



memmert

# Heating and drying ovens

COMMUNICATION. COMFORT. SIMPLY GREAT.

UNIVERSAL OVEN U

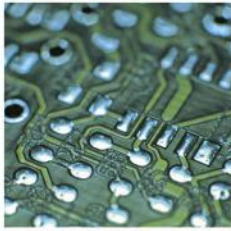
PASS-THROUGH OVEN UF TS

PARAFFIN OVEN UNpa

VACUUM OVEN VO

MADE IN GERMANY.

[www.memmert.com](http://www.memmert.com)



# Simply boundless. Boundlessly simple.

Drying, heating, ageing, testing, sterilising,  
burning-in, curing, storing.

From very small to very large! 32 litres or 1060 litres chamber volume? Standard applications or high demand for functionality, programming and documentation? In any case, all Memmert heating and drying ovens feature user-friendliness and state-of-the-art communication interfaces as a basic. Each individual appliance complies with the strict requirements of DIN 12880:2007-05 and is equipped with a maximum of safety functions.

## UNIVERSAL OVENS U

PAGE 4 - 9

Drying, burning-in, ageing, vulcanising, degassing, curing, burn-in testing, conditioning, heated storage

## PASS-THROUGH OVENS UF TS

PAGE 10 - 14

In-line curing and tempering

## PARAFFIN OVENS UNpa

PAGE 15 - 20

Tempering of embedding media like paraffin and wax

## VACUUM OVENS VO

PAGE 21 - 27

Drying, burning-in, ageing, curing, degassing, conditioning, oxygen-free storing

## ADDITIONAL INFORMATION

PAGE 28

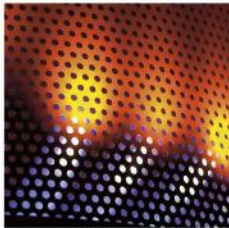


Universal Oven UN and UF with SingleDISPLAY  
Universal Oven UNplus and UFplus with TwinDISPLAY  
Natural convection or forced air circulation  
AtmoCONTROL software

Model sizes:

30 / 55 / 75 / 110 / 160 / 260 / 450 / 750 / 1060  
+20 °C up to +300 °C

**UNIVERSAL OVEN U** The all-round genius among the heating ovens covers a multitude of applications, ideally at temperatures above +50 °C. Without compromises! Thanks to two model variants and nine sizes, optionally with natural or forced convection, industry, science and research institutes will find a heating and drying oven which combines top precision and safety with optimal operating comfort.



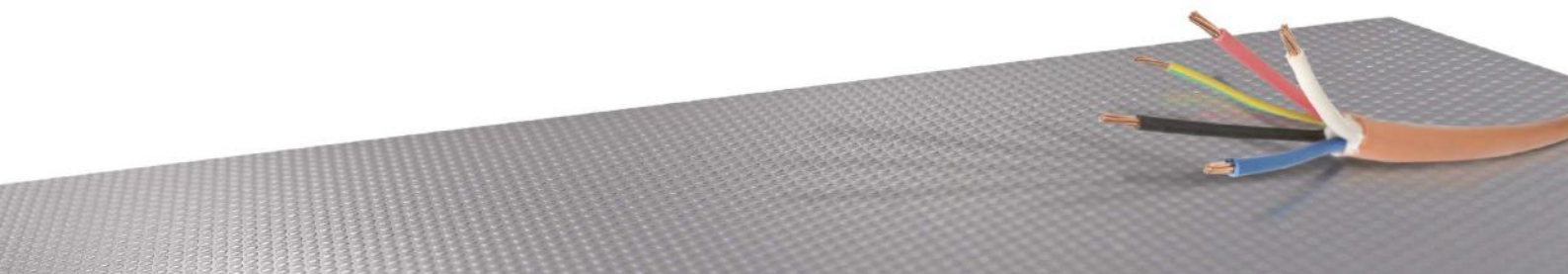
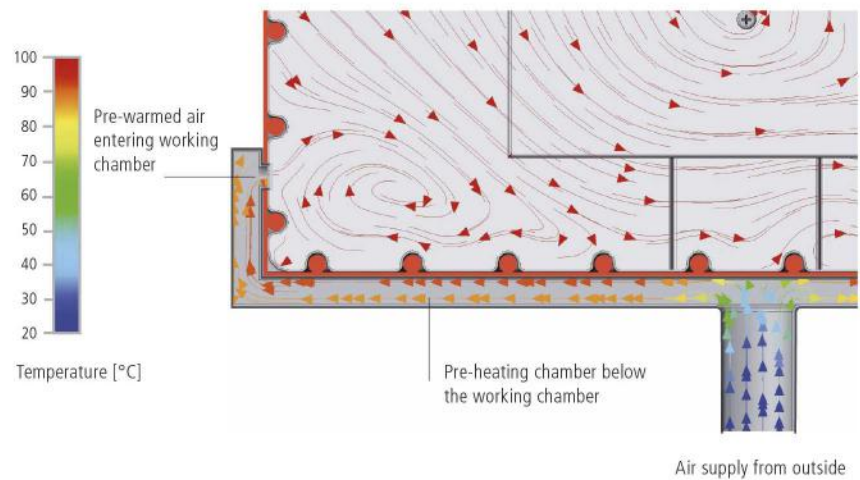
## Defined and programme-controlled fan speed

Air exchange rates and air flap position can be controlled electronically at the ControlCOCKPIT. More inlet and outlet openings lead to a higher air exchange and reduced drying times. Various applications recommend or even require controlled ventilation. When drying powder, sand or corn, reducing the ventilation prevents undesired swirls.

Other applications like testing of wires or cables demand for defined air exchange rates. UFplus appliances feature easy programming of temperature and air exchange rates with the AtmoCONTROL software.

## Fresh air is preheated

Temperature deviations caused by fresh air can influence sample characteristics or prolong drying. In Memmert universal ovens, the fresh air is therefore fed through a pre-heating chamber and introduced into the working chamber.





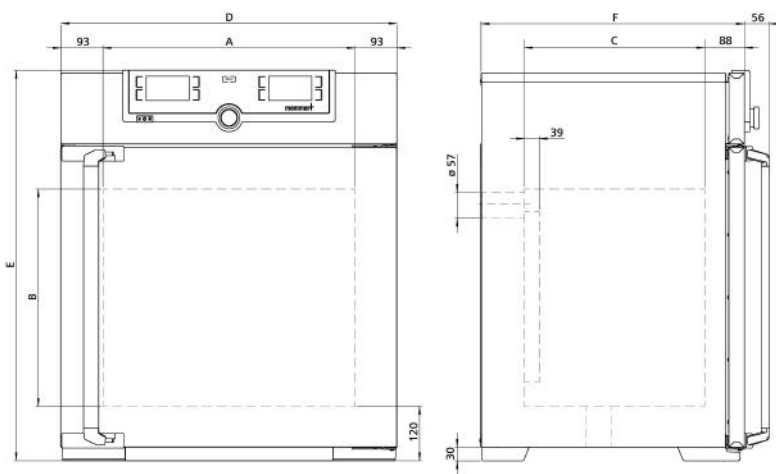
## UNIVERSAL OVENS U

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:



- Interior:** Stainless steel, material 1.4301 (ASTM 304), with all-round deep-drawn ribs to integrate the large-area heating with ceramic-metal sheath
- Housing:** Textured stainless steel, rear zinc-plated steel, intuitively operated SingleDISPLAY or TwinDISPLAY (TFT colour display) with touchscreen, fully insulated stainless steel door, (from size 450 two leaves)
- Fresh air:** Admixture of pre-heated fresh air by electronically adjustable air flap
- Connection:** Mains cable with plug (German type)  
CEE plug for 400 V
- Installation:** 4 feet; sizes 450, 750 and 1060 mounted on lockable castors
- Interfaces:** Ethernet LAN, USB
- USB: only TwinDISPLAY



