

Model KBF LQC 240 | Constant climate chambers with ICH-compliant light source and light dose control

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 240



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MAIN FEATURES

- Temperature range: 0 °C to 70 °C
- Temperature range with light: 10 °C to 60 °C
- Humidity range: 10 % to 80 % RH
- 2 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
- Controller with time-segment programming
- Tightly-sealed inner door made of tempered safety glass
- 2 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

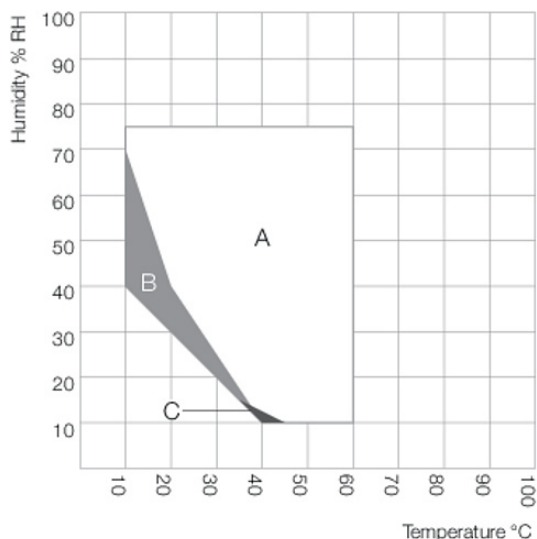
ORDERING INFORMATION

| Interior volume [L] | Voltage | Option model | Version | Art.-No. |
|---------------------|-------------------------|--------------|------------------|-----------|
| Model KBF LQC 240 | | | | |
| 247 | 200...230 V 1~ 50 Hz | Standard | KBFLQC240-230V | 9020-0277 |
| | 200...240 V 1~ 50/60 Hz | Standard | KBFLQC240UL-240V | 9020-0278 |

TECHNICAL DATA

| Description | KBFLQC240-230V | KBFLQC240UL-240V |
|---|----------------|------------------|
| Article Number | 9020-0277 | 9020-0278 |
| Performance Data Temperature | | |
| Temperature range without illumination cassettes [°C] | 0...70 | 0...70 |
| Temperature range with illumination cassettes, with illumination [°C] | 10...60 | 10...60 |
| Max. heat compensation at 40 °C with illumination [W] | 400 | 400 |
| Recovery time after 30 seconds door open at 25 °C and 60 % RH with illumination [min] | 3 | 3 |
| Recovery time after 30 seconds door open at 40 °C and 75 % RH with illumination [min] | 4 | 4 |
| Performance Data Climate | | |
| Temperature range without illumination cassettes [°C] | 10...70 | 10...70 |
| Temperature range with illumination cassettes, with illumination [°C] | 10...60 | 10...60 |
| Temperature uniformity with illumination at 25 °C and 60 % RH [± K] | 0.6 | 0.6 |
| Temperature uniformity with illumination at 40 °C and 75 % RH [± K] | 0.6 | 0.6 |
| 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 without illumination [% RH] | 10...80 | 10...80 |
| Humidity range with illumination cassettes, with illumination [% RH] | 10...75 | 10...75 |
| Humidity fluctuation with illumination at 25 °C and 60 % RH | 1,5 ± % RH | 1,5 ± % RH |
| Humidity fluctuation with illumination at 40 °C and 75 % RH | 2 ± % RH | 2 ± % RH |
| Lightdata per Illumination Cassettes | | |
| ICH compliant illumination for photo stability testing [lx] | 7500 | 7500 |
| ICH compliant illumination for photo stability testing [W/m²] | 1.1 | 1.1 |
| Electrical data | | |
| Rated Voltage [V] | 200...230 | 200...240 |
| Power frequency [Hz] | 50 | 50/60 |
| Nominal power [kW] | 2.4 | 2.4 |
| Unit fuse [A] | 16 | 16 |
| Phase (Nominal voltage) | 1~ | 1~ |
| Measures - Outer dimensions | | |
| Width net [mm] | 925 | 925 |
| Height net [mm] | 1460 | 1460 |
| Depth net [mm] | 800 | 800 |
| Wall clearance back [mm] | 100 | 100 |
| Wall clearance sidewise [mm] | 100 | 100 |
| Measures - Doors | | |
| Inner doors | 1 | 1 |
| Unit doors | 1 | 1 |
| Measures - Internal Dimensions | | |
| Width [mm] | 650 | 650 |
| Height [mm] | 785 | 785 |
| Depth [mm] | 485 | 485 |
| Measures | | |
| Interior volume [L] | 247 | 247 |
| Net weight of the unit (empty) [kg] | 213 | 213 |
| Load per rack [kg] | 30 | 30 |
| Environment-specific data | | |
| Energy consumption at 40 °C and 75 % RH | 660 Wh/h | 660 Wh/h |
| Sound-pressure level [dB(A)] | 52 | 52 |

