	102	1	4.667 962
UFP 0399 A	153	700	55	738 x 690 x 1173	105	1	4.667 963

536

845

129

564 569

Flake ice makers with/without reservoir, air-cooled

Manufactured according to DIN ISO 9001. For preparing solid and saturated ice flakes of hygienic, 0.5 °C cold ice. With eletronic control of the ice temperature. The units have a stainless steel housing and an antimicrobial coated interior. Air-cooled versions, with cleaning indication.

- MF models without reservoir (please order separately).
- 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 (can be up to 1.70 m higher).
 Distance to drain outlet up to 15 meters. Drain can be placed up to 1.70 higher.
- 2 year warranty.

Scope of supply: Flake ice maker, 1 x scoop

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





9.580 016

1 9.580 010

1 9.580 049

9.580 045

Туре	Capacity	Depth	Width	Height	Output kg/24 hrs.	Rating	PK Cat. No.
	kg	mm	mm	mm	up to kg	W	
Ice flake maker AF 80	25	620	535	890	73	340	1 9.580 006 2
Ice flake maker AF 103	30	622	592	1078	120	550	1 9.580 040
Ice flake maker AF 124	40	605	950	872	122	510	1 9.580 041
Ice flake maker AF156	60	605	950	1083	160	590	1 9.580 042
Ice flake maker AF 206	60	605	950	1083	200	950	1 9.580 043
Ice flake maker EF 103	30	622	592	1078	120	550	1 9.580 045 3
Ice flake maker EF 124	40	605	950	872	122	510	1 9.580 046
Ice flake maker EF 156	60	605	950	1083	160	590	1 9.580 047
Ice flake maker EF 206	60	605	950	1083	200	950	1 9.580 048
Ice flake maker MF 26*		536	564	531	140	500	1 9.580 009

531

1048

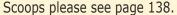
1048

Ice flake maker MF 36*

Reservoir SB 193 for MF 26/MF 36

Reservoir SB 393 for MF 26/MF 36





900

200

incl. cover adapter
* without reservoir

Bürkle

Campingaz

Campingaz

7. Heating and cooling technology

Cooling/Ice machines-Transport boxes



Dry Ice Machines SnowPack®

The dry ice machine SnowPack® produces dry ice tablets of -79 °C with 50 or 250 g weight within a short time. Suitable for all European siphon carbon dioxide cylinders with valve (W $21.80 \times 11/4$ " acc. to DIN 477-1, no. 6) without pressure regulator.

- Produces dry ice tablets at -79 °C with 50 or 250 g
- Operates without electricity
- Taint and odour free

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.

Gassing period (per tablet):

approx. 1 min

Tablets per 22 kg bottle (dependent on ambient temperature and pressure):

either 90 or 16 pieces approx.

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



Cooling Boxes, Isotherm Extreme

- Strong, high quality PU insulation
- Compact and robust cool boxes
- Cover can be locked with carrier bracket
- Rubber seal for airtight seal

Type Capacity		Internal dimensions (W x D x H)	External dimensions (W x D x H)	Weight	PK	Cat. No.
	I	mm	mm	g		
Isotherm Extreme	10	265 x 165 x 250	350 x 225 x 310	1400	1	9.031 821



3 Cooling Boxes, Icetime® Plus

- Strong, high quality PU insulation,
- Lockable lid, which clicks audibly when closing
- Handle for easy transport

Туре	Capacity	External dimensions (W x D x H)	Weight	PK	Cat. No.
	1	mm	g		
Icetime® Plus	26	407 x 313 x 424	2400	1	6.284 954
Icetime® Plus	30	410 x 310 x 460	2600	1	6.284 527



4 Cooling bag Fold'N Cool™

The cooler Fold'N Cool™ 30 L has a wide range of uses and can be laid flat after use. 1 large front pocket with zip, 2 carrying handles and hanging loop. Campingaz

- 100 % polyester with PU coating on the back
- Easy-to-clean inner material, food-free PEVA
- Isolation: high-performance EPE foam
- Dark blue/grey

Туре	Capacity	External dimensions (W x D x H)	Weight	PK	Cat. No.
	I	mm	g		
Fold'N Cool™	30	390 x 250 x 380	760	1	6.266 054

7. Heating and cooling technology Cooling/Transport boxes

Campingaz

6.802 089

Cool packs Freez'Pack®

- Composition: water, carboxymethyl cellulose, acticides and blue dye
- Suitable for food contact (non-toxic coolant)

1100

- Dishwasher safe

Freez'Pack® M30

Туре	Weight	Dimensions (W x D x H)	PK	Cat. No.
	g	mm		
Freez'Pack® 2 x M5	200	150 x 80 x 25	2	6.236 733
Freez'Pack® M10	370	180 x 95 x 30	1	6.262 337
Freez'Pack® M20	741	200 x 172 x 30	1	6.803 624



Cool packs 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:

255 x 210 x 30

- 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



H phrases: H302



9.695 000



Туре	Description	Dimensions (W x D x H)	Weight	PK	Cat. No.
		mm	g		
Icecatch®-Gel	with cooling gel	90 x 110 x 20	90	120	9.695 000 2
Icecatch®-Gel	with cooling gel	90 x 150 x 20	170	80	9.695 001
Icecatch®-Gel	with cooling gel	90 x 180 x 20	230	60	9.695 002
Icecatch®-Gel	with cooling gel	140 x 190 x 30	460	32	9.695 003
Icecatch®-Gel	with cooling gel	140 x 240 x 40	690	24	9.695 004
Icecatch®-Solid	with hard foam/cool medium	195 x 130 x 20	500	27	6.262 659
Icecatch®-Solid	with hard foam/cool medium	105 x 180 x 40	630	12	6.262 660
Icecatch®-Solid	with hard foam/cool medium	280 x 190 x 25	1100	12	9.695 006
Icecatch®-Solid Insulated	with hard foam/cool medium and isolation layer	195 x 130 x 23	500	24	9.695 008
Icecatch®-Solid Insulated	with hard foam/cool medium and isolation layer	280 x 190 x 30	1100	12	9.695 007
Icecatch®-Solid Insulated	with hard foam/cool medium and isolation layer	280 x 190 x 45	1700	8	9.695 009

Icecatch

7. Heating and cooling technology

Cooling/Transport boxes



Isolation Box Icecatch®, EPS

The standard thermo boxes made of EPS (Styrofoam®) for temperature sensitive products used in the Pharmaceutical and food industries which have to be stored and transported within a specific temperature spectrum. In combination with the Icecatch cooling elements the perfect solution for the transport of temperature sensitive products.

Specifications:

Colour: White Foam weight: 20 g/l

Capacity	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Wall thickness	PK	Cat. No.
L	mm	mm	mm		
3.1	200 x 115 x 135	260 x 170 x 190	30	1	9.695 030
3.1	200 x 115 x 135	260 x 170 x 190	30	5	6.290 853
9.1	275 x 195 x 170	335 x 255 x 230	30	1	9.695 031
9.1	275 x 195 x 170	335 x 255 x 230	30	5	6.290 854
12.8	305 x 210 x 200	365 x 270 x 250	30	1	9.695 032
18.8	300 x 250 x 250	400 x 350 x 350	50	1	9.695 033
26.3	420 x 305 x 205	480 x 365 x 255	30	1	9.695 034



Isolating box with lid, Neopor®

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.

Storopack Deutschland



Description	Capacity	External dimensions (W x D x H)	Internal dimensions (W x D x H)	PK	Cat. No.
	L	mm	mm		
Isolating box with lid	3.5	165 x 165 x 130	225 x 225 x 195	1	6.267 991
Isolating baffle ring	6.2	350 x 350 x 100	250 x 250 x 100	1	7.656 681
Isolating box with lid	12.5	350 x 350 x 300	250 x 250 x 200	1	7.656 680
Isolating box with lid	101.5	690 x 565 x 470	590 x 465 x 370	1	7.661 033

3 Euronormboxes, PP, stackable

Solid transparent plastic containers, odorless, cold- and heat-resistant, stable against the most acids and alkalis. Dishwasher safe, food safe. Two sizes $(40 \times 30 \text{ cm})$ and $60 \times 40 \text{ cm})$ available.

- Corresponding lids please order separately

- Suitable Trolley (Cat. No.: 9.301 502)

Туре	Capacity	External dimensions (W x D x H)	Colour	PK	Cat. No.
	I	mm			
Euronormbox	20	400 x 300 x 220	transparent	1	9.301 503
Lid	-	400 x 300 x 10	transparent	1	9.301 506
Euronormbox	46	600 x 400 x 220	transparent	1	9.301 504
Euronormbox	66	600 x 400 x 320	transparent	1	9.301 505
Lid	-	600 x 400 x 10	transparent	1	9.301 507
Euronormbox	20	400 x 300 x 220	grey	1	6.283 913
Lid	-	400 x 300 x 10	arev	1	6.283 914

Suitable accessories can be found in our online shop.



Cooling/Transport boxes

Ice buckets and pans PolarSafe™, PS

These polystyrene buckets and pans are produced with thick walls to provide rigidity and Argos Technologies strength, and yet are very lightweight. Perfectly suited for use with ice, dry ice and slurry ice. Even liquid nitrogen can be stored in these containers. All products provide excellent insulating properties to help keep temperature sensitive samples safely chilled. PolarSafe™ buckets come with snug fitting lids to minimize evaporation loss and to maximize cooling. They feature easy-grab knobs on each lid and prominent recessed handles to facilitate transport. The pans, without a lid feature unique gripping ridges and pour spouts to facilitate the disposal of cooling agents.



Colour	Capacity	Dimensions (I x w x h)	PK	Cat. No.
	L	mm		
black	2.5	276 x 308 x 114	1	6.281 562
blue	5.0	276 x 308 x 173	1	6.281 563
blue	4.0	305 x 229 x 127	1	6.281 565
	black blue	L black 2.5 blue 5.0	(I x w x h) L mm black 2.5 276 x 308 x 114 blue 5.0 276 x 308 x 173	(I x w x h) L mm black 2.5 276 x 308 x 114 1 blue 5.0 276 x 308 x 173 1

^{*} with lid

Cool Containers True North®, PU

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.





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

Insulated container Magic Touch 2™

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.

Bel-Art Products





- lightweight
- durable
- non-sweating
- impervious to moisture and odors
- able to with stand a wide temperature range: -196 $^{\circ}\mathrm{C}$ to 100 $^{\circ}\mathrm{C}$
- 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

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







Bel-Art Products

7. Heating and cooling technology

Cooling/Transport boxes



9,401 090

Cryo-Safe™ Coolers

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



9.401 094

For tubes	Dimensions (I x w x h)	Array	Temperature- maintained	PK Cat. No.
ml	mm			
0.5 ml, 1.5 ml	145 x 100 x 95	12	≤ 0 °C for 2.5 h	1 9.401 090
0.5 ml, 1.5 ml, 2.0 ml	145 x 100 x 95	12	≤ -15 °C for 1 h	1 9.401 091
15 ml	197 x 140 x 190	12	\leq 0 °C for 3 h	1 9.401 092
0.5 ml, 1.5 ml	243 x 157 x 146	32	\leq 0 °C for 3 h	1 9.401 093
0.5 ml, 1.5 ml, 2.0 ml	243 x 157 x 146	32	≤ -15 °C for 1.5 h	1 9.401 094 2



Labtop Cooler Nalgene™, Type 5115, 5116, DS5116

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 0.5 ml microtubes.

Thermo Scientific

BRAND

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



4 Mini coolers, PC

Mini coolers are designed to protect a wide range of solutions (enzymes, DNA, RNA, cell suspensions) by helping to maintain freezer temperatures on the lab bench. Durable polycarbonate filled with non-toxic gel.

Mini coolers hold twelve 0.5 ml to 2.0 ml tubes.

Colour	Temperature- maintained on lab bench	PK	Cat. No.
red	0 °C, up to 60 min	1	6.802 253
yellow	-20 °C up to 60 min	1	7.300 442
white	-70 °C up to 45 min	1	7.090 437

Cooling Block Systems, FreezeBox™

Blue. FreezeBox™ is a new, energy-saving, environmentally friendly and safe cooling equipment, without additives. It does not require electricity (except for pre-cooling the cores in the freezer) and no ice for low-temperature cooling of biological samples. The system can be used ice-free, is lightweight, easy to transport and ideal for the collection and storage of biological samples. It can be combined with interchangeable cores and different tube modules. Cooling cores can be tempered in a refrigerator or freezer and inserted into the FreezeBox™. For operation with dry ice, leave out the cooling core and fill with 200 g dry ice instead.

- For use with cooling core, ice or dry ice
- Easy to clean and disinfect
- Durable, suitable for frequent use
- Easy to mount

Туре	Description	Dimensions	PK	Cat. No.
		(W x D x H)		
		mm		
FreezeBox™	with cooling core, -0.5 °C 4 °C and CM-01-module	152 x 170 x 123	1	4.665 848
FreezeBox™	with cooling core, -0.5 °C 4 °C and CM-02-module	152 x 170 x 123	1	4.665 856
FreezeBox™	with cooling core, -0.5 °C 4 °C and CM-03-module	152 x 170 x 123	1	4.665 857
FreezeBox™	with cooling core, -0.5 °C 4 °C and CM-04-module	152 x 170 x 123	1	4.665 858
FreezeBox™	with freeze core, -18 °C4 °C and CM-01-module	152 x 170 x 123	1	4.665 859
FreezeBox™	with freeze core, -18 °C4 °C and CM-02-module	152 x 170 x 123	1	4.665 860
FreezeBox™	with freeze core, -18 °C4 °C and CM-03-module	152 x 170 x 123	1	4.665 861
FreezeBox™	with freeze core, -18 °C4 °C and CM-04-module	152 x 170 x 123	1	4.665 862
FreezeBox™	Empty FreezeBox™	152 x 170 x 123	1	4.665 849
Cooling core	for -0.5 °C 4 °C	105 x 100 x 26	1	4.665 850
Freeze core	for -18 °C4 °C	105 x 100 x 26	1	4.665 851
CM-01-module	for 30 x 2 ml tubes, Ø 12,6	119 x 101 x 38	1	4.665 852
CM-02-module	for 48 x 1.5 ml tubes, Ø 11	119 x 101 x 38	1	4.665 853
CM-03-module	for 30 x 5 ml tubes, Ø 13,5	119 x 101 x 38	1	4.665 854
CM-04-module	for 96 PCR-tubes, Ø 7	119 x 101 x 38	1	4.665 855

Freezing Aid for Cell Cultures, FreezerCell™

FreezerCellTM can be used for a variety of cell types, including stem cells, primary cells, cell lines and yeasts. The FreezerCellTM does not require any additives and only needs to be placed in an ultra deep freezer and the cooling runs at -1°C per minute. Fill the freezing aid with the cryotubes and freeze for approx. 3 hours at -80 °C.

Then the samples are readyto transfer to a nitrogen tank. This gentle method ensures a high survival rate of the cells during the freezing process.

- No pre-cooling necessary
- Consistent temperature distribution, even with partial loading
- Lid can be opened easily



4.665 863



4 6 6 5	
4.665	865

Туре	Dimensions (W x D x H) mm	PK Cat. No.
Hexagon shape for 12 tubes	108 x 108 x 100	1 4.665 863 2
Square shape for 12 tubes	117 x 117 x 100	1 4.665 865 3

4 Nalgene Freezing container Mr. Frosty, PC

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

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



E & OE. 795

Thermo Scientific

Temperature regulators/Heating-Thermostats



Immersion circulator

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.

PolyScience

- Temperature stability ±0.07 °C
- Minimum working depth 7.5 inch/19 cm
- Large LCD-display
- Display resolution 0.1 °C
- Displays actual and set point temperature simultaneously
- Integrated pump and heater protection
- Integrated over-temperature protection
- Low liquid level protection
- Included clamp for straight and curved tank walls
- Maximum pressure 0.12 bar/1.8 psi with a maximum pressure flow rate of 11.9 l/min

Туре	Dimensions	Pump	Temp.	PK	Cat. No.
	(W x D x H)	max.	range		
	mm	I/min / bar	max. °C		
MX	109 x 97 x 358	11.9 / 0.12	135	1	6.281 081



2 Open Tanks

For use with Immersion circulator LX and MX.

PolyScience

PolyScience

Filling volume	Dimensions (W x D x H)	Bath opening	Bath tank depth	Temp. range	Material	PK	Cat. No.
L	mm	mm	mm	max. °C			
8	302 x 174 x 232	284 x 156	203	85	Polycarbonate	1	6.281 082
11	406 x 174 x 232	389 x 156	203	85	Polycarbonate	1	4.658 653
14	513 x 174 x 232	493 x 156	203	85	Polycarbonate	1	4.658 654
17	351 x 324 x 232	312 x 305	203	85	Polycarbonate	1	4.658 655
23	455 x 324 x 232	417 x 305	203	85	Polycarbonate	1	4.658 656
28	561 x 324 x 232	523 x 305	203	85	Polycarbonate	1	4.658 657



Open Bath Systems, Stainless Steel

An economical alternative to integrated heating baths for liquid temperatures up to 150 °C. Controller bridge rests securely on the bath, yet is easily removed for tank cleaning.

Generous bath opening provides ready access to samples and the included bath cover improves stability.

- Working temperatures from ambient +10° up to 150 °C

- Advanced Programmable, Advanced Digital or MX Temperature Controller
- 6, 10, 20 or 28 liter reservoir
- DuraTop™ Chemical Resistant Bridge, Swivel 180™ Rotating Controller
- (on Advanced Programmable and Advanced Digital models)
- Lidded opening for optional cooling coil (10, 20 and 28 liter models)
- External circulation capability
- Complies with DIN 12876-1 Class I safety requirements for use with non-flammable liquids
- Incl. bath cover

Туре	Filling volume	Dimensions (W x D x H)	Bath opening	Bath tank depth	PK	Cat. No.
	L	mm	mm	mm		
MX	6	340 x 206 x 406	100 x 110	152	1	4.658 641
MX	10	353 x 342 x 406	99 x 255	152	1	4.658 644
MX	20	531 x 342 x 406	264 x 228	152	1	4.658 647
MX	28	531 x 342 x 457	257 x 214	203	1	4.658 650
AD	6	340 x 206 x 378	100 x 110	152	1	4.658 640
AD	10	353 x 342 x 378	99 x 255	152	1	4.658 643
AD	20	531 x 342 x 378	264 x 228	152	1	4.658 646
AD	28	531 x 342 x 427	257 x 214	203	1	4.658 649
AP	6	340 x 206 x 378	100 x 110	152	1	4.658 639
AP	10	353 x 342 x 378	99 x 255	152	1	4.658 642
AP	20	531 x 342 x 378	264 x 228	152	1	4.658 645
AP	28	531 x 342 x 427	257 x 214	203	1	4.658 648

796

YOUR FORMULA FOR SUCCESS





CHILLERS AND COOLERS

GENERAL PURPOSE WATER BATHS

CIRCULATING BATHS

APPLICATION-SPECIFIC BATHS







@polysciencelab

polyscience.com

QUALITY RELIABILITY DURABILITY VALUE

Temperature regulators/Heating-Thermostats



1 Refrigerated/heated circulators

The circulators are available in 4 bath sizes combined with 4 different temperature controllers. A large, 180° freely rotatable display allows good visibility and control of the values set from different angles.

PolyScience

PolvScience

Grant

- Temperature range -40 to 200 °C
- Reservoir sizes ranging from 7 liters to 45 liters
- Working temperature from ambient +10 °C to 200 °C
- Pressure and suction pump (selected models)
- Incl. lid and LidDock™ lid holder
- DuraTop™, precision-molded phenolic bath top resists laboratory chemicals
- Large bath opening and drain
- Swivel 180™, display with a 180° viewing radius
- Easy hook-up of fluid connections
- Intuitive setup and operation, featuring multi-language help and screen prompts
- Simplified setup and maintenance
- Class III safety, according to DIN 12876-1 Class III standards for use with flammable liquids (selected models)



Heated Circulating Baths with MX Temperature Controller

- Working Temperature: Ambient +10° to +135 °C

- Temperature Stability: ±0.07 °C

- Pump: 1-speed

- Pump Pressure (max.): 1.8 psi (0.12 bar)

- External Circulation: Closed loop

Bath capacity	External dimensions (W x D x H)	Pressure pump max.	Heating capacity	Bath opening	Bath tank depth	PK	Cat. No.
L	mm	L/min bar	kW	mm	mm		
7	499 x 221 x 437	11.9/0.12	1.1	157 x 142	127	1	6.281 071
15	569 x 368 x 452	11.9/0.12	1.1	212 x 276	140	1	7.920 413
20	610 x 419 x 452	11.9/0.12	1.1	250 x 316	140	1	4.658 635



Thermostatic controllers Optima™ T100/TC120

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 35 mm for rectangular tanks, 30 mm for circular tanks (300 mm diameter), and a capacity of up to 50 L.

Models with clamps available on request.

Specifications

Temperature range with stainless steel tank

0 °C to +100 °C* T100: -15 °C to +120 °C* TC120: ±0.05 °C/±0.1 °C Stability/Uniformity (DIN 12876) at 70 °C: Setting resolution: 0.1 °C Display: 4 digit LED No. of pre-set temperatures: Recalibration points: Heating power (230 V): 1.3 kW Power supply (230 V/50-60 Hz): 1.4 kW

TC120 only:

Timer: 1 to 6000 mins
Pump max. pressure: 210 mbar
Flow rate max.: 16 l/min

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

Temperature regulators/Heating-Thermostats

Grant

Thermostatic controllers Optima™ TX150/TXF200

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 35 mm for rectangular tanks, 30 mm for circular tanks (300 mm diameter), and a capacity of up to 50 L.

Models with clamps available on request.



Specifications

Temperature range with stainless steel tank TX150: TXF200:

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**

1 min to 99 hrs 59 mins Timer:

No. of pre-set temperatures: Recalibration points: Heating power (230 V): 1.9 kW Power supply (230 V/50-60 Hz): 2.0 kW USB and RS232 Interface:

Pump max. pressure

TX150: 310 mbar TXF200: 530 mbar

Flow rate max.

TX150: 18 l/min

TXF200: 22 l/min (adjustable)

Туре	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

-15 °C to 150 °C*

-15 °C to 200 °C*

Accessories for water baths Optima™ series

Drain syphon SY1: For the rapid draining of baths.

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

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.

C1G refrigerated cooler:

Above 100 °C a lid must be used.

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 -15 °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.

Туре	PK	Cat. No.
Drain syphon SY1	1	9.699 096
Heat exchange coil CW5	1	9.920 764
PP spheres PS20	300	6.239 419 2
Refrigerated cooler C1G	1	9.920 765
Refrigerated cooler C2G	1	9.920 766





6.239 419

Temperature regulators/Heating-Thermostats



Stirred thermostatic baths Optima™ series

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

Grant

- 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.

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.

Туре	Capacity	External dimensions (W x D x H)	Working space W x D x H	Temp. range	Material	PK	Cat. No.
	1	mm	mm	max. °C			
T100-P5	5	235 x 325 x 380	150 x 120 x 155	amb. +15 +99	plastic	1	9.699 640
T100-P12	12	350 x 415 x 380	280 x 210 x 155	amb. +5 +99	plastic	1	9.699 641
T100-P18	18	350 x 600 x 380	375 x 280 x 155	amb. +5 +99	plastic	1	9.699 642
T100-ST5	5	180 x 330 x 395	150 x 150 x 150	amb. +15 +100	stainless steel	1	9.699 643
T100-ST12	12	330 x 360 x 415	300 x 205 x 150	amb. +5 +100 *	stainless steel	1	9.699 644
T100-ST18	18	330 x 540 x 415	300 x 385 x 150	amb. +5 +100 *	stainless steel	1	9,699 645
T100-ST26	26	330 x 540 x 465	300 x 385 x 200	amb. +5 +100 *	stainless steel	1	9.699 646
T100-ST38	38	330 x 730 x 460	300 x 575 x 200	amb. +5 +100 *	stainless steel	1	9,699 647
TC120-P5	5	235 x 325 x 380	150 x 120 x 155	amb. +15 +99	plastic	1	9,699 648
TC120-P12	12	350 x 415 x 380	280 x 210 x 155	amb. +5 +99	plastic	1	9,699 649
TC120-P18	18	350 x 600 x 380	375 x 280 x 155	amb. +5 +99	plastic	1	9,699 650
TC120-ST5	5	180 x 330 x 395	150 x 150 x 150	amb. +15 +120 *	stainless steel	1	9.699 651
TC120-ST12	12	330 x 360 x 415	300 x 205 x 150	amb. +5 +120 *	stainless steel	1	9.699 652
TC120-ST18	18	330 x 540 x 415	300 x 385 x 150	amb. +5 +120 *	stainless steel	1	9.699 653
TC120-ST26	26	330 x 540 x 465	300 x 385 x 200	amb. +5 +120 * **	stainless steel	1	9.699 654
TC120-ST38	38	330 x 730 x 460	300 x 575 x 200	amb. +5 +120 * **	stainless steel	1	9.699 655
TX150-P5	5	235 x 325 x 380	150 x 120 x 155	amb. +15 +99	plastic	1	9.699 656
TX150-P12	12	350 x 415 x 380	280 x 210 x 155	amb. +5 +99	plastic	1	9.699 657
TX150-P18	18	350 x 600 x 380	375 x 280 x 155	amb. +5 +99	plastic	1	9.699 658
TX150-ST5	5	180 x 330 x 395	150 x 150 x 150	amb. +15 +150 *	stainless steel	1	9.699 659
TX150-ST12	12	330 x 360 x 415	300 x 205 x 150	amb. +5 +150 *	stainless steel	1	9,699 660
TX150-ST18	18	330 x 540 x 415	300 x 385 x 150	amb. +5 +150 *	stainless steel	1	9.699 661
TX150-ST26	26	330 x 540 x 465	300 x 385 x 200	amb. +5 +150 * **	stainless steel	1	9.699 662
TX150-ST38	38	330 x 730 x 460	300 x 575 x 200	amb. +5 +150 * **	stainless steel	1	9.699 663
TXF200-P5	5	235 x 325 x 380	150 x 120 x 155	amb. +15 +99	plastic	1	9.699 664
TXF200-P12	12	350 x 415 x 380	280 x 210 x 155	amb. +5 +99	plastic	1	
TXF200-P18	18	350 x 600 x 380	375 x 280 x 155	amb. +5 +99	plastic	1	9.699 666
TXF200-ST5	5	180 x 330 x 395	150 x 150 x 150	amb. +15 +200 *	stainless steel	1	9.699 667
TXF200-ST12	12	330 x 360 x 415	300 x 205 x 150	amb. +5 +200 *	stainless steel	1	9.699 668
TXF200-ST18	18	330 x 540 x 415	300 x 385 x 150	amb. +5 +200 *	stainless steel	1	9.699 669
TXF200-ST26	26	330 x 540 x 465	300 x 385 x 200	amb. +5 +200 * **	stainless steel	1	9.699 670
TXF200-ST38	38	330 x 730 x 460	300 x 575 x 200	amb. +5 +200	stainless steel	- 1	9.699 671

^{*} Temperature range can be extended to 0 °C with accessory cooling of flow cooler 9.920 765.

**Temperature range can be extended to -15 °C with accessory cooling of flow cooler 9.920 766.



Lids for water baths Optima™ series

Grant



9.905 724

Туре	For	For Description Material		PK Cat. No.
PL 5	bath P 5	Flat	Stainless steel	1 9.699 085
PL 12	bath P 12	Flat	Plastic	1 9.699 086 2
PL 18	bath P 18	Flat	Plastic	1 9.699 087
STL5	bath ST5	Flat	Stainless steel	1 9.905 723
STL12	bath ST12	Gabled with hinge	Stainless steel	1 9.905 724 3
STL26	bath ST26 and ST18	Gabled with hinge	Stainless steel	1 9.905 725
STL38	bath ST38	Gabled with hinge	Stainless steel	1 9.905 726

Temperature regulators/Heating-Thermostats

Baths and Circulators

The Huber circulators are split into two product lines, the Compatible Control models and the simpler KISS 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 20 mA or 0 to 10 V, standby signal and programmable alarm.

Circulators using the KISS Controller

The functions of models with the low price KISS controller concentrate on the essentials. KISS 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.

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
- Large, bright OLED display
- Simple operation via a plain text menu
- RS232 and USB Interfaces
- Safety class 3 (FL) to DIN 12876
- Internal and external temperature control

Huber



Immersion circulators KISS E and CC-E

Immersion circulators are the basis of many combinations of polycarbonate and Huber stainless steel baths. Together with a cooling bath it is possible to get exact and reproducable temperatures down to -30 °C. All models are equipped with a powerful suction pressure pump and comply with safety class III (FL) for use with flammable liquids. Pump adapters for external tempering and cooling coils for cooling water connection are available as accessories.

Temp. control range °C: (-30) 25 to 200 °C

FL, III Safety class: Heating capacity kW: 2 kW

suction max. (CC-E): 22 I/min/0.4 bar suction max. (CC-E xd): 17 l/min/0.25 bar suction max. (KISS E): 10.5 I/min/0.17 bar

Immersion depth

(CC-E, KISS E): 150 mm (CC-E xd): 195 mm

Туре	Pump max.	Dimensions (W x D x H)	Temp. Stability	PK	Cat. No.
	I/min / bar	mm	K		
CC-E	27 / 0.7	132 x 159 x 315	0,01*	1	9.859 201
CC-E xd	22 / 0.4	132 x 159 x 360	0,01	1	6.313 816
KISS E	14 / 0.25	132 x 163 x 312	0,05*	1	6.272 332







Huber

Huber

7. Heating and cooling technology

Temperature regulators/Heating-Thermostats



Thermostatic baths with polycarbonate tanks

The transparent polycarbonate baths are suitable for use up to $100\,^{\circ}\text{C}$. 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 KISS E: 0.05 K CC-E: 0.02 K Safety class: FL, III Bath depth: 150 mm

Туре	Bath capacity	Pressure pump max.	Dimensions (W x D x H)	Bath opening	PK	Cat. No.
	L	L/min bar	mm	mm		
CC-106A	6	27 / 0,7	147 x 307 x 330	130 x 110	1	9.859 203
KISS-106A	6	14 / 0,25	147 x 307 x 330	130 x 110	1	6.272 334
CC-108A	8	27 / 0,7	147 x 407 x 330	130 x 210	1	9.859 204
KISS-108A	8	14 / 0,25	147 x 407 x 330	130 x 210	1	6.272 335
CC-110A	10	27 / 0,7	147 x 507 x 330	130 x 310	1	9.859 205
KISS-110A	10	14 / 0,25	147 x 507 x 330	130 x 310	1	6.272 336
CC-112A	12	27 / 0,7	333 x 360 x 335	275 x 161	1	9.859 206
KISS-112A	12	14 / 0,25	333 x 360 x 335	275 x 161	1	6.272 337
CC-118A	18	27 / 0,7	333 x 520 x 335	275 x 321	1	9.859 207
KISS-118A	18	14 / 0,25	333 x 520 x 335	275 x 321	1	6.272 338



Heating circulators with stainless steel baths

The insulated stainless steel baths are suitable for use up to 200°C. All models have a bridge-mounted 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:
 0.02 K

 KISS models:
 0.05 K

 Max. temp.:
 200 °C

 Safety class:
 FL, III

Туре	Bath capacity	Pressure pump max.	Dimensions (W x D x H)	Bath tank depth	Bath opening	PK	Cat. No.
	L	L/min bar	mm	mm	mm		
CC-208B	8.5	27 / 0.7	290 x 350 x 375	150	230 x 127	1	9.859 212
KISS-208B	8.5	14 / 0.25	290 x 350 x 375	150	230 x 127	1	6.272 343
CC-212B	12	27 / 0.7	350 x 375 x 375	150	290 x 152	1	9.859 208
KISS-212B	12	14 / 0.25	350 x 375 x 375	150	290 x 152	1	6.272 342
CC-215B	15	27 / 0.7	350 x 375 x 425	200	290 x 152	1	9.859 209
KISS-215B	15	14 / 0.25	350 x 375 x 425	200	290 x 152	1	6.272 341
CC-220B	20	27 / 0.7	350 x 555 x 375	150	290 x 329	1	9.859 210
KISS-220B	20	14 / 0.25	350 x 555 x 375	150	290 x 329	1	6.272 340
CC-225B	25	27 / 0.7	350 x 555 x 425	200	290 x 329	1	9.859 211
KISS-225B	25	14 / 0.25	350 x 555 x 425	200	290 x 329	1	6.272 339



OUR POWER DWARFS FOR YOUR LABORATORY

Our smallest – Stars in every laboratory



Inspired by temperature

Our smallest ones are convincing as an inexpensive and environmentally friendly solution for numerous laboratory applications. The units require little space on the laboratory bench and are therefore ideally suited for high-precision temperature control of research reactors, reactor blocks, vapour barriers, vacuum pumps, rotary evaporators or heat exchangers.







Temperature regulators/Heating-Thermostats





1 Heating circulators

Good things come in small packages! Thanks to their low bath volumes the models CC-104A und KISS-104A (with polycarbonate bath) as well as the CC-202C and KISS-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 KISS models. Models CC-202C and KISS-202C are fitted with an integrated cooling coil as standard. With the models CC-104A and KISS-104A the cooling coil is an optional extra.

Temperature range CC-104A/KISS-104A:

CC-104A/KISS-104A: (15) 25 to 100 °C CC-202C/KISS-202C: (-30) 45 to 200 °C

Temp. Stability to DIN 12876

CC models: 0.02 K
KISS models: 0.05 K
Safety class: FL, III
Bath depth: 150 mm
Heating capacity: 2kW

Туре	Suction pump cap.	Pressure pump max.	Dimensions (W x D x H)	Bath opening	PK	Cat. No.
	L/min bar	L/min bar	mm	mm		
CC-104A	22/0.4	27/0.7	147 x 235 x 330	Ø 25	1	9.859 213
CC-202C	22/0.4	27/0.7	178 x 260 x 355	Ø 25	1	9.859 220
KISS-202C	10.5/0.17	14/0.25	178 x 260 x 355	Ø 25	1	6.272 344

2 Heating bath circulators

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/KISS-205B: (20) 45 ... 200 °C CC-304B/CC-308B/CC-315B: 28 ... 300 °C Safety class: FL, III

Stability to DIN 12876

CC-205B/CC-304B/CC-308B/CC-315B: 0.02 K KISS-205B: 0.05 K

Туре	Bath capacity	Suction pump cap.	Pressure pump max.	Dimensions (W x D x H)	Heating capacity	PK	Cat. No.
	L	L/min bar	L/min bar	mm	kW		
CC-205B	5.0	22 / 0.4	27 / 0.7	178 x 337 x 355	2.0	1	9.859 221
KISS-205B	5.0	10.5 / 0.17	14 / 0.25	178 x 337 x 355	2.0	1	6.272 345
CC-304B	5.0	18.5 / 0.4	25 / 0.7	210 x 335 x 392	3.0	1	9.859 222
CC-308B	8.5 / 5.2*	18.5 / 0.4	25 / 0.7	242 x 404 x 392	3.0	1	9.859 223
CC-315B	15 / 8.5*	18.5 / 0.4	25 / 0.7	335 x 382 x 433	3.0 / 4.0	1	9.859 224

*using displacement insert



804 E & OE.

Huber

Huber

Temperature regulators/Heating-Thermostats

JULABO

NEW

JULABO

Thermoregulators CORIO™

The CORIO™ C Immersion Circulator is the basic model of the CORIO™ circulator portfolio. The bath attachment clamp is included in delivery and facilitates mounting of the circulator on any bath tank up to 30 liters. With a few simple steps you can install a pump set onto the CORIO™ CD Immersion Circulator. In no time at all, your circulator is ready for temperature control of an external application.



- For internal standard applications
- Immersion depth: 7.5 to 16.5 cm
- Bright, white, easy to read display
- Whisper quiet
- Easy operation

CORIO™ C

- For bath tank up to 30 liters
- Class I (NFL) according to DIN 12876-1
- Circulation capacity 6 l/min at 0.1 bar

CORIO™ CD

- For bath tank up to 50 liters
- Pump change-over between internal and external circulation
- USB interface
- Class III (FL) according to DIN 12876-1
- Circulation capacity 15 l/min at 0.35 bar

Delivery without bath please order separately.

To adapt the CORIO™ Immersion Circulator to your individual application we offer a comprehensive range of accessories (racks, bath lids, and more).

Туре	Heating capacity	Working Temp. range	Temp. stability	PK	Cat. No.
	kW	°C	± °C		
CORIO™ C	2	+20 +100	0.03	1	7.673 349
CORIO™ CD	2	+20 +150	0.03	1	4.658 066

Pump set for CORIO™ CD with connectors M16x1, Art. No. 4.658 027

Thermoregulators CORIO™ CP

CORIO CP thermoregulators are capable to control the temperature of external applications in combination with an optional pump set. Suitable for bath vessels with a volume of up to 50 l.

- For internal and external applications (accessories required)
- Bright, white, easily visible display, even from a distance
- Very quiet
- Easy operation
- Low-level warning system
- Pump switch for internal and external circulation
- Powerful, continously variable pump
- USB connection
- RS232 interface
- Class III (FL) according to DIN 12876-1

Scope of supply: Thermoregulator, mains power cable, bath attachment clamp **Specifications**

Setting accuracy: 0.01 °C Pump output: 8 ... 27 l/min Pump pressure: 0.1 ... 0.7 bar Immersion depth: 75 ... 165 mm Max. viscosity: 50 cSt 0 ... 999 min Timer: 5 ... 40 °C Permissible ambient temperature: Dimensions (W x D x H): 132 x 160 x 362 mm

Weight: 2.5 kg 230 V/50 Hz Power supply:

Туре	Working Temp. range	Temp. stability	Heating capacity	PK	Cat. No.
	°C	± °C	kW		
СР	20 200	0.02	2	1	4.669 404







JULABO

7. Heating and cooling technology

Temperature regulators/Heating-Thermostats



Thermoregulators DYNEO™ DD

For internal and external applications. The thermoregulators with maximum flexibility can be mounted with the sturdy bath clamp to any bath up to 50 liters. Equipped with USB interface, also available with optional analogue (extra code A) or RS232 (extra code D) interface.

- Easy switching between internal and external circulation (optional pump set, Cat. No. 4.658 027)
- Large colour TFT Display
- Easy to operate via central controller
- Integrated programmer for 8 x 60 program steps
- Class III (FL) acc. to DIN 12876-1
- Continuously adjustable, powerful pressure pump
- External Pt100 sensor connection
- Installation cooling coil for counter-cooling, Cat No. 4.658 026, available separately

Bath clamp included.

Specifications

Operating temperature range: 20...200 °C
Temperature stability: 0.01 °C
Heating capacity: 2 kW
Flow rate: 8 ... 27 l/min
Pump capacity: 0.1 ... 0.7 bar
Dimensions (W x D x H): 130 x 160 x 360 mm

Weight: 2.5 kg

Power supply: 200-230 V, 50/60 Hz

Туре	PK	Cat. No.
DD	1	4.663 220
DD.A	1	4.663 233
DD.D	1	4.663 246



Bridge circulators MAGIO MS and MX

NEW JULABO

Thanks to the adjustable stainless steel bridge the thermostats can be used with bath tanks up to a filling volume of 100 litres and bath widths from 33 to 68 cm.

- Simple control of complex applications
- Infinitely adjustable, extremely powerful pressure and suction pump
- Large, high-resolution TFT touch display with multilingual user interface
- Medium-contacting parts made of stainless steel
- Integrated programmer
- External Pt100 connection
- USB interface
- RS232 interface
- Ethernet interface
- Analogue interfaces (optionally)
- Classification III according to DIN 12876-1

MS-Z // MX-Z Specifications: ±0.01 °C Temperature stability: Flow rate: 16 ... 31 l/min Pump pressure: 0.24 ... 0.92 bar Suction pressure: 0.03 ... 0.4 bar 150 mm // 200 mm Immersion depth: Heating capacity: 2000 W // 3000 W 5 ... 40 °C Permissible ambient temperature: 230 V/50 ... 60 Hz Power supply:

Туре	Dimensions	Temp.	Heating	PK	Cat. No.
	(W x D x H)	range	power		
	mm	°C	W		
MS-Z	340 x 190 x 360	20 300	2000	1	4.678 302
MX-Z	340 x 190 x 410	20 300	3000	1	4.678 309

Temperature regulators/Heating-Thermostats

Heating circulators MAGIO MS and MX

For precise temperature control of internal and external applications from 3 to 26 litres.

