



**memmert**  
Experts in Thermostatics

# Waterbaths & Oilbaths

PRECISION AND SAFETY BROUGHT TO THE POINT.



WATERBATH W

OILBATH O

100% ATMOSAFE. MADE IN GERMANY.

[www.memmert.com](http://www.memmert.com) | [www.atmosafe.net](http://www.atmosafe.net)



# Uniquely precise and reliable.

Of course always at the right temperature

Since in 1947 the first Memmert hot air steriliser has left our facilities, we have pursued one essential goal in the development of our thermostatic ovens and thermostatic baths: controlled atmosphere. Inseparably linked to this are reliability, optimum temperature homogeneity and stability, user friendliness and an outstanding price/performance ratio. This promise to customers and users is called: 100% AtmoSAFE.

It is the modern control technology which makes Memmert's waterbaths and oilbaths unparalleled in precision. At least 2-fold over-temperature protection guarantees optimum safety for all baths. You can combine programme start delay and hold time, for baths of the Excellent class even setpoint-dependent. Made by professionals for professionals.

**WATERBATHS WNB, WNE, WPE****PAGE 4 - 9**

Temperature control of samples, plates, breeding media and emulsions in the laboratory, long-term exposure to heat of plastics to determine dimensional stability and post-shrinkage, softening temperature testing of plastic, warming of baby food

**OILBATHS ONE****PAGE 10 - 13**

Testing of overtemperature protection devices, sensor calibration, industrial processings

**ADDITIONAL INFORMATION****PAGE 14**



Waterbath Basic WNB  
Waterbath Excellent WNE  
Waterbath Excellent with circulating pump WPE

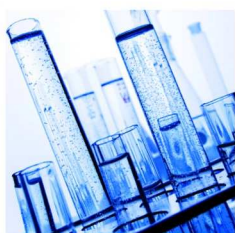
Model sizes WNB, WNE:  
7 / 10 / 14 / 22 / 29 / 45

Model size WPE:  
45

+10 °C to +95 °C and boiling stage  
(WPE: only with pump switched off)

**WATERBATH W** Memmert waterbaths W are unparalleled in terms of precision, safety and comfort. In the Excellent version, they are perfectly suited for professional applications in quality management and for technical guidelines and standards.





## Safety functions of the Memmert Waterbaths

### WATERBATHS BASIC WNB

2-stage safety through relay switch-off close to the setpoint (approx.  $+10\text{ }^{\circ}\text{C}$ ) and mechanical temperature limiter TB at  $+135\text{ }^{\circ}\text{C}$

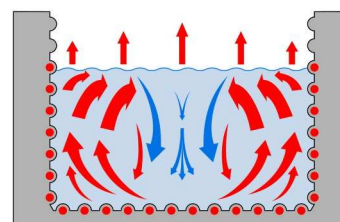
### WATERBATHS EXCELLENT WNE, WPE

relay switch-off close to the setpoint (approx.  $+10\text{ }^{\circ}\text{C}$ ) and mechanical temperature limiter TB at  $+135\text{ }^{\circ}\text{C}$

additional electronic temperature controller TWW as standard or alternatively temperature limiter TWB adjustable in the setup

## Dual-use heating design

The tank does not contain any heating elements liable to corrode or attract lime deposits. Fully protected against moisture and yet close to the tank contents, the heating is located underneath deep-drawn and easy-to-clean ribs. This form of construction generates natural turbulence and therefore better temperature distribution in the bath (see sketch). Heating from three sides ensures optimal temperature uniformity. At  $95\text{ }^{\circ}\text{C}$  water temperature the deviation over the entire bath is less than  $0.36\text{ }^{\circ}\text{C}$ !



optimal temperature uniformity

## Water level control

Where an almost constant water level is required, each thermostatic bath can optionally be fitted with a level control device. The bath is connected by hoses to the mains water system and is continuously supplied drop-wise with additional water. An overflow permits maintaining two different water levels.



