Model KBF 240 | Constant climate chambers with large temperature / humidity range

The BINDER KBF is the specialist for unconditionally reliable stability testing and precise maintenance of constant climate conditions. From programming to documentation, this constant climate chamber meets all critical requirements.

**BENEFITS**

- Homogeneous climate conditions thanks to APT.line™ technology
- Automatic water and wastewater management
- Pressure humidification with fast response times

**MAIN FEATURES**

- Temperature range: 0 °C to 70 °C
- Humidity range: 10 % to 80 % RH
- APT.line™ preheating chamber technology
- Humidity regulation with capacitive humidity sensor and vapor humidification
- Intuitive touchscreen controller with time-segment and real-time programming
- BINDER Multi Management Software APT-COM™ Basic Edition
- 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
- Inner chamber made of stainless steel
- 2 stainless steel racks
- Access port with silicone plug, 30 mm, left
- 4 stable castors, two with brakes, from 240 liters
- Class 3.1 independent temperature safety device (DIN 12880) with visual and audible temperature alarm
- Computer interface: Ethernet
- Door heating

**ORDERING INFORMATION**

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<thead>
<tr>
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<tbody>
<tr>
<td>247</td>
<td>200...230 V 1- ph 50/60 Hz</td>
<td>Standard</td>
<td>KBF240-230V</td>
<td>9020-0322</td>
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<tr>
<td></td>
<td>200...240 V 1- ph 50/60 Hz</td>
<td>Standard</td>
<td>KBF240UL-240V</td>
<td>9020-0323</td>
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### TECHNICAL DATA

<table>
<thead>
<tr>
<th>Description</th>
<th>KBF240-230V²</th>
<th>KBF240UL-240V²</th>
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<tr>
<td>Article Number</td>
<td>9020-0322</td>
<td>9020-0323</td>
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</table>

#### Performance Data Temperature
- **Temperature range**: 0...70
- **Temperature variation at 40 °C [± K]**: 0.3
- **Temperature fluctuation [± K]**: 0.1
- **Max. heat compensation at 40 °C [W]**: 300

#### Performance Data Climate
- **Temperature range [°C]**: 10...70
- **Temperature variation at 25 °C and 60 % RH [± K]**: 0.3
- **Temperature variation at 40 °C and 75 % RH [± K]**: 0.3
- **Temperature fluctuation at 25 °C and 60 % RH [± K]**: 0.1
- **Temperature fluctuation at 40 °C and 75 % RH [± K]**: 0.1
- **Humidity range [% RH]**: 10...80
- **Humidity fluctuation at 25 °C and 60 % RH [± % RH]**: 1.5 ± % RH
- **Humidity fluctuation at 40 °C and 75 % RH [± % RH]**: 1.5 ± % RH
- **Humidity recovery time after 30 s door open at 25 °C and 60 % RH [min]**: 5
- **Humidity recovery time after 30 s door open at 40 °C and 75 % RH [min]**: 11

#### Electrical data
- **Rated Voltage [V]**: 200...230
- **Power frequency [Hz]**: 50/60
- **Nominal power [kW]**: 2.1
- **Unit fuse [A]**: 16
- **Phase (Nominal voltage)**: 1~

#### Measures
- **Interior volume [L]**: 247
- **Net weight of the unit (empty) [kg]**: 189
- **Permitted load [kg]**: 100
- **Load per rack [kg]**: 30
- **Wall clearance back [mm]**: 100
- **Wall clearance sidewise [mm]**: 100

#### Internal Dimensions
- **Width [mm]**: 650
- **Height [mm]**: 785
- **Depth [mm]**: 485

#### Doors
- **Inner doors**: 1
- **Unit doors**: 1

#### Housing dimensions not incl. fittings and connections
- **Width net [mm]**: 925
- **Height net [mm]**: 1460
- **Depth net [mm]**: 800

#### Environment-specific data
- **Energy consumption at 40 °C and 75 % RH [Wh/h]**: 650
- **Sound-pressure level [dB(A)]**: 52

#### Fixtures
- **Number of shelves (std./max.)**: 2/9

1 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 in accordance 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]**

![Dimensions Diagram]