- Simple control of complex applications
- Infinitely adjustable, extremely powerful pressure and suction pump
- Large, high-resolution TFT touch display with multilingual user interface
- Medium-contacting parts made of stainless steel
- Integrated programmer
- External Pt100 connection
- USB interface

Power supply:

- RS232 interface
- Ethernet interface
- Analogue interfaces (optionally)
- Classification III according to DIN 12876-1
- High quality thermal insulation of the bath tanks
- Integrated drain cock for easy and safe emptying

Specifications: Temperature stability: Flow rate: Pump pressure: Suction pressure: Heating capacity: Permissible ambient temperature:



Туре	Filling volume	Dimensions (W x D x H)	Bath opening	Bath tank depth	Temp. range	Heating power	PK	Cat. No.
	L	mm	mm	mm	°C	W		
MS-BC4	3 4.5	230 x 410 x 420	130 x 150	150	20 300	2000	1	4.678 303
MX-BC6	4.5 6	240 x 440 x 470	130 x 150	200	20 300	3000	1	4.678 310
MX-BC12	8.5 12	330 x 490 x 470	220 x 150	200	20 300	3000	1	4.678 311
MX-BC26	19 26	390 x 620 x 480	260 x 350	200	20 300	3000	1	4.678 312

MS-BC // MX-BC

16 ... 31 l/min 0.24 ... 0.92 bar

0.03 ... 0.4 bar

5 ... 40 °C

2000 W // 3000 W

230 V/50 ... 60 Hz

±0.01 °C

Accessories for heating thermostats CORIO™

Transparent bath tanks and stainless steel bath tank for CORIO™

JULABO

For Type	Description	Internal dimensions (W x D x H)	External dimensions (W x D x H)	PK	Cat. No.
		mm	mm		
C,CD	Transparent bath tank BT5, up to +100 °C	150 x 300 x 150	220 x 370 x 160	1	4.658 013
C,CD	Transparent bath tank BT9, up to +100 °C	240 x 300 x 150	310 x 370 x 160	1	4.658 014
C,CD	Transparent bath tank BT19, up to +100 °C	300 x 500 x 150	370 x 580 x 160	1	4.658 015
C,CD	Transparent bath tank BT27, up to +100 °C	300 x 500 x 200	370 x 580 x 210	1	4.658 016
C,CD	Stainless steel bath tank B5, up to +150 °C	150 x 300 x 150	220 x 370 x 200	1	4.658 017
C,CD	Stainless steel bath tank B13, up to +150 °C	300 x 320 x 150	370 x 400 x 200	1	4.658 018
C,CD	Stainless steel bath tank B17, up to +150 °C	300 x 320 x 200	370 x 400 x 250	1	4.658 019
C,CD	Stainless steel bath tank B19, up to +150 °C	300 x 500 x 150	370 x 580 x 200	1	4.658 020
C,CD	Stainless steel bath tank B27, up to +150 °C	300 x 500 x 200	370 x 580 x 250	1	4.658 021
C,CD	Stainless steel bath tank B33, up to +150 °C	830 x 300 x 150	900 x 360 x 200	1	4.658 022
C,CD	Stainless steel bath tank B39, up to +150 °C	300 x 500 x 300	340 x 580 x 350	1	4.658 023





Temperature regulators/Heating-Thermostats



Circulator Baths, CORIO™ C with transparent bath tanks

CORIO $^{\text{TM}}$ C Open Heating Bath Circulators for internal temperature applications with transparent bath tanks for working temperatures from 20 °C to 100 °C.

JULABO

- For internal applications
- Bright, white, easy to read display
- Whisper quiet

Working temperature range: $20 \dots 100$ °C Temperature stability: ± 0.03 °C Heating capacity: 2 kW Pump capacity: 6 l/min/0.1 bar

Туре	Filling volume	Dimensions (W x D x H)	Bath opening	Bath tank depth	РК	Cat. No.
	L	mm	mm	mm		
CORIO™ C-BT5	3.5 - 5	230 x 380 x 380	150 x 150	150	1	4.657 985
CORIO™ C-BT9	6 - 9	320 x 380 x 380	230 x 150	150	1	4.657 986
CORIO™ C-BT19	14 - 19	380 x 580 x 380	300 x 350	150	1	4.657 987
CORIO™ C-BT27	20 - 27	380 x 580 x 430	300 x 350	200	1	4.657 988



Circulator Baths, CORIO™ C with stainless steel bath tanks

CORIO $^{\text{TM}}$ C Open Heating Bath Circulators for internal temperature applications with stainless steel bath tanks for working temperatures from +20 °C to +100 °C, complete set with bath tanks.

JULABO

- For internal applications
- Bright, white, easy to read display
- Whisper quiet
- Integrated drain screw (except for B5)

Working temperature range: 20 ... 100 °C
Temperature stability: ±0.03 °C
Heating capacity: 2 kW
Flow rate: 6 l/min
Pressure: 0.1 bar

Туре	Filling volume	Dimensions (W x D x H)	Bath opening	Bath tank depth	PK	Cat. No.
	L	mm	mm	mm		
CORIO™ C-B5	3.5 - 5	230 x 380 x 410	150 x 150	150	1	4.657 989
CORIO™ C-B13	9 - 13	380 x 400 x 420	300 x 180	150	1	4.657 990
CORIO™ C-B17	13 - 17	380 x 400 x 470	300 x 180	200	1	4.657 991
CORIO™ C-B19	14 - 19	380 x 580 x 420	300 x 350	150	1	4.657 992
CORIO™ C-B27	17 - 27	380 x 580 x 470	300 x 350	200	1	4.657 993



Circulator baths, CORIO™ CD with transparent bath tanks

CORIOTM CD Open Heating Bath Circulators for internal and external temperature applications with transparent bath tanks for working temperatures from +20 °C to +100 °C. The Open Heating Bath Circulator of the new CORIOTM series feature durable, high-quality transparent bath tanks and pump connections.

JULABO

- For internal and external applications
- Bright, white, easy to read display
- Very quiet
- Pump change-over between internal and external circulation
- USB connection
- Class III (FL) according to DIN 12876-1

Working temperature range: 20 ... 100 °C
Temperature stability ±0.03 °C
Heating capacity: 2 kW
Flow rate: 15 l/min
Pressure: 0.35 bar

Туре	Filling volume	Dimensions (W x D x H)	Bath opening	Bath tank depth	PK	Cat. No.
	L	mm	mm	mm		
CORIO™ CD-BT5	3.5 - 5	230 x 380 x 380	150 x 150	150	1	4.657 994
CORIO™ CD-BT19	14 - 19	380 x 580 x 380	300 x 350	150	1	4.657 995
CORIO™ CD-BT27	20 - 27	380 x 580 x 430	300 x 350	200	1	4.657 996

Temperature regulators/Heating-Thermostats

Circulator baths, CORIO™ CD with stainless steel bath tanks

CORIO™ CD Open Heating Bath Circulators for internal and external temperature applications with stainless steel bath tanks for working temperatures from +20 °C to +150 °C.

The Open Heating Bath Circulators of the new CORIO™ series feature high-quality bath tanks made of stainless steel and with pump connections.

- For internal and external applications
- Bright, white, easy to read display
- Very quiet
- Pump change-over between internal and external circulation
- USB connection
- Integrated drain screw (except for B5)

Working temperature range: 20 ... 150 °C ±0.03 °C Temperature stability: Heating capacity: 2 kW Flow rate: 15 l/min Pressure: 0.35

Туре	Filling volume	Dimensions (W x D x H)	Bath opening	Bath tank depth	PK	Cat. No.
	L	mm	mm	mm		
CORIO™ CD-B5	3.5 - 5	230 x 380 x 410	150 x 150	150	1	4.657 997
CORIO™ CD-B13	9 - 13	380 x 400 x 420	300 x 180	150	1	4.657 998
CORIO™ CD-B17	13 - 17	380 x 400 x 470	300 x 180	200	1	4.657 999
CORIO™ CD-B19	14 - 19	380 x 580 x 420	300 x 350	150	1	4.658 000
CORIO™ CD-B27	17 - 27	380 x 580 x 470	300 x 350	200	1	4.658 001
CORIO™ CD-B33	26 - 39	910 x 360 x 430	660 x 320	150	1	4.658 002
CORIO™ CD-B39	35 - 41	540 x 340 x 570	330 x 300	300	1	4.658 003



Bath covers

Flat bath cover or lift-up gable bath cover made of stainless steel.

JULABO

For Type	Description	Material	PK Cat. No.
B5, BT5	Flat bath cover	stainless steel	1 4.658 040
B13, B17	Flat bath cover	stainless steel	1 4.658 036 2
B19, B27, BT19, BT27	Flat bath cover	stainless steel	1 4.658 037
B33	Flat bath cover	stainless steel	1 4.658 038
B39	Flat bath cover	stainless steel	1 4.658 039
B13, B17	Lift-up gable bath cover	stainless steel	1 4.658 033 3
B19, B27, BT19, BT27	Lift-up gable bath cover	stainless steel	1 4.658 034
B33	Lift-up gable bath cover	stainless steel	1 4.658 035



Circulator Baths, CORIO™ CD

CORIO™ CD Heating Circulators for internal and external temperature applications with stainless steel baths for working temperatures from +20 °C to +150 °C. CORIO™ Heating Circulators feature professional technology for demanding applications. These units facilitate internal temperature control in the bath tank or control of externally connected applications.

- For internal and external applications
- Bright, white, easy to read display
- Very quiet
- Pump change-over between internal and external circulation
- USB connection
- High-quality bath tanks made of stainless steel with bath lid and drain tap
- Integrated cooling coil for counter-cooling

Working temperature range: +20 ... +150 °C Temperature stability: ±0.03 °C 2 kW Heating capacity: 15 l/min Flow rate: Pressure: 0.35 bar

Туре	Filling volume	Dimensions (W x D x H)	Bath opening	Bath tank depth	PK	Cat. No.
	L	mm	mm	mm		
CORIO™ CD-BC4	3 - 4,5	230 x 410 x 420	130 x 150	150	1	4.658 004
CORIO™ CD-BC6	4,5 - 6	240 x 440 x 470	130 x 150	200	1	4.658 005
CORIO™ CD-BC12	8,5 - 12	330 x 490 x 470	220 x 150	200	1	4.658 006
CORIO™ CD-BC26	19 - 26	390 x 620 x 480	260 x 350	200	1	4.658 007



Temperature regulators/Heating-Thermostats



Circulator Baths, CORIO™ CP



Lenz

With insulated stainless steel bath tanks, flexible performance and an operating temperature range of up to 200 $^{\circ}$ C. Temperature control is possible either in the internal bath or in a connected external application.

- Suitable for internal and external applications
- High-quality stainless steel bath vessels with bath lid and drain
- Integrated pump connections M16x1
- Integrated cooling coil for counter-cooling
- Bright, white, easily visible display, even from a distance
- Low-level warning system
- Easy switching between internal and external circulation
- Powerful, continuously variable pump
- Pump capacity adjustable from 8 to 27 l/min
- Very quiet
- Rubber feet for secure standing
- USB connection
- RS232 interface
- 3-point calibration
- Class III (FL) according to DIN 12876-1

Scope of supply: Circulator bath, mains power cable, connection box, bath, bath cover, hose connectors 8 and 12 mm

Specifications

Temperature range:	20 200 °C
Setting accuracy:	0.01 °C
Temperature uniformity:	±0.02 °C
Pump output:	8 27 l/min
Pump pressure:	0.1 0.7 bar
Heat output:	2 kW
Timer:	0 999 min
Hose connector inner width:	8/12 mm
Permissible ambient temperature:	5 40 °C
Power supply:	230 V/50 Hz

Туре	Capacity of the bath	Bath opening	Bath tank depth	Weight	External dimensions (W x D x H)	PK	Cat. No.
	litres	mm	mm	kg	mm		
CP-BC4	4.5	130 x 150	150	8.5	230 x 410 x 420	1	4.669 405
CP-BC6	6.0	130 x 150	200	10.0	240 x 440 x 470	1	4.670 677
CP-BC12	12.0	220 x 150	200	12.0	330 x 490 x 470	1	4.670 678
CP-BC26	26.0	260 x 350	200	19.0	390 x 620 x 480	1	4.670 679



Reaction vessels, cylindrical, with thermostatic jacket

- With graduation

- Laboratory flange LF
- Groove
- Flat bottom
- Two connectors with threads GL 14 or GL 18
- Made of DURAN® tubing

Other sizes on request.

Nominal capacity	Flange (LF)	Outer/ inner diam.	Height	Int. height	Connection	PK	Cat. No.
ml		mm	mm	mm			
100	60	90/60	135	115	GL 14	1	9.142 726
250	60	90/60	190	170	GL 14	1	9.142 727
500	60	90/60	275	255	GL 14	1	9.142 728
1000	60	90/60	245	220	GL 18	1	6.243 104
250	100	130/93	160	140	GL 18	1	6.243 105
500	100	130/93	180	155	GL 18	1	9.142 741
1000	100	130/93	245	220	GL 18	1	9.142 742
2000	100	130/93	375	350	GL 18	1	9.142 744
3000	100	190/150	325	285	GL 18	1	6.243 106
4000	100	190/150	380	340	GL 18	1	9.142 747
2000	150	190/150	265	225	GL 18	1	9.142 754
3000	150	190/150	320	280	GL 18	1	6.089 893
4000	150	190/150	375	335	GL 18	1	9.142 757
5000	150	190/150	430	390	GL 18	1	6.243 107
6000	150	190/150	485	445	GL 18	1	9.142 759

7. Heating and cooling technology **Temperature regulators/Heating-Thermostats**

Heating circulator baths DYNEO™ DD

For internal and external applications. With powerful components and a large, easy-to-read colored TFT display. Operation is simple and intuitive via the central controller on the front of the device. Equipped with USB interface and with additional analogue (extra code A) or RS232 (extra code D) interface.

- Easy switching between internal and external circulation

- Integrated cooling coil for counter-cooling
- Built-in drain tap
- Integrated programmer for 8 x 60 program steps
- Class III (FL) acc. to DIN 12876-1
- Continuously adjustable, powerful pressure pump
- Pump connections M16x1 (outer thread)
- External Pt100 sensor connection

2 hose connectors for 8 and 12 mm I.W. and bath lid included.

Specifications

Operating temperature range: 20...200 °C 0.01 °C Temperature stability: Heating capacity: 2 kW 8 ... 27 l/min Flow rate: 0.1 ... 0.7 bar Pump capacity: 200-230 V, 50/60 Hz Power supply:

Туре	Filling volume	Bath opening	Bath tank depth	Weight	PK	Cat. No.
	L	mm	mm	kg		
DD-BC4	3.0 - 4.5	130 x 150	150	8.5	1	4.663 221
DD-BC6	4.5 - 6.0	130 x 150	200	9.7	1	4.663 222
DD-BC12	8.5 - 12.0	220 x 150	200	11.9	1	4.663 223
DD-BC26	19.0 - 26.0	260 x 350	200	18.7	1	4.663 224
DD-BC4.A	3.0 - 4.5	130 x 150	150	8.5	1	4.663 234
DD-BC6.A	4.5 - 6.0	130 x 150	200	9.7	1	4.663 235
DD-BC12.A	8.5 - 12.0	220 x 150	200	11.9	1	4.663 236
DD-BC26.A	19.0 - 26.0	260 x 350	200	18.7	1	4.663 237
DD-BC4.D	3.0 - 4.5	130 x 150	150	8.5	1	4.663 247
DD-BC6.D	4.5 - 6.0	130 x 150	200	9.7	1	4.663 248
DD-BC12.D	8.5 - 12.0	220 x 150	200	11.9	1	4.663 249
DD-BC26.D	19.0 - 26.0	260 x 350	200	18.7	1	4.663 250

Stabilizing/Weighting rings, lead

LAB-Rings to stabilise glassware and plasticware on shakers or to immerse in water baths. Vinyl-coated lead rings will not mark or scratch benchtops and labware.

Туре	For	Int.	PK	Cat. No.
	flasks	diam.		
	ml	mm		
O-Shape	5 10	18	1	7.072 085
O-Shape	125 500	48	1	6.243 010
O-Shape	250 1000	51	1	6.242 742
O-Shape	500 2000	57	1	6.243 011
O-Shape	1000 4000	70	1	7.054 161
C-Shape	125 500	42	1	9.149 902
C-Shape	250 1000	51	1	9.149 905
C-Shape	500 2000	54	1	9.149 906
C-Shape	1000 4000	66	1	9.149 907





→ Water baths please see page 829.





Temperature regulators/Cooling-Thermostats



1 Refrigerated/heated circulators

The circulators are available in 4 bath sizes combined with 4 different temperature controllers. A large, 180° freely rotatable display allows good visibility and control of the values set from different angles.

PolyScience

- Temperature range -40 to 200 °C
- Reservoir sizes ranging from 7 liters to 45 liters
- Working temperature from ambient +10 °C to 200 °C
- Pressure and suction pump (selected models)
- Incl. lid and LidDock™ lid holder
- DuraTop™, precision-molded phenolic bath top resists laboratory chemicals
- Large bath opening and drain
- Swivel 180™, display with a 180° viewing radius
- Easy hook-up of fluid connections
- Intuitive setup and operation, featuring multi-language help and screen prompts
- Simplified setup and maintenance
- Class III safety, according to DIN 12876-1 Class III standards for use with flammable liquids (selected models)





Refrigerated Circulators with MX Temperature Controller

- Working Temperature: From -30° up to +135 °C

Temperature Stability: ±0.07 °C
Pressure Pump with one pump speed
Maximum Pressure: 1.8 psi (0.12 bar)
External circulation: closed loop

PolyScience

PolyScience

Dimensions (W x D x H)	Heating capacity	Cooling capacity kW at 20 °C	Temp. range	Bath opening	Bath tank depth	PK	Cat. No.
mm	kW		max. °C	mm	mm		
157 x 142 x 127	1.1	0.2	-20 +135	157 x 142	127	1	4.658 606
212 x 276 x 140	1.1	0.9	-30 +135	212 x 276	140	1	4.658 616
250 x 316 x 140	1.1	0.9	-30 +135	250 x 316	140	1	6.283 678
	(W x D x H) mm 157 x 142 x 127 212 x 276 x 140	(W x D x H) capacity mm kW 157 x 142 x 127 1.1 212 x 276 x 140 1.1	(W x D x H) capacity kW at 20 °C mm kW 157 x 142 x 127 1.1 0.2 212 x 276 x 140 1.1 0.9	(W x D x H) capacity kW at 20 °C range kW at 20 °C mm kW max. °C 157 x 142 x 127 1.1 0.2 -20 +135 212 x 276 x 140 1.1 0.9 -30 +135	(W x D x H) capacity kW at 20 °C range max. °C opening mm kW max. °C mm 157 x 142 x 127 1.1 0.2 -20 +135 157 x 142 x 142 212 x 276 x 140 1.1 0.9 -30 +135 212 x 276	(W x D x H) capacity kW at 20 °C range max. °C opening mm depth 157 x 142 x 127 1.1 0.2 -20 +135 157 x 142 127 212 x 276 x 140 1.1 0.9 -30 +135 212 x 276 140	(W x D x H) capacity kW at 20 °C range opening depth mm kW max. °C mm mm 157 x 142 x 127 1.1 0.2 -20 +135 157 x 142 127 1 212 x 276 x 140 1.1 0.9 -30 +135 212 x 276 140 1





Refrigerated Circulators with Standard Digital (SD) Temperature Controller

- Working Temperature: From -30° up to +170 °C

- Temperature Stability: ±0.04 °C

- Large, universal icon and English display

- Swivel 180™ Rotating Controller

- Pressure Pump with two speeds
- Pump pressure max. 2.9 psi (0.20 bar)
- On-board connectivity: RS-232 serial output
- Adjustable over- or under-temperature
- Automatic performance optimization
- Single-point calibration capability

Capacity	Dimensions (W x D x H)	Heating capacity	Cooling capacity kW at 20 °C	Temp. range	Bath opening	Bath tank depth	PK	Cat. No.
I	mm	kW		max. °C	mm	mm		
7	157 x 142 x 127	2.2	0.2	-20 +170	157 x 142	127	1	6.280 874
15	212 x 276 x 140	2.2	0.9	-30 +170	212 x 276	127	1	4.658 615
20	250 x 316 x 140	2.2	0.9	-30 +170	250 x 316	140	1	4.658 620
28	314 x 359 x 140	2.2	0.9	-30 +170	314 x 359	140	1	4.658 623

Temperature regulators/Cooling-Thermostats

PolyScience

Refrigerated Circulators with Advanced Digital (AD) Temperature Controller

- Working Temperature: From -40° up to +200 °C
- Temperature Stability: ±0.01 °C
- Intuitive 3.75" (9.5 cm) display with touch-pad control
- 4 languages: French, German, Spanish, English
- Swivel 180™ Rotating Controller
- Pump speed variable external temperature control capability
- Pump pressure max. 4.3 psi (0.3 bar)
- On-board connectivity: USB-À & B, Ethernet, RS-232/RS-485, and external temperature probe
- Adjustable over- or under-temperature
- On-screen prompts
- Single-point calibration capability

1	
	1

Capacity	Dimensions (W x D x H)	Heating capacity	Cooling capacity kW at 20 °C	Temp. range	Bath opening	Bath tank depth	РК	Cat. No.
I	mm	kW		max. °C	mm	mm		
7	157 x 142 x 127	2.2	0.20	-20 +200	157 x 142	127	1	6.281 080
7	157 x 142 x 127	2.2	0.36	-40 +200	157 x 142	127	1	4.658 612
15	212 x 276 x 140	2.2	0.90	-30 +200	212 x 276	140	1	4.658 614
15	212 x 276 x 140	2.2	1.00	-40 +200	212 x 276	140	1	4.658 618
20	250 x 316 x 140	2.2	0.90	-30 +200	250 x 316	140	1	6.281 652
28	314 x 359 x 140	2.2	0.90	-30 +200	314 x 359	140	1	4.658 622
45	549 x 398 x 140	2.2	1.40	-25 +135	549 x 398	140	1	4.658 625



Refrigerated Circulators with Advanced Programmable (AP) Temperature Controller



PolyScience

- Working Temperature: From -40° up to +200 °C

- Temperature Stability: ±0.005 °C

- Time/temperature programming (ten 100-step programs)

- Intuitive 4.3" (10.9 cm) SmartTouch display
- 11 languages: French, German, Spanish, Chinese, Arabic, English, Portuguese, Russian, Hindi, Italian, Korean
- Variable speed pump with open- and closed-loop external circulation capability
- Swivel 180™ Rotating Controller
- On-board connectivity: USB-A & B, Ethernet, RS-232/RS-485, remote on/off and external temperature probe
- Event scheduling (time & date) with real-time clock
- Review temperature trends for up to 10 days
- Multiple selectable "home" screens
- On-screen help
- Automatic and/or user-adjustable performance optimization
- 10-point calibration capability

		an a
1	-	

Capacity	Dimensions (W x D x H)	Heating capacity	Cooling capacity kW at 20 °C	Temp. range	Bath opening	Bath tank depth	PK	Cat. No.
I	mm	kW		max. °C	mm	mm		
7	157 x 142 x 127	2.2	0.20	-20 200	157 x 142	127	1	4.658 605
7	157 x 142 x 127	2.2	0.36	-40 200	157 x 142	127	1	4.658 611
15	212 x 276 x 140	2.2	0.92	-30 200	212 x 276	140	1	4.658 613
15	212 x 276 x 140	2.2	1.00	-40 200	212 x 276	140	1	4.658 617
20	250 x 316 x 140	2.2	0.92	-30 200	250 x 316	140	1	4.658 619
28	314 x 359 x 140	2.2	0.92	-30 200	314 x 359	140	1	4.658 621
45	549 x 398 x 140	2.2	1.40	-25 135	549 x 398	140	1	4.658 624

Refrigerated/heated circulating baths LT ecocool

Consisting of two models, all products in the LT ecocool range are supplied assembled as ready to use kits, complete with accessory hosing, clips and connectors as standard.

- Choice of two models, temperature range -25 °C to 150 °C (model dependent)
- Industry leading 4 year warranty with Grant renowned service and support, no registration required
- Active cooling through the whole temperature range
- True energy saving of up to 80% against standard compressor units
- Thermostat and chiller work in harmony, neither will operate alone, eliminating any danger of overheating or freezing
- Single front switch for user convenience
- Modern, sleek, attractive design



Туре	Capacity	Dimensions (W x D x H)	Heating power	Cooling capacity kW at 20/0/-20°C	Temp. range	PK	Cat. No.
	1	mm	W		max. °C		
LT ecocool 100	5	245 x 430 x 640	2160	210/184/21	-20 to 100	1	6.282 852
LT ecocool 150	6	245 x 430 x 640	2280	378/189/53	-25 to 150	1	6.286 686

Temperature regulators/Cooling-Thermostats



1 Refrigerated circulators LTC 4

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

Grant

- Optima™ digital thermostat for precise temperature control: assembled with TX 150
- Cooling/heating range -30 to 100 °C
- Stability ±0.1 °C
- Powerful integral pump; allows temperature-controlled fluid to be circulated to external devices (18 L/min, 310 mbar)
- 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

Туре	Capacity	Dimensions (W x D x H)	Heating power	Cooling capacity kW at 20/0/-20 °C	Temp. range		Cat. No.
	1	mm	W		max. °C		
LTC 4	20	390 x 490 x 730	1900	0.90/0.50/0.18	-30 to +100	1	9.721 067

Cooling circulators

Combinations of immersion circulators and insulated refrigeration baths are low-cost solutions for direct thermoregulation within

Huber 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 0.02 K for the Compatible Control models and 0.05 K for the KISS models.

Туре	Bath capacity	Pump max.	Dimensions (W x D x H)	Bath opening	Cooling capacity kW at 0/-10/-20 °C	Working Temp. range	PK	Cat. No.
	L	I/min / bar	mm	mm		°C		
CC-K12	12	27 / 0.7	350 x 560 x 430	290 x 152	0.2/0.12/0.05	-20 +200	1	9.859 227
KISS-K12	12	14 / 0.25	350 x 560 x 430	290 x 152	0.2/0.12/0.05	-20 +200	1	6.287 658
CC-K15	15	27 / 0.7	350 x 560 x 430	290 x 152	0.2/0.12/0.05	-20 +200	1	9.859 228
KISS-K15	15	14 / 0.25	350 x 560 x 430	290 x 152	0.2/0.12/0.05	-20 +200	1	6.272 329
CC-K20	20	27 / 0.7	350 x 555 x 615	290 x 329	0.35/0.27/0.16	-30 +200	1	9.859 229
KISS-K20	20	14 / 0.25	350 x 555 x 615	290 x 329	0.35/0.27/0.16	-30 +200	1	6.272 330
CC-K25	25	27 / 0.7	350 x 555 x 615	290 x 329	0.35/0.27/0.16	-30 +200	1	9.859 230
KISS-K25	25	14 / 0.25	350 x 555 x 615	290 x 329	0.35/0.27/0.16	-30 +200	1	6.272 331



Temperature regulators/Cooling-Thermostats

Compatible Control Refrigeration Circulators K6

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 0.02 K for the Compatible Control models and 0.05 K for the KISS models.

Safety class: Heating capacity: 2 kW Pressure pump

CC-K6/CC-K6s: 27 L/min/0.7 bar KISS-K6/KISS-K6s: 14 L/min/0.25 bar





Туре	Bath capacity	Dimensions (W x D x H)	Bath opening	Cooling capacity kW at 0/-10/-20 °C	Temp. range	PK	Cat. No.
	L	mm	mm		max. °C		
CC-K6	4.5	210 x 400 x 546	140 x 120	0.15/0.1/0.05	-25 +200	1	9.859 226
KISS-K6	4.5	210 x 400 x 546	140 x 120	0.15/0.1/0.05	-25 +200	1	6.272 327
CC-K6s	4.5	210 x 400 x 546	140 x 120	0.21/0.15/0.05	-25 +200	1	9.859 225
KISS-K6s	4.5	210 x 400 x 546	140 x 120	0.21/0.15/0.05	-25 +200	1	6.272 328

All units use natural refrigerant as standard.

Compact refrigerated circulators - Ministat®

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.

300 x 465 x 516

300 x 465 x 516

Huber





Pump pressure max.: Max. suction: Temperature Stability to DIN 12876: 27 L/min / 0.7 bar 20 L/min / 0.4 bar 0.02 K

Туре	Bath capacity	Dimensions (W x D x H)	Bath tank depth	Heating power	Cooling capacity kW at 0/-20/-30° C	Working Temp. range	PF	Cat. No.
	L	mm	mm	W		max. °C		
Ministat® 125	2.75/1.3*	225 x 370 x 429	120	1000	0.21/0.05/	-25 +150		6.257 173
Ministat® 125w	2.75/1.3*	225 x 370 x 429	120	1000	0.20/0.10/	-25 +150	:	9.859 232
Ministat® 230	3.2/1.7*	255 x 450 x 476	135	2000	0.38/0.25/0.14	-40 +200	:	9.859 233
Ministat® 230w	3.2/1.7*	255 x 450 x 476	135	2000	0.38/0.25/0.14	-40 +200		9.859 234

0.55/0.35/0.125

0.55/0.35/0.125

2000

2000

Ministat® 240w 4.9/2.8* All units use natural refrigerant as standard.

4.9/2.8*

*with displacement inser

Ministat® 240

-45 ... +200

-45 ... +200

9.859 235

9.859 236

Temperature regulators/Cooling-Thermostats



Refrigeration Bath Circulators to -45 °C

HUBER refrigerated bath circulators perform safe and repeatable heating and cooling tasks in Huber the lab. The models are covering the range to -45 °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.

25 L/min/0.7 bar

Option: Natural refrigerant available on request

Pump data
Max. pressure:
Max. suction:

Max. suction: 18.5 L/min/0.4 bar Temp. stability acc. to DIN 12876: 0.02 K

Туре	Bath capacity	Bath tank depth	Heating power	Cooling capacity KW at 100/20/0/-20/-30/-40°C	Working Temp. range	PK	Cat. No.
	L	mm	W	,,-,,,	°C		
CC-405	5	150	1500	0.7 / 0.7 / 0.7 / 0.45 / 0.18 / 0.03	-40 +200	1	9.859 237
CC-405w	5	150	1500	0.7 / 0.7 / 0.7 / 0.45 / 0.18 / 0.03	-40 +200	1	9.859 238
CC-410	22 /8.5*	200	3000	0.8 / 0.8 / 0.8 / 0.5 / 0.15 / 0.1	-45 +200	1	9.857 403
CC-410wl	22 /8.5*	200	3000	0.8 / 0.8 / 0.8 / 0.5 / 0.15 / 0.1	-45 +200	1	9.859 243
CC-415	5	150	1500	1.2 / 1.2 / 1.0 / 0.6 / 0.2 / 0.05	-40 +200	1	9.859 239
CC-415wl	5	150	1500	1.2 / 1.2 / 1.0 / 0.6 / 0.2 / 0.05	-40 +200	1	9.859 240
* ''' !' !		130	1300	1.2 1.2 1.0 0.0 0.2 0.03	TO 1200	1	7.00





Double-walled wide-mouth bottles GLS 80[®], DURAN[®]

The DURAN® double-walled wide-mouth bottles GLS 80® incorporate an integral jacket that isolates the contents from the external environment. Heated or cooled liquids can be circulated through the jacket to control the temperature within the screw topped DURAN® bottle.

DWK Life Sciences

Applications

- Simple, low cost, jacketed chemostat or bioreactor for cell culture.
- Vessel for temperature-controlled reactions such as enzyme digestions.
- Simple continuous flow stirred reactor system with the optional GLS 80® cap components.
- Thermostatic vessel to maintain fluids, or high viscosity liquids at a constant temperature, useful when working with endo- or exothermic reactions.
- Large cold trap or condenser when used with dry ice in the inner container.

Features

- Usable temperature range of 40 to + 120 °C.
- Manufactured from DURAN® borosilicate 3.3 glass.
- All components are fully autoclavable.
- Available in two sizes: 500 and 1000 ml.
- Compatible with full range of wide mouth GLS 80® connection cap systems for liquid addition or removal during processing.

Capacity	Diam.	Height without closure	PK	Cat. No.
ml	mm	mm		
500	110	170	1	6.266 805
1000	110	270	1	6.266 806

Temperature regulators/Cooling-Thermostats

Refrigeration Bath circulators to -55°C

Compact design and high cooling capacity at low temperatures.

Option: Natural refrigerant available on request

Heating capacity CC-505/CC-505wl: 1.5 kW CC-508 to CC-525w: 3.0 kW

Pump data CC-505 to CC-525w

25 L/min / 0.7 bar Max. pressure: Max. suction: 18.5 L/min / 0.4 bar Supply requirement

CC-505 to CC-508w: 230 V / 50 Hz CC-510 to CC-525w: 400 V / 50 Hz Temp. stability acc. to DIN 12876: ±0.02 K



Туре	Bath capacity	Bath tank depth	Cooling capacity KW at 100/20/0/-20/-40°C	Working Temp.	PK	Cat. No.
				range		
	L	mm		°C		
CC-505	5	150	1.2 / 1.2/ 1.0 / 0.6 / 0.15	-50 + 200	1	9.859 241
CC-505wl	5	150	1.2 / 1.2/ 1.0 / 0.6 / 0.15	-50 +200	1	9.859 242
CC-508w	5	160	1.5 / 1.5 / 1.5 / 1.0 / 0.3	-55 + 200	1	9.857 401
CC-510	26/15*	200	2.1 / 2.1 / 2.1 / 1.0 / 0.4	-50 +200	1	9.859 256
CC-510w	18/11*	200	2.4 / 2.4 / 2.4 / 1.0 / 0.4	-50 +200	1	9.859 245
CC-515	26/15*	200	3.3 / 3.3 / 3.3 / 1.6 / 0.6	-55 +200	1	9.859 247
CC-515w	18/11*	200	3.3 / 3.3 / 3.3 / 1.6 / 0.6	-55 + 200	1	9.859 246
CC-520w	17/10*	200	5.0 / 5.0 / 5.0 / 3.0 / 1.5	-55 +200	1	9.859 248
CC-525w	17/10*	200	7.0 / 7.0 / 5.0 / 3.0 / 1.5	-55 +100	1	9.859 249

^{*}with displacement insert

Refrigerated circulator baths, CORIO™ CD

CORIO™ CD Heating Circulators for internal and external temperature applications with stainless steel baths for working temperatures from -40 $^{\circ}$ C to +150 $^{\circ}$ C.

CORIO™ Heating Circulators feature professional technology for demanding applications.

These units facilitate internal temperature control in the bath tank or control of externally connected applications.

- For internal and external applications
- Bright, white, easy to read display
- Very quiet
- Pump change-over between internal and external circulation
- External pump connections (M16x1)
- USB connection
- High-quality bath tanks made of stainless steel with bath lid and drain tap
- Integrated cooling coil for counter-cooling
- Removable ventilation grille
- Refrigeration machines without lateral ventilation openings
- Class III (FL) according to DIN 12876-1



±0.03 °C Temperature stability: Heating capacity: 2 kW 15 l/min Flow rate: 0.35 bar Pressure:



Туре	Filling volume	Dimensions (W x D x H)	Bath opening	Bath tank depth	Working Temp. range	Cooling capacity kW at 20/0/-20°C	PK	Cat. No.
	L	mm	mm	mm	°C ¯			
CORIO™ CD-200F	3 - 4	230 x 390 x 650	130 x 150	150	-20 - 150	0.22 / 0.17 / 0.06	1	4.658 008
CORIO™ CD-201F	3 - 4	440 x 410 x 440	130 x 150	150	-20 - 150	0.22 / 0.17 / 0.06	1	4.658 009
CORIO™ CD-300F	3 - 4	240 x 420 x 660	130 x 150	150	-25 - 150	0.31 / 0.28 / 0.11	1	4.658 010
CORIO™ CD-600F	5 - 7,5	330 x 470 x 690	220 x 150	150	-35 - 150	0.6 / 0.46 / 0.18	1	4.658 011
CORIO™ CD-601F	8 - 10	360 x 460 x 740	220 x 150	200	-40 - 150	0.6 / 0.46 / 0.18	1	6.283 539
CORIO™ CD-900F	21 - 30	390 x 620 x 750	260 x 350	200	-40 - 150	0.9 / 0.8 / 0.35	1	6.283 540
CORIO™ CD-1000F	5 - 7,5	420 x 490 x 700	220 x 150	150	-40 - 150	1.0 / 0.98 / 0.53	1	6.283 541
CORIO™ CD-1001F	42 - 56	450 x 640 x 950	350 x 410	300	-38 - 100	1.0 / 0.9 / 0.35	1	6.283 542

Function version available by E-grade.

Temperature regulators/Cooling-Thermostats



Refrigerated circulators CORIO™ CP



With insulated stainless steel bath tanks, flexible performance and an operating temperature range of up to 200 °C. Temperature control is possible either in the internal bath or in a connected external application.

- Suitable for internal and external applications
- High-quality stainless steel bath vessels including bath lid and drain
- Refrigerating units without side ventilation openings
- More space in the bath due to space-saving evaporator coils
- External pump connections M16x1
- Bright, white, easily visible display, even from a distance
- Low-level warning system
- Simple switchng between internal and external circulation
- Powerful, continuously variable pump
- Pump capacity adjustable from 8 to 27 l/min
- Very quiet
- Rubber feet for secure standing
- Removable air vent
- USB connection
- RS232 interface
- Class III (FL) according to DIN 12876-1

Scope of supply: refrigerated circulator, mains power cable, connection box, bath cover, connecting cable, refrigerator, hose connectors 8 and 12 mm

Specifications

Setting accuracy:	0.01 °C
Temperature uniformity:	±0.03 °C
Pump output:	8 27 l/min
Pump pressure:	0.1 0.7 bar
Heat output:	2 kW
Timer:	0 999 min
Hose connector inner width:	8/12 mm
Permissible ambient temperature:	5 40 °C
Power supply:	230 V/50 Hz

Туре	Capacity of the bath	Bath opening	Bath tank depth	Temp. range	External dimensions (W x D x H)	Cooling capacity kW at 20/0/-20°C	PK	Cat. No.
	litres	mm	mm	°C	mm			
CP-200F	4.0	130 x 150	150	-20 200	230 x 390 x 650	0.22 / 0.17 / 0.02	1	4.670 680
CP-201F	4.0	130 x 150	150	-20 200	440 x 410 x 440	0.22 / 0.17 / 0.02	1	4.670 681
CP-300F	4.0	130 x 150	150	-30 200	240 x 420 x 660	0.31 / 0.28 / 0.08	1	4.670 683
CP-600F	7.5	220 x 150	150	-35 200	330 x 470 x 690	0.6 / 0.44 / 0.16	1	4.670 684
CP-601F	10.0	220 x 150	200	-35 200	360 x 460 x 740	0.6 / 0.44 / 0.16	1	4.670 685
CP-900F	30.0	260 x 350	200	-38 200	390 x 620 x 750	0.9 / 0.8 / 0.31	1	4.670 686
CP-1000F	7.5	220 x 150	150	-50 200	420 x 490 x 700	1.0 / 0.96 / 0.51	1	4.670 687
CP-1001F	56.0	350 x 410	300	-38 100	450 x 640 x 950	1.0 / 0.85 / 0.32	1	4.670 688



Temperature regulators/Cooling-Thermostats

Refrigerated/heated circulators MAGIO MS

For precise, reliable temperature control of demanding external applications, e.g. in basic research, in material testing and in technical installations.

