

# Model BD 53 | Incubators with natural convection

## 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 53

## MAIN FEATURES

- Temperature range: room temperature plus 5 °C to 100 °C
- APT.line™ preheating chamber technology
- Free 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 and audible temperature alarm
- Computer interface: RS 422

## ORDERING INFORMATION

| Interior volume [L] | Voltage           | Option model | Version      | Art.-No.  |
|---------------------|-------------------|--------------|--------------|-----------|
| Model BD 53         |                   |              |              |           |
| 53                  | 230 V 1~ 50/60 Hz | Standard     | BD053-230V   | 9010-0081 |
|                     | 120 V 1~ 60 Hz    | Standard     | BD053UL-120V | 9010-0179 |

## TECHNICAL DATA

| Description                                              | BD053-230V | BD053UL-120V |
|----------------------------------------------------------|------------|--------------|
| Article Number                                           | 9010-0081  | 9010-0179    |
| Performance Data Temperature                             |            |              |
| Temperature range 5 °C above ambient temperature to [°C] | 100        | 100          |
| Temperature uniformity at 37 °C [± K]                    | 0.5        | 0.5          |
| Temperature uniformity at 50 °C [± K]                    | 1.1        | 1.1          |
| Temperature fluctuation at 37 °C [± K]                   | 0.1        | 0.1          |
| Temperature fluctuation at 50 °C [± K]                   | 0.1        | 0.1          |
| Heating-up time to 37 °C [min]                           | 38         | 38           |
| Heating-up time to 50 °C [min]                           | 59         | 59           |
| Recovery time after 30 seconds door open at 37 °C [min]  | 5          | 5            |
| Recovery time after 30 seconds door open at 50 °C [min]  | 7          | 7            |

| Description                         | BD053-230V | BD053UL-120V |
|-------------------------------------|------------|--------------|
| Article Number                      | 9010-0081  | 9010-0179    |
| Electrical data                     |            |              |
| Rated Voltage [V]                   | 230        | 120          |
| Power frequency [Hz]                | 50/60      | 60           |
| Nominal power [kW]                  | 0.4        | 0.3          |
| Nominal current [A]                 | 1.8        | 2.6          |
| Unit fuse [A]                       | 12.5       | 12.5         |
| Phase (Nominal voltage)             | 1~         | 1~           |
| Measures - Outer dimensions         |            |              |
| Width net [mm]                      | 635        | 635          |
| Height net [mm]                     | 620        | 620          |
| Depth net [mm]                      | 575        | 575          |
| Wall clearance back [mm]            | 100        | 100          |
| Wall clearance sidewise [mm]        | 160        | 160          |
| Steam space volume [L]              | 70         | 70           |
| Measures - Doors                    |            |              |
| Unit doors                          | 1          | 1            |
| Measures - Internal Dimensions      |            |              |
| Width [mm]                          | 400        | 400          |
| Height [mm]                         | 400        | 400          |
| Depth [mm]                          | 330        | 330          |
| Measures                            |            |              |
| Interior volume [L]                 | 53         | 53           |
| Net weight of the unit (empty) [kg] | 43         | 43           |
| Load per rack [kg]                  | 15         | 15           |
| Environment-specific data           |            |              |
| Energy consumption at 37 °C         | 11 Wh/h    | 11 Wh/h      |

## OPTIONS AND ACCESSORIES

| Designation                       | Description                                                           | *      | Art.-No.  |
|-----------------------------------|-----------------------------------------------------------------------|--------|-----------|
| Access port with silicone plug    | 10 mm, back                                                           | 01     | 8012-0390 |
|                                   | 10 mm, left                                                           | 01     | 8012-0388 |
|                                   | 10 mm, right                                                          | 01     | 8012-0387 |
|                                   | 10 mm, top                                                            | 01     | 8012-0386 |
|                                   | 30 mm, back                                                           | 01     | 8012-0397 |
|                                   | 30 mm, left                                                           | 01     | 8012-0047 |
|                                   | 30 mm, right                                                          | 01     | 8012-0046 |
|                                   | 30 mm, top                                                            | 01     | 8012-0045 |
|                                   | 50 mm, back                                                           | 01     | 8012-0399 |
|                                   | 50 mm, left                                                           | 01     | 8012-0051 |
|                                   | 50 mm, right                                                          | 01     | 8012-0050 |
|                                   | 50 mm, top                                                            | 01     | 8012-0049 |
|                                   | 100 mm, top                                                           | 01, 10 | 8012-0053 |
| Analog output, 4 – 20 mA          | for temperature values (output not adjustable)                        | –      | 8012-0432 |
| Calibration certificate, expanded | each measurement at additional measuring point or testing temperature | –      | 8012-0022 |

