memmert

Experts in Thermostatics

Cooled incubators ICP/IPP

Series IPP in four sizes: highly accurate and environmentally friendly, exceptional savings in space and energy

Five sizes of Series ICP with powerful compressor technology for larger chamber volumes

Internal log memory, interfaces for long-term logging and printing of experimental series

Innovative Peltier technology

Forced heating/cooling power

Documented quality

>>>> www.memmert.com

Microelectronics meets microbiology!

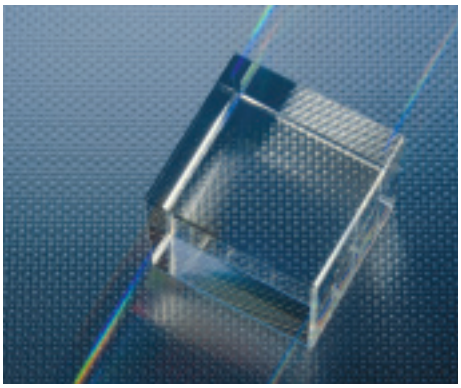
Memmert cooled incubators are used in all areas of microbiology, e.g. environmental research, environmental protection, foodstuff examination, pharmacy, and also water engineering. Both the conventional compressor-cooled incubators and the models with Peltier technology incorporate a precise and well-proven control system for the controlled and documented storage and incubation of micro-organisms under real environmental conditions.

Functional design in its most pleasing form

Memmert cooled incubators are found in microbiological laboratories and equally in tests for industrial manufacture. Wherever they are, they demonstrate the superiority of high-grade stainless steel over painted sheet steel which soon tends to corrode during extended use.

Structured stainless steel has for many years been an unmistakable mark of the Memmert design. Functional design in its most pleasing form: scratch-resistant, sturdy and durable.

A Memmert special: The chamber interior is made entirely from high-grade and fully recyclable stainless steel mat. 1.4301 (ASTM304)



A Memmert special: The housing manufactured from sturdy textured stainless steel (except rear of zinc-plated steel) conforms to Memmert's holistic quality philosophy

Proven high quality of life

All Memmert cooled incubators are provided with precise, triple-protected temperature control. With the great variety of programming facilities and non-manipulable documentation functions every quality specialist is certain to keep a cool head.

Convenience: made for you!

The cooled incubators are convenient to operate:

- Clear, easy-to-clean underglass function display
- Memmert's unique feature: the patented push-turn control for intuitive selection from the entire menu
- Fully insulated stainless steel door and internal glass door for observing the chamber load without affecting the temperature

Documentation: For controlled quality

The basic outfit for professional quality assurance:

- Standard "Celsius" software for programming and logging, also optional FDA-conforming software (extra charge)
- Internal ring memory for uninterrupted long-term documentation (approx. 6 months) protected against manipulation
- MEMoryCard XL for programming up to 40 temperature ramps and documenting the temperature profiles
- Parallel printer interface for printouts of thermostating processes (USB printer via converter possible)
- USB interface for programming and storage (Ethernet at extra charge)

Precision: for controlled procedures

Technical features for fault-free processes:

- User-friendly programming of up to 40 temperature ramps directly on the incubator; practically unlimited number of ramps using standard "Celsius" software
- Internal ventilation for optimal temperature distribution (adjustable on ICP)
- Multi-functional fuzzy-supported control for exact setting and maintenance of setpoint temperature
- Controller calibration at three freely selected temperatures directly on the incubator
- Option (extra charge):
  Up to three additional and freely positionable Pt100 sensors for indication on the display and recording in the log memory

Security: Of course!

Yet more functions for zero error:

- Integral auto-diagnostic system with visual and audible fault indication
- Multiple temperature monitor with mechanical temperature limiter TB (ICP only), electronic adjustable temperature monitor TWW as well as the Memmert ASF (Automatic Safety Function)
- Two high-grade platinum sensors communicate with each other like a climbing team on a rope and ensure uninterrupted faultless temperature control. The high-grade 4-wire circuit ensures precise transmission of the measurements
- Acoustic signal on over- and under-temperature
- Option (extra charge): volt-free contacts on "combination error" and "setpoint reached"
- Protection against unauthorised operation: through incubator-linked personal User-ID-Card (extra charge)

ICP cooled incubators: directly on target

Ideal for larger useful volumes! Wherever there is a requirement for rapid and precise alternating heating and cooling phases using ramp operation, Memmert cooled incubators with compressor cooling are showing their mettle - and yet operate at an extremely low noise level. Through the finely adjusted control technology the temperature accurately reaches the setpoint without any intermediate energetic spurts. The ICP 800, for example, requires only 21 minutes to cool down from 20°C to 10°C, or to heat up from 20°C to 37°C. It is obvious that only CFC-free coolants compatible with the environment are being employed.