| Model sizes/Description           |                                                                         |            | 30                                                                         | 55       | 75       | 110       | 160       | 260       | 450       | 750       | 1060       |  |
|-----------------------------------|-------------------------------------------------------------------------|------------|----------------------------------------------------------------------------|----------|----------|-----------|-----------|-----------|-----------|-----------|------------|--|
| Stainless steel interior          | Volume                                                                  | approx. l  | 32                                                                         | 53       | 74       | 108       | 161       | 256       | 449       | 749       | 1060       |  |
|                                   | Width                                                                   | (A) mm     | 400                                                                        |          |          | 560       |           | 640       | 1040      |           |            |  |
|                                   | Height                                                                  | (B) mm     | 320                                                                        | 400      | 560      | 480       | 720       | 800       | 720       | 1200      |            |  |
|                                   | Depth (less 39 mm for fan)                                              | (C) mm     | 250                                                                        | 330      |          | 400       |           | 500       | 600       |           | 850        |  |
|                                   | Max. number of grids/shelves                                            | number     | 3                                                                          | 4        | 6        | 5         | 8         | 9         | 8         | 14        |            |  |
|                                   | Max. loading per grid/shelf                                             | kg         | 20                                                                         |          |          |           |           |           | 30        |           | 20         |  |
|                                   | Max. loading of chamber                                                 | kg         | 60                                                                         | 80       | 120      | 175       | 210       | 300       |           |           |            |  |
|                                   | Max. loading per slide-in drip tray                                     | kg         | 1,5                                                                        |          |          | 3         |           | 4         | 8         |           |            |  |
| Max. loading per bottom drip tray | kg                                                                      | 1,5        |                                                                            |          | 3        |           | 4         | 8         |           |           |            |  |
| Textured stainless steel exterior | Width                                                                   | (D) mm     | 585                                                                        |          |          | 745       |           | 824       | 1224      |           |            |  |
|                                   | Height (size 450, 750, 1060 with castors)                               | (E) mm     | 704                                                                        | 784      | 944      | 864       | 1104      | 1183      | 1247      | 1720      |            |  |
|                                   | Depth (without door handle, depth of handle +56 mm)                     | (F) mm     | 434                                                                        | 514      |          | 584       |           | 684       | 784       |           | 1035       |  |
| Standard equipment                | Stainless steel grids, electropolished                                  | number     | 1                                                                          |          | 2        |           |           |           |           |           |            |  |
|                                   | Standard works calibration certificate (measuring point chamber center) | °C         | +160                                                                       |          |          |           |           |           |           |           |            |  |
| Temperature                       | Working temperature range                                               | °C         | at least 5 (UN/UNplus) or 10 (UF/UFplus) above ambient temperature to +300 |          |          |           |           |           |           |           |            |  |
|                                   | Setting temperature range                                               | °C         | +20 to +300                                                                |          |          |           |           |           |           |           |            |  |
|                                   | Setting accuracy                                                        | °C         | up to 99.9: 0.1 / from 100: 0.5                                            |          |          |           |           |           |           |           |            |  |
| Further data                      | Electrical load at 230 V, 50/60 Hz                                      | approx. W  | 1600                                                                       | 2000     | 2500     | 2800      | 3200      | 3400      | -         |           |            |  |
|                                   | Electrical load at 115 V, 50/60 Hz                                      | approx. W  | 1600                                                                       | 1700     | 1800     |           |           |           |           | -         |            |  |
|                                   | Electrical load at 400 V and 3 x 230 V w/o neutral, 50/60 Hz            | approx. W  | -                                                                          |          |          |           |           |           | 5800      | 7000      |            |  |
| Packing data                      | Net weight                                                              | approx. kg | 45                                                                         | 57       | 66       | 74        | 96        | 110       | 161       | 217       | 252        |  |
|                                   | Gross weight (packed in carton)                                         | approx. kg | 61                                                                         | 76       | 85       | 99        | 122       | 161       | 227       | 288       | 416        |  |
|                                   | Width                                                                   | approx. mm | 660                                                                        | 730      |          | 830       |           | 930       | 1330      |           | 1370       |  |
|                                   | Height                                                                  | approx. mm | 890                                                                        | 950      | 1130     | 1050      | 1300      | 1380      | 1440      | 1910      | 1970       |  |
|                                   | Depth                                                                   | approx. mm | 650                                                                        | 670      |          | 800       |           | 930       | 1050      |           | 1300       |  |
| Universal Ovens                   |                                                                         |            | UN30                                                                       | UN55     | UN75     | UN110     | UN160     | UN260     | UN450     | UN750     | -          |  |
| U = Universal Oven                |                                                                         |            | UN30plus                                                                   | UN55plus | UN75plus | UN110plus | UN160plus | UN260plus | UN450plus | UN750plus | -          |  |
| N = Natural convection            |                                                                         |            | UF30                                                                       | UF55     | UF75     | UF110     | UF160     | UF260     | UF450     | UF750     | UF1060     |  |
| F = Forced air circulation        |                                                                         |            |                                                                            |          |          |           |           |           |           |           |            |  |
| plus = Model with TwinDISPLAY     |                                                                         |            | UF30plus                                                                   | UF55plus | UF75plus | UF110plus | UF160plus | UF260plus | UF450plus | UF750plus | UF1060plus |  |

| Options                                                                                                                                                                                                                                                                                                  | 30                                                                                                                                                             | 55 | 75 | 110 | 160 | 260 | 450 | 750 | 1060 |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|-----|-----|-----|-----|-----|------|--|
| Voltage 115 V, 50/60 Hz                                                                                                                                                                                                                                                                                  | X2                                                                                                                                                             |    |    |     |     |     | -   |     |      |  |
| Extended overtemperature protection by additionally integrated Pt100 sensor for independent temperature monitoring for models with SingleDISPLAY                                                                                                                                                         | A6                                                                                                                                                             |    |    |     |     |     |     |     |      |  |
| Full-sight glass door (4-layer insulating glass) Temperature-range up to max. +250 °C                                                                                                                                                                                                                    | B0                                                                                                                                                             |    |    |     |     |     |     |     |      |  |
| Full-sight glass door (4-layer insulating glass borsilicat) Temperature-range up to max. +300 °C                                                                                                                                                                                                         | B1                                                                                                                                                             |    |    |     |     |     |     |     |      |  |
| 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 (standard with 1060)                                                      | -                                                                                                                                                              |    |    |     |     |     | K1  | -   |      |  |
| Fresh-air filter (filtration efficiency 80 %) mounted at the appliance bottom (for UF/UFplus, for sizes requires 30 - 260 castor frame R9 or subframe)                                                                                                                                                   | R8                                                                                                                                                             |    |    |     |     |     |     |     |      |  |
| Interior lighting for observing the load                                                                                                                                                                                                                                                                 | R0                                                                                                                                                             |    |    |     |     |     |     |     |      |  |
| Interior socket (can only be ordered with limited temperature range - max. +70 °C), ampacity 230 V, 2.2 A, can be switched off with the On/Off switch, cannot be switched individually, moisture tight IP68 (option A8 necessary)                                                                        | R3                                                                                                                                                             |    |    |     |     |     |     |     |      |  |
| Interior nearly gastight - technical clarification required for combination with other options                                                                                                                                                                                                           | K2                                                                                                                                                             |    |    |     |     |     |     |     |      |  |
| Interior nearly gastight with possibility for gas inlet/outlet through 2 tubes with ball valves - technical clarification required for combination with other options                                                                                                                                    | K3                                                                                                                                                             |    |    |     |     |     |     |     |      |  |
| Entry port, 23 mm clear diameter, for introducing connections at the side, can be closed by flap, standard positions                                                                                                                                                                                     | left centre/centre                                                                                                                                             |    |    |     | F0  |     |     |     |      |  |
|                                                                                                                                                                                                                                                                                                          | left centre/top                                                                                                                                                |    |    |     | F1  |     |     |     |      |  |
|                                                                                                                                                                                                                                                                                                          | right centre/centre                                                                                                                                            |    |    |     | F2  |     |     |     |      |  |
|                                                                                                                                                                                                                                                                                                          | right centre/top                                                                                                                                               |    |    |     | F3  |     |     |     |      |  |
| Entry port, 23 mm clear diameter, can be closed by flap, in special positions (please state location)                                                                                                                                                                                                    | left                                                                                                                                                           |    |    |     | F4  |     |     |     |      |  |
|                                                                                                                                                                                                                                                                                                          | right                                                                                                                                                          |    |    |     | F5  |     |     |     |      |  |
|                                                                                                                                                                                                                                                                                                          | rear                                                                                                                                                           |    |    |     | F6  |     |     |     |      |  |
| Entry port, 14 mm clear diameter, can be closed by flap, in special positions in the back wall (please state location)                                                                                                                                                                                   | D6                                                                                                                                                             |    |    |     |     |     |     |     |      |  |
| Entry port, 38 mm clear diameter, can be closed by flap, in special positions in the back wall (please state location)                                                                                                                                                                                   | F7                                                                                                                                                             |    |    |     |     |     |     |     |      |  |
| Entry port, 57 mm clear diameter, can be closed by flap, in special positions in the back wall (please state location; not possible for UF/UFplus size 30-75)                                                                                                                                            | F8                                                                                                                                                             |    |    |     |     |     |     |     |      |  |
| Entry port, 100 mm clear diameter, can be closed by flap, in special positions in the back wall (please state location; not possible for UF/UFplus size 75)                                                                                                                                              | -                                                                                                                                                              |    | F9 |     |     |     |     |     |      |  |
| 4 - 20 mA current loop interface (0 to +310 °C = 4 - 20 mA)                                                                                                                                                                                                                                              | Temperature controller, actual value                                                                                                                           |    |    |     | V3  |     |     |     |      |  |
|                                                                                                                                                                                                                                                                                                          | Temperature of a Pt100 sensor positioned flexibly in chamber for external temperature monitoring (max. 1 SingleDISPLAY, max. 3 TwinDISPLAY) - price per sensor |    |    |     | V6  |     |     |     |      |  |
| Fan speed monitoring with switching off the heating and with alarm in case of failure (for UFplus)                                                                                                                                                                                                       | V4                                                                                                                                                             |    |    |     |     |     |     |     |      |  |
| Works calibration certificate for 3 temperatures: +100, +160, +220 °C                                                                                                                                                                                                                                    | D00128                                                                                                                                                         |    |    |     |     |     |     |     |      |  |
| Works calibration certificate for one (freely selectable) temperature value according to customer specification                                                                                                                                                                                          | D00109                                                                                                                                                         |    |    |     |     |     |     |     |      |  |
| Door with lock and key (safety lock)                                                                                                                                                                                                                                                                     | B6                                                                                                                                                             |    |    |     |     |     |     |     |      |  |
| Door hinged on the left                                                                                                                                                                                                                                                                                  | B8                                                                                                                                                             |    |    |     |     |     | -   |     |      |  |
| Potential-free contact for combination error message (e.g. supply failure, sensor fault, fuse)                                                                                                                                                                                                           | H6                                                                                                                                                             |    |    |     |     |     |     |     |      |  |
| Potential-free contact (24 V/2 A) with socket, for signal generation, controlled by programme segment, for free-selectable functions to be activated (e.g. activation of audible and visual signals, exhaust motors, fans, stirrers, etc.). Only for units with TwinDISPLAY                              | H72                                                                                                                                                            |    |    |     |     |     |     |     |      |  |
| Process-dependent programmable door lock (only for units with TwinDISPLAY)                                                                                                                                                                                                                               | D4                                                                                                                                                             |    |    |     |     |     |     |     |      |  |
| Door-open-recognition (only for units with TwinDISPLAY)                                                                                                                                                                                                                                                  | V5                                                                                                                                                             |    |    |     |     |     |     |     |      |  |
| Flexible Pt100 temperature sensor, positioned flexibly in chamber or load, for local temperature measurement (up to 1 additional sensor is possible). The measured temperature will be indicated on the display, recorded in the integral data store, and can be documented via the AtmoCONTROL software | H8                                                                                                                                                             |    |    |     |     |     |     |     |      |  |
| MobileALERT, notification by SMS in case of any error or alarm of the device (requires option H6)                                                                                                                                                                                                        | C3                                                                                                                                                             |    |    |     |     |     |     |     |      |  |

