
$CO_2$-cooled climate chamber ICHeco
with TwinDISPLAY + AtmoCONTROL software

Model sizes: 110 / 260 / 750

| | |
|---|---|
| ICHeco / ICH | with humidity control |
| ICHeco L / ICH L | with humidity control and light |
| ICH C | with humidity and $CO_2$ control |

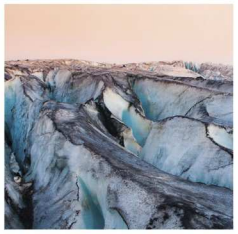
Temperature range with humidity

| | |
|---|---|
| ICHeco / ICH | +10 °C to +60 °C |
| ICHeco L / ICH L | +10 °C to +60 °C |
| ICH C | +10 °C to +50 °C |
| Humidity range | 10 to 80 % rh |

Temperature range without humidity

| | |
|---|---|
| ICHeco / ICH | -10 °C to +60 °C |
| ICHeco L / ICH L | 0 °C to +60 °C |
| ICH C | +10 °C to +50 °C |

**CLIMATE CHAMBER ICHeco** These environmentally-friendly stability testing chambers operate with climate-friendly $CO_2$ (R744) as refrigerant. Powerful and climate-friendly at the same time, they are especially designed for testing pharmaceuticals according to ICH, Q1A and Q1B (option 2) as well as for testing the stability of cosmetics and foodstuffs. Temperature and humidity are distributed homogeneously and stable throughout the interior.



## Refrigerant $CO_2$ is climate-friendly

The decision for a $CO_2$-cooled climate chamber ICHeco makes sense. The refrigerant $CO_2$ (R744) is almost climate-neutral in contrast to refrigerants with fluorinated greenhouse gases (e.g. R134a). Legal restrictions for use are therefore completely excluded in the future. R744 is neither flammable nor toxic and does not cause ozone depletion in the atmosphere.

## Refrigerant $CO_2$ ensures better cooling performance

An ICHeco is virtually maintenance-free and extremely powerful. Compared to appliances with refrigerant R134a, it scores with faster cooling-down times. The Memmert climate chambers ICH with refrigerant R134a will be available in parallel.

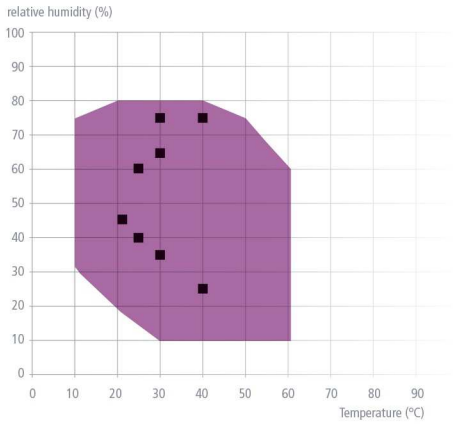
## All-round protection of samples

No icing, no drying out of samples, no dehumidification of the working chamber. Cooling aggregate and heating of the ICHeco/ICH are situated outside the working chamber in the air jacket surrounding the entire chamber thus ensuring quick and precise temperature control. Furthermore, the motor-driven forced air circulation, adjustable in 10 % steps, ensures particularly homogenous temperature distribution.

**Optionally with illumination unit (ICHeco L / ICH L) or $CO_2$ control (ICH C)**

For tests according to ICH Q1B, option 2, an illumination unit with standard light D65 is available if required. The light sources are fluorescent lamps with cold white light (daylight: light colour 865, 6,500 K) and UV lamps in the spectral range 320 - 400 nm. Especially for tests in the construction industry model ICH C is available with a digitised, electronic $CO_2$ control with automatic zero setting, NDIR measuring method, self-diagnosis system, acoustic error display and air pressure compensation.

### Temperature-humidity working range




■ Temperature and humidity test points defined in the ICH guideline

Note:
Within the respective temperature-humidity range, condensation-free permanent operation is possible. To which extent condensation may occur in the threshold range depends on the humidity content of the chamber load and the ambient conditions.

