

7. Heating and cooling technology

Temperature regulators/Thermostats, cryostats-Heating/Water baths

1 2 Heating bath HB 1500/HB 1500-S NEW!

The heating bath HB 1500 is developed for varied tasks. As bath filling water, oils and sand is used. Different sizes are deliverable! The device has an integrated temperature controller with microprocessor. It is freely programmable and has also self optimization function and rampfunction!

- Microprocessor controller with 4-digits 7-segment display, 10 mm high, green,
- With selfoptimization and rampfunction
- Measurement and control range +20.0 to +250.0°C
- On-Off switch is light up green
- Setting of heat power from 1 to 99%
- Irreversible rapid shut-down when reaching the security temperature

Heating bath HB 1500-S

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



HB 1500



HB 1500-S

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

3 Heating baths HB 10 digital NEW!

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

A: clear regulation of all parameters

B: a fixable safety temperature setting avoids unintentional readjustments

C: fixable set- and safety temperatures

Specifications:

Heating output:	1350W
Temperature range:	ambient to 180°C
Setting accuracy:	±1K
Offset:	±1K
Material:	stainless steel (AISI 304)
Useful volume:	3L
Ext./int. height:	185/134mm
Dimensions (WxDxH):	295 x 265 x 190mm
Weight:	3kg
Protection class DIN EN 60529:	IP 21
Tested to DIN EN IEC 61010-1.	

Type	PK	Cat. No.
HB 10 digital	1	6.240 505



IKA

Heating/Water baths



1 Heating baths HBR4 digital

A digital heating bath characterised by:

IKA

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

Specifications:

Heating output:	1000W
Temperature range:	ambient to 200°C
Setting accuracy:	±1K
Offset:	±1K
Speed range:	100 to 800rpm
Material:	stainless steel (AISI 304)
Useful volume:	4L
Ext./int. diameters:	250mm/200mm
Ext./int. height:	250mm/160mm
Weight:	4.4kg
Protection class DIN EN 60529:	IP21
Tested to DIN EN IEC 61010-1.	

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



2 3 Accessories for HB- baths

IKA

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

* For HB 4 basic digital bath.

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



4 Incubation/Inactivation Water Baths

GFL

Microprocessor controlled temperature regulation. Short heating-up times. Temperature display and setting digitally via LED display in 0.1°C increments. Temperature variation ±0.1°C, temporal. Temperature range from approx. 5°C above ambient temperature to 99.9°C; after installation of an accessory water level regulator 1919 from approx. 3°C above tap water temperature to 99.9°C. Electronic monitoring of the temperature regulator. In case of failure, the cause of the fault is shown on the display. Electronic overtemperature cut-out, 4°C above set temperature and electromechanical >130°C. Soft touch keys with clear symbols. Tip-up, insulating lid with inner camber, no dripping back of condensate into the vessels. Bath interior, cover frame, lid, heating element and perforated floor made of stainless steel (standard equipment includes lid and perforated floor**). Housing is made of electrolytically galvanized sheet steel, powder-coated and corrosion-resistant. Electrical connection: 230 volt/50...60 Hz (other voltages available on request).

Model 1005

Especially suitable for warming medical hot packs.

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

Models 1012 and 1013

The circulation system ensures an optimal temperature uniformity throughout the whole bath. An electric motor with rotary magnet is flanged to the bath floor and drives a PTFE-coated stirring magnet bar in the bath.

The units are tested according to the German Equipment Safety Law and have the CE mark.

Type	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	Capacity		Weight kg	PK	Cat. No.
			L	W			
1002	245 x 200 x 145	330 x 395 x 255	7	1000	9	1	9.905 902
1003	400 x 245 x 145	485 x 440 x 255	14	1500	12	1	9.905 903
1004	600 x 245 x 145	685 x 440 x 255	21	1500	17	1	9.905 904
1005	410 x 296 x 315	495 x 490 x 445	40	1500	21	1	9.905 905
1008	400 x 245 x 205	485 x 440 x 325	20	1500	14	1	9.905 908
1012	245 x 200 x 145	330 x 395 x 325	7	1000	10	1	9.905 912
1013	400 x 245 x 145	485 x 440 x 325	14	1500	14	1	9.905 913

Table of racks held by water baths 1002-1013

GFL

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



9.905 970



9.905 971



9.905 972

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

Type	Description	PK	Cat. No.
1920	With 20 apertures, each 18 mm diameter for 16/17 mm test tubes	1	9.905 970
1921	With 5 apertures, each 31 mm diameter for test tubes	1	9.905 971
1922	With 20 apertures each 13 mm diameter for 12 mm test tubes	1	9.905 972
1923	For water bath 1005, especially for warming medical hot packs	1	9.905 973
1942	With 12 apertures 56 mm diameter for baby milk bottles	1	9.905 977

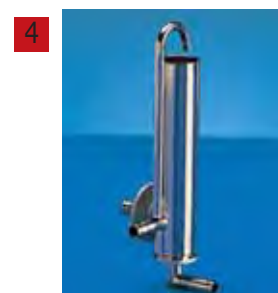
4 Water Level Regulator

Accessory for **Water Baths 1002 to 1013 and for Shaking Water Baths 1083, 1086 and 1092.**

GFL

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

Type	PK	Cat. No.
1919	1	9.905 986



5 Steam Bath 1023

For gentle steaming work using Erlenmeyer flasks, bottles, etc. Bath, cover frame and perforated floor above the heating element are made of stainless steel.

GFL

Temperature range from approx. 5°C above ambient to boiling point, with temperature control by thermostat. Heating element protected by overtemperature cut-out. The adjustable water level regulator at the back of the unit and the set of rings are supplied as standard.

With removable, square cover (W 265mm x L 265mm) accommodating a 9-part set of rings, in heat-resistant plastic, which can be split. The aperture diameter can be adjusted in approx. 20mm steps (min. 32.5/max. 173.5mm). The bath housing is made of powder coated, electrolytically galvanized sheet steel. Mains supply 230V 50/60 Hz, 1.0kW (Other voltages available on request).

The unit is tested according to the German Equipment Safety Law and has the CE mark.

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



6 Test Tube Rack 1933

Accessory for **Steam Bath 1023.**

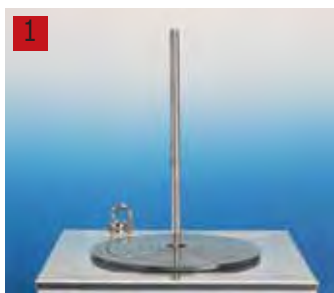
GFL

Stainless steel, test tube rack, with 100 x 18mm diameter apertures.

Type	PK	Cat. No.
1933	1	9.905 993



Heating/Water baths



1 Support Rod 1985

Accessory for **Steam Bath 1023**.
Stainless steel support rod, 316 x 12mm length x diameter.

GFL

Type	PK	Cat. No.
1985	1	9.905 995



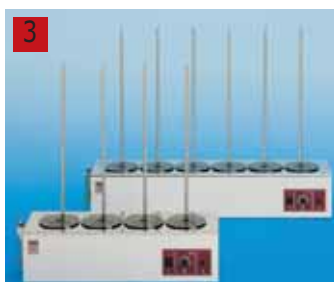
2 Water Baths for Fume Hoods 1031 and 1032

Special baths for gentle steaming work with Erlenmeyer flasks, bottles, etc., also suitable for use in fume hoods. Bath, removable recessed lid with holes and perforated floor above the heating element made of stainless steel.

GFL

Temperature range from approx. 5°C above ambient to boiling point, with thermostatic temperature controller. Heating element protected by over-temperature cut-out. The apertures in the lid are covered by sets of rings in heat-resistant plastic. The adjustable water level regulator at the right-hand side of the unit is included. The units are tested according to the German Equipment Safety Law and have the CE mark. Electrical connection: 230V/50/60Hz (other voltages on request).

Type	Apertures with sets of rings	Top dia. mm	External dimensions (W x D x H) mm	Power W	Working height mm	Weight kg	PK	Cat. No.
1031	6	90	430 x 300 x 155	1500	100	6.1	1	9.905 931
1032	8	110	670 x 300 x 155	1500	100	8.2	1	9.905 932



3 Multiple Water Baths 1041 and 1042

For gentle steaming work with Erlenmeyer flasks, bottles, etc. Bath interior, frame with apertures and perforated floor above the heating element made of stainless steel.

GFL

Temperature range from approx. 5°C above ambient to boiling point, with thermostatic temperature control. Heating element protected by overtemperature cut-out. The 130mm dia. apertures in the frame are covered by sets of rings in heat resistant plastic. With stainless steel support rod, 600mm x 12mm L x diameter behind each opening, for securing vessels. A water level regulator is included on the left-hand side of the bath. Working height 90mm. The units are tested according to the German Equipment Safety Law and have the CE mark. Electrical connection: 230 Volt/50/60Hz (other voltages available on request).

Type	Apertures with sets of rings	Top dia. mm	External dimensions (W x D x H) mm	Power W	Working height mm	Weight kg	PK	Cat. No.
1041	4	130	682 x 232 x 190	1000	90	12.0	1	9.905 941
1042	6	130	982 x 232 x 190	1500	90	16.0	1	9.905 942



1 Shaking Water Bath 1083

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



Specifications

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

Type	PK	Cat. No.
1083	1	9.905 983

2 Shaking Water Bath 1086

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

Technical Specification

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



Type	PK	Cat. No.
1086	1	9.905 984

3 Shaking Water Bath 1092

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

Technical Specification

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



Type	PK	Cat. No.
1092	1	9.905 985



1 Tray type 3960

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

Type	PK	Cat. No.
3960	1	9.837 960

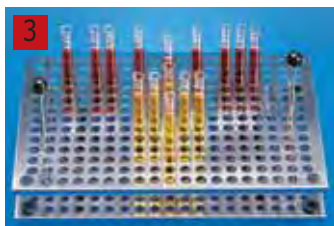


2 Clamps for Erlenmeyer Flasks

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

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

Type 3989 raised lid required (on request).



3 Test tube racks

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

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



4 Rack 3923

Accessory for **Shaking Water Baths 1083, 1086 and 1092.** GFL
 Stainless steel, raised tray with 6 holding frames for test plates.

Type	PK	Cat. No.
3923	1	9.905 998



5 Holder 3926

Accessory for **Shaking Water Baths 1083, 1086 and 1092.** GFL
 Holder for 58 reaction vessels. Stainless steel. For 58 x 1.5ml to 2.0ml reaction tubes, with float protection, can be screwed onto **shaking tray 3960**. Max. 3 holders per tray.

Type	PK	Cat. No.
3926	1	9.905 990



6 Test Tube Racks 3924 and 3925

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

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

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

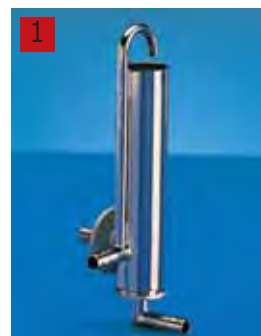
1 Water Level Regulator

Accessory for **Shaking Water Baths 1083, 1086, 1092** and for **Water Baths 1002 to 1013**.

GFL

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

Type	PK	Cat. No.
1919	1	9.905 986



2 Shaking Water Bath 1070, THERMOLAB®

The Quadrothermal Shaking Water Bath 1070 with reciprocating motion is equipped with four separate tanks, in which different sample vessels can be heated, independently of each other. It is universally applicable for use in routine, research and specialised laboratories for all temperature-dependent reactions, e.g. for incubations of reagents and solutions, Enzyme-Immuno-Essays, Western-Blots, Reverse Dot Blots, for hybridisations at four different temperatures, for stringent washing processes with variable temperatures, Restriction Enzyme Digestions, Proteinase-K Digestions, DNA Elution, T 7 Sequenase Sequencing, for thawing processes and incubations of cultures or for polymerase chain reactions (PCR). Microprocessor controlled temperature regulation. Temperature constancy: ±0.1°C temporal. Temperature range from approx. 5°C above ambient to +99.9°C. Temperature display and setting digitally via LED display. Electronic monitoring of the temperature controller. Electronic over-temperature cut-out applies at 4°C above set temperature and electromechanical at >130°C. Maintenance-free and durable shaking device, electronically controlled and continuously settable shaking motion, with soft-start. Insulating, double-walled lid - no dripping back of condensate into the vessels. Bath interior and shaking rack are in stainless steel. Height-adjustable, sample holder in each of the four tanks. With the use of optional racks or directly on the sample holders, all kinds of vessels from µl to ml used in laboratories can be held.

GFL



Technical Specification

External dimensions (WxDxH):	625 x 556 x 270mm
Usable internal dimensions per tank (sample holder) (WxDxH):	175 x 175 x 100mm
Usable bath height:	128 x 128mm
Sample holder, height-adjustable:	80mm
Temperature range:	32mm
Temperature control:	from approximately 5°C above ambient temperature to 99.9°C
Temperature accuracy:	Electronic microprocessor-controlled with proportional-plus-integral control (PI)
Temperature display:	±0.1°C
Temperature adjustment:	Digital LED
Overtemperature cut-out:	Digital LED
Shaking motion:	electronic 4°C above set temperature, and electro-mechanical > 130°C
Shaking frequency:	Reciprocating, can be switched on/off
Shaking speed adjustment:	2 to 50 rpm
Shaking amplitude:	continuously settable
Supply requirement:	22mm
Net/gross weight:	230V 50/60Hz, 1.3kW
	28/36kg

Type	PK	Cat. No.
1070	1	9.905 980

3 Type 1070

Racks for test tubes and microtubes in **Shaking Water Bath 1070**.

GFL



Type	Description	For	PK	Cat. No.
1710	With 7 apertures 31mm dia.	Test tubes 50 ml	1	9.905 987
1711	With 19 apertures 17mm dia.	Test tubes 15ml	1	9.905 988
1712	With 32 apertures 12mm dia.	Reaction vessels 1.5 to 2.0 ml	1	9.905 989

Heating/Water baths

1


1 Shaking water baths, SW series

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

JULABO

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

Bath lid not included.

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

2


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

JULABO

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

3


3 Trays for Erlenmeyer flasks

JULABO

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

4


4 Spring clips for erlenmeyer flasks as indicated, to fit tray 9.906 390.

JULABO

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

5


5 Test tube trays

JULABO

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

1 Water baths, TW series

JULABO

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

Bath lid not included.



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

2 Water baths, TW series, accessories

NEW!

JULABO

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

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



3 Water baths, TW series, accessories

NEW!

JULABO

Test tube racks.

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



Water baths/Oil baths

The latest generation of water baths, a combination of high-grade, anti-corrosion stainless steel and state-of-the-art technology. Two performance classes available: "Basic" and "Excellent", tuned to varying requirements and applications.

Memmert

Basic: the water bath for routine processes, with integral timer adjustable from 1min. up to 99.59 hrs, and with delayed switch-on and programmable hold time.

Excellent: with enhanced features for overtemperature protection, liquid level monitoring and continuous, long-term tests using two high-grade Pt100 sensors. The integral timer range is from 1 min. up to 999 hrs and allows a setpoint-dependent hold time to be programmed, in addition to all the Basic-level features. Audible alarms for overtemperature, low liquid level and programme end make operation even more convenient.

The new generation oil bath range differs from the Excellent water baths by their temperature range of up to +200°C and by incorporating an adjustable, class 2 temperature limiter as standard.

Interior - Heating Concept:

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

Heating/Water baths



9.906 582

Water baths WNB Series

Memmert

Control:

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

On continuous operation

Wait (delayed On for continuous and limited timed operation)

Hold

- digital display (LED) of set and actual temperature and of (remaining) programme time
- LEDs for indication of programme status

Overtemperature protection (dual):

- easy-to-clean interior, made of laser-welded, grade 1.4301 (ASTM 304) stainless steel, reinforced by deep drawn ribbing
- corrosion-proof, large-area heating surface on 3 sides of the tank
- if an overtemperature condition occurs due to a fault, heating is switched off at approx. 10°C above the set temperature (fixed value)
- an independent, mechanical, TB class 1 temperature limiter switches the heating off at approx. 30°C above max. bath temperature

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

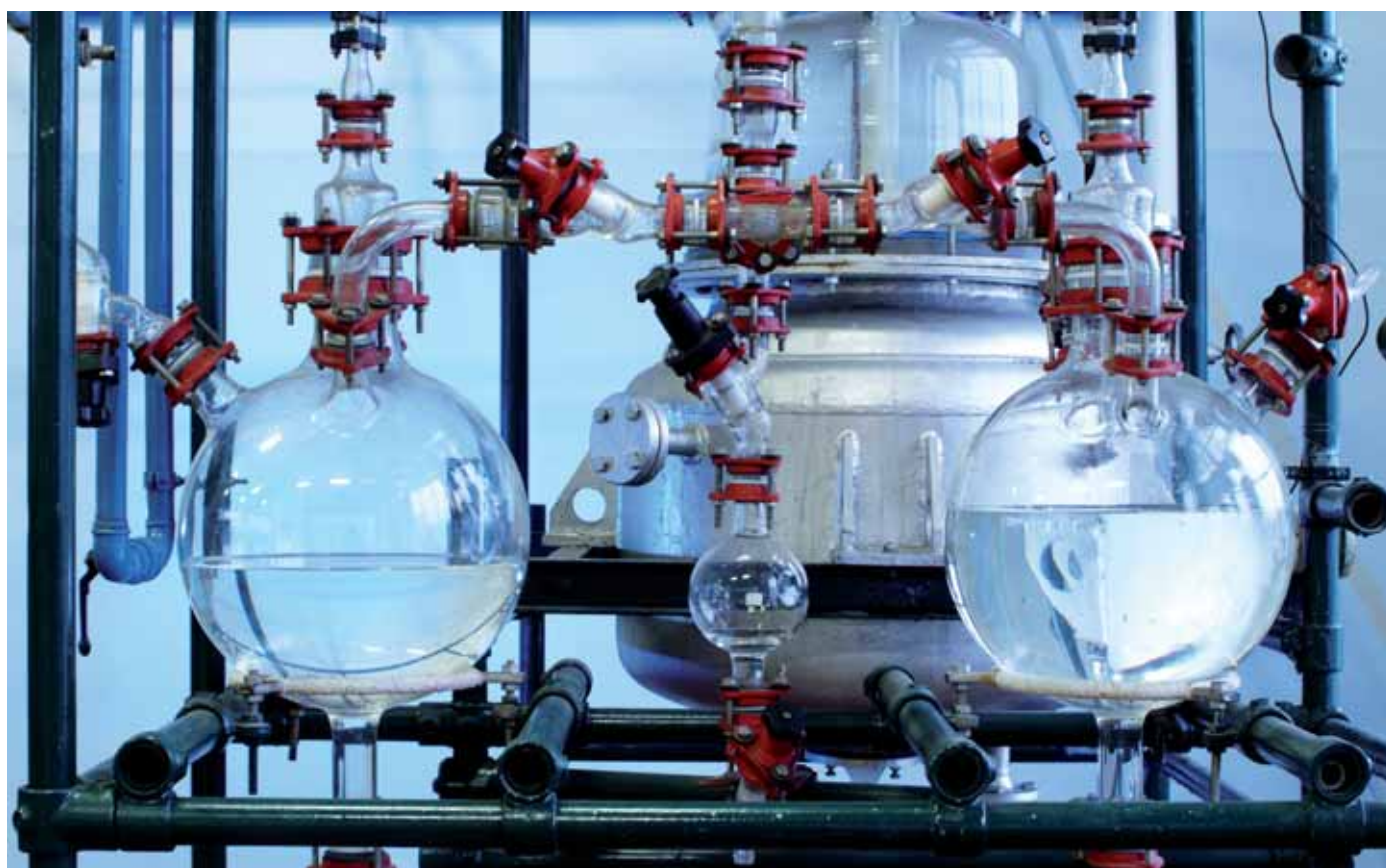
Without lids - please order separately.
Specifications

Temperature range: from +10°C (however, at least 5°C above ambient temperature) up to +95°C with additional boiling mode (+100°C)

Power supply: 230V (±10%), 50/60Hz

Type	Capacity	Internal dimensions (W x D x H) mm	Housing (W x D x H) mm	Weight kg	Rating W	PK	Cat. No.
WNB 7	7	240 x 210 x 140	468 x 356 x 238*	11	1200	1	9.906 581
WNB 10	10	350 x 210 x 140	578 x 356 x 238*	13	1200	1	9.906 582
WNB 14	14	350 x 290 x 140	578 x 436 x 238*	15	1800	1	9.906 583
WNB 22	22	350 x 290 x 220	578 x 436 x 296*	16	2000	1	9.906 584
WNB 29	29	590 x 350 x 140	818 x 516 x 238*	22	2400	1	9.906 585
WNB 45	45	590 x 350 x 220	818 x 516 x 296*	24	2800	1	9.906 586

* High with flat lid.



2 | 3 | 4 Water baths WNE series

Control:

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

On (continuous operation)

Delayed On Hold, or set temperature-dependent Hold, with fixed dwell time

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

Triple Overtemperature Protection:

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

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

Without lids - please order separately.

Specifications:

Temperature range: from +10°C (however, at least 5°C above ambient) up to +95°C with additional boiling mode (+100°C)

Power supply: 230V (±10%), 50/60Hz

Type	Capacity	Internal dimensions (W x D x H) mm	Housing (W x D x H) mm	Weight kg	Rating W	PK	Cat. No.
WNE 7	7	240 x 210 x 140	468 x 356 x 238*	11	1200	1	9.906 591
WNE 10	10	350 x 210 x 140	578 x 356 x 238*	13	1200	1	9.906 592
WNE 14	14	350 x 290 x 140	578 x 436 x 238*	15	1800	1	9.906 593
WNE 22	22	350 x 290 x 220	578 x 436 x 296*	16	2000	1	9.906 594
WNE 29	29	590 x 350 x 140	818 x 516 x 238*	22	2400	1	9.906 595
WNE 45	45	590 x 350 x 220	818 x 516 x 296*	24	2800	1	9.906 596

*High with flat lid.