- Simple control of complex applications
- Infinitely adjustable, extremely powerful pressure and suction pump
- Large, high-resolution TFT touch display with multilingual user interface
- Medium-contacting parts made of stainless steel
- Integrated programmer
- External Pt100 connection
- USB interface
- RS232 interface
- Ethernet interface
- Analogue interfaces (optionally)
- Classification III according to DIN 12876-1

Specifications:

Temperature stability: ±0.01 °C 16 ... 31 l/min Flow rate: 0.24 ... 0.92 bar Pump pressure: 0.03 ... 0.4 bar Suction pressure: 2000 W Heating capacity: 5 ... 40 °C Permissible ambient temperature: 230 V/50 ... 60 Hz Power supply:



Туре	Filling volume	Dimensions (W x D x H)	Bath opening	Bath tank depth	Temp. range	Cooling capacity kW at 20/0/-20°C	PK	Cat. No.
		mm	mm	mm	°C	. ,		
MS-300F	3 4	240 x 420 x 660	130 x 150	150	-25 200	0.3/0.24/0.06	1	4.678 304
MS-600F	5 7.5	330 x 470 x 690	220 x 150	150	-35 200	0.6/0.44/0.16	1	4.678 305
MS-601F	8 10	330 x 470 x 740	220 x 150 220 x 150	200	-35 200	0.6/0.52/0.16	1	4.678 306
							1	
MS-900F	21 30	390 x 620 x 750	260 x 350	200	-38 200	0.9/0.8/0.31	1	4.678 307
MS-1000F	21 30	420 x 490 x 700	180 x 130	150	-50 200	1.0/0.96/0.51	1	4.678 308

Water bath preservative liquid Aqua Stabil

- Prevents build-up of algae and bacteria in bath tanks providing hygienic operation
- 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.

This product is a disinfectant containing biocides. Please inquire its availability and legal information.



H phrases: H412

Volume ml	PK	Cat. No.
100	1	9.858 040

We can **SUPPly** this manufacturer's whole product range!





JULABO

JULABO

7. Heating and cooling technology

Temperature regulators/Cooling-Thermostats



Refrigerated circulator baths DYNEO™ DD

Ideal for internal and external applications. With powerful components and a large, easy to read colored TFT display. Operation is simple and intuitive via the central controller on the front of the device. Equipped with USB interface, also available with optional analogue (extra code A) or RS232 (extra code D) interface.

- Easy switching between internal and external circulation
- Built-in drain tap
- Integrated programmer for 8 x 60 program steps
- Class III (FL) acc. to DIN 12876-1
- Continuously adjustable, powerful pressure pump
- Pump connectors M16x1
- External Pt100 sensor connection

2 hose connectors for 8 and 12 mm I.W. and bath lid included.

Specifications

Temperature stability: 0.01 °C Heating capacity: 2 kW8 ... 27 l/min Flow rate: Pump capacity: 0.1 ... 0.7 bar Power supply: 230 V, 50/60Hz

Туре	Working Temp.	Filling volume	Bath opening	Bath tank depth	Cooling capacity kW at 20/0/-20°C	PK	Cat. No.
	range	Volume	opening	асран	ut 20/0/ 20 C		
	°C	L	mm	mm			
DD-200F	-20200	3.0 - 4.0	130 x 150	150	0.22 / 0.17 / 0.02	1	4.663 225
DD-201F	-20200	3.0 - 4.0	130 x 150	150	0.22 / 0.17 / 0.02	1	4.663 226
DD-300F	-30200	3.0 - 4.0	130 x 150	150	0.31 / 0.28 / 0.08	1	4.663 227
DD-600F	-35200	5.0 - 7.5	220 x 150	150	0.6 / 0.44 / 0.16	1	4.663 228
DD-601F	-35200	5.0 - 7.5	220 x 150	20	0.6 / 0.44 / 0.16	1	4.663 229
DD-900F	-38200	21.0 - 30.0	260 x 350	20	0.9 / 0.8 / 0.31	1	4.663 230
DD-1000F	-50200	5.0 - 7.5	180 x 130	15	1.0 / 0.96 / 0.51	1	4.663 231
DD-1001F	-38100	42.0 - 56.0	350 x 410	30	1.0 / 0.85 / 0.32	1	4.663 232
DD-200F.A	-20200	3.0 - 4.0	130 x 150	150	0.22 / 0.17 / 0.02	1	4.663 238
DD-201F.A	-20200	3.0 - 4.0	130 x 150	150	0.22 / 0.17 / 0.02	1	4.663 239
DD-300F.A	-30200	3.0 - 4.0	130 x 150	150	0.31 / 0.28 / 0.08	1	4.663 240
DD-600F.A	-35200	5.0 - 7.5	220 x 150	150	0.6 / 0.44 / 0.16	1	4.663 241
DD-601F.A	-35200	5.0 - 7.5	220 x 150	20	0.6 / 0.44 / 0.16	1	4.663 242
DD-900F.A	-38200	21.0 - 30.0	260 x 350	20	0.9 / 0.8 / 0.31	1	4.663 243
DD-1000F.A	-50200	5.0 - 7.5	180 x 130	15	1.0 / 0.96 / 0.51	1	4.663 244
DD-1001F.A	-38100	42.0 - 56.0	350 x 410	30	1.0 / 0.85 / 0.32	1	4.663 245
DD-200F.D	-20200	3.0 - 4.0	130 x 150	150	0.22 / 0.17 / 0.02	1	4.663 251
DD-201F.D	-20200	3.0 - 4.0	130 x 150	150	0.22 / 0.17 / 0.02	1	4.663 252
DD-300F.D	-30200	3.0 - 4.0	130 x 150	150	0.31 / 0.28 / 0.08	1	4.663 253
DD-600F.D	-35200	5.0 - 7.5	220 x 150	150	0.6 / 0.44 / 0.16	1	4.663 254
DD-601F.D	-35200	5.0 - 7.5	220 x 150	20	0.6 / 0.44 / 0.16	1	4.663 255
DD-900F.D	-38200	21.0 - 30.0	260 x 350	20	0.9 / 0.8 / 0.31	1	4.663 256
DD-1000F.D	-50200	5.0 - 7.5	180 x 130	15	1.0 / 0.96 / 0.51	1	4.663 257
DD-1001F.D	-38100	42.0 - 56.0	350 x 410	30	1.0 / 0.85 / 0.32	1	4.663 258

Pump set for Circulator baths CORIO CD™, CORIO CP™, DYNEO™ DD

JULABO

Туре	For Type	PK	Cat. No.
Pump set with pump connectors M16x1	CD	1	4.658 027
Pump set with pump connectors M16x1	CP, DD	1	4.663 259

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

Temperature regulators/Circulator baths

Chiller DuraChill®

Stable and reliable cooling for many common heat removal applications, including laser etching, AA furnaces, ICP, rotary evaporators, vacuum systems, reaction vessels, plasma etching, and condenser cooling.

The chillers are available with turbine or positive displacement pump.

- A bright, full-color touchscreen display
- Cooling at ambient temperatures up to 30 °C
- DynamicFilter™ self-cleaning filter system
- Liquid level sensor
- UV light system to prevent growth inhibitors
- User-adjustable temperature, pressure, and flow rate alarms
- External temperature tracking and communications capability (optionally)
- Cool Command™
- WhisperCool® noise reduction system
- Self-diagnostics service and functionality system
- Front fill reservoir
- 4 Casters, 2 of them locking



-10 ... 70 °C Working temperature: Temperatur stability: ±0.1 °C Cooling capacity: 850 ... 2900 W

Connectivity: RS232, status relay, dry contact

Power supply: 240 V, 50 Hz







Туре	Description	Pressure	Flow rate (50/60Hz)	Cooling capacity kW at 20 °C	PK	Cat. No.
		bar	L / min.			
CA 02	With positive displacement pump	1.4 5.7	7.6	0.7	1	4.675 228
CA 02	With turbine pump	1.4 5.2	8.3	0.7	1	4.675 229
CA 03	With positive displacement pump	1.4 5.7	7.6	1.28	1	4.675 230
CA 03	With turbine pump	1.4 5.2	8.3	1.28	1	4.675 231
CA 05	With positive displacement pump	1.4 5.7	7.6	1.84	1	4.675 232
CA 05	With turbine pump	1.4 5.2	8.3	1.84	1	4.675 233
CA 10	With positive displacement pump	1.4 5.7	11.0	2.65	1	4.675 234
CA 10	With turning numn	14 52	11.0	2 65	1	7 984 151

Benchtop Chillers

These powerful, low-temperature chillers are well matched for use with rotary evaporators, vacuum systems, spectrometers, and other analytical equipment. They also are available with a mobile cart accessory for convenient placement under a bench.

- Large, easy to read LED display
- Space-saving design
- Cooling at ambient temperatures as high as 35 °C
- Temperature Stability ±0.1 °C
- Low flow shut-off and alarm, high and low temperature alarms
- Front mounted fluid level gauge
- Simple setup, operation, and maintenance
- Choice of pumps





Туре	With	Working Temp. range	Pressure	Flow rate (50/60 Hz)	Cooling capacity kW at	PK	Cat. No.
		°C	bar	L / min.	20/0/-10 °C		
LS	Centrifugal Pump	-20 +40	0.4	12.9	1.16 / 0.69 / 0.435	1	4.658 658
LS	Centrifugal Pump	-20 +40	0.7	11.7	1.19 / 0.7 / 0.46	1	4.658 659
LS	Turbine Pump	-20 +40	2.2	8.3	0.8 / 0.5 / 0.3	1	4.658 660
LM	Centrifugal Pump	-10 +30	0.3	6.8	0.52 / 0.25 / 0.14	1	4.658 661
LM	Centrifugal Pump	-10 +30	0.9	11.4	0.39 / 0.17 / 0.11	1	4.658 662
MM	Centrifugal Pump	-5 +50	0.9	11.4	0.39 / 0.175 / -	1	4.658 663
MM	Centrifugal Pump	-5 +50	0.3	6.8	0.4 / 0.19 / -	1	6.280 728

Temperature regulators/Circulator baths



Unichiller® in alternative bench-top or tower housing formats

Unichillers are intelligent chillers which are used mainly as an environmentally friendly Huber 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 air cooled and 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).

The desktop models are equipped with the Pilot ONE- and OLÉ-controller.



Chillers, Minichiller®

Small, robust and cost effective with its stainless steel casing. The Minichiller is the Huber 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. Minichillers have suction and pressure pumps and therefore have the advantage of have a high flow at low pressure. This is particularly interesting for all pressure sensitive applications (e.g. glass condensors).

Supply req.: 230V 50/60Hz

Туре	Cooling capacity kW at 15/0/-10°C	Working Temp. range	Dimensions (W x D x H)	PK	Cat. No.
		°C	mm		
Minichiller® 280 OLÉ	0.28/0.2/-	-5 40	225 x 360 x 380	1	6.272 350
Minichiller® 300 OLÉ	0.3/0.2/0.14	-20 40 (80)*	225 x 360 x 380	1	6.272 346
Minichiller® 300w OLÉ	0.3/0.2/0.14	-20 40 (80)*	225 x 360 x 380	1	6.272 347
Minichiller® 600 OLÉ	0.6/0.5/0.35	-20 40	280 x 490 x 424	1	6.272 348
Minichiller® 600w OLÉ	0.6/0.5/0.35	-20 40	280 x 490 x 424	1	4.675 313
Minichiller® 900w OLÉ	0.9/0.7/0.4	-25 40	280 x 490 x 424	1	4.664 642
* Darmissible temperature in r	atum line 00 0C				

Permissible temperature in return line 80 °C

We can SUPPLY this manufacturer's whole product range!





Temperature regulators/Circulator baths

Unichiller® with Pilot ONE controller

High performance Unichiller with Pilot ONE controller for standard applications. The Unichiller offers cooling powers up to 2.5 kW. The chiller is ideal for standard cooling applications in the laboratory or in industry. The energy efficient function of the chiller reduces the water consumption for many applications, helping to protect the environment and reducing operating costs. The models are fitted with the Pilot ONE controller including 5.7" colour touch screen and 2 x USB, Ethernet and RS232 connections. P-models include circulating pumps with a high discharge pressure for applications with high pressure drops.

- Cooling power up to 2.5 kW
- Air- and watercooled models
- Compact, robust stainless steel housings
- Fitted with wheels for easy handling
- Optional heating up to +100 °C

Power supply: 230 V, 50/60 Hz

Туре	Working Temp. range	Cooling capacity kW at 15/0/-10 °C	Flow rate	Pressure	PK	Cat. No.
	°C		L / min.	max. bar		
Unichiller® 007	-20 40	0.7/0.55/0.4	29	1.0	1	4.675 316
Unichiller® 007w	-20 40	0.7/0.55/0.4	29	1.0	1	4.675 317
Unichiller® P007	-20 40	0.7/0.55/0.4	25	2.5	1	4.675 327
Unichiller® P007w	-20 40	0.7/0.55/0.4	25	2.5	1	4.675 328
Unichiller® 010	-20 40	1.0/0.8/0.5	29	1.0	1	4.675 318
Unichiller® 010w	-20 40	1.0/0.8/0.5	29	1.0	1	4.675 319
Unichiller® P010	-20 40	1.0/0.8/0.5	25	2.5	1	6.273 296
Unichiller® P010w	-20 40	1.0/0.8/0.5	25	2.5	1	4.675 329
Unichiller® 012	-20 40	1.2/1.0/0.7	29	1.0	1	4.675 320
Unichiller® 012w	-20 40	1.2/1.0/0.7	29	1.0	1	4.675 321
Unichiller® P012	-20 40	1.2/1.0/0.7	25	2.5	1	4.675 330
Unichiller® P012w	-20 40	1.2/1.0/0.7	25	2.5	1	6.288 870
Unichiller® 015	-20 40	1.5/1.0/0.7	29	1.0	1	4.675 322
Unichiller® 015w	-20 40	1.5/1.0/0.7	29	1.0	1	4.675 323
Unichiller® P015	-20 40	1.5/1.0/0.7	25	2.5	1	4.675 331
Unichiller® P015w	-20 40	1.5/1.0/0.7	25	2.5	1	4.675 332
Unichiller® 022	-10 40	2.2/1.6/1.0	29	1.0	1	4.675 324
Unichiller® 022w	-10 40	2.2/1.6/1.0	29	1.0	1	4.675 325
Unichiller® P022	-10 40	2.2/1.6/1.0	25	2.5	1	4.675 333
Unichiller® P022w	-10 40	2.2/1.6/1.0	25	2.5	1	4.675 334
Unichiller® 025	-10 40	2.5/2.0/1.2	29	1.0	1	7.971 768
Unichiller® 025w	-10 40	2.5/2.0/1.2	29	1.0	1	4.675 326
Unichiller® P025	-10 40	2.5/2.0/1.2	25	2.5	1	4.675 335
Unichiller® P025w	-10 40	2.5/2.0/1.2	25	2.5	1	4.675 336



Huber

Туре	Temp working range °C	Length	Material	PK	Cat. No.
NW 12 M16 x 1	-50 200	100	Metal	1	9.857 214
NW 12 M16 x 1	-50 200	150	Metal	1	9.857 215
NW 12 M16 x 1	-50 200	200	Metal	1	9.857 216
NW 12 M16 x 1	-50 200	300	Metal	1	9.857 217
NW 12 M16 x 1	-100 350	100	Metal	1	9.857 121
NW 12 M16 x 1	-100 350	150	Metal	1	9.857 122
NW 12 M16 x 1	-100 350	200	Metal	1	9.857 045
NW 12 M16 x 1	-100 350	300	Metal	1	9.857 124
NW 12 M10 X 1	-60 260	100	Plastic	1	7.900 874
NW 12 M24 x 1,5	-60 260	150	Plastic	1	6.254 865
NW 12 M24 x 1,5	-100 350	100	Metal	1	9.857 218
NW 12 M24 x 1,5	-100 350	150	Metal	1	6.229 781
NW 12 M24 x 1,5 NW 12 M24 x 1,5	-100 350	200	Metal	1	9.857 219
NW 12 M24 x 1,5	-100 350	300	Metal	1	9.857 220
NW 12 M24 x 1,5 NW 12 M24 x 1,5	-120 400	100	Metal	1	9.857 046
NW 12 M24 x 1,5 NW 12 M24 x 1,5	-120 400	150	Metal	1	9.857 040
NW 12 M24 x 1,5	-120 400	200	Metal	1	9.857 048
NW 12 M24 x 1,5	-120 400	300	Metal	1	9.857 048
NW 20 M30 x 1,5	-60 260	100	Plastic	1	6.261 514
NW 20 M30 x 1,5	-60 260	150	Plastic	1	6.258 999
NW 20 M30 x 1,5	-60 260	200	Plastic	1	7.671 774
NW 20 M30 x 1,5	-60 260	300	Plastic	1	6.254 719
NW 20 M30 x 1,5	-100 350	100	Metal	1	9.857 125
NW 20 M30 x 1,5	-100 350	150	Metal	1	9.857 126
NW 20 M30 x 1,5	-100 350	200	Metal	1	9.857 126
NW 20 M30 x 1,5	-100 350	300	Metal	1	9.857 128
		100	Plastic	1	4.675 343
NW 25 M38 x 1,5	-60 260	150	Plastic	1	
NW 25 M38 x 1,5	-60 260			=	4.675 344
NW 25 M38 x 1,5	-60 260	200 300	Plastic Plastic	1	6.269 871
NW 25 M38 x 1,5	-60 260 -100 350	100	Metal	1	4.675 345 9.857 129
NW 25 M38 x 1,5			Metal Metal	1	
NW 25 M38 x 1,5	-100 350	150 200	Metal	1	9.857 130 9.857 131
NW 25 M38 x 1,5	-100 350			1	
NW 25 M38 x 1,5	-100 350	300	Metal	1	9.857 132





Temperature regulators/Circulator baths



1 Unichiller® with OLÉ controller

High performance Unichiller with OLÉ controller for standard applications. The Unichiller with the OLÉ controller offers cooling powers up to 2.5 kW.

Huber

The chiller is ideal for standard cooling applications in the laboratory or in industry. The energy efficient function of the chiller reduces the water consumption for many applications, helping to protect the environment and reducing operating costs. All models are fitted with the OLÉ controller with its modern OLED display as well as for RS232, USB interfaces and PT100 measurement sensor connection.

P-models include circulating pumps with a high discharge pressure for applications with high pressure drops.

- Cooling power up to 2.5 kW
- Air- and watercooled models
- Compact, robust stainless steel housings
- Fitted with wheels for easy handling
- Optional heating up to +100°C

Power supply: 230 V, 50/60 Hz

Туре	Working Temp. range	Cooling capacity kW at 15/0/-10°C	Flow rate	Pressure	PK	Cat. No.
	°C		L / min.	max. bar		
Unichiller® 007 OLÉ	-20 40	0.7.0,55/0.4	29	1,0	1	6.272 357
Unichiller® 007w OLÉ	-20 40	0.7/0.55/0.4	29	1,0	1	4.675 314
Unichiller® P007 OLÉ	-20 40	0.7/0.55/0.4	25	2,5	1	6.288 861
Unichiller® 010 OLÉ	-20 40	1.0/0.8/0.5	29	1,0	1	6.272 358
Unichiller® 010w OLÉ	-20 40	1.0/0.8/0.5	29	1,0	1	4.667 602
Unichiller® P010 OLÉ	-20 40	1.0/0.8/0.5	25	2,5	1	6.288 863
Unichiller® 012 OLÉ	-20 40	1.2/1.0/0.7	29	1,0	1	6.272 351
Unichiller® 012w OLÉ	-20 40	1.2/1.0/0.7	29	1,0	1	4.675 315
Unichiller® P012 OLÉ	-20 40	1.2/1.0/0.7	25	2,5	1	6.288 852
Unichiller® P012w OLÉ	-20 40	1.2/1.0/0.7	25	2,5	1	6.288 864
Unichiller® 015 OLÉ	-20 40	1.5/1.0/0.7	29	1,0	1	6.272 352
Unichiller® 015w OLÉ	-20 40	1.5/1.0/0.7	29	1,0	1	6.272 359
Unichiller® P015 OLÉ ,	-20 40	1.5/10/0.7	25	2,5	1	6.288 853
Unichiller® P015w OLÉ	-20 40	1.5/1.0/0.7	25	2,5	1	6.288 865
Unichiller® 022 OLÉ ,	-10 40	2.2/1.6/1.0	29	1,0	1	6.272 355
Unichiller® 022w OLÉ	-10 40	2.2/1.6/1.0	29	1,0	1	6.272 353
Unichiller® P022 OLÉ	-10 40	2.2/1.6/1.0	25	2,5	1	6.288 857
Unichiller® P022w OLÉ	-10 40	2.2/1.6/1.0	25	2,5	1	6.288 854
Unichiller® 025 OLÉ į	-10 40	2.5/2.0/1.2	29	1,0	1	6.272 356
Unichiller® 025w OLÉ	-10 40	2.5/2.0/1.2	29	1,0	1	6.272 354
Unichiller® P025 OLÉ	-10 40	2.5/2.0/1.2	25	2,5	1	6.288 859
Unichiller® P025w OLÉ	-10 40	2.5/2.0/1.2	25	2,5	1	6.288 856



2 Compact Recirculating Cooler, F-Series

- 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

Туре	Flow rate	Cooling capacity kW at	Working Temp. range	Temp. stability	Pressure	PK	Cat. No.
	L / min.	20/0/-10°C	°C	± °C	bar		
F250	15	0.25/0.18/0.09	-10 to +40	0.5	0.35	1	9.698 525
F500	24	0.5/0.25	0 to +40	0.5	0.5	1	9.698 528
F1000	23	1.0/0.35	0 to +40	0.5	1.0	1	9.698 526

Temperature regulators/Circulator baths

Flow coolers, FL series

- 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: IP 21
- pressure indicator
- adjustable bypass for pump pressure





Туре	Flow rate	Cooling capacity kW at	Working Temp. range	Temp. stability	Pressure	PK	Cat. No.
	L / min.	20/0/-10°C	°C	± °C	bar		
FL300	15	0.3/0.2/0.15	-20 to 40	0.5	0.35	1	9.698 530
FL601	23	0.6/0.4/0.33	-20 to 40	0.5	1.0	1	9.698 531
FL1201	23	1.2/0.9/0.6	-20 to 40	0.5	1.0	1	9.698 532
FL1203	40	1.2/0.8/0.5	-20 to 40	0.5	0.5-3.0	1	9.698 533
FL1701	23	1.7/1.1/0.85	-20 to 40	0.5	1.0	1	9.698 534
FL1703	40	1.7/1.0/0.75	-20 to 40	0.5	0.5-3.0	1	9.698 535
FL2503	40	2.5/1.5/1.2	-20 to 40	0.5	0.5-3.0	1	9.698 536
FL2506	60	2.5/1.0/0.3	-15 to 40	0.5	0.5-6.0	1	9.698 537
FL4003	40	4.0/2.4/1.5	-20 to 40	0.5	0.5-3.0	1	9.698 538
FL4006	60	4.0/1.9/0.9	-20 to 40	0.5	0.5-6.0	1	9.698 539
FL7006	60	7.0/5.1/3.0	-20 to 40	0.5	0.5-6.0	1	9.698 540
FL11006	60	11.0/7.5/5.0	-20 to 40	0.5	0.5-6.0	1	9.698 541
FL20006	80	20.0/10/6	-20 to 40	0.5	0.8-6.0	1	9.698 550

Recirculating chillers ULK

For cooling applications and processes in laboratory and industry. Thanks to the space-saving design and the particularly quiet cooling unit, the Chiller is ideally suited for installation directly at the workplace.

- Higher energy efficiency through fan with EC technology
- Pleasantly quiet and space saving
- Refrigeration unit: fully hermetically sealed, air-cooled, low maintenance
- Integrated funnel
- Self-sealing hose connector with quick coupling
- Touchscreen controller with high-grade glass screen and integrated flow and digital fill level indicators
- Freeze-up and thermal overload protection
- Flow control with dry running protection
- Optical and acoustical alarm
- MOD bus interface optionally available





Туре	Working Temp. range	Pressure	Flow rate	Cooling capacity kW at 20 °C	PK Cat. No
	°C	bar	L / min.		
ULK 602	-10 40	0.6	10	650	1 6.284 44
ULK 1002	-10 40	2.9	12	1200	1 6.284 44
ULK 2002	-10 40	2.9	12	2300	1 6.284 44

JULABO

7. Heating and cooling technology

Temperature regulators/Dynamic Temperature Control Systems



9.857 916

Highly Dynamic Temperature Control Systems Presto™

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. 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



Temperature stability: $\pm 0.01 \dots 0.05$ °C Pump capacity

Flow rate:
A30 25 l/min
A40/W40/A80/W80 16 ... 40 l/min
A45/A45t/W50/W50t 35 ... 76 l/min
A85/A85t 35 ... 80 l/min



9.857 917

Cooling Working Type **Dimensions** Heating Cooling capacity kW PK Cat. No. (WxDxH) capacity capacity Temp. at 20/0/-20°C kW at 20 °C range °C 1 **9.857 915** A 30 242 x 583 x 612 0.5 -30 ... 250 0.5 / 0.4 / 0.17 2.7 -40 ... 250 A 40 323 x 583 x 662 2.7 1.2 1.2 / 0.9 / 0.6 1 9.857 916 1 W 40 323 x 583 x 662 -40 ... 250 1.2 / 1.0 / 0.55 9.857 917 2 1.2 2.7 3.5 -45 ... 250 3.5 / 3.3 / 1.8 A 45 530 x 665 x 1260 6.0 1 **4.672 122** 3.5 / 3.3 / 1.8 A 45t 530 x 665 x 1260 -45 ... 250 4.672 123 6.0 3.5 7.5 / 6.5 / 3.0 W 50 530 x 665 x 1260 6.0 7.5 -50 ... 250 1 4.658 069 W 50t 530 x 665 x 1260 -50 ... 250 7.5 / 6.5 / 3.0 4.658 070 7.5 6.0 -80 ... 250 1.2 / 1.2 / 1.1 A 80 430 x 650 x 1258 1.8 1.2 9.857 918 W 80 430 x 650 x 1258 1.2 -80 ... 250 9.857 919 1.8 1.2 / 1.2 / 1.1 A 80t 430 x 650 x 1260 1.2 -80 ... 250 1.2 / 1.2 / 1.1 1 **9.857 920** 3.4 W 80t 430 x 650 x 1260 -80 ... 250 9.857 921 3.4 1.2 / 1.2 / 1.1



Reaction vessels, cylindrical, with thermostatic jacket and withdrawal valve



Lenz

- With graduation
- Laboratory flange LF
- With groove
- Two connectors with threads GL 14 or GL 18
- Made of DURAN® tubing

Other sizes on request.

Nominal capacity	Flange (LF)	Outer/ inner diam.	Height	Int. height	Connection	Bore	PK	Cat. No.
ml		mm	mm	mm		mm		
100	60	90/60	245	115	GL 14	10	1	9.142 766
250	60	90/60	300	170	GL 14	10	1	9.142 767
500	60	90/60	385	255	GL 14	10	1	9.142 768
1000	60	90/60	360	220	GL 14	10	1	6.233 770
250	100	130/99	275	140	GL 18	10	1	6.230 277
500	100	130/99	295	155	GL 18	10	1	9.142 781
1000	100	130/99	360	220	GL 18	10	1	9.142 782
2000	100	130/99	490	350	GL 18	10	1	9.142 784
3000	100	190/150	440	285	GL 18	10	1	6.243 114
4000	100	190/150	495	340	GL 18	10	1	9.142 787
2000	150	190/150	375	225	GL 18	10	1	6.233 793
3000	150	190/150	430	280	GL 18	10	1	6.243 115
4000	150	190/150	485	335	GL 18	10	1	7.635 340
5000	150	190/150	540	390	GL 18	10	1	6.224 194
6000	150	190/150	595	445	GL 18	10	1	6.243 116
10000	150	315/240	640	480	GL 18	20	1	6.240 516

Temperature regulators/Temperature Control Accessories

Function upgrade for Huber circulators

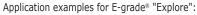
E-grade - innovative activation keys for the functionality to suit your budget and process requirements

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.

The E-grade "Explore" for Unistats is more than just another functions package. It makes important information available to users of Unistat temperature control systems. Temperature values and temperature differentials as well as for the actual heating power, cooling power and pump power within the system are displayed on the touch-panel. E-grade "Explore" is an evolution of the existing Unistat technology. Existing sensors are utilised to make important process temperature and power data visible. In addition to making the data visible on the display of the device,

it can also be accessed via the digital interfaces for further processing.



- Process and product development and optimisation
- Use-Tests of raw materials, quality control
- Enhanced data collection for scale-up trials





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





Temperature regulators/Temperature Control Accessories



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

JULABO



Danger

H phrases: H304

Туре	Description	Capacity	Temp. range	PK	Cat. No.
		1	°C		
P20.190.40	Thermal fluid MinOil	5	+20 +190	1	6.201 643
P20.190.40	Thermal fluid MinOil	20	+20 +190	1	6.239 618
P20.275.50	Thermal fluid SilOil	5	+20 +275	1	6.201 670
P20.275.50	Thermal fluid SilOil	10	+20 +275	1	6.203 535
M20.195/235.20	Thermal fluid SilOil	5	-20 + 195/235	1	6.306 078
M20.195/235.20	Thermal fluid SilOil	10	-20 +195/235	1	6.250 420
M40.165.10/220.10	Thermal fluid SilOil	5	-40 +165/220	1	6.250 278
M40.165.10/220.10	Thermal fluid SilOil	10	-40 +165/220	1	6.304 378
M60.115/200.05	Thermal fluid SilOil	5	-60 +115/200	1	6.201 255
M60.115/200.05	Thermal fluid SilOil	10	-60 +115/200	1	6.225 263
M90.055/170.03	Thermal fluid SilOil	5	-90 +55/170	1	7.615 661
M90.055/170.03	Thermal fluid SilOil	10	-90 +55/170	1	6.202 172

Further thermal fluids available on request



2 Tempering Liquids

Long-term tested for safe and reliable operation. Suitable for temperature control in refrigerated circulators.

- Low toxicity
- Low viscosity
- High stability
- Almost odor-free
- Good thermal conductivity
- Low corrosion susceptibility
- Wide temperature ranges



H phrases: H302|H373

Туре	Temp.	Capacity	Description	PK	Cat. No.
<i>"</i>	range		•		
	°C	Litres			
Thermal M	+70+170	10	Heating Thermostats	1	6.100 525
Thermal M	+70+170	5	Heating Thermostats	1	6.051 961
Thermal HS	+50+250	10	Heating Thermostats	1	6.100 527
Thermal HS	+50+250	5	Heating Thermostats	1	6.100 528
Thermal HY	-80+55	10	Heating-, Cooling Thermostats	1	6.100 529
Thermal HY	-80+55	5	Heating-, Cooling Thermostats	1	6.100 530
Thermal H20S	0+220	10	Heating-, Cooling Thermostats	1	6.100 533
Thermal H20S	0+220	5	Heating-, Cooling Thermostats	1	6.100 534
Thermal H5	-50+105	10	Flow Coolers, Cooling Thermostats	1	6.100 531
Thermal H5	-50+105	5	Flow Coolers, Cooling Thermostats	1	6.100 532
Thermal G	-30+80	10	Flow Coolers, Cooling Thermostats	1	6.206 171
Thermal G	-30+80	5	Flow Coolers, Cooling Thermostats	1	6.229 933
Thermal H10	(-40)-20+180	10	Flow Coolers, Cooling Thermostats	1	6.222 284
Thermal H10	(-40)-20+180	5	Flow Coolers, Cooling Thermostats	1	6.207 217
Thermal H250S	+20+250	5	High Temperature Thermostats (Forte HT)	1	6.264 316
Thermal HL30	-30+90	5	Dynamic Temperature Control Systems	1	6.287 812
Thermal HL60	-60+250	10	Dynamic Temperature Control Systems	1	6.281 890
Thermal HL60	-60+250	5	Dynamic Temperature Control Systems	1	7.647 214
Thermal HL 90	-90 +200	5	Dynamic Temperature Control Systems	1	4.672 125
Thermal HL 90	-90 +200	10	Dynamic Temperature Control Systems	1	4.672 124

7. Heating and cooling technology Heating/Water baths

Water baths Precision incl. Thermal Beads

The general purpose water baths, Precision, are rugged, high performance baths for temperatures up to 100°C (TSGP02 up to 90 °C). Over-temperature safety circuit is designed to prevent thermal runaway. Benefit from outstanding chemical and corrosion resistance with epoxy powder-coated exterior, and easily clean the chamber with its seamless stainless-steel interior. With timer.

- Advanced microprocessor controller is designed for extended functionality
- Protect your work with audible alarms
- Conveniently save commonly used settings with four temperature presets
- Clear polycarbonate gable cover

Scope of supply: Bath incl. gable cover, diffuser tray, TSGP02 and TSGP05 with hand pump, all other models with drain hose.



Туре	Capacity of the bath	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	With	PK	Cat. No.
	litres	mm	mm	kW			
TSGP02PM05	2	138 x 155 x 150	230 x 199 x 233	0.2	4 I Thermal Beads	1	6.290 947
TSGP05PM05	5	154 x 300 x 150	246 x 355 x 232	0.3	4 I Thermal Beads	1	6.273 859
TSGP10PM05	10	301 x 330 x 150	393 x 383 x 233	0.8	8 I Thermal Beads	1	6.273 860
TSGP20PMO5	20	297 x 500 x 150	392 x 555 x 233	1.2	16 Thermal Beads	1	6.273 861
TSGP28PM05	28	297 x 500 x 200	392 x 555 x 282	1.2	24 I Thermal Beads	1	6.273 862
TSGP15PMO5	5 +	154 x 300 x 150 +	246 x 355 x 232 +	1.1	12 Thermal Beads	1	6.273 863
	10	301 x 330 x 150	393 x 383 x 233				

Thermal beads for Water baths Precision

Thermal beads replace water in laboratory baths or ice in ice buckets to prevent contamination. A bath filled with Thermal Beads can be left unattended and is always available at the set temperature without danger of water evaporating to dryness.

- Small, non-uniform metal beads composed of a dry metallic thermal alloy
- Cleaning with biodegradable disinfectant every 2 4 weeks only
- Good temperature stability and uniformity
- Energy-efficient
- Minimizes maintenance such as emptying, cleaning, monitoring, and refilling the bath
- Holds common lab vessels in place without accessories such as racks, floats, and weights





Descrip	on Pk	Cat. No.
Thermal	ads, 4 l	6.290 968





Heating/Water baths





Digital water baths

The unstirred, general purpose water baths are available in 5 sizes: 2, 5, 10, 20 and 28 liters.

PolyScience

- Color TFT display with control panel
- Calibration offset feature
- Low liquid alarm
- Over temperature alarm
- 5 user programmable pre-sets (temperature and duration)
- 5 languages (English, German, French, Spanish and Chinese)
- Integrated independent timer
- Eco-mode
- Safety thermostat
- High-gabled, clear lids accommodate taller media bottles
- Rear-mounted drain (10, 20 and 28 liters)
- Recessed Handles

Scope of supply: Digital water bath, incl. lid

Specifications:

Temperature range: Ambient +5 °C ... 100 °C

Temperature uniformity: ± 0.2 °C Temperature stability: ± 0.1 °C Power supply: 240 V, 50 Hz

Туре	Capacity of the bath	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	PK	Cat. No.
	litres	mm	mm	kW		
WBE02A12E	2	109 x 99 x 152	305 x 229 x 267	0.12	1	6.274 985
WBE05A12E	5	274 x 127 x 152	305 x 368 x 267	0.36	1	6.274 986
WBE10A12E	10	295 x 269 x 152	432 x 393 x 305	1.00	1	6.274 987
WBE20A12E	20	432 x 241 x 152	445 x 572 x 305	1.40	1	6.274 988
WBF28A12F	28	432 x 241 x 203	445 x 572 x 356	1.40	1	6.274 989



Basic digital water baths JB Academy

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.

Grant

- 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

Accessory polypropylene spheres or a lid must be used at temperatures between +60 °C and +99 °C. Please order lid and PP spheres separately.

Туре	of the bath	Internal dimensions (W x D x H)	dimensions (W x D x H)	Rated capacity	PK	Cat. No.
	litres	mm	mm	kW		
JBA5	5	281 x 131 x 132	335 x 215 x 200	0.35	1	9.905 875
JBA12	12	306 x 281 x 132	360 x 365 x 225	0.80	1	9.905 876
JBA18	18	281 x 485 x 132	335 x 570 x 275	1.40	1	9.905 877
JBA18	18	281 x 485 x 132	335 x 570 x 275	1.40	1	9.



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.

This product is a disinfectant containing biocides. Please inquire its availability and legal information.

H phrases: H412

Volume ml	PK	Cat. No.
100	1	9.858 040

Digital water baths JB Nova

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 $^{\scriptscriptstyle\mathsf{TM}}$ technology, fast reliable temperature control
- Stability ±0.5 °C
- Simple, intuitive controls, quick and easy to set temperature
- Drain tap on 12 L, 18 L and 26 L baths
- Practical front panel lock disables front panel controls preventing unintentional temperature changes
- 3-year warranty

Accessory polypropylene spheres or a lid must be used at temperatures between +60 °C and +99 °C. Please order PP spheres separately.

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

Unstirred water baths SUB Aqua Pro series, digital

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 Pro 12, 18, 26 and 34
- 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
- Non drip polycarbonate lid and base tray included as standard Available as 120V or 230V.

Accessory polypropylene spheres or a lid must be used at temperatures between +60 °C and +99 °C. Please order PP spheres separately.

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

LLG- Floating pellets, PP

Pellets with 20 mm diameter. Can cover 0.1 m². Protect against evaporation and rapid temperature loss. Decreases 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







Grant



JULABO

JULABO

JULABO

7. Heating and cooling technology

Heating/Water baths

Water baths PURA™

Flexible in use for all purposes in research and quality control. All PURA™ water baths (except PURA™ 4) have an integrated drain screw. The bright, easy-to-read white LED display is clearly visible, even from a distance. With integrated side recessed grips for easy transport and non-slip rubber feet for safe standing.

The complete interior surface of the water baths can be used, as there are no installation elements in the interior.

- Including platform
- Integrated timer
- Working temperature range from 18 to 99.9 °C (with counter-cooling/bath cover)
- Models with filling volumes from 0.8 to 36 liters available
- High temperature accuracy of 0.15 °C
- Bright display with membrane keypad
- Splash-proof
- Built-in dry-running protection

Please order bath cover separately



Water bath PURA™ 4

For 1 test tube rack.

Specifications

Bath volume: 0.8 ... 4.5 |

Bath opening $(W \times D \times H)$: 120 x 270 x 140 mm

Heating capacity: 0.5 kW Weight: 4.9 kg

Overall dimensions (W x D x H): 210 x 350 x 220 mm 230 V, 50-60 Hz Power supply:

Cat. No. Type PURA™ 4 1 4.667 880



Water bath PURA™ 10

For 2 test tube racks.

Specifications Bath volume: 1.4 ... 9.5 |

Bath opening $(W \times D \times H)$: 220 x 270 x 140 mm

Heating capacity: 1.2 kW Weight: 7 kg

Overall dimensions (W x D x H): 310 x 350 x 220 mm Power supply: 230 V, 50-60 Hz

Cat. No. Type PURA™ 10 4.667 881



Water bath PURA™ 14

For 3 test tube racks. JULABO

Specifications

Bath volume: 2 ... 14 | Bath opening (W x D x H): 330 x 270 x 140 mm

Heating capacity: 1.8 kW

Weight: 8.5 kg

420 x 350 x 220 mm Overall dimensions (W x D x H):

Power supply: 230 V, 50-60 Hz

Туре Cat. No. 4.667 882



Water bath PURA™ 22

For 5 test tube racks. **JULABO**

Specifications

Bath volume: 3.4 ... 25.5 | Bath opening (W x D x H): 550 x 270 x 180 mm

Heating capacity: 2.0 kW Weight: 11.5 kg

Overall dimensions (W x D x H): 640 x 350 x 260 mm Power supply: 230 V, 50-60 Hz

Cat. No. Type PURA™ 22 4.667 883

Water bath PURA™ 30

For 7 test tube racks.