| Options                                                                                                                                                                                                                                                                                                                                                                                             | 30     | 55     | 75     | 110    | 160    | 260     | 450    | 750    | 1060   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|--------|--------|---------|--------|--------|--------|
| Temperature restriction; Temperatures: +60, +70, +80, +95, +100, +120, +160, +180, +200 or +250 °C (Please indicate upon ordering)                                                                                                                                                                                                                                                                  | A8     |        |        |        |        |         |        |        |        |
| Castor frame (2-part), height 140 mm                                                                                                                                                                                                                                                                                                                                                                | R9     |        |        |        |        |         | -      |        |        |
| Accessories                                                                                                                                                                                                                                                                                                                                                                                         | 30     | 55     | 75     | 110    | 160    | 260     | 450    | 750    | 1060   |
| Stainless steel grid, electropolished                                                                                                                                                                                                                                                                                                                                                               | E28884 | E20164 |        | E20165 |        | E28891  | E20182 |        | B41251 |
| Reinforced stainless steel grid, electropolished, max. loading 60 kg; from size 450 with guide bars and fixing screws (only in connection with option K1). Please consider max. loading of chamber                                                                                                                                                                                                  |        | -      |        | E29767 |        | E29766  | B32190 |        | B32550 |
| Perforated stainless steel shelf                                                                                                                                                                                                                                                                                                                                                                    | B29727 | B03916 |        | 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 | B32549 |
| Stainless steel slide-in drip tray, 15 mm rim (may affect the temperature distribution, not in connection with option K1)                                                                                                                                                                                                                                                                           | E02070 | E02072 |        | E02073 |        | E29726  | E02075 |        | B32599 |
| 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)                                                                                                                                                                                                                                                                             | B04356 | B04358 |        | B04359 |        | B29722  | B04362 |        | B29769 |
| Stainless steel bottom drip tray, 15 mm rim (may affect the temperature distribution, only in connection with option K1)                                                                                                                                                                                                                                                                            |        | -      |        |        |        |         |        | B34055 | -      |
| Wall bracket for wall mounting                                                                                                                                                                                                                                                                                                                                                                      | B29755 | B29756 | B29757 | B29758 | B29759 | -       |        |        |        |
| Guarantee extension by 1 year                                                                                                                                                                                                                                                                                                                                                                       | GA1Q5  |        |        |        |        | GA2Q5   |        |        |        |
| 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 (only for units with TwinDISPLAY)                                                                                                                                      |        |        |        |        |        | B33170  |        |        |        |
| USB stick with documentation software AtmoCONTROL and operation manual for products with SingleDISPLAY (the standard equipment of appliances with TwinDISPLAY includes one USB stick with AtmoCONTROL). When reordering please specify serial number                                                                                                                                                |        |        |        |        |        | B33172  |        |        |        |
| Set of height adjustable feet (4 pcs)                                                                                                                                                                                                                                                                                                                                                               | B29768 |        |        |        |        |         | -      |        |        |
| Stacking set (4 pcs) for stacking of appliances of same size                                                                                                                                                                                                                                                                                                                                        | B29744 |        |        |        |        | -       |        |        |        |
| Plug-in tube extension (outer diam. 60.3 mm, inner 57 mm), straight, for exhaust air ducting (if necessary for connection by hose)                                                                                                                                                                                                                                                                  |        |        |        |        |        | B29718  |        |        |        |
| Plug-in tube extension (outer diam. 60.3 mm, inner 57 mm), angled, for exhaust air ducting (if necessary for connection by hose)                                                                                                                                                                                                                                                                    |        |        |        |        |        | B29719  |        |        |        |
| Flush-fit unit (stainless steel frame covering gap between oven and wall opening), with air slots                                                                                                                                                                                                                                                                                                   | B29728 | B29730 | B29732 | B29734 | B29736 | B29738  | B29740 | B29742 |        |
| Flush-fit unit (stainless steel frame covering gap between oven and wall opening), without air slots                                                                                                                                                                                                                                                                                                | B29729 | B29731 | B29733 | B29735 | B29737 | B29739  | B29741 | B29743 |        |
| Subframe, adjustable in height (size 30 to 75: height 600 mm, size 110 to 450: height 500 mm)                                                                                                                                                                                                                                                                                                       | B29745 | B29747 |        | B29749 |        | B29751  | B29753 | -      |        |
| Subframe, on castors (size 30 to 75: height 660 mm, size 110 to 160: height 560 mm)                                                                                                                                                                                                                                                                                                                 | B29746 | B29748 |        | B29750 |        | -       |        |        |        |
| Subframe, adjustable in height, height 130 mm, for example for units with fresh air filter                                                                                                                                                                                                                                                                                                          | B33657 | B33659 |        | B33661 |        | B33664  | -      |        |        |
| Software conforming to FDA AtmoCONTROL. 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 (only for units with TwinDISPLAY). Respective IQ/OQ documents available in German and English language (without surcharge) |        |        |        |        |        | FDAQ1   |        |        |        |
| Integration of one additional unit (up to max. 31 units) into an already existent FDA-software licence (only for units with TwinDISPLAY)                                                                                                                                                                                                                                                            |        |        |        |        |        | FDAQ2   |        |        |        |
| DAkKS calibration for one free-selectable temperature value according to method C (DKD-R 5-7)                                                                                                                                                                                                                                                                                                       |        |        |        |        |        | E39696  |        |        |        |
| DAkKS calibration for further temperature values according to method C (DKD-R 5-7)                                                                                                                                                                                                                                                                                                                  |        |        |        |        |        | E39697  |        |        |        |
| 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 9 measuring points (size 30), 27 measuring points (sizes 55 - 1060) to DIN 12880:2007-05. PQ check list as support for validation by customer. 305 € for further temperature values                                                             | D00125 | D00127 |        |        |        |         |        |        |        |
| On-site IQ/OQ for a freely selectable temperature value, including temperature distribution survey for 9 measuring points (size 30), 27 measuring points (sizes 55-1060) to DIN 12880: 2007-05 (plus travel costs, not subject to discount, only D, A, FR)                                                                                                                                          |        |        |        |        |        | DLQ100  |        |        |        |
| Extension of DLQ100 by an additional freely selectable temperature value (not subject to discount)                                                                                                                                                                                                                                                                                                  |        |        |        |        |        | DLQ100A |        |        |        |
| Individual on-site Performance Qualification (PQ)                                                                                                                                                                                                                                                                                                                                                   |        |        |        |        |        | DLQ200  |        |        |        |



| Accessories                                                                                                                                                                                   | 30 | 55 | 75 | 110 | 160 | 260     | 450 | 750 | 1060 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|----|-----|-----|---------|-----|-----|------|
| Maintenance UIS - carrying out and documentation according to Memmert maintenance plan (excluding travel costs, not subject to discount, GER, AT, FR only)                                    |    |    |    |     |     | S00311  |     |     |      |
| Maintenance contract UIS - carrying out and documentation according to Memmert maintenance plan, minimum duration 3 years (excluding travel costs, not subject to discount, GER, AT, FR only) |    |    |    |     |     | S00311J |     |     |      |
| 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  |     |     |      |



Pass-through oven UF TS  
with TwinDISPLAY  
Forced convection  
AtmoCONTROL standard software

Model sizes:  
160 / 260 / 450 / 750  
+20 °C to +250 °C

**PASS-THROUGH OVEN UF TS** Pass-through ovens UF TS are based on a standard heating oven and feature all technological highlights like product specific heating and perfectly adjusted control technology. The additional option of alternate door locking protects against contamination and, thanks to the split unit lid, access to all electronic components is possible at all times, despite a possible fixed wall installation.



## Material lock with precise temperature control

The advantages of the Memmert drying oven with pass-through possibility always come into play when samples are to be transported without contamination.

It is the ideal material lock between the grey room and the cleanroom, and contamination during sample transport is reduced. The Memmert pass-through oven is equipped with a special air circulation system: the supply air takes place in the cleanroom and the exhaust air takes place in the grey room.