## Two baths in one

The optional electronically controlled shaking device for waterbaths is available in two versions for different bath sizes (requires gable cover). It converts the models from size W14 upwards into an adjustable-speed shaking bath with horizontal movement from 35 to 160 strokes per minute. An electronic blockage protection switches off the motor within fractions of a second on a sudden overload.





**PELTIER COOLING UNIT CDP115** Worldwide only from Memmert! The innovative Peltier cooling unit CDP115 enables you to work exactly at temperatures below room temperature and puts an end to unwieldy external cooling units. Space-saving, environmentally friendly and precise in its temperature control, it fits on the smallest as well as on the largest Memmert waterbath! Your benefits: Compact design, user-friendly snap-on technology and exact controllability down to  $\pm 0.1$  K.





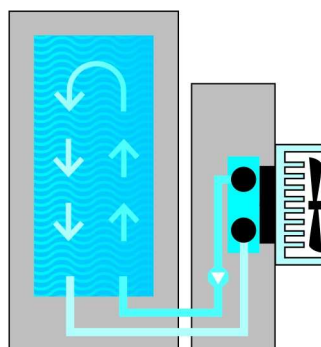
### Cooling with Peltier – sustainable and energy-saving

If constant set temperatures close to ambient are required in the waterbath, Peltier elements cool down the tempering medium in a way that is economical, eco-friendly and precise.

- No gases or fluids (coolants) required
- Quiet and smooth-running
- High control precision
- Saves valuable space in the laboratory

### A cooling unit for all Memmert waterbaths!

The CDP115 extends the working temperature range of the Memmert waterbaths. It can be fitted to all appliances from 7 to 45 litres in capacity, quickly and without technical knowledge. Simply hang it onto the flaps of the gable cover hinge, and that's it! The water is continually circulated via two Norpren tubes, cooling it down. Simultaneous use of the SV shaking device is not a problem.



Fluid circulation



### Safety and precision are involved, as always!

The cooling unit CDP115 has its own main switch. The temperature is controlled via the electronic controller of the waterbath and achieves an impressive precision of  $\pm 0.1$  K. A frost protection unit we have developed switches off the cooling element if there is too little fluid flow, thus protecting the Peltier flow-through cooler from freezing. After the disruption has been cleared up, the frost protection switch resets automatically.

### Average cooling speed

#### Filling volumes / bath size

7 litres / WN...7  
10 litres / WN...10  
14 litres / WN...14  
22 litres / WN...22  
29 litres / WN...29  
45 litres / WN...45

#### Average cooling down speed\*

14.1 K/h  
9.9 K/h  
7.1 K/h  
4.5 K/h  
3.4 K/h  
2.2 K/h

\* At a room temperature of +20 °C



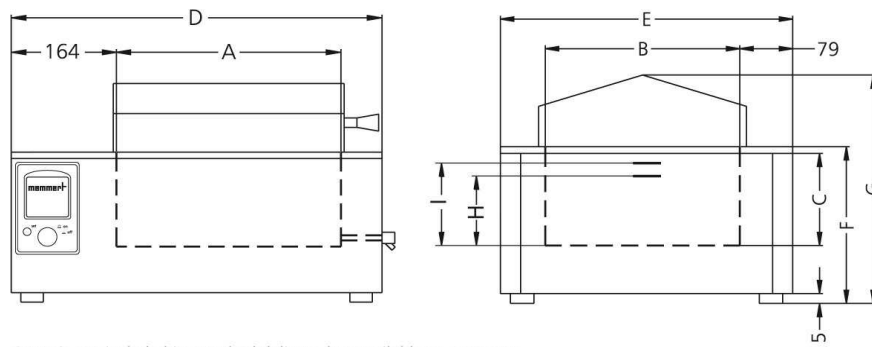
## WATERBATHS WNB, WNE, WPE

according to DIN 12876-3, EN 61010, EN 61010-1 (IEC 61010-1), EN 61010-2-010

Standard units are safety-approved and bear the test marks:



- Interior: deep-drawn, laser-welded stainless steel interior, material 1.4301, with integrated large-area heating system on three sides (no disturbing fittings)
- Housing: textured stainless steel, material 1.4301
- Connection: mains cable with plug (German type)
- Installation: 4 feet



Cover is not included in standard delivery, but available as accessory.

