

Model KMF 240 | Humidity test chambers with expanded temperature / humidity range

The BINDER KMF ensures absolutely constant test conditions throughout the testing area. A big advantage of this humidity test chamber is its low space requirement and flexibility in terms of water supply. The wide temperature and humidity range make this humidity test chamber ideally suited for stress testing series.

BENEFITS

- Safe thanks to climatic homogeneity that far exceeds the accuracy required by ICH guidelines as well as THB (85/85), even with a fully loaded unit.
- Reliable thanks to failsafe operation without compromise. The interior and Longlife evaporator plate are made entirely from stainless steel.
- Smart, as a wide range of accessories makes it highly compatible for adaptation to specific customer requirements.
- Economical thanks to maximum effective volume which allows for 30% larger load compared to the competition.



Model 240



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IMPORTANT FEATURES

- Temperature range: -10 °C to +100 °C
- Humidity range: 10 % RH to 98 % RH
- APT.line™ preheating chamber technology
- Humidity regulation with capacitive humidity sensor and vapor humidification
- Inner chamber made of stainless steel
- BINDER Multi Management Software APT-COM™ Basic Edition
- Intuitive touchscreen controller with time-segment and real-time programming
- Internal data logger, measured values can be read out in open format via USB
- Unit self-test for comprehensive status analysis
- Tight-sealing inner door made of safety glass (ESG)
- Avoidance of glass corrosion by special TIMELESS coating
- 1 stainless steel rack
- Access port with silicone plug, 30 mm, left
- Class 3.1 independent temperature safety device (DIN 12880) with visual and audible temperature alarm
- Computer interface: Ethernet
- Door heating

ORDERING INFORMATION

| Interior volume | | Power supply - unit fuse | Plug* | Version | Model version | Art.-No. |
|----------------------|-----|---------------------------------|-----------|----------|---------------|-----------|
| [L] | [L] | | | | | |
| Model KMF 240 | | | | | | |
| 247 | 247 | 200...230 V 1~ 50/60 Hz -16,0 A | CEE 7/7 | Standard | KMF240-230V | 9020-0343 |
| | | 200...240 V 1~ 50/60 Hz -16,0 A | NEMA 6-20 | Standard | KMF240-240V | 9020-0344 |

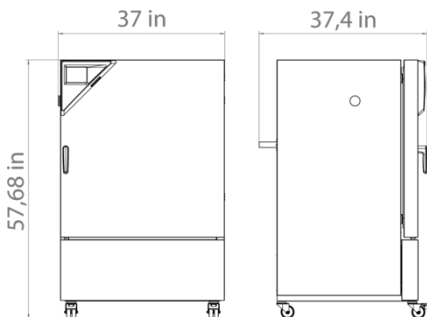
TECHNICAL DATA

| Data | | |
|--|----------------|----------------|
| Designation | KMF240-230V | KMF240-240V |
| Article Number | 9020-0343 | 9020-0344 |
| Option model | Standard | Standard |
| Performance Data Temperature | | |
| Temperature range | -10...100 °C | -10...100 °C |
| Average heating-up rate according to IEC 60068-3-5 | 0.8 K/min | 0.8 K/min |
| Average cooling down time according to IEC 60068-3-5 | 0.4 K/min | 0.4 K/min |
| Performance Data Climate | | |
| Temperature range with humidity | 10...90 °C | 10...90 °C |
| Humidity range | 10...98 % r.F. | 10...98 % r.F. |
| Temperature uniformity with humidity dependent on set value | 0.1...1.0 ± K | 0.1...1.0 ± K |
| Temperature fluctuation with humidity dependent on set value | 0.1...0.3 ± K | 0.1...0.3 ± K |
| Humidity fluctuation with humidity dependent on set value | ±2 ± % r.F. | ±2 ± % r.F. |
| Electrical data | | |
| Rated Voltage | 200...230 V | 200...240 V |
| Power frequency | 50/60 Hz | 50/60 Hz |
| Nominal power | 2,1 kW | 2,1 kW |
| Unit fuse | 16,0 A | 16,0 A |
| Phase (Nominal voltage) | 1~ | 1~ |
| Dimensions and weights | | |
| Interior volume | 247 L | 247 L |
| Net weight of the unit (empty) | 189 kg | 189 kg |
| Load per rack | 30 kg | 30 kg |
| Permitted load | 100 kg | 100 kg |
| Wall clearance back | 100 mm | 100 mm |
| Wall clearance sidewise | 100 mm | 100 mm |
| Housing dimensions not incl. fittings and connections | | |
| Width net | 930 mm | 930 mm |