5 sizes: 53 - 108 - 256 - 416 - 749 litre chamber volume.

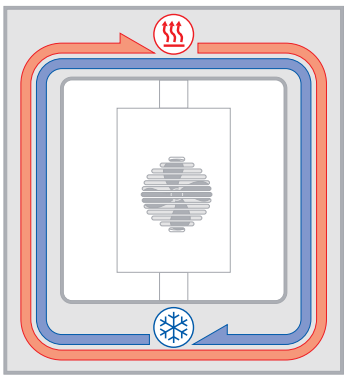
Temperature range compressor-cooled incubators ICP: 0°C to +60°C

Working chamber closed all-round

Refrigeration unit and heating system are located outside the working chamber in the air-jacket thermostating system which surrounds the entire inner chamber and ensures rapid and precise temperature control. In addition the motorised internal air circulation which is adjustable in 10% steps produces a particularly uniform temperature distribution.

The advantages:

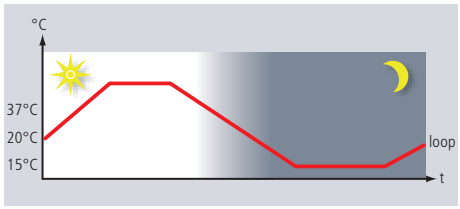
- No icing-up of the refrigeration unit through moisture in the chamber
- No drying-out of the sample due to the evaporator
- No dehumidification of the chamber since the air circulating in the jacket is completely separated from the air in the working chamber



The ICP air-jacket thermostating system

The sun rises here

- Realistic day-night simulation
- Programmable in combination with optional internal chamber illumination (extra charge; dimming function to special order)
- Thermally decoupled internal illumination



Programming function day-night simulation

Special control functions of the ICP

All compressor-cooled incubators are equipped with the most advanced Memmert controller class. Special functions provide more convenience combined with reduced energy consumption:

- Energy-saving control of the refrigeration unit – no wasted energy through continuous cooling running against the heating
- Demand-controlled defrosting through intelligent DEFROST function

Timer module

1 Time indication (here real time)

2 Text messages

Temperature module

23 Heating

24 Auto-defrost

25 Setpoint/actual temperature

26 Cooling (active)

27 Chamber ventilation

- Temperature adjustment: 0°C to +60°C (optimal performance at ambient temperatures from +16°C to +32°C)
- Variation (time): ±0.1°C max. uniformity (space): ±0.3°C max. at 10°C