Model sizes/Description			7	10	14	22	29	45
Stainless steel interior	Contents	approx. l	7	10	14	22	29	45
	Length	(A) mm	240	350			590	
	Width	(B) mm	210		290		350	
	Height	(C) mm	140			220	140	220
Textured stainless steel exterior	Length	(D) mm	468	578			818	
	Width	(E) mm	356		436		516	
	Height (with flat cover)	(F) mm	238			296	238	296
	Height (with gable cover)	(G) mm	337		347	405	343	401
	Liquid level min.	(H) mm	97			177	105	177
	Liquid level max.	(I) mm	120			200	120	200
Temperature	Working temperature range	°C	at least 5 (WNB/WNE) 15 (WPE) above ambient to +95 and additional boiling stage (WPE only with pump switched off)					
	Setting temperature range	°C	+10 to +95 and boiling stage					
	Temperature variation	K	+/- 0.1					
	Temperature distribution	K	+/- 0.25					+/- 0.3
Further data	Electrical load at 230 V, 50/60 Hz / 115 V, 50/60 Hz, WPE: 50 Hz	approx. W	1200		1800	2000	2400	2800
	CDP115: Dimensions of casing height/width/depth	approx. mm	185/450/200					
	CDP115: Electrical load at 230 V/115 V, 50/60 Hz	max. W	160					
	CDP115: Effective cooling capacity	W	115					
	CDP115: Pumping capacity of circulation pump for coolant	ml/Min	600					
	Portable stainless steel rack for 10 baby food bottles, maximum capacity each bath	max.	-	1	2	-	4	-
	Bath capacity - number of racks: models 10/14/22 width of bath working area less 20 mm : width of the racks models 29/45 length of bath working area less 20 mm : width of the racks		●					
Packing data	Net weight (with one cover option)	approx. kg	11	13	15	17	24	26
	Gross weight in Triwall carton	approx. kg	16	19	21	23	31	33
	Length	approx. mm	570		670		910	
	Width	approx. mm	450		530		610	
	Height	approx. mm	420	380	400	460	400	460
<b>Order No. Waterbaths</b> WNB = Waterbath, natural circulation, temperature controller BASIC WNE = Waterbath, natural circulation, temperature controller EXCELLENT WPE = Waterbath, pump circulation, temperature controller EXCELLENT			WNB7	WNB10	WNB14	WNB22	WNB29	WNB45
			WNE7	WNE10	WNE14	WNE22	WNE29	WNE45
			-	-	-	-	-	WPE45



