

Model KB 400 | Refrigerated incubators with compressor technology

The most versatile among the refrigerated incubators for microorganisms: The BINDER KB series refrigerated incubator controls temperature ranges of -5 °C to 100 °C. With its comprehensive program functions, this refrigerated incubator offers a wide range of capabilities and delivers reproducible test results.

BENEFITS

- Safe, reproducible incubation, even at high ambient temperatures
- Disinfection routine at 100 °C
- Up to 30% lower energy consumption compared to the previous model



Model 400



Model 400

MAIN FEATURES

- Temperature range (Model 23): 0 °C to 100 °C
- Temperature range (Models 53, 115, 240, 400, 720): -5 °C to 100 °C
- APT.line™ preheating chamber technology
- Refrigeration with compressor refrigerated unit
- Door heating system from 240 liters
- Adjustable fan speed
- Controller with time-segment and real-time programming
- Inner door made of tempered safety glass
- 2 stainless steel racks
- Units up to 115 liters are stackable
- Access port with silicone plug from 240 liters
- 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

ORDERING INFORMATION

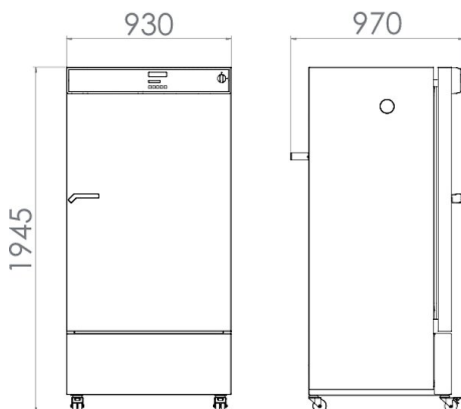
| Interior volume [cu.ft.] | Voltage | Option model | Version | Art.-No. |
|--------------------------|-------------------------|--------------|--------------|-----------|
| 14.1 | 200...240 V 1~ 50/60 Hz | Standard | KB400-230V | 9020-0203 |
| | 100...120 V 1~ 50/60 Hz | Standard | KB400UL-120V | 9020-0305 |

TECHNICAL DATA

| Description | KB400-230V ¹ | KB400UL-120V ¹ |
|--|-------------------------|---------------------------|
| Article Number | 9020-0203 | 9020-0305 |
| Performance Data Temperature | | |
| Temperature range | -5...100 | -5...100 |
| Temperature variation at 37 °C [± K] | 0.2 | 0.2 |
| Temperature fluctuation at 37 °C [± K] | 0.1 | 0.1 |
| Recovery time after 30 seconds door open at 37 °C [min] | 4 | 4 |
| Electrical data | | |
| Rated Voltage [V] | 200...240 | 100...120 |
| Power frequency [Hz] | 50/60 | 50/60 |
| Nominal power [kW] | 1.4 | 1.4 |
| Unit fuse [A] | 16 | 16 |
| Phase (Nominal voltage) | 1~ | 1~ |
| Measures | | |
| Interior volume [cu.ft.] | 14.1 | 14.1 |
| Net weight of the unit (empty) [lbs] | 485 | 485 |
| Permitted load [lbs] | 265 | 265 |
| Load per rack [lbs] | 66 | 66 |
| Wall clearance back [in] | 3.94 | 3.94 |
| Wall clearance sidewise [in] | 3.94 | 3.94 |
| Internal Dimensions | | |
| Width [in] | 25.61 | 25.61 |
| Height [in] | 50 | 50 |
| Depth [in] | 19.11 | 19.11 |
| Doors | | |
| Inner doors | 1 | 1 |
| Unit doors | 1 | 1 |
| Housing dimensions not incl. fittings and connections | | |
| Width net [in] | 36.45 | 36.45 |
| Height net [in] | 76.8 | 76.8 |
| Depth net [in] | 31.72 | 31.72 |
| Environment-specific data | | |
| Energy consumption at 37 °C [Wh/h] | 330 | 330 |
| Sound-pressure level [dB(A)] | 53 | 53 |
| Fixtures | | |
| Number of shelves (std./max.) | 2/15 | 2/15 |

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]