CHARTS



- A: Guaranteed condensation-free range
 B: Time-limited operation (max. 24 hours)
 C: Deviations of technical data may be possible

Climate chart

OPTIONS AND ACCESSORIES

| Designation | Description | * | Art.-No. |
|---|---|----|-----------|
| Access port with silicone plug | 30 mm, left | 01 | 8012-0648 |
| | 30 mm, right | 01 | 8012-0647 |
| | 30 mm, top | 01 | 8012-0649 |
| | 50 mm, left | 01 | 8012-0653 |
| | 50 mm, right | 01 | 8012-0652 |
| | 50 mm, top | 01 | 8012-0650 |
| | 100 mm, left | 01 | 8012-0515 |
| | 100 mm, right | 01 | 8012-0514 |
| | 100 mm, top | 01 | 8012-0651 |
| 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 | - | 8012-0615 |
| Analog output, 4 – 20 mA | for temperature and humidity values (output not adjustable) | - | 8012-0614 |
| 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 |
| Calibration certificate, expanded | for temperature and humidity, each additional measurement at additional points or sets of values | - | 8012-0155 |
| Calibration certificate, temperature | temperature measurement incl. certificate and 27 measuring points at specified temperature | - | 8012-0923 |
| | temperature measurement incl. certificate, 15- 18 measuring points at specified temperature | - | 8012-0920 |
| | temperature measurement incl. certificate, 9 measuring points at specified temperature | - | 8012-0917 |
| Calibration certificate, temperature and humidity | for temperature and humidity, measurement in center of chamber at 25 °C / 60 % RH or at specified values | - | 8012-0154 |
| | 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 | - | 8012-0924 |
| Class 3.3 independent temperature safety device | with visual alarm (DIN 12880) 230 V option model | - | 8012-0610 |

* Notes › See last page

Data Sheet Model KBF LQC 240

| Designation | Description | * | Art.-No. |
|---|--|----|-----------|
| Converter, voltage | to operate the device at a nominal voltage of 120 V 1 ph 60 Hz | - | 8009-0821 |
| | T 220: temperature logging from -90 °C to 220 °C | 19 | 8012-0715 |
| Data Logger Kit | TH 70/70: temperature and humidity logging from -40 °C to 70 °C and 0 % to 100 % RH and additional combination sensor for recording environmental conditions | 19 | 8012-0717 |
| | TH 70: temperature and humidity logging from -40 °C to 70 °C and 0 % to 100 % RH | 19 | 8012-0716 |
| Data Logger Kit, software | LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable) | 19 | 8012-0821 |
| Door lock | lockable door handle | - | 8012-1023 |
| ICH illumination cassette, accessories | replacement fluorescent tubes for one illumination cassette (set of 5) | - | 8012-0657 |
| | RS 422 cable set and RS 232 / RS 422 interface converter for connection to 10-way plug distributor or for connection to a unit | | |
| | 120 V, 60 Hz option model | - | 8012-0557 |
| | 230 V, 50/60 Hz option model | - | 8012-0556 |
| Interface converter | RS 422 cable set and RS 422 / Ethernet interface converter for connection to 10-way plug distributor or for connection to a unit | | |
| | 120 V, 60 Hz option model | - | 8012-0405 |
| | 230 V, 50/60 Hz option model | - | 8012-0380 |
| Interface converter, USB / RS422 | RS 422 cable set and RS 422 / USB interface converter for connection to 10-way plug distributor or for connection to a unit (USB-powered converter) | - | 8012-0665 |
| 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 |
| Lockable controller keyboard | Lockable controller keyboard with key-operated switch | - | 8012-0609 |
| Magnetic Pouch (A4) | insert pouch with magnetic strip | - | 1007-0065 |
| pH-neutral detergent | concentrated, for gentle remove of residual contaminants; 1 kg | - | 1002-0016 |
| Pt 100 temperature sensor | additional Pt 100, with flexible cable installed with external connection, incl. 6-pin DIN socket | - | 8012-0637 |
| Rack | stainless steel | - | 6004-0101 |
| Rack, accessories | set of 4 fasteners for additional security | - | 8012-0620 |
| Rack, reinforced | stainless steel, with 1 set of 4 fasteners, max. load 70 kg | - | 8012-0638 |
| | in place of Ethernet, for communication software | - | 8012-0641 |
| RS 422 interface | modular plug distributor for 10 RS 422 interfaces | - | 8012-0295 |
| RS 422 interface, cable (15 m) | RS 422 connection cable (15 m) between plug distributor and RS 422 interface | - | 5023-0036 |
| RS 422 interface, cable (50 m) | RS 422 extension cable (50 m) between interface converter and unit or RS 232 / RS 422 plug distributor | - | 5023-0117 |
| Shelf, perforated | stainless steel | - | 6004-0040 |
| | APT-COM™ communications software | | |
| | version 2 to 3, GLP edition | 19 | 9053-0016 |
| | version 3, BASIC edition | 19 | 9053-0014 |
| Software | version 3, GLP edition | 19 | 9053-0015 |
| | version 3, STANDARD edition | 19 | 9053-0013 |
| | APT-COM™ communications software, price: for free | | |
| | version 3, GLP DEMO Edition | 19 | 9053-0008 |
| Water supply set | external, consisting of fresh- and waste-water containers (20 liters each), cabling and pump | - | 8012-0643 |