Options	7	10	14	22	29	45
Voltage 115 V, 50/60 Hz	X2					
Water level control	L3					
Works calibration certificate +37 °C	D00123					
Accessories	7	10	14	22	29	45
Stainless steel gable cover, also suitable for shaking device (14/22 and 29/45) and Peltier cooling device CDP115	B02641	B02642	B02643		B04390	
Flat stainless steel cover with openings and concentric ring sets; 1 opening, Ø 147 mm	B02680	-				
Flat stainless steel cover with openings and concentric ring sets; 3 openings, Ø 107 mm	-	B02681	-			
Flat stainless steel cover with openings and concentric ring sets; 6 openings, Ø 87 mm	-		B02682		-	
Flat stainless steel cover with openings and concentric ring sets; 8 openings, Ø 107 mm	-				B02684	
Flat stainless steel cover with openings and concentric ring sets; 4 openings, Ø 147 mm	-				B02685	
Flat stainless steel cover with openings and concentric ring sets for Peltier cooling CDP115; 1 opening, Ø 147 mm	B24372	-				
Flat stainless steel cover with openings and concentric ring sets for Peltier cooling CDP115; 3 openings, Ø 107 mm	-	B24373	-			
Flat stainless steel cover with openings and concentric ring sets for Peltier cooling CDP115; 6 openings, Ø 87 mm	-		B04552		-	
Flat stainless steel cover with openings and concentric ring sets for Peltier cooling CDP115; 8 openings, Ø 107 mm	-				B04462	
Shelf reversible for 2 heights (30 or 60 mm)	E02893	E02894	E02895		E02896	
Portable stainless steel rack for 10 baby food bottles	-	E02066		-	E02066	-
Peltier-cooling device CDP115 for waterbaths for temperatures below ambient from +10 °C, Voltage 230 V, 50/60 Hz, or 115 V, 60 Hz (please state in case of order). Please do not forget to order the installation and connection set! On sizes 7 - 22 racks cannot be used together with this device	CDP115					
Installation and connection set for Peltier cooling device CDP115 (incl. mounting bars for all different bath sizes)	B02770					
Shaking device for waterbaths incl. support frame, shaking frequency 35 - 160 strokes per minute (horizontal back/forth movement), requires gable cover. Please do not forget to order the support basket!	-			SV1422	SV2945	
Support basket with perforated mounting shelf (stainless steel) with grid perforations to take clips for conical flasks	-			B02782	B04397	
Clip for 100 ml flask, 18 flasks max.	-				B02692	
Clip for 100 ml flask, 12 flasks max.	-			B02692	-	
Clip for 200 ml flask, 14 flasks max.	-				B02693	
Clip for 200 ml flask, 6 flasks max.	-			B02693	-	
Clip for 300 ml flask, 14 flasks max.	-				B02694	
Clip for 300 ml flask, 6 flasks max.	-			B02694	-	
Clip for 500 ml flask, 8 flasks max.	-				B02695	
Clip for 500 ml flask, 5 flasks max.	-			B02695	-	
Rack for shaking device for 216 test tubes Ø 14.5 mm	-				B04399	
Rack for shaking device for 110 test tubes Ø 14.5 mm	-			B02778	-	
Rack for shaking device for 180 test tubes Ø 18 mm	-				B04400	
Rack for shaking device for 90 test tubes Ø 18 mm	-			B02779	-	
Rack for shaking device for 54 test tubes Ø 32 mm	-				B04401	
Rack for shaking device for 25 test tubes Ø 32 mm	-		B02780		-	
Test tube racks, 56 holes (7x8), Ø 18 mm each; bath capacity: 1 rack	B02781	-				
Test tube racks, 24 holes (3x8), Ø 18 mm each; bath capacity: 2 racks	B02783	-				
Test tube racks, holes 2-row racks, 40 holes, Ø 10 mm each, width 42 mm	-	E02028				
Test tube racks, holes 2-row racks, 40 holes, Ø 12 mm each, width 41 mm	-	E02013				
Test tube racks, holes 2-row racks, 24 holes, Ø 14.5 mm each, width 45 mm	-	E02014				
Test tube racks, holes 2-row racks, 24 holes, Ø 18 mm each, width 50 mm	-	E02022				
Test tube racks, holes 2-row racks, 20 holes, Ø 21 mm each, width 57 mm	-	E02032				
Test tube racks, holes 2-row racks, 12 holes, Ø 32 mm each, width 81 mm	-	E02034				
Test tube racks, holes 3- row racks, 60 holes, Ø 10 mm each, width 50 mm	-	E02046				
Test tube racks, holes 3- row racks, 60 holes, Ø 12 mm each, width 57 mm	-	E02049				
Test tube racks, holes 3- row racks, 36 holes, Ø 14.5 mm each, width 60 mm	-	E02039				
Test tube racks, holes 3- row racks, 36 holes, Ø 18 mm each, width 71 mm	-	E02019				
Test tube racks, holes 3- row racks, 30 holes, Ø 21 mm each, width 82 mm	-	E02043				
Test tube racks, holes 4-row racks, 80 holes, Ø 10 mm each, width 66 mm	-	E02057				
Test tube racks, holes 4-row racks, 80 holes, Ø 12 mm each, width 75 mm	-	E02060				
Test tube racks, holes 4-row racks, 48 holes, Ø 14.5 mm each, width 86 mm	-	E02056				
Test tube racks, holes 4-row racks, 48 holes, Ø 18 mm each, width 97 mm	-	E02051				
Test tube racks, holes 4-row racks, 40 holes, Ø 21 mm each, width 110 mm	-	E02061				
IQ/OQ document with device-specific works test data for one free-selectable temperature value, incl. temperature distribution survey at Memmert for 9 measuring points to DIN 12876.2. Further temperature values and validation at customer site on demand (GER, AT, CH only)						D00125