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The pass-through oven UF TS is based on the Memmert standard heating oven UFplus and guarantees precision and thermal safety, especially when working in the clean room.



## PASS-THROUGH OVENS UF TS

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:



**Interior:** Stainless steel, mat. 1.4301 (ASTM 304), with all-round deep-drawn ribs to integrate the large-area heating with ceramic-metal sheath

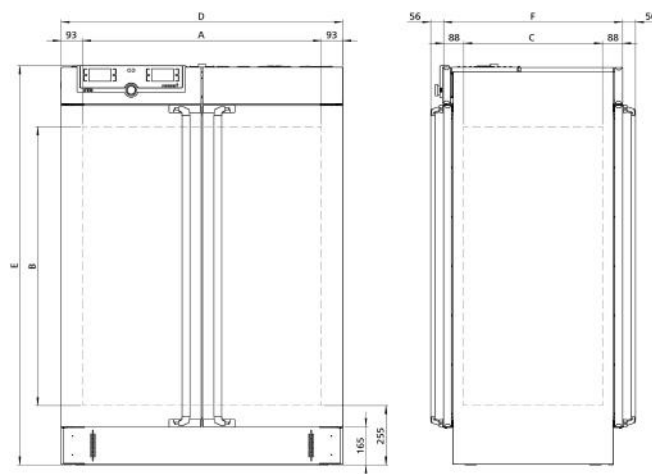
**Housing:** Textured stainless steel, intuitively operated TwinDISPLAY (TFT colour displays) with touchscreen, fully insulated stainless steel door on both sides (from model size 450 two leaves), pass-through version

**Fresh air:** Admixture of pre-heated fresh air by electronically adjustable air flap

**Connection:** Mains cable with plug (German type) (CEE plug for 400 V)

**Installation:** 4 feet

**Interfaces:**



| Model sizes/Description           |                                                                         |            | 160                                           | 260     | 450     | 750     |
|-----------------------------------|-------------------------------------------------------------------------|------------|-----------------------------------------------|---------|---------|---------|
| Stainless steel interior          | Volume                                                                  | approx. l  | 161                                           | 256     | 449     | 749     |
|                                   | Width                                                                   | (A) mm     | 560                                           | 640     | 1040    |         |
|                                   | Height                                                                  | (B) mm     | 720                                           | 800     | 720     | 1200    |
|                                   | Depth                                                                   | (C) mm     | 400                                           | 500     | 600     |         |
|                                   | Max. number of grids/shelves                                            | number     | 8                                             | 9       | 8       | 14      |
|                                   | Max. loading per grid/shelf                                             | kg         | 20                                            |         | 30      |         |
|                                   | Max. loading of chamber                                                 | kg         | 210                                           | 300     |         |         |
|                                   | 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                                           | 825     | 1224    |         |
|                                   | Height                                                                  | (E) mm     | 1233                                          | 1314    | 1233    | 1714    |
|                                   | Depth (without door handle, depth of handle 2x +56 mm)                  | (F) mm     | 582                                           | 682     | 782     |         |
| Standard equipment                | Stainless steel grids, electropolished                                  | number     | 2                                             |         |         |         |
|                                   | Standard works calibration certificate (measuring point chamber center) | °C         | +160                                          |         |         |         |
| Temperature                       | Working temperature range                                               | °C         | at least 10 above ambient temperature to +250 |         |         |         |
|                                   | Setting temperature range                                               | °C         | +20 to +250                                   |         |         |         |
|                                   | Setting accuracy                                                        | °C         | up to 99.9: 0.1 / from 100: 0.5               |         |         |         |
| Further data                      | Electrical load at 230 V, 50/60 Hz                                      | approx. W  | 3200                                          | 3400    | -       |         |
|                                   | Electrical load at 115 V, 50/60 Hz                                      | approx. W  | 1800                                          |         | -       |         |
|                                   | Electrical load at 400 V and 3 x 230 V w/o neutral, 50/60 Hz            | approx. W  | -                                             |         | 4800    | 5000    |
| Packing data                      | Net weight                                                              | approx. kg | 120                                           | 138     | 213     | 260     |
|                                   | Gross weight (packed in carton)                                         | approx. kg | 146                                           | 189     | 279     | 331     |
|                                   | Width                                                                   | approx. mm | 830                                           | 930     | 1330    |         |
|                                   | Height                                                                  | approx. mm | 1300                                          | 1380    | 1450    | 1920    |
|                                   | Depth                                                                   | approx. mm | 800                                           | 930     | 1050    |         |
| Order No. Pass-Through Ovens      |                                                                         |            | UF160TS                                       | UF260TS | UF450TS | UF750TS |

| Options                                                                                                                                                                                                                                                                                                  | 160                                                                                                                          | 260 | 450    | 750 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----|--------|-----|
| Voltage 115 V, 50/60 Hz                                                                                                                                                                                                                                                                                  | X2                                                                                                                           |     | -      |     |
| Full-sight glass door (4 layer insulating glass) - extra cost per side - Temperature-range up to max. +250 °C                                                                                                                                                                                            |                                                                                                                              |     | B0     |     |
| 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                                                                           | -                                                                                                                            |     | K1     |     |
| Entry port, 23 mm clear diameter, for introducing connections at the side, can be closed by flap, standard positions                                                                                                                                                                                     | left centre/centre                                                                                                           |     |        | F0  |
|                                                                                                                                                                                                                                                                                                          | left centre/top                                                                                                              |     |        | F1  |
|                                                                                                                                                                                                                                                                                                          | right centre/centre                                                                                                          |     |        | F2  |
|                                                                                                                                                                                                                                                                                                          | right centre/top                                                                                                             |     |        | F3  |
| Entry port, 23 mm clear diameter for introducing connections at the side, can be closed by flap, in special positions (please state location)                                                                                                                                                            | left                                                                                                                         |     |        | F4  |
|                                                                                                                                                                                                                                                                                                          | right                                                                                                                        |     |        | F5  |
| Locking mechanism to prevent simultaneous opening of doors for contamination protection in case of wall installation (requires option V5)                                                                                                                                                                |                                                                                                                              |     | D5     |     |
| 4 - 20 mA current loop interface (0 to +260 °C = 4 - 20 mA)                                                                                                                                                                                                                                              | Temperature controller, actual value                                                                                         |     | V3     |     |
|                                                                                                                                                                                                                                                                                                          | Temperature of a Pt100 sensor positioned flexibly in chamber for external temperature monitoring (max. 3) - price per sensor |     | V6     |     |
| Fan speed monitoring with switching off the heating and with alarm in case of failure                                                                                                                                                                                                                    |                                                                                                                              |     | V4     |     |
| Works calibration certificate for 3 temperatures: +100, +160, +220 °C                                                                                                                                                                                                                                    |                                                                                                                              |     | D00128 |     |
| Works calibration certificate for one (freely selectable) temperature value according to customer specification                                                                                                                                                                                          |                                                                                                                              |     | D00109 |     |
| Door with lock (safety lock); per side                                                                                                                                                                                                                                                                   |                                                                                                                              |     | B6     |     |
| Door hinged on the left; price per side                                                                                                                                                                                                                                                                  | B8                                                                                                                           |     | -      |     |
| Potential-free contact for combination error message (e.g. supply failure, sensor fault, fuse)                                                                                                                                                                                                           |                                                                                                                              |     | H6     |     |
| Potential-free contact (24 V/2 A) with socket, for signal generation, controlled by programme segment, for free-selectable functions to be activated (e.g. activation of audible and visual signals, exhaust motors, fans, stirrers, etc.); max. 2 contacts on 1-phase appliances                        | 2 contacts                                                                                                                   |     | H72    |     |
| Process-dependent electromagnetic door lock (both sides)                                                                                                                                                                                                                                                 |                                                                                                                              |     | D4     |     |
| Door-open-recognition; per side                                                                                                                                                                                                                                                                          |                                                                                                                              |     | V5     |     |
| Flexible Pt100 temperature sensor, positioned flexibly in chamber or load, for local temperature measurement (up to 1 additional sensor is possible). The measured temperature will be indicated on the display, recorded in the integral data store, and can be documented via the AtmoCONTROL software |                                                                                                                              |     | H8     |     |
| MobileALERT, notification by SMS in case of any error or alarm of the device (requires option H6)                                                                                                                                                                                                        |                                                                                                                              |     | C3     |     |
| Temperature restriction; Temperatures: +60, +70, +80, +95, +100, +120, +160, +180 or +200 °C (Please indicate upon ordering)                                                                                                                                                                             |                                                                                                                              |     | A8     |     |

| Accessories                                                                                                                                                                                                                                                                                                                                                                  | 160    | 260    | 450    | 750    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|--------|
| Stainless steel grid, electropolished                                                                                                                                                                                                                                                                                                                                        | E20165 | E28891 | E20182 |        |
| Reinforced stainless steel grid, electropolished, max. loading 60 kg; with guide bars and fixing screws (requires option K1). Please consider max. loading of chamber                                                                                                                                                                                                        | -      |        | 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 |        |
| Flush-fit unit set (stainless steel frame covering gap between oven and wall opening), without air slots - technical clarification required                                                                                                                                                                                                                                  | B33204 | B33205 | B33206 | B33207 |
| Guarantee extension by 1 year                                                                                                                                                                                                                                                                                                                                                | GA1Q5  | GA2Q5  |        |        |
| 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 |        |        |        |
| Set of height adjustable feet (4 pcs)                                                                                                                                                                                                                                                                                                                                        | B29768 |        | -      |        |
| 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  |        |        |        |
| DAkKS calibration for one free-selectable temperature value according to method C (DKD-R 5-7)                                                                                                                                                                                                                                                                                | E39696 |        |        |        |
| DAkKS calibration for further temperature values according to method C (DKD-R 5-7)                                                                                                                                                                                                                                                                                           | E39697 |        |        |        |
| 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 |        |        |        |
| On-site IQ/OQ for a freely selectable temperature 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)                                                                                                                                                         | DLQ100 |        |        |        |