Monitor module

28 Visual alarm

29 Alarm limit

30 Sounder on alarm

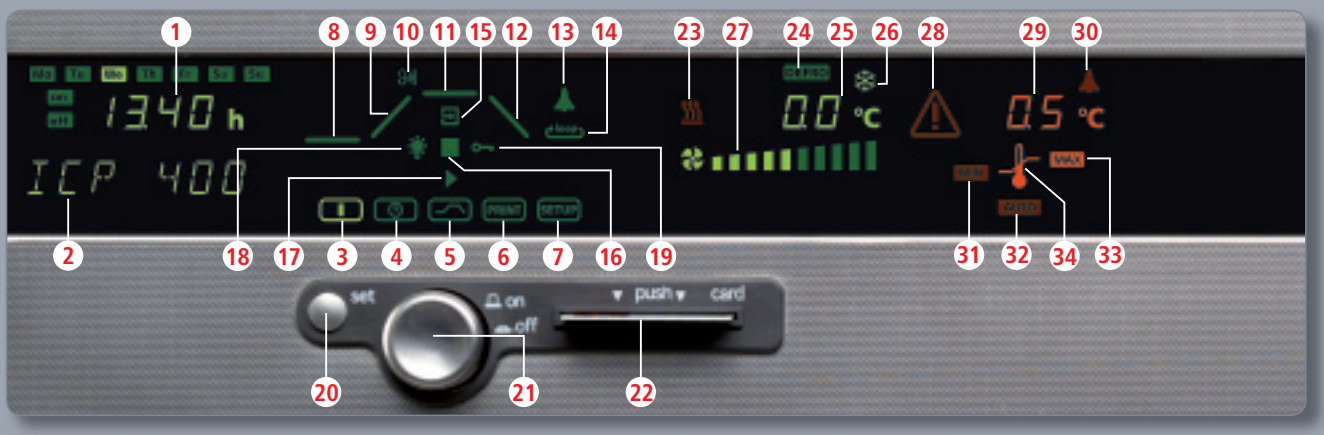
31 LOW alarm limit

32 Automatic alarm limit (ASF)

33 HIGH alarm limit

34 Temperature limiter

Acoustic and visual alarm on over-/undertemperature and other error messages



Operating mode

3 Normal operation (active)

4 Weekly timer*

5 Ramp timer (relative time programme)

6 Printer

7 Configuration

8 Wait (at programme start) hold (during programme)

9 Heating ramp

10 Setpoint wait – programme continues when setpoint is reached

11 Hold ramp

12 Cooling ramp

13 Sounder at ramp timer end

14 Repeat function

15 Edit (ramp timer)

16 Stop (ramp timer)

17 Start (ramp timer)

18 Internal chamber illumination (option)

19 Data manipulation prevented through optional User-ID-Card (extra charge)

20 SET key

21 Push/turn control

22 Chip card reader for MEMoryCard and optional User-ID-Card (extra charge)

* weekly timer, programmable with one ON and OFF time per weekday; additional group function (e.g. Mo – Fr)

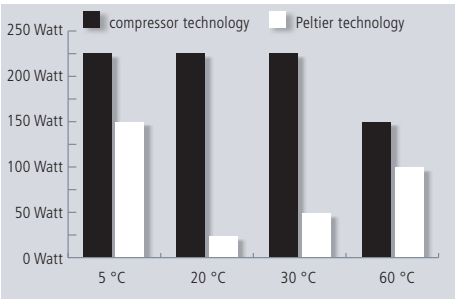
IPP cooled incubators: Precision? Exactly!

Ideal with smaller chamber volumes! With an extensive range of Peltier-cooled incubators Memmert occupies a leading position in this exacting market segment. The excellent controllability of the IPP models combined with their extremely small control fluctuations represents extra value from this perfect enhanced development of Peltier technology. Smooth changeover between heating and cooling in a single system.

The absence of a compressor provides extra space and results in a particularly pleasant silence in the lab. Up to a chamber volume of 108 litre the Memmert IPP cooled incubators offer a minimum of energy consumption with maximal environmental protection.

4 sizes: 32 - 39 - 53 - 108 litre chamber volume

Temperature range Peltier-cooled incubators IPP: +5°C to +70°C



Power demand reduced up to 90% at an ambient temperature of 22°C

No condensation inside the chamber

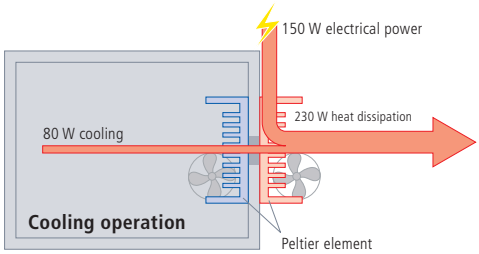
Due to the closed Peltier cooling system there is no air exchange with the surroundings. Physically unavoidable condensing water during the cooling process forms not inside the chamber but outside it on the cooling element. In addition the forced air circulation ensures rapid energy transport as well as optimal temperature distribution.

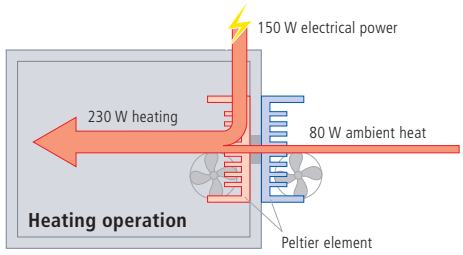
Combined heating-cooling technology saves energy

The Peltier system is particularly economical at temperatures close to ambient . Unlike compressor systems it only uses energy when heating or cooling is required. And the actual heating or cooling function can be controlled very precisely.

The advantages of the Memmert Peltier-cooled incubators:

- Compact construction, no compressor
- No gases or liquids (such as refrigerants) required, therefore no disposal problem
- Little vibration and noise
- Energy is consumed only while heating or cooling is required
- Closed chamber, therefore no drying of the chamber atmosphere
- Protection against contamination
- Extremely small control fluctuations





Heating and cooling in a single system: applying a voltage to the Peltier element produces cooling on one side together with heating on the opposite side. Reversing the polarity interchanges the heating and cooling sides



Timer module

1 Time indication (here real time)

2 Text messages

Temperature module

22 Heating function

23 Setpoint/actual temperature

24 Cooling function (active)

- Temperature adjustment: +5°C to +70°C (optimal performance at ambient temperatures from +12°C to +26°C)
- Variation (time): ±0.1°C max. uniformity (space): ±0.4°C max. at 10°C