Oilbath Excellent ONE

Model sizes:  
7 / 10 / 14 / 22 / 29 / 45  
+20 °C up to +200 °C

**OILBATH O** Memmert oilbaths O guarantee absolute safety for laboratory and samples even at high temperatures. They score through corrosion-resistant stainless steel, precise electronics, multiple temperature protection as well as reliable alarm and status notifications.



## Safety functions of the Memmert Oilbath

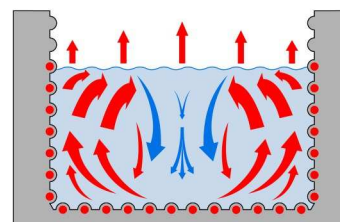
### **OILBATH EXCELLENT ONE**

relay switch-off close to the setpoint (approx.  $+10\text{ }^{\circ}\text{C}$ ) and mechanical temperature limiter TB at  $+230\text{ }^{\circ}\text{C}$

additional electronic temperature limiter TWB adjustable as standard

## Dual-use heating design

The tank does not contain any heating elements liable to corrode or attract lime deposits. Fully protected against moisture and yet close to the tank contents, the heating is located underneath deep-drawn and easy-to-clean ribs. This form of construction generates natural turbulence and therefore better temperature distribution in the bath (see sketch). Heating from three sides ensures optimal temperature uniformity. At  $95\text{ }^{\circ}\text{C}$  water temperature the deviation over the entire bath is less than  $0.36\text{ }^{\circ}\text{C}$ !



optimal temperature uniformity

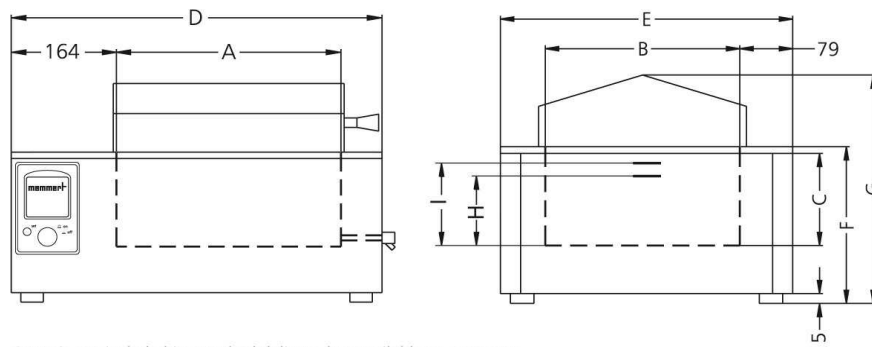
## OILBATHS ONE

according to DIN 12876-3, EN 61010, EN 61010-1 (IEC 61010-1), EN 61010-2-010

Standard units are safety-approved and bear the test marks:



- Interior: deep-drawn, laser-welded stainless steel interior, material 1.4301, with integrated large-area heating system on three sides (no disturbing fittings)
- Housing: textured stainless steel, material 1.4301
- Connection: mains cable with plug (German type)
- Installation: 4 feet



Cover is not included in standard delivery, but available as accessory.