Specifications

Bath volume: 4.8 ... 36.0 l
Bath opening (W x D x H): 770 x 270 x 180 mm

Heating capacity: 2.0 kW Weight: 14.5 kg

Overall dimensions (W x D x H): 860 x 350 x 260 mm Power supply: 230 V, 50-60 Hz

Туре	PK	Cat. No.
PURA™ 30	1	4.667 884



Lids for Water baths, PURA™

JULABO

For model	Description	PK	Cat. No.
PURA™ 4	Hinged bath cover	1	9.857 931
PURA™ 10	Hinged bath cover	1	9.857 932
PURA™ 14	Hinged bath cover	1	9.857 933
PURA™ 22	Hinged bath cover	1	9.857 934
PURA™ 30	Hinged bath cover	1	9.857 935
PURA™ 10	Flat bath cover, with 4 openings Ø 92 mm	1	9.857 922
PURA™ 10	Flat bath cover, with 1 openings Ø 190 mm	1	9.857 923
PURA™ 14	Flat bath cover, with 6 openings Ø 92 mm	1	9.857 924
PURA™ 22	Flat bath cover, with 8 openings Ø 92 mm	1	9.857 925
PURA™ 22	Flat bath cover, with 6 openings Ø 115 mm	1	9.857 926
PURA™ 22	Flat bath cover, with 2 openings Ø 190 mm	1	9.857 927
PURA™ 30	Flat bath cover, with 10 openings Ø 115 mm	1	9.857 928
PURA™ 30	Flat bath cover, with 3 openings Ø 190 mm	1	9.857 929



9.857 932

Test tube trays for PURA™

JULABO

For Type	Description	PK	Cat. No.
PURA™	Test tube rack for 60 tubes 100 x 16/17 mm diam.	1	4.658 041
PURA™	Test tube rack for 90 tubes 75 x 12/13 mm diam.	1	4.658 042
PURA™	Test tube rack for 21 tubes 30 mm diam.	1	4.658 043



Water baths Hydro

NEW

The Hydro water baths are optimally equipped for every application in the laboratory. With their precise temperature distribution, they are designed for the needs of biological, medical or biochemical laboratories. The H 8 A and H 16 A models are also equipped with a circulation system for optional mixing.

- Interior made of high quality stainless steel
- Applications in the boiling range possible (temperature range: 25 to 100 °C)
- TFT color display for intuitive operation, temperature display in °C and °F
- Programmable timer
- Optical and acoustic alarm in the event of an error

Туре	Capacity of the bath	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	PK	Cat. No.
	litres	mm	mm	kW		
H 4	4	245 x 100 x 165	340 x 290 x 275	0.5	1	4.672 291
H 8	8	245 x 200 x 165	340 x 395 x 275	1.0	1	4.672 292
H 8 A	8	245 x 200 x 165	340 x 395 x 275	1.0	1	4.672 297
H 16	16	400 x 245 x 165	500 x 440 x 275	1.5	1	4.672 293
H 16 A	16	400 x 245 x 165	500 x 440 x 275	1.5	1	4.672 298
H 22	22	400 x 245 x 225	500 x 440 x 345	1.5	1	4.672 294
H 24	24	600 x 245 x 165	700 x 440 x 275	1.5	1	4.672 295
H 41	41	410 x 296 x 335	510 x 490 x 476	1.5	1	4.672 296



7. Heating and cooling technology Heating/Water baths

Water baths WNB/WNE

The Memmert waterbath is available in six model sizes and two performance classes. In addition to the Basic class for standard temperature control tasks, the Excellent version provides precise test procedures with a maximum of safety. The 3-sided heating ensures excellent temperature homogeneity.

WNB = water bath, natural circulation, temperature controller BASIC with 2-fold overtemperature protection

WNE = water bath, natural circulation, temperature controller EXCELLENT with 3-fold overtemperature protection, filling level control and calibration option

Specifications

Working-temperature range: Setting temperature-range: Temperature variation: Temperature distribution: Power supply: at least 5 °C above ambient to +95 °C and additional boiling stage ± 0.1 K ± 0.25 K (sizes 7 - 29), ± 0.3 K (size 45) 230 V, 50/60 Hz; 115 V, 50/60 Hz no extra charge

Water baths WNB

Water bath with natural circulation and temperature controller BASIC with 2-fold overtemperature protection

Memmert

Without covers - please order separately!

Туре	Capacity of the bath	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Net weight	PK	Cat. No.
	litres	mm	mm	kW	kg		
WNB7	7	240 x 210 x 140	468 x 356 x 238 *	1.2	11	1	9.906 581
WNB10	10	350 x 210 x 140	578 x 356 x 238 *	1.2	13	1	9.906 582
WNB14	14	350 x 290 x 140	578 x 436 x 238 *	1.8	15	1	9.906 583
WNB22	22	350 x 290 x 220	578 x 436 x 296 *	2.0	17	1	9.906 584
WNB29	29	590 x 350 x 140	818 x 516 x 238 *	2.4	24	1	9.906 585
WNB45	45	590 x 350 x 220	818 x 516 x 296 *	2.8	26	1	9.906 586

^{*} Weight and height with flat cover.



Water baths WNB with gabled cover

Memmert

Туре	Capacity of the bath	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Net weight	PK	Cat. No.
	litres	mm	mm	kW	kg		
WNB7	7	240 x 210 x 140	468 x 356 x 337	1.2	11	1	6.290 896
WNB10	10	350 x 210 x 140	578 x 356 x 337	1.2	13	1	6.290 897
WNB14	14	350 x 290 x 140	578 x 436 x 347	1.8	15	1	6.290 898
WNB22	22	350 x 290 x 220	578 x 436 x 405	2.0	17	1	6.290 899
WNB29	29	590 x 350 x 140	818 x 516 x 343	2.4	24	1	6.290 900
WNB45	45	590 x 350 x 220	818 x 516 x 401	2.8	26	1	6.290 901

Heating/Water baths

Water baths WNE

Water bath with natural ciculation and temperature controller EXCELLENT with 3-fold overtemperature protection, filling level control and calibration option.

Memmert

Memmert

Without covers - please order separately!

Туре	Capacity of the bath	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Net weight	PK	Cat. No.
	litres	mm	mm	kW	kg		
WNE7	7	240 x 210 x 140	468 x 356 x 238*	1.2	11	1	9.906 591
WNE10	10	350 x 210 x 140	578 x 356 x 238 *	1.2	13	1	9.906 592
WNE14	14	350 x 290 x 140	578 x 436 x 238 *	1.8	15	1	9.906 593
WNE22	22	350 x 290 x 220	578 x 436 x 296 *	2.0	17	1	9.906 594
WNE29	29	590 x 350 x 140	818 x 516 x 238 *	2.4	24	1	9.906 595
WNE45	45	590 x 350 x 220	818 x 516 x 296 *	2.8	26	1	9.906 596

^{*}Weight and hight with flat cover.





Options and accessories for water baths

Flat cover: Flat stainless steel cover with openings and concentric ring sets

Gable cover: Stainless steel gable cover, also suitable for shaking device and Peltier cooling device

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 gable 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: 115 W. Pumping capacity of circulation pump for coolant: 600 ml/min

Bottom grid: reversible for 2 heights (30 mm and 60 mm)

Туре	For	Diam.	Openings	PK	Cat. No.
	Volume		., .		
	1	mm			
Flat cover	7	147	1	1	9.906 530
Flat cover	10	107	3	1	9.906 531
Flat cover	14	87	6	1	9.906 532
Flat cover	22	87	6	1	9.906 533
Flat cover	29	107	8	1	9.906 534
Flat cover	45	107	8	1	9.906 537
Flat cover	29/45	147	4	1	6.073 294
Gable cover	7			1	9.906 561
Gable cover	10			1	9.906 562
Gable cover	14/22			1	6.306 619
Gable cover	29/45			1	6.228 924
CDP115 Peltier Cooling Device	all			1	9.906 651
Water level control	all			1	9.906 650
Installation and connection set for Peltier cooling device CDP115	all			1	7.900 153
Bottom grid	7			1	6.302 001
Bottom grid	10			1	7.076 000
Bottom grid	14			1	6.200 774
Bottom grid	22			1	7.076 101
Bottom grid	29			1	7.083 478
Bottom grid	45			1	6.801 467
Shaking device	14/22			1	7.075 941
Shaking device	29/45			1	6.228 923

Grant

7. Heating and cooling technology

Heating/Shaking water baths



Shaking water baths LSB Agua Pro

- 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
- Universal frame and polycarbonate lid included

Accessory polypropylene spheres or a lid must be used at temperatures between +60 °C and +99 °C.

Accessory cooling is required for temperatures below ambient.

Please order PP spheres separately.

Minimum working depth: 60mm

Temperature range: ambient +5 to 99 °C

Display: LED

Linear shaking speed: 20 to 200 rpm (depending on load)

Shaking speed display resolution: 1 rpm
Linear shaking stroke length: 20 mm
Timer: 1 to 999 min
Drain tap: yes
Supply voltage: 220-230 V

Туре	Capacity of the bath	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Dimensions Shaking trays (D x W)	PK	Cat. No.
	litres	mm	mm	mm		
LSB12	12	323 x 298 x 118	360 x 380 x 275	240 x 235	1	6.264 684
LSB18	18	298 x 500 x 118	335 x 565 x 275	420 x 235	1	6.264 685



2 Shaking water bath OLS 26 Agua Pro

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

Grant

- 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
- Universal frame and polycarbonate lid included

Accessory polypropylene spheres or a lid must be used at temperatures between +60 °C and +99 °C. Accessory cooling is required for temperatures below ambient.

Please order PP spheres separately.

Tank size: 26 l Minimum working depth: 70 mm

Temperature range: ambient +5 to 99 °C (0 to 99 °C with accessory cooling)

Uniformity: ± 0.1 °C Stability: ± 0.1 °C ± 0.1 °C

Display: 2 x LED (individual displays & controls for

temperature and shaking speed)

Orbital and Linear shaking speed: 20 to 200 rpm (depending on load)

Orbital shaking radius:

Shaking speed display resolution:

1 rpm
Linear shaking stroke length:

Shaking tray area:

Timer:

1 to 999 min
Drain Tap:

Supply voltage:

9 mm
1 rpm
18, 28, 36 mm
380 x 235 mm
1 to 999 min
yes
220-230 V

Туре	Capacity of the bath	Internal dimensions (W x D x H)	External dimensions (W x D x H)	PK	Cat. No.
	litres	mm	mm		
OLS 26	26	298 x 500 x 159	335 x 565 x 325	1	6.264 683

Heating/Shaking water baths

Accessories for shaking water baths

Grant

Туре	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	25 ml flask	1	6.264 810
Spring clamp SC-50	50 ml flask	1	6.264 811
Spring clamp SC-100	100 ml flask	1	6.264 812
Spring clamp SC-250	250 ml flask	1	6.264 813
Spring clamp SC-500	500 ml flask	1	6.264 814
Spring clamp SC-1000	1000 ml flask	1	6.264 815

Trays for shaking water baths OLS/LSB series

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

Grant



Туре	For	PK	Cat. No.
Universal tray TU12	LSB12	1	6.264 687
Universal tray TU18	LSB18	1	6.264 688
Universal tray TU26	OLS26	1	6.264 686
Test tube tray TS26	OLS26	1.	6.264 689
Test tube tray TS12	LSB12	1	6.264 690
Test tube tray TS18	LSB18	1	6.264 691
Flask tray TF26	OLS26	1	6.264 695
Flask tray TF12	LSB12	1	6.264 696
Flask tray TF18	LSB18	1	6.264 697
Base tray SBT12	LSB12	1	6.264 698
Base tray SBT26	OLS26/LSB18	1	6.264 699



Shaking water baths Hydro

With their excellent temperature homogeneity, the universal Hydro shaking water baths are designed for the needs of biological, medical or biochemical laboratories.

The models H 20 S and H 20 SW shaking water baths have a linear, oscillating shaking movement, while model H 20 SOW moves the sample in an orbital motion.

- For boiling range applications

Power supply:

- Speed controller for load-independent, continuously adjustable shaking movement

230 V, 50/60 Hz

- Soft, controlled start of the shaking movement
- Dry run protection (safety class I, NFL)
- Maintenance free and reliable
- H 20 SW and H 20 SOW with integrated cooling coil





Specifications H 20 S (SW) // H 20 SOW

Type of movement: linear // orbital Speed Range: 10 ... 250 rpm Shaking diameter: 22 mm // 14 mm Temperature stability: ±0.1 K Heating power: 1.5 kW

Туре	Capacity of the bath	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Temp. range	PK Cat. No.
	litres	mm	mm	°C	
H 20 S	20	450 x 300 x 160	715 x 520 x 330	25 99.9	1 4.672 299
H 20 SW	20	450 x 300 x 160	715 x 520 x 330	10 99.9	1 4.672 300
H 20 SOW	20	450 x 300 x 155	632 x 500 x 390	10 80	1 4.672 301

JULABO

7. Heating and cooling technology

Heating/Shaking water baths

Shaking water baths, SW series

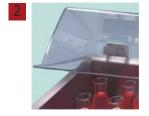
For simultaneous heating and shaking of samples, e.g. incubations, hybridizations etc. Reciprocal motion.

- 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 15 mm stroke
- removable shaking carriage
- model SW23 has an internal circulation pump giving enhanced temperature stability

Bath lid not included.

Туре	Capacity of the bath	Internal dimensions (W x D x H)	External dimensions (W x D x H)	PK	Cat. No.
	litres	mm	mm		
SW22	20	500 x 300 x 180	700 x 350 x 260	1	9.906 383
SW23	20	500 x 300 x 180	700 x 350 x 260	1	9.906 384





Shaking water baths, SW 22, SW 23, accessories

JULABO

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



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 830.

Heating/Heating baths

Sand Baths with Performance Control and Thermostatic Controller

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 50 mm. Stainless steel controller housing, with painted central section. Height-adjustable feet. Connection cable approximately 1.7 m.

With earthed plug for 230 V supplies up to 3300 W. A 400 V 3-phase model is also available.



Туре	Min. operating temperature	Max. operating temperature	Hot- plate	Dimensions (W x D x H)	Net weight	PK	Cat. No.
	RT + °C	°C	mm	mm	kg		
ST 72	50	300	360 x 360	358 x 358 x 220	14	1	9.645 814
ST 82	50	300	360 x 510	364 x 514 x 220	21	1	9.645 815
ST 92-2	50	300	440 x 590	442 x 592 x 220	28	1	9.645 816
ST 93-230	100	370	440 x 590	442 x 592 x 220	28	1	9.645 819
ST 92-3	50	300	440 x 590	442 x 592 x 220	28	1	9.645 820

^{*} special production

Heating Bath HB eco

Compact and ergonomic heating safety bath.

- Ergonomic handles
- Clear, black-and-white display
- Alternating set-point/actual temperature display
- USB interface

Specifications

Heating output: 1400 W

ambient ... 99 °C Temperature range:

Setting accuracy: ±1 K Offset: ±2 K

Material: Stainless steel 1.4404

Useful volume:

Dimensions, internal (diam. x H): 225 x 130 mm 330 x 325 x 190 mm Dimensions, external (W x D x H):

Weight: 3.9 kg

Power supply: 200 ...240/100 ... 120 V, 50/60 Hz

IP code acc. to DIN EN 60529: IP 21

Туре	PK	Cat. No.
НВ есо	1	6.311 083

Heating Bath HB Digital

Compact and ergonomic heating safety bath for all tempering media.

- Ergonomic handles
- Key button to lock heating bath temperature
- Clear, black-and-white display
- Permanent set-point/actual temperature display
- 3 different safety operating modes
- USB interface

Specifications

1350 W Heating output:

Temperature range: ambient ... 180 °C

Setting accuracy: ±1 K Offset: ±1 K

Stainless steel 1.4404 Material:

Useful volume:

225 x 130 mm Dimensions, internal (diam. x H): Dimensions, external (W x D x H): 330 x 325 x 190 mm

Weight: 3.9 kg

Power supply: 200 ...240/100 ... 120 V, 50/60 Hz

IP code acc. to DIN EN 60529: IP 21

Туре	PK	Cat. No.
HB digital	1	9.729 918





ΙΚΑ

IKA

7. Heating and cooling technology

Heating/Heating baths



Heating bath HBR 4 control

The heating bath is noted for:

- Cylindrical bath shape
- Heating elements integrated into the bath base
- Heat transfer media can be low-viscous oil (50 mPas) or water
- Two carry handles
- Infinitely variable safety temperature limiter according to DIN 12877
- Double-jacketed mantle protection against burns
- Digital display for target, actual and safety temperatures as well as speed
- Integrated magnetic stirrer drive to circulate the tempering fluid, allowing for better heat distribution in the bath
- RS 232 interface

Specifications

Heating output: 1000 W

Temperature range: ambient up to 200 °C

Setting accuracy: ±1 K
Offset: ±1 K

Material: stainless steel 1.4301 Useful volume: max. 4 l

 Useful volume:
 max. 4 I

 Ext./int. height:
 250/160 mm

 Dimensions (W x D x H):
 340 x 250 x 340 mm

Weight: 4.4 kg Protection class DIN EN 60529: IP 20

Tested to DIN 12877 II.

Туре	PK	Cat. No.
HBR 4 control	1	6.282 329



2 Heating bath liquid, BUDDE

Use:Buddeberg

 $\ensuremath{\mathsf{BUDDE}}$ 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 achieve best results.

The crucial advantages of BUDDE 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
- BUDDE 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.
- BUDDE heating bath liquid does not foam when mixed with water.

Viscosity on addition of water:

BUDDE 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: BUDDE 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 polyglycolether

Appearance: Clear, colourless or lightly yellowish liquid

Storage time: When stored for long periods (over 2 years) the product may become

darker. This does not affect the performance of the product. Heating bath liquid BUDDE can be mixed with water in any ratio.

pH value (DIN ISO 976): 6-8 (100 g/l, 20 °C) Solidification temperature (DIN ISO 3016): approx. -39 °C

Boiling point: 200 °C

Density (DIN 51757, 23 °C): approx. 1.13 g/cm³ to 1.17 g/cm³

Flashpoint (DIN EN ISO 2592): > 290 °C Ignition temperature (DIN 51794): approx. 390 °C

Container	PK	Cat. No.
5 litres	1	9.906 200

840 E & OE.

Water solubility:

Hotplate Ceran®

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 (TC = Touch Control). Two-circle HiLight technique, thus extra large heating zone (dia. 210 mm) can be activated. Thermal shutdown and automatic cooking system. Residual heat indicator and warning light. Temperature range (empty): 0 to approx. 460 °C. Power supply 230 V.

Туре	Dimensions (W x D x H) mm	Hot- plate mm	Heating capacity W	PK Cat. No.
CT 2200/E	305 x 410 x 75	Ø 140/210	1000/2200	1 9.645 510 1
CT 2203/TC	305 x 410 x 75	Ø 140/210	1000/2200	1 9.645 511
CT 3400/E	550 x 310 x 65	Ø 140/210, Ø 145	1000/2200, 1200	1 6.261 651
CT 3010	300 x 600 x 80	Ø 145, Ø 180	1200, 1800	1 7.940 294



9.645 510

Hotplate induction Ceran®

- 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

Specifications

Heating zone: 80 - 200 mm Ø Weight: 3.5 kg 230 V ~ 2200 W Power supply:

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

Hotplates, analogue, CB300 and CB500

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

Туре	Dimensions (W x D x H)	Hot- plate	Rating	Max. temp.	Weight	PK	Cat. No.
	mm	mm	W	°C	kg		
CB300	320 x 370 x 120	300 x 300	1200	450	6	1	9.645 338
CB500	520 x 360 x 130	500 x 300	2250	375	12	1	9.645 316



Stuart

NEV

Stuart

Hotplate CP 300, analogue

A heated glass ceramic plate mounted in a block of pure PTFE creates a powerful hotplate which is chemically resistant, even to concentrated acids. The separate temperature controller is connected to the hotplate via a 2 metre PTFE coated lead, which allows the hotplate to be located in fume hoods.

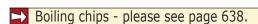
- Ideal for acid digestions or trace metal analysis
- PTFE construction with glass ceramic plate for exceptional resistance to chemical attack
- Can be cleaned with concentrated nitric acid
- Controller is fitted with a hot warning light for temperatures above 50 °C

Specifications

Max. temperature: Heater power: 900 W Heated area: 200 x 200 mm Dimensions Hotplate (W x D x H): 320 x 360 x 60 mm Dimensions Controller (W x D x H): 150 x 160 x 65 mm Net weight: 11 kg

230 V, 50/60 Hz Power supply:

Туре	PK	Cat. No.
CP 300	1	6.230 893







Stuart

7. Heating and cooling technology Heating/Hotplates

Hotplates SS/CS/SD/CD/SP150

Hotplates with accurate temperature control.

- Spill-resistant front control panel with chemically toughened glass for extra resilience
- Hot surface warning light flashes when plate temperature is above 50 $^{\circ}\text{C}$
- Durable chip-resistant aluminum top plate offers excellent heat transmission, rapid heating, and oven temperature distribution
- Ceramic top plate is chemical resistant and easy to clean, plus the white surface ensures good visibility of colour changes
- With an integral fixing point for a retort rod
- With BioCote, silver-based, antimicrobial protection

SP150 additionally with:

- Full-colour 10-cm TFT screen which simultaneously displays target settings and the actual temperature
- Individual profiles can be created and saved
- User calibration for adjusting the temperature output (±5% at 50 and 450 °C)
- Incl. Pt100 Temperature sensor

Specifications

Max. load: 15 I Display resolution: 1°C ±1 °C Accuracy: Dimensions Hotplate (W x D x H): 150 x 150 mm 180 x 300 x 93 mm Dimensions (W x D x H): Net weight: 2.5 kg 230 V, 50/60 Hz Power supply: Warranty: 3 years



4.672 501

Hotplate SS150/CS150, analogue

NEW

Stuart

With basic interface and an LED array indicating the temperature, offering the same quality as the two higher end models. With connection for contact thermometer SCT-1.

 Specifications
 SS150 // CS150

 Max. temperature:
 325 °C // 450 °C

 Heater power:
 700 W // 500 W

Heated area: $150 \times 150 \text{ mm} // 120 \times 120 \text{ mm}$



4.672 502

Туре	Material stirring surface	Colour	PK Cat. No.
SS150B	Aluminium, ceramic coated	Blue	1 4.672 499
SS150K	Aluminium, ceramic coated	Black	1 4.672 500
SS150W	Aluminium, ceramic coated	White	1 4.672 501 1
CS150B	Glass ceramic	Blue	1 4.672 502 2
CS150K	Glass ceramic	Black	1 4.672 503
CS150W	Glass ceramic	White	1 4.672 504







4.672 576

Hotplate SD150/CD150/SP150, digital



With digital interface for a digital temperature setting. With connection for contact thermometer SCT-1.

Specifications SD150/SP150 // CD150 Max. temperature: 325 °C // 450 °C

Heated area: $150 \times 150 \text{ mm} // 120 \times 120 \text{ mm}$

700 W // 500 W

Туре	Material stirring surface	Colour	PK Cat. No.
SD150B	Aluminium, ceramic coated	Blue	1 4.672 511
SD150K	Aluminium, ceramic coated	Black	1 4.672 512
SD150W	Aluminium, ceramic coated	White	1 4.672 513
CD150B	Glass ceramic	Blue	1 4.672 514
CD150K	Glass ceramic	Black	1 4.672 515
CD150W	Glass ceramic	White	1 4.672 516
SP150B	Aluminium, ceramic coated	Blue	1 4.672 575
SP150W	Aluminium, ceramic coated	White	1 4.672 576 4
SP150K	Aluminium, ceramic coated	Black	1 4.672 577
SP150P	Aluminium, ceramic coated	Pink	1 4.672 578

842 E & OE.

Heater power:

Heating/Hotplates

Hotplates, analogue, SB 300 and SB 500

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 300 mm x 300 mm top plate model has a retort rod mounting at the rear of the housing. With BioCote, silver-based, antimicrobial protection.

Stuart

IKA



Туре	Dimensions (W x D x H)	Hot- plate	Rating	Max. temp.	Weight	PK	Cat. No.
	mm	mm	W	°C	kg		
SB300	320 x 370 x 120	300 x 300	600	300	6	1	9.645 331
SB500	520 x 360 x 130	500 x 300	1500	300	12	1	9.645 317

Hotplates digital, SD 300 and SD 500

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 300 mm top plate model has a retort rod mounting at the rear of the housing.

With BioCote, silver-based, antimicrobial protection.

For 230V 50/60 Hz single phase supplies.

Туре	Dimensions (W x D x H)	Hot- plate	Rating	Max. temp.	Weight	РК	Cat. No.
	mm	mm	W	°C	kg		
SD300	320 x 370 x 105	300 x 300	600	300	6	1	9.645 320
SD500	520 x 360 x 130	300 x 500	1500	300	12	1	9.645 321



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

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



9.720 496

Specifications

Heating function

Temperature display:	digital
Heat output	
C-MAG HP 4:	250 W
C-MAG HP 7:	1000 W
C-MAG HP 10:	1500 W
Heating rate (1 litre H ₂ O)	
	2 5 1// 1

C-MAG HP 4: 2.5 K/min C-MAG HP 7/HP 10: 5 K/min 50 to 500 °C Temperature range: ±10 K Setting accuracy: Safety circuit fixed: 550 °C

Control accuracy with sensor

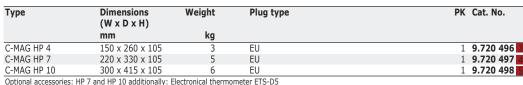
C-MAG HP 4: C-MAG HP 7/HP 10: ETS-D5/±0.5 K

Heating plate

Material: glass ceramic

Dimensions C-MAG HP 4: 100 x 100 mm C-MAG HP 7: 180 x 180 mm C-MAG HP 10: 260 x 260 mm

Tested to DIN EN IEC 61010-1.





9.720 497



9.720 498

7. Heating and cooling technology Heating/Hotplates

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.

Gestigkeit

Gestigkeit

Туре	Dimensions	Hot-	Rating	Temp.	Supply	Weight	PK	Cat. No.
	(W x D x H)	plate		range	requirements			
	mm	mm	W	max. °C	V	kg		
4 A	440 x 300 x 100	430 x 140	1500	50 - 500	230	5.0	1	7.603 031
11 A	290 x 410 x 100	280 x 280	2000	50 - 500	230	5.5	1	9.645 711
22 A	290 x 560 x 100	280 x 430	3000	50 - 500	230	6.5	1	9.645 712
33 A	440 x 560 x 100	430 x 430	4400	50 - 500	3x400	9.0	1	9.645 714
44 A	590 x 560 x 100	580 x 430	5700	50 - 500	3x400	11.5	1	9.645 715
4 SR	440 x 180 x 100	430 x 140	1500	50 - 500	230	5.0	1	6.803 027
11 SR	290 x 290 x 100	280 x 280	2000	50 - 500	230	5.5	1	9.645 721
22 SR	290 x 440 x 100	280 x 430	3000	50 - 500	230	6.5	1	9.645 722
33 SR	440 x 440 x 100	430 x 430	4400	50 - 500	3x400	9.0	1	9.645 724
44 SR	590 x 440 x 100	580 x 430	5700	50 - 500	3x400	11.5	1	9.645 725
33 EB	440 x 440 x 100	430 x 430	4400	50 - 500	3x400	9.0	1	9.645 734



2 High-performance hotplate CERAN®

High-performance CERAN® glass ceramic hotplate with circular heating area 145 mm diameter and square placement surface made of glass ceramic (175 x 175), stainless steel housing, power controller (adjustable 10 % to 100 %) and integral temperature monitor.

Туре	Dimensions (W x D x H)	Hot- plate	Rating	Temp. range	Supply requirements	Weight	PK	Cat. No.
	mm	mm	W	max. °C	V	kg		
CT 10	200 x 290 x 85	Ø 145	1200	500	230	2.6	1	9.645 740



Precision hotplate, PZ 44

Automatic, precise regulation of temperatures between 20 and 450 °C.

Gestigkeit
Digital presetting and temperature display. Three power levels (825 W, 1650 W and 3300 W)
can be set and an additional electronic power controller (adjustable 10 % to 100 %) is provided.

At 825 W and 3300 W settings the entire plate surface is heated. At 1650 W 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 ±1 K.

Туре	Dimensions (W x D x H)	Hot- plate	Rating	Temp. range	Supply requirements	Weight	PK	Cat. No.
	mm	mm	W	max. °C	V	kg		
PZ 44	320 x 470 x 190	290 x 440	3300	20 to 450	230*	23	1	9.645 744

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

7. Heating and cooling technology Heating/Hotplates

Precision hotplates, PZ-series

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.



Туре	Dimensions	Hot-	Rating	Temp.	Supply	Weight	PK	Cat. No.
	(W x D x H)	plate		range	requireme	ents		
	mm	mm	W	max. °C	V	kg		
PZ 28-1	210 x 300 x 135	200 x 280	500	20 to 110	230	7	1	9.645 827
PZ 28-2	210 x 300 x 135	200 x 280	1100	20 to 300	230	7	1	9.645 828
PZ 35	365 x 365 x 155	350 x 350	2200	20 to 300	230	14	1	9.645 824
PZ 60	620 x 200 x 155	610 x 160	2000	20 to 300	230	12	1	9.645 829

2 Hotplates with Performance Control and Thermostatic Controller

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 1.7 m. With earthed plug for 230 V supplies up to 3300 W. A 400V 3-phase model is also available.



Туре	Dimensions	Hot-	Rating	Temp.	Supply	Weight	PK	Cat. No.
	(W x D x H)	plate		range	requirements			
	mm	mm	W	max. °C	V	kg		
HT 02	312 x 312 x 170	300 x 300	1800	50 - 300	230	11	1	9.645 781
HT 12	358 x 358 x 170	350 x 350	2200	50 - 300	230	13	1	9.645 782
TH 11	308 x 458 x 170	290 x 440	1650	30 - 110	230	14	1	9.645 773
TH 13	308 x 458 x 170	290 x 440	2400	100 - 370	230	14	1	9.645 793
HT 22	514 x 364 x 170	350 x 500	2850	50 - 300	230	19	1	9.645 785
HT 31	592 x 442 x 170	430 x 580	2000	30 - 110	230	26	1	9.645 776
HT 32-230	592 x 442 x 170	430 x 580	4000	50 - 300	230	26	1	9.645 786
HT 32-400	592 x 442 x 170	430 x 580	4000	50 - 300	3x400	26	1	9.645 787
HT 33-230	592 x 442 x 170	430 x 580	4000	100 - 370	230	26	1	9.645 796

Multiple hotplate systems behrotest®

Multiple hotplate systems, 360 W, with individually adjustable heating controls and indidicator lights. Maximum surface temperature 400 $^{\circ}\text{C}.$

behr



HB4 + HBS4

Туре	Description	Dimensions (W x D x H)	PK	Cat. No.
		mm		
HB 4	4 hotplates with metal protective grills, 94 mm diam.	530 x 320 x 150/760*	1	9.645 590
HB 6	6 hotplates with metal protective grills, 94 mm diam.	760 x 320 x 150/760*	1	9.645 591
HB 8	8 hotplates with metal protective grills, 94 mm diam.	900 x 320 x 150/760*	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

^{*}with support rod

Heating/Heating mantles



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. 60 mm bottom out-let from 500 ml,
max. heating element temperature 450 °C, 1.5 m power supply (earthed) cable with heating-zone switch and
RCD (residual current detection), nominal voltage 230 V AC.

Capacity	Flask diam.	Rating	Heating zones	PK	Cat. No.
ml	mm	W			
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



Standard heating mantles series KM-GH

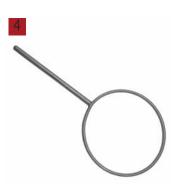
LabHEAT®-Heating mantles for flasks, round bottom. Designed identical to series KM-G, but the heating element is made of heat-resistant quartz yarn and permits a maximum temperature up to 900 °C; 1.5 m power supply (earthed) cable with heating-zone switch and RCD (residual current detection); nominal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

SAF Wärmetechnik

Capacity	diam.	Kating	zones	PK	Cat. No.
ml	mm	W	201103		
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.





Accessories for Standard heating mantles

LabHEAT $^\circ$ - 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

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

9.642 509

9.642 510

9.642 511

Electrothermal

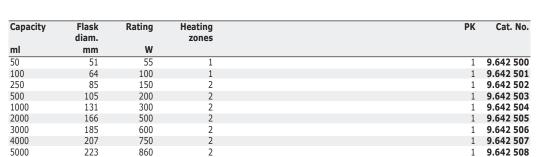
6000

10000

20000

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

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



2000 Serial heating units and Heating mantles with other specifications available on request.

1000

1400

236

279

345



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

LabHEAT® - Heating mantles for flasks, round bottom. Flexible glass yarn heating element SAF Wärmetechnik 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; 1.5 m power supply (earthed) cable and RCD (residual current detection); nominal voltage 230 V AC.

Capacity	Flask	Rating	Heating	PK	Cat. No.
	diam.		zones		
ml	mm	W			
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.



Electronic heating mantles, EM series

Polypropylene outer case is resilient and chemically resistant. Highly efficient in heating up to a maximum 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 12 mm 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	Width	Depth	Height	Power	PK	Cat. No.
ml	mm	mm	mm	W		
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



Heating/Heating mantles



1

Multi-size Heating Mantles, series KM-MPE for different sized round bottom flasks

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

Capacity	Flask diam.	Rating	Heating zones	PK	Cat. No.
ml	mm	W			
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.



Metal-cased heating mantles, series KM-MEB

With corrosion-resistant stainless steel heating bowl to protect against leaking liquid resulting of a broken flask.

SAF Wärmetechnik

- increased working safety in the lab
- plastic-coated, chemically resistant metal housing
- predrilled threaded hole on rear allows to fix the stativ clamp
- 2 heating zones
- with built-in controller allows a continuous adjustment of power outlet
- thermally insulated and earthed
- with built-in heating zone switch and residual current detection (RCD)

Capacity	Flask diam.	Rating	Heating zones	PK	Cat. No.
ml	mm	W			
250	85	150	2	1	6.310 317
500	105	200	2	1	6.310 318
1000	131	300	2	1	6.310 319
2000	166	500	2	1	6.310 320





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

For flasks	Width	Depth	Height	Power	PK	Cat. No.
ml	mm	mm	mm	W		
500 - 1000	238	310	145	240	1	9.643 081
2000 - 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 a maximum 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 12 mm 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 round bottom flasks, pear-shaped flasks and 60° funnels (Mantle is open at the bottom).

For flasks	For funnel diam.	Dimensions (W x D x H)	Power	PK	Cat. No.
ml	mm	mm	W		
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
2000 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.

7. Heating and cooling technology **Heating/Heating mantles**

Heating mantles Electrothermal® CMUV

NEW Electrothermal

Heating mantle has a "V"-shaped design for large, pear-shaped and round-bottom flasks. The bottom opening allows 60° funnels of various diameters to be accommodated.

Coiled heating element provides optimal heat transfer. Control heat throughout the mantle using three separate electrical circuits (top, middle, and bottom), each controlled with its own dial switch.

- Cool-to-the-touch design with powder-coated aluminium casing
- Indicator lamps for "power on" and "heat on" operation

Scope of supply: Heating mantle, three sets of integrated support rod clamps, power cords with UK and EU plugs

Specifications

450 °C Max. working temperature:

Dimensions (W x D x H): 485 x 485 x 300 mm Power supply: 230 V, 50/60 Hz

Туре	For flasks ml	PK	Cat. No.
CMUV10/CL	10000	1	6.282 660
CMUV20/CL	20000	1	4.672 211
CMUV22/CL	22000	1	4.011 144



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 1600 rpm max. heating element temperature 450 °C, 1.5 m power supply (earthed) cable and RCD (residual current detection); nominal voltage 230 V AC.

SAF Wärmetechnik



300 131 Serial heating units and Heating mantles with other specifications available on request.



Electronic stirrer mantles, EMA series

Built-in adjustable heater control up to an element temperature of 450 °C and magnetic Electrothermal stirring control up to approx. 520 rpm 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 12 mm 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	Width	Depth	Height	Power	PK	Cat. No.
ml	mm	mm	mm	W		
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



Support clamp KM-SK

LabHEAT®-Accessories for metal-cased heating mantles and serial heating unit to fix support rods up to diameter 12 mm or to integrate the metal-cased heating mantles within support wall.

SAF Wärmetechnik



Туре	PK	Cat. No.
KM-SK	1	9.642 630

SAF Wärmetechnik

7. Heating and cooling technology

Heating/Heating mantles



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 5 mm; min. bending radius > 15 mm; max. heating element temperature 450 °C;
preterminated with 1.0 m cold end; nominal voltage 230V AC.

Length	Heating	PK	Cat. No.
	power		
cm	W		
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.



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

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

Length	Heating	PK	Cat. No.
	power		
cm	W		
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.



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) 55 x 65 x 120 mm; switching power max. 2990 W (13 A); 1.5 m power supply (earthed) cable with plug.

 Type
 PK
 Cat. No.

 KM-L116
 1
 9.642 660



4 Laboratory regulator series KM-RX1000

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

	Туре	Description	Sensor / Alarm connetion	PK	Cat. No.
ď	KM-RX 1001	Laboratory regulator	Socket / Socket	1	7.619 815
	KM-RX 1004	Laboratory regulator	Clamps / Clamps	1	9.642 654

Heating/Heating mantles-Temperature controllers, thermostats

Temperature sensors for Laboratory regulator series KM-RX

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

SAF Wärmetechnik

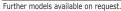
KM-TP2: Pt100, up to 400 °C, sheated element V2A, dia. 4 x 50 mm,

KM-TPG: Pt100, up to 250 °C, glass tube, dia. 6 x 40 0mm,

KM-TNS: NiCr-Ni, up to 1200 °C, rod sensor in Inconell, dia. 1.5 x 300 mm

KM-TNF: NiCr-Ni, up to 400 °C, flat sensor, 0.4 x 15 x 400 mm

For	Length	gth Description		Cat. No.
	m			
KM-RX1001	2.0	with diode plug	1	7.619 816
KM-RX1001	1.5	with diode plug	1	9.642 674
KM-RX1001	2.0	with diode plug	1	6.237 998
KM-RX1001	1.5	with diode plug	1	6.236 355
KM-RX1004	2.0	without diode plug	1	9.642 672
KM-RX1004	1.5	without diode plug	1	9.642 673
KM-RX1004	2.0	without diode plug	1	9.642 671
KM-RX1004	1.5	without diode plug	1	9.642 670
	KM-RX1001 KM-RX1001 KM-RX1001 KM-RX1001 KM-RX1004 KM-RX1004	M M M M M M M M M M	M	M KM-RX1001 2.0 with diode plug 1 KM-RX1001 1.5 with diode plug 1 KM-RX1001 2.0 with diode plug 1 KM-RX1001 1.5 with diode plug 1 KM-RX1004 2.0 without diode plug 1 KM-RX1004 1.5 without diode plug 1 KM-RX1004 2.0 without diode plug 1 KM-RX1004 2.0 without diode plug 1





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 25 V 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.

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

Temperature controllers, TEMPAT®-D

For controlling temperature of heating coils, hotplates, ovens, infrared radiators and water baths. TEMPAT®-D has a 10 mm 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 10 K. 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: 230 V, 50/60 Hz Switching capacity: 2300 W, 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: 188 mm x 110 mm x 70 mm
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

Probe for temperature controllers, TEMPAT®

All probes with 2m connecting cable and plug.

Туре	Diam.	Length	PK	Cat. No.
	mm	mm		
Probe Pt100	1.6*	250	1	9.725 320
Probe Pt100	2.0*	250	1	9.725 321
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

Heating/Temperature controllers, thermostats-Microwaves



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

Weight: 0.7 kg

Туре	PK	Cat. No.
VOLTRON-PLUS F	1	9.725 363



Microwave SEVERIN MW 7875, silver/black

- 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 (W x D x H) : 452 x 352 x 262 mm

Rating W	Colour	PK	Cat. No.
700	silver/black	1	4.658 443



3 Microwave Severin MW 7873

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

Туре	PK	Cat. No.
Severin MW 7873	1	7.672 991



7. Heating and cooling technology Heating/Universal, Heating and Drying incubators

Universal drying oven LLG-uniOVEN 42 and LLG-uniOVEN 110

Microprocessor controlled universal drying oven with **forced convection** including two shelves. Each shelf of the uni*OVEN* 42 and uni*OVEN* 110 has a load capacity of 20 kg, the total load capacity of each unit is 50 kg. The maximum number of shelves is 7 for uni*OVEN* 42 and 10 for uni*OVEN* 110 with a distance of 40 mm between shelves.