# CLIMATE CHAMBERS ICH

according to DIN 12880:2007-05, EN 61010-1 (IEC 61010-1), EN 61010-2-010

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

Interior: Stainless steel, mat. 1.4301 (ASTM 304), deep-drawn

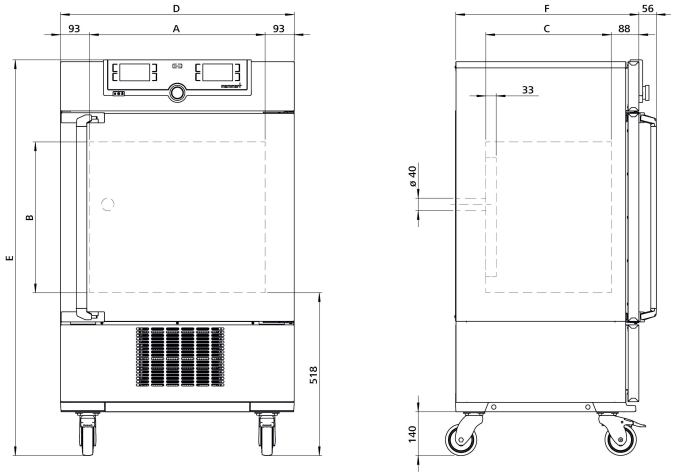
Housing: Textured stainless steel, rear zinc-plated steel, intuitively operated TwinDISPLAY (TFT colour display) with touchscreen

Double doors: Outside stainless steel, fully insulated, inside glass (size 750: two leaves)

Connection: Mains cable with plug (German type)

Installation: Mounted on lockable castors

Interfaces: Ethernet LAN, USB




| Model sizes/Description | | | | 110 | 260 | 750 |
|---|---|---|---|---|---|---|
| Stainless steel interior | Volume | | approx. l | 108 | 256 | 749 |
| | Width | (A) | mm | 560 | 640 | 1040 |
| | Height | (B) | mm | 480 | 800 | 1200 |
| | Depth (less 33 mm for fan) | (C) | mm | 400 | 500 | 600 |
| | Max. number of grids/shelves | | number | 5 | 9 | 14 |
| | Max. loading per grid/shelf | | kg | 20 | | 30 |
| | Max. loading of chamber | | kg | 150 | 200 | |
| | Max. loading per slide-in drip tray | | kg | 3 | 4 | 8 |
| | Max. loading per bottom drip tray | | kg | 3 | 4 | 8 |
| Textured stainless steel exterior | Width | (D) | mm | 745 | 824 | 1224 |
| | Height (with castors) | (E) | mm | 1233 | 1552 | 1950 |
| | Depth (without door handle, depth of handle +56 mm) | (F) | mm | 585 | 685 | 785 |
| Standard equipment | Stainless steel grids, electropolished | | number | 2 | | |
| | Entry port (silicone), 40 mm clear diameter, moisture tight, can be closed by a silicone stopper, standard position at the back | | | ● | | |
| | Water tank including connection hose | | | ● | | |
| | Standard works calibration certificate (measuring point chamber center) | | | +10, +37 and +30 °C with 60 % rh | | |
| Temperature | Working temperature range without humidity ICH (not suitable for long-term storing at sub-zero temperatures. During permanent operation, the glass door may ice over) | | °C | -10 to +60 | | |
| | Working temperature range ICH/ICH L with humidity and/or light | | °C | +10 to +60 | | |
| | Working temperature range ICH C with and without humidity | | °C | +10 to +50 | | |
| | Working temperature range ICH L without humidity | | °C | 0 to +60 | | |
| | Setting temperature range ICH | | °C | -10 to +60 | | |
| | Setting temperature range ICH L | | °C | 0 to +60 | | |
| | Setting temperature range ICH C | | °C | +10 to +50 | | |
| | Setting accuracy | | °C | 0.1 | | |
| Humidity | Setting range humidity | | % rh | 10 to 80 | | |
| | Setting accuracy | | % rh | 0.5 | | |
| $CO_2$ / $O_2$ | Digital electronic $CO_2$ control with autozero, NDIR system, with auto-diagnostic system and acoustic fault indication, barometric pressure compensation (only ICH C), setting range | | % $CO_2$ | 0 to 20 | | 0 to 10 |
| | Setting accuracy $CO_2$ (only ICH C) | | % $CO_2$ | 0.1 | | |
| | Control accuracy $CO_2$ at 0 – 10 % $CO_2$ | | % | +/- 0.2 | | +/- 0.3 |
| | Control accuracy $CO_2$ at 11 – 15 % $CO_2$ | | % | +/- 0.5 | | - |
| Light | Illumination unit (only ICH L) acc. ICH Q1B, option 2; separately switchable via controller, one box; Number of fluorescent lights with cold white light (size 110: 3, size 260/750: 4), light colour 865 6,500 K; Number of fluorescent lights with UV lamps (all sizes: 2), spectral range from 320 to 400 nm; (daylight and UV light comply with standard illuminant D65) | | | ● | | |
| Further data | Electrical load at 230/115 V, 50/60 Hz ICH L | | approx. W | 1450 | | 1550 |
| | Electrical load at 230/115 V, 50/60 Hz ICH and ICH C | | approx. W | 1350 | | |
| Packing data | Net weight | | approx. kg | 109 | 160 | 249 |
| | Gross weight (packed in carton) | | approx. kg | 137 | 217 | 319 |
| | Width | | approx. mm | 880 | 930 | 1330 |
| | Height | | approx. mm | 1410 | 1760 | 2150 |