Accessories please see page 772.



Heating/Water baths



1 Water bath with circulation pump WPE 45

Control:

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

On (continuous operation)

Delayed On Hold, or set temperature-dependent Hold, with fixed dwell time

- pump can be switched on and off
- pump is switched off at programme end, digital display (LED) of all set parameters, such as temperature, time and alarm values
- Calibration facility on controller
- audible and visual alarms at programme end, as input keypress confirmation and if low liquid level occurs (heating is switched off automatically)

Triple Overtemperature Protection:

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

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

Without lids - please order separately.

Specifications:

Temperature range: from +10°C (however, at least 15°C above ambient) up to +95°C

Power supply: 230V (±10%), 50Hz

Type	Capacity	Internal dimensions (W x D x H)	Housing (W x D x H)	Weight	Rating	PK	Cat. No.
	L	mm	mm	kg	W		
WPE 45	45	590 x 350 x 220	818 x 516 x 296*	32	2800	1	9.906 589

*High with flat lid

We can supply this
 manufacturer's
 whole
 product range !



memmert

Experts in Thermostatics

1 Oil baths, One series

Memmert



Control:

- fuzzy-supported PID microprocessor controller with integral autodiagnostic system and fault indication
- solid state switch unit
- 2 x class A, 4-wire, Pt100 sensors, mutually monitoring and controlling performance at the same temperature
- digital timer from 1 min to 999 hours for:
On (continuous operation)
Delayed On Hold, or set temperature-dependent Hold with fixed dwell time
- digital display (LED) of all set parameters, such as temperature, time and alarm values
- Calibration facility on controller
- audible and visual alarms at programme end, as keypress input acknowledgement and in the case of low liquid level (heating is switched off automatically)

Interior - Heating Concept:

- easy-to-clean, grade 14301 (ASTM 304), laser-welded, stainless steel interior, reinforced by deep drawn ribbing
- corrosion-proof, large-area heating surface on 3 sides of the tank

Triple Overtemperature Protection:

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

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

Without lids - please order separately.

Specifications:

Temperature range: from +20°C (minimum 5°C above ambient) up to +200°C
 Power supply: 230V (±10%), 50/60Hz

Type	Capacity	Internal dimensions (W x D x H) mm	Housing (W x D x H)	Weight	Rating	PK	Cat. No.
	L		mm	kg	W		
One 7	7	240 x 210 x 140	468 x 356 x 238*	11	1200	1	9.906 601
One 10	10	350 x 210 x 140	578 x 356 x 238*	13	1200	1	9.906 602
One 14	14	350 x 290 x 140	578 x 436 x 238*	15	1800	1	9.906 603
One 22	22	350 x 290 x 220	578 x 436 x 296*	16	2000	1	9.906 604
One 29	29	590 x 350 x 140	818 x 516 x 238*	22	2400	1	9.906 605
One 45	45	590 x 350 x 220	818 x 516 x 296*	24	2800	1	9.906 606

*High with flat lid



1 Memmert Thermostatic baths, WB, OB series, accessories



Memmert

Stainless steel flat lid with apertures and ring sets. Stainless steel gabled lid. Adjustable temperature limit selector instead of cut-out for WB/WBU. WB/WBU have a constant level device.

Shaking device:

Shaking device including support frame, shaking speed 15-150 strokes per minute (horizontal back/forth movement)

Peltier Cooling Device CDP 115

For precise operation with temperatures starting from +10°C. The temperature is controlled via the electronic controller of the waterbath with a precision of ±0.1K

Easy fitting to bath by snap-on-technology, suitable for all tank sizes.

Power consumption: 160W

Effective cooling capacity: 115W

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

Type	For Volume l	Well format	Dia. mm	PK	Cat. No.
Flat lid for water baths / oil baths	7	1	147	1	9.906 530
Flat lid for water baths / oil baths	10	3	107	1	9.906 531
Flat lid for water baths / oil baths	14	6	87	1	9.906 532
Flat lid for water baths / oil baths	22	6	87	1	9.906 533
Flat lid for water baths / oil baths	29	8	147	1	9.906 534
Flat lid for water baths / oil baths	45	8	147	1	9.906 537
Gabled lid for water baths / oil bath	7			1	9.906 550
Gabled lid for water baths / oil bath	10			1	9.906 551
Gabled lid for water baths / oil bath	14			1	9.906 552
Gabled lid for water baths / oil bath	22			1	9.906 553
Gabled lid for water baths / oil bath	29			1	9.906 554
Gabled lid for water baths / oil bath	45			1	9.906 555
Special gabled cover for WNB/WNE 29/45	29/45			1	6.228 924
Special gabled cover for WNB/WNE 14/22	14/22			1	6.306 619
Special gabled cover for WNB/WNE 7 for Peltier cooling device	7			1	9.906 561
Special gabled cover for WNB/WNE 10 for Peltier cooling device	10			1	9.906 562
Stainless steel flat lid for WNB/WNE 7 for Peltier cooling device	7	1	147	1	9.906 565
Stainless steel flat lid for WNB/WNE 10 for Peltier cooling device	10	3	107	1	9.906 566
Stainless steel flat lid for WNB/WNE 14/22 for Peltier cooling device	14/22	6	87	1	9.906 567
Stainless steel flat lid for WNB/WNE 29/45 for Peltier cooling device	29/45	8	107	1	9.906 568
Factory calibration certificate at 37°C for WNE / WPE; at 160°C for ONE models				1	9.867 696
CDP Peltier Cooling Device				1	9.906 651
Constant level device for WNB / WNE / WPE				1	9.906 650
Shaking device	29/45			1	6.228 923
Shaking device	14/22			1	7.075 941

Accessories for shaking waterbath are available on request.

1



1 Shaking water bath OLS 200

High quality, robust design with unique magnetically coupled shaking mechanism for maximum reliability, consistency and quiet operation.

Grant

- Precision digital temperature control
- 0° to 99°C operating range (Accessory cooling required for operation below ambient)
- Stability ±0.1°C
- Easy changeover from linear to orbital shaking
- Precise, electronic control of temperature and shaking speed with digital setting and LED display
- Stainless steel tank and shaking trolley
- Requires, but is not supplied with, accessory trays for operation

Linear motion:

Setting A: 18mm stroke length, 340 strokes/minute
 Setting B: 28mm stroke length, 240 strokes/minute
 Setting C: 36mm stroke length, 180 strokes/minute

Orbital motion:

Adjustable from 20 to 200rpm with a 9mm fixed radius.

Tank dimensions:	505 x 300 x 200mm
Overall dimensions:	555 x 325 x 300mm
Max. flask immersion:	min./max. 0/90mm
Weight:	15kg
Supply requirements:	220-240V 50Hz

Type	PK	Cat. No.
OLS 200	1	9.905 800



2 Shaking water baths GLS Aqua Plus series

NEW!
Grant

GLS Aqua Plus linear shaking baths offers Grant quality and design combined with the temperature stability and functions required in a linear shaking bath for the laboratory.

- Two programmable temperature and shaking presets
- Drain tap
- Front panel lock-out
- Countdown timer with audible buzzer
- Choice of 2 tank sizes 12L and 18L high grade steel, with durable polished finish
- Digital PID control for quick heat-up and precision control throughout the temperature range
- Ambient +5°C to 99°C operation
- Stability ±0.1°C
- User-settable sample protection and fixed thermal cut-out

Type	Capacity		Rating kW	Dimensions (W x D x H) mm	PK	Cat. No.
	L					
GLS Aqua 12 Plus	5.0	0.80		390 x 335 x 270	1	9.905 819
GLS Aqua 18 Plus	8.0	1.35		570 x 335 x 270	1	7.900 380



3 Shaking water bath, accessories

Stainless steel sloping lid for shaking water baths. For use at temperatures above 60°C and below room temperature.

Grant

Type	For	PK	Cat. No.
LS200	OLS200	1	9.905 809
LU14	GLS12	1	9.905 771
LU28	GLS18	1	9.905 772



4 Accessories for shaking water bath

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

Grant

Type	For	PK	Cat. No.
UT12	GLS12	1	9.905 818
UT18	GLS18	1	7.900 400
UT200	OLS200	1	9.905 801




1

1 Test tube tray for shaking water baths

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

Grant

Type	For	PK	Cat. No.
TT12	GLS12	1	9.905 816
TT18	GLS18	1	9.905 817
TT200	OLS200	1	9.905 802


2

2 Test tube racks for shaking water bath, H1 series

Type H1-series test tube racks. Stainless steel, 200 x 75mm. The OLS 200 holds up to 5 H1 racks, GLS12 holds up to 3 H1 racks and GLS18 holds up to 5 H1 racks. Choice of 7 variants to accommodate different tube diameters and microtubes. Used with test tube tray order no. 9.905 802.

Grant

Type	For tubes	PK	Cat. No.
H1-10	48 x 10mm	1	9.905 803
H1-13	44 x 13mm	1	9.905 804
H1-16	24 x 16mm	1	9.905 805
H1-19	21 x 19mm	1	9.905 806
H1-25	12 x 25mm	1	9.905 807
H1-30	10 x 30mm	1	9.905 808
H1-LE	48 x 1.5ml	1	9.905 815


3

3 Shaking water bath OLS200, accessories

Type CW200 heat exchange coil. For use with mains tap water or refrigerated circulator. It can be used down to 2°C above the temperature of the coolant. Fits underneath the shaking tray.

Grant

Type	For	PK	Cat. No.
CW200	OLS200	1	9.905 811


4

4 Immersion cooler, CS200G

CS200G immersion cooler. The coil fits underneath the shaking tray. Cooling rate will depend on the ambient temperature, the supply voltage and the volume of liquid used.

Grant

Fits underneath the shaking tray and is designed to be attached to a supply of cooling tap water or a refrigerated circulator. Can be used down to 2°C above the temperature of the coolant. Coil diameter/1 mm 260/470/20. For 120V or 230V supply.

Type	PK	Cat. No.
CS200G	1	9.905 812

1 Digital unstirred water baths SUB Aqua Plus series

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 Plus range is composed of eight models, including shallow and dual baths.

- Three programmable temperature presets
- Drain tap on SUB Aqua 12 Plus, 18 Plus, 26 Plus and 34 Plus
- 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
- Grant non-drip polycarbonate lid and tray included as standard
- Wide range of tanks sizes and accessory options to suit different requirements

Available as 120V or 230V.

Grant



Type	Volume litres	Rating kW	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	PK	Cat. No.
SUB Aqua 2 Plus	2	0.13	190 x 200 x 215	140 x 115 x 125	1	9.905 830
SUB Aqua 2s Plus	2	0.37	335 x 210 x 150	290 x 30 x 145	1	9.905 831
SUB Aqua 5 Plus	5	0.37	335 x 215 x 270	290 x 115 x 145	1	9.905 832
SUB Aqua 12 Plus	12	0.77	335 x 390 x 270	290 x 115 x 315	1	9.905 833
SUB Aqua 18 Plus	18	1.50	335 x 570 x 270	290 x 115 x 495	1	9.905 834
SUB Aqua 26 Plus	26	1.50	335 x 570 x 270	290 x 165 x 495	1	9.905 835
SUB Aqua 34 Plus	34	2.10	340 x 750 x 270	290 x 160 x 630	1	9.905 836
SUB Aqua Dual Plus	5 & 12	1.20	540 x 360 x 225	290 x 115 x 145 & 290 x 115 x 315	1	9.905 837

2 Unstirred waterbathes, JB Aqua Plus series

Analogue unstirred water baths JB Aqua Plus range. Quality meets value-for-money! The JB Aqua Plus range offers the simplicity of an analogue bath, with the quality and reliability expected in a Grant water bath. Blue transparent polycarbonate lid and polycarbonate base tray are included as standard to improve performance and limit energy wastage. The range consists of seven models including shallow and dual bath options.

- Drain tap available on JB Aqua 12 Plus, 18 Plus and 26 Plus
- Ambient + 5°C to 98°C
- User-settable sample protection and fixed thermal cut-out
- Polycarbonate lid and base tray - improve performance and reduce evaporation/energy loss
- Available as 120V or 230V.

Grant



Type	Volume litres	Rating kW	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
JB Aqua 2 Plus	2	0.13	140 x 115 x 125	190 x 200 x 215	1	9.905 840
JB Aqua 2s Plus	2	0.37	290 x 30 x 145	335 x 210 x 150	1	9.905 841
JB Aqua 5 Plus	5	0.37	290 x 115 x 145	335 x 215 x 270	1	9.905 842
JB Aqua 12 Plus	12	0.77	290 x 115 x 315	335 x 390 x 270	1	9.905 843
JB Aqua 18 Plus	18	1.50	290 x 115 x 495	335 x 570 x 270	1	9.905 844
JB Aqua 26 Plus	26	1.50	290 x 165 x 495	335 x 570 x 270	1	9.905 845
JB Aqua Dual Plus	5 & 12	1.20	290 x 115 x 315 & 290 x 115 x 145	540 x 360 x 225	1	9.905 846

Heating/Water baths



1 2 Unstirred water baths

PB1 bath, temperature range ambient to 60°C. Transparent polycarbonate tank with removable control unit. Analogue thermostat dial is graduated in 10 x 5°C divisions from 20° to 60°C. Temperature stability ±0.3°C.

Grant

SBB Aqua Plus boiling baths Provide continuous 100°C operation.

- A choice of 4 models
- Stainless steel tank
- Non-drip polycarbonate lid and perforated tray (to ensure uniform heat distribution), included as standard
- Two over-temperature cut-outs protect users and the workspace if bath is accidentally run without water
- Adjustable energy regulator provides steady boiling
- Constant level device maintains liquid level for optimal operation

Please order racks separately.

At operating temperatures above 60°C, a lid or a layer of polypropylene spheres must be used.

Type	Capacity	Working space W x D x H	Rating	Racks	PK	Cat. No.
PB 1	3.5	225 x 80 x 120	0.30	3xP1	1	9.905 750
SBB Aqua 5 Plus	5.0	290 x 105 x 145	1.50	1xJ2	1	9.905 854
SBB Aqua 12 Plus	12.0	290 x 105 x 315	1.50	2xJ2	1	9.905 855
SBB Aqua 18 Plus	18.0	290 x 105 x 495	2.00	4xJ2	1	9.905 856
SBB Aqua 26 Plus	26.0	290 x 155 x 495	2.00	4xJ2	1	9.905 857



3 Accessories for unstirred water baths

Stainless steel sloping lids for unstirred water baths ranges. Gabled lid for PB1 transparent water bath.

Grant

Type	For bath type	PK	Cat. No.
LP1	PB1	1	9.905 765
LU6	SBB Aqua 5 Plus; SUB Aqua 2s/5 Plus; JB Aqua 2s/5 Plus; SUB Aqua Dual Plus; JB Aqua Dual Plus	1	9.905 770
LU14	SBB Aqua 12 Plus; SUB Aqua 12 Plus; JB Aqua 12 Plus; SUB Aqua Dual Plus; JB Aqua Dual Plus	1	9.905 771
LU28	SBB Aqua 18/26 Plus; SUB Aqua 18/26 Plus; JB Aqua 18/26 Plus	1	9.905 772
LU36	SUB Aqua 34 Plus	1	9.905 773



4 Shelving for unstirred water baths

Stainless steel with perforated mesh shelf. Used to alter the effective depth of the bath. Each shelf occupies half the area of the bath specified and so allows both deep and shallow vessels to be accommodated. Dual bath shelf covers half area of the dual 12 tank.

Grant

Type	For bath type	PK	Cat. No.
RS14H	SUB Aqua 12 Plus*; JB Aqua 12 Plus*; SBB Aqua 12 Plus	1	9.905 780
RS28H	SUB Aqua 26 Plus; JB Aqua 26 Plus; SBB Aqua 26 Plus	1	9.905 781
RS36H	SUB Aqua 34 Plus	1	9.905 782

* half of the 12 tank.

1 Racks for unstirred water baths

Stainless steel. P1 racks for PB1 bath only hang from the tank rim and have a single row of holes so that the contents can be examined through the transparent sides of the tank. Choice of 8 variants to accommodate different tube diameters and microtubes. J2-SE and J2-LE are for microcentrifuge tubes.

Grant



Type	Size mm	Array	For bath type	PK	Cat. No.
P1-13	13.0	12	PB1	1	9.905 785
P1-16	16.0	10	PB1	1	9.905 786
P1-19	19.0	19	PB1	1	9.905 787
J2-10	10.0	84	JB Aqua Plus; SUB Aqua Plus; SBB Aqua Plus	1	9.905 788
J2-13	13.0	55	JB Aqua Plus; SUB Aqua Plus; SBB Aqua Plus	1	9.905 789
J2-16	16.0	36	JB Aqua Plus; SUB Aqua Plus; SBB Aqua Plus	1	9.905 790
J2-19	19.0	32	JB Aqua Plus; SUB Aqua Plus; SBB Aqua Plus	1	9.905 791
J2-25	25.0	18	JB Aqua Plus; SUB Aqua Plus; SBB Aqua Plus	1	9.905 792
J2-30	30.0	12	JB Aqua Plus; SUB Aqua Plus; SBB Aqua Plus	1	9.905 793
J2-SE	0.5	105	JB Aqua Plus; SUB Aqua Plus; SBB Aqua Plus	1	9.905 820
J2-LE	1.5	65	JB Aqua Plus; SUB Aqua Plus; SBB Aqua Plus	1	9.905 821

2 Accessories for unstirred water baths

Flat lid for unstirred water baths. With ring sets of variable hole diameter to accommodate tall vessels whilst reducing evaporation.

Grant

Type	Well format	For bath type	PK	Cat. No.
LF2	6	JB2	1	9.905 774
LF6	2	SBB Aqua 5 Plus; JB Aqua 5 Plus; SUB Aqua 5 Plus; JB Aqua Dual Plus; SUB Aqua Dual Plus	1	9.905 775
LF14	4	SBB Aqua 12 Plus; JB Aqua 12 Plus; SUB Aqua 12 Plus; JB Aqua Dual Plus; SUB Aqua Dual Plus	1	9.905 776
LF28	6	SBB Aqua 18/26 Plus; JB Aqua 18/26 Plus; SUB Aqua 18/26 Plus	1	9.905 777
LF36	8	SUB Aqua 34 Plus	1	9.905 778

2



Heating/Water baths



1 Heating bath liquid, BASF

Use:

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

Buddeberg
The crucial advantages of BASF heating bath liquid compared to the oils or other organic liquid mainly used are:

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

Viscosity on addition of water:

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

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

Chemical character:

Modified, polyvalent, aliphatic alcohol

Appearance:

Clear, colourless or lightly coloured liquid

Storage time:

When stored for long periods the product may become darker. This does not affect the performance of the product.

(unlimited at present knowledge)

Density:

approx. 255°C

Flashpoint

to DIN 51758:

> 200°C

to DIN 51794:

 approx. 1.15g/cm³

Container	PK	Cat. No.
5 litres	1	9.906 200



2 Beakers, glass, jacketed, type T

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

KGW

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



3 Beakers, glass, jacketed with PTFE-Olive, type T-GL

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

KGW

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

7. Heating and cooling technology

Heating/Water baths-Drying-/ Universal incubators

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

ProAquaTop prevents the formation of algae, bacteria, and mould. Biodegradable and non-toxic. Only 1ml per litre of water required. Replacement of the bath water is indicated by fading of the blue colouration.

GFL

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



2 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.

JULABO

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



Universal incubators "Basic"

All models are equipped with:

- microprocessor PID-temperature controller with integral autodiagnostic system and fault indicator
- single, class A, Pt100 sensor with 4-wire-circuit
- integral digital timer (1 min. up to 99 h 59 min) to switch off heating to stand-by mode
- digital LED display of set and actual temperature as well as remaining process time
- two separate overtemperature protection systems: In case of total sensor failure the heating is switched off at approx. 10°C above the set temperature; in case of thermostatic switch failure, the heating is controlled by an additional thermostat approx. 10°C above the set temperature; if a sensor fault (incorrect measurements) or the total breakdown of the controller occurs, the heating is switched off at approx. 10°C above the max. oven temperature by a TB class 1 mechanical temperature limiter
- for very sensitive and/or valuable/irreplaceable loads, we recommend our E- and P-class ovens, guaranteeing an even higher safety standard.
- Easy-to-clean, stainless steel housing and interior, with heaters located in deep-drawn ribs on all four sides, providing uniform gentle heating.

