

Model KBF LQC 720 | Humidity test chambers with ICH-compliant light source and light dose control

The main advantage of the BINDER KBF LQC series is the patented light photometry for photostability tests. Two 3D spherical sensors control the light dosage of UV-A and visible light. Once the desired light dosage is achieved, the chamber switches off automatically.

BENEFITS

- Homogeneous climate conditions thanks to APT.line™ technology
- Automatic water and wastewater management
- Pressure humidification with fast response times
- Variable position and removable illumination cassettes
- ICH-compliant illumination for long-term stable test conditions
- Precise photometry with 3D ball-type sensors at the sample



Model 720

MAIN FEATURES

- Temperature range: 0 °C to 70 °C
- Temperature range with light: 10 °C to 60 °C
- Humidity range: 10 % to 80 % RH
- 3 positionable illumination cassettes with ICH-compliant UV/Vis light source
- Independent light-dose control of UV-A and visible light with spherical sensors
- APT.line™ preheating chamber technology
- Humidity regulation with capacitive humidity sensor and vapor humidification
- Inner chamber made of stainless steel
- 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) with special TIMELESS coating
- 3 stainless steel racks
- Access port with silicone plug, 30 mm, left
- 4 stable castors, two with brakes
- Class 3.1 independent temperature safety device (DIN 12880) with visual and audible temperature alarm
- Computer interface: Ethernet
- Door heating

ORDERING INFORMATION

| Interior volume [cu.ft.] | Voltage | Option model | Version | Art.-No. |
|--------------------------|-------------------------|--------------|------------------|-----------|
| 24.7 | 200...230 V 1~ 50 Hz | Standard | KBFLQC720-230V | 9020-0334 |
| | 200...240 V 1~ 50/60 Hz | Standard | KBFLQC720UL-240V | 9020-0335 |

TECHNICAL DATA

| Description | KBFLQC720-230V ¹ | KBFLQC720UL-240V ¹ |
|--|-----------------------------|-------------------------------|
| Article Number | 9020-0334 | 9020-0335 |
| Performance Data Temperature | | |
| Temperature range with 100% illumination [°C] | 10...60 | 10...60 |
| Temperature range without illumination cassettes [°C] | 0...70 | 0...70 |
| Max. heat compensation at 40 °C with illumination [W] | 1000 | 1000 |
| Performance Data Climate | | |
| Temperature range with 100% illumination [°C] | 20...60 | 20...60 |
| Temperature range without illumination cassettes [°C] | 10...70 | 10...70 |
| Temperature variation with illumination at 25 °C and 60 % RH [± K] | 1.2 | 1.2 |
| Temperature variation with illumination at 40 °C and 75 % RH [± K] | 1.2 | 1.2 |
| Temperature fluctuation with illumination at 25 °C and 60 % RH [± K] | 0.2 | 0.2 |
| Temperature fluctuation with illumination at 40 °C and 75 % RH [± K] | 0.2 | 0.2 |
| Humidity range with illumination cassettes, with illumination [% RH] | 10...75 | 10...75 |
| Humidity range without illumination [% RH] | 10...80 | 10...80 |
| Humidity fluctuation with illumination at 25 °C and 60 % RH [± % RH] | 2 | 2 |
| Humidity fluctuation with illumination at 40 °C and 75 % RH [± % RH] | 2 | 2 |
| Humidity recovery time after 30 s door open at 25 °C and 60 % RH with illumination [min] | 1 | 1 |
| Humidity recovery time after 30 s door open at 40 °C and 75 % RH with illumination [min] | 5 | 5 |
| Lightdata per Illumination Cassettes | | |
| ICH compliant illumination for photo stability testing [lx]* ² | 9000 | 9000 |
| ICH compliant illumination for photo stability testing [W/m ²]* ² | 1.5 | 1.5 |
| Electrical data | | |
| Rated Voltage [V] | 200...230 | 200...240 |
| Power frequency [Hz] | 50 | 50/60 |
| Nominal power [kW] | 3.5 | 3.5 |
| Unit fuse [A] | 16 | 16 |
| Phase (Nominal voltage) | 1~ | 1~ |
| Measures | | |
| Interior volume [cu.ft.] | 24.7 | 24.7 |
| Net weight of the unit (empty) [lbs] | 825 | 825 |
| Permitted load [lbs] | 331 | 331 |
| Load per rack [lbs] | 99 | 99 |
| Wall clearance back [in] | 3.94 | 3.94 |
| Wall clearance sidewise [in] | 7.88 | 7.88 |
| Internal Dimensions | | |
| Width [in] | 38.34 | 38.34 |
| Height [in] | 49.3 | 49.3 |
| Depth [in] | 22.69 | 22.69 |
| Doors | | |
| Inner doors | 2 | 2 |
| Unit doors | 2 | 2 |