Prices for options are only valid when ordering new appliances.
Not all options/accessories are combinable with each other. Please contact us for individual combination requests.

Feb-2021

| Model sizes/Description | | | 110 | 260 | 750 |
|---|---|---|---|---|---|
| Packing data | Depth | approx. mm | 810 | 930 | 1050 |
| **Order No. Climate Chambers** | | | ICH110 | ICH260 | ICH750 |
| ICH = Climate chamber | | | ICH110L | ICH260L | ICH750L |
| ICH L = Climate chamber with light | | | ICH110C | ICH260C | ICH750C |
| ICH C = Climate chamber with $CO_2$ control | | | | | |

| Options | | 110 | 260 | 750 |
|---|---|---|---|---|
| Voltage 115 V, 50/60 Hz | | X2 | | |
| Chamber modification for the application of reinforced perforated stainless steel shelves or stainless steel grids (bearing rails mounted in the working chamber) - includes replacement of standard grids by reinforced grids (ICHeco/ICH and ICH C only) | | - | | K1 |
| Illumination unit (has to be ordered together with the chamber) consisting of 4 fluorescent lights with cold white light (daylight: light colour 865, 6,500 K) and 2 UV lamps in the spectral range of 320 to 400 nm, acc. ICH Q1B, option 2 (daylight and UV light comply with standard illuminant D65) separately switchable via controller (only ICHeco L/ICH L) | second box | - | T72 | |
| Alternative light boxes (replace the standard lighting; have to be ordered together with the chamber); number of fluorescent lamps: size 110: 5, sizes 260/750: 6, with cold white light (daylight: light colour 865, 6.500 K; daylight complies with standard illuminant D65) (only ICHeco L/ICH L) | one box | | T81 | |
| | second box (cannot be switched on separately) | - | T82 | |
| Alternative light boxes (replace the standard lighting; have to be ordered together with the chamber); number of fluorescent UV lamps: size 110: 5, sizes 260/750: 6, in the spectral range of 320 to 400 nm; UV light complies with standard illuminant D65 (only ICHeco L/ICH L) | one box | | T01 | |
| | second box (cannot be switched on separately) | - | T02 | |
| Interior socket, ampacity 230 V/2.2 A, can be switched off with the On/Off switch, cannot be switched individually, moisture tight IP68 (not for ICH110eco L/ICH110L) | | | R3 | |
| Entry port, 23 mm clear diameter, for introducing connections at the side, moisture tight, can be closed by flap and silicone stopper, standard positions (F1 and F3 not for models ICHeco L/ICH L) | left centre/centre | | F0 | |
| | left centre/top | | F1 | |
| | right centre/top | - | F3 | |
| Entry port (silicone), 40 mm clear diameter, moisture tight, can be closed by silicone stopper, at the back (please state location). Not for models ICHeco L/ICH L | | - | F7 | |
| 4 - 20 mA current loop interface | Temperature controller actual value (-20 to +70 °C = 4 - 20 mA) | | V3 | |
| | Temperature of a Pt100 sensor positioned flexibly in chamber for external temperature monitoring (max. 3) - price per sensor (-20 to +70 °C = 4 - 20 mA) | | V6 | |
| | Humidity controller, actual value (0 to 100 % rh = 4 - 20 mA) | | V7 | |
| | $CO_2$ controller, actual value (0 to 25 % $CO_2$ = 4 - 20 mA) (only ICH C) | | V9 | |
| Fan speed monitoring with switching off the heating and with alarm in case of failure | | | V4 | |
| Works calibration certificate for one (freely selectable) temperature and humidity value | | | D00105 | |
| Works calibration certificate for one (freely selectable) temperature, humidity and $CO_2$ value according to customer specification (ICH C) | | | D00131 | |
| Compressed air dehumidification (efficient dehumidification of the interior by means of compressed air - only ICHeco/ICH and ICHeco L/ICH L) Standard works calibration certificate (measuring point chamber centre) at +10 °C with 10 % rh | | | C9 | |
| Door with lock and key (safety lock) | | | B6 | |
| Potential-free contact for combination error message (e.g. supply failure, sensor fault, fuse) | | | H6 | |
| Door-open-recognition, shuts down humidity, light and $CO_2$ (standard with ICH C and ICHeco L/ICH L) | | | V5 | |
| MobileALERT, notification by SMS in case of any error or alarm of the device (requires option H6) | | | C3 | |