Power supply: 230V (±10%) 50/60Hz

Safety proof: EMV/VDE/GS/CE/GOST

Memmert

Universal Ovens, UNB series

Ventilation and control:	natural convection
Temperature range:	+30 to +220°C; (actual minimum: 5°C above ambient)
Display resolution	
set value:	0.5°C
actual value:	0.5°C

Memmert



9.868 054

Type	Internal volume	Int. dimensions (W x D x H) mm	Shelf support ribs/shelves	Housing (W x D x H)	Rating W	PK	Cat. No.
	litres			mm			
UNB 100	14	320 x 175 x 240	2 / 1	470 x 325* x 520	600	1	9.868 051
UNB 200	32	400 x 250 x 320	3 / 1	550 x 400* x 600	1100	1	9.868 052
UNB 300	39	480 x 250 x 320	3 / 1	630 x 400* x 600	1200	1	9.868 053
UNB 400	53	400 x 330 x 400	4 / 2	550 x 480* x 680	1400	1	9.868 054
UNB 500	108	560 x 400 x 480	5 / 2	710 x 550* x 760	2000	1	9.868 055

* Depth without door handle, please add 38mm

➔ Accessories please see page 792

1



9.868 057

Universal Ovens with fan, UFB series

Memmert

Ventilation: Forced air circulation by quiet fan turbine
 Temperature range: +30 to +220°C;
 (actual minimum: 10°C above ambient)
 Display resolution
 set value: 0.5°C
 actual value: 0.5°C

Type	Internal volume	Int. dimensions (W x D x H)	Shelf support ribs/shelves	Housing (W x D x H)	Rating	PK	Cat. No.
	litres	mm		mm	W		
UFB 400	53	400 x 330* x 400	4 / 2	550 x 480** x 680	1400	1	9.868 056
UFB 500	108	560 x 400* x 480	5 / 2	710 x 550** x 760	2000	1	9.868 057

* Minus 30mm for an air vent in centre of rear panel
 **Depth without door handle, please add 38mm

2 Universal Incubators, "Excellent"

Memmert

All models are equipped with:

- fuzzy supported PID-microprocessor controller with integral autodiagnostic system and fault indicator
- 2 x Pt100 Class A sensors with 4-wire circuit, mutually monitoring and maintaining performance at the stable temperature value
- digital 7-day programme-timer
- integral digital timer for temperature profile with max. 4 segments, adjustable from 1 min. up to 999h: Delayed on; Heating up; Hold, Cooling-down, "Loop" function with 1 to 99 repeats or continuous
- heating switch off to stand-by mode
- digital LED display of set all parameters
- Triple overtemperature protection systems:
 - if an overtemperature state occurs due to failure the heating is switched off at approx. 10°C above the set temperature (fixed value);
- independently working, digitally adjustable electronic overtemperature controller TWW protection class 3.1
- mechanical temperature limiter TB class 1 switching the heating off at approx. 10°C above max. oven temperature
- Easy-to-clean interior, made of stainless steel, reinforced by deep drawn ribbing with integral and protected large-area heating on four sides. 2 perforated stainless steel, non-tipping shelves

Supply requirements: 230V (±10%) 50/60Hz. approx. 1400W (during heating). Safety conformance: EMV/VDE/GS/CE/GOST

Glass door available at extra charge.

2



7. Heating and cooling technology

Heating/Drying-/ Universal incubators

Universal Ovens, UNE series

Memmert



9.868 059

Ventilation: natural convection
 Temperature range: +30 to +250°C;
 (actual minimum: 5°C above ambient)
 Display resolution
 Setpoint / actual value: 0.1°C up to 99.9°C; 0.5°C above 100°C
 Calibration certificate for test at +160°C

Type	Internal volume	Int. dimensions (W x D x H)	Shelf support ribs/shelves	Housing (W x D x H)	Rating	PK	Cat. No.
	litres	mm		mm	W		
UNE 200	32	400 x 250 x 320	3 / 1	550 x 400** x 600	1100	1	9.868 058
UNE 300	39	480 x 250 x 320	3 / 1	630 x 400** x 600	1200	1	9.868 059
UNE 400	53	400 x 330 x 400	4 / 2	550 x 480** x 680	1400	1	9.868 060
UNE 500	108	560 x 400 x 480	5 / 2	710 x 550** x 760	2000	1	9.868 061
UNE 550	153	480 x 500 x 640	7 / 2	630 x 650** x 920	2200	1	9.868 041
UNE 600*	256	800 x 500 x 640	7 / 2	950 x 650** x 920	2400	1	9.868 062
UNE 700*	416	1040 x 500 x 800	9 / 2	1190 x 650** x 1080	4000	1	9.868 063
UNE 800*	749	1040 x 600 x 1200	14 / 2	1190 x 750** x 1620	4800	1	9.868 064

* Double doors

** Depth without door handle, please add 38mm

Universal Ovens with fan, UFE series

Memmert



9.868 066

Ventilation: forced air circulation by quiet fan turbine, adjustable in 10% steps via process controller
 Temperature range: +30°C (actual minimum: 10°C above ambient) to +250°C
 Display resolution:
 Setpoint / actual value: 0.1°C up to 99.9°C; 0.5°C above 100°C
 Calibration certificate for test at +160°C

Type	Internal volume	Int. dimensions (W x D x H)	Shelf support ribs/shelves	Housing (W x D x H)	Rating	PK	Cat. No.
	litres	mm		mm	W		
UFE 400	53	400 x 330** x 400	4 / 2	550 x 480*** x 680	1400	1	9.868 065
UFE 500	108	560 x 400** x 480	5 / 2	710 x 550*** x 760	2000	1	9.868 066
UFE 550	153	480 x 500** x 640	7 / 2	630 x 650*** x 920	2200	1	9.868 042
UFE 600*	256	800 x 500** x 640	7 / 2	950 x 650*** x 920	2400	1	9.868 067
UFE 700*	416	1040 x 500** x 800	9 / 2	1190 x 650*** x 1080	4000	1	9.868 068
UFE 800*	749	1040 x 600** x 1200	14 / 2	1190 x 750*** x 1620	4800	1	9.868 069

* Double doors

**Minus 30mm (up to UFE 600) and 45mm (UFE 700 + UFE 800) for an air vent in centre of rear panel

***Depth without door handle, please add 38mm



Heating/Drying-/ Universal incubators

Universal incubators, "Perfect"

The highest specification class for the most demanding requirements:

Memmert

- adaptive, fuzzy-supported, microprocessor PID-temperature controller
- autodiagnostic system with fault indicator
- two, class A, 4-wire circuit, Pt100 sensors, jointly monitoring and regulating performance at any specific temperature
- digital 7-day programmer with real time clock allowing precise setting to minute intervals and one set value or ramp operation in combination with digital, heating-profile timer with max. 40 ramp segments, each segment adjustable from 1 min to 999 hours
- multifunctional menu programming via 8-digit, multilingual, alphanumeric display of: heating profiles of up to 40 ramps, time and set point dependent operation, fan air circulation speed in 10% steps from min. 20% to 100%
- long-term documentation (memory) of all relevant data, GLP-conformance using 1024kB memory datalogger
- non-volatile, programme memory
- parallel printer interface (incl. real-time clock with date function) for all PCL3-compatible, ink-jet printers for GLP documentation
- RS232 interface with Memmert „Celsius" software
- chip-card control incl. one MEMory Card XL with 32kB (holds up to 40 ramps)
- Multiple Overtemperature Protection: With audible and visual alarms; digitally adjustable, TWW protection class 3.1, electronic overtemperature controller
 - maximum value for overtemperature; additional adjustable "ASF" Auto-Safety-Function for over- and undertemperature, which monitors the set value at a preset tolerance range; an audible alarm is activated in case of over- or undertemperature and heating is switched off in the event of overtemperature;
 - TB class 1, mechanical temperature limiter, which switches the heating off at approx. 10°C above max. oven temperature.
- Easy-to-clean, stainless steel housing and interior, with heaters located in deep-drawn ribs on all four sides, providing uniform gentle heating.

Supply requirements: 230 V (UN/UF 700 and 800: 400V) ±10%, 50/60Hz

Safety conformance: EMV/VDE/GS/CE/GOST

Optional equipment: An alternative external glass door is available at extra cost.

Universal ovens, UNP series

Memmert

Ventilation:	natural convection
Temperature range:	+30°C (actual minimum: 5°C above ambient) to +250°C
Display resolution:	0.1°C up to 99.9°C; 0.5°C above 100°C
Calibration certificate at +160°C	

Type	Internal volume	Int. dimensions (W x D x H)	Shelf support ribs/shelves	Housing (W x D x H)	Rating	PK	Cat. No.
	litres	mm		mm	W		
UNP 200	32	400 x 250 x 320	3 / 1	550 x 400** x 600	1100	1	9.868 070
UNP 300	39	480 x 250 x 320	3 / 1	630 x 400** x 600	1200	1	9.868 071
UNP 400	53	400 x 330 x 400	4 / 2	550 x 480** x 680	1400	1	9.868 072
UNP 500	108	560 x 400 x 480	5 / 2	710 x 550** x 760	2000	1	9.868 073
UNP 550	153	480 x 500 x 640	7 / 2	630 x 650** x 920	2200	1	9.868 044
UNP 600*	256	800 x 500 x 640	7 / 2	950 x 650** x 920	2400	1	9.868 074
UNP 700*	416	1040 x 500 x 800	9 / 2	1190 x 650** x 1080	4000	1	9.868 075
UNP 800*	749	1040 x 600 x 1200	14 / 2	1190 x 750** x 1620	4800	1	9.868 076

* Double doors

** Depth without door handle, please add 38mm

7. Heating and cooling technology

Heating/Drying-/ Universal incubators

Universal ovens with fan, UFP series

Ventilation: forced air circulation by quiet fan turbine, adjustable in 10% steps via process controller, with each segment individually programmable

Temperature range: +30°C (actual minimum: 10°C above ambient) to +250°C (300°C optional at extra cost)

Display resolution: 0.1°C up to 99.9°C; 0.5°C above 100°C

Calibration certificate at +160°C

Memmert



9.868 081

Type	Internal volume litres	Int. dimensions (W x D x H) mm	Shelf support ribs/shelves	Housing (W x D x H) mm	Rating W	PK	Cat. No.
UFP 400	53	400 x 330** x 400	4 / 2	550 x 480*** x 680	1400	1	9.868 077
UFP 500	108	560 x 400** x 480	5 / 2	710 x 550*** x 760	2000	1	9.868 078
UFP 550	153	480 x 500** x 640	7 / 2	630 x 650*** x 920	2200	1	9.868 045
UFP 600*	256	800 x 500** x 640	7 / 2	950 x 650*** x 920	2400	1	9.868 079
UFP 700*	416	1040 x 500** x 800	9 / 2	1190 x 650*** x 1080	4000	1	9.868 080
UFP 800*	749	1040 x 600** x 1200	14 / 2	1190 x 750*** x 1620	4800	1	9.868 081

* Double doors

** Minus 30mm (up to UFP 600) and 45mm (UFP 700 + UFP 800) for an air vent in centre of rear panel

***Depth without door handle, please add 38mm

Accessories please see page 792



2 Drying oven E28 series

Robust, space-saving, low-profile ovens with hydraulic thermostat control and adjustable chamber ventilation.

BINDER

- temperature range: 60°C to 230°C
- hydraulic thermostat temperature control
- chamber ventilation valve
- timer 0 to 120min
- available with, or without, overheat cut-out (Class 1)



Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	Description	PK	Cat. No.
E 28	28	400 x 250 x 280	580 x 425 x 402	without overheat cut out	1	9.883 543
E 28*	28	400 x 250 x 280	580 x 425 x 402	with overheat cut out	1	9.883 544

* with overheat cut-out TB (Class 1)



Heating/Drying-/ Universal incubators

1


9.883 545

2


9.883 555

Heating ovens, ED, FD, FED series

NEW!

BINDER

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

- Fast, even tempering
- Wide temperature range

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

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

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

Equipment:

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

Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
ED 23	20	222 x 277 x 330	433 x 516 x 492	1	9.883 529
ED 23*	20	222 x 277 x 330	433 x 516 x 492	1	9.883 530
ED 53	53	400 x 330 x 400	634 x 575 x 617	1	9.883 545
ED 53*	53	400 x 330 x 400	634 x 575 x 617	1	9.883 548
ED 115	115	600 x 400 x 480	834 x 645 x 702	1	9.883 546
ED 115*	115	600 x 400 x 480	834 x 645 x 702	1	9.883 549
ED 240*	240	800 x 500 x 600	1034 x 745 x 822	1	9.883 550
ED 400*	400	1000 x 500 x 800	1234 x 765 x 1022	1	9.883 551
ED 720*	720	1000 x 600 x 1200	1234 x 865 x 1528	1	9.883 552
FD 23	20	222 x 277 x 330	433 x 516 x 492	1	9.883 808
FD 53	53	400 x 330 x 400	634 x 575 x 617	1	9.883 800
FD 115	115	600 x 400 x 480	834 x 645 x 702	1	9.883 801
FD 240	240	800 x 500 x 600	1034 x 745 x 822	1	9.883 802
FED 53	53	400 x 330 x 400	634 x 575 x 617	1	9.883 553
FED 115	115	600 x 400 x 480	834 x 575 x 702	1	9.883 554
FED 240	240	800 x 500 x 600	1034 x 745 x 822	1	9.883 555
FED 400	400	1000 x 500 x 800	1234 x 765 x 1022	1	9.883 803
FED 720	720	1000 x 600 x 1200	1234 x 765 x 1528	1	9.883 804

* with RS 422

3


3 Safety drying ovens, FDL, MDL series

A safety drying oven from BINDER ensures the perfect test result of your solvent-based paints and coatings, absolute temperature precision even with high ventilation.

BINDER

Advantages:

- Defined solvent quantity according to EN 1539
- Wide temperature range up to 350°C

Series FDL: The silicone-free and dust-free inner chamber and symmetric airflow provides the perfect environment for all specimens containing solvents.

Series MDL: Thanks to high air flow at temperatures up to 350°C, it is perfectly suited for high-temperature testing.

Equipment:

- Electronically controlled APT.line™ preheating chamber
- Temperature range: from 5°C above ambient temperature to 300°C (FDL)
- Temperature range: from 5°C above ambient temperature to 350°C (MDL)
- Independent adjustable temperature safety device class 2 (DIN 12880), with visual temperature alarm
- RS 422 interface for use with APT-COM™ DataControlSystem communication software

Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
FDL 115	115	600 x 435 x 435	834 x 685 x 800	1	9.883 580
MDL 115	115	600 x 435 x 435	834 x 685 x 800	1	9.883 581

7. Heating and cooling technology

Heating/Microwaves

1 Combination microwave 3in1 Sharp WW R-93 STAA NEW!

Can be build with cavity capacity of 40L. 1450W hot air (40-250°C), max. Microwave power: 800W, max. Grill power: 1300W. 18 cooking and defrosting automatic programs, 10 express cooking and defrosting automatic programs, 7 cooking and heating automatic programs, 1 cake automatic program, information and language selection (5 languages: D, NL, F, I, E), preheat, time specification: to 90 min., time switches, operating time adjustment (shorter/longer), +1 minute function (direct start), 2 round gratings (high/low). 1 round baking tray, power consumption: 2950W. Dimensions (WxDxH): 550mm x 535mm x 368mm. Diameter of the turntable: 362mm.



Type	PK	Cat. No.
Sharp WW R-93 STAA	1	6.241 663

2 Microwave solo Sharp WW R240BK NEW!

Freestanding with cavity capacity of 20L. 10 microwave power levels, 2 cooking sequences programmable, 13 cooking and defrosting automatic programs, time specification: to 99 Min./50 sec., time switches, +1 minute function (direct start), operating time adjustment (shorter/longer), max. Microwave power: 800W, child-proof lock. Dimensions (WxDxH): 452mm x 370mm x 262mm. Diameter turntable: 245mm.



Type	PK	Cat. No.
Sharp WW R240BK	1	6.241 662

3 Microwave SEVERIN MW 9675 si NEW!

Freestanding with cavity capacity of 23L. Digital multi-function display, grill and convection separately or combined switchable. Max. Microwave power: 800W, max. Grill power: 1200W. Preheat function to 190°C for convection, clock (24 hour), defrost by weight or time, Quick start button for instant full power, 10 different automatic cooking programs, grill grate with two selectable levels, child-proof lock. Dimensions (WxDxH): 486mm x 400mm x 290mm. Diameter turntable: 270mm.



Type	PK	Cat. No.
SEVERIN MW 9675 si	1	6.241 664

Digestion vessels please see page 1116. ➔



Heating/Vacuum drying ovens

1


9.537 928

2 Vacuum drying ovens VO

The new Perfect series of vacuum ovens, based on state-of-the-art technology, has been optimised to fulfil the most stringent demands, beyond merely vacuum control. In addition to direct heating of the shelves and digital control of the vacuum depth (adjustable from 10 mbar to 1100 mbar) these vacuum ovens now have a weekly programmer and daily schedule function, protocol timer for temperature profiles of up to 40 ramps, with 1 min up to 999 hour segments; programmable with an 8-digit, alphanumeric display (selection of language via set-up) also used for visualizing data during operation. An internal datalogging memory with a capacity of 1024kB provides tamper-proof, storage and output of GLP-compliant, archive documentation of all relevant data. Also includes an output interface with real time clock for PCL3-compatible printers, USB interface incl. "Celsius Software" and 32 kB MEMory Card. For total safety, a multi-level overtemperature protection (MLOP) system is provided, with audiovisual alarm system, protection class 3.3 microprocessor temperature selector (MTS) for over- and undertemperature, and additional integral Automatic Safety Function ASF for high and low temperature limits, automatically monitoring the set temperature and warning by an alarm when there is a temperature-related malfunction. In addition, the VO series has a TB class 1 mechanical temperature control unit which activates when the actual temperature exceeds 10°C above the set value.

Memmert

2


Textured 1.4301 stainless steel housing and 1.4404 stainless steel chamber. Galvanized steel rear panel. Safety double-glazed, door window with inner toughened glass and outer shatterproof panels.

Temperature range: from + 20°C up to +200°C
 Operating range: from 5°C above ambient

Type	Description	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
VO 200	incl. 1 thermoshelf, 3 connections for thermoshelves in the rear	29	385 x 250 x 305	550 x 400* x 600	1	9.537 928
VO 400	incl. 1 thermoshelf, 4 connections for thermoshelves in the rear	49	385 x 330 x 385	550 x 480* x 680	1	9.537 929
VO 500	incl. 1 thermoshelf, 4 connections for thermoshelves in the rear	101	545 x 400 x 465	710 x 550* x 760	1	9.537 932

*Depth without door handle, please add 38 mm

3


3 Vacuum ovens, VO series, accessories

NEW!

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

Memmert

Option pump control: Optimised rinsing procedures for the pump membranes as well as signal output for pump on/off

Premium module: The premium module comprises the inert gas inlet, the pump control, one printer interface, extra connectors for thermoshelves, one for VO 200, two for VO 400/500, an additional thermoshelf for model size 400/500 and a drip tray.

Description	PK	Cat. No.
Vacuum pump module cabinet without pump for VO 200	1	9.537 933
Vacuum pump module cabinet without pump for VO 400	1	9.537 934
Vacuum pump module cabinet without pump for VO 500	1	9.537 935
Chemically resistant vacuum pump, capacity 34 NI/min for VO 200, in combination with pump control or premium module	1	9.537 936
Chemically resistant vacuum pump, capacity 60 NI/min for VO 400/500 in combination with pump control or premium module	1	9.537 937
Aluminium thermo plate for VO 200	1	9.537 938
Aluminium thermo plate for VO 400	1	9.537 939
Aluminium thermo plate for VO 500	1	9.537 940
Stainless steel thermo plate for VO 200	1	6.071 767
Stainless steel thermo plate for VO 400	1	9.537 941
Stainless steel thermo plate for VO 500	1	6.225 112
Option inert gas inlet	1	9.537 942
Option pump control	1	9.537 943
Premium module for VO 200	1	9.537 944
Premium module for VO 400	1	9.537 945
Premium module for VO 500	1	9.537 946

1 Vacuum drying ovens, VD, VDL series

The standard when it comes to gentle drying: Vacuum drying ovens from BINDER dry without residues, without incrustations or oxidation. In addition, they have a reliable safety concept.

BINDER

- Safe work with one-of-a-kind safety concept
- Fast, condensation-free drying processes
- Homogeneous sample drying in a vacuum

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

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

Equipment:

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



Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
VD 23	23	285 x 285 x 285	515 x 500 x 655	1	9.883 540
VD 53	53	400 x 330 x 400	634 x 550 x 775	1	9.883 541
VD 115	115	506 x 450 x 506	740 x 670 x 900	1	9.883 542
VDL 23	23	285 x 285 x 285	515 x 500 x 655	1	9.883 531
VDL 53	53	400 x 330 x 400	634 x 550 x 775	1	9.883 532
VDL 115	115	506 x 450 x 506	740 x 670 x 900	1	9.883 533

Vacuum pumps please see page 978.



Incubators "Basic"

All models are equipped with:

- microprocessor PID-temperature controller with integral autodiagnostic system and fault indicator
- single, class A, Pt100 sensor with 4-wire-circuit
- integral digital timer (1 min. up to 99 h 59 min) to switch off heating to stand-by mode
- digital LED display of set and actual temperature as well as remaining process time
- two separate overtemperature protection systems, in case of total sensor failure the heating is switched off at approx. 10°C above the set temperature, in case of thermostatic switch failure, the heating is controlled by an additional thermostat approx. 10°C above the set temperature, if a sensor fault (incorrect measurements) or the total breakdown of the controller occurs, the heating is switched off at approx. 10°C above the max. oven temperature by a TB class 1 mechanical temperature limiter
- for very sensitive and/or valuable/irreplaceable loads, we recommend our E- and P-class ovens, guaranteeing an even higher safety standard.
- Easy-to-clean, stainless steel housing and interior, with heaters located in deep-drawn ribs on all four sides, providing uniform gentle heating.