OPTIONS

| Designation | Description | * | Art.-No. |
|---|--|----|-----------|
| Access port with silicone plug | left | | |
| | 30 mm | 01 | 8012-0648 |
| | 50 mm | 01 | 8012-0653 |
| | right | | |
| | 30 mm | 01 | 8012-0647 |
| | 50 mm | 01 | 8012-0652 |
| | top | | |
| | 30 mm | 01 | 8012-0649 |
| | 50 mm | 01 | 8012-0650 |
| | 100 mm | 01 | 8012-0651 |
| Alarm output, zero-voltage | for temperature (± 2 °C), accessible via 6-pin DIN socket (max. 24 V - 2.5 A), with audible signal that can be switched off | - | 8012-1083 |
| Analog output 4-20 mA | for temperature values (output not adjustable) | 02 | 8012-1073 |
| Calibration certificate, expanded | for temperature; for extending the measurement in center of chamber to include another test temperature | - | 8012-1120 |
| Calibration certificate, temperature | for temperature, measurement in center of chamber at specified temperature | - | 8012-1139 |
| | temperature measurement incl. certificate and 27 measuring points at specified temperature | - | 8012-1598 |
| | temperature measurement incl. certificate, 15- 18 measuring points at specified temperature | - | 8012-1577 |
| | temperature measurement incl. certificate, 9 measuring points at specified temperature | - | 8012-1556 |
| Class 3.3 independent temperature safety device | with visual alarm (DIN 12880) | - | 8012-1081 |
| Door lock | lockable door handle | - | 8012-1774 |
| Interior lighting | with two 15 W light bulbs | | |
| | 120 V option model | 02 | 8012-1070 |
| | 230/240 V option model | 02 | 8012-1071 |
| 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) | 07 | 8012-1075 |
| Pt 100 temperature sensor | additional flexible Pt 100, interior, for displaying the temperature on the unit display | - | 8012-1079 |
| Shelf, reinforced | positioned at bottom level, max. load 67 kg, with additional attachment for operation of shaking device, stirring device or roller bottle system | - | 8012-0639 |

* 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 |
| 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 |
| Data Logger Software | LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable) | 19 | 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 | - | 8012-1107 |
| | Basic set 500, length 50 cm | - | 8012-1108 |
| | Basic set 900, length 90 cm | - | 8012-1109 |
| | 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 |
| | Expansion set 900, length 90 cm | - | 8012-1718 |
| pH-neutral detergent | concentrated, for gentle remove of residual contaminants; 1 kg | - | 1002-0016 |
| Qualification documents | IQ/OQ documents – supporting documents for validation performed by customers, consisting of: IQ/OQ checklists incl. calibration guide and comprehensive unit documentation; parameters: temperature, CO ₂ , O ₂ , pressure, depending on unit | | |
| | Digital in PDF format | - | 7057-0001 |
| | Hard copy inside folder | - | 7007-0001 |
| | 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, CO ₂ , O ₂ – or pressure, depending on unit | | |
| | Digital in PDF format | - | 7057-0005 |
| | Hard copy inside folder | - | 7007-0005 |
| Rack | stainless steel | - | 6004-0101 |
| Rack accessories | fasteners (1 set of 4) for additional security of racks | - | 8012-0620 |
| Rack, reinforced | stainless steel, with fasteners (1 set of 4) | - | 8012-0638 |
| Shelf, perforated | Stainless steel | - | 6004-0040 |

* 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 | DL10-0100 |
| Unit instructions | Unit function instructions for operation and programming of the controller | 18 | DL10-0500 |
| Preventive maintenance | | | |
| Maintenance | Functional testing of all electrical and mechanical components, short calibration, documentation in the maintenance schedule | 14, 18 | DL20-0200 |
| Calibration services | | | |
| Temperature calibration | Expansion – including certificate, each additional measuring point in center of chamber at specified test temperature | 14, 16, 17, 18 | DL30-0102 |
| | Temperature calibration with 1 measuring point in center of chamber at a specified test temperature, including certificate | 14, 16, 17, 18 | DL30-0101 |
| Temperature measurement, 18 measuring points | Temperature measurement with 18 measuring points at a specified test temperature, including certificate | 14, 16, 17, 18 | DL30-0118 |

* Notes › See last page

| Designation | Description | * | Art.-No. |
|--|---|----------------|-----------|
| Temperature measurement, 27 measuring points | Temperature measurement with 27 measuring points at a specified test temperature, including certificate | 14, 16, 17, 18 | DL30-0127 |
| Temperature measurement, 9 measuring points | Temperature measurement with 9 measuring points at a specified test temperature, including certificate | 14, 16, 17, 18 | DL30-0109 |
| Validation services | | | |
| Execution of IQ/OQ | Execution of IQ/OQ in accordance with qualification folder | 15, 18 | DL41-0200 |
| Execution of IQ/OQ/PQ | Execution of IQ/OQ/PQ in accordance with qualification folder | 15, 18 | DL44-0500 |
| Warranty service | | | |
| Warranty extension from 2 to 3 years | The warranty is extended from 2 to 3 years from the delivery date, wear parts are excluded | - | DL01-8041 |
| Warranty extension from 2 to 5 years | The warranty is extended from 2 to 5 years from the delivery date, wear parts are excluded | - | DL01-8042 |

* 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 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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