Model sizes/Description			7	10	14	22	29	45
Stainless steel interior	Contents	approx. l	7	10	14	22	29	45
	Length	(A) mm	240	350			590	
	Width	(B) mm	210		290		350	
	Height	(C) mm	140			220	140	220
Textured stainless steel exterior	Length	(D) mm	468	578			818	
	Width	(E) mm	356		436		516	
	Height (with flat cover)	(F) mm	238			296	238	296
	Height (with gable cover)	(G) mm	337		347	405	343	401
	Liquid level min.	(H) mm	97			177	105	177
	Liquid level max.	(I) mm	120			200	120	200
Temperature	Working temperature range	°C	at least 5 above ambient to +200					
	Setting temperature range	°C	+20 to +200					
	Temperature variation	K	+/- 0.3					
	Temperature distribution	K	+/-1					
Further data	Electrical load at 230 V, 50/60 Hz / 115 V, 50/60 Hz	approx. W	1200		1800	2000	2400	2800
	Portable stainless steel rack for 10 baby food bottles, maximum capacity each bath	max.	-	1	2	-	4	-
	Bath capacity - number of racks: models 10/14/22 width of bath working area less 20 mm : width of the racks models 29/45 length of bath working area less 20 mm : width of the racks		●					
Packing data	Net weight (with one cover option)	approx. kg	11	13	15	17	24	26
	Gross weight in Triwall carton	approx. kg	16	19	21	23	31	33
	Length	approx. mm	570	670			910	
	Width	approx. mm	450		530		610	
	Height	approx. mm	420	380	400	460	400	460
Order No. Waterbaths			ONE7	ONE10	ONE14	ONE22	ONE29	ONE45
ONE = Oilbath, natural convection, temperature controller EXCELLENT								