- Quick and intuitive operation
- Microprocessor control with integrated auto-diagnostic system
- Forced convection with fan
- Digital display for time and temperature
- **Timer**: 1 minute to 99.9 h and continuous
- Delayed start timer: 1 minute to 99.9 h
- Outlet for vapour exhaustion
- Acoustical and visible information for end of program
- Acoustical and optical alarm at temperature differences
- Interior made of stainless steel
- Adjustable over temperature protection at 300 °C

Scope of supply: LLG-uniOVEN incl. 2 shelves

Specifications LLG-uniOVEN 42 // LLG-uniOVEN 110

Permissible relative moisture: 80 %, not condensing

Dimensions (W x D x H): 420 x 280 x 360 // 500 x 445 x 500 mm

 Weight:
 39 kg // 66 kg

 Power supply:
 230 V, 50/60 Hz

 Warranty:
 3 years



6.263 670



6.263 675

Туре	Nom. capacity	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Plug type	PK Cat. No.
	L	mm	mm	kW		
LLG-uniOVEN 42	42	420 x 280 x 360	705 x 505 x 540	0.85	EU	1 6.263 670
LLG-uniOVEN 42	42	420 x 280 x 360	705 x 505 x 540	0.85	UK	1 6.263 673
LLG-uniOVEN 110	110	500 x 445 x 500	790 x 665 x 680	1.55	EU	1 6.263 675 2
LLG-uniOVEN 110	110	500 x 445 x 500	790 x 665 x 680	1.55	UK	1 6.263 678

Accessories for Universal drying ovens LLG-uniOVEN 42/110

Description	PK	Cat. No.
Shelf for LLG-uniOVEN 42	1	6.263 671
Shelf carrier for LLG-uniOVEN 42	2	6.263 672
Shelf for LLG-uniOVEN 110	1	6.263 676
Shelf carrier for LLG-uniOVEN 110	2	6.263 677

Drying oven E28 series

Robust, space-saving, low-profile ovens with mechanical and adjustable chamber ventilation.

- Temperature range: 60 to 230 °C
- Hydraulic thermostat temperature control
- Adjustable exhaust air flap
- Timer 0 to 120 min
- Available with, or without, TB (Class 1)
- Power supply 230 V, 50/60 Hz

The number of shelves included in the scope of delivery is listed in the table.



Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	PK	Cat. No.
	L			mm	mm	kW		
E 28	28	4	2	400 x 250 x 280	580 x 425 x 405	0.8	1	9.883 543
E 28*	28	4	2	400 x 250 x 280	580 x 425 x 405	0.8	1	9.883 544

^{*} with TB (Class 1)

BINDER

7. Heating and cooling technology Heating/Universal, Heating and Drying incubators

Universal Ovens UN/UF and UNplus/UFplus

The all-round genius among heating ovens covers a multitude of applications, ideally at temperatures above +50 °C. The fresh air is preheated in the pre-heating chamber to avoid temperature fluctuations.

Memmert

Specifications

Type designation: N = Natural convection

F = Forced air circulation plus = TwinDISPLAY

Working temperature range: at least 5 °C (UN/UNplus) or 10 °C (UF/UFplus) above ambient to +300 °C

Setting temperature range: +20 to +300 °C

up to 99.9 °C: 0.1 °C/from 100 °C: 0.5 °C Setting accuracy:

Power supply: 230 V, 50/60 Hz (sizes 30 - 260)

400 V (sizes 450 - 1060)

Universal Ovens UN and UF

SingleDISPLAY: ControlCOCKPIT with one colour display

You can find a detailed description of the "SingleDISPLAY" model at www.memmert.com

Memmert

Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions	External dimensions	Rated capacity	Net weight	PK Cat. No.
	capacity	grius	grius	(W x D x H)	(W x D x H)	capacity		
	L			mm	mm	kW	kg	
UN30	32	3	1	400 x 250* x 320	585 x 434** x 704	1.6	45	1 9.869 681
UN55	53	4	1	400 x 330* x 400	585 x 514** x 784	2.0	57	1 9.869 682
UN75	74	6	2	400 x 330* x 560	585 x 514** x 944	2.5	66	1 9.869 683
UN110	108	5	2	560 x 400* x 480	745 x 584** x 864	2.8	74	1 9.869 684
UN160	161	8	2	560 x 400* x 720	745 x 584** x 1104	3.2	96	1 9.869 685
UN260	256	9	2	640 x 500* x 800	824 x 684** x 1183	3.4	110	1 9.869 686
UN450	449	8	2	1040 x 600* x 720	1224 x 784** x 1247	5.8	161	1 9.869 687
UN750	749	14	2	1040 x 600* x 1200	1224 x 784** x 1720	7.0	217	1 9.869 688
UF30	32	3	1	400 x 250* x 320	585 x 434** x 704	1.6	45	1 9.869 697 2
UF55	53	4	1	400 x 330* x 400	585 x 514** x 784	2.0	57	1 9.869 698
UF75	74	6	2	400 x 330* x 560	585 x 514** x 944	2.5	66	1 9.869 699
UF110	108	5	2	560 x 400* x 480	745 x 584** x 864	2.8	74	1 9.869 700
UF160	161	8	2	560 x 400* x 720	745 x 584** x 1104	3.2	96	1 9.869 701
UF260	256	9	2	640 x 500* x 800	824 x 684** x 1183	3.4	110	1 9.869 702
UF450	449	8	2	1040 x 600* x 720	1224 x 784** x 1247	5.8	161	1 9.869 703
UF750	749	14	2	1040 x 600* x 1200	1224 x 784** x 1720	7.0	217	1 9.869 704
UF1060	1060	14	1	1040 x 850* x 1200	1224 x 1035** x 1720	7.0	252	1 6.266 314





9.869 697

^{*} Less 39 mm for fan **Depth without door handle, please add 56 mm

Heating/Universal, Heating and Drying incubators

Universal Ovens UNplus and UFplus

TwinDISPLAY: ControlCOCKPIT with two colour displays

You can find a detailed description of the "TwinDISPLAY" model at www.memmert.com

Memmert

Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Net weight	PK Cat. No.
	L			mm	mm	kW	kg	
UN30plus	32	3	1	400 x 250* x 320	585 x 434** x 704	1.6	45	1 9.869 689
UN55plus	53	4	1	400 x 330* x 400	585 x 514** x 784	2.0	57	1 9.869 690
UN75plus	74	6	2	400 x 330* x 560	585 x 514** x 944	2.5	66	1 9.869 691
UN110plus	108	5	2	560 x 400* x 480	745 x 584** x 864	2.8	74	1 9.869 692
UN160plus	161	8	2	560 x 400* x 720	745 x 584** x 1104	3.2	96	1 9.869 693
UN260plus	256	9	2	640 x 500* x 800	824 x 684** x 1183	3.4	110	1 9.869 694
UN450plus	449	8	2	1040 x 600* x 720	1224 x 784** x 1247	5.8	161	1 9.869 695
UN750plus	749	14	2	1040 x 600* x 1200	1224 x 784** x 1720	7.0	217	1 9.869 696
UF30plus	32	3	1	400 x 250* x 320	585 x 434** x 704	1.6	45	1 9.869 705
UF55plus	53	4	1	400 x 330* x 400	585 x 514** x 784	2.0	57	1 9.869 706
UF75plus	74	6	2	400 x 330* x 560	585 x 514** x 944	2.5	66	1 9.869 707
UF110plus	108	5	2	560 x 400* x 480	745 x 584** x 864	2.8	74	1 9.869 708 1
UF160plus	161	8	2	560 x 400* x 720	745 x 584** x 1104	3.2	96	1 9.869 709
UF260plus	256	9	2	640 x 500* x 800	824 x 684** x 1183	3.4	110	1 9.869 710
UF450plus	449	8	2	1040 x 600* x 720	1224 x 784** x 1247	5.8	161	1 9.869 711
UF750plus	749	14	2	1040 x 600* x 1200	1224 x 784** x 1720	7.0	217	1 9.869 712
UF1060plus	1060	14	1	1040 x 850* x 1200	1224 x 1035** x 1720	7.0	252	1 9.869 713

Suitable accessories can be found in our online shop.



Heating ovens, ED, FD, FED series - Classic.Line

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.

ED Series: Drying ovens with gravity convection. FD Series: Drying ovens with forced convection.

FED Series: Heating chambers with forced convection and enhanced timer functions.

Eugipment:

- 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

The number of shelves included in the scope of delivery is listed in the table.





Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Type of auxiliary energy	PK	Cat. No.
	L			mm	mm	kW			
ED 23	20	4	2	222 x 300 x 330	435 x 520 x 495	0.8	230 V, 50/60 Hz	1	9.883 529
ED 23	20	4	2	222 x 300 x 330	435 x 520 x 495	8.0	230 V, 50/60 Hz	1	9.883 530
ED 400	400	10	2	1000 x 520 x 800	1235 x 765 x 1025	3.4	400 V, 50/60 Hz	1	9.883 551
FD 23	20	4	2	222 x 300 x 330	435 x 520 x 495	0.8	230 V, 50/60 Hz	1	9.883 808
FED 400	400	10	2	1000 x 510 x 800	1235 x 765 x 1025	3.4	400 V, 50/60 Hz	1	9.883 803

^{*} with RS 422

^{*} Less 39 mm for fan **Depth without door handle, please add 56 mm

BINDER

Heating/Universal, Heating and Drying incubators



Heating ovens ED-S/FD-S Solid.Line

For drying and heating in research and quality control. With ramp function, optical temperature alert and delayed power-off. BINDER

- APT.line™ preheating chamber technology
- Natural convection with homogenous temperature distribution
- Adjustable exhaust air flap
- Digital controller with timer
- Easy and ergonomical door opening
- Class 2 integrated independent adjustable temperature safety device (DIN 12880) with visual alarm

Scope of delivery: Heating oven, 1 chrome plated rack incl. shelf supports

Heating oven ED-S 56 Solid.Line with natural convection

With natural convection for homogenous temperature distribution.

BINDER

Specifications

Temperature range: RT + 10 °C ... 250 °C

Temperature variation at 150 °C: ±2.8 °C
Heating-up time to 150 °C: 60 min
Permitted load: 30 kg
Weight: 38 kg
Power supply: 230 V, 50/60 Hz

Туре

ED-S 56 1 4.665 042

Heating oven ED-S 115 Solid.Line with natural convection



Cat. No.

PK

With natural convection for homogenous temperature distribution.

Specifications

Temperature range: RT + 7 °C ... 250 °C Temperature variation at 150 °C: ± 2.8 °C

Heating-up time to 150 °C: 55 min
Interior volume: 118 |

Internal dimensions:550 x 390 x 550 mmExternal dimensions:745 x 565 x 735 mm

 Permitted load:
 75 kg

 Max. shelves:
 5

 Weight:
 54 kg

 Power supply:
 230 V, 50/60 Hz

Type PK Cat. No.

ED-S 115 1 4.667 816

Heating oven FD-S 56 Solid.Line with forced convection

With forced convection for homogenous temperature distribution.

BINDER

Specifications

Temperature range: RT + 10 °C ... 250 °C

Temperature variation at 150 °C: ± 2.6 °C

Heating-up time to 150 °C: 20 min

Permitted load: 30 kg

Weight: 38 kg

Power supply: 230 V, 50/60 Hz

 Type
 PK
 Cat. No.

 FD-S 56
 1
 4.665 196

Heating oven FD-S 115 Solid.Line with forced convection



With forced convection for homogenous temperature distribution.

Specifications

Temperature range: RT + 10 °C ... 250 °C

Temperature variation at 150 °C: ± 2.4 °C Heating-up time to 150 °C: 22 min Interior volume: 106 l

Internal dimensions: 550 x 350 x 550 mm External dimensions: 745 x 565 x 735 mm

 Permitted load:
 75 kg

 Max. shelves:
 5

 Weight:
 54 kg

 Power supply:
 230 V, 50/60 Hz

 Type
 PK
 Cat. No.

 FD-S 115
 1
 4.665 522

7. Heating and cooling technology Heating/Universal, Heating and Drying incubators

Heating ovens, ED, FD, FED series - Avantgarde.Line

The drying chambers with natural convection (Type designation ED) or forced convection (Type designation FD, FED) are renowned due to their new design, convenient operation, and efficiency. The latest APT.line™ technology offers outstanding temperature accuracy.

Equipment:

- Temperature range series ED: room temperature plus 5-6 °C to 300 °C
- Temperature range series FD, FED: room temperature plus 10 °C to 300 °C
- Controller with LCD display
- Electromechanical control of the exhaust air flap
- Class 2 independent temperature safety device (DIN 12880) with visual temperature alarm
- USB port for recording data

The number of shelves included in the scope of delivery is listed in the table.



Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Type of auxiliary energy	PK	Cat. No.
	L			mm	mm	kW			
ED 56	57	4	2	360 x 380 x 420	560 x 565 x 625	1.05	230 V, 50/60 Hz	1	4.658 061
ED 115	114	5	2	510 x 425 x 530	710 x 605 x 735	1.25	230 V, 50/60 Hz	1	4.658 059
ED 260	260	8	2	610 x 550 x 760	810 x 760 x 965	2.25	230 V, 50/60 Hz	1	6.280 292
FD 56	60	4	2	400 x 345 x 440	560 x 565 x 625	1.10	230 V, 50/60 Hz	1	6.280 069
FD 115	116	5	2	550 x 385 x 550	710 x 605 x 735	1.30	230 V, 50/60 Hz	1	4.658 060
FD 260	260	8	2	650 x 515 x 780	810 x 760 x 965	2.30	230 V, 50/60 Hz	1	6.280 362
FD 720	741	16	2	1000 x 570 x 1300	1165 x 870 x 1590	4.50	400 V, 50/60 Hz	1	6.291 250
FED 56	60	4	2	400 x 345 x 440	560 x 565 x 625	1.10	230 V, 50/60 Hz	1	6.280 295
FED 115	116	5	2	550 x 385 x 550	710 x 605 x 735	1.30	230 V, 50/60 Hz	1	6.280 284
FED 260	260	8	2	650 x 515 x 780	810 x 760 x 965	2.30	230 V, 50/60 Hz	1	6.280 296
FED 720	741	16	2	1000 x 570 x 1300	1165 x 870 x 1590	4.50	400 V, 50/60 Hz	1	4.668 970

Accessories for incubators, drying and heat chambers

Insert grids and shelves, chrome-plated or stainless steel.

BINDER

Туре	For	PK	Cat. No.
Shelves, perforated	BF 56, FD 56, MKF 56, MK 56, FED 56	1	6.272 895
Shelves, perforated, stainless steel	BD 56, ED 56	1	6.290 544
Shelves, perforated, stainless steel	FD 115, FED 115, BF 115	1	6.313 969
Shelves, perforated, stainless steel	KBF-S 240, KBF P 240, KBF LQC 240, KBWF 240, KB 400, KB 240, KBF 240, KMF 240, KBW 400, KBW 240	1	6.233 078
Shelves, perforated, stainless steel	FP 720, M 720	1	6.242 769
Shelves, perforated, stainless steel	KMF 720, KB 720, KBF P 720, KBF LQC 720, KBF-S 720, KBF 720, KBWF 720, KBW 720	1	6.237 182
Shelves, perforated, stainless steel	KBF 1020, KBF-S 1020	1	6.312 312
Insert grids, chrome-plated	BF 56, FD 56, FED 56	1	6.280 337
Insert grids, chrome-plated	BD 115, ED 115	1	6.283 062
Insert grids, chrome-plated	FD 115, FED 115, BF 115	1	6.287 278
Insert grids, chrome-plated	FP 115, M 115, FDL 115	1	6.901 132
Insert grids, chrome-plated	ED 260, BD 260	1	4.664 397
Insert grids, chrome-plated	FED 260, BF 260, FD 260	1	6.270 116
Insert grids, chrome-plated	BF 400, BD 400, FP 400, ED 400, FED 400, M 400	1	6.223 529
Insert grids, chrome-plated	BF 720, FD 720, FED 720	1	6.291 569
Insert grids, chrome-plated	FP 720, M 720	1	6.510 242
Insert grids, stainless steel	MKT 115, KB 115, FP 115, MK 115, MKF 115, M 115, MKFT 115, FDL 115	1	6.059 089
Insert grids, stainless steel	M 240, FP240	1	6.058 638
Insert grids, stainless steel	KBF-S 240, KBF P 240, KBF LQC 240, KBWF 240, KB 400, KB 240, KBF 240, KBW 400, KBW 240, KMF 240	1	6.206 325
Insert grids, stainless steel	FED 260, BF 260, FD 260	1	6.314 255
Insert grids, reinforced, stainless steel	FP 720, M 720	1	6.240 557
Insert grids, stainless steel	BF 720, FD 720, FED 720	1	6.275 805
Insert grids, stainless steel	ED 720, BD 720	1	6.313 789





7. Heating and cooling technology Heating/Universal, Heating and Drying incubators

DryingOven 125 basic dry/control dry

Powerful drying cabinets with rapid heating and exact temperature regulation guarantees reproducible results. Thanks to its high quality insulation, the device has a very large interior of 125L in relation to its total volume. This structure also reduces odour emissions, operating costs, and ensures excellent temperature uniformity.

- Oven basic dry with natural convection up to 250 °C
- Oven control dry with recirculating air up to 300 °C
- Electronically adjustable ventilation
- Clear LED display and control menu
- Key lock function
- Timer from 1 minute up to 100 days
- Adjustable temperature limit
- USB Interface
- For up to 6 shelves
- Interior made of stainless steel
- Also available with glass door
- Door opening possible up to max. 180°

Additional features Oven 125 control dry:

- Recirculating air drying cabinet with automatic fan switch-off
- Recirculating air adjustable in 10 steps
- Real-time clock
- Temperature selection limited TWB (DIN 12880)
- Illuminated interior
- Cable bushing at the rear for measurings inside the oven
- RS 232 Interface
- Direct saving of data on USB stick
- Interface for additional temperature sensor (display and control possible)
- 2 large TFT Displays

Scope of supply: Oven with 2 shelves and calibration certificate at 160 °C.

Specifications basic dry // control dry

Internal volume: 125 l Ambient temperature: 5 ... 40 °C

Working temperature: RT+ 5 ... 250 $^{\circ}$ C // RT+ 5 ... 300 $^{\circ}$ C

 $\begin{array}{lll} \mbox{Adjustment and display resolution:} & 0.1 \ \mbox{K} \\ \mbox{Temperature stability (150 °C):} & \pm 0.3 \ \mbox{K} \\ \mbox{Ambient humidity:} & 80 \ \% \\ \mbox{Heating power:} & 2400 \ \mbox{W} \\ \end{array}$

 $\begin{array}{lll} \text{Outer Dimensions (W x D x H):} & 700 \text{ x } 650 \text{ x } 825 \text{ mm} \\ \text{Inner Dimensions (W x D x H):} & 550 \text{ x } 525 \text{ x } 450 \text{ mm} \\ \text{Weigth:} & 55 \text{ kg } \text{// } 82 \text{ kg} \\ \text{Power supply:} & 230 \text{ V, } 50/60 \text{ Hz} \\ \end{array}$

Protection class: IP 20

Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	PK Cat. No.
	L			mm	mm	kW	
Oven basic dry	125	6	2	550 x 525 x 450	700 x 650 x 825	2.45	1 6.289 337
Oven basic dry - glass	125	6	2	550 x 525 x 450	700 x 650 x 825	2.45	1 6.289 338 1
Oven control dry	125	6	2	550 x 525 x 450	700 x 650 x 825	2.45	1 4.663 261 2
Oven control dry - glass	125	6	2	550 x 525 x 450	700 x 650 x 825	2.45	1 4.663 262





4.663 261

858 E & OE.

IKA

Heating/Universal, Heating and Drying incubators

Thermo Scientific

Ovens Heratherm™

The series provide bench-top models with 60, 100 or 180 I as well as floor models with 400 or 750 I 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.

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)

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.

- Low energy consumption
- Built in timer
- Excellent footprint/volume ratio
- Tabletop models in 3 sizes (60 L, 100 L, 180 L), floor models in 2 sizes (400 L, 750 L)
- 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 (Type designation OGS) 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 (Type designation OM) 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

The number of shelves included in the scope of delivery is listed in the table.





Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	PK	Cat. No.
	L			mm	mm	kW		
OGS60	65	13	2	328 x 415 x 480	530 x 565 x 720	1.80	1	4.009 206
OGS100	105	16	2	438 x 414 x 580	640 x 565 x 820	3.10	1	4.009 207
OGS180	176	19	2	438 x 589 x 680	640 x 738 x 920	3.10	1	4.009 208
OGS400	419	39	2	544 x 590 x 1307	778 x 770 x 1545	2.40	1	9.534 156
OGS750	774	39	2	1004 x 590 x 1307	1261 x 770 x 1545	3.00	1	9.534 159
OGS750-3/N/PE	774	39	2	1004 x 590 x 1307	1261 x 770 x 1545	6.35	1	9.534 161
OMS60	66	13	2	354 x 368 x 508	530 x 565 x 720	1.40	1	4.009 209
OMS100	104	16	2	464 x 368 x 608	640 x 565 x 820	3.06	1	4.009 210
OMS180	179	19	2	464 x 543 x 708	640 x 738 x 920	3.06	1	4.009 211

7. Heating and cooling technology Heating/Universal, Heating and Drying incubators

1 2

Heratherm™ Advanced Protocol Ovens

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.

Thermo Scientific

- 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

The number of shelves included in the scope of delivery is listed in the table.

Specifications

Type designation:

Temperature range: Power supply:

OGH = Natural convection OMH = Forced air circulation 10 to 330 °C

230 V/50 Hz

Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	PK	Cat. No.
	L			mm	mm	kW		
OGH60	61	13	2	328 x 389 x 480	530 x 565 x 720	1.80	1	4.009 212
OGH60 SS*	61	13	2	328 x 389 x 480	530 x 565 x 720	1.80	1	4.009 215
OGH100	99	16	2	438 x 389 x 580	640 x 565 x 820	3.10	1	4.009 213
OGH100 SS*	99	16	2	438 x 389 x 580	640 x 565 x 820	3.10	1	4.009 216
OGH180	168	19	2	438 x 564 x 680	640 x 738 x 920	3.10	1	4.009 214
OGH180 SS*	168	19	2	438 x 564 x 680	640 x 738 x 920	3.10	1	4.009 217
OMH60	62	13	2	354 x 343 x 508	530 x 565 x 720	1.40	1	4.009 218
OMH60 SS*	62	13	2	354 x 343 x 508	530 x 565 x 720	1.40	1	4.009 221
OMH100	97	16	2	464 x 343 x 608	640 x 565 x 820	3.06	1	4.009 219
OMH100 SS*	97	16	2	464 x 343 x 608	640 x 565 x 820	3.06	1	4.009 222
OMH180	170	19	2	464 x 518 x 708	640 x 738 x 920	3.06	1	4.009 220
OMH180 SS*	170	19	2	464 x 518 x 708	640 x 738 x 920	3.06	1	4.009 223
OMH400	396	39	2	544 x 545 x 1335	778 x 770 x 1545	3.00	1	9.534 157
OMH400 SS	396	39	2	544 x 545 x 1335	778 x 770 x 1545	3.00	1	9.534 158
OMH750	731	39	2	1004 x 545 x 1335	1261 x 770 x 1545	3.00	1	9.534 162
OMH750 SS	731	39	2	1004 x 545 x 1335	1261 x 770 x 1545	3.00	1	9.534 163
OMH750-3P	731	39	2	1004 x 545 x 1335	1261 x 770 x 1545	5.75	1	9.534 165

^{*}Stainless steel housing.





Heating/Universal, Heating and Drying incubators

Heratherm™ Advanced Protocol Security Ovens

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.

Thermo Scientific

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

The number of shelves included in the scope of delivery is listed in the table.



Specifications

Type designation: OGH = Natural convection, OGH = Forced air circulation

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

Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions	External dimensions	Rated capacity	PK	Cat. No.
	capacity,	9	g	(W x D x H)	(W x D x H)	oup,		
	L			mm	mm	kW		
OGH60-S	61	13	2	328 x 389 x 480	530 x 565 x 720	1.81	1	4.009 224
OGH60-S SS*	61	13	2	328 x 389 x 480	530 x 565 x 720	1.81	1	4.009 227
OGH100-S	99	16	2	438 x 389 x 580	640 x 565 x 820	3.10	1	4.009 225
OGH100-S SS*	99	16	2	438 x 389 x 580	640 x 565 x 820	3.10	1	4.009 228
OGH180-S	168	19	2	438 x 564 x 680	640 x 738 x 920	3.10	1	4.009 226
OGH180-S SS*	168	19	2	438 x 564 x 680	640 x 738 x 920	3.10	1	4.009 229
OMH60-S	62	13	2	328 x 343 x 508	530 x 565 x 720	1.40	1	4.009 230
OMH60-S SS*	62	13	2	328 x 343 x 508	530 x 565 x 720	1.40	1	4.009 233
OMH100-S	97	16	2	438 x 343 x 608	640 x 565 x 820	3.06	1	4.009 231
OMH100-S SS*	97	16	2	438 x 343 x 608	640 x 565 x 820	3.06	1	4.009 234
OMH180-S	170	19	2	464 x 518 x 708	640 x 738 x 920	3.06	1	4.009 232
OMH180-S SS*	170	19	2	464 x 518 x 708	640 x 738 x 920	3.06	1	4.009 235

^{*}Stainless steel housing.

Accessories for Heratherm™ Ovens

Thermo Scientific

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

Heating/Vacuum drying incubators

1

Vacuum drying ovens VD/VDL series



For gentle, fast drying without residues, incrustations or oxidation.

- Direct heat transfer through large thermal conducting plates
- Program-controlled drying monitoring with automatic ventilation at end of process
- Internal data logger, measured values can be read out in open format via USB
- Inert gas connection
- Shatterproof, spring-mounted safety glass panel
- Large viewing window
- Aluminum expansion racks, can be custom-positioned
- Ethernet interface

Vacuum drying ovens VD:

- Temperature range: RT +10 °C to 220 °C
- For non-flammable solvents
- Controller with digital display of pressure and temperature
- 2 relay outputs, 24 V DC (max. 0.4 A)

Vacuum drying ovens VDL:

- Temperature range: RT +10 °C to 110 °C
- For flammable solvents
- ATEX conformity for units: EX II 2/3/- G IIB T3 Gb/Gc/- X
- Intuitive touchscreen controller with graphical pressure and temperature display
- Pressure control device for heating activated from < 100 mbar

Туре	Nom. capacity	Max. grids	Incl grid	uded Internal s dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Type of auxiliary energy	PK	Cat. No.
	L			mm	mm	kW			
VD 23	24	4	1	285 x 295 x 2	285 523 x 413 x 698	0.9	200 230 V, 50/60 Hz	1	4.678 317
VD 56	55	5	1	400 x 343 x 4	400 638 x 461 x 815	1.4	200 230 V, 50/60 Hz	1	4.678 318
VD 115	119	6	1	506 x 460 x 5	506 743 x 581 x 942	2 1.6	200 230 V, 50/60 Hz	1	4.678 319
VDL 23	24	4	2	285 x 295 x 2	285 523 x 413 x 698	0.9	200 230 V, 50/60 Hz	1	4.678 320
VDL 56	55	5	2	400 x 343 x 4	400 638 x 461 x 815	1.4	200 230 V, 50/60 Hz	1	4.678 321
VDL 115	119	6	2	506 x 460 x 5	506 743 x 581 x 942	2 1.6	200 230 V, 50/60 Hz	1	4.678 322



LLG-Porcelain evaporating dishes with spout, flat bottom, medium form

Glazed.

Capacity	Ext.	Height	PK	Cat. No.
	diam.			
ml	mm	mm		
22	54	22	1	7.970 673
62	70	30	1	6.268 802
93	86	33	1	6.251 474
154	98	40	1	6.253 566
265	112	50	1	6.262 379
330	126	53	1	6.257 949
450	145	55	1	6.269 244
620	151	63	1	6.257 950
800	169	68	1	6.269 245
1200	195	74	1	6.241 820
3000	254	105	1	7.971 013



Heating/Vacuum drying incubators

Vacuum Ovens VO

Reliable, comfortable and energy-efficient - that's how vacuum drying works today. Separately adjustable and directly heated thermoshelves ensure precise temperature control and, thanks to the digital pressure control, the chamber load is not only dried at high speed but also extremely gently in our powerful and robust vacuum drying oven.

- Safety glass door with armoured glass on the inside and splinter shield on the outside
- Digital pressure control
- Directly heated and individually controllable thermoshelves
- With 2 thermoshelf connections
- Optional: Pump base cabinet and energy-efficient vacuum pump

Model variant TwinDISPLAY: ControlCOCKPIT with two colour displays

You can find a detailed description of the "TwinDISPLAY" model at www.memmert.com

Scope of supply: Vacuum drying oven, 1 aluminium thermoshelf, calibration certificate (for 160 °C at 20 mbar), software AtmoCONTROL



Memmert



4.663 352

Specifications

Working temperature range: at least 5 above ambient to $+200 \, ^{\circ}\text{C}$

Setting temperature range: 20 °C to +200 °C

Setting accuracy: up to 99.9: 0.1 °C/ from 100: 0.5 °C

Vacuum: 5 to 1100 mbar Power supply: 230 V, 50/60 Hz

Туре	Nom. capacity	Max. shelves	Included shelves	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Net weight	PK Cat. No.
	L			mm	mm	kW	kg	
V029	29	1	1	385 x 250 x 305	550 x 400 x 607	0.82	55	1 4.663 352 1
VO49	49	2	1	385 x 330 x 385	550 x 480 x 687	2.02	83	1 4.663 353
VO101	101	2	1	545 x 400 x 465	710 x 550 x 767	2.42	110	1 4.663 354

Accessories for vacuum ovens VO

Premium module: The premium module comprises the inert gas inlet (only sizes 49/101), extra connectors for thermoshelves, one for VO29, two for VO49/VO101, an additional thermoshelf for model size 49/101.

Memmert

Vacuum pump module: Without pump with antivibration metal plate at the bottom to accommodate the vacuum pump, including full-sight glass door, socket, signal cable and connecting hose to the vacuum oven.

Chemical-resistant vacuum pump: With 4x diaphragm, pump capacity: approx. $50 \text{ NI/min} = 3.0 \text{ m/h}^3$, automatic purge control, with signal cable (3 m) to control the rotation speed and vacuum connecting hose (3 m).

Description	For Volume	PK	Cat. No.
Thermoshelf, aluminium, eloxadised material 3.3547	29	1	9.537 938
Thermoshelf, aluminium, eloxadised material 3.3547	49	1	9.537 939
Thermoshelf, aluminium, eloxadised material 3.3547	101	1	9.537 940
Thermoshelf stainless steel, material 1.4404	29	1	6.071 767
Thermoshelf stainless steel, material 1.4404	49	1	9.537 941
Thermoshelf stainless steel, material 1.4404	101	1	6.225 112
Chemical-resistant vacuum pump	all	1	4.663 358
Vacuum pump module	29	1	4.663 355
Vacuum pump module	49	1	4.663 356
Vacuum pump module	101	1	4.663 357
Premium module	29	1	9.537 944
Premium module	49	1	9.537 945
Premium module	101	1	9.537 946
Subframe, tubular steel, black enamelled	29	1	6.225 455
Subframe, tubular steel, black enamelled	49	1	4.664 347
Subframe, tubular steel, black enamelled	101	1	6.260 454

Heating/Incubators





Mini-Incubator CULTURA® M inclusive Multirack

The CULTURA® M Mini-Incubator has specifically been designed for the incubation of contact slides and dipslides, as well as common Petri dishes for detecting bacteria, fungi and yeast. With its extremely small footprint, it can easily be transported wherever you need to use it. The Cultura® M incubator has an internal capacity of approximately 4 L. It is used in the areas of medical diagnostics and water analytics. The transparent door allows you to check inside the incubator without opening the door. Supplied with one Multirack for the incubation of up to 18 dipslides and one thermometer.

Specifications

Temperature range: 25 to 45 °C Temperature uniformity: ± 1.0 °C Capacity: 4 I

External dimensions (W x D x H): 310 x 168 x 155 mm

Internal dimensions (W x D x H): 220 x 150 x 120 mm

Weight: 1.1 kg
Power supply: 230 V, 50 Hz
Warranty: 2 Years

Туре	PK	Cat. No.
Mini-Incubator CULTURA® M incl. Multirack for 18 tests	1	6.280 441



2 Incubator Lovibond® DI 10

Designed for the reliable incubation of dipslides in laboratories and field work.

Lovibond®

Lovibond®

- Low voltage, in-car operation possible
- Holds up to 12 dipslides or 10 quanti-discs
- Excellent temperature stability
- Programmable incubation period setting
- LCD Temperature display with up/down push button control
- Rapid heating times for fast testing
- External status LEDs

Scope of supply: Incubator incl. external 12 V universal power supply, set of leads (UK, EU, US),

12 V in-car power adapter

Temperature range: ambient +5 ... +40 °C (±0.5 °C)

Dimensions (W x D x H): 246 x 215 x 162 mm

Weight: 1.7 kg

Power supply: 110/220-240 V or 12 V

Туре	PK	Cat. No.
Lovibond® DI 10	1	6.291 192
Dipslide-Holder	1	6.274 399



Microbiological rapid tests Lovibond® Dipslides

The Lovibond® Dipslides are designed to test liquids as well as surfaces. These dual-sided Dipslides are available in a wide range of different media types. They are ideal for use in many applications including evaporative cooling towers, closed water circuits, cutting fluids, food testing, and many more.

Description	PK	Cat. No.
TTC/TTC for total viable count (TVC)	10	6.282 520
TTC/MALT for Yeast, Moulds, Fungi, TVC	10	6.282 521
TTC/ROSE for Yeast, Moulds, Fungi, TVC	10	6.282 522
TTC/MAC for coliforms, TVC	10	6.282 523
TTC/E.COLI for E. coli/coliforms, TVC	10	6.282 524
PDM/MAC for Pseudomonas species, coliforms	10	6.282 525
TTC/PDM for Pseudomonas species, TVC	10	6.282 526
SRB for Sulphate reducing bacteria	10	6.282 527
NRB for Nitrite reducing bacteria	10	6.282 528
R2A/R2A - TTC for testing of potable water	10	6.282 529

Mini-Incubator LLG-uniINCU 20

The **portable** LLG-uni*INCU* 20 **digital** incubator is ideally suited for haematology and microbiology applications, such as the cultivation of contact plates for microbiological hygiene analysis. Due to its small footprint and economical price, it is also the perfect incubator for educational institutions and small laboratories. The LLG-uni*INCU* 20 incubator features a large internal chamber with a capacity of 20 liter, capable of storing flasks and bottles up to 2 liter. In addition, the incubator includes two adjustable/removable shelves for increased capacity, as well as an electrical socket. The digital temperature control eliminates the need for external thermometers and repetitive "fine tuning" of an analog control knob. Optimum temperature distribution throughout the cabinet interior by fan circulation. The LLG-mini tumbling shaker uni*SHAKER* 2 which can be positioned inside the incubator (please order separatly).

Scope of supply: incubator, mains adapter, mains cable for integrated socket, 12 V cigarette lighter cable, 2 grid shelves, 1 drip tray

Specifications LLG-uniINCU 20

Temperature range: Ambient + 5 °C to 60 °C

Accuracy: ± 0.5 °C Temperature uniformity: ± 1.5 °C Capacity: 20 l

External dimensions (W x D x H): 335 x 370 x 475 mm Internal dimensions (W x D x H): 260 x 235 x 325 mm

Weight: 6.5 kg

Power supply: 100 - 240 V, 50/60 Hz

Warranty: 3 years

Туре	Max. grids	Included grids	Plug type	PK	Cat. No.
LLG-uni <i>INCU</i> 20	4	2	EU	1	6.263 570
LLG-uni <i>INCU</i> 20	4	2	UK	1	6.263 571
Set LLG-uniINCU 20 incl. LLG-uniSHAKER 2	4	2	EU	1	6.280 597





Mini-Incubator Heratherm™ Compact

The most compact unit of the Heratherm $^{\text{\tiny TM}}$ microbiological incubator family has an 18 L 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: Convection technology:

Temperature deviation at 37 °C (spatial):

Temperature deviation at 37 °C (over time): Footprint:

Chamber volume:

Dimensions chamber (W x H x D): Dimensions, external (W x H x D):

Number of shelves: Max. shelf load:

Power supply/max. current:

Weight:

17 to 50 °C

Mechanical convection

±1.2 °C ±0.2 °C

0.12 m² approx. 18 l

180 x 310 x 290 mm 260 x 415 x 470 mm 2 (incl. in delivery)/max. 3

2 kg

45 W/0.45 - 0.85 A

7.2 kg



Туре	PK	Cat. No.
Compact Incubator Heratherm™	1	4.009 190
Compact Incubator Heratherm™ *	1	4.672 604

7. Heating and cooling technology Heating/Incubators

Incubators IN/IF and INplus/IFplus

Incubators for research, medicine, pharmaceuticals and food technology. Organic chamber loads require gentle heating. F or this reason, the heating and control system are especially optimised for low temperatures of up to +80 °C. To prevent temperature overshoots, temperature is increased within a very narrow control range and kept exactly at the setpoint value.

- with all-round surface heating
- fresh air is pre-heated
- with inner glass door

Specifications

Type designation: N = Natural convection,

F = Forced air circulation plus = TwinDISPLAY

Working temperature range: at least 5°C (IN/INplus), at least 10°C (IF/IFplus) above ambient to +80 °C

Setting temperature range: +20 °C to +80 °C

Setting accuracy: 0.1 °C
Power supply: 230 V, 50/60 Hz

Incubators IN and IF

SingleDISPLAY: ControlCOCKPIT with one colour display

You can find a detailed description of the "SingleDISPLAY" model at www.memmert.com

Memmert

Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Net weight	PK Cat. No.
	L			mm	mm	kW	kg	
IN30	32	3	1	400 x 250* x 320	585 x 434** x 704	1.60	48	1 9.537 961 1
IN55	53	4	1	400 x 330* x 400	585 x 514** x 784	1.00	57	1 9.537 962
IN75	74	6	2	400 x 330* x 560	585 x 514** x 944	1.25	66	1 9.537 963
IN110	108	5	2	560 x 400* x 480	745 x 584** x 864	1.40	76	1 9.537 964
IN160	161	8	2	560 x 400* x 720	745 x 584** x 1104	1.60	96	1 9.537 965
IN260	256	9	2	640 x 500* x 800	824 x 684** x 1183	1.70	110	1 9.537 966
IN450	449	8	2	1040 x 600* x 720	1224 x 784** x 1247	1.80	161	1 9.537 967
IN750	749	14	2	1040 x 600* x 1200	1224 x 784** x 1720	2.00	217	1 9.537 968
IF30	32	3	1	400 x 250* x 320	585 x 434** x 704	1.60	48	1 9.537 977
IF55	53	4	1	400 x 330* x 400	585 x 514** x 784	1.00	57	1 9.537 978
IF75	74	6	2	400 x 330* x 560	585 x 514** x 944	1.25	66	1 9.537 979
IF110	108	5	2	560 x 400* x 480	745 x 584** x 864	1.40	76	1 9.537 980
IF160	161	8	2	560 x 400* x 720	745 x 584** x 1104	1.60	96	1 9.537 981
IF260	256	9	2	640 x 500* x 800	824 x 684** x 1183	1.70	110	1 9.537 982
IF450	449	8	2	1040 x 600* x 720	1224 x 784** x 1247	1.80	161	1 9.537 983
IF750	749	14	2	1040 x 600* x 1200	1224 x 784** x 1720	2.00	217	1 9.537 984

^{*} Less 39 mm for fan

^{**}Depth without door handle, please add 56 mm



Incubators INplus and IFplus

TwinDISPLAY: ControlCOCKPIT with two colour displays

You can find a detailed description of the "TwinDISPLAY" model at www.memmert.com

Memmert



Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Net weight	PK Cat. No.
	L			mm	mm	kW	kg	
IN30plus	32	3	1	400 x 250* x 320	585 x 434** x 704	1.60	48	1 9.537 969
IN55plus	53	4	1	400 x 330* x 400	585 x 514** x 784	1.00	57	1 9.537 970
IN75plus	74	6	2	400 x 330* x 560	585 x 514** x 944	1.25	66	1 9.537 971
IN110plus	108	5	2	560 x 400* x 480	745 x 584** x 864	1.40	76	1 9.537 972
IN160plus	161	8	2	560 x 400* x 720	745 x 584** x 1104	1.60	96	1 9.537 973
IN260plus	256	9	2	640 x 500* x 800	824 x 684** x 1183	1.70	110	1 9.537 974
IN450 plus	449	8	2	1040 x 600* x 720	1224 x 784** x 1247	1.80	161	1 9.537 975
IN750plus	749	14	2	1040 x 600* x 1200	1224 x 784** x 1720	2.00	217	1 9.537 976
IF30plus	32	3	1	400 x 250* x 320	585 x 434** x 704	1.60	48	1 9.537 985
IF55plus	53	4	1	400 x 330* x 400	585 x 514** x 784	1.00	57	1 9.537 986
IF75plus	74	6	2	400 x 330* x 560	585 x 514** x 944	1.25	66	1 9.537 987
IF110plus	108	5	2	560 x 400* x 480	745 x 584** x 864	1.40	76	1 9.537 988
IF160plus	161	8	2	560 x 400* x 720	745 x 584** x 1104	1.60	96	1 9.537 989
IF260plus	256	9	2	640 x 500* x 800	824 x 684** x 1183	1.70	110	1 9.537 990 1
IF450plus	449	8	2	1040 x 600* x 720	1224 x 784** x 1247	1.80	161	1 9.537 991
IF750plus	749	14	2	1040 x 600* x 1200	1224 x 784** x 1720	2.00	217	1 9.537 992

Less 39 mm for fan

Accessories for Universal Ovens and Incubators

Additional stainless steel grids and drip trays are available on request.