Power supply: 230V (±10%) 50/60Hz

Safety proof: EMV/VDE/GS/CE/GOST

Memmert

1



9.868 048

Precision incubators, INB series

- Ventilation: natural convection
 Temperature range: +30 to +70°C
 (actual minimum: 5°C above ambient)
- Display resolution
 set value: 0.5°C
 actual value: 0.5°C
- Additionally fitted with inner glass door

Memmert

Type	Internal volume	Int. dimensions (W x D x H)	Shelf support ribs/shelves	Housing (W x D x H)	Rating	PK	Cat. No.
	litres	mm		mm	W		
INB 200	32	400 x 250 x 320	3 / 1	550 x 400* x 600	440	1	9.868 047
INB 300	39	480 x 250 x 320	3 / 1	630 x 400* x 600	500	1	9.868 048
INB 400	53	400 x 330 x 400	4 / 2	550 x 480* x 680	800	1	9.868 049
INB 500	108	560 x 400 x 480	5 / 2	710 x 550* x 760	900	1	9.868 050

* Depth without door handle, please add 38mm

2



2 Universal Incubators, "Excellent"

All models are equipped with:

- fuzzy supported PID-microprocessor controller with integral autodiagnostic system and fault indicator
 - 2 x Pt100 Class A sensors with 4-wire circuit, mutually monitoring and maintaining performance at the stable temperature value
 - digital 7-day programme-timer
 - integral digital timer for temperature profile with max. 4 segments, adjustable from 1 min. up to 999h: Delayed on; Heating up; Hold, Cooling-down, "Loop" function with 1 to 99 repeats or continuous
 - heating switch off to stand-by mode
 - digital LED display of set all parameters
 - Triple overtemperature protection systems:
 - if an overtemperature state occurs due to failure the heating is switched off at approx. 10°C above the set temperature (fixed value);
 - independently working, digitally adjustable electronic overtemperature controller TWW protection class 3.1
 - mechanical temperature limiter TB class 1 switching the heating off at approx. 10°C above max. oven temperature
 - Easy-to-clean interior, made of stainless steel, reinforced by deep drawn ribbing with integral and protected large-area heating on four sides. 2 perforated stainless steel, non-tipping shelves
- Supply requirements: 230V (±10%) 50/60Hz. approx. 1400W (during heating). Safety conformance: EMV/VDE/GS/CE/GOST

Memmert

Glass door available at extra charge.

Incubators, INE series

Memmert

Ventilation: natural convection
 Temperature range: +30°C (actual minimum: 5°C above ambient) to +70°C
 Display resolution: 0.1°C
 Textured stainless steel casing: with inner glass door
 Calibration certificate at +37°C



9.537 342

Type	Internal volume	Int. dimensions (W x D x H)	Shelf support ribs/shelves	Housing (W x D x H)	Rating	PK	Cat. No.
	litres	mm		mm	W		
INE 200	32	400 x 250 x 320	3 / 1	550 x 400** x 600	440	1	9.537 339
INE 300	39	480 x 250 x 320	3 / 1	630 x 400** x 600	500	1	9.537 340
INE 400	53	400 x 330 x 400	4 / 2	550 x 480** x 680	800	1	9.537 341
INE 500	108	560 x 400 x 480	5 / 2	710 x 550** x 760	900	1	9.537 342
INE 550	153	480 x 500 x 640	7 / 2	630 x 650** x 920	1100	1	9.537 336
INE 600*	256	800 x 500 x 640	7 / 2	950 x 650** x 920	1600	1	9.537 343
INE 700*	416	1040 x 500 x 800	9 / 2	1190 x 650** x 1080	1800	1	9.537 344
INE 800*	749	1040 x 600 x 1200	14 / 2	1190 x 750** x 1620	2000	1	9.537 345

* Double doors

** Depth without door handle, please add 38mm

Incubators with fan, IFE series

NEW!

Memmert

Ventilation: forced air circulation
 Temperature range: +30°C (actual minimum: 10°C above ambient) to +70°C
 Display resolution: 0.1°C
 Textured stainless steel casing: with inner glass door
 Calibration certificate at +37°C

Type	Internal volume	Int. dimensions (W x D x H)	Shelf support ribs/shelves	Housing (W x D x H)	Rating	PK	Cat. No.
	litres	mm		mm	W		
IFE 400	53	400 x 330** x 400	4/2	550 x 480 *** x 680	800	1	9.537 360
IFE 500	108	560 x 400** x 480	5/2	710 x 550 *** x 760	900	1	9.537 361
IFE 550	153	480 x 500** x 640	7/2	630 x 650 *** x 920	1100	1	9.537 362
IFE 600*	256	800 x 500** x 640	7/2	950 x 650 *** x 920	1600	1	9.537 363
IFE 700*	416	1040 x 500** x 800	9/2	1190 x 650*** x 1080	1800	1	9.537 364
IFE 800*	749	1040 x 600** x 1200	14/2	1190 x 750*** x 1620	2000	1	9.537 365

* Double doors

** Minus 30mm (up to IFE 600) and 45mm (IFE 700 + IFE 800) for an air vent in centre of rear panel

***Depth without door handle, please add 38mm

Incubators, "Perfect"

The highest specification class for the most demanding requirements:

Memmert

- adaptive, fuzzy-supported, microprocessor PID-temperature controller
- autodiagnostic system with fault indicator
- two, class A, 4-wire circuit, Pt100 sensors, jointly monitoring and regulating performance at any specific temperature
- digital 7-day programmer with real time clock allowing precise setting to minute intervals and one set value or rampoperation in combination with digital, heating-profile timer with max. 40 ramp segments, each segment adjustable from 1 min to 999 hours
- multifunctional menu programming via 8-digit, multilingual, alphanumeric display of: heating profiles of up to 40 ramps, time and set point dependent operation, fan air circulation speed in 10% steps from min. 20% to 100%
- long-term documentation (memory) of all relevant data, GLP-conformance using 1024kB memory datalogger
- non-volatile, programme memory
- parallel printer interface (incl. real-time clock with date function) for all PCL3-compatible, ink-jet printers for GLP documentation
- RS232 interface with Memmert „Celsius" software
- chip-card control incl. one MEMory Card XL with 32kB (holds up to 40 ramps)
- Multiple Overtemperature Protection: With audible and visual alarms; digitally adjustable, TWW protection class 3.1, electronic overtemperature controller
 - maximum value for overtemperature; additional adjustable "ASF" Auto-Safety-Function for over- and undertemperature, which monitors the set value at a preset tolerance range; an audible alarm is activated in case of over- or undertemperature and heating is switched off in the event of overtemperature;
 - TB class 1, mechanical temperature limiter, which switches the heating off at approx. 10°C above max. oven temperature.
- Easy-to-clean, stainless steel housing and interior, with heaters located in deep-drawn ribs on all four sides, providing uniform gentle heating.

Supply requirements: 230 V (UN/UF 700 and 800: 400V) ±10%, 50/60Hz

Safety conformance: EMV/VDE/GS/CE/GOST

Optional equipment: An alternative external glass door is available at extra cost.

1

Precision Incubators, INP series

Memmert



9.537 351

Ventilation:
Temperature range:

natural convection
+30°C up to +70°C
(actual minimum: 5°C above ambient)
0.1°C

Display resolution:
2nd chip-card (Steri-Card) for sterilisation of work chamber with fixed cycle (4 hours at 160°C)
Additionally supplied with inner glass door
Calibration certificate at +37°C

Type	Internal volume	Int. dimensions (W x D x H)	Shelf support ribs/shelves	Housing (W x D x H)	Rating	PK	Cat. No.
	litres	mm		mm	W		
INP 200	32	400 x 250 x 320	3 / 1	550 x 400** x 600	440	1	9.537 346
INP 300	39	480 x 250 x 320	3 / 1	630 x 400** x 600	500	1	9.537 347
INP 400	53	400 x 330 x 400	4 / 2	550 x 480** x 680	800	1	9.537 349
INP 500	108	560 x 400 x 480	5 / 2	710 x 550** x 760	900	1	9.537 350
INP 550	153	480 x 500 x 640	7 / 2	630 x 650** x 920	1100	1	9.537 354
INP 600*	256	800 x 500 x 640	7 / 2	950 x 650** x 920	1600	1	9.537 351
INP 700*	416	1040 x 500 x 800	9 / 2	1190 x 650** x 1080	1800	1	9.537 352
INP 800*	749	1040 x 600 x 1200	14 / 2	1190 x 750** x 1620	2000	1	9.537 353

* Double doors

** Depth without door handle, please add 38mm

1 Precision Incubators with fan, IFP series NEW!

Memmert

Ventilation: forced aircirculation
 Temperature range: +30°C up to +70°C
 (actual minimum: 5°C above ambient)
 0.1°C

Display resolution:
 2nd chip-card (Steri-Card) for sterilisation of work chamber with fixed cycle (4 hours at 160°C)
 Additionally supplied with inner glass door
 Calibration certificate at +37°C



Type	Internal volume	Int. dimensions (W x D x H)	Shelf support ribs/shelves	Housing (W x D x H)	Rating	PK	Cat. No.
	litres	mm		mm	W		
IFP 400	53	400 x 330** x 400	4 / 2	550 x 480*** x 680	800	1	9.537 366
IFP 500	108	560 x 400** x 480	5 / 2	710 x 550*** x 760	900	1	9.537 367
IFP 550	153	480 x 500** x 640	7 / 2	630 x 650*** x 920	1100	1	9.537 368
IFP 600*	256	800 x 500** x 640	7 / 2	950 x 650*** x 920	1600	1	9.537 369
IFP 700*	416	1040 x 500** x 800	9 / 2	1190 x 650*** x 1080	1800	1	9.537 370
IFP 800*	749	1040 x 600** x 1200	14 / 2	1190 x 750*** x 1620	2000	1	9.537 371

* Double doors
 ** Minus 30mm (up to IFE 600) and 45mm (IFE 700 + IFE 800) for an air vent in centre of rear panel
 ***Depth without door handle, please add 38mm

Accessories please see page 792 ➔

2 3 Microplate incubator, SI19 Stuart

A dedicated microtitration plate incubator, working volume 20 litres. Up to 48 x 96-well plates can be held, evenly distributed onto four pull-out stainless steel shelves, one or two layers deep. Precise, even temperature control is maintained throughout the chamber by forced circulation of preheated air from one side to the other across the plates. When filled with 24 x 96-well plates evenly distributed and at a temperature setting of +37°C, variation of temperature between shelves is maintained to within ±0.5°C and fluctuation to within ±0.5°C. A removable stainless steel tray in the chamber base may be filled with water to increase humidity. The 10mm clear acrylic door opens upwards. For 230V 50Hz single phase supplies, 280W. With BioCote, silver-based, antimicrobial protection.

Temperature range °C: Amb. + 8°C to +80°C
 Usable volume litres: 20L
 Temperature variation °C: ±0.5
 Temperature fluctuation °C: ±0.5
 Shelves supplied: 4
 Shelves supplied: 250x 230 x 200mm
 Dimensions W x H x D: 380 x 380 x 435mm
 Internal:
 External:
 Weight kg: 20kg



Type	PK	Cat. No.
SI19	1	9.951 744

Heating/Incubators



9.951 603



9.951 604



3 Total visibility incubators, SI60/SI60D

Capacity 60L. Maximum temperature 60°C. With hinged front and top panels, temperature control system with preset at 37°C, safety temperature cut-out, air circulating fan and holes for gas or cable introduction. Supplied flat packed for assembly by the user. For 220-240V 50Hz single phase supplies. Without base plate or shelf rack system. With BioCote, silver-based, antimicrobial protection on the metal surfaces.

Stuart

Type	Description	PK	Cat. No.
SI60	60 litres, dial control	1	9.951 603 1
SI60D	60 litres, digital set-and-read control	1	9.951 604 2

Total visibility incubators, SI60 series, accessories

Stuart

Description	PK	Cat. No.
Base plate	1	9.951 605
Shelf rack system, plastic coated wire	1	9.951 606

Accessories for Universal ovens B-, E- and P- series

Type E3(x): standard, stainless steel wire (max. loading: 30kg)

Memmert

Type E0(x): perforated stainless steel shelves (max. loading: 30kg)

B-Class = UNB/UFB/INB/SNB/SFB

E- and P-Class = UNE/INE/IFE/SNE/SFE/UNP/UPP/INP/IFP/SFP

Type	Class	PK	Cat. No.
E0 100	B	1	9.537 026
E0 200	B, E, P	1	9.537 126
E0 300	B, E, P	1	9.537 226
E0 400	B, E, P	1	9.537 326
E0 500	B, E, P	1	9.537 426
E0 550	E, P	1	9.537 476
E0 600	E, P	1	9.537 526
E0 700	E, P	1	9.537 626
E0 800	E, P	1	9.537 826
E3 100	B	1	9.537 103
E3 200	B, E, P	1	9.537 203
E3 300	B, E, P	1	6.232 432
E3 400	B, E, P	1	6.231 512
E3 500	B, E, P	1	6.232 433
E3 550	E, P	1	9.537 553
E3 600	E, P	1	9.537 603
E3 700	E, P	1	9.537 703
E3 800	E, P	1	6.222 688

Additional stainless steel shelves are available on request

Accessories for Universal ovens E- and P- series

Full glass door for UN/UF series.

Memmert

Type	Class	PK	Cat. No.
B0 200	E, P	1	9.868 120
B0 300	E, P	1	9.868 130
B0 400	E, P	1	9.868 140
B0 500	E, P	1	9.868 150
B0 550	E, P	1	9.868 155
B0 600	E, P	1	9.868 160
B0 700	E, P	1	9.868 170
B0 800	E, P	1	9.868 180

Accessories for Universal ovens E- and P- series

Extended temperature range option, maximum 300°C - Universal ovens
(Not available for models with full glass door).

Memmert

Type	Class	PK	Cat. No.
A0 200	E, P	1	9.868 520
A0 300	E, P	1	9.868 530
A0 400	E, P	1	9.868 540
A0 500	E, P	1	9.868 550
A0 550	E, P	1	9.868 555
A0 600	E, P	1	9.868 560
A0 700	E, P	1	9.868 570
A0 800	E, P	1	9.868 580

Accessories for Universal ovens, E- and P- series

Special equipment.

Memmert

Type	Class	Description	PK	Cat. No.
Q1	E, P	IQ check list with works test data for unit as support for validation by customer	1	9.867 698
Q2	E, P 200/300	OQ check list, including temperature distribution survey to DIN 12880: 2007-05 at 9 measuring points	1	9.867 699
Q2	E, P 400 - 800	OQ check list, including temperature distribution survey to DIN 12880: 2007-05 at 27 measuring points	1	9.867 693
Q3	P	Extra for FDA conformance software, "Celsius FDA-Edition"	1	9.867 700
V1	P	Oven-linked authorisation card (user ID card)	1	9.867 701
V4	P	additional MEMory Card	1	9.867 714
V9	P	additional SeriCard (only for interior-sterilization) for incubators	1	9.867 702
W3	E, P	USB interface instead of RS232	1	9.867 717
W4	P	Ethernet interface instead of RS232. Software "Celsius-Ethernet-Edition" included	1	9.867 718

1 Hybridisation Incubator 7601

For exact hybridisations of DNA and RNA probes with nucleic acid on filter paper and for incubations of protein blots with antibodies. The small quantity of hybridisation liquid that is required enables the user to work with high concentrations of probes or antibodies. Other applications are also possible. Instead of the removable rotating rack, the Incubator's interior can be equipped with up to five, non-tilt and pull-out, trays (accessories). The unit bears the CE mark.

GFL

- microprocessor-controlled temperature regulation. Temperature range: approx. 8°C above ambient to +99.9°C, Temperature constancy (temporal): ±0.5°C. Temperature setting and display: digital - LED, in 0.1°C increments.
- the ventilator ensures optimum temperature distribution throughout the cabinet interior
- overtemperature cut-out: electrical, with visual alarm at 4°C above the set temperature, and electro-mechanical > 130°C. Electronic monitoring.
- variable rotating rack for up to 8 hybridisation bottles 51mm dia. or 16 hybridisation bottles 32mm dia. Rack rotation speed: 10 per minute, fixed
- soft-touch keys with clear symbols
- clear view of the interior cabinet through a large 16mm thick, heat-insulating, acrylic glass window
- switches for two 15W cabinet lamps
- interior parts of rotating rack made of stainless steel
- two clip wheels with 8 spring clips (type 7937) and 4 hybridisation bottles (type 7945) are included as standard
- housing: electrolytically galvanized sheet steel
- WxDxH (internal): 400 x 330 x 380mm W x D x H (external): 585 x 630 x 650mm
- supply requirements: 230V 50/60Hz, 550W (other voltages are available - details on request)
- weight: 45kg



Type	PK	Cat. No.
7601	1	9.535 601



1 Clip Wheel for Hybridisation Incubator 7601

Clip wheel 7940. Stainless steel, with holes for spring clips. Two clip wheels are included. Two more clip wheels can be inserted to double the capacity of shorter vessels.

GFL

Type	PK	Cat. No.
7940	1	9.535 640



2 Incubator, mechanical control, B 28 series

Robust, small, space-saving unit with hydraulic thermostat temperature controller and adjustable ventilation for accurate and reliable incubation.

BINDER

- temperature range: 30°C to 70°C
- Adjustable air vent
- Inner glass door
- Available with, or without, overheat cut-out (Class 1)
- Internal volume: 28L
- External dimensions: 580 x 425 x 402mm
- Internal dimensions: 400 x 250 x 280mm

Type	Description	PK	Cat. No.
B28	without cut-out	1	9.883 556
B28*	with cut-out	1	9.883 557

* with overheat cut-out TB (Class 1)



3 Spring Clips for Hybridisation Incubator 7601

Spring clips 7935, 7936, 7937. To attach hybridisation bottles onto the clip wheels. Two spring clips are required for each bottle. The required fixings are supplied with each clip. Eight spring clips 7937 are in the standard scope of supply.

GFL

Type	For dia. mm	PK	Cat. No.
7935	32 (16/32) *	1	9.535 635
7936	38 (8/16) *	1	9.535 636
7937	51 (8/16) *	1	9.535 637

* Maximum number of clips per clip plate/number of clips required.



4 Special Hybridisation Bottles

Accessories for Hybridisation Incubator 7601 (see also GFL Tube Roller Incubator 4020). Borosilicate glass, with plastic screw cap perforated with 0.5mm centre hole for pressure compensation (also available unperforated on request).

GFL

Type	Dia. mm	Length mm	Max. bottles per rack	PK	Cat. No.
7943	32	273	16	1	9.535 643
7944	38	273	8	1	9.535 644
7945	51	273	8	1	9.535 645

➔ Other Accessories for GFL Shaking Incubators see Shakers, page 454.

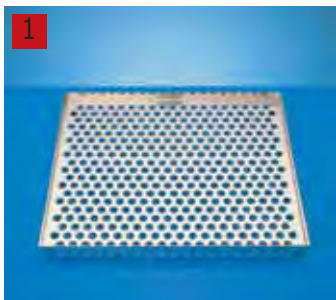
7. Heating and cooling technology

Heating/Incubators-Cooling incubators

1 Perforated Tray for Hybridisation Incubator 7601

Perforated tray 7914. Stainless steel, can only be used instead of the rotating rack, max. five trays. GFL

Type	PK	Cat. No.
7914	1	9.535 614



Cooled incubators, series IPP and ICP and Storage chamber IPS

The innovations of the new Perfect Line have been transplanted into Memmert cooled incubators as well. With fuzzy logic-supported, multifunctional, PID-microprocessor controller, 2 x high quality DIN-class A, 4-wire circuit, Pt100 probes allowing simultaneous monitoring and control functions, digital real time clock with weekly programmer and daily schedule function, protocol timer for temperature profiles of up to 40 ramps, with 1 min up to 999h segments; programmable with an 8-digit, alphanumeric display (selection of language via set-up) also used for visualizing data during operation. Memmert

An internal datalogging memory with a capacity of 1024kB provides tamper-proof, storage and output of GLP-compliant, archive documentation of all relevant data. Includes an output interface with real time clock for PCL3-compatible printers, RS 232 interface incl. "Celsius 2007 Software " and 32kB MEMORY Card.

For total safety, a multi-level overtemperature protection (MLOP) system is provided, with audiovisual alarm system, microprocessor temperature selector (MTS), protection class 3.3, for over- and undertemperature and additional integral Automatic Safety Function ASF for high and low temperature limits, automatically monitoring the set temperature and warning by an alarm when there is a temperature-related malfunction. In addition, the ICP series has a TB class 1 mechanical temperature control unit which activates when the actual temperature exceeds 10°C above it's setting.

Proven Memmert quality: Textured 1.4301 stainless steel housing and stainless steel chamber guarantees corrosion-resistance, easy cleaning and sanitization

- With additional inner glass door.
- Calibration certificate available on request at +10°C and +37°C (IPP and ICP)
- Calibration certificate available on request at +18°C and +25°C (IPS)
- Supply requirements: 230V ±10%, 50/60Hz

Cooled incubators, IPP series

With Peltier heating/cooling system, temperature range: + 5°C to + 70°C. Maximum temperature fluctuation: better than 0.1°C (temporal), better then ±0.4°C (spatial from 10 to 37°C). With gentle, fan-assisted, air circulation via refrigerant-free, Peltier-cooled fan.

NEW!
Memmert



9.537 925

Type	Internal volume		Internal dimensions (W x D x H) mm	Shelf support ribs/shelves	External dimensions (W x D x H) mm	PK	Cat. No.
	litres	mm					
IPP 200	32	400 x 250* x 320	3/1	550 x 490** x 600	1	9.537 925	
IPP 300	39	480 x 250* x 320	3/1	630 x 490** x 600	1	9.537 926	
IPP 400	53	400 x 330* x 400	4/2	550 x 570** x 680	1	9.537 927	
IPP 500	108	560 x 400* x 480	5/2	710 x 640** x 760	1	9.537 930	
IPP 800	749	1040 x 600* x 1200	14/2	1190 x 840** x 1620	1	6.239 431	

* - 10mm for an air vent in centre of rear panel
 **Depth without door handle, please add 38mm

Heating/Cooling incubators

1


1 Storage chamber, IPS

NEW!

Memmert

Sample storage in the food industry, the cosmetics industry, medicine, or pharmaceuticals with Peltier heating/cooling system temperature range: + 14°C to +45°C.
 maximum temperature fluctuation: better than 0.1°C (temporal), better than ±0.4°C (spatial at 18 to 25°C).
 With gentle, fan-assisted, air circulation via refrigerant-free, Peltier-cooled fan.