Options	7	10	14	22	29	45
Voltage 115 V, 50/60 Hz	X2					
Works calibration certificate +160 °C	D00123					
Accessories	7	10	14	22	29	45
Stainless steel gable cover	B02641	B02642	B02643		B04390	
Flat stainless steel cover with openings and concentric ring sets; 1 opening, Ø 147 mm	B02680		-			
Flat stainless steel cover with openings and concentric ring sets; 3 openings, Ø 107 mm	-	B02681		-		
Flat stainless steel cover with openings and concentric ring sets; 6 openings, Ø 87 mm	-		B02682		-	
Flat stainless steel cover with openings and concentric ring sets; 8 openings, Ø 107 mm		-			B02684	-
Flat stainless steel cover with openings and concentric ring sets; 4 openings, Ø 147 mm		-			B02685	
Shelf reversible for 2 heights (30 or 60 mm)	E02893	E02894	E02895		E02896	
Portable stainless steel rack for 10 baby food bottles	-	E02066	-		E02066	-
Support basket with perforated mounting shelf (stainless steel) with grid perforations to take clips for conical flasks	-		B02782		B04397	
Clip for 100 ml flask, 18 flasks max.		-			B02692	
Clip for 100 ml flask, 12 flasks max.	-		B02692		-	
Clip for 200 ml flask, 14 flasks max.		-			B02693	
Clip for 200 ml flask, 6 flasks max.	-		B02693		-	
Clip for 300 ml flask, 14 flasks max.		-			B02694	
Clip for 300 ml flask, 6 flasks max.	-		B02694		-	
Clip for 500 ml flask, 8 flasks max.		-			B02695	
Clip for 500 ml flask, 5 flasks max.	-		B02695		-	
Test tube racks, 56 holes (7x8), Ø 18 mm each; bath capacity: 1 rack	B02781		-			
Test tube racks, 24 holes (3x8), Ø 18 mm each; bath capacity: 2 racks	B02783		-			
Test tube racks, holes 2-row racks, 40 holes, Ø 10 mm each, width 42 mm	-		E02028			
Test tube racks, holes 2-row racks, 40 holes, Ø 12 mm each, width 41 mm	-		E02013			
Test tube racks, holes 2-row racks, 24 holes, Ø 14.5 mm each, width 45 mm	-		E02014			
Test tube racks, holes 2-row racks, 24 holes, Ø 18 mm each, width 50 mm	-		E02022			
Test tube racks, holes 2-row racks, 20 holes, Ø 21 mm each, width 57 mm	-		E02032			
Test tube racks, holes 2-row racks, 12 holes, Ø 32 mm each, width 81 mm	-		E02034			
Test tube racks, holes 3- row racks, 60 holes, Ø 10 mm each, width 50 mm	-		E02046			
Test tube racks, holes 3- row racks, 60 holes, Ø 12 mm each, width 57 mm	-		E02049			
Test tube racks, holes 3- row racks, 36 holes, Ø 14.5 mm each, width 60 mm	-		E02039			
Test tube racks, holes 3- row racks, 36 holes, Ø 18 mm each, width 71 mm	-		E02019			
Test tube racks, holes 3- row racks, 30 holes, Ø 21 mm each, width 82 mm	-		E02043			
Test tube racks, holes 4-row racks, 80 holes, Ø 10 mm each, width 66 mm	-		E02057			
Test tube racks, holes 4-row racks, 80 holes, Ø 12 mm each, width 75 mm	-		E02060			
Test tube racks, holes 4-row racks, 48 holes, Ø 18 mm each, width 97 mm	-		E02051			
Test tube racks, holes 4-row racks, 48 holes, Ø 14.5 mm each, width 86 mm	-		E02056			
Test tube racks, holes 4-row racks, 40 holes, Ø 21 mm each, width 110 mm	-		E02061			
IQ/OQ document with device-specific works test data for one free-selectable temperature value, incl. temperature distribution survey at Memmert for 9 measuring points to DIN 12876.2. Further temperature values and validation at customer site on demand (GER, AT, CH only)	D00125					

## ACCESSORIES INFORMATION

### Racks for models with shaking device



The maximum number of test tube racks of equal width in your waterbath is calculated as follows:

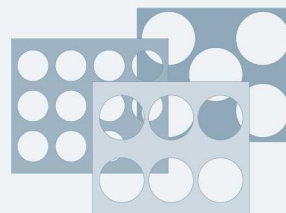
W10/14/22:

Width of the bath container less 20 mm: width of the rack

W29/45:

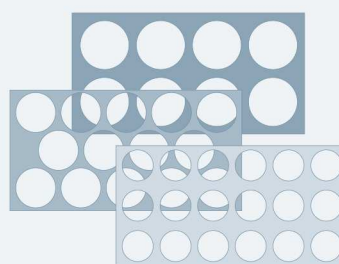
Length of the bath container less 20 mm: width of the racks

### Mounting shelves



W14/22:

12 flasks 100 ml or 6 flasks 200/300 ml  
or 5 flasks 500 ml



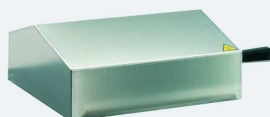
W29/45:

18 flasks 100 ml or 14 flasks 200/300 ml  
or 8 flasks 500 ml

### Stainless steel cover

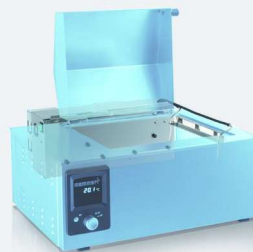


Stainless steel flat cover with openings and concentric ring sets



Stainless steel gable cover, also suitable for shaking device (SV14/22 and SV29/45) or Peltier cooling unit CDP115

### Peltier cooling unit CDP115 for waterbath



### Portable stainless steel rack



for 10 baby bottles

### Shaking device for waterbath



### Support basket with perforated mounting shelf (stainless steel)



with grid perforations to take clips for conical flasks

### Shelf reversible



for 2 heights (30 or 60 mm)

Subject to technical modifications. All dimensions in mm.