Memmert

Туре	For	Load	PK	Cat. No.
	Volume	max.		
	I	kg		
Stainless steel grid	30	20	1	9.537 203
Stainless steel grid	55/75	20	1	6.231 512
Stainless steel grid	110/160	20	1	6.232 433
Stainless steel grid	260	20	1	9.537 204
Stainless steel grid	450/750	30	1	6.222 688
Stainless steel grid	1060	60	1	6.266 337

Further accessories can be found in our online shop.

Incubators, BD, BF series - Classic.Line

BINDER incubators stand for optimal incubation and for results that are reproducible in every routine test, even under high batch throughputs in long-term operation.

Serie BD: Incubators with gravity convection. Serie BF: Incubators with forced convection.

- Temperature range: from 5°C above room temperature to 100 °C
- 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 door made of tempered safety glass
- Power supply 230 V, 50/60 Hz



Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	PK	Cat. No.
	L			mm	mm	kW		
BD 23	20	4	2	222 x 277 x 330	435 x 520 x 495	0.20	1	9.883 599
BD 400	400	9	2	1000 x 500 x 800	1235 x 765 x 1025	0.85	1	9.883 603
BF 400	400	9	2	1000 x 500 x 800	1235 x 765 x 1025	0.85	1	6.203 549

^{**}Depth without door handle, please add 56 mm

Heating/Incubators

1



Incubators BD-S Solid.Line with natural convection

Standard incubators for research and quality control.

BINDER

BINDER

- $APT.line^{TM}$ preheating chamber technology for exact temperature control
- Natural convection with homogenous temperature distribution
- Adjustable exhaust air flap
- Digital controller with timer
- Inner door made from safety glass
- Class 3.1 integrated independent adjustable temperature safety device (DIN 12880) with visual alarm

Specifications

Temperature range:

Temperature variation at 37 °C:

Recovery time after 30 sec. door open at 37 °C:

Interior volume: Internal dimensions: External dimensions: Permitted load: Max. shelves: Weight:

Power supply:

BD-S 56 // BD-S 115 RT +5 °C ... 70 °C 0.7 °C // 0.5 °C 15 min. 62 | // 118 |

400 x 350 x 440 mm // 550 x 390 x 550 mm 595 x 525 x 625 mm // 745 x 565 x 735 mm 30 kg // 75 kg

30 kg // 75 kg 3 // 5 38 kg // 54 kg 230 V, 50/60 Hz

Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	PK	Cat. No.
	L			mm	mm		
BD-S 56	62	3	1	400 x 350 x 440	595 x 525 x 625	1	4.667 815
BD-S 115	118	5	1	550 x 390 x 550	745 x 565 x 735	1	4.667 817

2



Incubators, BD, BF series - Avantgarde.Line

The new Avantgarde.Line incubators, with their exceptional efficiency and perfect temperature accuracy thanks to the very latest APT.line $^{\text{TM}}$ technology has the real appeal.

Series BD: Incubator with natural convection Series BF: Incubator with forced convection

Equipment:

- Up to 30% lower energy consumption compared to the previous model
- APT.Line™ technology for homogenous temperature distribution and accuracy
- Electromechanical control of the exhaust air flap
- Controller with LCD display
- Inner door made of tempered safety glass
- 2 chrome-plated racks
- Stackable up to 115 l
- Temperature range Series BD: ambient temperature plus 5 $^{\circ}\text{C}$ to 100 $^{\circ}\text{C}$
- Temperature range Series BF: ambient temperature plus 7-8 °C to 100 °C
- Class 3.1 integrated independent temperature safety device (DIN 12880) with visual alarm
- USB port for recording data
- Power supply 230 V, 50/60 Hz

Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	PK	Cat. No.
	L			mm	mm	kW		
BF 56	59	4	2	400 x 340 x 440	560 x 565 x 625	0.40	1	4.658 058
BF 115	115	5	2	550 x 380 x 550	710 x 605 x 735	0.40	1	6.280 293
BF 260	260	8	2	610 x 545 x 760	810 x 760 x 965	0.90	1	6.270 115
BF 720	734	16	2	1000 x 565 x 1300	1165 x 870 x 1590	1.75	1	4.664 254
BD 56	57	4	2	360 x 380 x 420	560 x 565 x 625	0.30	1	6.280 269
BD 115	115	5	2	510 x 420 x 530	710 x 605 x 735	0.35	1	6.280 290
BD 260	260	8	2	610 x 545 x 760	813,5 x 813 x 962	0.85	1	6.280 291
BD 720	737	16	2	960 x 600 x 1280	1165 x 870 x 1590	1.65	1	6.274 532

Heating/Incubators

Microbiological Incubators Heratherm™

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

- 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



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.

- 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)



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







Туре	Nom. capacity L	Max. grids	Included grids	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	Rated capacity kW	PK	Cat. No.
IGS60	75	13	2	354 x 414 x 508	530 x 565 x 720	0.30	1	4.009 191
IGS100	117	16	2	464 x 414 x 608	640 x 565 x 820	0.54	1	4.009 192
IGS180	194	19	2	464 x 589 x 708	640 x 738 x 920	0.71	1	4.009 193
IGS400	405	39	2	544 x 569 x 1307	778 x 770 x 1545	1.20	1	9.534 150
IGS750	747	39	2	1004 x 569 x 1307	1261 x 770 x 1545	1.50	1	9.534 153

Accessories for Heratherm Microbiological Incubators

Thermo Scientific

Description	PK	Cat. No.
Wire mesh shelf for 60 L Incubators including 2 shelf supports, 338 mm x 336 mm	1	4.009 239
Wire mesh shelf for 100 L Incubators including 2 shelf supports, 448 mm x 336 mm	1	4.009 240
Wire mesh shelf for 180 L Incubators including 2 shelf supports, 448 mm x 511 mm	1	4.009 241
Kit for stacking 60 L units	1	4.009 246
Kit for stacking 100 L units	1	4.009 247
Kit for stacking 180 L 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

Heating/Cooling incubators



1 2 Cooling incubator LLG-uni*INCU* 28 Cool

The LLG-uni*INCU* 28 Cool is a small cooling incubator with 28 litres and a temperature range of 3 °C - 45 °C. Natural convection prevents the samples from drying and enables cultivation and storage of long-term samples. The device is suitable for food controls, research, various cultivation processes and protein crystallization.

- Control panel for temperature setting
- Good temperature distribution due to 5 cooling and heating surfaces
- Peltier cooling and heating system
- Lockable
- Max. 6 shelves possible

Scope of supply: Cooling incubator LLG-uniINCU 28 Cool with power plug, 2 shelves, key, instruction manual

Specifications

Temperature range: $3 \, ^{\circ}\text{C} \dots 45 \, ^{\circ}\text{C}$ Accuracy/Temperature uniformity: $\pm 0.5 \, ^{\circ}\text{C}$ Capacity: $28 \, \text{I}$

External dimensions (W x D x H): 420 x 413 x 485 mm Internal dimensions (W x D x H): 329 x 219 x 369 mm

Weight: 13.5 kg

Power supply: 100 ... 240 V, 50/60 Hz

Warranty: 3 years



Туре	Max. grids	Included grids	Rated capacity kW	Plug type	PK	Cat. No.
LLG-uniINCU 28 Cool	6	2	0.075	EU	1	6.263 575
LLG-uniINCU 28 Cool	6	2	0.075	UK	1	6.263 418

Cooled incubators FOC series

Versatile cooled incubators with class A+ energy efficiency. The auto-tuning temperature control system ensures excellent temperature stability and temperature distribution.

Velp Scientifica

- High efficiency, low operating costs
- 2 internal sockets for further devices
- Optionally available software TEMPSoft™ for setting times, temperatures, ramps and alarm thresholds
- Wireless data transmission
- Forced ventilation for uniform temperature distribution
- 3-digit display for indoor temperature
- The FOC 200I model has an internal glass door
- The FOC 200IL model has an internal glass door and illuminated shelves

Scope of supply: Cooled incubator, shelves



4.666 794

Specifications FOC 120 // FOC 200

Temperature range: 3 ... 50 °C Temperature accuracy: ± 0.5 °C Volume: $\pm 0.1 / 200$ |

Outer dimensions: 540 x 550 x 905 mm // 540 x 600 x 1263 mm

Power rating: 120 W // 400 W Weight: 36 kg // 46.3 kg Power supply: 230 V, 50/60 Hz



4.666 795

Туре	Nom. capacity	Max. grids	Included grids	Rated capacity	PK Cat. No.
	L			kW	
FOC 120E	120	2	2	0.12	1 4.666 793
FOC 120I	120	2	2	0.12	1 4.666 796
FOC 200E	200	6	4	0.40	1 4.666 794 3
FOC 200I	200	6	4	0.40	1 4.666 797
FOC 200IL	200	6	4	0.40	1 4.666 795 4

Heating/Cooling incubators

Cooling incubators, KB, KT series

Series KB: Cooling incubators with compressor technology, for safe, reproducible incubation, even at high ambient temperatures. Temperature range: -10 °C to 100 °C (KB 23: 0 °C to 100 °C).

Series KT: Cooling incubators with thermoelectric cooling, combines exceptional performance with low energy consumption. Temperature range: 4 °C to 100 °C.

- Adjustable fan speed Controller with time-segment and real-time programming
- Inner door made of tempered safety glass
- 2 stainless steel racks
- Class 3.1 independent temperature safety device (DIN 12880) with visual and audible temperature alarm
- Computer interface: Ethernet or RS 422
- Data recording and USB interface (Series KT)



6.269 765

Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Type of auxiliary energy	PK Cat. No.
	L			mm	mm	kW		
KT 53	52	5	2	400 x 334 x 400	660 x 630 x 635	0.4	200 240 V, 50/60 Hz	1 6.280 289
KT 115	102	6	2	600 x 355 x 455	860 x 655 x 715	0.7	200 240 V, 50/60 Hz	1 6.280 268
KT 170	163	10	2	600 x 355 x 765	860 x 655 x 1025	0.8	200 240 V, 50/60 Hz	1 6.269 765 1
KB 23	20	3	2	222 x 277 x 330	435 x 600 x 620	0.3	230 V, 50/60 Hz	1 9.883 528
KB 53	53	4	2	400 x 330 x 400	635 x 665 x 840	0.6	230 V, 50 Hz	1 9.883 568
KB 115	115	5	2	600 x 400 x 480	835 x 730 x 1025	0.7	230 V, 50 Hz	1 9.883 569
KB 240	240	9	2	650 x 485 x 785	930 x 880 x 1460	1.2	200 240 V, 50 Hz	1 9.883 570
KB 400	400	15	2	650 x 485 x 1270	930 x 880 x 1945	1.4	200 240 V, 50/60 Hz	1 9.883 571
KB 720	720	15	2	970 x 576 x 1250	1255 x 970 x 1925	2.3	200 240 V, 50/60 Hz	1 9.883 572

Thermostatic cabinets

The incubators from Lovibond® are designed for continuous tempering for different Lovibond® 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 3 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.

- Temperature range 2 °C to 40 °C, continuously adjustable in steps of 0.1 °C
- Low power consumption
- Illuminated LED display of preset and current temperatures
- Ideal for BOD determination at 20 °C
- Power sockets inside the incubator
- 5 models in 3 sizes
- Standard door or glass door

Specifications

Coolant: R134a

Axial, delivery rate 320 m³/h

Power supply: 220-230 V/50 Hz

Capacity	External dimensions (W x D x H)	sions dimensions		Temp. range	PK	Cat. No.
I	mm	mm	kg	max. °C		
135	600 x 600 x 850	513 x 441 x 704	39.0	+2 +40	1	9.699 142
255	600 x 610 x 1640	470 x 440 x 1452	61.0	+2 +40	1	9.699 144
445	750 x 730 x 1640	600 x 560 x 1452	78.5	+2 +40	1	9.699 145
140	600 x 600 x 850*	513 x 441 x 702	48.0	+2 +40	1	9.699 146
256	600 x 610 x 1640*	470 x 440 x 1452	77.0	+2 +40	1	9.699 147

^{*} With glass door





Heating/Cooling incubators

1

Cooled Storage Incubators, IPS

Sample storage, incubating and cooling in the food industry, medicine, the cosmetics industry or pharmaceuticals. The storage cooled incubators with Peltier elements, heat and cool seamlessly with one system.

Memmert

- double doors as standard: prevents contamination and drops in temperature, and at the same time an optimal view of the load through fully glazed interior doors

- fans integrated in the Peltier elements ensure rapid energy transport and optimal temperature distribution

Model variant SingleDISPLAY: ControlCOCKPIT with one colour display

You can find a detailed description of the "SingleDISPLAY" model at www.memmert.com

Specifications

Working temperature range: +14 °C to +45 °C Setting temperature range: +14 °C to +45 °C +14 °C to +45 °C

Setting accuracy: 0.1 °C

Power supply: 230/115V, 50/60 Hz

Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Net weight	PK Cat. No.
	L			mm	mm	kW	kg	
IPS260	256	9	2	640 x 500** x 800	824 x 754* x 1183	0.55	113	1 9.538 011
IPS750	749	14	2	1040 x 600** x 1200	1224 x 856* x 1720	0.55	230	1 9.538 012 1

^{*} Depth without door handle, please add 56 mm

9.538 012

Suitable accessories can be found in our online shop.





Refrigerated incubator RI-150/RI-250



For incubation and test applications below ambient temperature as well as standard incubation applications at 37 $^{\circ}\text{C}$ in warm environments.

- Available in 2 sizes as tabletop or standalone unit
- Standalone unit has lockable casters for easy mobility
- Door with viewing window
- Microprocessor control for precise temperature adjustment
- Timer function
- Temperature alarm, overtemperature shutdown
- Port hole on the right side of the device for inserting monitoring probes or cables
- RS232 data interface for temperature monitoring (software not included in delivery)
- IQ and OQ documentation and qualification service available
- Automatic defrosting
- Overheating protection in fan motor

Specifications

Temperature range: 4 ... 60 °C
Power supply: 230 V, 50 Hz
Warranty: 1 year

Туре	Nom. capacity	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	PK	Cat. No.
	L		mm	mm		
RI-150, tabletop	150	2	550 x 450 x 615	652 x 605 x 1050	1	4.672 602
RI-250, standalone unit	250	3	550 x 450 x 1015	652 x 605 x 1450	1	4.672 603

^{**}Less 10 mm for fan - Peltier

Heating/Cooling incubators

Peltier-cooled incubators IPP and IPPplus

Heating and cooling seamlessly with one system thanks to Peltier technology. In this respect, cooled incubators IPP not only contribute to climate protection, but it also achieves an additional decrease in operating costs of up to 90 % compared to compressor technology.

- Extremely quiet, vibration-free and space saving as no compressor is required
- No condensation in the interior chamber: due to the closed Peltier cooling system no outside air is exchanged
- LED light module for sizes 110 to 750 (as an option): dimmable LED light in three alternative colour temperatures (cold white light, warm white light or cold white and warm white light, dimmable in steps of 1 %)

Specifications

plus = TwinDISPLAY Type designation:

Working temperature range without light: 0 (at least 20 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

Peltier-cooled incubators IPP

SingleDISPLAY: ControlCOCKPIT with one colour display

You can find a detailed description of the "SingleDISPLAY" model at www.memmert.com

Memmert

Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Net weight	PK Cat. No.
	L			mm	mm	kW	kg	
IPP30	32	3	1	400 x 250* x 320	585 x 506** x 704	0.140	40	1 9.538 001
IPP55	53	4	1	400 x 330* x 400	585 x 586** x 784	0.275	52	1 9.538 002 1
IPP110	108	5	2	560 x 400* x 480	745 x 656** x 864	0.550	78	1 9.538 003
IPP260	256	9	2	640 x 500* x 800	824 x 756** x 1183	0.820	114	1 9.538 004
IPP410	384	14	2	640 x 500* x 1200	824 x 756** x 1720	1.030	157	1 6.312 192
IPP750	749	14	2	1040 x 600* x 1200	1224 x 856** x 1720	1.300	230	1 9.538 005

^{*} Less 10 mm for fan - Peltier

Peltier-cooled incubators IPPplus

TwinDISPLAY: ControlCOCKPIT with two colour displays

You can find a detailed description of the "TwinDISPLAY" model at www.memmert.com

Memmert

Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Net weight	PK Cat. No.
	L			mm	mm	kW	kg	
IPP30plus	32	3	1	400 x 250* x 320	585 x 506** x 704	0.140	40	1 9.538 006
IPP55plus	53	4	1	400 x 330* x 400	585 x 586** x 784	0.275	52	1 9.538 007
IPP110plus	108	5	2	560 x 400* x 480	745 x 656** x 864	0.550	78	1 9.538 008 2
IPP260plus	256	9	2	640 x 500* x 800	824 x 756** x 1183	0.820	114	1 9.538 009
IPP410plus	384	14	2	640 x 500* x 1200	824 x 756** x 1720	1.030	157	1 6.312 193
IPP750plus	749	14	2	1040 x 600* x 1200	1224 x 856** x 1720	1.300	230	1 9.538 010

^{*} Less 10 mm for fan - Peltier

Suitable accessories can be found in our online shop.





^{**}Depth without door handle, please add 56 mm

^{**}Depth without door handle, please add 56 mm

Heating/Cooling incubators

1

Cooled incubators with compressor cooling ICPeco



This environmentally-friendly incubator is cooled with climate-friendly CO₂.
Thanks to the excellent thermodynamic properties of the refrigerant CO₂ (R744) and the finely adjusted control technology, the ICPeco cooled incubator is both powerful and high-precision.

- double doors standard for all models: Prevention of contamination and drops in temperature, and at the same time an optimum view of the sensitive load through wide-area interior glass doors
- very good air circulation in the working chamber through sophisticated ventilation technology

Without critical temperature overshoots, it keeps the temperatures exactly at the setpoint.

- intelligent defrosting function

Model variant TwinDISPLAY: ControlCOCKPIT with two TFT colour displays

You can find a detailed description of the "TwinDISPLAY" model at www.memmert.com



9.538 021

Specifications

Power supply:

Working temperature range: (not suitable for long-term storing at sub-zero temperatures, during permanent operation, the inner glass door may ice over) Setting temperature range: Setting accuracy:

-12 to +60 °C

-12 to +60 °C 0.1 °C 230 V, 50/60 Hz

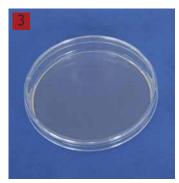


9.538 023

Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Net weight	PK Cat. No.
	L			mm	mm	kW	kg	
ICP110eco	108	5	2	560 x 400* x 480	745 x 584** x 1233	1.2	118	1 6.314 845
ICP260eco	256	9	2	640 x 500* x 800	824 x 684** x 1552	1.2	162	1 9.538 021 1
ICP450eco	449	8	2	1040 x 600* x 720	1224 x 784** x 1467	1.2	222	1 9.538 022
ICP750eco	749	14	2	1040 x 600* x 1200	1224 x 784** x 1950	1.2	254	1 9.538 023 2
* Less 33 mm	n for fan							

^{*} Less 33 mm for fan

^{**}Depth without door handle, please add 56 mm



3 LLG-Petridishes, PS

Made of high quality optical clear polystyrene. Produced under aseptic conditions in an ISO 6 cleanroom. Contact plate with counting grid.

- With a smooth surface for an optimal distribution of the transport medium
- Stable thickness to prevent any deformations while using
- Stackable
- With or without vents
- Aseptic (90 mm diam.) or beta irradiated sterile versions (all sizes)
- Packed in sleeves á 10 dishes or 20 dishes (90 mm diam. dishes)

Ext.	Description	Height	PK	Cat. No.
diam.		approx.		
mm		mm		
90	with triple vents, aseptic	16	480	6.285 823
90	without vents, aseptic	16	480	6.285 824
90	with triple vents, sterile	16	480	6.285 816
90	without vents, sterile	16	480	6.285 817
60	with triple vents, sterile	14	1080	4.678 371
60	without vents, sterile	14	1080	4.678 372
55	contact plate, sterile	17	1000	6.285 821
150	with triple vents, sterile	19	180	6.285 822

Heating/CO₂-Incubators

CO₂ Incubators CellCulture®

The CellCulture® CO₂ incubators from Esco are widely used in scientific research to grow and maintain cell cultures. Typical fields of application include tissue engineering, neuroscience, cancer research and other mammalian cell research applications.

- Fast and uniform temperature, CO₂ and O₂ control (O₂ suppressed models)
- HEPA filtration system with internal blower (some models)
- Capacitive humidity sensor
- IR CO₂-sensor with automatic auto zero
- Quick recovery time for temperature, CO₂ and humidity after door opening
- Stainless steel 1.4301 (AISI 304) or copper interior
- 90 °C moist heat decon system (models with air jacket)
- Easy to clean due to removable lids and inner door
- Serial RS485 communication port
- Low maintenance
- Stackable

Options on request:

Additional shelves, stacking kits, rollerbase, chart recorder

ESC0



NEW

ESCO

CO2 Incubators CelCulture® with High Heat Sterilization

Incubator with 180 °C high heat sterilization cycle, for efficient contamination protection. Conforms to the international standards for dry heat sterilization.

- Stainless steel chamber
- Heat-resistant sensors
- IR CO₂ sensor
- O2 Sensor (for suppressed O2 model)
- 2 MB built-in flash memory for data and event logging

Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	PK	Cat. No.
	L			mm	mm		
With ULPA Filter	170	7	4	505 x 535 x 633	660 x 660 x 905	1	4.678 084
With ULPA Filter	240	7	4	595 x 640 x 633	750 x 770 x 905	1	4.678 085
With ULPA Filter, O2 suppressed	170	7	4	505 x 535 x 633	660 x 660 x 905	1	4.678 086
With ULPA Filter, O ₂ suppressed	240	7	4	595 x 640 x 633	750 x 770 x 905	1	4.678 087
Without ULPA Filter	170	7	4	505 x 535 x 633	660 x 660 x 905	1	4.678 088
Without ULPA Filter	240	7	4	595 x 640 x 633	750 x 770 x 905	1	4.678 089
Without ULPA Filter, O2 suppressed	170	7	4	505 x 535 x 633	660 x 660 x 905	1	4.678 090
Without ULPA Filter, O2 suppressed	240	7	4	595 x 640 x 633	750 x 770 x 905	1	4.678 091

2 3

CO₂ incubator Heracell™ VIOS™ 160i with Cell Locker™ system





The CO_2 incubator with the Cell LockerTM system is designed for improved culturing

Thermo Scientific efficiency and security for sensitive cultures. Six individual, autoclavable polycarbonate chambers divide the incubator chamber. Each Cell LockerTM chamber has dual 0.2 μ m membrane filters, that permit air circulation but exclude microbial contaminants. When the Cell LockerTM chamber is opened, the temperature, CO_2 concentration and humidity in the unopened Cell LockerTM chambers remain stable.

- Provides security from cross contamination due to culture isolation in separate chambers
- Interior made of electropolished stainless steel or pure copper
- ISO class 5 HEPA filtered air
- Steri-Run overnight 180 °C sterilisation cycle achieves total sterilization (12 log SAL)
- iCAN Touchscreen with LED display
- Temperature resistant IR CO₂ sensor
- THRIVE technology for optimal air circulation



Volume: 165 l

Dimensions, external (W x H x D): 637 x 880 x 900 mm Dimensions, internal (W x H x D): 470 x 576 x 607 mm

Weight: 83 kg

Power supply: 230 V, 50/60 Hz

Туре	PK	Cat. No.
Copper interior	1	6.312 578
Stainless steel interior	1	6.312 579



Heating/CO₂-Incubators

Cell Locker™ chambers for CO₂ inkubator Heracell™ VIOS™ 160i



Transparent. Each Cell Locker™ holds 9 each T-75 cell culture flasks, 20 each 6-well plates, or 24 each 96-well plates. The Cell Locker™ can be manually disinfected or can be autoclaved a maximum of 12 times.

Thermo Scientific

Thermo Scientific



- Tapered box for easy installation into incubator
- Easy and secure one handed latch and pull
- Non-slick sliding tray with tip protection
- Removable cover for protected transport
- Membrane filter (0.2 µm)

Description	PK	Cat. No.
Package of 6 Cell Locker™ with copper sliding tray	6	6.312 571
Package of 6 Cell Locker™ with stainless steel sliding tray	6	6.312 573





CO2 Incubators ICOmed

The CO₂ incubator ICOmed is the perfect solution: Thanks to the battery-buffered Memmert ControlCOCKPIT, the operating display, logging and CO2 control remain fully functional even when there is a power failure. All parameters are logged in accordance with the FDA and, when individually adjusted ranges for CO2, O2, temperature and humidity are exceeded, notifications can be sent to a mobile phone in addition to an alarm. With its rounded corners, the interior is easy to clean and can be sterilised for 60 minutes at 180 °C (including all sensors). The active humidity control offers optimal protection for cell and tissue cultures. It minimizes evaporation in the interior and ensures short recovery times. Every Memmert CO2 incubator ICOmed is a medical device of class IIa according to MDD 93/42/EEC until 26 May 2024 according to the transitional provisions by the (EU) 2017/745 article 120 (2).

- fully insulated stainless steel door and heated inner glass door

Model variant TwinDISPLAY: ControlCOCKPIT with two colour displays

You can find a detailed description of the "TwinDISPLAY" model at www.memmert.com

Specifications

Working temperature range:

(standard sterilisation programme: 60 minutes at 180 °C)

Setting temperature range: +18 °C up to +50 °C

Setting accuracy temperature: 0.1 °C

Humidity limitation thanks to a Peltier

element:

Setting range active humidity control:

Setting accuracy humidity: CO₂-concentration:

O₂-concentration: Setting accuracy CO2: Setting accuracy O₂:

Power supply:

at least 5 above ambient up to +50 °C

when water dish is full and inserted, the Peltier element limits the

value of relative humidity in the interior to 93 % rh ±2.5 % 40 to 97 % rh and rh-Off

0.5 % rh 0 to 20 % 1 to 20 % 0.1 % 0.1 %

230 V, 50/60 Hz

Туре	Nom. capacity	Max. shelves	Included shelves	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Net weight	PK	Cat. No.
	L			mm	mm	kW	kg		
ICO50med	56	5	1	400 x 330* x 425	559 x 521** x 795	1.10	55	1	6.283 118
ICO105med	107	6	2	560 x 400* x 480	719 x 591** x 850	1.30	75	1	6.283 119
ICO150med	156	10	2	560 x 400* x 700	719 x 591** x 1070	1.50	90	1	6.283 120
ICO240med	241	12	2	600 x 500* x 810	759 x 691** x 1180	1.65	110	1	6.283 121

^{*} Less 35 mm for fan

Suitable accessories can be found in our online shop.





Non-treated, sterile flasks for suspension cell cultures. White caps for easy identification. Pyrogen-free.

Material flasks: Polystyrene Material caps: HDPE

Туре	Working volume ml	Culture surface cm²	Neck	PK	Cat. No.
EasyFlask™	7	25	curved	200	6.702 724
EasyFlask™	30	75	curved	100	6.222 672
EasyFlask™	55	175	curved	30	7.900 288
TripleFlask™	200	500	straight	32	7.900 289

For our Cell Culture range - please see page 1331.

^{**}Depth without door handle, depth of door handle 56 mm

Heating/CO₂-Incubators

CO₂ incubators, CB series with sterilizable sensor

Suitable for all incubation tasks, even for complex experiments under hypoxic conditions. Models with additional O₂ control, **active humidification** and split interior doors are available. With intuitive touchscreen controller, DuoDoor™ system for simultaneous opening of outer and inner door as well as lockable door handle. CO₂ autodiagnostic system to protect cell cultures.

- Unit and CO2 sensor can be sterilized with hot air at 180 °C
- Double-pan humidification system with condensation protection
- Seamless inner compartment made of stainless steel
- Measured values can be read out via USB and Ethernet interface
- Sealing inner door made of safety glass
- Stackable with adapter
- Fault diagnosis system with optical and acoustic alarm
- Internal data recording, can be read out via USB
- Ethernet interface

Type G: with divided inner door

Type F (CB170): with active humidification

Type O: with O₂ control



Specifications

RT + 7 °C ... 60 °C Working temperature range: 0 ... 20 % CO₂ range: Humidity range: 90 ... 95 %

200 ... 240 V, 50/60 Hz Power supply:

Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	PK	Cat. No.
	L			mm	mm	kW		
CB060-230V	53	3	2	400 x 330 x 400	580 x 545 x 720	1.0	1	9.883 726
CB060-230V-0	53	3	2	400 x 330 x 400	580 x 545 x 720	1.0	1	9.883 738
CB060-230V-G*	53	2	2	400 x 330 x 400	580 x 550 x 720	1.0	1	9.883 732
CB060-230V-GO*	53	2	2	400 x 330 x 400	580 x 550 x 720	1.0	1	9.883 744
CB170-230V	170	6	3	560 x 505 x 600	680 x 715 x 870	1.4	1	6.274 262
CB170-230V-0	170	6	3	560 x 505 x 600	680 x 715 x 870	1.4	1	4.663 953
CB170-230V-F	170	6	3	560 x 505 x 600	680 x 715 x 870	1.4	1	6.312 166
CB170-230V-OF	170	6	3	560 x 505 x 600	680 x 715 x 870	1.4	1	6.312 167
CB260-230V	267	8	3	620 x 575 x 750	740 x 785 x 1020	1.5	1	4.678 809
CB260-230V-0	267	8	3	620 x 575 x 750	740 x 785 x 1020	1.5	1	4.678 810
CB260-230V-F	267	8	3	620 x 575 x 750	740 x 785 x 1020	1.5	1	4.678 811
CB260-230V-OF	267	8	3	620 x 575 x 750	740 x 785 x 1020	1.5	1	4.678 812
*with four-part inner d	oor							

Further models can be found in our online shop.

Cell and Tissue Culture Dishes, treated, PS, sterile

Dishes with treated surface, suitable for adhesion cells.

- Easy and secure stacking
- Sterilized by gamma irradiation
- Pyrogen-free



Diam.	Height	Culture	PK	Cat. No.
		surface		
mm	mm	cm ²		
18	12	12.0	300	4.672 542
33	13	8.5	960	4.672 543
52	18	21.2	600	4.672 544
55	14	3.3	600	4.672 545
68	15	36.3	600	4.672 546
85	17	55.0	500	4.672 547
88	22	60.8	300	4.672 548
136	22	143.0	120	4.672 549
136	22	143.0	100	4.672 550

Heating/Shaking incubators



Incubator 1000, Suitable for Heidolph Shakers

Modular system for shaking, mixing and heating with visual reaction control. Compatible shakers are Duomax 1030, Polymax 1040, Titramax 1000, Unimax 1010 and Promax 1020.

Heidolph

- Heating module with a heating capacity of 300 W allows for quick and gentle temperature adjustments up to 65 °C
- Digital temperature setting of target temperature of 65 °C and separate display for actual temperature (accuracy of ±2°C up to 50°C and ±4°C over 50°C)
- Low noise blower allows for quick and even temperature distribution throughout the entire enclosure
- One incubation system can be used for several shakers, fast conversion possible
- To protect samples from thermal damages this unit features a safety circuit to prevent overheating
- Unlimited visual reaction control due to transparent and non-fogging PETG hoods
- 3 hoods options available: A flat hood for small vessels and mictrotiter plates, a high hood for all common medium sized vessels and a high hood XL for larger Erlenmeyer flasks up to 2000 ml
- The incubator hoods open instantly and interlock in any position

Please order hoods separately.

Туре	PK	Cat. No.
Incubator 1000, heating module	1	9.839 875



2 Hoods for Inkubator 1000

Heidolph

Grant

Description	PK	Cat. No.
Incubation hood, low	1	9.839 876
Incubation hood, high	1	9.839 877
Incubation hood XL	1	9.839 878



Shaking Incubators ES-20/ES-80

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 250 rpm
- 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 250 rpm +25 to 42 °C Temperature range ES-20: Temperature range ES-80: +25 to 80 °C Temperature setting resolution: 0.1 °C ±0.5 °C Stability: Shaking movement: orbital Orbit ES-20: 10 mm Orbit ES-80: 20 mm Continuous operation ES-20: 720 hrs Continuous operation ES-80: 168 hrs 1 min to 96 hrs Timer: Load capacity ES-20: 2.5 kg 8 kg Load capacity ES-80: 230 V 50/60 Hz Power supply:

AL ST	
See Mary	1112
5	
	_

9.721 056

Туре	Load capacity	Internal dimensions (W x D x H)	External dimensions (W x D x H)	PK	Cat. No.
	kg	mm	mm		
ES-20	2.5	305 x 260 x 250	340 x 340 x 435	1	6.251 451 3
ES-80	8.0	390 x 450 x 300	590 x 525 x 510	1	9.721 056 4

Heating/Shaking incubators

Accessories for Shaking Incubators ES-20/ES-80

Grant

Туре	Description	For Type	PK Cat. No.
P12-100	Platform with clamps for 12 x 100 ml flasks / 150 ml beakers	ES-20	1 9.721 023
PP-4	Flat platform with non slip rubber mat	ES-20	1 9.721 022
P6-250	Platform with clamps for 6 x 250 ml flasks / 300 ml 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 30 mm	ES-20	1 9.721 049 B
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







9.721 021 9.721 049

Shaking Incubator 211DS

Due to a small footprint, compact, stackable design and expanded temperature range, this shaking incubator is ideal for molecular biology and general use. With integral orbital shaker. Two full and one half shelves are supplied with each incubator.

- Temperature control system SmartChek™
- Internal electrical outlet
- Flask capacity: 4 x 1 l, 5 x 500 ml, 9 x 250 ml or 16 x 125 ml
- Gasket door with large viewing area

Specifications

211DS

Temperature range: Ambient +5 °C ... 80 °C

Precision: ±0.5 °C Temperature setting resolution: 0.1 °C Shaker orbit: 19 mm Shaker speed: 20 ... 300 rpm

Timer: 0 ... 99 min. or continuous

Chamber volume: 49 I

Chamber Dimensions (W x D x H): 343 x 375 x 381 mm Total Dimensions (W \times D \times H): 425 x 550 x 580 mm Weight: 37.7 kg

Power supply: 230 V, 50/60 Hz Type PK





Accessories for Shaking Incubator 211DS

Cat. No.

6.265 178

The second	
1	ahnat

		202.700
Description	PK	Cat. No.
Clamp for 125 ml flask	1	6.265 183
Clamp for 250 ml flask	1	6.261 512
Clamp for 500 ml flask	1	6.261 520
Clamp for 1000 ml flask	1	6.265 184
Flat platform with non-slip rubber mat	1	6.265 181
Flask clamp platform, predrilled	1	6.265 179
Universal spring loaded platform	1	6.265 180
Stacking adapter	1	4.676 172



6.265 181

Labnet

7. Heating and cooling technology

Heating/Shaking incubators





Benchtop Shaking Incubator 222DS

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 and non-slip mat please order separately.

Specifications

Temperature range: Ambient +5 °C ... 70 °C

Precision: ±0.5 °C Speed range: 20 ... 300 rpm

1 min - 99 hours or continuous Timer:

Platform size: 300 x 300 mm 230 V, 50 Hz Supply requirements:

Туре	PK	Cat. No.
222DS	1	6.259 079



Accessories for Benchtop Shaking Incubator 222DS



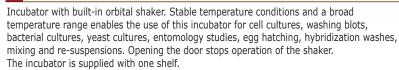
Labnet

Description	PK Cat. No.
Universal platform 30 x 30 cm	1 6.259 080
Non-slip mat	2 6.259 082 7



Shaking Incubator 311DS







- Broad temperature range
- High uniformity and accuracy
- Gasket door with large viewing area
- Adjustable shelves

Flat platform with non-slip rubber mat, flask platforms, additional shelves please order separately.

Specifications

Ambient +5 °C ... 80 °C Temperature range:

Precision: ±0.5 °C Temperature setting resolution: 0.1 °C Shaker orbit: 19 mm Shaker speed: 20 ... 300 rpm

Timer: 0 ... 99 min or continuous

Chamber volume: 71 I

Chamber Dimensions (W x D x H): 442 x 396 x 406 mm Total Dimensions (W \times D \times H): 574 x 544 x 635 mm

63.6 kg Weight: 230 V, 50/60 Hz Power supply:

Туре	PK	Cat. No.
311DS	1	6.261 509

7. Heating and cooling technology **Heating/Shaking incubators**

Accessories for Shaking Incubator 311DS



1 **6.261 510**

6.261 511



Description	PK	Cat. No.
Platform with 6 x 1000 ml flask clamps	1	4.676 163
Platform with 20 x 125 ml flask clamps	1	4.676 164
Platform with 4 x 2000 ml flask clamps	1	4.676 165
Platform with 12 x 250 ml flask clamps	1	4.676 166
Platform with 30 x 50 ml flask clamps	1	4.676 167
Platform with 8 x 500 ml flask clamps	1	4.676 168
Rack holder, fits I-5330, holds 1 x K566 for 15 ml tubes	1	4.676 169
Rack holder, fits I-5330, holds 1 x K568 for 50 ml tubes	1	4.676 170
Flat shaker platform with non-slip rubber mat	1	4.676 171



4.676 165

Benchtop shaking incubators Genie Temp-Shaker 100/300

For shaking and incubation of samples. The incubation chamber can be opened from 3 sides and tilted to the side to load the platform or take samples.

Scientific Industries

- Removable incubation chamber

Additional full size shelf

- Very good temperature distribution
- Minimum temperature loss when opening the chamber

Shaker platform pre-drilled for flask clamps (clamps sold separatly)

- The maximum working temperature of $75\ ^{\circ}\text{C}$ is reached in 20 minutes
- Transparent incubation chamber

Genie Temp-Shaker 100

For shaking speeds up to 100 min⁻¹. Available with adhering mat.

Genie Temp-Shaker 300

For shaking speeds up to 300 min⁻¹. Available with adhering mat, ratcheting clamps or flask clamps.

Specifications Temp-Shaker 100 // Temp-Shaker 300

Shaking movement: orbital Orbit: 19 mm Max. shaker weight: 3 kg

Speed range: 20 ... 100 min⁻¹ // 35 ... 300 min⁻¹

28 ... 75 °C Temperature range: Platform dimensions (W x D): 305 x 305 mm Chamber volume: 40 I

Overall dimensions (W x D x H): 450 x 480 x 305 mm

Weight: 9 kg

Ambient temperature range: 0 ... 38 °C

Туре	Plug type	PK Cat. No.
Genie Temp-Shaker 100	EU	1 4.668 295 2
•		
Genie Temp-Shaker 100	UK	1 4.668 296
Genie Temp-Shaker 100	CH	1 4.668 297
Genie Temp-Shaker 300, with ratcheting clamps	without	1 4.668 298
Genie Temp-Shaker 300, with flask clamps	without	1 4.668 299
Genie Temp-Shaker 300, with adhering mat	without	1 4.668 300
Genie Temp-Shaker 300, with ratcheting clamps	EU	1 4.668 301
Genie Temp-Shaker 300, with flask clamps	EU	1 4.668 302 3
Genie Temp-Shaker 300, with adhering mat	EU	1 4.668 303
Genie Temp-Shaker 300, with ratcheting clamps	UK	1 4.668 304
Genie Temp-Shaker 300, with flask clamps	UK	1 4.668 305
Genie Temp-Shaker 300, with adhering mat	UK	1 4.668 306
Genie Temp-Shaker 300, with ratcheting clamps	CH	1 4.668 307
Genie Temp-Shaker 300, with flask clamps	CH	1 4.668 308
Genie Temp-Shaker 300, with adhering mat	CH	1 4.668 309



4,668 302

OHAUS

OHAUS

7. Heating and cooling technology

Heating/Shaking incubators



Shaking incubator with cooling ISICMBCDG

The Incubating/Cooling Orbital Shaker is microplate ready without the need for any additional accessories. Optional modular blocks can accommodate micro-tubes, centrifuge tubes, vials, or culture tubes. Unit holds microplates or modular blocks with

a 127 mm tall interior capacity. Ideal for analyses that require a stable, controlled temperature.