| Accessories                                                                                                                                                                                   | 160 | 260 | 450     | 750 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|---------|-----|
| Extension of DLQ100 by an additional freely selectable temperature value (not subject to discount)                                                                                            |     |     | DLQ100A |     |
| Individual on-site Performance Qualification (PQ)                                                                                                                                             |     |     | DLQ200  |     |
| Maintenance UIS - carrying out and documentation according to Memmert maintenance plan (excluding travel costs, not subject to discount, GER, AT, FR only)                                    |     |     | S00311  |     |
| Maintenance contract UIS - carrying out and documentation according to Memmert maintenance plan, minimum duration 3 years (excluding travel costs, not subject to discount, GER, AT, FR only) |     |     | S00311J |     |
| 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  |     |

**PERSONAL NOTES**



Paraffin oven UNpa with TwinDISPLAY  
AtmoCONTROL software

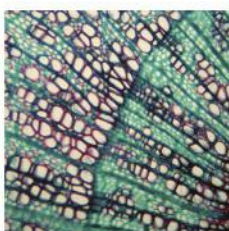
Model sizes:  
30 / 55 / 75 / 110 / 160  
+20 °C to +80 °C

**PARAFFIN OVEN UNpa** Five model sizes, five times high-precision temperature control of the embedding medium paraffin in science and research. The range of functions and thermal safety of paraffin ovens UNpa are designed specifically for absolutely reliable sample preparation in the laboratory. The benefits for the user: an optimal cost/benefit ratio for an appliance that guarantees, for many years, precise and even temperature control for embedding media without any loss in quality whatsoever.



## Safe warming of paraffin

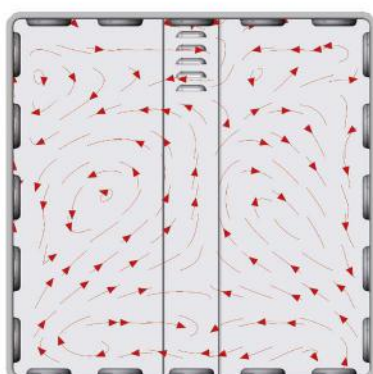
Thanks to its high capillarity, liquid paraffin is an ideal embedding medium. This property, however, may lead to oily residue in tiny cavities. For this reason, the interior chamber of paraffin ovens UNpa is designed almost gas tight. There is definitely no danger of ignition of residue or damage to mechanical and electronic components.



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## Absolutely uniform temperature distribution

Due to the almost gas tight chamber, no outside air is exchanged. Therefore, the advantages of the uniform temperature distribution by the large surface all-round heating system applied in Memmert heating ovens come fully into play. Also without forced convection, the perfect interaction of the control system and heating unit ensures unparalleled temperature homogeneity and stability.



Air flow with  
natural convection



## PARAFFIN OVENS UNpa

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:



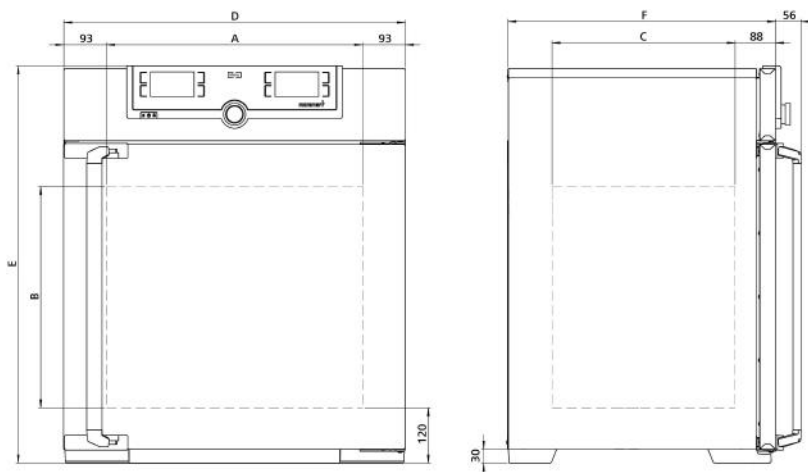
**Interior:** Stainless steel, material 1.4301 (ASTM 304), with all-round deep-drawn ribs to integrate the large-area heating with ceramic-metal sheath, nearly gastight

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

**Connection:** Mains cable with plug (German type)

**Installation:** 4 feet

**Interfaces:**



| Model sizes/Description           |                                                                         |            | 30                                          | 55   | 75   | 110  | 160  |
|-----------------------------------|-------------------------------------------------------------------------|------------|---------------------------------------------|------|------|------|------|
| Stainless steel interior          | Volume                                                                  | approx. l  | 32                                          | 53   | 74   | 108  | 161  |
|                                   | Width                                                                   | (A) mm     | 400                                         |      |      | 560  |      |
|                                   | Height                                                                  | (B) mm     | 320                                         | 400  | 560  | 480  | 720  |
|                                   | Depth                                                                   | (C) mm     | 250                                         | 330  |      | 400  |      |
|                                   | Max. number of grids/shelves                                            | number     | 3                                           | 4    | 6    | 5    | 8    |
|                                   | Max. loading per grid/shelf                                             | kg         | 20                                          |      |      |      |      |
|                                   | Max. loading of chamber                                                 | kg         | 60                                          | 80   | 120  | 175  | 210  |
|                                   | Max. loading per slide-in drip tray                                     | kg         | 1.5                                         |      |      | 3    |      |
|                                   | Max. loading per bottom drip tray                                       | kg         | 1.5                                         |      |      | 3    |      |
| Textured stainless steel exterior | Width                                                                   | (D) mm     | 585                                         |      |      | 745  |      |
|                                   | Height                                                                  | (E) mm     | 704                                         | 784  | 944  | 864  | 1104 |
|                                   | Depth (without door handle, door handle +56 mm)                         | (F) mm     | 434                                         | 514  |      | 584  |      |
| Standard equipment                | Stainless steel grids, electropolished                                  | number     | 1                                           |      | 2    |      |      |
|                                   | Standard works calibration certificate (measuring point chamber center) | °C         | +80                                         |      |      |      |      |
| Temperature                       | Working temperature range                                               | °C         | at least 5 above ambient temperature to +80 |      |      |      |      |
|                                   | Setting temperature range                                               | °C         | +20 to +80                                  |      |      |      |      |
|                                   | Setting accuracy                                                        | °C         | 0.1                                         |      |      |      |      |
| Further data                      | Electrical load at 230 V, 50/60 Hz                                      | approx. W  | 1600                                        | 2000 | 2500 | 2800 | 3200 |
|                                   | Electrical load at 115 V, 50/60 Hz                                      | approx. W  | 1600                                        | 1700 | 1800 |      |      |
| Packing data                      | Net weight                                                              | approx. kg | 45                                          | 55   | 66   | 75   | 96   |
|                                   | Gross weight (packed in carton)                                         | approx. kg | 61                                          | 74   | 85   | 100  | 122  |
|                                   | Width                                                                   | approx. mm | 660                                         | 730  |      | 830  |      |
|                                   | Height                                                                  | approx. mm | 890                                         | 950  | 1130 | 1050 | 1300 |
|                                   | Depth                                                                   | approx. mm | 650                                         | 670  |      | 800  |      |