Monitor module

25 Visual alarm

26 Alarm limit

27 Sounder on alarm

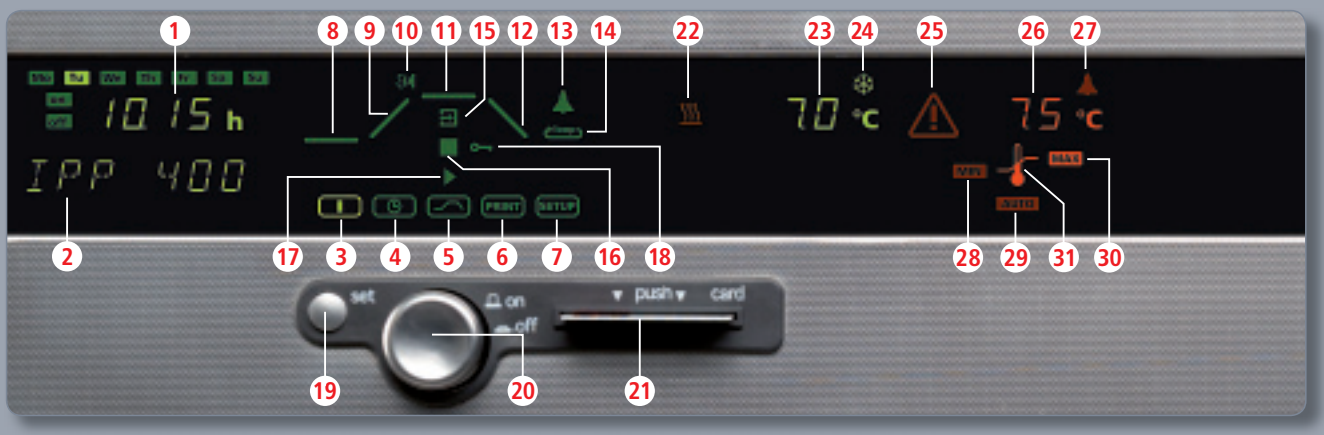
28 LOW alarm limit

29 Automatic alarm limit (ASF)

30 HIGH alarm limit

31 Temperature limiter

Acoustic and visual alarm on over-/undertemperature and other error messages



Operating mode

3 Normal operation (active)

4 Weekly timer*

5 Ramp timer (relative time programme)

6 Printer

7 Configuration

8 Wait (at programme start) hold (during programme)

9 Heating ramp

10 Setpoint wait – programme continues when setpoint is reached

11 Hold ramp

12 Cooling ramp

13 Sounder at ramp timer end

14 Repeat function

15 Edit (ramp timer)

16 Stop (ramp timer)

17 Start (ramp timer)

18 Data manipulation prevented through User-ID-Card (extra charge)

19 SET key

20 Push/turn control

21 Chip card reader for MEMoryCard and optional User-ID-Card (extra charge)

* weekly timer, programmable with one ON and OFF time per weekday; additional group function (e.g. Mo – Fr)

Technical data, models and accessories for Cooled Incubators ICP (Incubators Compressor-cooled Perfect)

Interfaces:

USB

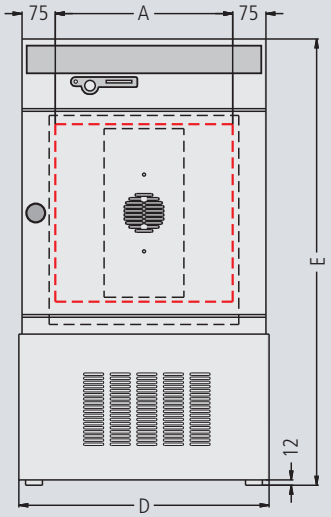
printer interface

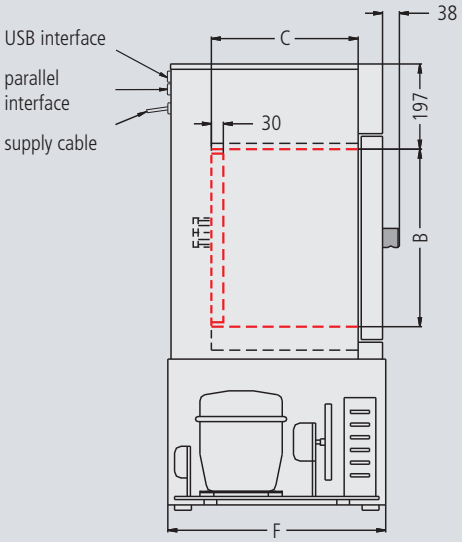
optional (extra charge):

Ethernet

LAN

CE





Dimensions of Cooled Incubators ICP (see table below)