Type	Internal volume	Internal dimensions (W x D x H)	Shelf support ribs/shelves	External dimensions (W x D x H)	PK	Cat. No.
	litres	mm		mm		
IPS 749	749	1040 x 600* x 1200	14/2	1190 x 840** x 1620	1	9.906 749

* Minus 10 mm for an air vent in centre of rear panel

**Depth without door handle, please add 38mm

2


9.537 904

Cooled incubators with compressor cooling, ICP

Memmert

ICP-cooled incubators with compressor cooling system.
 Temperature range 0°C to + 60°C (ICP 400 + 500), -12°C to +60°C (ICP 600 - 800).

Maximum temperature fluctuation: better than ±0.1°C (temporal), better than ±0.3°C (spatial at 37°C acc. DIN).
 Gentle, forced-air circulation, separation of the heating system from the interior, which ensures no sample drying occurs due to the cooling evaporator. Energy-efficient cooling/heating (R134a refrigerant), with highly efficient auto-defrost function. Microprocessor control of air circulation turbine fan speed in 10 % steps (between 10 and 100%). Easy-to-clean interior, made of stainless steel with 2 stainless steel grids.

Accessories for IPP-, IPS-, ICP-Models are available on request.

Type	Internal volume	Shelf support ribs/shelves	Internal dimensions (W x D x H)	External dimensions (W x D x H)	PK	Cat. No.
	litres		mm	mm		
ICP 400	53	4/2	400 x 330* x 400	558 x 486** x 967	1	9.537 904
ICP 500	108	5/2	560 x 400* x 480	718 x 556** x 1047	1	9.537 905
ICP 600	256	7/2	800 x 500* x 640	958 x 656** x 1335***	1	9.537 906
ICP 700	416	9/2	1040 x 500* x 800	1198 x 656** x 1495***	1	9.537 907
ICP 800	749	14/2	1040 x 600* x 1200	1198 x 756** x 1895***	1	9.537 908

* Minus 30 mm for an air vent in centre of rear panel

**Depth without door handle, please add 38 mm

***mounted on lockable castors

1 Incubators, KB series and cooling incubators, BD, BF series



1

BINDER incubators and cooling incubators stand for optimal incubation and for results that are reproducible in every routine test, even under high batch throughputs in long-term operation.

- Safe and reproducible incubation
- Disinfection routine at 100°C
- Broad range of products and applications

Serie BD: Incubators with gravity convection. The specialist for incubating organisms, as well as microbiological heating and conditioning.

Serie BF: Incubators with forced convection. It shines with its homogeneity and quick recovery times, even under a full load and high throughput.

Serie KB: Refrigerated incubators with forced convection. Safe incubation at high ambient temperatures. Additional options and a weekly programming function make it very versatile.

Equipment:

- Electronically controlled APT.line™ preheating chamber
- Temperature range: from 5°C above room temperature to 100°C (BD/BF), -5°C to 100°C (KB)
- Independent temperature safety device class 3.1 (DIN 12880) with optical and audible temperature alarm
- RS 422 interface for use with APT-COM™ DataControlSystem communication software
- Inner glass door



Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
BD 23	20	222 x 277 x 330	433 x 516 x 492	1	9.883 599
BD 53	53	400 x 330 x 400	634 x 575 x 617	1	9.883 605
BD 115	115	600 x 400 x 480	834 x 645 x 702	1	9.883 606
BD 240	240	800 x 500 x 600	1034 x 745 x 822	1	9.883 607
BD 400	400	1000 x 500 x 800	1234 x 765 x 1022	1	9.883 603
BD 720	720	1000 x 600 x 1200	1234 x 865 x 1528	1	9.883 604
BF 53	53	400 x 330 x 400	634 x 575 x 617	1	6.206 495
BF 115	115	600 x 400 x 480	834 x 645 x 702	1	6.902 328
BF 240	240	800 x 500 x 600	1034 x 745 x 822	1	6.224 050
BF 400	400	1000 x 500 x 800	1234 x 765 x 1022	1	6.203 549
BF 720	720	1000 x 600 x 1000	1234 x 865 x 1528	1	9.883 625
KB 23	23	222 x 277 x 330	433 x 516 x 618	1	9.883 528
KB 53	53	400 x 330 x 400	634 x 576 x 837	1	9.883 568
KB 115	115	600 x 400 x 480	834 x 646 x 1022	1	9.883 569
KB 240	240	650 x 485 x 785	925 x 800 x 1460	1	9.883 570
KB 400	400	650 x 485 x 1270	925 x 800 x 1945	1	9.883 571
KB 720	720	973 x 576 x 1250	1250 x 887 x 1925	1	9.883 572

2



9.883 570

1



9.867 732

2



9.867 733

CO₂ Incubators, INCO

NEW!

Memmert

Ventilation and Control:

- uniform atmosphere and temperature distribution owing to enclosed non-turbulent ventilation system in working chamber
- adaptive, fuzzy-supported multifunctional digital microprocessor PID-controller
- integral fault diagnostics on temperature, CO₂ and humidity limit control
- 2 x Class A, 4-wire circuit, Pt100 sensors mutually monitoring and maintaining the performance at the same temperature value
- digital 7-day programme timer with real time clock, precise minute setting
- digital display (LED) of all set parameters, such as temperature, weekdays, time, CO₂, humidity and set-up values - language to be chosen in setup
- CO₂ supply via sterile filter
- digital electronic CO₂ control with automatic zeroing (infrared measuring system)
- CO₂-supply being interrupted upon door opening
- digital display of set and actual values (LED 0.1°C resolution) of temperature and CO₂-concentration
- integral humidity limit control (88 to 97%) with digital display of relative humidity - setting accuracy 1%
- non-volatile, programme memory
- chip card (STERICard) for sterilization of working chamber with fixed cycle (4 hours/160°C) without removal of sensors and mountings

Multiple Overtemperature Protection:

- with audible and visual alarm in case of over-/undertemperature and over-/under-CO₂, open door and empty gas cylinder
- independently working, digitally adjustable electronic overtemperature controller TWW protection class 3.1
- additional adjustable Auto-Safety-Function "ASF" for over- and undertemperature automatically following the set value at a preset tolerance range
- mechanical temperature limiter TB class 1 switching the heating off at approx. 10°C above max. oven temperature

Heating Concept:

- large-area multi-function heating system on four sides incl. additional door and back heating to avoid condensation
- incl. works calibration certificate for +37°C

Textured Stainless Steel Casing:

- fully insulated stainless steel door with double locking and 4-point adjustment
- inner glass door with opening (8mm dia.) to take gas samples
- zinc-plated, steel rear panel

Interior:

- easy-to-clean interior, made of stainless steel, reinforced by deep drawn ribbing, material no. 1.4301, hermetically welded
- 3 non-tipping, perforated stainless steel shelves, 1 stainless steel water dish

Temperature Range: from +20°C (or amb. + 8°C whichever is higher) up to +45°C

Voltage/Power Rating: 230V (±10%), 50/60Hz; approx. 1000W (during heating)

Type	Internal dimensions/housing (WxHxD) mm
INCO 108	560 x 480 x 400*/710 x 778 x 550**
INCO 153	480 x 640 x 500/630 x 938 x 650
INCO 246	640 x 640 x 600/790 x 938 x 750

* Minus 25 mm for an air vent in centre of rear panel
** Depth without door handle, please add 38 mm

Type	Internal volume litres	Shelf support ribs	Shelves	Stainless steel water dishes	Rating W	PK	Cat. No.
INCO 108 basic model	108	4*	2*	1*	1000	1	9.867 732 1
INCO153 basic model	153	6*	3*	1*	1500	1	9.867 733 2
INCO 246 basic model	246	6*	3*	2**	2000	1	9.867 734
INCO 108 with Premium-Modul T5	108	4*	2*	1*	1000	1	9.867 703
INCO 153 with Premium-Modul T5	153	6*	3*	1*	1500	1	9.867 704
INCO 246 with Premium-Modul T5	246	6*	3*	2**	2000	1	9.867 705

*full width
**half width

Accessories for CO₂ Incubators, INCO 2 series

NEW!

Memmert



9.867 702

Comfort module:

two gas connections with quick release connectors, automatic switch-over gas cylinders (impossible in combination with O₂ module)

Hygiene module:

electropolished interior, seamlessly welded by laser

Communication module:

USB interface, "Celsius" standard software for the control and logging of temperature, CO₂; O₂ (with O₂ module) and relative humidity; internal log memory 1024 kB as ring memory for all setpoint values, actual values, errors, settings with real time and date; logging approx. 3 months at 1 min. logging interval; parallel printer interface for all PCL3-compatible printers

CO₂ module:

extended CO₂ range from 0 to 20%

Premium module:

includes Comfort, Hygiene, Communication and CO₂ module (impossible in combination with O₂ module)

Humidity module:

active microprocessor control for humidifying and dehumidifying (40 - 97% rh), incl. digital indication and auto-diagnostic system; humidity supply with distilled water (from an external tank) , dehumidifying via sterile filter; (standard humidity limit control and water dishes are omitted)

O₂ module:

control of oxygen concentration by N₂ inlet, adjustment range 1% to 20% O₂, setting accuracy 0.1%

Combination O₂ module with Comfort and Premium module impossible

Type	Description	PK	Cat. No.
E7 INCO 108	Additional stainless steel shelf, full width	1	9.867 707
E7 INCO 153	Additional stainless steel shelf, full width	1	9.867 708
E7 INCO 246	Additional stainless steel shelf, full width	1	9.867 748
E2 INCO 108	Additional stainless steel shelf, full width	1	9.867 709
E2 INCO 153	Additional water tray, full width	1	9.867 710
E2 INCO 246	Additional water tray, half width	1	9.867 711
F9	Entry port in the rear, heated, with silicone stopper, 57 mm inner diameter	1	6.238 238
H7	Pressure reduction valve (DIN 8546), incl. gas-bottle monitor	1	9.867 712
H9	HEPA Interior filter	1	9.867 731
V2	RS485 interface (for cross linking of several devices) instead of USB	1	9.867 713
V9	Additional Steri-Card (only for interior-sterilization) for incubators	1	9.867 702
W6	RS232 interface instead of USB	1	9.867 722
T1	Comfort module for INCO 108/153/246	1	9.867 735
T2	Hygiene module for INCO 108	1	9.867 736
T2	Hygiene module for INCO 153	1	9.867 737
T2	Hygiene module for INCO 246	1	9.867 738
T3	Communication module for INCO 108	1	9.867 739
T3	Communication module for INCO 153	1	9.867 740
T3	Communication module for INCO 246	1	9.867 741
T4	CO ₂ module for INCO 108	1	9.867 742
T4	CO ₂ module for INCO 153	1	9.867 743
T4	CO ₂ module for INCO 246	1	9.867 744
T5	Premium module for INCO 108	1	9.867 745
T5	Premium module for INCO 153	1	9.867 746
T5	Premium module for INCO 246	1	9.867 747
K7	Active humidity control microprocessor (40 to 97% RH) for INCO 108/153/246	1	9.867 706
T6	O ₂ module for INCO 108, 153, 246	1	9.867 749

Heating/CO₂ Incubators

1



1 CO₂ incubators, C Series

BINDER

The BINDER C is the fitting partner for routine applications for cell cultivation, contamination-free due to hot-air sterilisation at 180°C, reliable pH-stable thanks to the drift-free FPI infrared measuring system, high temperature precision with excellent dynamic and no risk of condensation even in high humidity.

Equipment:

- Air jacket system assuring temperature accuracy and reproducible results
- Temperature range from 7°C above ambient up to 50°C
- Water pan with built-in condensation control maintains dry interior walls
- Standard-compliant hot air sterilization at 180°C (DIN 58947)
- Seamless deep-drawn inner chamber made of stainless steel with integrated shelf support system
- Drift-free infrared CO₂ measurement system
- Microprocessor with LED display for temperature and CO₂ concentration
- Independent temperature safety device class 3.1 (DIN 12880) with optical and audible temperature alarm
- Gas mixing head
- Interior volume 150L

Type	Description	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
C 150	right hinged door	500 x 500 x 600	680 x 815 x 819	1	9.883 720
C 150	left hinged door	500 x 500 x 600	680 x 815 x 819	1	9.883 721
2 C 150	incl. stacking adapter, right hinged door	500 x 500 x 600	680 x 815 x 1783	1	9.883 722
2 C 150	incl. stacking adapter, left hinged door	500 x 500 x 600	680 x 815 x 1783	1	9.883 723



CO₂ incubators, CB series



BINDER

The BINDER CB series is the premium class for all sensitive incubation applications. Even during complex cultivation experiments or individual environments under hypoxic conditions, it is easy to grow thanks to a comprehensive assortment of options and accessories.

Advantages:

- Hot air sterilisation at 180°C
- Seamless, deep-drawn inner chamber made of stainless steel
- Unique BINDER technology (patented air jacket system, controlled condensation, etc.)

Equipment:

- Electronically controlled APT.line™ preheating chamber assuring temperature accuracy and reproducible results
- Temperature range from 5°C above ambient temperature to 60°C
- MCS controller for temperature and CO₂ concentration
- Standard-compliant hot air sterilization at 180°C (DIN 58947)
- VENTAIR™ Jacket System
- Drift-free infrared CO₂ measurement system
- Permadyr System, condensation-free double-pan humidification system, maintains dry interior walls
- Seamless deep-drawn inner chamber made of stainless steel with integrated shelf support system (flanges)
- Electronic self-diagnostic system for errors with visual and audible alarms, as well as relay potential changeover contact for central monitoring
- Independent temperature safety device class 3.1 (DIN 12880) with optical and audible temperature alarm
- RS 422 interface for communication software APT-COM™ DataControlSystem
- 2 perforated stainless steel shelves with standard equipment and O₂ control



9.883 701



9.883 707

Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
CB 53	53	400 x 332 x 400	580 x 545 x 720	1	9.883 725
CB 150	150	500 x 500 x 600	680 x 722 x 919	1	9.883 701
CB 210	210	560 x 500 x 750	740 x 722 x 1069	1	9.883 702
CB 53*	53	400 x 332 x 400	580 x 545 x 720	1	9.883 620
CB 150*	150	500 x 500 x 600	680 x 722 x 919	1	9.883 707
CB 210*	210	560 x 500 x 750	740 x 722 x 1069	1	9.883 706
CB 53**	53	400 x 332 x 400	580 x 545 x 720	1	9.883 724
CB 150**	150	500 x 500 x 600	680 x 722 x 919	1	9.883 704
CB 210**	210	560 x 500 x 750	740 x 722 x 1069	1	9.883 703
CB 53***	53	400 x 332 x 400	580 x 545 x 720	1	7.900 354
CB 150***	150	400 x 332 x 400	680 x 722 x 919	1	9.883 709
CB 210***	210	560 x 500 x 750	740 x 722 x 1069	1	9.883 708

* With divided glass door.

**With O₂ control.

***With O₂ control and divided glass door.

1 Midi 40 CO₂ Incubator with small volume

NEW!

The Thermo Scientific Midi 40 CO₂ incubator is designed specifically for cell culture scientists who require a compact culturing workspace to handle small workloads, perform personal use applications, or simply address limited space environments. With its 1.4 cu ft (40 L) capacity, the Midi 40 adds a new dimension to the Thermo Scientific portfolio of leading CO₂ incubation solutions. It delivers the performance and capabilities of full-sized incubators in a space-saving footprint, ideal for those who wish to avoid shared-use environments that can present potential contamination risk through unnecessary sample handling and repeated door openings. Easy to operate and economical to own, the fully featured Midi 40 offers remarkable value in a small footprint.

Thermo Scientific

The Midi 40 includes:

- Advanced IntrLogic™ II microprocessor: bright digital display and intuitive touchpad for simplified entry of temperature, CO₂ and alarm data, with keyed setpoint switch to prevent unauthorized changes to your operating parameters.
- Stainless steel culture chamber: seamless, non-corrosive and exceptionally easy to clean. The Midi 40 is provided with four removable shelves.
- Highly efficient direct heating design: provides even heat distribution to all sides of the chamber, for accurate control with uniformity of ±0.1°C.
- Precise and reliable CO₂ control: featuring accurate thermal conductivity sensor located directly in the chamber, ensuring responsive control and long service life.
- Removable water reservoir: generates relative humidity values up to 95% with rapid recovery rates that promote optimal cell growth.
- Heated inner glass door: provides sample security while preventing unwanted condensation.
- Convenient data communication: RS-485 signal output is standard, in addition to audible and visual alarm functions to ensure proper operations.

Type	PK	Cat. No.
Midi-40	1	4.009 273

1


Accessories for Midi 40 CO₂ Incubator

Thermo Scientific

Description	PK	Cat. No.
Shelf, Midi 40 CO ₂	1	4.009 356
2-STAGE REGULATOR - CO ₂	1	4.009 534
DISPOSABLE FILTER 99.97	1	4.009 525
FYRITE FLUID CO ₂	3	4.009 352

1 2 3 Shaking Incubators 3031, 3032 and 3033 with Orbital Motion

Specialising in gentle mixing as well as vigorous shaking, GFL Shaking Incubators are used for applications that require exactly reproducible orbital motions and temperatures of up to +70°C, e.g. incubations, fermentations, homogenisations, chemical and biochemical reactions, enzyme and tissue studies, as well as for bacterial culture. The units bear the CE mark.

Incubation time, temperature and shaking frequency regulation are microprocessor-controlled. Fast and exact temperature setting, exact reproducibility of set values.

- built-in RS232 serial interface for remote control of measurement and control tasks via PC, compatible with PC software programme e.g. labworldsoft®
- temperature range: from 8°C above ambient to +70°C. Serial cooling coil for operation below ambient temperature. Operation with cooling coil: +20°C to +70°C (dependent on cooling media and ambient temperature)
- temperature constancy (temporal): ±0.2°C
- soft-touch keys with clear symbols
- setting and display of temperature (in 0.1°C increments), shaking frequency and incubation time: digital - LED.
- optimum temperature distribution throughout the cabinet interior with a ventilator
- electronic monitoring of the temperature controller. Over-temperature cut-out: electrical/dependent on the set value, to protect the test substances, and electro-mechanically, to protect the unit. Under-temperature cut-out: electrical, max. 9.9°C below set temperature.
- shaking motion: orbital, can be switched on and off.
- silent and robust shaking mechanism with gentle start-up.
- Incubation time: 1 minute to 999:59 hours
- the microprocessor-controlled timer continuously displays the remaining period of the incubation process and triggers an audible alarm at the finish
- Maximum load 3031/3032/3033: 12kg/12kg/20kg
- Supply requirements: 230V 50/60 Hz, 0.8kW (other voltages are available on request)

Type 3031:

Lift-up, transparent acrylic cover. Volume/capacity: approx. 46 litres/1 shaking tray. Outer casing made of heavy-duty ABS and powder-coated, electrolytically galvanized sheet steel. The aluminium shaking platform includes four plastic pins to accept a shaking tray or a universal mount (accessories).

- shaking frequency: 10 to 250rpm max.

Type 3032 (one-door design)/Type 3033 (two-door design):

Acrylic window panels. Volume: approx. 45L/approx. 150L, capacity: 2 shaking trays (for vessel heights > 150 mm/ 180 mm: 1 shaking tray). Outer casing in powder-coated, electrolytically galvanized sheet steel. Interior cabinet, the insides of the doors and the shaking platform are stainless steel. The frame, permitting the use of two shaking trays, is included. A fluorescent lamp for interior illumination is separated from the interior cabinet by a diffusing screen.

- Shaking speed type 2032: 10 to max. 250rpm
- Shaking speed type 3033: 10 to max. 250rpm, if only bottom tray is fitted, max. 200rpm, if both trays are fitted

GFL



Type	Amplitude mm	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	Max. kg	Weight kg	PK	Cat. No.
3031	30	450 x 450 x 280	525 x 665 x 570	12	38.50	1	9.837 926
3032	25	450 x 300 x 320	710 x 650 x 710	12	70.00	1	9.837 927
3033	25	674 x 540 x 430	930 x 890 x 820	20	135.00	1	9.837 929

4 Trays for Shaking Incubators

Tray 3966 for Shaking Incubator 3031 and GFL Shakers 3011 to 3018
Stainless steel, 450mm x 450mm. With holes to accept clamps for Erlenmeyer flasks and other accessories.

Tray 3970 for Shaking Incubator 3032
Stainless steel, 450mm x 300mm. With holes to accept clamps for Erlenmeyer flasks and other accessories.

Tray 3980 for Shaking Incubator 3033 and GFL Shakers 3019 to 3020
Anodised aluminium, 670mm x 537mm. With holes to accept clamps for Erlenmeyer flasks and other accessories.

Type	For Type	PK	Cat. No.
Tray 3966	3031 / 3011 to 3018	1	9.837 936
Tray 3970	3032	1	9.837 990
Tray 3980	3033 / 3019 / 3020	1	9.837 980

GFL



Heating/Shaking Incubators



1 Clamps for Erlenmeyer Flasks

Clamps for Shaking Incubators 3031/3032/3033 with orbital motion, to be screwed onto trays **3966, 3970 and 3980**. Made of stainless steel. Complete with fixing material (see also GFL Shakers 3005 to 3020).

GFL

Type	For flasks ml	Max. clips per platform refs. 3966/3970/3980	PK	Cat. No.
3983	25	79/52/99	1	9.837 983
3984	50	49/33/99	1	9.837 984
3985	100	36/22/50	1	9.837 985
3986	200	22/15/26	1	9.837 986
3987	250-300	16/13/26	1	9.837 987
3988	500	12/10/26	1	9.837 988
3989	1000	9/6/12	1	9.837 989
3990	2000	-/3/9	1	9.837 991

3032 (Shaking tray 3970): Clamps for 300ml and larger: 1 tray only can be used
3033 (Shaking tray 3980): Clamps for 1000ml and larger: 1 tray only can be used

Other clamps on request

➔ Other Accessories for GFL Shaking Incubators see Shakers, page 454.



2 3 Mini Incubator 4010 and Mini Tube Roller Incubator 4020

Both models are well suited for incubations that require exactly reproducible temperatures in standard and research laboratory applications.