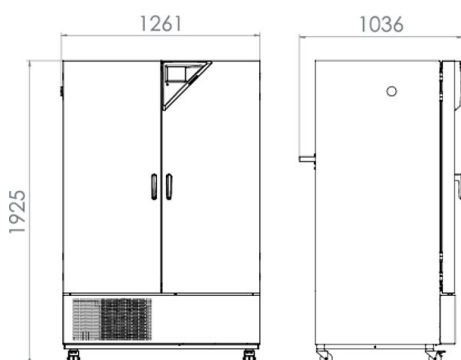
1 All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances 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.

2 Average value, measured at 25 °C with a spherical sensor (±10 %) by 12 cm below the light cassette. The values given in W/m² refer to global radiation.

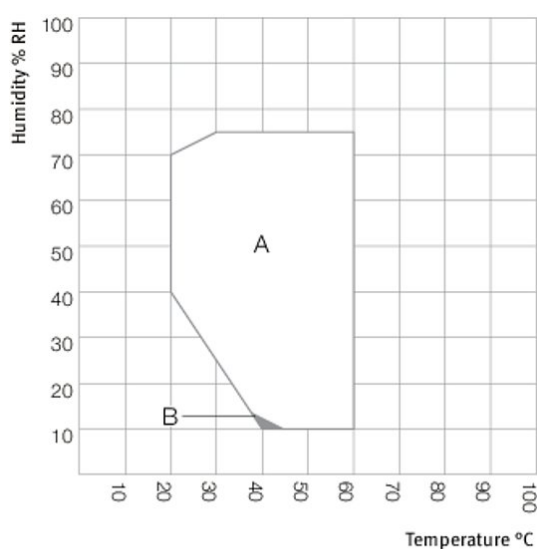
| Description | KBFLQC720-230V ¹ | KBFLQC720UL-240V ¹ |
|---|-----------------------------|-------------------------------|
| Article Number | 9020-0334 | 9020-0335 |
| Housing dimensions not incl. fittings and connections | | |
| Width net [in] | 49.3 | 49.3 |
| Height net [in] | 75.8 | 75.8 |
| Depth net [in] | 35.07 | 35.07 |
| Environment-specific data | | |
| Energy consumption at 40 °C and 75 % RH [Wh/h] | 2350 | 2350 |
| Sound-pressure level [dB(A)] | 53 | 53 |
| Fixtures | | |
| Number of shelves (std./max.) | 3/12 | 3/12 |
| Number of illumination cassettes (std./max.) | 3/3 | 3/3 |

- 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.
- 2 Average value, measured at 25 °C with a spherical sensor (±10 %) by 12 cm below the light cassette. The values given in W/m² refer to global radiation.