**CHARTS**

- **Climate chart**
- **Temperature-humidity chart with ICH checkpoints**

**OPTIONS**

<table>
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<tr>
<th>Designation</th>
<th>Description</th>
<th>*</th>
<th>Art.-No.</th>
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<tr>
<td><strong>left</strong></td>
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<tr>
<td>30 mm</td>
<td></td>
<td>01</td>
<td>8012-1442</td>
</tr>
<tr>
<td>50 mm</td>
<td></td>
<td>01</td>
<td>8012-1472</td>
</tr>
<tr>
<td>100 mm</td>
<td></td>
<td>01</td>
<td>8012-0515</td>
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<tr>
<td><strong>right</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 mm</td>
<td></td>
<td>01</td>
<td>8012-1436</td>
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<tr>
<td>50 mm</td>
<td></td>
<td>01</td>
<td>8012-1466</td>
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<tr>
<td>100 mm</td>
<td></td>
<td>01</td>
<td>8012-0514</td>
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<tr>
<td><strong>top</strong></td>
<td></td>
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<tr>
<td>30 mm</td>
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<td>01</td>
<td>8012-1448</td>
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<tr>
<td>50 mm</td>
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<td>01</td>
<td>8012-1454</td>
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<tr>
<td>100 mm</td>
<td></td>
<td>01</td>
<td>8012-1460</td>
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<tr>
<td><strong>Alarm output, zero-voltage</strong></td>
<td>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</td>
<td></td>
<td>8012-1037</td>
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<tr>
<td><strong>Analog output 4-20 mA</strong></td>
<td>for temperature and humidity values (output not adjustable)</td>
<td></td>
<td>8012-1040</td>
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* Notes: See last page
### Designation Description

**Calibration certificate, expanded**
- for temperature and humidity; for extending the measurement in center of chamber to include another test value
- Art.-No.: 8012-0155

**Calibration certificate, temperature**
- temperature measurement incl. certificate and 27 measuring points at specified temperature
- Art.-No.: 8012-0923
- temperature measurement incl. certificate, 15 - 18 measuring points at specified temperature
- Art.-No.: 8012-0920
- temperature measurement incl. certificate, 9 measuring points at specified temperature
- Art.-No.: 8012-0917

**Calibration certificate, temperature and humidity**
- Measurement in center of chamber at 25 °C / 60% RH or at specified test values
- Art.-No.: 8012-0154
- temperature measurement incl. certificate, 15 - 18 measuring points at specified temperature
- Art.-No.: 8012-0923
- temperature measurement incl. certificate, 9 measuring points at specified temperature
- Art.-No.: 8012-0917

**Class 3.3 independent temperature safety device**
- with visual alarm (DIN 12880)
- Art.-No.: 8012-1033

**Converter, voltage**
- to operate the device at a nominal voltage of 120 V 1 ph 60 Hz
- Art.-No.: 8012-0821

**Door lock**
- lockable door handle
- Art.-No.: 8012-1023

**Interior socket**
- Waterproof, switched flush-mounting box (CA3GD) for nominal voltage in unit interior, with cover and corresponding plug (nominal voltage; max. 500 W; max. 90 °C; protection class IP67)
- Art.-No.: 8012-1043

**Pt 100 temperature sensor**
- additional flexible Pt 100, interior, for displaying the temperature on the unit display
- Art.-No.: 8012-1042

**RS 485 interface, 2-wire**
- Additional serial interface can be used parallel to Ethernet, for Multi Management Software APT-COM™
- Art.-No.: 8012-1066

*Notes › See last page

### ACCESSORIES

**Designation Description**

**APT-COM™ 4 BASIC-Edition**
- for simple logging and documentation requirements with up to 5 networked units.
- version A, BASIC edition
- Art.-No.: 9053-0039

**APT-COM™ 4 GLP-Edition**
- for working under GLP-compliant conditions. Measured values are documented in a tamper-proof way in line with the requirements of FDA Regulation 21 CFR 11.
- version A, GLP edition
- Art.-No.: 9053-0042

**APT-COM™ 4 PROFESSIONAL-Edition**
- convenient unit and user management built on the BASIC edition. Suitable for networking up to 100 units.
- version A, PROFESSIONAL edition
- Art.-No.: 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
- Art.-No.: 8012-0759

**BINDER PURE AQUA SERVICE, accessories**
- Single-use, replacement cartridge for BINDER PURE AQUA System
- Art.-No.: 6011-0165

**Data Logger Kit**
- TH 70/70: For continuous temperature and humidity logging from -40 °C to 70 °C; 0% to 100% RH. Kit includes 1 data logger, Pt 100 sensor with 2 m extension cable and 1 magnetic fixture for mounting to the BINDER unit
- Art.-No.: 8012-0717

**Data Logger Software**
- LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable)
- Art.-No.: 8012-0821

**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
- Basic set 500, length 50 cm
- Art.-No.: 8012-1107
- Art.-No.: 8012-1108

**pH-neutral detergent**
- concentrated, for gentle removal of residual contaminants; 1 kg
- Art.-No.: 1002-0016

*Notes › See last page
### Qualification documents

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<td>7007-0002</td>
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<td>7012-0589</td>
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### Rack