## Order No. Paraffin Ovens

UN30pa

UN55pa

UN75pa

UN110pa

UN160pa

| Options                                                                                                                                                                                                                                                                                                  | 30                                                                                                                           | 55 | 75     | 110 | 160 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|----|--------|-----|-----|
| Voltage 115 V, 50/60 Hz                                                                                                                                                                                                                                                                                  |                                                                                                                              |    | X2     |     |     |
| Full-sight glass door (4-layer insulating glass)                                                                                                                                                                                                                                                         |                                                                                                                              |    | B0     |     |     |
| Entry port, 23 mm clear diameter, for introducing connections at the side, gastight, can be closed by flap and silicone stopper, standard positions - technical clarification required                                                                                                                   | left centre/centre                                                                                                           |    | F0     |     |     |
|                                                                                                                                                                                                                                                                                                          | left centre/top                                                                                                              |    | F1     |     |     |
|                                                                                                                                                                                                                                                                                                          | right centre/centre                                                                                                          |    | F2     |     |     |
|                                                                                                                                                                                                                                                                                                          | right centre/top                                                                                                             |    | F3     |     |     |
| Entry port, 23 mm clear diameter, gas tight, can be closed by flap and silicone stopper, in special positions (please state location) - technical clarification required                                                                                                                                 | left                                                                                                                         |    | F4     |     |     |
|                                                                                                                                                                                                                                                                                                          | right                                                                                                                        |    | F5     |     |     |
|                                                                                                                                                                                                                                                                                                          | rear                                                                                                                         |    | F6     |     |     |
| Entry port (silicone), 40 mm clear diameter, gas tight, can be closed by silicone stopper, in special positions at the back (please state location) - technical clarification required                                                                                                                   |                                                                                                                              |    | F7     |     |     |
| 4 - 20 mA current loop interface (0 to +90 °C = 4 - 20 mA)                                                                                                                                                                                                                                               | Temperature controller, actual value                                                                                         |    | V3     |     |     |
|                                                                                                                                                                                                                                                                                                          | Temperature of a Pt100 sensor positioned flexibly in chamber for external temperature monitoring (max. 3) - price per sensor |    | V6     |     |     |
| Gas inlet/outlet through 2 tubes with ball valves - technical clarification required for combination with other options                                                                                                                                                                                  |                                                                                                                              |    | K3     |     |     |
| Works calibration certificate for 3 temperatures: +37, +52, +70 °C                                                                                                                                                                                                                                       |                                                                                                                              |    | D00126 |     |     |
| Works calibration certificate for one (freely selectable) temperature value according to customer specification                                                                                                                                                                                          |                                                                                                                              |    | D00109 |     |     |
| Door with lock and key (safety lock)                                                                                                                                                                                                                                                                     |                                                                                                                              |    | B6     |     |     |
| Door hinged on the left                                                                                                                                                                                                                                                                                  |                                                                                                                              |    | B8     |     |     |
| Potential-free contact for combination error message (e.g. supply failure, sensor fault, fuse)                                                                                                                                                                                                           |                                                                                                                              |    | H6     |     |     |
| Potential-free contact (24 V/2 A) with socket, for signal generation, controlled by programme segment, for free-selectable functions to be activated (e.g. activation of audible and visual signals, exhaust motors, fans, stirrers, etc.)                                                               | 2 contacts                                                                                                                   |    | H72    |     |     |
| Process-dependent programmable door lock                                                                                                                                                                                                                                                                 |                                                                                                                              |    | D4     |     |     |
| Door-open-recognition                                                                                                                                                                                                                                                                                    |                                                                                                                              |    | V5     |     |     |
| Flexible Pt100 temperature sensor, positioned flexibly in chamber or load, for local temperature measurement (up to 1 additional sensor is possible). The measured temperature will be indicated on the display, recorded in the integral data store, and can be documented via the AtmoCONTROL software |                                                                                                                              |    | H8     |     |     |
| MobileALERT, notification by SMS in case of any error or alarm of the device (requires option H6)                                                                                                                                                                                                        |                                                                                                                              |    | C3     |     |     |
| Castor frame (2-part), height 140 mm                                                                                                                                                                                                                                                                     |                                                                                                                              |    | R9     |     |     |

| Accessories                                                                                                                                                                                                                                                                                                                                                                  | 30     | 55     | 75     | 110    | 160    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|--------|--------|
| Stainless steel grid, electropolished                                                                                                                                                                                                                                                                                                                                        | E28884 | E20164 |        | E20165 |        |
| Perforated stainless steel shelf                                                                                                                                                                                                                                                                                                                                             | B29727 | B03916 |        | B00325 |        |
| Stainless steel slide-in drip tray, 15 mm rim (may affect the temperature distribution)                                                                                                                                                                                                                                                                                      | E02070 | E02072 |        | E02073 |        |
| Stainless steel bottom drip tray, 15 mm rim (may affect the temperature distribution)                                                                                                                                                                                                                                                                                        | B04356 | B04358 |        | B04359 |        |
| Wall bracket for wall mounting                                                                                                                                                                                                                                                                                                                                               | B29755 | B29756 | B29757 | B29758 | B29759 |
| Guarantee extension by 1 year                                                                                                                                                                                                                                                                                                                                                |        |        | GA1Q5  |        |        |
| 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 |        |        |
| Set of height adjustable feet (4 pcs)                                                                                                                                                                                                                                                                                                                                        |        |        | B29768 |        |        |
| Stacking set (4 pcs) for stacking of appliances of same size                                                                                                                                                                                                                                                                                                                 |        |        | B29744 |        | -      |
| Flush-fit unit (stainless steel frame covering gap between oven and wall opening), with air slots                                                                                                                                                                                                                                                                            | B29728 | B29730 | B29732 | B29734 | B29736 |
| Flush-fit unit (stainless steel frame covering gap between oven and wall opening), without air slots                                                                                                                                                                                                                                                                         | B29729 | B29731 | B29733 | B29735 | B29737 |
| Subframe, adjustable in height (size 30 to 75: height 600 mm, size 110 to 160: height 500 mm)                                                                                                                                                                                                                                                                                | B29745 |        | B29747 |        | B29749 |
| Subframe, on castors (size 30 to 75: height 660 mm, size 110 to 160: height 560 mm)                                                                                                                                                                                                                                                                                          | B29746 |        | B29748 |        | B29750 |
| Subframe, adjustable in height, height 130 mm, for example for units with fresh air filter                                                                                                                                                                                                                                                                                   | B33657 |        | B33659 |        | B33661 |
| 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  |        |        |
| DAkkS calibration for one free-selectable temperature value according to method C (DKD-R 5-7)                                                                                                                                                                                                                                                                                |        |        | E39696 |        |        |
| DAkkS calibration for further temperature values according to method C (DKD-R 5-7)                                                                                                                                                                                                                                                                                           |        |        | E39697 |        |        |
| 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 9 measuring points (size 30), 27 measuring points (sizes 55 - 1060) to DIN 12880:2007-05. PQ check list as support for validation by customer. 305 € for further temperature values                                      | D00125 |        |        | D00127 |        |
| On-site IQ/OQ for a freely selectable temperature value, including temperature distribution survey for 9 measuring points (size 30), 27 measuring points (sizes 55 - 160) to DIN 12880: 2007-05 (excluding travel costs, not subject to discount, GER, AT, FR only)                                                                                                          |        |        |        | DLQ100 |        |



| Accessories                                                                                                                                                                                   | 30 | 55 | 75      | 110 | 160 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|---------|-----|-----|
| Extension of DLQ100 by an additional freely selectable temperature value (not subject to discount)                                                                                            |    |    | DLQ100A |     |     |
| Individual on-site Performance Qualification (PQ)                                                                                                                                             |    |    | DLQ200  |     |     |
| Maintenance UIS - carrying out and documentation according to Memmert maintenance plan (excluding travel costs, not subject to discount, GER, AT, FR only)                                    |    |    | S00311  |     |     |
| Maintenance contract UIS - carrying out and documentation according to Memmert maintenance plan, minimum duration 3 years (excluding travel costs, not subject to discount, GER, AT, FR only) |    |    | S00311J |     |     |
| 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  |     |     |

**PERSONAL NOTES**



Vacuum oven VO with TwinDISPLAY  
AtmoCONTROL software

Model sizes:

29 / 49 / 101

+20 °C to +200 °C

5 mbar to 1100 mbar

Accessories: lower pump chamber and  
energy-efficient vacuum pump

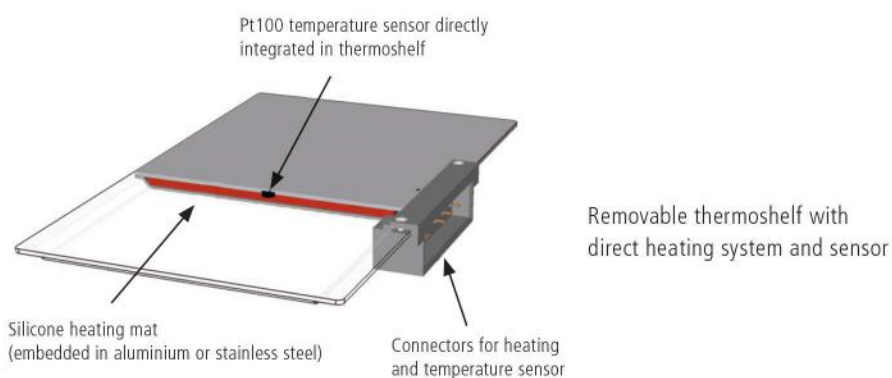
**VACUUM OVEN VO** The high-performance turbo dryer impresses with its many intelligent Memmert features for gentle drying and precise, rapid temperature control: digital pressure control, directly heated and individually controllable thermoshelves, and simple programming via ControlCOCKPIT or AtmoCONTROL software. Combined together, the speed-controlled vacuum pump and the vacuum oven VO are an unbeatable energy-efficient pairing. The pump fits neatly inside the matching lower chamber.





## Unique precision: Memmert VO direct heating

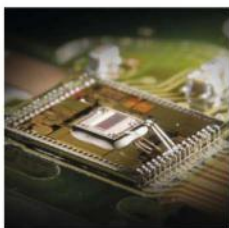
Available only from Memmert: multi-level sensing and heating. For really short heating-up and processing times, heating is provided via individually positionable thermoshelves with integrated shelf heating and sensors. The separate control circuits react precisely to different loads or humidity levels and ensure the setpoint temperature is consistently maintained. Due to the direct contact between the heating and the chamber load, there is practically no loss of heat. Each thermoshelf can be calibrated individually.