Model sizes			ICP	400	500	600	700	800
Stainless steel interior mat. 1.4301 (ASTM 304), deep-drawn)	Volume		approx. l	53	108	256	416	749
	Width (clear dimensions)	(A)	mm	400	560	800	1040	1040
	Height (clear dimensions)	(B)	mm	400	480	640	800	1200
	Depth (less 30 mm for air duct in the middle of the back wall)	(C)	mm	330	400	500	500	600
	Provision for sliding stainless steel shelves or wire grid shelves		number	4	5	7	9	14
Stainless steel exterior (rear zinc-plated steel)	Width	(D)	mm	558	718	958	1198	1198
	Height (model sizes 600-800 mounted on lockable castors)	(E)	mm	967	1047	1335	1495	1895
	Depth (without door handle, depth of handle 38 mm)	(F)	mm	486	556	656	656	756
	Extra internal glass door			□	□	□	□	□
Temperature	Electronic microprocessor temperature controller with Pt100 and auto-diagnostic system			□	□	□	□	□
	Temperature sensors Pt100 Class A in 4-wire circuit for uninterrupted operation on failure of one Pt100 with warning indication			double	double	double	double	double
	Temperature range		° C	from 0 up to +60	from 0 up to +60	from 0 up to +60	from 0 up to +60	from 0 up to +60
	Temperature variation in time (to DIN 58 945)		° C	≤ ± 0,1	≤ ± 0,1	≤ ± 0,1	≤ ± 0,1	≤ ± 0,1
	Temperature uniformity in chamber at 10°C and 37 °C (to DIN 58 945)		° C	≤ ± 0,3	≤ ± 0,3	≤ ± 0,3	≤ ± 0,3	≤ ± 0,3
Monitor	Microprocessor temperature monitor acting as overtemperature protection, with Pt100 incorporating fault diagnostics with visual and acoustic alarm			□	□	□	□	□
	Digital over- and undertemperature monitor (protection class 3.3)			□	□	□	□	□
	Temperature monitoring band automatically linked to the setpoint (ASF)			□	□	□	□	□
	Mechanical temperature limiter (TB)			□	□	□	□	□
	Acoustic alarm: Over- and undertemperature			□	□	□	□	□
Timer functions	Real-time/weekly programmer with group function (e.g. Monday-Friday)			□	□	□	□	□
	Timer with residual running time: max. 40 ramps (each 1 min. up to 999 h) programmable through controller or MEMoryCard XL; programming via PC and free-of-charge software: unlimited number of ramps			□	□	□	□	□
Air Circulation	Fan speed adjustable from 10-100% in 10% steps			□	□	□	□	□
Documentation	Internal log memory 1024 kB as ring memory for all setpoints, actual values, errors, settings with real-time and date; capacity approx. 6 months at 1 min. intervals			□	□	□	□	□
	Parallel printer interface for printing logging files, suitable for all PCL3-compatible ink jet printers (USB available via converter, see accessories)			□	□	□	□	□
	„Celsius“[1)] software for control and documentation of temperature			□	□	□	□	□
Setup	Calibration (no separate PC required), Temperature: 3-point calibration on controller			□	□	□	□	□
	Setting of language for dialogue and display D / UK / E / F / I			□	□	□	□	□

