

Model BD 23 | Standard-Incubators with natural convection

The BINDER incubator of the BD series with natural convection is the specialist in long-term and stable continuous operation. This incubator is specially designed for gentle incubation of organisms, as well as conditioning of heat-sensitive media or microbiological heating.

BENEFITS

- Safe and reproducible incubation even under high batch throughputs in long-term operation
- Disinfection routine at 100 °C
- Stable atmosphere by inner glass door



Model 23

MAIN FEATURES

- Temperature range: +5 °C above ambient temperature to +100 °C
- APT.line™ preheating chamber technology
- natural convection
- Adjustable exhaust air flap
- Controller with timer functions
- Inner door made of tempered safety glass
- 2 chrome-plated racks
- Stackable
- Class 3.1 independent temperature safety device (DIN 12880) with visual temperature alarm
- Computer interface: RS 422

ORDERING INFORMATION

| Interior volume [L] | Voltage | Option model | Version | Art.-No. |
|---------------------|----------------------|--------------|--------------|-----------|
| 20 | 230 V 1~ ph 50/60 Hz | Standard | BD023-230V | 9010-0187 |
| | 120 V 1~ ph 60 Hz | Standard | BD023UL-120V | 9010-0189 |

TECHNICAL DATA

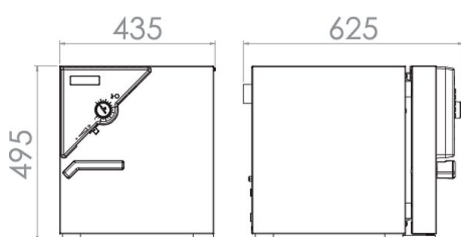
| Description | BD023-230V ¹ | BD023UL-120V ¹ |
|---|-------------------------|---------------------------|
| Article Number | 9010-0187 | 9010-0189 |
| Performance Data Temperature | | |
| Temperature range +5 °C above ambient temperature to | 100 °C | 100 °C |
| Temperature variation at 37 °C [± K] | 0.5 | 0.5 |
| Temperature fluctuation at 37 °C [± K] | 0.2 | 0.2 |
| Heating-up time to 37 °C [min] | 59 | 59 |
| Recovery time after 30 seconds door open at 37 °C [min] | 20 | 20 |

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. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

| Description | BD023-230V ¹ | BD023UL-120V ¹ |
|--|-------------------------|---------------------------|
| Article Number | 9010-0187 | 9010-0189 |
| Electrical data | | |
| Rated Voltage [V] | 230 | 120 |
| Power frequency [Hz] | 50/60 | 60 |
| Nominal power [kW] | 0.2 | 0.2 |
| Unit fuse [A] | 12.5 | 12.5 |
| Phase (Nominal voltage) | 1~ | 1~ |
| Measures | | |
| Interior volume [L] | 20 | 20 |
| Net weight of the unit (empty) [kg] | 27 | 27 |
| Permitted load [kg] | 25 | 25 |
| Load per rack [kg] | 12 | 12 |
| Wall clearance back [mm] | 160 | 160 |
| Wall clearance sidewise [mm] | 100 | 100 |
| Internal Dimensions | | |
| Width [mm] | 222 | 222 |
| Height [mm] | 330 | 330 |
| Depth [mm] | 277 | 277 |
| Doors | | |
| Unit doors | 1 | 1 |
| Housing dimensions not incl. fittings and connections | | |
| Width net [mm] | 435 | 435 |
| Height net [mm] | 495 | 495 |
| Depth net [mm] | 520 | 520 |
| Environment-specific data | | |
| Energy consumption at 37 °C [Wh/h] | 11 | 11 |
| Fixtures | | |
| Number of shelves (std./max.) | 2/4 | 2/4 |