Multi-level sensing and heating

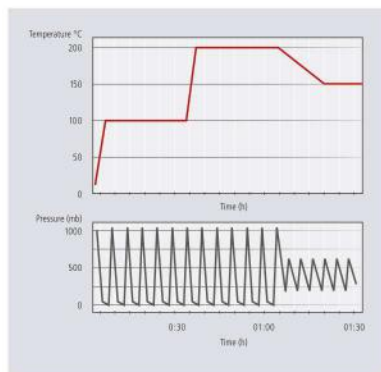
## Optional vacuum pump saves around 70 % energy

The speed-controlled chemically resistant Memmert vacuum pump is automatically detected by each vacuum oven VO. Thanks to intelligent speed control, it controls the setpoint with great precision. The energy efficiency is also obvious, with measurements showing energy savings of around 70 % in ramp mode compared with vacuum pumps that are not controlled; it is even possible to achieve higher savings at constant vacuum levels. The final vacuum level of up to 2 mbar favours a wide range of applications, while pump control (based on individual requirements) significantly extends the service life of membranes. If another vacuum pump or a central vacuum supply is connected, vacuum control is achieved via solenoid valves.



## Turbo drying thanks to vacuum cycles

Digitally controlled vacuum cycles, during which the working chamber is intermittently vented at short intervals, can achieve further significant reductions in drying times. The AtmoCONTROL software makes it quick and easy to program ramps with different temperature and vacuum setpoints.



Example of ramp programming

## Convenience in a package: the Premium Module

The basic version of the vacuum oven VO features a thermoshelf and two thermoshelf connectors (VO29: 1 thermoshelf connector). The Premium Module includes the option for switching to inert gas, a programmable, digitally controlled gas inlet with flow reduction; there is also the MobileALERT option with separate error messages for temperature and pressure as well as (depending on the appliance size) additional thermoshelves and thermoshelf connectors (see the technical data for details).

## VACUUM OVENS VO

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

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



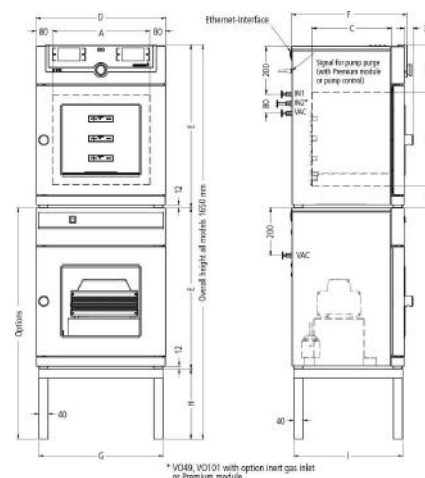
**Interior:** Stainless steel interior, material 1.4404 (ASTM 316 L), hermetically welded, with removable mountings at the sides for cleaning, including thermoshelf guide bars, as well as mounting on top to avoid turbulences

**Housing:** Textured stainless steel, rear zinc-plated steel, intuitively operated TwinDISPLAY (TFT colour displays) with touchscreen, safety glass door with inner bullet-proof glass and external anti-splinter screen

**Connection:** Mains cable with plug (German type)

**Installation:** 4 feet

**Interfaces:**



| Model sizes/Description           |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                | 29                                           | 49  | 101 |  |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-----|-----|--|
| Stainless steel interior          | Volume                                                                                                                                                                                                                                           | approx. l                                                                                                                                                                                                                                                                      | 29                                           | 49  | 101 |  |
|                                   | Width                                                                                                                                                                                                                                            | (A) mm                                                                                                                                                                                                                                                                         | 385                                          |     | 545 |  |
|                                   | Height                                                                                                                                                                                                                                           | (B) mm                                                                                                                                                                                                                                                                         | 305                                          | 385 | 465 |  |
|                                   | Depth                                                                                                                                                                                                                                            | (C) mm                                                                                                                                                                                                                                                                         | 250                                          | 330 | 400 |  |
|                                   | Distance between thermoshelves                                                                                                                                                                                                                   | mm                                                                                                                                                                                                                                                                             | 75                                           |     | 95  |  |
|                                   | Maximum load per oven                                                                                                                                                                                                                            | approx. kg                                                                                                                                                                                                                                                                     | 40                                           | 60  |     |  |
|                                   | Max. number of thermoshelves                                                                                                                                                                                                                     | number                                                                                                                                                                                                                                                                         | 1                                            | 2   |     |  |
|                                   | Max. number of thermoshelves (with premium module)                                                                                                                                                                                               | number                                                                                                                                                                                                                                                                         | 2                                            | 4   |     |  |
| Textured stainless steel exterior | Max. loading per thermoshelf                                                                                                                                                                                                                     | kg                                                                                                                                                                                                                                                                             | 20                                           |     |     |  |
|                                   | Width                                                                                                                                                                                                                                            | (D) mm                                                                                                                                                                                                                                                                         | 550                                          |     | 710 |  |
|                                   | Height                                                                                                                                                                                                                                           | (E) mm                                                                                                                                                                                                                                                                         | 607                                          | 687 | 767 |  |
|                                   | Depth (without door handle, depth of handle +38 mm)                                                                                                                                                                                              | (F) mm                                                                                                                                                                                                                                                                         | 400                                          | 480 | 550 |  |
|                                   | Safety glass door: Textured stainless steel frame with spring-loaded safety glass on inside and anti-splinter screen ESG on outside of door                                                                                                      |                                                                                                                                                                                                                                                                                | ●                                            |     |     |  |
|                                   | Door Seal: Endless silicone profile seal                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                | ●                                            |     |     |  |
|                                   | Standard equipment                                                                                                                                                                                                                               | Thermoshelves – aluminium eloxadised , mat. 3.3547 (ASTM B209) – with integrated large-area heating including local temperature sensing (Pt100, 4-wire-circuit); individual overtemp. protection for each shelf. Further data see stainless steel number inner working chamber | number                                       | 1   |     |  |
|                                   |                                                                                                                                                                                                                                                  | Works calibration certificate (measuring point in the middle of the individual shelf for +160 °C at 20 mbar pressure): a separate certificate is prepared for each thermoshelf ordered and shipped together with the vacuum oven                                               | °C                                           | ●   |     |  |
| Temperature                       | Temperature sensors Pt100 Class A in 4-wire circuit individually for each thermoshelf                                                                                                                                                            |                                                                                                                                                                                                                                                                                | ●                                            |     |     |  |
|                                   | Working temperature range                                                                                                                                                                                                                        | °C                                                                                                                                                                                                                                                                             | at least 5 above ambient temperature to +200 |     |     |  |
|                                   | Setting temperature range                                                                                                                                                                                                                        | °C                                                                                                                                                                                                                                                                             | +20 to +200                                  |     |     |  |
|                                   | Setting accuracy                                                                                                                                                                                                                                 | °C                                                                                                                                                                                                                                                                             | up to 99.9: 0.1 / from 100: 0.5              |     |     |  |
|                                   | Temperature variation in time (aluminium thermoshelf)                                                                                                                                                                                            | K                                                                                                                                                                                                                                                                              | ≤ ± 0.3                                      |     |     |  |
|                                   | Temperature uniformity (surface) at +160 °C/20 mbar (aluminium thermoshelf)                                                                                                                                                                      | K                                                                                                                                                                                                                                                                              | ≤ ± 2.5                                      |     |     |  |
| Pressure (vacuum)                 | Vacuum connection with small flange DN16, and gas inlet with fresh air supply                                                                                                                                                                    |                                                                                                                                                                                                                                                                                | ●                                            |     |     |  |
|                                   | Digital electronic pressure control for a speed-controlled vacuum pump. Tubing for vacuum, air and inert gas are made of material 1.4571 (ASTM 316 Ti). Adjustable from 5 mbar up to 1100 mbar. Programmable, digitally controlled inlet for air |                                                                                                                                                                                                                                                                                | ●                                            |     |     |  |
|                                   | Pump control: optimised rinsing procedures for the pump membranes as well as signal output for pump ON/OFF                                                                                                                                       |                                                                                                                                                                                                                                                                                | ●                                            |     |     |  |
|                                   | Rapid air intake for door opening without alteration of selected vacuum setpoint                                                                                                                                                                 |                                                                                                                                                                                                                                                                                | ●                                            |     |     |  |
|                                   | Permitted final vacuum                                                                                                                                                                                                                           | mbar                                                                                                                                                                                                                                                                           | 0.01                                         |     |     |  |
|                                   | Maximum leakage rate                                                                                                                                                                                                                             | bar/h                                                                                                                                                                                                                                                                          | 0.01                                         |     |     |  |
| Control technology                | Digital over- and undertemperature monitor                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                | ●                                            |     |     |  |
|                                   | Temperature monitoring band automatically linked to the setpoint (ASF)                                                                                                                                                                           |                                                                                                                                                                                                                                                                                | ●                                            |     |     |  |
|                                   | Monitor relay for reliable heating cut-off in case of fault                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                | ●                                            |     |     |  |
|                                   | Mechanical temperature limiter (TB)                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                | ●                                            |     |     |  |
|                                   | Multi-Level-Overtemperature-Protection (MLOP) for each thermoshelf                                                                                                                                                                               |                                                                                                                                                                                                                                                                                | ●                                            |     |     |  |