* Notes › See last page

SERVICES

| Designation | Description | * | Art.-No. |
|------------------------------|---|--------|----------|
| Installation services | | | |
| Installation | and set up of unit at operating location, connect to existing connections | 13, 18 | DL100300 |

* Notes › See last page

Data Sheet Model KBF LQC 240

| Designation | Description | * | Art.-No. |
|--|---|----------------|-----------------|
| Instruction | unit function instructions for operation and programming of the controller | 18 | DL100700 |
| Preventive maintenance | | | |
| Preventive maintenance | Execution of equipment inspection according to maintenance plan | 14, 18 | DL200400 |
| Calibration services | | | |
| Calibration temperature and humidity | including certificate, one measuring point in center of chamber at 25 °C / 60 % RH or at specified values | 14, 16, 17, 18 | DL300301 |
| 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 | DL300525 |
| Temperature and humidity measurement according to DIN12880 | including certificate (27 temperature measuring points and 1 humidity measuring point, at 25 °C / 60 % RH or at specified values) | 14, 16, 17, 18 | DL300427 |
| 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 | DL300318 |
| 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 | DL300327 |
| 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 | DL300309 |
| Validation services | | | |
| Execution of IQ/OQ, incl. light measurement | including light measurement, in accordance with qualification folder | 15, 18, 20 | DL430400 |
| Execution of IQ/OQ/PQ | in accordance with customer's requirement, price: on request | 15, 18 | DL440500 |
| 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, 20 | 8012-0869 |
| 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 | – | DL026041 |
| Extension of the warranty from 2 to 5 years | beginning with the date of delivery, wearing parts are not included | – | DL026042 |

* 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.
- 05 Attention: The pump is delivered separately. The electric connection for the pump (230 V/1~/50 Hz) must be carried out by an authorized electrician.
- 06 Heating-up time may increase as a result of the lower heat conductivity.
- 07 The additional heat input may affect the temperature behavior.
- 08 The pump (packaged separately) is ready for connection.
- 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 (see the chapter on BINDER Service) 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.
- 20 When ordering IQ/OQ qualification folders and associated IQ/OQ execution on one order, we offer a 15 % discount for both items.
When ordering IQ/OQ/PQ qualification folders and associated IQ/OQ/PQ execution on one order, we offer a 15 % discount for the item of the IQ/OQ/PQ folder.
- 21 ATEX conformity:
Pumping chamber (pumped gases): II 2G IIC T3 X
Environment with inert purge gas: II 2G IIB T4 X
Environment without inert purge gas: II 3G IIB T4 X
Motor: II 2G Ex d IIB T4 Gb

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