GFL

Mini Incubator 4010: also suitable for warming and drying of samples.

Mini Tube Roller Incubator 4020: also suitable for hybridisations that require exactly reproducible temperatures.

Compact, little space required for versatile applications directly on the workbench. Lift-up, transparent acrylic covers permit a clear view of the cultures in the interior cabinet. The units bear the CE mark.

- microprocessor-controlled temperature regulation, temperature range: approx. 8°C above ambient to +60°C, temperature constancy (temporal): ±0.2°C

- temperature setting and display: digital - LED, in 0.1°C increments

- fan ventilation ensures optimum temperature distribution throughout the cabinet interior

- electronic monitoring of the temperature controller, electronic overtemperature cut-out, with visual alarm at 4°C above the set value, and electro-mechanical >130°C

- soft-touch keys with clear symbols

- Outer casings made of powder-coated, electrolytically galvanized sheet steel

- W/D/H (outside): 280/510/280

- Mains supply: 230 V 50/60 Hz/0.3 kW (other are voltages on request)

- Net/gross weight: 4010 9.9/11.8kg, 4020 11.8/13.7kg

Mini Incubator 4010: Perforated tray and bottom tray made of stainless steel.

Mini Tube Roller Incubator 4020: Removable bottle rotating device, made of stainless steel, to accept hybridisation bottles from 32mm to 76mm dia. (can be placed individually or in pairs, even with different diameters - the outer axles can be placed into pre-fabricated seats without the use of tools). Even results and high resolutions of the detections even when in continuous use due to its constant frequency of 12rpm.

Type	Internal dimensions (W x D x H) mm	Max. load kg	Capacity L	Movement type	Speed rpm	PK	Cat. No.
Mini incubator 4010	230 x 310 x 170	5	12	-	-	1	9.535 605
Mini roller incubator 4020	230 x 300 x 140	3	10	rotating	12, fixed	1	9.535 607

Special hybridisation bottles for Tube Roller Incubator 4020: see Hybridisation Incubator 7601 (accessories).

2 Shaking Incubators, SI500/SI505

The SI500 combined shaker and incubator is ideal for scientists doing cell culturing procedures, especially suspension culture applications. It is compact enough to be positioned on the laboratory bench. The SI500 platform has a versatile clamping system which secures most sizes and mixtures of flask up to 1 litre capacity. Typically, the platform will accommodate the following Erlenmeyer flasks: 12 x 250ml, or 9 x 500ml or 6 x 1000ml.

The SI505 has been designed specifically to combine a bench top laboratory incubator with the specific mixing action required for microtitre plates. With a tight orbit of 1.5mm and a high speed shaking action between 250rpm and 1250rpm even the smallest of vessels can be adequately mixed.

Both of these benchtop shaking incubators have independent control of speed and temperature to avoid accidental temperature adjustment. Speed is microprocessor controller and set via the digital LED control panel. The units also incorporates a versatile timer, which can be set from 1 second to 9 days, once the timer has run down, an alarm will sound and the shaking action will cease, for safety reasons the incubator will continue to run. Both units are supplied with a retractable sample platform, to allow easier access to the samples at the back of the incubator. During operation the platform is securely locked in place, but can be easily released when required.

A range of accessory racks are available for each unit, for the SI500 racks are available to hold 1.5ml, 15ml, 30ml and 50ml sample tubes, the angle of the tubes can be adjusted up to 30°. These accessory racks are held to the orbiting platform by a patent pending Magnalock system, allowing quick coupling and de-coupling without tools. For the SI505 microtube racks for 0.2ml, 0.5ml or 1.5ml tubes are available. Please note accessory racks are not interchangeable between units.

To minimize sample evaporation the SI505 is supplied with stainless steel water trays, these are strategically placed within the unit to maintain a humidity of up to 80%, thus dramatically reducing sample evaporation over a 24 hour period.

Both units also features a USB connection which allows the incubator to be connected to a PC for long term monitoring of the incubator temperature, over night of weekends for example.

Specifications

Temperature range:	SI500/SI505 Ambient + 5°C to + 60°C/+7°C to 60°C
Samples:	Adj. platform or tube racks /4 x Microtitre plate or 2 x Microtube racks
Display resolution:	0.1°C
Precision:	±0.5°C at 37°C
Fluctuation:	±0.5°C at 37°C
Variation:	< 0.5°C at 37°C/< 0.6°C at 37°C
Speed range:	30 to 300rpm/250 to 1250rpm
Speed control:	Digital, in 1rpm increments/Digital, in 10rpm increments
Timer:	min/sec, hr/min, days/hrs
Orbit diameter:	16mm/1.5mm
Platform size:	335 x 335mm/220 x 220mm
Internal dimensions (WxDxH):	422 x 408 x 297/307 x 300 x 190mm
Overall dimensions (WxDxH):	3450 x 474 x 522/61 x 405 x 430mm
Maximum vessel height:	250mm
Maximum load:	10kg/1kg
Net weight:	30kg/22.5kg
Heater power:	250W/200W
Supply requirements:	230V 50Hz

Type	PK	Cat. No.
SI500	1	9.951 612 1
SI505	1	9.645 350

3 Tube racks for Shaking incubator SI500

Type	For	PK	Cat. No.
SI500/1	64 x 1.5ml microtubes	1	6.234 298
SI500/2	25 x 15ml centrifuge tubes	1	9.645 346
SI500/3	12 x 50ml centrifuge tubes	1	6.234 299
SI500/4	16 x 30ml universal containers	1	9.645 347

1



9.951 612

2



Stuart

3



Heating/Test incubators



9.868 000



9.868 001

Constant Climate Chamber Model HPP 108/ HPP 749

Memmert

Standard Features

Ventilation and Control:

- forced air, fan ventilation
- adaptive, fuzzy-supported, multifunctional PID-controller, for stepless control of Peltier heating/cooling system - without refrigerant
- autodiagnostic system with fault indication on temperature and humidity control
- 2 x Class A, 4-wire circuit, Pt100 sensors, mutually monitoring and maintaining performance at the same temperature value
- digital, 7-day, programme-timer with real time clock and precise minute setting
- integrated timer for heating/cooling profiles of up to 40 ramps, each segment adjustable from 1min. up to 999 hours
- digital display (LED) of all set parameters, such as temperature, day, time, humidity and set-up values - language chosen in setup
- digital display of set /actual values: 0.1°C
- GLP-compliant archiving of all relevant data, via 1024kB memory data logger
- non-volatile memory
- parallel printer interface (incl. real-time clock with date function) for all PCL3-compatible, ink-jet printers, providing GLP-compliant documentation
- USB interface and Memmert "Celsius" software for programming and documentation
- chip card control incl. one MEMoryCard XL with 32 kB (up to 40 ramps)
- incl. works calibration certificate for +10°C and +37°C at 60% RH

Humidifying and dehumidifying system:

- active humidifying and dehumidifying from 10 to 90% RH with digital display (resolution: 0.5%, setting accuracy 1% RH)
- humidity supplied by distilled water from external tank using self-priming pump
- humidification by hot steam generator
- dehumidification by cold-trap using Peltier technology

Multiple Overtemperature Protection

- with audible and visual alarms in case of over-/under temperature and/or humidity, or empty water tank
- independently working, digitally adjustable electronic overtemperature controller, TWW protection class 3.3
- additional adjustable Auto-Safety-Function "ASF" for over- and undertemperature automatically following the set value at a preset tolerance range

Textured Stainless Steel Housing:

- fully insulated, stainless steel door with double locking and 4-point adjustment
- inner glass door
- rear panel: zinc-plated steel

Interior:

- easy-to-clean, hermetically welded, 1.4301 (ASTM 304) stainless steel interior, reinforced by deep-drawn ribbing, with 2 stainless steel wire shelves (HPP 749), 2 perforated stainless steel shelves (HPP 108)

Heating- and cooling system:

- energy-saving, Peltier heating-/cooling system integrated into the rear housing

Temperature Range:

- from +5°C up to +70°C
- from +10°C up to + 40°C with light
- temperature variation in chamber at 10°C and 37°C: < ±0.4°C HPP108, ≤ ±0.5°C HPP 749

Voltage/Power Rating:

- 230V (±10%) 50/60Hz

Type	Capacity	Internal dimensions (W x D x H)		Shelf support ribs/shelves	Housing (W x D x H)	Weight	Rating	PK	Cat. No.
		l	mm						
HPP 108	108	560	400 x 480	5	710 x 640* x 760	66	350**	1	9.868 000 1
HPP 749	749	1040	600 x 1200	14	1190 x 840* x 1620	218	1050	1	9.868 001 2

* Depth without door handle, please add 38mm
HPP 108 with lightmodule bei voller Lichtstärke: 400 W

1 Accessories for Constant Climate Chamber HPP



Memmert

Accessories for Constant Climate Chamber HPP 108

Cold white light module (5.500 Kelvin), 10 LED light strips arranged on the side walls of the interior, illumination strength (measured from a distance of 10 cm) 10.000 Lux (180 µmol/(m2*s), programme-controlled dimming from 0 to 100 % in 10 % steps, ramp programming in combination with temperature and humidity

Light module cold white 5.500 Kelvin + warm white 2.700 Kelvin; 10 LED light strips (5 alternating cold white light strips and 5 warm white light strips) arranged on the side walls of the interior, illumination strength (measured from a distance of 10 cm) 10.000 Lux (180 µmol/(m2*s), programme-controlled dimming from 0 to 100 % in 10 % steps, ramp programming in combination with temperature and humidity



Type	Description	PK	Cat. No.
E0	Perforated stainless steel shelf (HPP749)	1	6.237 866
E0	Perforated stainless steel shelf (HPP108)	1	6.232 520
E3	Stainless Steel Grid	1	6.232 433
E3	Stainless Steel Grid	1	6.222 688
Q1	IQ check list with works test data for unit as support for validation by customer	1	9.867 729
Q2	OQ check list with works test data for one freely selectable humidity and temperature value incl. temperature distribution survey for 27 measuring points DIN 12 880: 2007-05	1	9.867 693
Q3	Extra for FDA conformance software, "Celsius FDA-Edition"	1	9.867 730
V1	Oven-linked authorisation card (user ID card)	1	9.867 725
V2	Interface RS485 (for cross linking of several devices) instead of USB	1	9.867 713
V3	Temperature profile	1	9.867 726
V4	MEMoryCard XL	1	9.867 727
W4	Ethernet interface instead of USB Software "Celsius- Ethernet-Edition" included	1	9.867 720
W6	RS232 instead of USB	1	9.867 722
W7	USB connection cable for computer interface	1	9.867 724
T7	Light module	1	9.868 002
T8	Light module	1	9.868 003



Heating/Test incubators

1



6.229 955

Humidity Chamber Model HCP 108

Memmert

Ventilation and Control:

- uniform atmosphere and temperature distribution owing to enclosed non-turbulent ventilation system in working chamber
- adaptive, fuzzy-supported multifunctional digital microprocessor PID-controller
- autodiagnostic system with fault indication on temperature and humidity control
- 2 x Class A , 4-wire-circuit, Pt100 sensors mutually monitoring and maintaining the performance at the same temperature value
- digital 7-day-programme-timer with real time clock, precise minute setting
- integrated timer for tempering profiles of up to 40 ramps, each segment adjustable from 1 min.up to 999 hours
- digital display (LED) of all set parameters, such as temperature, weekdays, time, humidity and set-up values - language to be chosen in setup
- digital display of set values (resolution: 0.1°C below 99.9°C, 0.5°C above 100°C) and actual values (resolution: 0.1°C) of temperature (LED)
- active control for humidifying and dehumidifying (20 to 95% rh) with digital display of relative humidity - resolution of display: 0.5%, setting accuracy 1%
- humidity supplied by distilled water from external tank using self-priming pump
- long-term documentation (ring store) of all relevant data, GLP-compliant data logger - 1024 kB
- non-volatile memory
- parallel printer interface (incl. real-time clock with date function) for all PCL3-compatible ink-jet printers for GLP-conforming documentation
- USB interface including Memmert "Celsius" software for programming and documentation
- chip card control incl. one MEMoryCard XL with 32 kB (up to 40 ramps)
- 2nd chip card (STERICard) for sterilization of working chamber with fixed cycle (4 hours/160°C) without removal of sensors

Heating Concept:

- large-area multi-function heating system on four sides incl. additional door and back heating to avoid condensation
- incl. works calibration certificate for +60°C

Multiple Overtemperature Protection

- with audible and visual alarm in case of over-/undertemperature and over-/under-humidity, open door and empty water tank
- independently working, digitally adjustable electronic overtemperature controller TWW protection class 3.1
- additional adjustable Auto-Safety-Function "ASF" for over- and undertemperature automatically following the set value at a preset tolerance range
- mechanical temperature limiter TB class 1 switching the heating off at approx. 10°C above max. oven temperature

Textured stainless Steel housing:

- W x H x D: 630 x 938 x 650mm
- fully insulated stainless steel door with double locking and 4-point adjustment
- inner glass door
- zinc-plated steel rear panel

Interior:

- easy-to-clean interior, made of stainless steel, reinforced by deep drawn ribbing, material no. 1.4301, electropolished and hermetically welded
- 2 perforated stainless steel shelves

Temperature Range:

- with humidity: from +20°C (however at least 8°C above ambient temperature) up to + 90°C
- without humidity: from +20°C (however at least 8°C above ambient temperature) up to + 160°C
- temperature variation in chamber at 50°C: < ±0.3°C

Voltage/Power Rating:

- 230V (±10%) 50/60Hz

Type	Capacity	Internal dimensions (W x D x H)	Shelf support ribs/shelves	Housing (W x D x H)	Weight	Rating	PK	Cat. No.
	l	mm		mm	kg	W		
HCP 108	108	560 x 400 x 480	5/2	710 x 550* x 778	70	1000	1	6.229 955
HCP 153	153	480 x 500 x 640	7/2	630 x 650* x 938	82	1500	1	9.868 006
HCP 246	246	640 x 600 x 640	7/2	790 x 750* x 938	110	2000	1	6.230 984

* Depth without door handle, please add 38mm

Accessories HCP 108

Memmert

Type	Description	PK	Cat. No.
E7	Additional stainless steel shelf	1	9.867 707
Q1	IQ check list with works test data for unit as support for validation by customer	1	9.867 729
Q2	OQ check list with works test data for one freely selectable humidity and temperature value incl. temperature distribution survey for 27 measuring points	1	9.867 693
Q3	Extra for FDA conformance software, "Celsius FDA-Edition"	1	9.867 730
V1	Oven linked authorisation (user ID card)	1	9.867 701
V2	Interface RS485 (for cross linking of several devices)	1	9.867 713
V3	Temperature profile	1	9.867 726
V4	MEMoryCard XL	1	9.867 727

1 Climatic Test Chamber CTC/Temperature Test chamber TTC

Memmert

Ventilation and Control:

- high-performance air fan in working chamber
- depending on operation status automatically variable fan speed with manual adjustment from 10% to 100%
- adaptive, fuzzy-supported multifunctional digital microprocessor PID-controller
- autodiagnostic system with fault indication on temperature and humidity control
- 2 x Class A, 4-wire circuit, Pt100 sensors, mutually monitoring and maintaining performance at the same temperature value
- digital 7-day-programme-timer with real time clock, precise minute setting
- integral timer for heating profiles of up to 40 ramps, each segment adjustable from 1 min. up to 999 hours
- digital display (LED) of all set parameters, such as temperature, weekdays, time, humidity and set-up values - language to be chosen in setup
- digital display of set values (resolution: 0.1°C below 99.9°C, 0.5°C above 100°C) and actual values (resolution: 0.1°C) of temperature (LED)
- 2 x 10L sumps acting as condensate collectors, on telescopic slide mounts
- long-term documenting (ring store) of all relevant data, GLP-conforming as data logger - 1024 kB
- programme stored on power failure
- parallel printer interface (incl. real-time clock with date function) for all PCL3-compatible ink-jet printers for GLP-conforming documentation
- USB interface including Memmert "Celsius" software for programming and documentation
- chip card control incl. one MEMoryCard XL with 32 kB (up to 40 ramps)
- incl. works calibration certificate for -20°C and +160°C
- incl. works calibration certificate for +30°C at 60% RH

Heating concept:

- high-performance ring heaters with optimised air circulation
- door heating to avoid condensate

Cooling Concept

- twin compressor
- speed adjustable condenser fan
- refrigerant R404A

Multiple Overtemperature Protection

- with audible and visual alarm in case of over-/undertemperature and over-/under-humidity, open door and empty water tank
- independently working, digitally adjustable electronic overtemperature controller, TWW protection class 3.3
- additional adjustable Auto-Safety-Function "ASF" for over- and undertemperature automatically following the set value at a preset tolerance range
- mechanical temperature limiter TB class 1 switching the heating off at approx. 10°C above max. oven temperature

Temperature range:

with humidity control: from +10°C up to +95°C
 without humidity control: from -42°C up to +190°C

Standards for CTC additionally:

- Electronically controlled active humidification and dehumidification from 10% to 98% rh
- incl. works calibration certificate for +30°C at 60% rh



Type	Capacity	Internal dimensions (W x D x H)		Housing (W x D x H)	Shelf support ribs/shelves	Weight	Rating	PK	Cat. No.
		l	mm						
CTC 256	256	640	597 x 670	898 x 1100 x 1730	6/1	297	7000	1	9.868 010
TTC 256	256	640	597 x 670	898 x 1100 x 1730	6/1	297	7000	1	9.868 011

Accessories CTC 256/ TTC 256

Memmert

Type	Description	PK	Cat. No.
B0	Full-sight glass door, heated	1	9.868 015
E3	Stainless steel grid	1	9.868 016
W9	External control and logging package	1	9.868 017
Q1	IQ check list with works test data for unit as support for validation by customer	1	9.867 729
Q2	OQ check list with works test data for one freely selectable humidity and temperature value incl. temperature distribution survey for 27 measuring points	1	9.867 693
Q3	Extra for FDA conformance software, "Celsius FDA-Edition"	1	9.867 730
V1	Oven-linked authorisation card (user ID card)	1	9.867 725
V2	RS485 interface (for cross linking of several devices) instead of USB	1	9.867 713
V3	Temperature profile	1	9.867 726
V4	MEMoryCard XL	1	9.867 727

1



1 Environmental simulation chambers, MK series

NEW!

BINDER

The BINDER MK series chamber is well-suited for all heating and cooling testing between -40°C and 180°C. The APT.line™ pre-heating chamber technology uniquely simulates a natural environment. For cyclical temperature testing, it is a smart alternative to complex individual solutions.

Advantages:

- State-of-the-art reliability
- User-friendly chamber interior
- Comprehensive standard equipment

Equipment:

- Electronically controlled APT.line™ preheating chamber
- Temperature range of -40°C to 180°C
- MCS controller with 25 storable programs of 100 sections each for a maximum of 500 program segments
- Heated viewing window with LED interior lighting
- Access port dia. 80mm top (MK 53), dia. 50mm, left side (MK 115, 240), 2 access ports dia. 80mm right and left side (MK 720)
- Independent adjustable temperature safety device class 2 (DIN 12880)
- Ethernet or RS 422 interface APT-COM™ DataControlSystem software

Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	Description	PK	Cat. No.
MK 53	53	402 x 330 x 402	740 x 740 x 1222	Standard	1	9.883 560
MK 115	115	600 x 400 x 480	995 x 850 x 1718	Standard	1	9.883 640
MK 240	240	735 x 434 x 700	1140 x 946 x 1713	Standard	1	9.883 641
MK 720	700	1000 x 600 x 1168	1341 x 987 x 1998	Standard	1	9.883 642



Material test chambers, FP, 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.

- The specialists for demanding heating profiles
- Adjustable high air change rate

FP Series: Material test chamber with forced convection. For complex temperature testing.

M Series: Material test chambers with individual programming. Temperatures up to 300°C, high-performance fan and individual programming make it the first choice in material testing and aging testing.

Equipment:

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

BINDER



9.883 710



9.883 565

Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
FP 53	53	400 x 330 x 400	634 x 575 x 617	1	9.883 710
FP 115	115	600 x 400 x 480	834 x 645 x 702	1	9.883 711
FP 240	240	800 x 500 x 600	1034 x 745 x 822	1	9.883 712
FP 400	400	1000 x 500 x 800	1234 x 765 x 1022	1	9.883 713
FP 720	720	1000 x 600 x 1200	1234 x 865 x 1528	1	9.883 714
M 53	53	400 x 330 x 400	634 x 575 x 779	1	9.883 563
M 115	115	600 x 400 x 480	834 x 645 x 863	1	9.883 564
M 240	240	800 x 500 x 600	1034 x 745 x 984	1	9.883 565
M 400	400	1000 x 500 x 800	1234 x 765 x 1184	1	9.883 566
M 720	720	1000 x 600 x 1200	1234 x 865 x 1692	1	9.883 567

We can supply this
manufacturer's
 whole
product range !



Heating/Test incubators



9.883 584

Constant climate chambers, KBF series



BINDER

The BINDER constant climate chambers for long-term stable temperature/humidity/light simulation in one chamber. They are ideal for norm-compliant work according to ICH guidelines and work independent of water supply. Their special feature: climate and light tests can be performed at the same time in on chamber.

Advantages:

- Long-term stable test conditions
- Independent of the water supply
- one-stop solution: Temperature/humidity/light simulation in one chamber

KBF Series: Constant climate chambers. The specialist for reliable stability testing.

KBF P Series: Constant climate chambers with ICH-compliant illumination. The ICH-compliant illumination device with BINDER Q1B Synergy Light™ makes it the expert for reliable photostability testing.

KBF LQC Series: Constant climate chambers with additional photometry. The constant climate chamber with Light Quantum Control is ideal for advanced photostability testing with precision light measurement.