| Model sizes/Description |                                                                                                                                                                                                   |            | 29          | 49          | 101          |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|-------------|--------------|
| Further data            | Subframe tubular steel (extra cost), black enamelled (for stacking unit consisting of vacuum oven and pump module, total height: 1650 mm, see sketch of oven dimensions G/H/I) Width/Height/Depth | mm         | 529/450/383 | 529/290/463 | 689/130/533  |
|                         | Electrical load (maximally equipped) at 230 V, 50/60 Hz                                                                                                                                           | approx. W  | 820         | 2020        | 2420         |
| Packing data            | Net weight                                                                                                                                                                                        | approx. kg | 55          | 83          | 110          |
|                         | Gross weight (packed in carton)                                                                                                                                                                   | approx. kg | 76          | 104         | 135          |
|                         | Packed dimensions (Width, Height, Depth)                                                                                                                                                          | approx. mm | 660/870/590 |             | 830/1050/800 |
|                         | Net weight pump module without/with pump                                                                                                                                                          | approx. kg | 25/41       | 30/46       | 41/57        |
|                         | Gross weight pump module without/with pump (packed in carton)                                                                                                                                     | approx. kg | 46/62       | 51/67       | 66/82        |
|                         | Packed dimensions pump module (Width, Height, Depth)                                                                                                                                              | approx. mm | 660/870/590 |             | 830/1050/800 |
| Order No. Vacuum Ovens  |                                                                                                                                                                                                   |            | VO29        | VO49        | VO101        |

| Options                                                                                                                                                                           |                                                                                                                     | 29 | 49     | 101 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----|--------|-----|
| Premium module: comprises the inert gas inlet (only size 49 and 101), extra connectors for thermoshelves, 1 (size 29), 2 (sizes 49/101), an additional thermoshelf (sizes 49/101) |                                                                                                                     |    | T5     |     |
| 4 - 20 mA current loop interface (requires option T5)                                                                                                                             | Temperature actual value (0 to 210 °C = 4 - 20 mA)                                                                  | -  | V3     |     |
|                                                                                                                                                                                   | Temperature of a Pt100 sensor positioned flexibly in chamber for external temperature monitoring - price per sensor |    | V6     |     |
| Potential-free contact (24 V/2 A) with socket, for combination error message (e.g. supply failure, sensor fault, fuse)                                                            |                                                                                                                     |    | H6     |     |
| MobileALERT, notification by SMS in case of any error or alarm of the device (requires option H6)                                                                                 |                                                                                                                     |    | C3     |     |
| MobileALERT for 2 alarm notifications; notification by SMS. temperature and vacuum alarm (only in connection with option T5)                                                      |                                                                                                                     | -  | C4     |     |
| Works calibration certificate for one (freely selectable) temperature and pressure value (per thermoshelf) according to customer specification                                    |                                                                                                                     |    | D00116 |     |

| Accessories                                                                                                                                                                                                                                                                                                                                                                                         | 29      | 49     | 101    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------|--------|
| Thermoshelf - aluminium eloxadised material W.-St. 3.3547 (ASTM B209) with integrated large-area heating including local temperature sensing (Pt100, 4-wire-circuit); individual overtemp. protection for each shelf MLOP (Multi-Level-Overtemperature-Control) and calibration certificate                                                                                                         | B00741  | B00743 | B00744 |
| Thermoshelf - stainless steel material 1.4404 (ASTM 316 L) for especially corrosive material with integrated large-area heating including local temperature sensing (Pt100, 4-wire-circuit); individual overtemp. protection for each shelf MLOP (Multi-Level-Overtemperature-Control) and calibration certificate                                                                                  | B00733  | B00734 | B00735 |
| Subframe, tubular steel, black enamelled (for stacking unit consisting of vacuum oven and pump module, total height: 1650 mm, see "further data" and sketch of oven dimensions)                                                                                                                                                                                                                     | E02030  | E02031 | E02037 |
| Works calibration certificate for 3 temperatures: +50, +100, +160 °C at 20 mbar pressure. Price per thermoshelf                                                                                                                                                                                                                                                                                     | D00115  |        |        |
| Guarantee extension by 1 year                                                                                                                                                                                                                                                                                                                                                                       | GA2Q5   |        |        |
| Noise-insulated vacuum pump module without pump (exterior dimensions and -material No. s. vacuum oven) with antivibration metal plate at the bottom to accommodate the vacuum pump, incl. full-sight glass door. Socket, signal cable and connecting hose to the vacuum oven                                                                                                                        | PM29    | PM49   | PM101  |
| Noise-insulated vacuum pump module, as above, however with built-in pump, 230 V, 50/60 Hz                                                                                                                                                                                                                                                                                                           | PMP29   | PMP49  | PMP101 |
| Signal cable (3 m) for control of rotation speed and optimising pump performance by demand-controlled activation of purge of Memmert pump (not required with pump module)                                                                                                                                                                                                                           | B39410  |        |        |
| Vacuum connecting hose (3 m) from oven to Memmert pump incl. optimised connection accessories (partially stainless steel), (not required with pump module)                                                                                                                                                                                                                                          | B04026  |        |        |
| Vacuum pump with chemically resistant 4x diaphragm, pump capacity at atm. pressures: approx. 50 Nl./min = 3,0 m³/h and autom. purge control, 230 V, 50 Hz. Max. guarantee period 2 years (requires accessories B39410 and B04026)                                                                                                                                                                   | E07509  |        |        |
| 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   |        |        |
| 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 and vacuum value, incl. temperature distribution survey at Memmert for 5 measuring points per thermoshelf to DIN 12880:2007-05. PQ check list as support for validation by customer valid for one thermoshelf; dito further thermoshelves, price on demand. 360 € for further temperature and vacuum values | D00117  |        |        |
| On-site IQ/OQ for a freely selectable temperature and pressure value of a thermoshelf, including temperature distribution survey for 5 measuring points to DIN 12880: 2007-05 (excluding travel costs, not subject to discount, GER, AT, FR only)                                                                                                                                                   | DLQ106  |        |        |
| Extension of DLQ106 by an additional freely selectable temperature and pressure value (each thermoshelf) (not subject to discount)                                                                                                                                                                                                                                                                  | DLQ106A |        |        |
| Extension of DLQ106 by a further thermoshelf for a freely selectable temperature and pressure value (not subject to discount)                                                                                                                                                                                                                                                                       | DLQ106T |        |        |
| Individual on-site Performance Qualification (PQ)                                                                                                                                                                                                                                                                                                                                                   | DLQ200  |        |        |
| Maintenance VO - carrying out and documentation according to Memmert maintenance plan (excluding travel costs, not subject to discount, GER, AT, FR only)                                                                                                                                                                                                                                           | S00320  |        |        |
| Maintenance contract VO - carrying out and documentation according to Memmert maintenance plan, minimum duration 3 years (excluding travel costs, not subject to discount, GER, AT, FR only)                                                                                                                                                                                                        | S00320J |        |        |
| 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 pressure value (excluding travel costs, not subject to discount, GER, AT, FR only)                                                                                                                                                                                                                                                             | S00212  |        |        |

| Accessories                                                                           | 29 | 49     | 101 |
|---------------------------------------------------------------------------------------|----|--------|-----|
| Calibration of an additional temperature and pressure value (not subject to discount) |    | 500218 |     |

## MODEL VARIANTS

| SingleDISPLAY<br>ControlCOCKPIT with one TFT display                                                                                                                                                                                           | TwinDISPLAY<br>ControlCOCKPIT with two TFT displays                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AVAILABLE APPLIANCES</b><br>UN / UF / IN / IF / IPPeco / IPP / UNm / UFm / INm / IFm / SN / SF / IFbw                                                                                                                                       | <b>AVAILABLE APPLIANCES</b><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 <sub>2</sub>                                                                                                                                                                                                                                                                                                  |
| 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 <sup>1)</sup> 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 <sup>1)</sup> 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 <sub>2</sub> |
| 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                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

<sup>1)</sup> 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

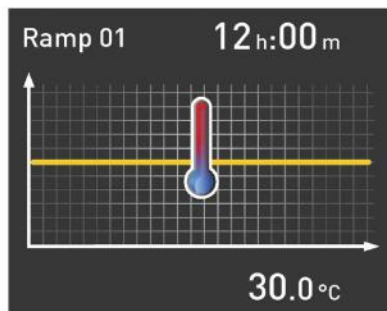
### AtmoCONTROL

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





## 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](mailto: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<sub>2</sub> parameters



### Accessories

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

## CUSTOMER SPECIFIC SOLUTIONS

### 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!







YOUR MEMMERT PARTNER



#### CLIMATE CHAMBERS

CONSTANT CLIMATE CHAMBERS HPPeco

HUMIDITY CHAMBERS HCP

CLIMATE CHAMBERS ICHeco / ICH

ENVIRONMENTAL TEST CHAMBERS CTC / TTC

#### HEATING AND DRYING OVENS

UNIVERSAL OVENS U

PASS-THROUGH OVENS UF TS

PARAFFIN OVENS UNpa

VACUUM OVENS VO

#### INCUBATORS

INCUBATORS I

CO<sub>2</sub> INCUBATORS ICO

COMPRESSOR-COOLED INCUBATORS ICPeco / ICP

PELTIER-COOLED INCUBATORS IPPeco

#### MEDICAL DEVICES

UNIVERSAL OVENS Um

INCUBATORS Im

STERILISERS S

CO<sub>2</sub> INCUBATORS ICOmed

BLANKET WARMERS IFbw

#### WATERBATHS

WATERBATHS WTB

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[facebook.com/memmert.family](https://facebook.com/memmert.family)  
[instagram.com/memmert.family](https://instagram.com/memmert.family)