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### Rack accessories

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<td>8012-0646</td>
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### RS 485 / RS 422 interface converter

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### Shelf, perforated

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<th>Art.-No.</th>
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<td>6004-0040</td>
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### Water supply set

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<td>8012-0643</td>
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### SERVICES

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<tr>
<th>Designation</th>
<th>Description</th>
<th>Art.-No.</th>
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<tbody>
<tr>
<td><strong>Unit installation</strong></td>
<td>Unpacking and setting up of unit, connecting to existing connections, and checking function</td>
<td>13, 18 DL10-0300</td>
</tr>
<tr>
<td><strong>Unit instructions</strong></td>
<td>Unit function instructions for operation and programming of the controller</td>
<td>18 DL10-0700</td>
</tr>
<tr>
<td><strong>Preventive maintenance</strong></td>
<td>Functional testing of all electrical and mechanical components, short calibration, documentation in the maintenance schedule</td>
<td>14, 18 DL20-0400</td>
</tr>
<tr>
<td><strong>Temperature and humidity calibration</strong></td>
<td>Expansion – including certificate, each additional measuring point in center of chamber at 25 °C / 60% RH or at specified values</td>
<td>14, 16, 17, 18 DL30-0302</td>
</tr>
<tr>
<td><strong>Temperature measurement in accordance with DIN 12880, 27 temperature measuring points and 1 humidity measuring point</strong></td>
<td>Temperature measurement in accordance with DIN 12880 with 27 temperature measuring points and 1 humidity measuring point in center of chamber at specified values, including certificate</td>
<td>14, 16, 17, 18 DL30-0427</td>
</tr>
<tr>
<td><strong>Temperature measurement, 18 temperature measuring points and 1 humidity measuring point</strong></td>
<td>Temperature measurement with 18 temperature measuring points and 1 humidity measuring point in center of chamber with 1 specified pair of values, including certificate</td>
<td>14, 16, 17, 18 DL30-0318</td>
</tr>
<tr>
<td><strong>Temperature measurement, 27 temperature measuring points and 1 humidity measuring point</strong></td>
<td>Temperature measurement with 27 temperature measuring points and 1 humidity measuring point in center of chamber with 1 specified pair of values, including certificate</td>
<td>14, 16, 17, 18 DL30-0327</td>
</tr>
<tr>
<td><strong>Temperature measurement, 9 temperature measuring points and 1 humidity measuring point</strong></td>
<td>Temperature measurement with 9 temperature measuring points and 1 humidity measuring point in center of chamber at specified values, including certificate</td>
<td>14, 16, 17, 18 DL30-0309</td>
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<tr>
<td><strong>Validation services</strong></td>
<td>Execution of IQ/OQ</td>
<td>15, 18 DL42-0300</td>
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<tr>
<td><strong>Exe</strong></td>
<td>cution of IQ/OQ/PQ in accordance with qualification folder</td>
<td>15, 18 DL44-0500</td>
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<tr>
<td><strong>Warranty service</strong></td>
<td>Warranty extension from 2 to 3 years</td>
<td>The warranty is extended from 2 to 3 years from the delivery date, wear parts are excluded</td>
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<tr>
<td><strong>Warranty extension from 2 to 5 years</strong></td>
<td>The warranty is extended from 2 to 5 years from the delivery date, wear parts are excluded</td>
<td>14, 16, 17, 18 DL01-4042</td>
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</tbody>
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*Notes › See last page
NOTES

01 Condensation may occur in the area around the access port. Access ports may be placed in custom locations for an additional charge.
02 UL mark is not granted when this option is used.
03 Heat resistant only to max. 200 °C.
04 Only available on units rated for 230 V.
07 The additional heat input may affect the temperature behavior.
09 Not in conjunction with the optional access port, door with window and interior lighting.
10 Not available on 23-liter units.
11 Not available on 27- or 53-liter units.
12 Only available on units rated for 230 V or 400 V.
13 Installation and connections take place at unit location; transport within the company only upon consultation.
14 We recommend a BINDER service contract to cover unit inspections, calibrations and validations.
15 OQ according to Yellow Paper = completed factory validation documentation of all OQ checklists.
16 Sensor calibration is performed in an accredited calibration laboratory.
17 Calibration is performed according to the BINDER factory standard.
18 Quoted prices do not include travel costs. Please refer to the chapter on BINDER Service for travel costs for your region. Quoted prices for services performed in Switzerland do not include a country-specific added fee (available on request).
19 For additional accessories, refer to the Process documentation chapter.