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| Designation                                    | Description                                                                                                                                         | *  | Art.-No.  |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|----|-----------|
| <b>Calibration certificate, temperature</b>    | for temperature, measurement in center of chamber at specified temperature                                                                          | –  | 8012-0030 |
|                                                | 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 |
| <b>Cart</b>                                    | stable cart, casters with locking brakes                                                                                                            | –  | 9051-0018 |
| <b>Data Logger Kit</b>                         | T 220: temperature logging from -90 °C to 220 °C                                                                                                    | 19 | 8012-0715 |
| <b>Data Logger Kit, software</b>               | LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable)                              | 19 | 8012-0821 |
| <b>Door lock</b>                               | lockable door handle                                                                                                                                | –  | 8012-0318 |
| <b>Interface converter, RS232/RS422 - 115V</b> | 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 |
| <b>Interface converter, RS232/RS422 - 230V</b> | RS 422 cable set and RS 232 / RS 422 interface converter for connection to 10-way plug distributor or for connection to a unit                      |    |           |
|                                                | 230 V, 50/60 Hz option model                                                                                                                        | –  | 8012-0556 |
| <b>Interface converter, RS422 - 115V</b>       | 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 |
| <b>Interface converter, RS422 - 230V</b>       | RS 422 cable set and RS 422 / Ethernet interface converter for connection to 10-way plug distributor or for connection to a unit                    |    |           |
|                                                | 230 V, 50/60 Hz option model                                                                                                                        | –  | 8012-0380 |
| <b>Interface converter, USB / RS422</b>        | 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 |
| <b>Interior socket</b>                         | coverable, with associated LEMO connector (nominal voltage, max. 500 W, max. 90 °C, protection class IP67)                                          | 07 | 8012-0077 |
| <b>Magnetic Pouch (A4)</b>                     | insert pouch with magnetic strip                                                                                                                    | –  | 1007-0065 |
| <b>Overheating alarm</b>                       | audible, can be switched off, adjustable limit on the independent temperature safety device                                                         |    |           |
|                                                | 120 V, 208 V option model                                                                                                                           | –  | 8012-0470 |
|                                                | 230 V, 400 V option model                                                                                                                           | –  | 8012-0469 |
| <b>pH-neutral detergent</b>                    | concentrated, for gentle remove of residual contaminants; 1 kg                                                                                      | –  | 1002-0016 |
| <b>Pt 100 temperature sensor</b>               | additional Pt 100, with flexible cable installed with external connection, incl. LEMO connector (3-pin)                                             | –  | 8012-0115 |
| <b>Rack</b>                                    | chrome plated                                                                                                                                       | –  | 6004-0002 |
|                                                | stainless steel                                                                                                                                     | –  | 6004-0007 |
| <b>RS 422 interface</b>                        | modular plug distributor for 10 RS 422 interfaces                                                                                                   | –  | 8012-0295 |
| <b>RS 422 interface, cable (15 m)</b>          | RS 422 connection cable (15 m) between plug distributor and RS 422 interface                                                                        | –  | 5023-0036 |
| <b>RS 422 interface, cable (50 m)</b>          | RS 422 extension cable (50 m) between interface converter and unit or RS 232 / RS 422 plug distributor                                              | –  | 5023-0117 |
| <b>Rubber pads</b>                             | set of 4 anti-slip feet, for safe stacking of unit                                                                                                  | 10 | 8012-0001 |
| <b>Shelf, perforated</b>                       | stainless steel                                                                                                                                     | –  | 6004-0029 |
| <b>Software</b>                                | APT-COM™ communications software                                                                                                                    |    |           |
|                                                | version 2 to 3, GLP edition                                                                                                                         | 19 | 9053-0016 |
|                                                | version 3, BASIC edition                                                                                                                            | 19 | 9053-0014 |
|                                                | 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 |

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