- Heats to 65 °C and cools to 10 °C below ambient
- LED displays for temperature, speed and time
- Temperature Calibration Mode
- Triple Eccentric Drive
- Overload Protection
- Speed Ramping Feature
- Audible Alarm
- Caution Hot Indicator
- Polycarbonate Lid

Scope of supply: Thermo Shaker incl. adapter bracket for blocks

Without blocks. Please order separately.

Specifications

Temperature range: 10 °C below ambient to +65 °C

Temperature uniformity: ±0.5 °C at +37 °C 100 to 1200 rpm Speed with microplates: Speed with blocks: 100 to 600 rpm ±2 % Accuracy: Timer: 1 s to 160 h Orbit: 3 mm

Max. load: 2 microplates or 2 blocks

Permissible ambient conditions: 5 to 40 °C

455 x 279 x 267 mm Dimensions (L x W x H):

Weight: 15.4 kg Power supply: 230 V, 50/60 Hz

Туре	PK	Cat. No.
ISICMBCDG	1	4.659 474



Shaking Incubator with rocking or tumbling motion

The Incubating Rocking and Tumbling Shakers combine smooth rocking or tumbling motion and general purpose incubation in one compact bench top unit.

- Electronic tilt adjustment while unit is operating
- LED displays for temperature, speed and tilt angle, and time
- Timer with audible alarm
- Overload Protection
- Speed Ramping Feature
- Caution Hot Indicator
- Polycarbonate Lid

Scope of supply: Shaking Incubator incl. built-in tray and lid



Specifications

Temperature range: Temperature uniformity: Tilt angle Rocking shaker/Tumbling shaker:

Timer: Max. loading:

Permissible ambient conditions: Overall Dimensions (L x B x H): Interior Dimensions (L x B x H):

Interior Dimensions Tumbling shaker (L x B x H):

Weight:

Power supply:

ambient +5 °C to 65 °C ±0.5 °C at 37 °C 0 to 15°/0 to 20° 1 s to 160 h 4.5 kg 5 to 40 °C 432 x 279 x 267 mm 273 x 197 x 97 mm 273 x 197 x 86 mm

10 kg

230 V, 50/60 Hz

180

Туре	PK Cat. No.
Rocking shaker ISRK04HDG	1 4.659 479
Tumbling shaker ISWV02HDG	1 4.659 480

OHAUS

Heating/Shaking incubators

Shaking Incubators ISLD

The Incubating Light Duty Orbital Shakers are designed to heat and shake a variety of samples. The Microplate Shakers are optimized for shaking microplates, deep-well plates, or micro-tubes. Available with opaque lid for light sensitive samples.

- LED displays for temperature, speed and time
- Timer with audible alarm
- Calibration mode for temperature
- Microprocessor Control
- PID Temperature Controller
- Triple Eccentric Drive
- LED Display
- Temperature Calibration Mode
- Overload Protection
- Speed Ramping Feature
- Audible Alarm
- Spill-Resistant Design
- Polycarbonate Lid

Scope of supply:

04HDG: Shaking Incubator incl. built-in tray and lid

MPHDG: Shaking Incubators incl. built in tray for microplates, deep-well plates, or micro-tubes and lid

MPHDGL: as MPHDG, but with opaque lid

Specifications

Temperature range: ambient +5 °C to 65 °C Temperature uniformity: ± 0.5 °C at 37 °C Speed/Accuracy: 100 to 1200 rpm/ ± 2 % Timer: 1 s to 160 h

Orbit: 3 mm

Max. Load

Orbital shaker 3.6 kg

Microplate shaker 4 microplates or 2 racks for microtubes

Permissible ambient conditions: 5 to 40 °C
Weight: 13.6 kg
Power supply: 230 V, 50/60 Hz









4.659 472

Туре	PK Cat. No.
04HDG	1 4.659 471
MPHDG	1 4.659 473 2
MPHDGL	1 4.659 472 3

Blocks for Benchtop Shaking Incubators

For	No. of wells	Plate format	Depth	PK	Cat. No.
		mm	mm		
Microplates*		107 x 71 x 2.5	23.0	1	4.659 810
384 Well Plates*	384	Ø 4.0	8.1	1	4.659 811 4
0.2 ml PCR Plates*	384	Ø 6.4	12.7	1	4.659 812
0.5 ml Microplates**	30	Ø 7.9	24.6	1	4.659 813
1.5 ml Microplates**	24	Ø 11.1	35.3	1	4.659 814
2.0 ml Microplates**	24	Ø 11.5	35.3	1	4.659 815
5-7 ml Tubes	24	Ø 12.0	36.1	1	4.659 816
2.0 ml Cryogenic Tubes	24	Ø 12.6	36.0	1	4.659 817 5
5 ml Eppendorf™ Tubes	9	Ø 16.8	49.0	1	4.659 818
15 ml conical Tubes	9	Ø 17.3	104.4	1	4.659 819
50 ml conical Tubes	4	Ø 30.0	100.9	1	4.659 820







4.659 811



4.659 817

Stuart

7. Heating and cooling technology

Heating/Shaking incubators





Shaking incubators SI500/SI600/SI600C

These combined shakers and incubators are ideal for scientists doing cell culturing procedures, especially suspension culture applications. All units are compact enough to be positioned on the laboratory bench.

When SI600C is combined with the SRC4 recirculating cooler, or equivalent, the SI600C can operate at temperatures down to 15 °C below ambient (min. 5 °C). On the SI600C all viewing windows are also double glazed to prevent condensation. The Incubators have a versatile clamping system which secures most sizes and mixtures of flask up to 1 litre on the SI500 and 2 litres on the SI600 and SI600C. Typically, the SI500 platform will accommodate the following Erlenmeyer flasks: 12 x 250 ml, or 9 x 500 ml or 4 x 1000 ml while the SI600 and SI600C can accommodate the following: 6 x 2000ml, 9 x 1000ml or 15 x 500ml.

- Microprocessor controlled
- 51 or 115 Litre capacity available
- Digital display for temperature and speed
- Timer from 1 second to 9 days
- USB connection
- Unique retractable platform for easy loading and unloading
- With alarm function

Specifications

Temperature range

SI500 + SI600: Amb.+5 °C to + 60 °C

SI600C: Amb. -15 °C (min. 5 °C) to 60 °C*

Display resolution: 0.1 °C

Precision: ±0.5 °C at 37 °C Fluctuation: ±0.5 °C at 37 °C < 0.5 °C at 37 °C Variation: Speed range: 30 to 300 rpm

Platform size

SI500 // SI600 + SI600C: 335 x 335 mm // 526 x 390 mm

Max. vessel height

SI500 // SI600 + SI600C: 250 mm // 300 mm

Volume

SI500 // SI600 + SI600C: 51 | // 115 |

Max. load

SI500 + SI600C // SI600: 10 kg // 15 kg

Heater power SI500 // SI600 + SI600C: 250 W // 400 W Supply requirements: 230 V, 50 Hz

Туре	Nom. capacity	Load capacity	Internal dimensions (W x D x H)	External dimensions (W x D x H)	PK	Cat. No.
	L	kg	mm	mm		
SI500	51	10	422 x 408 x 297	450 x 474 x 522	1	9.951 612
SI600	115	15	660 x 470 x 395	675 x 542 x 640	1	9.645 351
SI600C	115	10	625 x 455 x 380	675 x 562(592**) x 640	1	6.287 436

^{*} Requires separate recirculating cooler (6.287 437)
** 592 mm with cooling connectors attached



Erlenmeyer flasks, DURAN® Super Duty, narrow neck

With approximate graduations. Reinforced sturdy rim, and increased mechanical strength for heavy duty. Glass type I/neutral glass as per USP, EP and JP. With Retrace Code (Batch Identification) certificate available via the Internet.

DWK Life Sciences

Capacity	Neck	Bottom	Height	PK	Cat. No.
	diam.	diam.			
ml	mm	mm	mm		
25	22	42	75	1	9.141 270
50	22	51	90	1	9.141 271
100	22	64	105	1	9.141 272
250	34	85	145	1	9.141 273
500	34	105	180	1	9.141 274
1000	42	131	220	1	9.141 275
2000	50	166	280	1	9.141 276
5000	52	220	365	1	9.141 277

E & OE. 884

Autoclavable.

KS 3000 i control/KS 3000 ic control

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 20 mm Orbit: Max. shaker weight (with attachment): 7.5 kg Motor rating input/output: 45/10 W Power consumption: 1.120 W Speed: 10 to 500 rpm Timer: 1 s to 999 h Speed display: LED Heater power: 1000 W Temperature range KS 3000 i: RT +5 °C to +80 °C RT -10 °C to +80 °C Temperature range KS 3000 ic: Temperature stability (200 ml H₂O at target T=37 °C, RT 25 °C): ±0.1 K +12 to +80 °C Temperature range (inlet T>3 °C) for KS 3000 ic: Dimensions (W x D x H): 465 x 695 x 430 mm Protection class acc. to DIN EN 60529: **TP 30** Interface: RS 232, USB 230 V, 50/60 Hz Power supply:

Туре	Nom. capacity	Plug type	PK Cat. No.
	L		
KS 3000 i control	50	EU	1 9.837 881
KS 3000 i control	50	UK	1 9.837 883
KS 3000 i control	50	CH	1 9.837 884
KS 3000 ic control	50	EU	1 9.837 882 1
KS 3000 ic control	50	UK	1 9.837 885
KS 3000 ic control	50	CH	1 9.837 886

Erlenmeyer flasks DURAN® Super Duty, wide neck

With approximate graduations. Reinforced, sturdy rim and increased mechanical strength for heavy duty. Glass Type I/neutral glass as per USP, EP and JP. With retrace code (Batch Identification). Certificate available via the Internet. Autoclavable.

Capacity	Neck diam.	Bottom diam.	Height	PK	Cat. No.
ml	mm	mm	mm		
100	34	64	105	1	9.141 280
250	50	85	140	1	9.141 281
500	50	105	175	1	9.141 282
1000	50	131	220	1	9.141 283



IKA

ΙΚΑ

7. Heating and cooling technology

Heating/Shaking incubators





Incubator Shaker KS4000i control

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)
- KS 4000 ic with built-in cooler for connection to an external cooling unit e.g. RC 2 basic
- 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

Specifications

Shaking movement:orbitalOrbit:20 mmMax. shaker weight (with attachment):20 kgMotor rating input/output:82/24 WPower consumption:1120 W (at

Power consumption: 1120 W (at 230 V)
Operating time: continuous
Speed range: 10 to 500 rpm
Timer switch (select minutes/hours): 0 to 999 h/continuous

Heater power: 1000 W
Temperature range: RT +5 °C to 80 °C

Temperature stability (200 ml H_2O at target T = 37 °C, RT 25 °C): 0.1 K

Recirculating cooler: additional cooling function for KS 4000 ic

Dimensions (W x D x H):

Space required (W x D):

Weight:

Permissible ambient temperature:

15 to 32 °C

Protection class acc. to DIN EN 60529:

18 30

Protection class acc. to DIN EN 60529: IP 30
Interface: RS232
Supply requirements: 230 V 50/60 Hz

Supply requirements: 230 V 50/60 Hz Tested to DIN EN IEC 61010-1.

Туре	Nom. capacity L	Plug type	PK	Cat. No.
KS 4000 i control	90	EU	1	9.837 890
KS 4000 i control	90	UK	1	4.008 075
KS 4000 ic control	90	EU	1	9.837 891
KS 4000 ic control	90	UK	1	4.008 077



Accessories for Incubator Shaker KS4000i control

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): $50 \times AS 2.1(25ml)$, $48 \times AS 2.2 (50ml)$, $25 \times AS 2.3 (100ml)$, $16 \times AS 2.4 (250ml)$, $12 \times AS 2.5 (500ml)$, $7 \times AS 2.6 (1000 ml)$

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).



Туре	Description	Dimensions Set-up plate (W x D)	Weight	PK Cat. No.
		mm	g	
AS 4000.1	Universal attachment	360 x 410	3200	1 9.837 894 2
AS 1.402	Fastening screw*			1 9.837 897
AS 4000.2	Fixing clip attachment	430 x 430	2650	1 9.837 893 3
AS 4000.3	Dish attachment	430 x 430	800	1 9.837 892
STICKMAX	Adhesive mat	200 x 200		1 6.236 293

*Spare parts for universal attachment.

MaxQ 4450 Compact Benchtop Incubated Shakers, orbital

- 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 c ontinuous 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.



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 °C accuracy at 37°

O.1 hour to 999 hours or 0.1 minute to 999 minutes

Dimensions (L x W x H): 691 x 358 x 401 mm Supply requirements: 240 V, 50/60 Hz

Туре	PK	Cat. No.
MaxQ 4450, Benchtop Incubated Shaker, digital	1	4.011 063
MaxO 4450, Benchtop Incubated Shaker with Cooling Coil, digital	1	4.011 064

Universal Platform for MaxQ Shaker

Thermo Scientific

For	Dimensions (W x D) mm	PK	Cat. No.
MaxQ 4450	280 x 330	1	4.009 327
MaxQ 6000	460 x 460	1	4.009 330



Clamps for MaxQ Shaker (except MaxQ 8000)

Thermo	Scientific
111611110	Scientific

Description	PK	Cat. No.
Clamps for Microplate/Deep-well plate	1	4.009 340
Clamps for Erlenmeyer Flask 10 ml	1	4.010 229
Clamps for Erlenmeyer Flask 25 ml	1	4.009 332
Clamps for Erlenmeyer Flask 50 ml	1	4.010 230
Clamps for Erlenmeyer Flask 125 ml	1	4.009 333
Clamps for Erlenmeyer Flask 250 ml	1	4.010 231
Clamps for Erlenmeyer Flask 300 ml	1	4.009 334
Clamps for Erlenmeyer Flask 500 ml	1	4.010 232
Clamps for Erlenmeyer Flask 1000 ml	1	4.010 233
Clamps for Erlenmeyer Flask 2000 ml	1	4.009 335
Clamps for Erlenmeyer Flask 4000 ml	1	4.009 336
Clamps for Erlenmeyer Flask 6000 ml	1	4.009 337
Clamps for Low Form Culture Flask 2500 ml	1	4.009 338
Clamps for Fernbach Flask 2800 ml	1	4.009 339



Thermo Scientific

4.011 067

4.011 068

7. Heating and cooling technology

Heating/Shaking incubators



MaxQ 6000 Incubated and Refrigerated Stackable Shakers, orbital

- 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

Dimensions (L x W x H):

Speed range: 15 rpm to 300 rpm ±1 rpm (stacked)

15 rpm to 500 rpm ±1 rpm (unstacked)

15.9

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: 240 V 50/60 Hz, 4.5A, 1100 W
Refrigerated Floor Shaker: 240 V 50/60 Hz, 7A, 1500 W

Load capacity	PK	Cat. No.
ka		

838 x 699 x 1029 mm



MaxQ 6000, Stackable Incubated Floor Shaker, digital

MaxQ 6000S, Stackable Incubated and Refrigerated Floor Shaker

Type

Adhesive Flask Mat for MaxQ Shakers

Our Adhesive Flask Mat is an alternative to flask clamps for securing odd shaped objects Scientific such as bottles, volumetric flasks and test tube racks to a shaker platform. Simply place the 21 cm x 21 cm 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 4 L that contain 2 L of media at speeds up to 250 rpm. 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	1	4.009 506

Digital dry bath LLG-uniBLOCKTHERM

Suitable for use in microbiological, histological, clinical, industrial and environmental laboratories. Various types of optional heating blocks are available as accessories for the LLG-uniBLOCKTHERM.

- Digital control with LED display
- Can be used up to 120 °C
- For timer and continuous operation
- Can be used with different heating blocks
- 1 x block unit
- With overheating protection

Scope of supply: LLG-uniBLOCKTHERM, removal tool, lid

Please order heating blocks separately.

Specifications

 $\begin{tabular}{llll} Temperature range: & RT ... 120 °C \\ Temperature uniformity: & \pm 0.5 °C \\ Temperature accuracy: & \pm 0.5 °C \\ Timer: & 0 ... 99:59:00 min \\ Block material: & Aluminium \\ Dimensions (W x D x H): & 175 x 290 x 85 mm \\ \end{tabular}$

Weight: 3 kg

Power supply: 220 ... 240 V, 50/60 Hz

Warranty: 3 years

Туре	Plug type	PK	Cat. No.
LLG-uni <i>BLOCKTHERM</i>	EU	1	6.263 460
LLG-uniBLOCKTHERM	UK	1	6.263 461



Accessories for LLG-uniBLOCKTHERM

Description	No. of wells	Diam.	Depth	PK Cat. No.
		mm	mm	
Heating block 54 x 0.2 ml	54	6.4	15	1 6.263 462
Heating block 40 x 0.5 ml	40	8.2	26.4	1 6.263 463
Heating block 40 x 1.5 ml	40	11	34.7	1 6.263 464 2
Heating block 40 x 2.0 ml	40	11	34.7	1 6.263 465
Heating block 28 x 5/15 ml	28	17	48	1 6.263 466
Heating block 8 x 50 ml	8	29.8	48	1 6.263 467
Heating block for 96/384 Microplate	-	-	-	1 6.263 468
Heating block for each 18 x 0.2 ml, 0.5 ml and 1.5/2.0 ml	-	-	-	1 6.263 469 3





Labnet

7. Heating and cooling technology

Heating/Thermoblocks



Digital Dry Bath AccuBlock™ Mini

AccuBlock $^{\text{TM}}$ Mini combines digital control, a fast heating microtube block and a convenient AccuRack $^{\text{TM}}$ transfer system, all in an ultra compact footprint. With a temperature range to 100 °C which can be set in increments of 0.1 °C, AccuBlock $^{\text{TM}}$ Mini is suitable for a range of uses in life science, molecular biology, environmental and industrial laboratories and a variety of applications including incubation, enzyme reactions, immunoassays.

- Accepts up to 12 x 1.5 ml tapered microcentrifuge tubes
- With thermometer well for temperature confirmation and calibration
- Microprocessor controlled heating element
- Easy to read 4 digit LCD display
- Built in calibration mode allows end users to calibrate the bath as needed

The included AccuRack™ allows quick loading or unloading of all sample tubes simultaneously. It is self standing and can be used to hold samples while they are prepared for loading. Samples can also be loaded directly into the AccuBlock™ Mini without the AccuRack™.

Specifications:

Temperature range: Ambient +5 °C ... 100 °C, resolution 0.1 °C

Temperature uniformity: ±0.2 °C
Temperature accuracy: ±0.2 °C

Timer: 0 ... 19 h 59 min or continuous

Block material: Anodized aluminum
Block capacity: 12 x 1.5 ml tubes
Dimensions (W x D x H): 140 x 120 x 60 mm

Weight: 1.3 kg

Supply requirements: 230 V 50/60 Hz

Туре	PK	Cat. No.
AccuBlock™ Mini	1	9.945 780



6.272 368

Dry Baths, AccuBlock™

The device is available in single, dual, and four block configurations and provide a broad temperature range up to 150 °C, which makes them useful for a variety of applications in molecular biology, histology, clinical, environmental, and industrial laboratories.

Labnet

- Single, dual and four block capacity
- Dual display
- USB connectivity enables traceability of data
- Molded block chamber

Please order blocks separately. Specifications

Ten Ten Ten

Temperature range: Ambient +5 to +150 °C, adjustable in 0.1 °C steps

Temperature uniformity: ±0.2 °C
Temperature resolution: ±0.1 °C
Temperature accuracy: ±0.3 °C
Temperature control: Microprocessor

Timer: 1 ... 99 h 59 min or continuous

Block material: Aluminium

Dimensions (W x D x H)

 Single/Dual Block:
 210 x 290 x 120 mm

 4 Block:
 210 x 390 x 120 mm

Weight

Single/Dual Block: 3.2 kg 4 Block: 4.4 kg

Power supply: 230 V, 50/60 Hz



6.272 369

6.272 370

Туре	PK Cat. No.
Single Block	1 6.272 368 2
Dual Block	1 6.272 369 3
Four Block	1 6.272 370 4

Accessories for Dry Baths, AccuBlock™

Labnet

Туре	For	PK	Cat. No.
Block	24 x 1.5 ml tubes	1	6.224 191
Block	20 x 2.0 ml tubes	1	6.233 664
Block	24 x 0.5 ml tubes	1	6.235 417
Block	48 x 0.2 ml PCR tubes or 6 x 0.2 ml strips	1	9.945 763
Block	12 x 15 ml centrifuge tubes	1	9.945 764
Block	5 x 50 ml centrifuge tubes	1	9.945 765

7. Heating and cooling technology Heating/Thermoblocks

OHAUS

Dry Block Heaters, digital

Designed for applications that require repeatable results and superior temperature stability. These multi-purpose units are ideal for incubation and activation of cultures, enzyme reactions, immunoassays, melting/boiling points, and a wide variety of other laboratory procedures. Integral support rod holder with locking knob accepts optional External Temperature Probe Kit. Optional External Temperature Probe Kit monitors actual block or sample temperature. Each of the models accept separate interchangeable modular blocks, accommodating various tube sizes from 0.2 ml microtubes to 50 ml centrifuge tubes. Each block has a thermometer well for measuring block temperature. Efficient heating due to close tube-and-block contact for maximum heat retention.

- Microprocessor Control
- LED Display
- Temperature Calibration Mode
- Caution Hot Indicator
- Audible Alarm

Without blocks. Please order separately.

Specifications

Temperature range: Temperature stability at 37 °C: Uniformity within block at 37 °C: Uniformity across blocks at 37 °C/Heat up time to 100 °C 1 block:

2 blocks:

4 blocks: 6 blocks:

Permissible ambient conditions:

Power supply:

ambient +5 to 120 °C

±0.2 °C ±0.2 °C

-/45 min ±0.1 °C/50 min ±0.2 °C/60 min ±0.3 °C/65 min 18 to 33 °C

230 V, 50/60 Hz



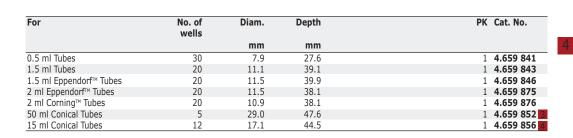


4.659 495

Capacity Length Width Height PK Cat. No. mm mm mm 1 block 203 89 1 **4.659 491 1** 2 blocks 391 203 89 4.659 494 4 blocks 429 203 89 4.659 495 2 6 blocks 89 4.659 496

Blocks for Microcentrifuge and Centrifuge tubes for Dry Block Heaters

OHAUS





4.659 852



4.659 856

Blocks and Combination Blocks for Standard Test Tubes for Dry Block Heaters

OHAUS

For tubes	No. of wells	Diam.	Depth	PK	Cat. No.
		mm	mm		
6 mm	30	8.3	48.4	1	4.659 842 5
10 mm	24	10.7	48.4	1	4.659 835
12/13 mm	20	13.9	48.4	1	4.659 836
12/13 mm	16	13.9	48.4	1	4.659 849
15/16 mm	12	17.5	48.4	1	4.659 837
17/18 mm	12	19.1	48.4	1	4.659 879
20 mm	8	21.0	48.4	1	4.659 838
25 mm	6	26.2	48.4	1	4.659 839
35 mm	4	35.0	47.6	1	4.659 851
2.5 ml	30	6.35	27	1	4.659 847
6 mm / 12/13 mm / 25 mm	6/5/3	8.3 / 13.8 / 26.2	48.4 / 48.4 / 48.4	1	4.659 840 6
1.5 ml / 15 ml / 50 ml	4/3/2	11.1 / 17.1 / 29.0	39.1 / 44.5 / 47.6	1	4.659 877
0.5 ml / 1.5 ml / 2 ml	6 / 10 / 5	7.9 / 11.1 / 11.5	27.6 / 39.1 / 38.1	1	4.659 878



4.659 842



4.659 840

E & OE.

Heating/Thermoblocks



Block thermostats PCH-1/PCH-2/PCH-3

Personal benchtop cooling/heating dry block for microcentrifuge tubes. The ingenious block construction, combined with the powerful Peltier module,

produces very rapid cooling and heating.

Temperature range: -10 to +100 °C Heat up, amb. to 100 °C: 15 min Cool down, 100 °C to amb.: 15 min Cool down, amb. to -10 °C: 21 min

Туре	Description	PK	Cat. No.
PCH-1	20 x 0.5 ml and 12 x 1.5 ml microtubes	1	9.721 009
PCH-2	20 x 1.5 ml microtubes	1	9.721 010
PCH-3	20 x 2.0 ml microtubes	1	9.721 066



Block thermostat CH3-150 Combitherm-2

NEW Grant

Grant

Block thermostat with cooling and heating function and with 2 independent modules for interchangeable blocks, combined in a single unit. Control panel is divided in two parts for separate control of cooling and heating blocks.

- Digital temperature control for optimum precision
- Digital timer with sound alarm
- User adjustable programs for temperature and time: 16 heating programs and 16 cooling programs
- Temperature Calibration Function
- With protective lid

Specifications

Temperature range heating/cooling: 25 ... 150 °C/-3 ... 20 °C

Temperature control range heating/cooling: ambient +5 ... 150 °C/ambient -23 ... ambient +5 °C

Temperature uniformity: ± 0.1 °C Temperature accuracy: ± 0.1 °C 0.1 °C

Timer: 1 min ... 99 h 59 min Dimensions (W x D x H): 295 x 285 x 220 mm

Weight: 5.6 kg

Power supply: 230 V, 50/60 Hz

Туре	PK	Cat. No.
CH3-150 Combitherm-2	1	7.983 641



Changeable blocks for CH3-150 Combitherm-2



Grant

For tubes	No. of wells	Depth	Description	PK	Cat. No.
		mm			
12 mm	18	58	round bottom	1	4.671 969
13 mm	10	30	flat bottom	1	4.671 968
16 mm	10	56	flat bottom	1	7.983 642
25 mm	6	40	flat bottom	1	7.983 643
29 mm	5	40	flat bottom	1	4.671 972
48 mm	2	58	flat bottom	1	4.671 970
1.5 ml	23		conical bottom	1	4.671 971

We can Supply this manufacturer's whole product range!





Microtube block thermostat BTD

Grantás block heating system BTD with fixed block is designed for rapid and precise heating of microtubes up to 100 °C.

- Digital temperature control for optimum precision

- Heating block holds combinations of four microtube sizes simultaneously
- up to a total of 49 tubes: 24 x 1.5/2.0 ml, 15 x 0.5 ml, 10 x 0.2 ml
- Flexible tube sizes and rapid heat-up time enables swift change of application
- Convenient integral timer for time-sensitive incubations
- Sturdy, durable, easy-to-clean plastic construction; compact design with small footprint
- 2-line display for simple and precise setting of temperature/time and for monitoring current status during operation



ambient +5 to 100 °C Temperature range:

Stability at 37 °C: ±0.1 °C ±0.1 °C Uniformity:

25 °C to 100 °C in 15 min Heat-up times: 25 °C to 37 °C in 4 min

1 min to 96 h Timer: Power supply: 230 V, 50/60 Hz

Туре	Dimensions (W x D x H)	Power	PK	Cat. No.
	mm	W		
BTD	210 x 230 x 110	200	1	6.223 310

Block thermostats, QBD and QBH series

For controlled dry heating of test tubes, microplates and Eppendorf tubes in interchangeable aluminium blocks. The following models are available:

- Choose from 3 digital systems with 1, 2 or 4 interchangeable blocks (QBD models) and 1 digital high-temperature system (OBH2) with 2 blocks
- Fast heat-up time and in-block temperature sensing capability using external sensor probe. Please order Cat. No. 6.228 714 separately.
- Built-in timer, programmable delayed start and RS232 output for data monitoring
- Includes block removal tool

Requires but does not include interchangeable QB-series blocks

Specifications

Temperature range: ambient 5 to 130 °C, QBH2: ambient 5 to 200 °C

Stability at 37 °C: ±0.1 °C

Uniformity

within the block at 37 °C: ±0.1 °C across similar blocks at 37 °C: ±0.2 °C

230 V, 50/60 Hz, single phase Supply requirements:

Туре	Width	Length	Height	Power	Blocks accepted	PK	Cat. No.
	mm	mm	mm	W			
QBD1	200	230	100	150	1	1	9.852 307
QBD2	200	280	100	300	2	1	9.852 308
QBD4	200	380	100	600	4	1	9.852 309
QBH2	200	280	100	300	2	1	9.852 310

Digital block thermostats QB, for QBD, QBH series

Accessory blocks for QB series only. Interchangeable. Machined aluminium, (L x W x H) 140 x 50 x 63 mm. Holes drilled as indicated.

Туре	For tubes	No.of	PK	Cat. No.
	diam.	holes		
	mm			
QB-10	10 mm	24	1	9.951 661
QB-12	12 mm	24	1	9.951 662
QB-16	16 mm	12	1	9.951 663
QB-18	18 mm	12	1	9.951 664
QB-24	24 mm	5	1	9.951 665
QB-50	50 ml	4	1	6.075 814
QB-H	0.2 ml	56	1	9.951 666
QB-E0	0.5 ml	24	1	9.951 667
QB-E1	1.5 ml	24	1	9.951 668
QB-E2	2.0 ml	24	1	9.951 669
QB-E5	5.0 ml	12	1	6.266 809

Further blocks available on request.











Grant

Stuart

7. Heating and cooling technology

Heating/Thermoblocks





9.852 300



9.852 303



6.207 050

Block Heaters, analogue and digital, SBH series

choice of either analogue or digital models

- digital models available with either 130 or 200 °C maximum temperature

- three block model for extra capacity

- dual control models have two blocks with independent temperature control

- uniform and stable block temperatures

Designed for the precise heating of test-tubes, microcentrifuge tubes, cuvettes and microplates. Range compromises an economical analogue model with easy to use, dial setting and advanced digital models with bright, easy to read, LED display which facilitates setting of the required temperature and also accurate monitoring of the actual temperature. Excellent temperature stability and uniformity is maintained via sensitive, microprocessor control.

Heats to 100°C in <12 mins.

Supplied complete with block extraction tool but without aluminium blocks which must be ordered separately. With BioCote, silver-based, antimicrobial protection.

Specifications

Temperature stability at 37 °C: ±0.1 °C Uniformity within block at 37 °C: ±0.1 °C Uniformity within block at 130 °C: ±1 °C Electrical supply: 230 V 50 Hz

Number of blocks: Temperature range:

Display type: Display resolution: Dimensions (W x D x H) mm:

Net weight: Heater power:

Number of blocks: Temperature range: Display type: Display resolution:

Dimensions (W x D x H) mm: Net weight:

Heater power: Number of blocks: Temperature range:

Display type: Display resolution:

Dimensions (W x D x H) mm:

Net weight: Heater power:

SBH130 // SBH130D // SBH200D

Amb.+8 °C to +130 °C // Amb.+8 °C to +130 °C // Amb.+8 °C to +200 °C Calibrated knob // LED // LED 10 °C // 0.1 °C // 0.1 °C 235 x 280 x 115 mm 2.1 kg // 2.3 kg // 2.3 kg 300W

SBH130D/3 // SBH200D/3

3 Amb.+8 °C to +130 °C // Amb.+8 °C to +200 °C LED 0.1 °C 310 x 280 x 115 mm 3.2 kg 450 W

SBH130DC // SBH200DC 2 (independent control)

Amb.+8 °C to +130 °C // +50 °C to +200 °C

LED 0.1 °C

310 x 280 x 115 mm

2.9 kg 300 W

Туре	Description	PK	Cat. No.
SBH130	Block heater, 2 block, analogue, 130 °C	1	9.852 300 1
SBH130D	Block heater, 2 block, digital, 130 °C	1	9.852 301
SBH200D	Block heater, 2 block, digital, 200 °C	1	9.852 302
SBH130D/3	Block heater, 3 block, digital, 130 °C	1	7.624 685
SBH200D/3	Block heater, 3 block, digital, 200 °C	1	9.852 303 2
SBH130DC	Block heater, 2 block, digital, dual control, 130 °C	1	6.207 050 3
SBH200DC	Block heater, 2 block, digital, dual control, 200 °C	1	9.852 315



Aluminium blocks SHT for block heaters Stuart SBH series

		Stuart
For	PK	Cat. No.
20 x 10.5 mm Ø tubes	1	9.951 617
20 x 12.5 mm Ø tubes	1	9.951 618
12 x 16.5 mm Ø tubes	1	9.951 619
8 x 19.5 mm Ø tubes	1	9.951 620
Solid, for user to drill as required	1	9.951 621
48 x 0.2 ml centrifuge tubes	1	9.951 622
20 x 1.5 ml Eppendorf Tubes®	1	9.951 623
20 x 2.0 ml Eppendorf Tubes®	1	9.951 624
15 x 10 mm cuvettes*	1	9.951 625

^{*}Separations can be removed to take larger cells

7. Heating and cooling technology Heating/Thermoblocks

Dry Block Heater

Digital block heaters for 1, 2, 3 or 4 aluminium blocks provides precise temperature control in small vessels. Included PT 1000 temperature sensor allows temperature control directly in the sample vessel. It is used with PCR tubes, PCR strips, Greiner tubes, microplates and cuvettes. The block heater is ideal for melting and boiling point determination, enzyme reactions, incubation and activation of cultures, immunoassays, DNA denaturation, culture media tests, coagulation tests, blood-urea-nitrogen determinations and in situ hybridizations.

- Stepless adjustable temperature up to 120 °C
- Timer: Countdown, adjustable from 1 min to 99 h 59min
- Counter: Display of heating time
- Highly versatile with a large number of blocks
- Error code display
- Fixed safety circuit
- Acoustic signal at end of test

Without blocks. Please order separately.





Specifications

RT to +120 °C Temperature range Display: LED ±1 K Heat control accuracy: DIN 12878 Connection for ext. temperature sensor: Control accuracy with sensor: ±1 K Temperature constancy in medium: ±1 K Temperature stability within the blocks at 37 °C: ±0.2 °C ±0.4 °C Temperature stability within the blocks at 60 °C +150 °C Fixed safety circuit: Protection class acc. to DIN EN 60529: IP 21

Power supply: 220-240 V, 50/60 Hz

Туре	Dimensions (W x D x H)	Dimensions Set-up plate (W x D)	Heating power	Plug type	PK	Cat. No.
	mm	mm	W			
Dry Block Heater 1	151 x 228 x 73	95 x 76	165	EU	1	9.816 801 1
Dry Block Heater 1	151 x 228 x 73	95 x 76	165	UK	1	9.816 802
Dry Block Heater 1	151 x 228 x 73	95 x 76	165	CH	1	9.816 803
Dry Block Heater 2	151 x 304 x 73	95 x 152	250	EU	1	9.816 804
Dry Block Heater 2	151 x 304 x 73	95 x 152	250	UK	1	9.816 805
Dry Block Heater 2	151 x 304 x 73	95 x 152	250	CH	1	9.816 806
Dry Block Heater 3	151 x 380 x 73	95 x 228	330	EU	1	9.816 807
Dry Block Heater 3	151 x 380 x 73	95 x 228	330	UK	1	9.816 808
Dry Block Heater 3	151 x 380 x 73	95 x 228	330	CH	1	9.816 809
Dry Block Heater 4	151 x 456 x 73	95 x 304	412	EU	1	9.816 810
Dry Block Heater 4	151 x 456 x 73	95 x 304	412	UK	1	9.816 811
Dry Block Heater 4	151 x 456 x 73	95 x 304	412	CH	1	9.816 812

Aluminium blocks for Dry Block Heater

Type	Description	PK	Cat. No.
DB 1.1	Single block for PCR tubes (0.5 ml), holes (diam. x D): 7.9 x 27.6 mm	1	9.816 813
DB 1.2	Single block for Eppendorf® microtubes (1.5 ml), holes (diam. x D): 11.5 x 36.9 mm	1	9.816 814
DB 3.1	Single block for centrifuge tube combination 0.5 ml, 15 ml, 50 ml	1	9.816 815
DB 3.2	Single block for microtube combination 1.5 ml, 15 ml, 50 ml	1	9.816 816
DB 6.3	Double block for 1 x 96 well plates (0.2 ml), holes (diam. x D): 6.4 x 15.5 mm	1	9.816 817
DB 7.1	Double block for 96 or 384 wellplates, depth: 13.5 mm	1	9.816 818

Further blocks available on request.



E & OE. **895**

IKA

Heating/Thermoblocks



Dry Block Heater Matrix ∆+



Eppendorf AG

IKA

Powerful Dry Block Heater for samples with very small volumes, e.g. blood samples, pharmaceutical agents, DNA/RNA samples, DNA/RNA samples or Elisa assays. Wide range of exchangeable attachments for various applications available.

- Without cross-contamination

- Large and clear display with a convenient menu structure allows for intuitive operation

- Robust aluminum die cast housing

Please order attachments separately.

Specifications

Temperature range: ambient -30 ... 100 °C

Temperature control: $\pm 1 \text{ K}$ Heating/cooling rate: $\pm 5 \text{ K/min}$ Uniformity: 0.5 °CDisplay: TFT
Programs: 2

Timer: 1 s ... 6000 min

Capacity: 0.3 kg

Dimensions (W x D x H): 220 x 350 x 125 mm

Weight: 8.8 kg Power consumption: 100 W

Power supply: 100 ... 240 V, 50/60 Hz

IP code: IP 21

Туре	PK	Cat. No.
Matrix Δ+	1	4.664 745



Cooling/Heating block Eppendorf ThermoStat C

The ideal device to accurately set and maintain temperatures. Precise temperature control is achieved using optimally balanced heating and cooling elements (peltier technology). The cooling and heating temperature keys provide quick access to five important experimental temperatures (4 °C, 16 °C, 37 °C, 56 °C and 95 °C). You can also individually store 15 programs.

- Excellent temperature accuracy

 Precise temperature control from -10 to +110 °C (+110 °C can be set when using 12 mm and cryo SmartBlocks™)

- Prevent condensation and improve temperature homogeneity with the new ThermoTop

- Comprehensive range of program functions

Specifications

Temperature operation range: min: +30 °C below RT, max: +110 °C

Temperature adjustable range: -10 to +110 °C (+110 °C can be set when using 12 mm and cryo SmartBlocks™)

Accuracy/ resolution: ± 0.5 °C at +20 to +45 °C

Max. heating time: 5.5 °C/min

Max. cooling time: 5 °C/min between +110 °C and RT

Dimensions (W x D x H): 206 x 304 x 131 mm

Capacity: dependent on Eppendorf SmartBlock™

Weight: 4.3 kg Power consumption: 200 W (max.)

Power supply: $220 - 240 \text{ V} \pm 10 \text{ %}, 50/60 \text{ Hz}$

Туре	Description	PK	Cat. No.
Eppendorf ThermoStat C	Basic device without Eppendorf SmartBlock™	1	9.776 903

7. Heating and cooling technology Heating/Thermoblocks

Eppendorf AG

Exchangeable blocks Eppendorf SmartBlocks™ and accessories for Eppendorf ThermoMixer™ C and ThermoStat C

Exchangeable blocks:

Flexibility has never been this easy.

Eppendorf offers a variety of SmartBlocks $^{\!\scriptscriptstyle\mathsf{TM}}$ for tubes from 0.5 ml to 50 ml.

- Fast and simple block exchange due to Eppendorf Quick Release
- Optimized block design guarantees maximum temperature transfer to the sample

Transfer Racks:

- Autoclavable transport aid for tubes from 0.5 to 2.0 ml $\,$
- For transferring up to 24 tubes in/from the heating block at the same time
- Offers protection against burns when transferring hot samples

SmartExtender:

A heatable frame/attachment for mixer, with separate temperature control (3 °C above RT to 110 °C), for simultaneous operation at two different temperatures.