DIMENSIONS INCL. FITTINGS AND CONNECTIONS [MM]



CHARTS



A: Guaranteed condensation-free range

B: Deviations of technical data may be possible

Climate chart

OPTIONS

| Designation | Description | * | Art.-No. |
|---|---|----|-----------|
| Access port with silicone plug | left | | |
| | 30 mm | 01 | 8012-1443 |
| | 50 mm | 01 | 8012-1473 |
| | 100 mm | 01 | 8012-1340 |
| | right | | |
| | 30 mm | 01 | 8012-1437 |
| | 50 mm | 01 | 8012-1467 |
| | 100 mm | 01 | 8012-1337 |
| | top | | |
| | 30 mm | 01 | 8012-1449 |
| | 50 mm | 01 | 8012-1455 |
| | 100 mm | 01 | 8012-1461 |
| 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 | – | 8012-1763 |
| Analog output 4-20 mA | for temperature and humidity values (output not adjustable) | – | 8012-1739 |
| Calibration certificate, expanded | for temperature and humidity; for extending the measurement in center of chamber to include another test value | – | 8012-1189 |
| Calibration certificate, temperature | temperature measurement incl. certificate and 27 measuring points at specified temperature | – | 8012-1604 |
| | temperature measurement incl. certificate, 15- 18 measuring points at specified temperature | – | 8012-1584 |
| | temperature measurement incl. certificate, 9 measuring points at specified temperature | – | 8012-1563 |
| Calibration certificate, temperature and humidity | Measurement in center of chamber at 25 °C / 60% RH or at specified test values | – | 8012-1183 |
| | 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 | – | 8012-1610 |
| Class 3.3 independent temperature safety device | with visual alarm (DIN 12880) | – | 8012-1755 |
| Door lock | lockable door handle | – | 8012-1661 |
| Light photometry | including certificate, illumination and irradiance for visible light, 25 measuring points on 3 measurement levels, as well as spectral distribution (385 – 785 nm) | – | 8012-0909 |
| Pt 100 temperature sensor | additional flexible Pt 100, interior, for displaying the temperature on the unit display | – | 8012-1748 |
| RS 485 / RS 422 interface converter | 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 |
| RS 485 interface, 2-wire | Additional serial interface can be used parallel to Ethernet, for Multi Management Software APT-COM™ | – | 8012-1744 |

* Notes › See last page

ACCESSORIES

| Designation | Description | * | Art.-No. |
|---------------------------------------|---|----|-----------|
| APT-COM™ 4 BASIC-Edition | for simple logging and documentation requirements with up to 5 networked units. version 4, BASIC edition | 19 | 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 4, GLP edition | 19 | 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 4, PROFESSIONAL edition | 19 | 9053-0040 |
| BINDER PURE AQUA SERVICE | system for preparation or complete desalination of tap water, containing single-use cartridge, hoses and measuring device | – | 8012-0759 |
| BINDER PURE AQUA SERVICE, accessories | Single-use, replacement cartridge for BINDER PURE AQUA System | – | 6011-0165 |

* Notes › See last page

| Designation | Description | * | Art.-No. |
|----------------------|--|----|-----------|
| Data Logger Kit | T 220: For continuous temperature logging from -90 °C to 220 °C. The kit includes 1 data logger, Pt 100 sensor with 2 m extension cable and 1 magnetic fixture for mounting to the BINDER unit | 19 | 8012-0715 |
| | TH 70/70: For continuous temperature and humidity logging from -40 °C to 70 °C / 0% to 100% RH and additional logging of ambient conditions. Kit includes 1 data logger, 2 attachable combined humidity/temperature sensors, 2 m extension cable and 1 fixture for mounting to the BINDER unit | 19 | 8012-0717 |
| | TH 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 | 19 | 8012-0716 |
| Data Logger Software | LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable) | 19 | 8012-0821 |
| pH-neutral detergent | concentrated, for gentle remove of residual contaminants; 1 kg | – | 1002-0016 |
| Rack | stainless steel | – | 6004-0106 |
| Rack accessories | fasteners (1 set of 4) for additional security of racks | – | 8012-0620 |
| Rack, reinforced | stainless steel, with fasteners (1 set of 4) | – | 8012-0674 |
| Shelf, perforated | Stainless steel | – | 8009-0486 |
| Shelf, reinforced | positioned at bottom level, max. load 67 kg, with additional attachment for operation of shaking device, stirring device or roller bottle system | – | 8012-1490 |
| Water supply set | consisting of fresh- and waste-water containers (20 liters each), cabling and pump external, free-standing | – | 8012-1846 |
| | external, consisting of fresh- and waste-water containers (20 liters each), cabling and pump | | |
| | external, for hanging from the back of the device | – | 8012-0643 |