## MODEL VARIANTS – MODERN CONTROL TECHNOLOGY

### Push and turn – intuitive operation of the control

In the Basic versions an electronic PID controller ensures that the selected temperature is accurately reached and maintained. The multi-functional fuzzy-supported PID control on the Excellent versions guarantees maximum security. Two high-grade platinum sensors are responsible for temperature control and for monitoring temperature and level. Like a climbing team on a rope they communicate with each other and ensure uninterrupted fault-free temperature control; the high-grade 4-wire circuit guarantees uncorrupted transmission of measurements.

The result can readily be seen behind the easy-clean glass window: all essential settings and operating states are clearly displayed.

BASIC version WNB	EXCELLENT version WNE / WPE / ONE
	
<p>① <b>Normal operation</b> Press the SET key, select the setpoint temperature</p>	
<p>② <b>Delayed switch-on</b> Go home in the evening; in the morning the bath is already at temperature. From 0 to 99:59 hrs (Excellent: 999 hrs) setting accuracy: 1 minute</p>	
<p>③ <b>Programmable hold time</b> Select to the nearest minute how long the waterbath should hold the temperature. From 0 to 99:59 hrs (Excellent: 999 hrs) setting accuracy: 1 minute</p>	
<p>④ <b>Visual alarm</b> If the setpoint temperature is exceeded by more than 10 °C the monitor relay permits emergency operation, indicated visually by the flashing alarm signal. If the factory-set maximum temperature is exceeded the mechanical temperature limiter TB switches off the heating permanently and the alarm symbol is on continuously.</p>	
	<p>⑤ <b>Electronic overtemperature protection</b> Set the monitoring temperature with 0.1 °C accuracy up to 10 °C above nominal temperature. If there should be a fault, you can choose in setup through standard function selection between continuation of the procedure (TWW) or abort (TWB).</p>
	<p>⑥ <b>Level</b> This flashes on low liquid level. At the same time there is an audible alarm and the heating is switched off automatically.</p>
	<p>⑦ <b>Audible signals</b> There is a brief beep at programme end and also as input acknowledgement. On overtemperature and low liquid level there is an audible signal together with a visual alarm.</p>
	<p>⑧ <b>Circulating pump</b> (WPE45 only) The circulating pump in the WPE45 optimises the thermal uniformity of the large water volume!</p>
	<p>⑨ <b>Hold period</b> Start of hold period only after reaching the setpoint.</p>
	<p>⑩ <b>Recalibration facility</b> Excellent quality assurance on standardised or documented material tests through +/-5 K recalibration facility on the controller.</p>



**memmert**  
Experts in Thermostatics

#### HEATING AND DRYING OVENS

UNIVERSAL OVEN U

PASS-THROUGH OVEN UF TS

PARAFFIN OVEN UNpa

STERILISER S

VACUUM OVEN VO

BLANKET WARMER IFbw

#### INCUBATORS

INCUBATOR I

CO<sub>2</sub> INCUBATOR ICOmed

COMPRESSOR-COOLED INCUBATOR ICPeco/ICP

PELTIER-COOLED INCUBATOR IPP

COOLED STORAGE INCUBATOR IPS

#### CLIMATE CHAMBERS

CONSTANT CLIMATE CHAMBER HPP

HUMIDITY CHAMBER HCP

CLIMATE CHAMBER ICHeco/ICH

ENVIRONMENTAL TEST CHAMBER CTC/TTC

#### WATERBATHS / OILBATHS

WATERBATH W

OILBATH O

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