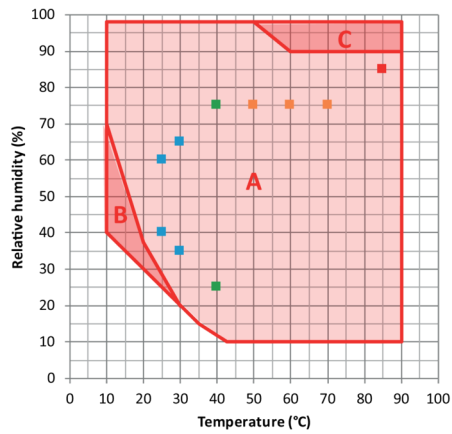
| | | |
|---------------------------------------|----------|----------|
| Height net | 1,465 mm | 1,465 mm |
| Depth net | 800 mm | 800 mm |
| Internal Dimensions | | |
| Interior width | 650 mm | 650 mm |
| Interior height | 785 mm | 785 mm |
| Interior depth | 485 mm | 485 mm |
| Inner doors | 1 | 1 |
| Unit doors | 1 | 1 |
| Environment-specific data | | |
| Sound-pressure level | 52 dB(A) | 52 dB(A) |
| Energy consumption at 85°C and 85% RH | 570 Wh/h | 570 Wh/h |
| Fixtures | | |
| Number of shelves (std./max.) | 1/9 | 1/9 |

All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

DIMENSIONS Incl. fittings and connections [mm]



DIAGRAMS



- ICH Long term stability testing
 - Accelerated stability testing
 - ICH Stress testing
 - Industrial THB testing (85/85)
- A: Guaranteed condensation-free range
 - B: Time-limited operation (max. 24 hours)
 - C: Condensation in the inner chamber may be possible

Climate chart

OPTIONS

| Designation | Description | KMF 240 | * | Art.-No. |
|-----------------------------------|---|---------|----|-----------|
| | left | | | |
| | 30 mm | • | 01 | 8012-1446 |
| | 50 mm | • | 01 | 8012-1476 |
| | 100 mm | • | 01 | 8012-1342 |
| | right | | | |
| | 30 mm | • | 01 | 8012-1440 |
| Access port with silicone plug | 50 mm | • | 01 | 8012-1470 |
| | 100 mm | • | 01 | 8012-1339 |
| | top | | | |
| | 30 mm | • | 01 | 8012-1452 |
| | 50 mm | • | 01 | 8012-1458 |
| | 100 mm | • | 01 | 8012-1464 |
| Alarm output, zero-voltage | for temperature (± 2 °C) and humidity (± 5 % RH), accessible via 6-pin DIN socket (max. 24 V - 2,5 A), with audible signal that can be switched off | • | - | 8012-1677 |
| Analog output 4-20 mA | for temperature and humidity values (output not adjustable) | • | - | 8012-1680 |
| Calibration certificate, expanded | for temperature and humidity; for extending the measurement in center of chamber to include another test value | • | - | 8012-1191 |

| Designation | Description | KMF 240 | * | Art.-No. |
|---|---|---------|---|-----------|
| Calibration certificate, temperature | temperature measurement incl. certificate, 9 measuring points at specified temperature | • | - | 8012-1565 |
| | temperature measurement incl. certificate, 15- 18 measuring points at specified temperature | • | - | 8012-1586 |
| | temperature measurement incl. certificate and 27 measuring points at specified temperature | • | - | 8012-1606 |
| Calibration certificate, temperature and humidity | Measurement in center of chamber at 25°C / 60% RH or at specified test values | • | - | 8012-1185 |
| | temperature (according to DIN12880) and humidity measurement incl. certificate, 27 temperature measuring points and 1 humidity measuring point, at 25 °C / 60 % RH or at specified values | • | - | 8012-1612 |
| Class 3,3 independent temperature safety device | with visual alarm (DIN 12880) | • | - | 8012-1674 |
| Door lock | lockable door handle | • | - | 8012-1660 |
| Inner chamber, reinforced | including 2 reinforced racks | • | - | 8012-0624 |
| Pt 100 temperature sensor | additional flexible Pt 100, interior, for displaying the temperature on the unit display | • | - | 8012-1682 |
| RS 485 interface, 2-wire | Additional serial interface can be used parallel to Ethernet, for Multi Management Software APT-COM™ | • | - | 8012-1712 |

ACCESSORIES

| Designation | Description | KMF 240 | * | Art.-No. |
|---------------------------------------|--|---------|---|-----------|
| APT-COM™ 4 | Multi Management Software APT-COM™ | | | |
| | version 4, GLP edition | • | - | 9053-0042 |
| | version 4, PROFESSIONAL edition | • | - | 9053-0040 |
| BINDER PURE AQUA SERVICE | System for preparation or complete desalination of tap water, complete set containing PURE AQUA 300 single-use cartridge, measuring device, and all necessary connecting parts | • | - | 8012-0759 |
| BINDER PURE AQUA SERVICE, accessories | Single-use, replacement cartridge for BINDER PURE AQUA System | • | - | 6011-0165 |
| LED light bars | Basic set consisting of 2 pieces, attachment material, control unit for max. 4 light strips, 100-240 V, 50/60 Hz | | | |
| | Basic set 300, length 30 cm | • | - | 8012-1107 |
| | Basic set 500, length 50 cm | • | - | 8012-1108 |
| | Expansion set consisting of 2 pieces, attachment material: clips. For expanding the basic set of light bars | | | |
| | Expansion set 300, length 30 cm | • | - | 8012-1716 |
| | Expansion set 500, length 50 cm | • | - | 8012-1717 |