9.883 630

Equipment:

- Electronically controlled APT.line™ preheating chamber with cooling system
- 2 variable position illumination cassettes (KBF P)
- Temperature range 0°C to 70°C (without humidity and illumination)
- Humidity range 10% to 80% RH (without illumination cassettes)
- MCS controller with 25 storable programs of 100 sections each for a maximum of 500 program segments
- Electronically controlled humidification and dehumidification system with capacitive humidity sensor
- Inner glass door with seal
- Independent temperature safety device class 3.1 (DIN 12880) with optical and audible temperature alarm
- Access port with silicone plug diam. 30mm, left side
- Ethernet interface for communication software APT-COM™ DataControlSystem

Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
KBF 115	115	600 x 351 x 483	885 x 650 x 1050	1	9.883 630
KBF 240	240	650 x 485 x 785	925 x 800 x 1460	1	9.883 582
KBF 720	720	973 x 576 x 1250	1250 x 887 x 1925	1	9.883 579
KBF P 240	240	650 x 485 x 785	925 x 800 x 1460	1	9.883 583
KBF P 720	720	973 x 576 x 1250	1250 x 887 x 1925	1	9.883 584
KBF LQC 240	240	650 x 485 x 785	925 x 800 x 1460	1	6.236 223
KBF LQC 720	720	973 x 576 x 1250	1250 x 887 x 1925	1	6.236 224



7. Heating and cooling technology

Heating/Test incubators-Ovens, Furnaces

Climate chambers with illumination, KBW, KBWF series

Homogeneous lighting conditions with constant temperature and humidity conditions, the BINDER climate chambers with illumination. The responsive humidification system, the high-performance cooling and uniform light distribution ensure optimal growth conditions.

BINDER

Advantages:

- Homogeneous light distribution
- Natural growth conditions
- Temperature, humidity & light in one unit

KBW Series: The KBW confidently meets all demands for optimal lighting and temperature conditions for precisely defined processes.

KBWF Series: The perfect combination of heat or cold, humidity and light in one chamber: The BINDER KBWF.

Equipment:

- Electronically controlled APT.line™ preheating chamber
- Temperature range 0°C to 70°C (without humidity and illumination)
- Humidity range 10% to 80% RH (without illumination)
- 2 variable position illumination cassettes each with 5 daylight fluorescent illumination tubes
- MCS controller for temperature, humidity, and lighting control with 25 storable programs of 100 sections each for a maximum of 500 program segments, for programming of day/night cycles
- Integrated electronic chart recorder
- Controlled humidification and dehumidification system with capacitive humidity sensor
- Independent temperature safety device class 3.1 (DIN 12880) with optical and audible temperature alarm
- Access port with silicone plug diam. 30mm, left side
- RS 422 interface for communication software APT-COM™ DataControlSystem



9.883 535



9.883 576

Type	Internal volume litres	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
KBW 240	240	650 x 485 x 785	925 x 800 x 1460	1	9.883 573
KBW 400	400	650 x 485 x 1270	925 x 800 x 1945	1	9.883 535
KBW 720	720	973 x 576 x 1250	1250 x 887 x 1925	1	9.883 574
KBWF 240	240	650 x 485 x 785	925 x 800 x 1460	1	9.883 575
KBWF 720	720	973 x 576 x 1250	1250 x 887 x 1925	1	9.883 576

3 Laboratory high temperature ovens

- maximum operating temperatures of 400°C, 500°C and 600°C
- chamber capacities of 30L, 60L and 120L
- good temperature uniformity
- fast heat up and recovery times
- polished stainless steel interior
- stainless steel shelves with multi position settings
- digital overtemperature protection
- digital PID-Controller E301

Carbolite



Type	Max. temp. °C	Power W	Capacity L	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
LHT 4/30	400	1000	28	300 x 305 x 300	830 x 570 x 570	1	9.764 289
LHT 4/60	400	1500	66	400 x 405 x 400	930 x 670 x 670	1	9.764 290
LHT 4/120	400	2250	128	460 x 405 x 650	1030 x 920 x 670	1	9.764 291
HT 4/220	400	3000	227	610 x 610 x 610	1030 x 1280 x 1160	1	9.764 292
LHT 5/30	500	2000	28	300 x 305 x 300	830 x 570 x 570	1	9.764 293
LHT 5/60	500	2250	66	400 x 405 x 400	930 x 670 x 670	1	9.764 294
LHT 5/120	500	3000	128	460 x 405 x 650	1030 x 920 x 670	1	9.764 295
HT 5/220	500	4500	227	610 x 610 x 610	1030 x 1280 x 1160	1	9.764 296
LHT 6/30	600	2000	28	300 x 305 x 300	830 x 570 x 570	1	9.764 297
LHT 6/60	600	2250	66	400 x 405 x 400	930 x 670 x 670	1	9.764 298
LHT 6/120	600	3000	128	460 x 405 x 650	1030 x 920 x 670	1	9.764 299
HT 6/220	600	6000	227	610 x 610 x 610	1030 x 1280 x 1160	1	9.764 300

Heating/Ovens, Furnaces

1


1 Chamber furnaces CWF

- maximum operating temperatures of 1100°C and 1200°C *Carbolite*
- chamber capacities of 5L, 13L or 23L
- powerful, free radiating, coiled wire elements on both sides of the chamber ensure good thermal uniformity
- hard wearing, refractory insulation inside the chamber and around the chamber entrance provides good resistance to abrasion
- vertical, counter-balanced door keeps hot door insulation away from operator
- positive break, door safety switch isolates chamber from power supply, when the door is opened
- double skinned construction allows convection air flow to cool the outer case
- wide range of applications (from ashing to hardening)
- digital PID-Controller E301

Type	Max. temp. °C	Power W	Capacity L	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
CWF 11/5	1100	2400	4.70	140 x 250 x 135	375 x 485 x 585	1	9.764 251
CWF 11/13	1100	3100	13.00	200 x 325 x 200	435 x 610 x 655	1	9.764 252
CWF 11/23	1100	7500	23.00	245 x 400 x 245	505 x 675 x 705	1	9.764 253
CWF 12/5	1200	2400	4.70	140 x 250 x 135	375 x 485 x 585	1	9.764 254
CWF 12/13	1200	3100	13.00	200 x 325 x 200	435 x 610 x 655	1	9.764 255
CWF 12/23	1200	7500	23.00	245 x 400 x 245	505 x 675 x 705	1	9.764 256

2


2 Economy laboratory furnaces ELF

- maximum operating temperature of 1100°C *Carbolite*
- chamber capacity of 6, 14 and 23 litres
- powerful free radiating coiled wire elements on both sides of the chamber ensure good temperature uniformity
- hard ceramic hearth provides robust base, which can be replaced in the event of spillage
- drop-down door can be used as shelf for loading/unloading
- positive break door safety switch isolates chamber from power supply, when door is opened
- double skinned construction allows convection air flow to cool the outer case
- ideal for light duty applications requiring good thermal response
- digital PID-Controller E301

Type	Max. temp. °C	Power W	Capacity L	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
ELF 11/6B	1100	2000	6	180 x 200 x 165	410 x 420 x 580	1	9.764 101
ELF 11/14B	1100	3000	14	220 x 300 x 210	450 x 520 x 630	1	9.764 102
ELF 11/23	1100	6000	23	255 x 400 x 235	505 x 660 x 715	1	9.764 103

1 Ashing/Burn off furnaces

Carbolite

- maximum operating temperatures of 1100°C and 1200°C
- AAF models: chamber capacity of 3L, 7L and 18L
- GSM model: chamber capacity of 8L
- BWF models: chamber capacity of 13L
- constant airflow with 4 to 5 volume changes per minute ensures rapid combustion
- pre-heated air flow to maintain excellent temperature uniformity for AAF models
- 3L & 7L models supplied with inconel tray & handle for easy loading/unloading
- GSM model with fused quartz muffle with wire wound element; also ideal for minimising the presence of ceramic dust found in conventional chamber furnaces
- BWF with additional air inlet holes in the door and a tall chimney
- positive break door safety switch isolates chamber from power supply, when door is opened
- double skinned construction allows convection air flow to cool the outer case
- vertical counter balanced door keeps hot door insulation away from operator
- digital PID-Controller E301



Type	Max. temp. °C	Power W	Capacity L	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	PK	Cat. No.
AAF 11/3*	1100	2000	3.10	150 x 250 x 90	375 x 485 x 580	1	9.764 259
AAF 11/7*	1100	3900	6.90	170 x 455 x 90	430 x 740 x 650	1	9.764 260
AAF 11/18*	1100	7000	18.40	196 x 400 x 235	505 x 675 x 705	1	9.764 261
GSM 11/8	1100	3000	7.20	175 x 345 x 120	435 x 740 x 655	1	9.764 262
BWF 11/13	1100	3100	13.00	200 x 325 x 200	435 x 610 x 655	1	9.764 263
BWF 12/13	1100	3100	13.00	200 x 325 x 200	435 x 610 x 655	1	9.764 264

*with max. temperature 1200°C on request

2 Rapid incinerator

Gestigkeit

For individual and series incineration of solids and liquids. Upper platform with 8 openings of 34mm diameter, for porcelain crucibles up to 50mm diameter. Upper platform and housing made of stainless steel. With 120 minute timer with audible signal after timed period and separate continuous operation switch. A safety switch switches the mains supply off/on automatically on opening/closing the incinerator chamber. With 1.5 metre cable and earthed plug.



Type SVR/E

With electronic temperature control which allows stepless heating adjustment from 10 to 100%. Complete for use.

Type SVD 95

With digital temperature adjustment and display. Complete for use.

Type	Temp. range °C	Rating W	Dimensions (W x D x H) mm	Weight kg	Supply requirements V	PK	Cat. No.
SVR/E	950	2500	450 x 310 x 180	7.0	230	1	9.884 140
SVD 95	950	2500	450 x 310 x 180	7.0	220	1	9.884 141

Spare parts for Rapid incinerator

Type EH 400

Complete, built-in heating element; Weight 1.6kg, for SVR/E.

Gestigkeit

Type EH 95

Complete, built-in heating element and integral thermocouple, for SVD 95.

Type	PK	Cat. No.
Heating element EH 400 for SVR/E	1	9.884 142
Heating element EH 95 for SVD 95	1	9.884 143

Heating/Ovens, Furnaces

Muffle furnaces series LE 1/11 - LE 14/11

NEW!

Nabertherm

- Tmax 1100°C, 1050°C working temperature
- heating from both sides with heating elements in quartz tubes
- multi-layer fibreboard insulation within the furnace
- housing manufactured from high-grade textured stainless steel
- folding door which can be used as a clipboard
- exhaust air outlet in the furnace rear wall
- silent, solid-state power control relay
- R 6 controller supplied with models LE 2 and LE 4 with adjustable target temperature. Models LE 6 and LE 14 available with controller B 150 (one ramp, one holding time, delayed start time) or optionally with controller C 250 (9 programmes each with 4 ramps and holding times).

Type	Capacity	Rating	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	Weight kg	PK	Cat. No.
	litres	kW					
LE 1/11/R6	1	1.5	90 x 115 x 110	250 x 265 x 340	10.00	1	9.764 543
LE 2/11/R6	2	1.8	110 x 180 x 110	275 x 380 x 350	10.00	1	9.764 537
LE 4/11/R6	4	1.8	170 x 200 x 170	335 x 400 x 410	15.00	1	9.764 538
LE 6/11/B150	6	1.8	170 x 200 x 170	510 x 400 x 320	18.00	1	9.764 539
LE 6/11/P300	6	1.8	170 x 200 x 170	510 x 400 x 320	18.00	1	9.764 540
LE 14/11/B150	14	2.9	220 x 300 x 220	555 x 500 x 370	25.00	1	9.764 541
LE 14/11/P300	14	2.9	220 x 300 x 220	555 x 500 x 370	25.00	1	9.764 542

1


9.764 543

2


9.764 538

3


9.764 539

4


4 Muffle furnaces L 1/12 - L 40/11 series

NEW!

Nabertherm

- Tmax 1100°C or 1200°C
- Ceramic heating plates with built-in heating wire, easy to replace
- Hardened vacuum-fibre, high-resistance muffle
- Housing manufactured from high grade structured stainless steel
- Double-walled housing for low surface temperature and high stability
- Available with folding door (L) which can be used as a clipboard or without additional charge with a lift gate (LT), where the hot side will be averted from the user
- Adjustable air inlet in the door
- Exhaust air outlet in the furnace rear wall
- Silent electronic relay
- Controller P330 with 9 programmes each with 4 ramps and holding times, PC interface. Optional controller B180 serially with adjustable ramp holding temperature and holding time

Type	Capacity	Rating	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	Weight kg	PK	Cat. No.
	litres	kW					
L 1/12/R6	1	1.5	90 x 11 x 110	250 x 265 x 340	10.00	1	9.764 508
L3/11/P330	3	1.2	160 x 140 x 100	380 x 370 x 420	20.00	1	9.764 503
L5/11/P330	5	2.4	200 x 170 x 130	440 x 470 x 520	35.00	1	9.764 505
L9/11/P330	9	3.0	230 x 240 x 170	480 x 550 x 570	45.00	1	9.764 509
L15/11/P330	15	3.6	230 x 340 x 170	480 x 660 x 570	55.00	1	9.764 507
L24/11/P330	24	4.5	280 x 340 x 250	560 x 660 x 650	75.00	1	9.764 504
L40/11/P330	40	6.0	320 x 490 x 250	600 x 790 x 650	95.00	1	9.764 506

Other models available on request.

1 2 High-temperature Tube Furnaces RHTH/RHTV series

NEW!

Nabertherm

The high-temperature tube furnaces are available in either horizontal (type RHTH) or vertical (type RHTV) designs. High-quality insulation materials made of vacuum-formed fibre plates enable energy-saving operation and a fast heating time due to low heat storage and heat conductivity. By using different gas supply systems, operations can be performed under a protective gas atmosphere, vacuum, or even with flammable gasses.

- Tmax 1600°C, 1700°C or 1800°C
- MoSi2 heating elements, mounted vertically for easy replacement
- Insulation with vacuum-formed ceramic fibre plates
- Rectangular outer housing with slots for convection cooling
- Models RHTV with hinges for wall mounting
- Housing made of sheets of textured stainless steel
- Ceramic working tube made of material C 799 incl. fibre plugs operation under air
- Type B thermocouple
- Power unit with low-voltage transformer and thyristor
- Switchgear and control unit separate from furnace in separate floor standing cabinet

Additional equipment:

- Over-temperature limit controller with manual reset for thermal protection class 2 in accordance with EN 60519-2 as temperature limiter to protect the oven and load
- Charge control with temperature measurement in the working tube and in the oven chamber behind the tube
- Working tubes designed for process requirements
- Display of inner tube temperature with additional thermocouple
- Gas-tight flanges for protective gas and vacuum operation
- Manual or automatic gas supply system
- Three- or five-zone control for optimization of temperature uniformity
- Check valve at gas outlet avoids intrusion of false air
- Stand for vertical operation

1



2



Type	Tube length	Tube dia.	Rating	External dimensions (W x D x H)	PK	Cat. No.
	mm	mm	kW	mm		
RHTH 120/150	470	50.0	5.4	470 x 550 x 640	1	9.764 560
RHTH 120/300	620	80.0	9.0	620 x 550 x 640	1	9.764 561
RHTH 120/600	920	120.0	14.4	920 x 550 x 640	1	9.764 562
RHTV 120/150	480	50.0	5.4	570 x 650 x 510	1	9.764 563
RHTV 120/300	630	80.0	10.3	570 x 650 x 660	1	9.764 564
RHTV 120/600	880	120.0	19.0	570 x 650 x 960	1	9.764 565

Oven with optional fumigation package II.

3 Tube furnaces

Carbolite

- maximum operating temperature 1200°C
- tube diameters up to 110mm
- heated lengths of 200, 300, 400, 600 and 900mm
- resistance wire heating elements are semiembedded in rigidised low thermal mass insulation
- the split design offers the flexibility to lower or wrap the furnace around a fixed item
- removable half tube adapters allow rapid changes for different size worktubes or workpieces up to 110mm outer diameter
- HST built on the horizontal base with a separate control box
- VST built on the vertical stand with a separate control box
- digital PID-Controller E301

3



Type	Max. temp.	Zones	Heated zone	Tube length	PK	Cat. No.
	°C		mm	mm		
HST 12/-/200	1200	1	200	350	1	9.764 236
HST 12/-/300	1200	1	300	450	1	9.764 237
HST 12/-/400	1200	1	400	550	1	9.764 238
HST 12/-/600	1200	1	600	750	1	9.764 239
HST 12/-/900	1200	1	900	1050	1	9.764 240
VST 12/-/200	1200	1	200	350	1	9.764 241
VST 12/-/300	1200	1	300	450	1	9.764 242
VST 12/-/400	1200	1	400	550	1	9.764 243
VST 12/-/600	1200	1	600	750	1	9.764 244
VST 12/-/900	1200	1	900	1050	1	9.764 245
HZS 12/-/600	1200	3	600	750	1	9.764 246
HZS 12/-/900	1200	3	900	1050	1	9.764 247
TVS 12/-/600	1200	3	600	750	1	9.764 248
TVS 12/-/900	1200	3	900	1050	1	9.764 249



1 Infra-red furnace (NEW!) Behr

The behr IRF 10 programmable infrared furnace the optimum solution for many tasks in the laboratory, e.g.:

- Temperature range up to 1150°C
- Extremely short heating period (e.g. from room temperature to 1000°C in 10 sec)
- Up to 5 ramps and 5 heating rates can be programmed optionally. The program controls the individual analysis phases exactly and in a reproducible manner, in the meantime the sample boat remains in the same place
- Cooling with heat pipes no coolant required
- Quick cooling down with the heat pipe technique and opening of the kiln
- Combustion chamber which can be viewed by the user: The user can push back the upper cylindrical shell (furnace lid) on rollers
- The use of silica combustion tubes with different dimensions allows adaptation to different applications, sample materials and sample quantities
- Two flow meters to connect 2 type of gas, e.g. oxygen and an inert gas
- RS232 serial interface
- Control via PC possible

Specifications

Maximum furnace temperature along focal line:	1150°C
Tube diameter, external.:	18 to 28mm
IR furnace length (heated length):	200mm
Maximum radiation strength:	1.5kW
Dimensions (W x H x D):	360mm x 440mm x 420mm
Supply:	230V 50Hz

Type	For	PK	Cat. No.
Infrared furnace*	silica tube 18mm to 20mm	1	9.882 105
Infrared furnace	silica tube 22mm to 24mm	1	9.882 130
Infrared furnace	silica tube 26mm to 28mm	1	9.882 131

*without silica tube



2 Single hotplate Ceran® (NEW!)

Housing made of stainless steel, brushed and polished, in a unique Softline Design, Schott Ceran cooking surface, adjustable power control with power-saving two-circle HiLight technique, thus extra large heating zone (dia. 210mm) can be activated, thermal shutdown and automatic cooking system, residual heat indicator and warning light.

Specifications:

Heat output	
1. Heating area:	dia. 140mm, 1000W
2. Heating area:	dia. 210mm, 2200W
Supply requirements:	230 V

Type	PK	Cat. No.
Single hotplate Ceran®	1	9.645 510

We can supply this
manufacturer's
 whole
product range !



7. Heating and cooling technology

Heating/Hotplates

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

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

Specifications

Heating function

Temperature display:	digital
Heat output	
C-MAG HP 4:	250W
C-MAG HP 7:	1000W
C-MAG HP 10:	1500W
Heating rate (1 litre H ₂ O)	
C-MAG HP 4:	2.5K/min
C-MAG HP 7/HP 10:	5K/min
Temperature range:	50 to 500°C
Setting accuracy:	±10K
Safety circuit fixed:	550°C
Control accuracy with sensor	
C-MAG HP 4:	-
C-MAG HP 7/HP 10:	ETS-D5/±0.5 K

Heating plate

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

Tested to DIN EN IEC 61010-1.

Type	Dimensions (W x D x H) mm	Weight kg	PK	Cat. No.
C-MAG HP 4	150 x 260 x 105	3	1	9.720 496 1
C-MAG HP 7	220 x 330 x 105	5	1	9.720 497 2
C-MAG HP 10	300 x 415 x 105	6	1	9.720 498 3

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

1



9.720 496

2



9.720 497

3



9.720 498

4 Laboratory hotplates, SLK series

The heating surface of both models is made of CERAN® glass ceramic panels which are well-known for their tried and tested reliability. These plates are ideal for use as laboratory hotplates. They offer excellent chemical resistance with high-grade surface quality and are therefore easy to clean. Due to their excellent thermal properties cold water can be poured over glass ceramic plates when hot without causing any damage.

SLK 1 and SLK 2:

For rapid and safe heating of liquids using a radiant heating element. Heat can be adjusted over 9 stages using an infrared touch panel and at level 9 reaches an output of 1.2 or 1.8kW respectively. An overtemperature cut-out prevents overheating.

Type	Heated zone mm	Rating W	Dimensions (W x D x H) mm	PK	Cat. No.
SLK 1	280 x 280	1200	295 x 395 x 110	1	9.645 610
SLK 2	280 x 280	1800	295 x 395 x 110	1	9.645 611

4



SI Analytics GmbH

Heating/Hotplates



1 2 Hotplate, SB 160

Energy regulator control with arbitrarily scaled dial heat control. cast aluminium/silicon hotplate. Maximum temperature 325°C. Warning light comes on if plate temperature exceeds 50°C. A support rod can be mounted within the top of the outer casing. For 230V a.c. supplies. With BioCote, silver-based, antimicrobial protection.

Stuart

Overall dimensions (WxDxH): 190 x 300 x 112mm
 Plate dimensions (W x D): 160 x 160mm

Type	Max. temp. °C	Power W	PK	Cat. No.
SB 160	325	700	1	9.645 300



3 4 Hotplates, analogue, Stuart 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 230V 50/60 Hz single phase supplies. With BioCote, silver-based, antimicrobial protection. Maximum temperature as indicated.