| Accessories | 110 | 260 | 750 |
|---|---|---|---|
| Stainless steel grid, electropolished | E20165 | E28891 | E20182 |
| Reinforced stainless steel grid, electropolished, max. loading 60 kg; size 750 with guide bars and fixing screws (requires option K1). Please consider max. loading of chamber | E29767 | E29766 | B32190 |
| Perforated stainless steel shelf | B00325 | B29725 | B00328 |
| Reinforced stainless steel shelf, max. loading 60 kg; with guide bars and fixing screws (requires option K1). Please consider max. loading of chamber | - | | B32191 |
| Stainless steel slide-in drip tray, 15 mm rim (may affect the temperature distribution, not in connection with option K1) | E02073 | E29726 | E02075 |
| Stainless steel slide-in drip tray, 15 mm rim, with guide bars and fixing screws (may affect the temperature distribution, only in connection with option K1) | - | | B32763 |
| Stainless steel bottom drip tray, 15 mm rim (may affect the temperature distribution, not in connection with option K1) | B04359 | B29722 | B04362 |
| Stainless steel bottom drip tray, 15 mm rim (may affect the temperature distribution, only in connection with option K1) | - | | B34055 |
| Holder for water tank (2.5 litres) for mounting on the rear of the appliance. Standard equipment for size 750 | E32172 | | - |
| Central water supply with filter cartridges for connection to the domestic water supply. Product information on demand | ZWVR6 | | |