Model sizes		ICP	400	500	600	700	800
Further data	Electrical supply[2]	V / Hz	230 / 50	230 / 50	230 / 50	230 / 50	230 / 50
	Electrical load (during heating)	approx. W	500	500	700	750	1200
	Net weight	approx. kg	68	87	144	178	227
	Gross weight	approx. kg	77	104	190	230	372
Standard accessories	Stainless steel sliding shelves	number	2 ☐	2 ☐	2 ☐	2 ☐	2 ☐
	Shelf or wire grid shelf width (grids to order; extra charge)	approx. mm	396	556	796	1036	1036
	Shelf or wire grid shelf depth	approx. mm	290	361	454	454	530
	Works calibration certificate (test point chamber centre at 10 °C and 37 °C)		☐	☐	☐	☐	☐
Standard version	Cooled Incubator ICP		ICP 400	ICP 500	ICP 600	ICP 700	ICP 800
Options	Locking door (security lock)		B6	B6	B6	B6	B6
	Extra stainless steel shelf		E0(x)	E0(x)	E0(x)	E0(x)	E0(x)
	Extra stainless steel tray (non-perforated) 15 mm rim (may affect the temperature distribution)		E2(x)	E2(x)	E2(x)	E2(x)	E2(x)
	Stainless steel grid (for good air circulation)		E3(x)	E3(x)	E3(x)	E3(x)	E3(x)
	Entry port (standard position centre/centre or centre top); for introducing connections at the side, can be closed by flap, 23 mm clear diameter (please state location or order no. when ordering)	left centre/centre left centre top right centre/centre right centre top	F0 F1 F2 F3	F0 F1 F2 F3	F0 F1 F2 F3	F0 F1 F2 F3	F0 F1 F2 F3
	Other port (23 mm diameter), in special positions in the back wall (please state location)		F6 (x)	F6 (x)	F6 (x)	F6 (x)	F6 (x)
	Temperature profile write/read unit for programming via PC, for writing to and reading from the chip card, up to 40 ramps		V3	V3	V3	V3	V3
	Additional chip card, blank, formatted (32 kB MEMoryCard XL for a maximum of 40 ramps)		V4	V4	V4	V4	V4
	Oven-linked authorisation card (User-ID-Card) prevents undesired manipulation by unauthorised third parties		V1	V1	V1	V1	V1
	Computer interface RS485 (for networking a maximum of 16 ovens) instead of USB		V2	V2	V2	V2	V2
	RS232 Interface instead of USB		W6	W6	W6	W6	W6
	Interface Ethernet instead of USB inclusive software "Celsius Ethernet-Edition"		W4	W4	W4	W4	W4
	Parallel/USB converter cable with integrated power supply unit to connect PCL3-compatible HP printers with USB interface to MEMMERT units.		W1	W1	W1	W1	W1
	Documentation package consisting of parallel USB converter cable including PLC3-compatible HP colour inkjet printer with USB interface (HP Deskjet 6940 or successor) for direct connection of printer to Memmert unit		W2	W2	W2	W2	W2
	USB connection cable for computer interface		W7	W7	W7	W7	W7
	Connection cable for computer interface RS232 according to DIN 12 900-1		V6	V6	V6	V6	V6
	Flexible Pt100 for positioning in chamber or in load with socket according to NAMUR NE 28 for external temperature recording (load temperature)		H4	H4	H4	H4	H4
	Potential-free contact (24 V/2 A) with socket to NAMUR NE 28 for external monitoring (indicates when setpoint is reached)		H5	H5	H5	H5	H5
	Potential-free contact (24 V/2 A) with socket to NAMUR NE 28 for combination error message (e.g. supply failure, sensor fault or fuse)		H6	H6	H6	H6	H6
	Floating triple contact, for signal generation, controlled by programme segment (using PC) for a total of 3 freely selected functions to be activated (e.g. activation of acoustic and visual signals, exhaust motors, fans, stirrers etc.)		H7	H7	H7	H7	H7
	Additional Pt100 temperature sensor, positioned flexibly in chamber or load, for local temperature measurement (up to 3 additional sensors are possible). The measured temperature can, if required, be indicated on the multifunction display, recorded in the integral ring store, and can be documented via the „Celsius"[1] software or on an attached printer		H8(x)	H8(x)	H8(x)	H8(x)	H8(x)
	Interior lighting (programme-segment-dependent switching on/off by process controller, for example day/night simulation), fluorescent lamps at the back – Thermally isolated illumination box with insulating glass window and reflectors	 no. of lamps/W Illumination approx. Lux	- - -	R2 6/15 1000	R2 6/18 2500	R2 6/18 1000	R2 6/30 2500
	Works calibration certificate at three temperatures: 0 °C, 37 °C, 60 °C		Z4	Z4	Z4	Z4	Z4
	IQ check list with works test data for incubator as support for validation by customer		Q1	Q1	Q1	Q1	Q1
	OQ check list with works test data for one freely selectable temperature value[3] incl. temperature distribution survey for 27 measuring points to DIN 12 880: 2007-05 as support for validation by customer		Q2	Q2	Q2	Q2	Q2
	Software „Celsius FDA Edition"[4] for up to 16 units. Meets the requirements for the use of electronically stored data sets and electronic signatures as laid down in Regulation 21 CFR Part 11 of the US Food and Drug Administration (FDA)		Q3	Q3	Q3	Q3	Q3
	Integration of additional units (up to max. 16 units) into an already existent FDA-software licence		Q4	Q4	Q4	Q4	Q4

Subject to technical modifications

1) MEMMERT "Celsius" software has been tested for Windows NT 4, 2000, XP and Vista
2) Other voltages upon request
3) Additional temperature values at extra cost
4) Requires Windows 2000 Professional or XP Professional

☐ Standard model, basic specification
– Not available
(x) Please specify quantity required after the order number

Technical data, models and accessories for Cooled Incubators IPP (Incubators Peltier-operated Perfect)

Interfaces:

USB

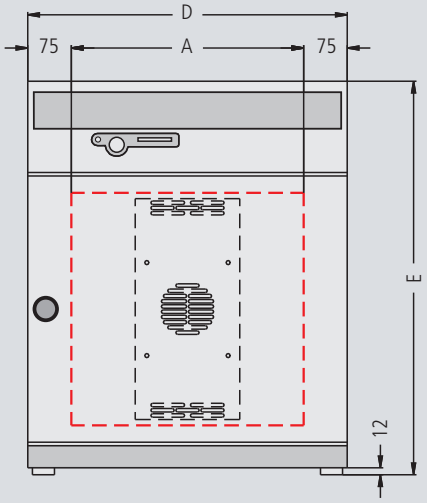
printer interface

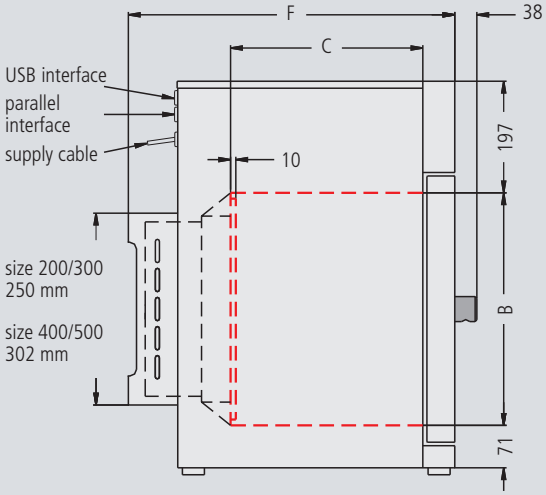
optional (extra charge):

Ethernet

LAN

CE





Dimensions of Cooled Incubators IPP (see table below)

size 500: 2 peltier elements in the rear

Model sizes			IPP	200	300	400	500
Stainless steel interior mat. 1.4301 (ASTM 304), deep-drawn	Volume		approx. l	32	39	53	108
	Width (clear dimensions)	(A)	mm	400	480	400	560
	Height (clear dimensions)	(B)	mm	320	320	400	480
	Depth (less 10 mm for air duct in the middle of the back wall)	(C)	mm	250	250	330	400
	Provision for sliding stainless steel shelves or wire grid shelves		number	3	3	4	5
Stainless steel exterior (rear zinc-plated steel)	Width	(D)	mm	550	630	550	710
	Height	(E)	mm	600	600	680	760
	Depth (without door handle, depth of handle 38 mm)	(F)	mm	490	490	550	620
	Extra internal glass door			☐	☐	☐	☐
Temperature	Electronic microprocessor temperature controller with Pt100 and auto-diagnostic system			☐	☐	☐	☐
	Temperature sensors Pt100 Class A in 4-wire circuit for uninterrupted operation on failure of one Pt100 with warning indication			double	double	double	double
	Temperature range		° C	from +5 up to +70	from +5 up to +70	from +5 up to +70	from +5 up to +70
	Temperature variation in time (to DIN 58 945)		° C	≤ ± 0,1	≤ ± 0,1	≤ ± 0,1	≤ ± 0,1
	Temperature uniformity in chamber at 10°C and 37 °C (to DIN 58 945)		° C	≤ ± 0,4	≤ ± 0,4	≤ ± 0,4	≤ ± 0,4
Monitor	Microprocessor temperature monitor acting as overtemperature protection, with Pt100 incorporating fault diagnostics with visual and acoustic alarm			☐	☐	☐	☐
	Digital over- and undertemperature monitor (protection class 3.3)			☐	☐	☐	☐
	Temperature monitoring band automatically linked to the setpoint (ASF)			☐	☐	☐	☐
	Acoustic alarm: Over- and undertemperature			☐	☐	☐	☐
Timer functions	Real-time/weekly programmer with group function (e.g. Monday-Friday)			☐	☐	☐	☐
	Timer with residual running time: max. 40 ramps (each 1 min. up to 999 h) programmable through controller or MEMoryCard XL; programming via PC and free-of-charge software: unlimited number of ramps			☐	☐	☐	☐
Documentation	Internal log memory 1024 kB as ring memory for all setpoints, actual values, errors, settings with real-time and date; capacity approx. 6 months at 1 min. intervals			☐	☐	☐	☐
	Parallel printer interface for printing logging files, suitable for all PCL3-compatible ink jet printers (USB available via converter, see accessories)			☐	☐	☐	☐
	„Celsius“[1)] software for control and documentation of temperature			☐	☐	☐	☐
Setup	Calibration (no separate PC required), Temperature: 3-point calibration on controller			☐	☐	☐	☐
	Setting of language for dialogue and display D / UK / E / F / I			☐	☐	☐	☐