Stuart



Type	Max. temp. °C	Hot-plate mm	Weight kg	Rating W	Internal dimensions (W x D x H) mm	PK	Cat. No.
CB300	450	300 x 300	6.00	1200	300 x 365 x 105	1	9.645 338
CB500	375	500 x 300	12.00	2250	520 x 360 x 130	1	9.645 316



5 6 Hotplates, analogue, Stuart 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 300mm x 300mm top plate model has a retort rod mounting at the rear of the housing. With BioCote, silver-based, antimicrobial protection.

Stuart

Model

Top plate:
 Overall WxDxH:
 Weight:
 Power:

SB 300

300mm x 300mm
 300mm x 365mm x 105mm
 6kg
 600W

Model

Top plate:
 Overall WxDxH:
 Weight:
 Power:

SB 500

500mm x 300mm
 520mm x 360mm x 130mm
 12kg
 1500W

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

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



3 Hotplates digital, SD 300 and SD 500

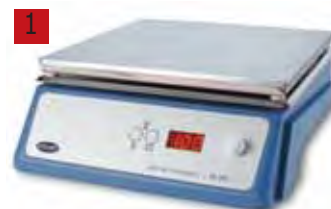
Maximum temperature 300°C. Digital setting and control of plate temperature with 1°C resolution and cast aluminium/silicon alloy top plate. The 300mm x 300mm top plate model has a retort rod mounting at the rear of the housing. With BioCote, silver-based, antimicrobial protection.

Stuart

Model SD300
 Top plate: 300mm x 300mm
 Overall (WxDxH): 300mm x 365mm x 105mm
 Weight: 6kg
 Power: 600W

Model SD500
 Top plate: 500mm x 300mm
 Overall (WxDxH): 520mm x 360mm x 130mm
 Weight: 12kg
 Power: 1500W
 For 230V 50/60 Hz single phase supplies.

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



9.645 320



9.645 321



4 Hotplate with Stirrer, US152 and UC152

NEW!

Stuart

- Choice of top plate: Robust coated aluminium; Chemically resistant ceramic
- Flashing "Hot" warning light, mains independent
- Accurate temperature control with LED indicator scale
- Compact space saving design

Stylish and economical general purpose hotplate stirrers designed with safety as well as performance in mind. The compact shape takes up less bench space and makes storage easier. The hotplate has an innovative LED temperature indicator scale and can also be used in conjunction with the SCT1 digital contact thermometer to accurately control sample temperature. The "Hot" warning light will flash whenever the plate temperature is above 50°C even when the hotplate is turned off and unplugged from the mains. Powerful magnets and motor give stirring speeds up to 1500rpm and is capable of mixing large volumes (up to 15 litres).

Model US152 has a robust aluminium/silicon alloy top plate for excellent heat transmission. The top plate has a thin ceramic coating for added chemical resistance. A 700W element gives rapid heating and ensures even temperature distribution across the whole surface of the plate.

Model UC152 has a glass ceramic top which has excellent chemical resistance. The surface is easy to clean and the thermal properties allow very high plate temperatures while ensuring the edges stay cooler, reducing the chance of accidental burns. The white surface ensures good visibility of colour changes.

Both models have an integral fitting for a retort rod and are supplied with 2 x 25mm PTFE coated stirring bars.

Specification US152/UC152
 Plate Material: Coated Aluminium/Silicon/Glass ceramic
 Plate Dimensions: 150 x 150mm
 Heated Area: 150 x 150mm/120 x 120mm
 Heater Power: 700W/500W
 Max plate temp: 325°C/450°C
 Stirrer Speed: 100-2000rpm
 Maximum Stirring Capacity: 15L*
 Dimensions (w x d x h): 172 x 248 x 120mm/172 x 248 x 122mm
 Weight: 2.9kg
 Electrical supply: 230V, 50Hz, 750W/230V, 50Hz, 550W
 IP Rating: IP 32

Type	Description	PK	Cat. No.
US152	Stirrer/hotplate, ceramic plate	1	9.645 295
UC152	Stirrer/hotplate, coated aluminium plate	1	9.645 296 5
SCT1	Digital contact thermometer	1	9.645 342 6
SR1	Retort rod, 600 x 12mm diameter	1	9.645 335



9.645 296



9.645 342

Heating/Hotplates

1


1 High-performance hotplates

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

Gestigkeit

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

2


2 High-performance hotplate

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

Gestigkeit

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

3


3 Precision hotplate, PZ 44

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

Gestigkeit

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

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

Precision hotplate, PZ 44, accessories

Gestigkeit

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

1 Hotplates

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

Gestigkeit



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

2 Precision hotplates, PZ-series

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.

Gestigkeit



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

Precision hotplates, PZ-series, accessories

As described.

Gestigkeit

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

3 Sand baths

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

Gestigkeit



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

Heating/Hotplates



1 Hotplate, EV 1

Compact laboratory heater with 85mm diameter hotplate. With variable energy regulator control and dipole cut-out mains switch with indicator lamp. Maximum temperature 425°C.

Gerhardt

Dimensions: (WxDxH): 150 x 225 x 110mm

Type	PK	Cat. No.
EV 1 individual heater	1	9.645 520



2 Flask heaters, KI-series

Reliable, individual heaters for flasks. With bowl-shaped tubular heating element and built-in stainless steel reflector collar around the aperture. With variable power controller, dipole cut-out via mains switch and indicator lamp. Maximum temperature 650°C.

Gerhardt

Dimensions (WxDxH): 150 x 225 x 130mm

Type	For flasks ml	PK	Cat. No.
KI 1	50 to 250	1	9.645 525
KI 2	250 to 1000	1	9.645 527

3 4 Hotplates behrotest® with metal protective grille

Adjustable hotplates for general laboratory use. A metal grille protects the user against inadvertent contact with the hot surface and also prevents the vessel from falling off the hotplate.

Behr

Type	Dia. mm	Heating power W	Mains supply V	PK	Cat. No.
KP 1	94	500	230	1	9.645 100
KP 2	145	1100	230	1	9.645 101
KP 3	220	2000	230	1	9.645 102
Aluminium adapters for KP 1, for 100 ml flasks, with integrated inlay				1	9.645 105
Aluminium adapters for KP 1, for 250 ml flasks, with integrated inlay				1	9.645 106
Aluminium adapters for KP 1, for 500 ml flasks, with integrated inlay				1	9.645 107
Aluminium adapters for KP 2, for 1000 ml flasks, with integrated inlay				1	9.645 108
Standing basin with cross, for flask 100 ml				1	9.645 110
Standing basin with cross, for flask 250 ml				1	9.645 111
Standing basin with cross, for flask 500 ml				1	9.645 112



7. Heating and cooling technology

Heating/Hotplates-Temperature controllers, thermostats

1 Multiple hotplate systems behrotest®

Multiple hotplate systems with individually adjustable heating controls. A metal grille protects the user against inadvertent contact with the hot surfaces and also prevents the vessel being heated from falling off the hotplates.

Behr



Type	Description	PK	Cat. No.
HB 4	4 hotplates with metal protective grilles, 94mm dia.	1	9.645 590
HB 6	6 hotplates with metal protective grilles, 94mm dia.	1	9.645 591
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
HSB 8	8 hotplates with metal protective grilles, 94mm dia.	1	9.645 594
HBS 8	Holder for HB 8 incl. 8 support rods	1	9.645 595

2 Hotplates, series heating, EV

Convenient, 4- or 6-place series heating benches with 85mm diameter hotplates. Each of the hotplates can be individually controlled. With dipole mains switch and indicator lamp. Supplied with mains cable. Multi-functional due to the wide range of accessories available. Maximum temperature 425°C.

Gerhardt



Type	Zones	Heating power		Width mm	Depth mm	Height mm	PK	Cat. No.
		W	mm					
EV 14	4	1800	600	225	110	1	9.645 530	
EV 16	6	2700	900	225	110	1	9.645 532	

3 Flask heaters, series heating, KI series

Versatile, 4- or 6-bank heaters with bowl-shaped tubular heating elements and built-in stainless steel reflector collars around the apertures for flasks up to 1000ml. Each heater position can be individually controlled. With mains switch and pilot light. Particularly suitable for Kjeldahl analyses. Supplied with mains connection cable. Capacity can be increased using accessories. Not suitable for use with distillation solvents.

Gerhardt



Type	Zones	Max. temp. °C	Power W	Dimensions (W x D x H) mm		PK	Cat. No.
				W	mm		
KI 16	6 x 250 ml	600	1800	600 x 225 x 130	1	9.645 540	
KI 24	4 x 250 - 1000 ml	750	2320	600 x 225 x 130	1	9.645 544	
KI 26	6 x 250 - 1000 ml	650	3480	900 x 225 x 130	1	9.645 546	

4 Temperature sensors for Laboratory regulator series KM-RX1000

NEW!

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



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



1 Contact thermometers, accessory relay TST-tr

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

Heju

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



2 Adaptor plug INTPA

NEW!

Adaptor plug for electronic products with class 1 (earth pin protection). On secondary side it is possible to contact the India plug15 A (big South Africa plug). It guarantees also safe use of foreign plug systems in over 120 countries worldwide: Germany; France; Spain; Portugal; Morocco; Mauritius etc. Following plugs can be contacted: UK; USA; Australia; Switzerland; Italy; India (small plug 10A/big 15A); South-Africa etc.

Behr

Type	Description	PK	Cat. No.
INTPA	Adaptor plug for electronic products with class 1 (earth pin protection)	1	9.843 960



3 Adaptor plug UKPA

NEW!

Adaptor plug for electronic products with class 1 (earth pin protection) It guarantees safe use of foreign plug systems in over 70 countries worldwide: Great Britain (UK); Hongkong; China; Malaysia; Singapore etc. Following plugs can be contacted: EU; Switzerland; Italy.

Behr

Type	Description	PK	Cat. No.
UKPA	Adaptor plug for electronic products with class 1 (earth pin protection)	1	9.843 961



4 UPA Universal Power Adaptor

NEW!

This worldwide all-in-one power adaptor is suitable for most applications and can be used with devices with class I (max. 2500 W). The 2 part adaptor allows connection with devices with earth pin protected plugs. It can be used worldwide in over 150 countries. It is possible to use this adaptor for following plug systems: Australia, America, Great Britain (UK), Italy, Switzerland, Euro.

Behr

Type	Description	PK	Cat. No.
UPA	Universal Power Adapter for equipment with 2-pin or 3-pin plugs with protection classes I and II	1	9.843 962

1 Contact thermometers

With MS 121st2 flat plug.

Heju

Measuring range	Grad.	Length*	PK	Cat. No.
°C	°C			
0 ... +100	1	50	1	9.233 010
-20 ... +150	1	50	1	9.233 015
0 ... +100	1	100	1	9.233 110
-20 ... +150	1	100	1	9.233 115
0 ... +250	2	100	1	9.233 125
0 ... +100	1	150	1	9.233 210
-20 ... +150	1	150	1	9.233 215
0 ... +250	2	150	1	9.233 225
-20 ... +150	1	200	1	9.233 315
0 ... +250	2	200	1	9.233 325
-20 ... +150	1	250	1	9.233 345
0 ... +250	2	250	1	9.233 347
-20 ... +150	1	300	1	9.233 365
-20 ... +150	1	300	1	9.233 371
0 ... +250	1	300	1	6.090 811
0 ... +250	2	300	1	9.233 367
0 ... +360	1	300	1	9.233 369

* Probe length (mm)

1



2 Contact thermometers

With diode plug MS 121st3.

Heju

Measuring range	Grad.	Length*	PK	Cat. No.
°C	°C			
-20 ... +150	1	100	1	9.233 116
0 ... +250	2	100	1	9.233 126
-20 ... +150	1	150	1	9.233 216
0 ... +250	2	150	1	9.233 226
0 ... +250	2	200	1	9.233 326
-20 ... +150	1	300	1	6.072 628
0 ... +250	1	300	1	9.233 372
0 ... +360	1	300	1	6.085 906

* Probe length (mm)

2



Contact thermometers, accessory connecting cable

With flat coupling and diode connection for relay.

Heju

For	Cable	PK	Cat. No.
	m		
Contact thermometers with flat plug MS 121st2	0.8	1	9.233 400
Contact thermometers with diode plug MS 121st3	1.5	1	6.091 756



1


1 Temperature controllers, TEMPAT®-D

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

Appropriate temperature sensor can be supplied.
If no temperature sensor is ordered, a loose plug is supplied.

Specifications

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

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

2


2 Temperature controllers, TEMPAT®-DSI

Safety temperature controllers for regulating the temperature of heating coils, hotplates, ovens, infrared radiators and water baths. with 7mm high LED display. A coding switch is provided for entering set points. For optimum safety: **Irreversible safety contact breaker** with secondary sensor input and dipole switch-off in the event of overtemperature or sensor malfunction. Visual and audible alarms. Critical temperature values are set using potentiometer and controlled via the display.

Voltage:	220-235V, 50/60Hz
Switching capacity:	max. 1800VA
Switching current:	max. 8 A
Measuring accuracy:	±1%
Dimensions:	188 x 110 x 70mm
Weight:	1.1kg

For	Temp. range °C	PK	Cat. No.
Probe Pt100	0 to 400	1	9.725 365
Probe Fe-CuNi	0 to 600	1	9.725 366
Probe NiCr-Ni	0 to 1200	1	9.725 367

For operation, 2 probes are required as temperature controllers. Please order separately.

3


3 Probe for temperature controllers, TEMPAT®

NEW!

All probes with 2m connecting cable and plug.

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

* probe tube stainless steel 4301.

**mantle of austenitic stainless steel.

1 Safety temperature switch TEMPAT®-Control



Type	Temp. range °C	PK	Cat. No.
TEMPAT®-Control Pt100	0 to 400	1	9.725 330
TEMPAT®-Control NiCr-Ni	0 to 1200	1	9.725 331
TEMPAT®-Control Fe-CuNi	0 to 600	1	9.725 332

2 Power controller, VOLTRON-PLUS F

Alternating current controller for variable and no-loss control of resistive and inductive power devices with the following additional features:

- On/off luminous rocker switch, dipole switching, 10 A (4)
- IC controlled, hysteresis free
- Quiet running
- Anti-interference grade N
- Fast-blow fuse
- Protected fuse holder
- Power-on indicator lamp

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

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

3 Power controller, Voltron 20

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

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



1


9.724 984

Laboratory temperature regulators

For monitoring and control of electronic heating equipment, such as heating mantles, heating baths, heating mats, water baths, oil baths etc. Fitted with state of the art control electronics.

JULABO

- Multi-Display: separate (LED) temperature displays for set and actual values, and for high and low temperature warning and safety functions
- Splashproof, membrane keypad which is easy to use
- Display resolution 0.1°C
- Adjustable control parameters
- PID control
- Connections for control and safety sensors
- Max. switching capacity: 2kW

2


9.724 985

Additional features of model LC4-F:

- Display resolution 0.01°C
- Adaptive PID control for enhanced requirements
- Analogue programmer input, printer output

... and even more features with the LC6 programme controller:

- ICC = Intelligent Cascade Control; adjustable classic PID control
- Additional LCD function display for user-friendly operation
- Integral programmer (6 profiles with 60 segments)
- Connections for 2 control and 1 safety sensors
- Max. switching capacity: 3kW.

Type	Temp. range °C	Stability K	Connection	Serial interface	PK	Cat. No.
LC4	-50 to 350	> ± 0.05	1 x Pt100	RS232	1	9.724 984 1
LC4-F	-50 to 350	> ± 0.03	1 x Pt100	RS232	1	9.724 985 2
LC6	-100 to 400	> ± 0.03	2 x Pt100	RS232/RS485	1	9.724 986

3


3 Power controller KM-L116

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

SAF Wärmetechnik

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

4


4 Laboratory regulator series KM-RX1000

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

SAF Wärmetechnik

Type	Connection	PK	Cat. No.
KM-RX 1001	Socket	1	7.619 815
KM-RX 1004	Clamps	1	9.642 654

7. Heating and cooling technology

Heating/Temperature controllers, thermostats-Incubation hoods

1 Cooling water relay LKR 3000 NEW!

The device is used for monitoring cooling water circuits. It is set a high value on a simple handling. Because of the high braking capacity also thermostats and cryostats are connectable. A reliable water flow sensor was chosen.

Specifications

Plastic housing (W x H x D): 160 x 82 x 130mm
 LED indication: 10mm high, green
 Adjustment: min. 10 l/h up to max 250 l/h
 Power supply: 230V/50Hz, 16A
 Breaking capacity: 16A/230V for consumer load, 1A/230V for magnetiv valve

Description	PK	Cat. No.
Cooling water relay LKR 3000	1	9.234 295
Flow sensor	1	9.234 296
Water stop valve	1	9.234 297



2 Standard heating mantles series KM-G

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

Capacity	Flask dia.	Rating	Heating areas	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.



3 Standard heating mantles series KM-GH

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

Capacity	Flask dia.	Rating	Heating areas	PK	Cat. No.
ml	mm	W			
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.



Heating/Incubation hoods



1 Tripod series KM-DF

LabHEAT®-Accessories made of plastic coated, chemical-resistant metal for higher stability of the standard heating mantles series KM-G and KM-GH.

SAF Wärmetechnik

For mantle	PK	Cat. No.
ml		
100	1	9.642 600
250	1	9.642 601
500	1	9.642 602
1000	1	9.642 603
2000	1	9.642 604
3000	1	9.642 605
4000	1	9.642 606
5000	1	9.642 607
6000	1	9.642 608
10000	1	9.642 609
20000	1	9.642 610



2 Metal-cased heating mantles series KM-M

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

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

Heating mantles with other specifications available on request.



3 Metal-cased heating mantles series KM-ME

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

SAF Wärmetechnik

Capacity	Flask dia.	Rating	Heating areas	PK	Cat. No.
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.

7. Heating and cooling technology

Heating/Incubation hoods

1 Multi-size heating mantles series KM-MPE

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

Capacity	Flask dia.	Rating	Heating areas	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

Heating mantles with other specifications available on request.



2 Stirring heating mantles series KM-MER

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

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

Heating mantles with other specifications available on request.



3 Heating mantles, EM series

Range up to 450°C. With PP outer case which is chemical-resistant and resilient. Highly efficient, heating element insulation and air circulation ensure low external casing temperatures. Flexible heating element is suspended in a thermal insulating cartridge to provide maximum heat transfer with minimum risk of flask breakage. All heating mantles are internally fused and have support clamp for rods up to 12mm diameter. With earth (ground) screen and energy regulator control. For 220-240 V 50/60 Hz supplies. Spare heater cartridges are available on request. Electrothermal

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



4 Heating mantles, EMX series

Up to 450°C. Spillproof. Replaceable heating element is protected against moisture penetration by a stainless steel liner and is easy to clean. PP outer case. Heating mantles are suitable for heating a variety of glass containers, such as round bottomed flasks and 60° funnels. Highly efficient, heating element insulation and air circulation ensure low external temperatures. With support rod clamp and base outlet, safety earth (ground) screen and time proportional, arbitrarily scaled controller. For 220-240 V 50/60 Hz supplies. Electrothermal

For flasks	Width	Depth	Height	Power	PK	Cat. No.
ml	mm	mm	mm	W		
50 to 1000	310	238	150	150+80	1	9.643 081
500 to 5000	400	325	195	400+200	1	9.643 083



Heating/Incubation hoods



1 Multimantles, EMV series

Up to 450°C. For flasks and funnels. With flexible heating elements and internal fuse. With support rod clamp for 12.5mm diameter rods, or for attaching mantle to support. With base outlet, earth (ground) screen and solid state controller. For 220-240V 50/60 Hz supplies.

Electrothermal

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

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



2 Stirrer mantles, EMA series

Up to 450°C. PP outer case. Time proportional heater control via built-in, solid state controller and adjustable magnetic stirrer in one instrument. Flexible heating element. The stirrer unit has an independent power supply. Stepless speed control up to approx. 520rpm. with auto-reverse facility. Automatic stirrer bar trap. With support clamp for rods up to 12.5mm diameter and earth (ground) screen. For 220-240 V 50/60 Hz.

Electrothermal

For flasks	PK	Cat. No.
ml		
50	1	9.643 122
100	1	9.643 123
250	1	9.643 124
500	1	9.643 125
1000	1	9.643 126
2000	1	9.643 127



3 Support ring series KM-TR

LabHEAT®-Accessories made of plastic coated, chemical-resistant metal to integrate the standard heating mantles series KM-G and KM-GH within support wall.

SAF Wärmetechnik

For mantle	PK	Cat. No.
ml		
25	1	9.642 620
50	1	9.642 621
100	1	9.642 622
250	1	9.642 623
500	1	9.642 624
1000	1	9.642 625
2000	1	9.642 626
3000	1	9.642 627
4000	1	9.642 628



4 Serial heating units series KM-R6

LabHEAT®-Heating mantles for flasks, round bottom. Serial heating unit in plastic coated, chemical-resistant metal housing (H x B x T) 150 x 1150 x 290mm with six heating positions. Each heating position is separately controlled via controller, 1.5m supply (earthed) cable and RCD (residual current detection); nominal voltage 230V AC.

SAF Wärmetechnik

Capacity	Flask dia.	Rating	PK	Cat. No.
ml	mm	W		
100	64	110	1	9.642 570
250	85	220	1	9.642 571
500	105	330	1	9.642 572
1000	131	495	1	9.642 573

Size and rating specifications are valid for each heating position. Serial heating or stirring function with three heating positions on request.

7. Heating and cooling technology

Heating/Incubation hoods-Heating tapes

1 Support clamp KM-SK

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

SAF Wärmetechnik

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



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

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

SAF Wärmetechnik

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

Other lengths and other specifications available on request.



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

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

SAF Wärmetechnik

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

Other lengths and other specifications available on request.



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