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| Accessories | 110 | 260 | 750 |
|---|---|---|---|
| Central water supply without filter cartridges for connection to the domestic water supply (only for demineralised water with a conductivity of 5 to 10 µS/cm and a pH value between 5 and 7). Product information on demand | | ZWVR7 | |
| $CO_2$ pressure reducing valve to DIN 8546, incl. gas cylinder monitor (only ICH C) | | E02087 | |
| USB-Ethernet adapter | | E06192 | |
| Ethernet connection cable 5 m for computer interface | | E06189 | |
| USB User-ID stick (with User-ID licence): Oven-linked authorisation licence (User-ID-programme) on Memory-stick, prevents undesired manipulation by unauthorised third parties. When reordering please specify serial number | | B33170 | |
| FDA conforming software AtmoCONTROL (FDA edition). 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). Base licence for the control of one unit. Respective IQ/OQ documents available in German and English language (without surcharge) | | FDAQ1 | |
| Integration of additional units (up to max. 31 units) into an already existent FDA-software licence | | FDAQ2 | |
| External measuring instrument with sensors for daylight and UV-light. Product information on demand (only ICHeco L/ICH L) | | B04713 | |
| External measuring instrument with additional measuring head for temperature and humidity measurement. Product information on demand | | B04714 | |
| DAkkS calibration for one (freely selectable) temperature and humidity value according to method C (DKD-R 5-7) | | E48847 | |
| DAkkS calibration for further temperature and humidity values according to method C (DKD-R 5-7) | | E48848 | |
| IQ document with device-specific works test data, OQ/PQ check list as support for validation by customer | | D00124 | |
| IQ/OQ document with device-specific works test data for one free-selectable temperature value, incl. temperature distribution survey at Memmert for 27 measuring points to DIN 12880:2007-05. PQ check list as support for validation by customer. 305 € for further temperature values | | D00127 | |
| IQ/OQ document with device-specific works test data for one free-selectable temperature and humidity value, incl. temperature distribution survey at Memmert for 27 measuring points to DIN 12880:2007-05, PQ check list as support for validation by customer. 475 € for further temperature and humidity values | | D00136 | |
| IQ/OQ document with device-specific works test data for one free-selectable temperature and humidity value, and measuring of light intensity, incl. temperature distribution survey at Memmert for 27 measuring points to DIN 12880:2007-05, PQ check list as support for validation by customer (models ICHeco L/ICH L). 605 € for further temperature and humidity values, and measuring of light intensity | | D00137 | |
| IQ/OQ document with device-specific works test data for one free-selectable $CO_2$, humidity and temperature value, incl. temperature distribution survey at Memmert for 27 measuring points to DIN 12880:2007-05, PQ check list as support for validation by customer (models ICH C). 605 € for further $CO_2$, humidity and temperature values | | D38897 | |
| On-site IQ/OQ for a freely selectable temperature and humidity value, including temperature distribution survey for 27 measuring points to DIN 12880: 2007-05 (excluding travel costs, not subject to discount, GER, AT, FR only) | | DLQ101 | |
| Extension of DLQ101 by an additional freely selectable temperature and humidity value (not subject to discount) | | DLQ101A | |
| On-site IQ/OQ for a freely selectable temperature and $CO_2$ value, including temperature distribution survey for 27 measuring points to DIN 12880: 2007-05 (models ICH C) (excluding travel costs, not subject to discount, GER, AT, FR only) | | DLQ102 | |
| Extension of DLQ102 by an additional freely selectable temperature and $CO_2$ value (models ICH C) (not subject to discount) | | DLQ102A | |
| On-site IQ/OQ for a freely selectable temperature, humidity and $CO_2$ value, including temperature distribution survey for 27 measuring points to DIN 12880: 2007-05 (models ICH C) (excluding travel costs, not subject to discount, GER, AT, FR only) | | DLQ103 | |
| Extension of DLQ103 by an additional freely selectable temperature, humidity and $CO_2$ value (models ICH C) (not subject to discount) | | DLQ103A | |
| Individual on-site Performance Qualification (PQ) | | DLQ200 | |
| Maintenance ICH-C - carrying out and documentation according to Memmert maintenance plan (excluding travel costs, not subject to discount, GER, AT, FR only) | | S00316 | |
| Maintenance contract ICH-C - carrying out and documentation according to Memmert maintenance plan, minimum duration 3 years (excluding travel costs, not subject to discount, GER, AT, FR only) | | S00316J | |
| Maintenance ICH/ ICHeco - carrying out and documentation according to Memmert maintenance plan (excluding travel costs, not subject to discount, GER, AT, FR only) | | S00322 | |
| Maintenance contract ICH/ ICHeco - carrying out and documentation according to Memmert maintenance plan, minimum duration 3 years (excluding travel costs, not subject to discount, GER, AT, FR only) | | S00322J | |
| Calibration of one freely selectable temperature value (excluding travel costs, not subject to discount, GER, AT, FR only) | | S00205 | |
| Calibration of an additional temperature value (not subject to discount) | | S00215 | |
| Calibration of one freely selectable temperature and humidity value (excluding travel costs, not subject to discount, GER, AT, FR only) | | S00207 | |
| Calibration of an additional temperature and humidity value (not subject to discount) | | S00216 | |
| Calibration of one freely selectable temperature and humidity value including $CO_2$ (excluding travel costs, not subject to discount, GER, AT, FR only) | | S00211 | |
| Calibration of an additional temperature and humidity value including $CO_2$ (not subject to discount) | | S00217 | |

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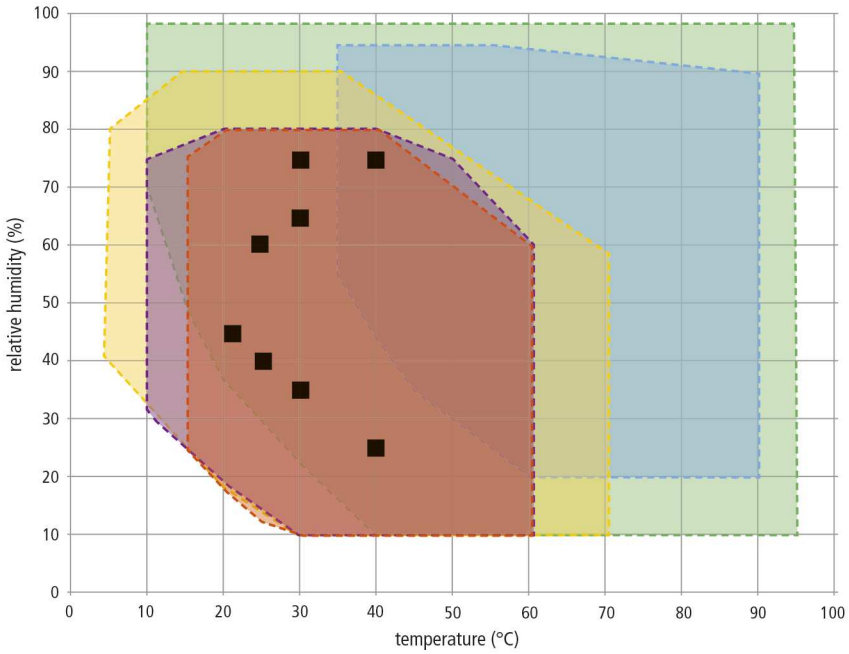
# DECISION AID FOR PRODUCTS WITH HUMIDITY CONTROL