* Notes › See last page

SERVICES

| Designation | Description | * | Art.-No. |
|--|---|----------------|-----------|
| Installation services | | | |
| Unit installation | Unpacking and setting up of unit, connecting to existing connections, and checking function | 13, 18 | DL10-0300 |
| Unit instructions | Unit function instructions for operation and programming of the controller | 18 | DL10-0700 |
| Preventive maintenance | | | |
| Maintenance | Functional testing of all electrical and mechanical components, short calibration, documentation in the maintenance schedule | 14, 18 | DL20-0400 |
| Calibration services | | | |
| Calibration temperature and humidity | expansion - including certificate, each measurement at additional measuring point or testing temperature/humidity | 14, 16, 17, 18 | DL30-0302 |
| | including certificate, one measuring point in center of chamber at 25 °C / 60 % RH or at specified values | 14, 16, 17, 18 | DL30-0301 |
| Light photometry | including certificate, 25 measuring points on 3 measurement levels, intensity measurements for visible light and UVA, as well as spectral distribution (qualitative spectral measurements 250 – 785 nm) | 14, 16, 17, 18 | DL30-0525 |
| Temperature and humidity measurement according to DIN12880 | including certificate (27 temperature measuring points and one humidity measuring point, at 25 °C / 60 % RH or at specified values) | 14, 16, 17, 18 | DL30-0427 |
| Temperature measurement 18 temperature measuring points and 1 humidity measuring point | including certificate, 18 temperature measuring points and 1 humidity measuring point in center of chamber, at 25 °C / 60 % RH or at specified values | 14, 16, 17, 18 | DL30-0318 |
| Temperature measurement 27 temperature measuring points and 1 humidity measuring point | including certificate, 27 temperature measuring points and 1 humidity measuring point in center of chamber, at 25 °C / 60 % RH or at specified values | 14, 16, 17, 18 | DL30-0327 |
| Temperature measurement 9 temperature measuring points and 1 humidity measuring point | including certificate, 9 temperature measuring points and 1 humidity measuring point in center of chamber, at 25 °C / 60 % RH or at specified values | 14, 16, 17, 18 | DL30-0309 |
| Validation services | | | |
| Execution of IQ/OQ incl. light measurement | including light measurement, in accordance with qualification folder | 15, 18 | DL43-0400 |
| Execution of IQ/OQ/PQ | in accordance with customer's requirement, price: on request | 15, 18 | DL44-0500 |
| Qualification folder IQ/OQ | supporting documents for validation performed by customer, consisting of: IQ/OQ checklists, unit schematics, QM certificate in accordance with ISO 9001 | 15, 18 | 8012-0869 |

* Notes › See last page

| Designation | Description | * | Art.-No. |
|---|---|--------|-----------|
| Qualification folder IQ/OQ/PQ | supporting documents for validation performed by customer, in accordance with customer's requirement, extension of Qualification folder IQ/OQ by chapter PQ | 15, 18 | 8012-0957 |
| Warranty service | | | |
| Extension of the warranty from 2 to 3 years | beginning with the date of delivery, wearing parts are not included | – | DL02-6041 |
| Extension of the warranty from 2 to 5 years | beginning with the date of delivery, wearing parts are not included | – | DL02-6042 |

* 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.
- 06 Heating-up time may increase as a result of the lower heat conductivity.
- 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 23- 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.

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