Model sizes		IPP	200	300	400	500
Further data	Electrical supply[2]	V / Hz	230 / 50/60	230 / 50/60	230 / 50/60	230 / 50/60
	Electrical load (during heating and cooling)	approx. W	125	125	175	350
	Net weight	approx. kg	33	36	43	66
	Gross weight	approx. kg	40	45	52	70
Standard accessories	Stainless steel sliding shelves	number	1 ☐	1 ☐	2 ☐	2 ☐
	Shelf or wire grid shelf width (grids to order; extra charge)	approx. mm	397	477	396	556
	Shelf or wire grid shelf depth	approx. mm	213	213	290	361
	Works calibration certificate (test point chamber centre at 10 °C and 37 °C)		☐	☐	☐	☐
Standard version	Cooled Incubator IPP		IPP 200	IPP 300	IPP 400	IPP 500
Options	Locking door (security lock)		B6	B6	B6	B6
	Extra stainless steel shelf		E0(x)	E0(x)	E0(x)	E0(x)
	Extra stainless steel tray (non-perforated) 15 mm rim (may affect the temperature distribution)		E2(x)	E2(x)	E2(x)	E2(x)
	Stainless steel grid (for good air circulation)		E3(x)	E3(x)	E3(x)	E3(x)
	Entry port (standard position centre/centre or centre top); for introducing connections at the side, can be closed by flap, 23 mm clear diameter (please state location or order no. when ordering)	left centre/centre left centre top right centre/centre right centre top	F0 F1 F2 F3	F0 F1 F2 F3	F0 F1 F2 F3	F0 F1 F2 F3
	Stacking version for 2 incubators of equal size (bottom incubator modification)		G3	G3	G3	G3
	Temperature profile write/read unit for programming via PC, for writing to and reading from the chip card, up to 40 ramps		V3	V3	V3	V3
	Additional chip card, blank, formatted (32 kB MEMoryCard XL for a maximum of 40 ramps)		V4	V4	V4	V4
	Oven-linked authorisation card (User-ID-Card) prevents undesired manipulation by unauthorised third parties		V1	V1	V1	V1
	Computer interface RS485 (for networking a maximum of 16 ovens) instead of USB		V2	V2	V2	V2
	RS232 Interface instead of USB		W6	W6	W6	W6
	Interface Ethernet instead of USB inclusive software "Celsius Ethernet-Edition"		W4	W4	W4	W4
	Parallel/USB converter cable with integrated power supply unit to connect PCL3-compatible HP printers with USB interface to MEMMERT units.		W1	W1	W1	W1
	Documentation package consisting of parallel USB converter cable including PLC3-compatible HP colour inkjet printer with USB interface (HP Deskjet 6940 or successor) for direct connection of printer to Memmert unit		W2	W2	W2	W2
	USB connection cable for computer interface		W7	W7	W7	W7
	Connection cable for computer interface RS232 according to DIN 12 900-1		V6	V6	V6	V6
	Flexible Pt100 for positioning in chamber or in load with socket according to NAMUR NE 28 for external temperature recording (load temperature)		H4	H4	H4	H4
	Potential-free contact (24 V/2 A) with socket to NAMUR NE 28 for external monitoring (indicates when setpoint is reached)		H5	H5	H5	H5
	Potential-free contact (24 V/2 A) with socket to NAMUR NE 28 for combination error message (e.g. supply failure, sensor fault, fuse)		H6	H6	H6	H6
	Floating triple contact, for signal generation, controlled by programme segment (using PC) for a total of 3 freely selected functions to be activated (e.g. activation of acoustic and visual signals, exhaust motors, fans, stirrers etc.)		H7	H7	H7	H7
	Additional Pt100 temperature sensor, positioned flexibly in chamber or load, for local temperature measurement (up to 3 additional sensors are possible). The measured temperature can, if required, be indicated on the multifunction display, recorded in the integral ring store, and can be documented via the „Celsius"[1] software or on an attached printer		H8(x)	H8(x)	H8(x)	H8(x)
	Works calibration certificate at three temperatures: 5 °C, 37 °C, 60 °C		Z4	Z4	Z4	Z4
	IQ check list with works test data for incubator as support for validation by customer		Q1	Q1	Q1	Q1
	OQ check list with works test data for one freely selectable temperature value[3] incl. temperature distribution survey to DIN 12880: 2007-05 (size 200/300: 9 measuring points, size 400/500: 27 measuring points) as support for validation by customer		Q2	Q2	Q2	Q2
	Software „Celsius FDA Edition"[4] for up to 16 units. Meets the requirements for the use of electronically stored data sets and electronic signatures as laid down in Regulation 21 CFR Part 11 of the US Food and Drug Administration (FDA)		Q3	Q3	Q3	Q3
	Integration of additional units (up to max. 16 units) into an already existent FDA-software licence		Q4	Q4	Q4	Q4

Subject to technical modifications

1) MEMMERT "Celsius" software has been tested for Windows NT 4, 2000, XP and Vista
2) Option: 115 V / 50/60 Hz
3) Additional temperature values at extra cost
4) Requires Windows 2000 Professional or XP Professional

☐ Standard model, basic specification
– Not available
(x) Please specify quantity required after the order number

OUR PROGRAMME

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Some of the illustrations in this publication include special accessories. We reserve the right of technical modifications. Dimensions are subject to confirmation.

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