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. 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 | back | | |
| | 10 mm | 01 | 8012-0390 |
| | 30 mm | 01 | 8012-0397 |
| | 50 mm | 01 | 8012-0399 |
| | left | | |
| | 10 mm | 01 | 8012-0388 |
| | 30 mm | 01 | 8012-0047 |
| | 50 mm | 01 | 8012-0051 |
| | right | | |
| | 10 mm | 01 | 8012-0387 |
| | 30 mm | 01 | 8012-0046 |
| | 50 mm | 01 | 8012-0050 |
| | top | | |
| | 10 mm | 01 | 8012-0386 |
| | 30 mm | 01 | 8012-0045 |
| | 50 mm | 01 | 8012-0049 |
| | 100 mm | 01 | 8012-0053 |
| Alarm function for overheating | Switchable acoustic alarm, with adjustable limit value on the independent temperature safety device | | |
| | 120 V option model | – | 8012-0470 |
| | 230 V option model | – | 8012-0469 |
| Analog output 4-20 mA | for temperature values (output not adjustable) | – | 8012-0432 |
| Calibration certificate, expanded | for temperature; for extending the measurement in center of chamber to include another test temperature | – | 8012-1110 |
| Calibration certificate, temperature | for temperature, measurement in center of chamber at specified temperature | – | 8012-1129 |
| | temperature measurement incl. certificate and 27 measuring points at specified temperature | – | 8012-0921 |
| | temperature measurement incl. certificate, 15- 18 measuring points at specified temperature | – | 8012-0918 |
| | temperature measurement incl. certificate, 9 measuring points at specified temperature | – | 8012-0915 |
| Door lock | lockable door handle | – | 8012-0318 |
| 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) | – | 8012-0077 |
| Pt 100 temperature sensor | additional flexible Pt 100, interior, with external connection incl. LEMO connector (3-pin) | – | 8012-0115 |

* 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 | – | 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 | – | 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 | – | 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 | – | 8012-0715 |
| Data Logger Software | LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable) | – | 8012-0821 |
| pH-neutral detergent | concentrated, for gentle remove of residual contaminants; 1 kg | – | 1002-0016 |

* Notes › See last page

| Designation | Description | * | Art.-No. |
|--------------------------------|---|---|-----------|
| 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 | chrome plated | – | 6004-0050 |
| | stainless steel | – | 6004-0051 |
| Rubber pads | set anti-slip feet | – | 8012-1887 |
| Shelf, perforated | Stainless steel | – | 6004-0052 |
| Table on castors | stable cart, casters with locking brakes, dimensions: W 1,000 x D 800 x H 780 mm | – | 9051-0018 |

* Notes › See last page

SERVICES

| Designation | Description | * | Art.-No. |
|--|--|------------|-----------|
| Installation services | | | |
| Unit commissioning | 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) | 05 | DL10-0100 |
| Unit instructions | Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming | 05 | DL10-0500 |
| Maintenance services | | | |
| Maintenance | Maintenance service in accordance with maintenance schedule. Visual inspection of mechanical and electrical components, testing of all key functions. Calibration of a test temperature specified by the user in center of chamber without certificate | 05 | DL20-0200 |
| Calibration services | | | |
| Calibration certificate, temperature | Calibration of one (1) test temperature specified by the user in center of chamber including certificate | 03, 04, 05 | DL30-0101 |
| | Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate | 03, 04, 05 | DL30-0102 |
| Temperature measurement, 18 measuring points | Temperature measurement with 18 measuring points with a set value specified by the user, including certificate | 03, 04, 05 | DL30-0118 |
| Temperature measurement, 27 measuring points | Temperature measurement with 27 measuring points with a set value specified by the user, including certificate | 03, 04, 05 | DL30-0127 |
| Temperature measurement, 9 measuring points | Temperature measurement with 9 measuring points with a set value specified by the user, including certificate | 03, 04, 05 | DL30-0109 |
| Validation services | | | |
| Execution of IQ/OQ | Execution of IQ/OQ in accordance with qualification folder | 05 | DL40-0100 |
| Execution of IQ/OQ/PQ | Execution of IQ/OQ/PQ in accordance with qualification folder | 05 | 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 | – | DL01-6041 |
| Warranty extension from 2 to 5 years | The warranty is extended from 2 to 5 years from the delivery date, wear parts are excluded | – | DL01-6042 |

* 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 Sensor calibration is performed in an accredited calibration laboratory.
04 Calibration is performed according to the BINDER factory standard.
05 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).

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