## Explanation of diagram:

Within the respective temperature-humidity range, condensation-free permanent operation is possible. To which extent condensation may occur in the threshold range depends on the humidity content of the chamber load and the ambient conditions.

- ICHeco/ICH
- HPP110eco-HPP1060eco
- HPP1400eco/2200eco
- HCP
- CTC
- Climate testing points according to ICH guidelines

**Model selection**

| Model size in litres (= dm³) | ICHeco/ICH | HPPeco | | HCP | CTC |
|---|---|---|---|---|---|
| 56 | | | | HCP50 | |
| 107 | | | | HCP105 | |
| 108 | ICH110eco/ICH110 | HPP110eco | | | |
| 156 | | | | HCP150 | |
| 241 | | | | HCP240 | |
| 256 | ICH260eco/ICH260 | HPP260eco | | | CTC256 |
| 384 | | HPP410eco | | | |
| 749 | ICH750eco/ICH750 | HPP750eco | | | |
| 1060 | | HPP1060eco | | | |
| 1360 | | | HPP1400eco | | |
| 2140 | | | HPP2200eco | | |
| Temp. with hum. | +10 to +60 °C | 5[2] to +70 °C | 15[3] to +60 °C | 7[1] to +90 °C | +10 to +95 °C |
| Temp. w/o hum. | -10 to +60 °C | 0[2] to +70 °C | 15[3] to +60 °C | 7[1] to +90 °C | -42 to +190 °C |
| Humidity range | 10 to 80 % rh | 10 to 90 % rh | 10 to 80 % rh | 20 to 95 % rh | 10 to 98 % rh |
| Ambient conditions | +19 to +25 °C, max 50 % rh according to Memmert works standard | | | | |

[1] above ambient temperature
[2] at least 20 °C below ambient temperature
[3] at least 10 °C below ambient temperature

## Important notes concerning working ranges

If the temperature-humidity values exceed the specific limits (working range), the superheated steam introduced will immediately condense at the coldest point in the appliance, due to the dew point.

If the temperature-humidity values fall below the specific limits (working range), the effective range is heavily dependent on the humidity content of the chamber load.

The higher the humidity content of the chamber load, the more steam is generated inside the chamber. This may influence the maintenance of the constant humidity. If you need constant stable operation at the edges or the chamber load is very humid, we recommend dehumidifying with compressed air. We also have other technical solutions for special needs that guarantee stable operation. Send us your inquiry!

To support you in choosing the right appliance, the Memmert TechLab MPTC is always available for tests under realistic conditions. Your customer service representative will gladly establish contact.