| Designation | Description | KMF 240 | * | Art.-No. |
|--|---|---------|---|-----------|
| Qualification documents | IQ/OQ/PQ documents – supporting documents for validation performed by customers, according to customer requirements, PQ section added to qualification folder IQ/OQ; parameters: temperature and humidity values | | | |
| | Digital in PDF format | • | - | 7057-0006 |
| | Hard copy inside folder | • | - | 7007-0006 |
| | IQ/OQ documents – supporting documents for validation performed by customers, consisting of: IQ/OQ checklists incl. calibration guide and comprehensive unit documentation; parameters: temperature and humidity values | | | |
| RS 485 / RS 422 interface converter | Digital in PDF format | • | - | 7057-0002 |
| | Hard copy inside folder | • | - | 7007-0002 |
| RS 422 cable set and RS 485 / RS 422 interface converter for connection to 10-way plug distributor | 115 V option model | • | - | 8012-0599 |
| | 230 V option model | • | - | 8012-0589 |
| Rack | stainless steel | • | - | 8012-2050 |
| Rack, reinforced | stainless steel, with fasteners (1 set of 4) | • | - | 8012-0638 |
| Rack accessories | fasteners (1 set of 4) for additional security of racks | • | - | 8012-2280 |
| Shelf, perforated | Stainless steel | • | - | 8012-2163 |
| Water supply set | consisting of fresh- and waste-water containers (20 liters each), cabling and pump | | | |
| | external, for hanging from the back of the device | • | - | 8012-0643 |
| | external, free-standing | • | - | 8012-1846 |
| pH-neutral detergent | concentrated, for gentle remove of residual contaminants; 1 kg | • | - | 8012-2250 |

SERVICES

| Designation | Description | * | Art.-No. |
|--|--|---|-----------|
| Calibration services | | | |
| Temperature and humidity calibration | Expansion –Additional Temperature and humidity calibration with 1 measuring point in center of chamber with 1 specified pair of values, including certificate. Travel to be quoted separate. | – | DL30-0302 |
| Temperature and humidity measurement according to DIN12880 | Temperature measurement in accordance with DIN 12880 with 27 temperature measuring points and 1 humidity measuring point in center of chamber with a pair of values specified by the user, including certificate | – | DL30-0427 |
| Temperature measurement, 9 temperature measuring points and 1 humidity measuring point | Temperature measurement with 9 temperature measuring points and 1 humidity measuring point in center of chamber with a pair of values specified by the user, including certificate. Travel to be quoted separate. A total of 3 shelves are required. | – | DL30-0309 |

| Designation | Description | * | Art.-No. |
|---|--|---|-----------|
| Temperature measurement, 18 temperature measuring points and 1 humidity measuring point | Temperature measurement with 18 temperature measuring points and 1 humidity measuring point in center of chamber with a pair of values specified by the user, including certificate. Travel to be quoted separate. A total of 2 shelves are required. | – | DL30-0318 |
| Temperature measurement, 27 temperature measuring points and 1 humidity measuring point | Temperature measurement with 27 temperature measuring points and 1 humidity measuring point in center of chamber with a pair of values specified by the user, including certificate. Travel to be quoted separate. A total of 3 shelves are required. | – | DL30-0327 |
| Installation services | | | |
| Unit installation | Connect the unit to the customer-side connections (electricity, water, wastewater, gas), basic functions check, brief operating instructions. (excl.: unpacking, setup, controller instructions, programming, installation work) Travel to be quoted as separate. | – | DL10-0300 |
| | | – | DL10-0310 |
| Unit instructions | Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming. Travel to be quoted as separate Limited to 3 hours. | – | DL10-0700 |
| | | – | DL10-0710 |
| Maintenance services | | | |
| BRONZE 3-year maintenance contract | Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate. 10% Discount on Spare Parts and Labor for any additional Services needed Wear + tear parts to be purchased or billed to customer. Travel to be quoted as separate. | – | DL20-0710 |
| GOLD 3-year maintenance contract | Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate of both Temperature and Humidity. 25% Discount on Spare Parts and Labor for any additional Services needed. One additional courtesy visit per year can be used for service visit or operator. Wear + tear parts to be purchased or billed to customer. Travel to be quoted separate. | – | DL20-0920 |
| SILVER 3-year maintenance contract | Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate 15% Discount on Spare Parts and Labor for any additional Services needed One additional courtesy visit per year can be used for service visit or operator training. Wear + tear parts to be purchased or billed to customer. Travel to be quoted separate. | – | DL20-0820 |
| Validation services | | | |
| Execution of IQ/OQ | Execution of IQ/OQ in accordance with qualification folder. Travel to be quoted separate. | – | DL42-0300 |
| Execution of IQ/OQ/PQ | Execution of IQ/OQ/PQ in accordance with qualification folder. Travel to be quoted separate. | – | DL44-0500 |
| Warranty service | | | |
| 1-year warranty extension | The warranty is extended by 1 year from the delivery date, wear parts are excluded | – | DL50-0030 |

NOTES

01 Condensation may occur in the area around the access port. Access ports may be placed in custom locations for an additional charge.

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