- Enables 2 incubations at the same time

Туре	Description	PK	Cat. No.
Eppendorf SmartBlock™ 0.5 mL	24 tubes, 0.5 ml	1	9.776 906
Eppendorf SmartBlock™ 1.5 mL	24 tubes, 1.5 ml	1	9.776 907
Eppendorf SmartBlock™ 2.0 mL	24 tubes, 2.0 ml	1	9.776 908
Eppendorf SmartBlock™ 5.0 mL	8 Eppendorf Tubes®, 5.0 ml	1	9.776 909
Eppendorf SmartBlock™ 15 mL	8 conical tubes, 15 ml	1	9.776 910
Eppendorf SmartBlock™ 50 mL	4 conical tubes, 50 ml	1	9.776 911
Eppendorf SmartBlock™ 12 mm	24 tubes, diam. 11 to 11.9 mm	1	9.776 912
Eppendorf SmartBlock™ cryo	24 cryogenic tubes, 1.5 to 2.0 ml, all bottom forms	1	9.776 913
Eppendorf SmartBlock™ plates	For micro plates and Deepwell plates, incl. lid	1	9.776 914
Eppendorf SmartBlock™ PCR 96	PCR plates 96, incl. lid	1	9.776 915
Eppendorf SmartBlock™ PCR 384	PCR plates 384, incl. lid	1	9.776 916
Eppendorf SmartExtender™	12 tubes 1.5 - 2.0 ml	1	4.664 579
Transfer Rack	For 24 tubes, 0.5 ml	1	6.280 936
Transfer Rack	For 24 tubes, 1.5 to 2.0 ml	1	6.280 935



Memmert

Memmert

7. Heating and cooling technology

Heating/Test incubators

1



9.868 022

Constant Climate Chambers HPP

They are simply unbeatable in energy efficiency.

Furthermore, as constant climate chambers HPP have a very long maintenance free service life, they are perfectly suited for stability tests, storage in controlled environments and conditioning. The high precision temperature control as well as the active humidification and dehumidification.

The high precision temperature control as well as the active humidification and dehumidification were particularly adapted to the ICH guidelines, option Q1A, for stability tests.

- LED light module for sizes 110 to 750 (as an option): dimmable LED light in three alternative colour temperatures (cold white light, warm white light or cold white and warm white light, dimmable in steps of 1 %)

- Heating and cooling seamlessly with one system thanks to Peltier technology Almost vibration-free and extremely quiet

Model variant TwinDISPLAY: ControlCOCKPIT with two colour displays

You can find a detailed description of the "TwinDISPLAY" model at www.memmert.com

Specifications

Working temperature range sizes 110 - 1060:

without light, without humidity:

without light, with humidity:
Working temperature range sizes 110 - 750:

with light, without/with humidity:

Setting temperature range sizes1400 - 2200:

without light, without/with humidity:

Setting accurate temperature:

Setting ranges humidty:

Sizes 110 - 1060: without light

Size 1400 - 2200: without light

Sizes 110 - 750: with light

Setting accurate humidity:

Power supply:

0 (at least 20 °C below ambient) to +70 °C +5 °C (at least 20 °C below ambient) to +70 °C

+15 to +40 °C

+15 °C (at least 10 °C below ambient) to +60 °C

0.1 °C

10 to 90 % rh 10 to 80 % rh 10 to 85 % rh 0.5 % rh

230 V, 50/60 Hz

Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Net weight	PK Cat. No.
	L			mm	mm	kW	kg	
HPP110	108	5	2	560 x 400* x 480	745 x 656** x 864	0.65	77	1 9.868 021
HPP260	256	9	2	640 x 500* x 800	824 x 756** x 1183	0.92	122	1 9.868 022 1
HPP410	384	14	2	640 x 500* x 1200	824 x 756** x 1720	1.30	160	1 6.312 191
HPP750	749	14	2	1040 x 600* x 1200	1224 x 856** x 1720	1.50	208	1 9.868 023
HPP1060	1060	14	2	1040 x 850* x 1200	1224 x 1107** x 1720	1.60	260	1 6.272 235
HPP1400	1360	28	4	1250 x 750* x 1450	1435 x 1007** x 1913	3.10	450	1 6.286 315
HPP2200	2140	42	6	1972 x 750* x 1450	2157 x 1007** x 1913	3.50	493	1 6.312 160

^{*} Less 10 mm for fan-Peltier

^{**}Depth without door handle, please add 56mm





Options and accessories for constant climate chamber HPP

Light module cold white 6.500 K:

LED strips arranged on the side walls of the interior, 10 for model 110;

14 for models 260, 410 and 750; programme controlled dimming from 0 to 100 % (in 1 % steps);

ramp programming in combination with temperature and humidity

Light module cold white 6.500 K + warm white 2.700 K:

LED light strips - 10 strips for model 110; 14 strips for model 260, 410 and 750 (5 resp. 7 alternating cold white light strips and 5 resp. 7 warm white light strips);

on the side walls of the interior, programme controlled dimming from 0 to 100 % (in 1 % steps);

ramp programming in combination with temperature and humidity

Туре	Description	For Volume I	PK	Cat. No.
T7	Light module cold white 6,500 kelvin	110	1	9.868 024
T7	Light module cold white 6,500 kelvin	260	1	9.868 025
T7	Light module cold white 6,500 kelvin	410/750	1	9.868 026
T8	Light module cold white 6,500 kelvin + warm white 2,700 kelvin	110	1	9.868 027
T8	Light module cold white 6,500 kelvin + warm white 2,700 kelvin	260	1	9.868 028
T8	Light module cold white 6,500 kelvin + warm white 2,700 kelvin	410/750	1	9.868 029
E20165	Stainless steel grid	110	1	6.232 433
E28891	Stainless steel grid	260/410	1	9.537 204
E20182	Stainless steel grid	750	1	6.222 688
B41251	Stainless steel grid	1060	1	6.312 988
B38955	Stainless steel grid	1400/2200	1	4.663 195
B00325	Perforated stainless steel shelf	110	1	9.867 707
B29725	Perforated stainless steel shelf	260/410	1	6.262 685
B00328	Perforated stainless steel shelf	750	1	6.266 306
B32549	Perforated stainless steel shelf	1060	1	6.310 098

Further accessories can be found in our online shop.

Heating/Test incubators

Climate Chambers ICHeco

NEW



Memmert

Climate-friendly and powerful: the ICHeco climate chamber for the stability testing of pharmaceuticals, cosmetics or food works with environmentally-friendly CO₂ (R744) as refrigerant. No icing, no drying out of samples, no dehumidification of the working chamber. Compared to appliances with refrigerant R134a, it scores with faster cooling-down times. In the ICHeco L climate chamber, stability tests in accordance with ICH guidelines Q1B, option 2, can be performed, thanks to an illumination unit. Fluorescent lights with cold white light (daylight: light colour 865, 6.500 K) and UV radiation in the spectral range of 320 - 400 nm. Daylight and UV light comply with standard illuminant D65.

Model variant TwinDISPLAY: ControlCOCKPIT with two colour displays

You can find a detailed description of the "TwinDISPLAY" model at www.memmert.com

Different variants of ICHeco: ICHeco with humidity control ICHeco L with humidity control and light

Specifications

Working temperature range with humidity and/or light (ICHeco/ICHeco L):

Working temperature range without humidity (ICHeco): Working temperature range without humidity (ICHeco L):

Setting temperature range ICHeco: Setting temperature range ICHeco L: Setting accuracy temperature: Setting range humidity: Setting accuracy humidity:

Power supply:

+10 °C to +60 °C -10°C to +60°C 0 °C to +60 °C -10 to +60 °C 0°C to +60°C

0.1 °C 10 to 80 % rh 0.5 % rh 230 V, 50/60 Hz



Туре	Nom. capacity	Max. grids	Included grids	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Rated capacity	Net weight	PK Cat. No.
	L			mm	mm	kW	kg	
ICH110eco	108	5	2	560 x 400* x 480	745 x 585** x 1233	1.35	114	1 6.314 847
ICH260eco	256	9	2	640 x 500* x 800	824 x 685** x 1552	1.35	165	1 9.538 024 1
ICH750eco	749	14	2	1040 x 600* x 1200	1224 x 785** x 1950	1.35	254	1 9.538 025
ICH110Leco	108	5	2	560 x 400* x 480	745 x 585** x 1233	1.45	114	1 6.314 850
ICH260Leco	256	9	2	640 x 500* x 800	824 x 685** x 1552	1.45	165	1 9.538 026
ICH750Leco	749	14	2	1040 x 600* x 1200	1224 x 785** x 1950	1.55	254	1 9.538 027

^{*} Less 33 mm for fan

Further products can be found in our online shop.

Humidity Chambers HCP

The Memmert humidity chamber HCP - This climate chamber offers a full range of comfort, reliability and safety. This humidity chamber is ideally suited for environmental testing, environmental simulation, accelerated service life tests and 85/85 tests according to IEC 60068-2-67 and IEC 60068-2-78.

The active humidity control is the guarantee for ideal homogeneity of temperature and humidity as well as for short recovery times after opening the door. In combination with heating on all six sides, including heated inner glass door, it also minimises vaporisation in the interior and thus the risk of condensed water dripping onto the test object. An aluminium thermal conductive layer supports optimum temperature distribution and serves as a heat accumulator in case of a temporary power failure.

Model variant TwinDISPLAY: ControlCOCKPIT with two colour displays

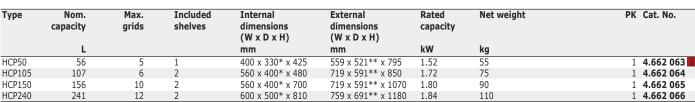
You can find a detailed description of the "TwinDISPLAY" model at www.memmert.com

Specifications

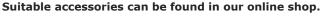
Setting range active humidity control: 20 to 95 % rh Setting accurate humidity: 0.5 % rh

at least 7 °C above ambient up to +90 °C Working temperature range:

Setting temperature range: +18 °C to +90 °C 0.1 °C Setting accurate temperature: Power supply: 230 V, 50/60 Hz



^{**}Depth without door handle, depth of door handle 56 mm





Memmert

4.662 063

^{**}Depth without door handle, please add 56 mm

BINDER

7. Heating and cooling technology

Heating/Test incubators



Constant climate chambers, KBF/KMF series

For long-term stable temperature/humidity simulations in one chamber. The constant climate chambers are ideal for norm-compliant work according to ICH guidelines and work independently of the water supply.

KBF Series: Constant climate chambers with large temperature range:

0 °C to 70 °C and humidity range: 10 % RH to 80 % RH.

KMF Series: Ideal for demanding stress tests, e.g. at 85 °C and 85 % RH. Temperature range: -10 °C to 100 °C and humidity range 10 % RH to 98 % RH.

Equipment:

- Electronically controlled APT.line™ preheating chamber with cooling system
- Inner chamber made of stainless steel
- Intuitive touchscreen controller with time-segment and real-time programming with internal data recording
- Humidity regulation with capacitive humidity sensor and vapor humidification
- Inner glass door with seal
- Independent temperature safety device class 3.1 (DIN 12880) with optical and audible temperature alarm
- Avoidance of glass corrosion by special TIMELESS coating
- Access port with silicone plug diam. 30 mm, left side
- Door heating
- Ethernet interface for communication software APT-COM™ DataControlSystem
- Internal data logger, measured values can be read out in open format via USB
- Power supply 200 ... 230 V, 50/60 Hz

Туре	Internal volume	External dimensions	Internal dimensions	PK	Cat. No.
	litres	(W x D x H) mm	(W x D x H) mm		
KBF 115	102	880 x 650 x 1050	600 x 351 x 483	1	6.270 830
KBF 240	247	925 x 800 x 1460	650 x 485 x 785	1	4.661 323
KBF 720	700	1250 x 890 x 1925	973 x 576 x 1250	1	6.291 134
KBF 1020	1020	1250 x 1145 x 1925	976 x 836 x 1250	1	4.661 324
KMF 115	102	880 x 650 x 1050	600 x 351 x 483	1	6.287 692
KMF 240	247	930 x 800 x 1465	650 x 485 x 785	1	4.661 325
KMF 720	700	1250 x 890 x 1925	973 x 576 x 1250	1	4.661 326



Constant climate chambers, KBF P/KBF LQC

NEW

For long-term stable temperature/humidity simulations in one chamber. The constant climate chambers are ideal for norm-compliant work according to ICH guidelines and work independently of the water supply.

KBF P Series: Constant climate chambers with ICH-compliant lighting and variably positionable light cassettes. **KBF LQC Series:** Constant climate chambers with ICH-compliant light source and patented light dose control for UV-A and VIS. Temperature range: 0 °C to 70 °C and humidity range: 10 % RH to 80 % RH.

Equipment:

- Electronically controlled APT.line™ preheating chamber with cooling system
- Inner chamber made of stainless steel
- Intuitive touchscreen controller with time-segment and real-time programming with internal data recording
- Humidity regulation with capacitive humidity sensor and vapor humidification
- Inner glass door with seal
- Independent temperature safety device class 3.1 (DIN 12880) with optical and audible temperature alarm
- Avoidance of glass corrosion by special TIMELESS coating
- Access port with silicone plug diam. 30 mm, left side
- Door heating
- Ethernet interface for communication software APT-COM™ DataControlSystem
- Internal data logger, measured values can be read out in open format via USB
- Power supply 200 ... 230 V, 50/60 Hz

Туре	Internal volume	External dimensions (W x D x H)	Internal dimensions (W x D x H)	PK	Cat. No.
	litres	mm	mm		
KBF P 240	247	925 x 800 x 1460	650 x 485 x 785	1	9.883 583
KBF P 720	700	1250 x 890 x 1925	973 x 1250 x 576	1	9.883 584
KBF LQC 240	247	925 x 800 x 1460	650 x 485 x 785	1	6.236 223
KBF LQC 720	700	1250 x 890 x 1925	973 x 576 x 1250	1	6.236 224

Heating/Test incubators

Constant climate chambers series KBF-S Solid.Line

Constant climate chambers for long-term tests and accelerated stability tests of pharmaceutical products according to the ICH guideline Q1A. With corrosion and condensate-free stainless steel interior for homogeneous temperature and humidity conditions.

- Electronically controlled APT.line™ preheating chamber with cooling system
- Inner chamber made completely of stainless steel
- 2 stainless steel racks incl. shelf support
- Intuitive touchscreen controller with time segment and real-time programming with internal measured value recording
- Humidity control with capacitive humidity sensor and vapor humidification
- Independent temperature safety device class 3.1 (DIN 12880) with optical and audible alarm
- Access port with silicone plug diam. 30mm, left side
- LCD display for indication of temperature, humidity, alarms and additional information
- Internal data logger with USB interface
- Independent water supply via canisters
- Models from 240 I capacity with double swivel castors and brake

Specifications

Humidity range: 20 ... 80 % r.F. Humidity accuracy: 2.0 % Temperature range: 0 ... 70 °C Temperature accuracy: ±0.1 °C Computer interface: Ethernet

200 ... 230 V, 50/60 Hz Power supply:

Туре	Internal volume	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Plug type	PK	Cat. No.
	litres	mm	mm			
KBF-S 115	102	880 x 650 x 1050	600 x 351 x 483	EU	1	6.275 186
KBF-S 240	247	925 x 800 x 1460	650 x 485 x 785	EU	1	4.665 284
KBF-S 270	700	1250 x 890 x 1925	973 x 576 x 1250	EU	1	4.665 286
KBF-S 1020	1020	1250 x 1145 x 1925	976 x 1250 x 836	EU	1	6.275 188

Material test chambers, FP and M series

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.

FP Series: Material test chamber with forced convection. M Series: Material test chambers with individual programming.

- Electronically controlled APT.line™ preheating chamber assuring temperature accuracy and reproducible results
- Adjustable fan speed
- 2 chrome-plated racks
- 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







9.883 710



9.883 565

Туре	Internal volume	External dimensions	Internal dimensions	Type of auxiliary energy	PK Cat. No.
		(W x D x H)	(W x D x H)		
	litres	mm	mm		
FP 53	53	635 x 575 x 620	400 x 340 x 400	230 V, 50/60 Hz	1 9.883 710 2
FP 115	115	835 x 645 x 705	600 x 410 x 480	230 V, 50/60 Hz	1 9.883 711
FP 240	240	1035 x 745 x 825	800 x 510 x 600	230 V, 50/60 Hz	1 9.883 712
FP 400	400	1235 x 765 x 1025	1000 x 510 x 800	400 V, 50/60 Hz	1 9.883 713
FP 720	720	1235 x 865 x 1530	1000 x 610 x 1200	400 V, 50/60 Hz	1 9.883 714
M 53	53	635 x 575 x 780	400 x 340 x 400	230 V, 50/60 Hz	1 9.883 563
M 115	115	835 x 645 x 865	600 x 410 x 480	230 V, 50/60 Hz	1 9.883 564
M 240	240	1035 x 745 x 985	800 x 510 x 600	230 V, 50/60 Hz	1 9.883 565 3
M 400	400	1235 x 765 x 1185	1000 x 510 x 800	400 V, 50/60 Hz	1 9.883 566
M 720	720	1235 x 865 x 1695	1000 x 610 x 1200	400 V, 50/60 Hz	1 9.883 567

7. Heating and cooling technology Heating/Test incubators

Growth chambers, KBW, KBWF series

Homogeneous lighting conditions with constant temperature and humidity conditions, the BINDER growth chambers. The responsive humidification system, the high-performance cooling and uniform light distribution ensure optimal growth conditions.

BINDER

KBW Series: Growth chambers with light.

KBWF Series: Growths chambers with light and humidity.

Equipment:

- Electronically controlled APT.line™ preheating chamber
- Temperature range 0 °C to 70 °C (without humidity and illumination)
- Humidity range 10 % to 80 % RH (KBWF)
- 2 variable position illumination cassettes each with 5 daylight fluorescent illumination tubes
- Controller with time-segment and real-time programming
- Humidity regulation with capacitative humidity sensor and vapor humidification (KBWF)
- Independent temperature safety device class 3.1 (DIN 12880) with optical and audible temperature alarm
- Ethernet or RS 422 interface for communication software APT-COM $^{\!\!\top\!\!M}$ DataControlSystem

Туре	Internal volume	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Type of auxiliary energy	PK Cat. No.
	litres	mm	mm		
KBW 240	247	925 x 800 x 1460	650 x 485 x 785	200 240 V, 50 Hz	1 9.883 573
KBW 400	400	925 x 800 x 1945	650 x 485 x 1270	200 240 V, 50/60 Hz	1 9.883 535 1
KBW 720	698	1255 x 887 x 1925	970 x 576 x 1270	200 240 V, 50/60 Hz	1 9.883 574
KBWF 240	247	930 x 800 x 1460	650 x 485 x 785	200 240 V, 50 Hz	1 9.883 575
KBWF 720	720	1255 x 890 x 1925	973 x 576 x 1250	200 240 V, 50 Hz	1 9.883 576 2





9.883 535

Gestigkeit



3 Rapid incinerator

For individual and series incineration of solids and liquids. Upper platform with 8 openings of 34 mm diameter, for porcelain crucibles up to 50 mm 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.

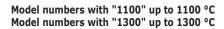
Туре	Dimensions (W x D x H)	Rating	Temp. range	Supply requiremen	Weight ts	PK	Cat. No.
	mm	W	max. °C	V	kg		
SVR/E	450 x 310 x 180	2500	950	230	7	1	9.884 140
SVD 95	450 x 310 x 180	2500	950	220	7	1	9.884 141
Heating element EH 400 for SVR/E (spare part)						1	9.884 142
Heating element EH 95 for SVD 95 (spare part)						1	9.884 143

NEW

Muffle furnaces up to 1300 °C

High temperature furnaces with glass fibre insulated chamber. Suitable for applications in industry, science and medicine.

- Ceramic bottom plate
- Side-opening, down-opening or top-opening door, depending on model
- Controls easily accessible in the socket
- Fast heating times
- Furnace housing made of powder-coated metal
- Good temperature stability
- Energy saving
- Models with Omron E5CC controller: time and temperature can be set
- Models with Omron E5CC-T controller: 8 storable programs





4.669 221

Туре	Nom. capacity	Description	Internal dimensions (W x D x H)	Type of auxiliary energy	PK Cat. No.
	L		mm		
SNOL 3/1100 LHM01*	3	Top-opening	120 x 200 x 105	230 V, 50 Hz	1 4.669 202
SNOL 8.2/1100 LHM01*	8	Top-opening	195 x 310 x 135	230 V, 50 Hz	1 4.669 203
SNOL 8.2/1100 LSM01*	8	Side-opening	195 x 310 x 135	230 V, 50 Hz	1 4.669 204
SNOL 8.2/1100 LZM01*	8	Down-opening	195 x 310 x 135	230 V, 50 Hz	1 4.669 205
SNOL 13/1100 LHM01*	13	Top-opening	220 x 335 x 170	230 V, 50 Hz	1 4.669 206
SNOL 22/1100 LHM01*	22	Top-opening	280 x 500 x 160	230 V, 50 Hz	1 4.669 207
SNOL 39/1100 LHM01*	39	Top-opening	320 x 495 x 230	400 V, 50 Hz	1 4.669 208
SNOL 6.7/1300 LSM01*	7	Side-opening	145 x 310 x 135	230 V, 50 Hz	1 4.669 209
SNOL 10/1300 LHM01*	10	Top-opening	190 x 335 x 170	230 V, 50 Hz	1 4.669 210
SNOL 3/1100 LHM01**	3	Top-opening	120 x 200 x 105	230 V, 50 Hz	1 4.669 220
SNOL 8.2/1100 LHM01**	8	Top-opening	195 x 310 x 135	230 V, 50 Hz	1 4.669 221 1
SNOL 8.2/1100 LSM01**	8	Side-opening	195 x 310 x 135	230 V, 50 Hz	1 4.669 222
SNOL 8.2/1100 LZM01**	8	Down-opening	195 x 310 x 135	230 V, 50 Hz	1 4.669 223
SNOL 13/1100 LHM01**	13	Top-opening	220 x 335 x 170	230 V, 50 Hz	1 4.669 224
SNOL 22/1100 LHM01**	22	Top-opening	280 x 500 x 160	230 V, 50 Hz	1 4.669 225
SNOL 39/1100 LHM01**	39	Top-opening	320 x 495 x 230	400 V, 50 Hz	1 4.669 226
SNOL 6.7/1300 LSM01**	7	Side-opening	145 x 310 x 135	230 V, 50 Hz	1 4.669 227
SNOL 10/1300 LHM01**	10	Top-opening	190 x 335 x 170	230 V, 50 Hz	1 4.669 228
* with Omeon EECC controller					

^{*} with Omron E5CC controller **with Omron E5CC-T controller

Muffle Furnaces Series LE 1/11 - LE 14/11 up to 1100 °C

Compact muffle furnaces with dual shell furnace housing of rust-free stainless steel and heating elements encased in quartz glass tubes.

- Tmax 1100 °C, working temperature 1050 °C
- Heating from two sides from heating elements in quartz glass tubes
- Maintenance-friendly replacement of heating elements and insulation
- Insulation only made of materials that are classified as not carcinogenic acc. to TRGS 905, class 1 or 2 $\,$
- Housing made of sheets of textured stainless steel
- Dual shell housing for low external temperatures and high stability
- Flap door which can also be used as a work platform
- Exhaust air outlet in rear wall
- Compact dimensions and light weight
- Controller mounted under the door to save space
- Equipped with the basic controller R 7 with one free storeable temperature, which is dwelled until the controller is switch off
- Standard power supply 230 V, 1/N/PE, 50/60 Hz

Type/Controller	Capacity	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Rating	Weight	PK	Cat. No.
	I	mm	mm	kW	kg		
LE 1/11/R7	1	290 x 280 x 406	90 x 115 x 110	1.5	10	1	9.764 543
LE 2/11/R7	2	330 x 385 x 406	110 x 180 x 110	1.8	10	1	9.764 537
LE 6/11/R7	6	390 x 434 x 466	170 x 200 x 170	1.8	18	1	9.764 539
LE 14/11/R7	14	440 x 534 x 516	220 x 300 x 220	2.9	25	1	9.764 541

External dimensions vary for versions with additional equipment. Dimensions on request.



Nabertherm





Safety gloves, heat protection - please see page 239.

7. Heating and cooling technology

Heating/Ovens, Furnaces

Muffle furnaces series L/LT 1100 °C to 1400 °C

For daily laboratory use. Models with flap door or lift door available, for temperatures from 1100 $^{\circ}$ C to 1400 $^{\circ}$ C.

Nabertherm

- Dual shell housing made of textured stainless steel sheets for low external temperatures and high stability
- Adjustable air inlet integrated in door
- Exhaust air outlet in rear wall of furnace
- Solid state relays provide low-noise operation
- Optionally available with flap door (L models) that can be used as work platform or with lift door (LT models) with hot surface facing away from the operator
- Available with the programmable controllers B 410 and C 450 with adjustable ramps and hold times (L 1/12 with R7 or 3216)
- All insulation materials used are classified as non-carcinogenic according to TRGS 905, Class 1 or 2
- Standard connection 220-240 V 1/N/PE 50/60 Hz

1100 °C and 1200 °C models

- Ceramic heating plates with integrated heating wire, splash and exhaust protected, easy to replace
- heating from two sides (heating from three sides for muffle furnaces with interior volumes of 24 litres and 40 litres)

1300 °C and 1400 °C models

- Heating elements on support tubes for free heat radiation, short heating times and long service life
- Heating from two sides

Optional

- Chimney, chimney with fan or catalytic converter
- Over-temperature limiter with adjustable cutout temperature for thermal protection class 2 in accordance with EN 60519-2 as temperature limiter to protect the furnace and load
- Protective gas connection to purge with non-flammable protective or reaction gases (not available in combination with chimney, chimney with fan or catalytic converter)
- Manual or automatic gas supply system
- Process control and documentation via VCD software package for monitoring, documentation and control



Muffle furnaces series LT 3/11 - LT 40/11, max. 1100 °C, with lift door

Max. temperature 1100 °C. Lift door with hot surface facing away from the operator.

Nabertherm

Туре	Nom. capacity	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Power consumption	PK	Cat. No.
	L	mm	mm	W		
LT 3/11/B410	3	160 x 140 x 100	385 x 330 x 405	1200	1	6.241 787
LT 5/11/B410	5	200 x 170 x 130	385 x 390 x 460	2400	1	6.260 949
LT 9/11/B410	9	230 x 240 x 170	415 x 455 x 515	3000	1	6.241 499
LT 15/11/B410	15	230 x 340 x 170	415 x 555 x 515	3500	1	6.237 183
LT 24/11 *	24	280 x 340 x 250	490 x 555 x 580	4500	1	6.274 993
LT 40/11/B410*	40	320 x 490 x 250	530 x 705 x 580	6000	1	6.239 613

*400 V 3/N/PE 50/60 Hz connector as standard

External dimensions vary for versions with additional equipment. Dimensions on request.



Muffle furnaces series L 3/11 - L 40/11, max. 1100 °C, with flap door

Max. temperature 1100 °C. Flap door can be used as work platform.

Nabertherm

Туре	Nom. capacity	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Power consumption	PK	Cat. No.
	L	mm	mm	W		
L 3/11/B410	3	160 x 140 x 100	385 x 330 x 405	1200	1	6.059 769
L 5/11/B410	5	200 x 170 x 130	385 x 390 x 460	2400	1	6.092 769
L 9/11/B410	9	230 x 240 x 170	415 x 455 x 515	3000	1	6.302 391
L 15/11/B410	15	230 x 340 x 170	415 x 555 x 515	3500	1	6.056 446
L 24/11/B410*	24	280 x 340 x 250	490 x 555 x 580	4500	1	6.206 861
L 40/11/B410*	40	320 x 490 x 250	530 x 705 x 580	6000	1	7.660 691

^{* 400} V 3/N/PE 50/60 Hz connector as standard

External dimensions vary for versions with additional equipment. Dimensions on request.

7. Heating and cooling technology **Heating/Ovens, Furnaces**

Muffle furnaces series LT 3/12 - LT 40/12, max. 1200 °C, with lift door

Max. temperature 1200 °C. Lift door with hot surface facing away from the operator.

Nabertherm

Туре	Nom. capacity	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Power consumption	PK	Cat. No.
	L	mm	mm	W		
LT 3/12/B410	3	160x 140 x 100	385 x 330 x 405	1200	1	6.256 646
LT 5/12/B410	5	200 x 170 x 130	385 x 390 x 460	2400	1	6.284 369
LT 9/12/B410	9	230 x 240 x 170	415 x 455 x 515	3000	1	6.244 089
LT 15/12/B410	15	230 x 340 x 170	415 x 555 x 515	3500	1	6.240 063
LT 24/12/B410*	24	280 x 340 x 250	490 x 555 x 580	4500	1	6.287 691
LT 40/12/B410*	40	320 x 490 x 250	530 x 705 x 580	6000	1	4.660 518



External dimensions vary for versions with additional equipment. Dimensions on request.

Muffle furnaces series L 1/12 - L 40/12, max. 1200 °C, with flap door

Max. temperature 1200 °C. Flap door can be used as work platform.

Nabertherm

Туре	Nom. capacity	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Power consumption	PK	Cat. No.
	L	mm	mm	W		
L 1/12	1	90 x 115 x 110	290 x 280 x 430	1500	1	4.675 300
L 3/12/B410	3	160 x 140 x 100	385 x 330 x 405	1200	1	6.201 618
L 5/12/B410	5	200 x 170 x 130	385 x 390 x 460	2400	1	6.223 409
L 9/12/B410	9	230 x 240 x 170	415 x 455 x 515	3000	1	6.226 450
L 15/12/B410	15	230 x 340 x 170	415 x 555 x 515	3500	1	6.233 463
L 24/12/B410*	24	280 x 340 x 250	490 x 555 x 580	4500	1	6.265 211
L 40/12/B410*	40	320 x 490 x 250	530 x 705 x 580	6000	1	6.234 225

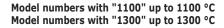


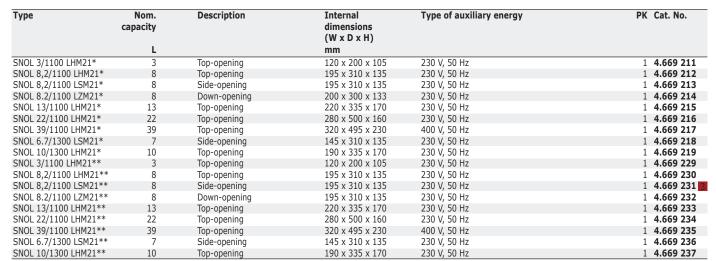
External dimensions vary for versions with additional equipment. Dimensions on request.

Ashing furnaces up to 1300 °C

Ashing furnaces with glass fibre insulated chamber. Suitable for applications in industry, science and medicine.

- Fan-assisted chimney for air extraction
- Side- opening, down-opening or top-opening door, depending on model
- Continuous air change in the chamber
- Controls easily accessible in the socket
- Fast heating times
- Furnace housing made of powder-coated metal
- Good temperature stability
- Energy saving
- Models with Omron E5CC controller: time and temperature can be set
- Models with Omron E5CC-T controller: 8 storable programs





with Omron E5CC controller **with Omron E5CC-T controller



4.669 231



Nabertherm

NEV

Nabertherm

7. Heating and cooling technology

Heating/Ovens, Furnaces

6.310 023

High-temperature chamber furnaces with air circulation NA/N

These chamber furnaces with air circulation are characterized by their extremely high temperature uniformity. Hence, they are especially suitable for processes such as cooling, crystalizing, preheating, curing, but also for numerous processes in tool making. Due to the modular concept, the forced convection furnaces can be adjusted to the process requirements by adding suitable equipment.

- Tmax 450 °C, 650 °C, or 850 °C
- Horizontal air circulation
- Swing door hinged on the right
- Temperature uniformity up to ±4 °C according to DIN 17052-1 (model NA 15/65 up to ±5 °C)
- Optimum air flow and temperature uniformity through high circulation rates
- One frame sheet and rails for two additional trays included in the scope of delivery (NA 15/65 without frame sheet)
- Stainless steel air-baffles in the furnace for optimum air circulation
- Base frame included in the delivery, NA 15/65 designed as table-top model
- Air inlet and exhaust air flaps as additional equipment for using as drying oven
- NTLog Basic for Nabertherm controller: recording of process data with USB-flash drive
- Available with the programmable controllers B 400 and C 440 with adjustable ramps and hold times (NA 15/65 with B 410 or C 450)
- Standard power supply 400 V 3/N/PE 50/60 Hz (NA 15/65: 220 240 V, 1/N/PE)



6.310 029

Type/Controller	Temp.	Capacity	Rating	Internal dimensions (W x D x H)	External dimensions (W x D x H)	PK Cat. No.
	max. °C	L	kW	mm	mm	
NA 30/45/B400	450	30	3.6	290 x 420 x 260	1040 x 1290 x 1385	1 6.310 019
NA 60/45/B400	450	60	6.6	350 x 500 x 350	1100 x 1370 x 1475	1 6.310 021
NA 120/45/B400	450	120	9.8	450 x 600 x 450	1250 x 1550 x 1550	1 6.310 023 1
NA 250/45/B400	450	250	12.8	600 x 750 x 600	1350 x 1650 x 1725	1 6.310 025
NA 500/45/B400	450	500	18.8	750 x 1000 x 750	1550 x 1900 x 1820	1 6.310 027
NA 15/65 HA/B410*	650	15	2.8	295 x 340 x 170	470 x 790 x 460	1 6.310 029 2
NA 30/65/B400	650	30	7.0	290 x 420 x 260	870 x 1290 x 1385	1 6.310 031
NA 60/65/B400	650	60	10.0	350 x 500 x 350	910 x 1390 x 1475	1 6.310 033
NA 120/65/B400	650	120	13.0	450 x 600 x 450	990 x 1470 x 1550	1 6.310 035
NA 250/65/B400	650	250	21.0	600 x 750 x 600	1170 x 1650 x 1680	1 6.310 037

*Standard power supply 220-240 V 1/N/PE 50/60 Hz

External dimensions vary for versions with additional equipment. Dimensions on request.



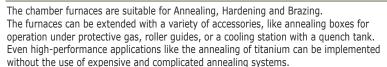


6.226 571



6.285 618

Chamber furnaces



- Robust insulation with light refractory bricks
- Deep furnace chamber with three-sides heating: from both side walls and bottom
- Low energy consumption due to multi-layer insulation
- Base frame included
- N 7/H N 17/HR designed as table-top model
- Parallel guided downward swinging door (user protected from heat radiation)
- NTLog Basic for Nabertherm controller: recording of process data with USB-flash drive
- Available with the programmable controllers B 400 and C 440 with adjustable ramps and hold times

Туре	Temp.	Capacity	Internal dimensions (W x D x H)	External dimensions (W x D x H)	Type of auxiliary energy	PK Cat. No.
	max. °C	L	mm	mm		
N 7/H	1280	9	250 x 250 x 140	800 x 650 x 600	230 V, 1/N/PE, 50 Hz	1 6.226 571
N 11/H	1280	11	250 x 350 x 140	800 x 750 x 600	230 V, 1/N/PE, 50 Hz	1 6.227 200
N 11/HR	1280	11	250 x 350 x 140	800 x 750 x 600	400 V, 3/N/PE, 50 Hz	1 6.226 570
N 31/H	1280	30	350 x 350 x 250	1040 x 1100 x 1340	400 V, 3/N/PE, 50 Hz	1 4.675 220
N 41/H	1280	40	350 x 500 x 250	1040 x 1250 x 1340	400 V, 3/N/PE, 50 Hz	1 6.241 122
N 61/H	1280	60	350 x 750 x 250	1040 x 1500 x 1340	400 V, 3/N/PE, 50 Hz	1 6.285 618 4
N 87/H	1280	87	350 x 1000 x 250	1040 x 1750 x 1340	400 V, 3/N/PE, 50 Hz	1 4.675 221

Tube Furnaces

These compact tube furnaces with integrated control systems can be used universally for many processes. Equipped with a standard working tube of C 530 ceramic and two fiber plugs, these tube furnaces have an unbeatable price/performance ratio.

- Tmax 1200 °C or 1300 °C
- Single-zoned design as standard
- Dual shell housing made of sheets of textured stainless steel
- Outer tube diameter of 50 to 170 mm, heated length from 250 to 1000 mm
- Working tube of C 530 ceramic including two fiber plugs as standard equipment
- Solid state relays provide for lownoise operation
- Available with the programmable controllers B 410, C 450 and P 480 (for three-zoned design) with adjustable ramps and hold times
- Standard power supply 400 V 3/N/PE 50/60 Hz (R 50/250 und R 50/500: 220 V, 1/N/PE, 50/60 Hz)

Option:

- Over-temperature limiter with adjustable cutout temperature for thermal protection class 2 in accordance with EN 60519-2 as temperature limiter to protect the furnace and load
- Charge control with temperature measurement in the working tube and in the furnace chamber outside the tube
- Three-zoned design (heated length from 500 mm)
- Working tubes
- Gas supply systems for protective gas or vacuum operation
- Process control and documentation with VCD software package

Type/Controller	Tube diam.	Tube length	Max. temp.	Dimensions (W x D x H)	Power	PK	Cat. No.
	mm	mm	°C	mm	W		
R 50/250/12/B410	40	450	1200	434 x 340 x 508	1.6	1	9.764 651
R 50/500/12/B410	40	700	1200	670 x 340 x 508	2.3	1	9.764 653
R 170/750/12/B410	150	1100	1200	920 x 460 x 628	11.5	1	9.764 659
R 170/1000/12/B410	150	1350	1200	1170 x 460 x 628	11.5	1	9.764 661
R 50/250/13/B410	40	450	1300	434 x 340 x 508	1.6	1	9.764 663
R 50/500/13/B410	40	700	1300	670 x 340 x 508	2.3	1	9.764 665
R 120/500/13/B410	100	850	1300	670 x 410 x 578	6.5	1	9.764 667
R 170/750/13/B410	150	1100	1300	920 x 460 x 628	11.5	1	9.764 671
R 170/1000/13/B410	150	1350	1300	1170 x 460 x 628	11.5	1	9.764 673
R 120/500/12/B410	100	850	1200	670 x 410 x 578	6.5	1	9.764 655

Tube Furnaces with Stand

These compact tube furnaces are used when laboratory experiments must be performed horizontally, vertically, or at specific angles. The ability to configure the angle of tilt and the working height, and their compact design, also make these tube furnaces suitable for integration into existing process systems.

- Vertical or horizontal operation freely adjustable
- Working height freely adjustable
- Working tube made of C 530 ceramic
- Control system integrated in furnace base
- NTLog Basic for Nabertherm controller: recording of process data with USB-flash drive
- Available with the programmable controllers B 410 and C 450 with adjustable ramps and hold times

Specifications

Power input:

Power supply: 230 V, 1/N/PE, 50/60 Hz

Туре	Tube diam.	Tube length	Temp.	Dimensions (W x D x H)	Weight	PK	Cat. No.
	mm	mm	max. °C	mm	kg		
RT 50-250/11	50	360	1100	350 x 380 x 740	25	1	6.242 203
RT 50-250/13	50	360	1300	350 x 380 x 740	25	1	6.240 831
RT 30-200/15	30	360	1500	445 x 475 x 740	45	1	4.675 222

Glass drying pistol

Ideally suited for drying of small sample volumes. This sample dryer, for analysing substances and synthetic products, uses heat, desiccant and vacuum at the same time for optimum results. Its temperature range can be adjusted between +30 °C to +160 °C, with a temperature stability of ±1°C.

The two-part drying vessel is approximately two parts of DURAN® glass:

- 1) Drying tube with an outer diameter of 44 mm, length inside 200 mm, joint NS45.
- 2) Ground flask with stopcock for connection to a vacuum pump.

The glass drying oven needs to be fixed with screw stand rod at the laboratory stand to be secured. Dimensions (without mounting for tripod and Flask): H 120 mm x B 195 mm x T 185 mm. Weight: 2 kg

Supplied with: Glass drying oven consisting of heating element with support rod and glassware with ground drying tube and ground flask with stopcock.

Туре	PK	Cat. No.
Glass drying oven	1	6.269 737
Glassware for Glass drying oven	1	6.269 738



NEW

Nabertherm

























- Heating
- Drying
- Tempering
- Humidifying
- EX-proofed
- Individual

HORO Dr. Hofmann GmbH











Electric Laboratory Burner

A universal heat source for laboratory and education

HORO Dr. Hofmann GmbH

Rudolf-Diesel-Straße 2-8 73760 Ostfildern-Nellingen Germany Tel.: +49 711 341 6995-0 Fax: +49 711 341 6995-19

info@horo.eu www.horo.eu