## MODEL VARIANTS

| SingleDISPLAY<br>ControlCOCKPIT with one TFT display | TwinDISPLAY<br>ControlCOCKPIT with two TFT displays |
|---|---|
| **AVAILABLE APPLIANCES**<br>**UN / UF / IN / IF / IPPeco / IPP / UNm / UFm / INm / IFm / SN / SF / IFbw** | **AVAILABLE APPLIANCES**<br>**HPPeco / ICHeco / ICH / HCP / UNplus / UFplus / UF TS / UNpa / VO / INplus / IFplus / ICO / IPPecoplus / IPPplus / ICPeco / ICP / UNmplus / UFmplus / INmplus / IFmplus / SNplus / SFplus / ICOmed** |
| One high-resolution TFT colour display with touch-sensitive buttons for selection of functions | Two high-resolution TFT colour displays with touch-sensitive buttons for selection of functions |
| Available parameters on the ControlCOCKPIT: Temperature (Celsius or Fahrenheit), fan speed, exhaust air flap position, programme time | Available parameters on the Control COCKPIT: All parameters of the SingleDISPLAY and device-specific parameters like relative humidity, illumination and $CO_2$ |
| One temperature sensor Pt100 DIN class A in a 4-wire circuit | Two Pt100 sensors DIN class A in a 4-wire circuit for mutual monitoring, taking over functions in case of an error |
| | HeatBALANCE function for application specific adjustment of heat output distribution (balance) between the upper and lower heating groups in an adjustment range between -50 % and +50 % (not valid for models 30, HPP110eco, IPP110ecoplus, ICPeco, ICP, ICHeco, ICH) |
| AtmoCONTROL software[1)] for reading out, managing and organising the data logger via Ethernet interface (temporary trial version can be downloaded). USB stick with AtmoCONTROL software available as accessory (on demand) | AtmoCONTROL software[1)] on a USB stick for programming, managing and transferring programmes via Ethernet interface or USB port |
| | ControlCOCKPIT with USB port for uploading programmes, reading out protocol logs, activating the User-ID function |
| | Displaying of already logged protocol data on the ControlCOCKPIT (max 10,000 values correspond to approx. 1 week) |
| Ethernet interface on the rear of the appliance for reading out the protocol log and for online logging | Ethernet interface on the rear of the appliance for reading out the protocol log and for uploading programmes and for online logging |
| Double overtemperature protection: Electronic temperature monitoring with freely adjustable monitoring temperature, for models U, I, S with option A6 TWW/TWB (protection class 3.1 or 2), mechanical temperature limiter TB acc. to DIN 12880 | Multiple overtemperature protection: Electronic temperature monitoring TWW/TWB (protection class 3.1 or 2 resp. 3.3 for units with active cooling) and mechanical temperature limiter TB (protection class 1) acc. to DIN 12880, AutoSAFETY automatically adjusts to the set value within a freely adjustable tolerance range. Setting individual MIN / MAX values for over/undertemperature and also for all other parameters such as relative humidity, $CO_2$ |

PID microprocessor control with integrated auto-diagnostic system

Structured stainless steel housing, scratch-resistant, robust and durable; rear of zinc-plated steel

High-temperature connectors on the rear of the appliance for single-phase power connection according to country specific systems and IEC standards

Internal data logger with a storage capacity of at least 10 years

German, English, French, Spanish, Polish, Czech, Hungarian language settings available on the ControlCOCKPIT

Digital backwards counter with target time setting, adjustable from 1 minute to 99 days

The SetpointWAIT function guarantees that the process time does not start until the set temperature is reached at all measuring points – optional for temperature values recorded by the freely positionable Pt100 sensors inside the chamber

Adjustment of three calibration values for temperature and additional appliance specific parameters directly at the ControlCOCKPIT

1) As a manufacturer, Memmert GmbH + Co. KG clearly labels its devices, which are medical devices in the sense of the European legislation. The AtmoCONTROL software is not a medical device. All Memmert medical devices can be used for their purpose without the software AtmoCONTROL. AtmoCONTROL is only intended for reading the data logging in conjunction with Memmert GmbH + CO. KG medical devices.

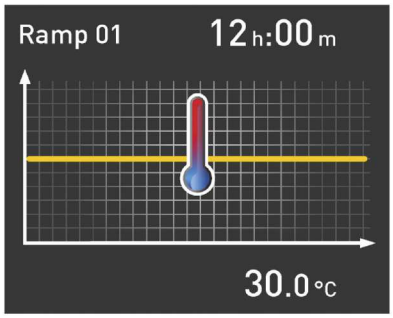
# SOFTWARE AtmoCONTROL

## AtmoCONTROL
## The innovative control and logging software

Parameters such as temperature and humidity as well as the process time can be set directly at the ControlCOCKPIT. Ramp programming is done via the control and logging software AtmoCONTROL.

### Drag, drop & go!

Numerical and graphic programming of complex processes is a thing of the past. Today, programming is done via AtmoCONTROL by means of the mouse or touchpad on your notebook. Even the most complex ramp programmes are created within minutes. Simply drag & drop the graphical symbols for the desired parameters to the input field and change the values according to your wishes with a mouse click.

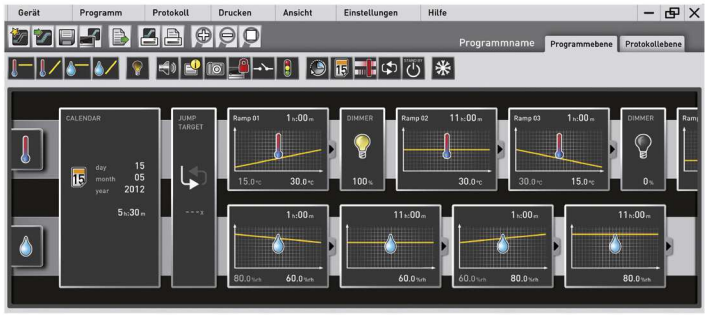



### Programme functions for appliances with SingleDISPLAY and TwinDISPLAY

- Reading out, managing and organising the data logger
- Saving the log memory in various formats
- Online monitoring of up to 32 connected appliances
- Optical alarms when the alarm limits individually set at the ControlCOCKPIT are exceeded
- Automatic alarm to one or several e-mail addresses

### Additional functions for appliances with TwinDISPLAY

- Intuitive programming and archiving of ramps and programme sequences
- Synchronous visualisation of the created programme sequence during programming
- Application-specific repeat functions (loops) can be inserted within a temperature control programme in any place
- Simple creation of repeating weekly programmes
- Programming, managing and transferring programmes via Ethernet interface or USB port



# 24 HOURS AT YOUR SERVICE

## www.memmert.com

Here you can find the latest news concerning our company and products, as well as detailed descriptions of every single product. Additional information on the technologies used will support your sales arguments. In addition to this, data sheets, certificates, operating instructions and brochures are available for download. Service notifications can be submitted to our service team using the corresponding form.

## Dedicated login area for our trading partners

- Technical information:
  Service instructions, software download, wiring diagrams, maintenance schedules etc.
- Marketing/sales information:
  Press releases, product photos, image photos, videos, order form for advertising material etc.
- Download of price list and customisation department price list
- Dates and registration form for sales and service trainings

Our tip:

Please consider the Memmert customer information, which we regularly send exclusively to our trading partners. We inform you about campaigns, upcoming product launches, service offers and new application reports!

## Device Modifications - Proven and Good

**The perfect extension for your Memmert appliance**
Our mission at Memmert is to provide you with the best possible solution for your individual application. With the increasing complexity of customer processes, a custom-fit modification of our appliances has many advantages for your application. Through modifications, process and set-up times can be significantly reduced or errors in the application can be completely ruled out by monitoring devices. Even small measures, such as individually adapted accessories, have a noticeable influence on the ergonomics and user-friendliness in the operation of the appliance.

You as a customer have the best ideas - and often already have a specific idea of how our products can be better used in your working environment.

Tell us about your thoughts and let us create an individual solution together with you! Please contact us and call us at +49 9122-925-0 or send us an email to sonderbau@memmert.com.

The Memmert customisation department team is looking forward to hearing from you!

## Versatile modifications for our standard appliances

### Mechanics

- Customised interior fittings
- Individual entry ports in all sizes and shapes
- Telescopic slide pull-outs for ergonomic loading

### Electronics

- Extended parameter monitoring e.g. by means of additional measuring sensors
- Optical and acoustic process monitoring e.g. by means of a traffic light system

### Software

- Additional interfaces for data evaluation
- Individual temperature, humidity and $CO_2$ parameters

### Accessories

- Tailor-made subframe and stacking options
- Modified grids and shelves
- Individual air filters

# Customised solutions for your requirements

**Our expertise as a development partner in plant and project business**
The Memmert customisation department has been active in the project business for over 20 years now and has proven itself in countless projects as a strong and reliable partner. The experts in customisation benefit from two aspects: Access to the complete capacities of an ultra-modern and specialised production line, as well as the entire technical know-how of the Memmert company in designing climate and temperature control appliances. Combined with the experience of our project managers, the Memmert customisation department is also able to find a solution for the most complex requirements.

**Special sizes**
Does your product not fit into a standard unit? We build appliances to measure! Whether you need more volume in the interior or there is not enough space for installation at the installation location, we have the expertise to design your appliance individually. Ask us!

**Process and plant integration**
Integrate our technology seamlessly into your plant or your work organisation. We will find the right solution together for your process integration:

- Preparation for integration into your plant
- Integration of your processes into our appliances
- Inclusion of customer-specific installations
- Interface for semi-automatic assembly

**Project business**
Are you a project developer with ideas for innovative products and looking for a strategic cooperation? Take advantage of our know-how and manufacturing capacities for your project. Our customisation department will be pleased to hear from you!