

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

* Notes › See last page

Designation	Description	*	Art.-No.
Calibration certificate, temperature	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
Cart	stable cart, casters with locking brakes	-	9051-0018
Data Logger Kit	T 220: temperature logging from -90 °C to 220 °C	19	8012-0715
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	-	8012-0318
Interface converter, RS232/RS422 - 115V	RS 422 cable set and RS 232 / RS 422 interface converter for connection to 10-way plug distributor or for connection to a unit	-	8012-0557
	120 V, 60 Hz option model		
Interface converter, RS232/RS422 - 230V	RS 422 cable set and RS 232 / RS 422 interface converter for connection to 10-way plug distributor or for connection to a unit	-	8012-0556
	230 V, 50/60 Hz option model		
Interface converter, RS422 - 115V	RS 422 cable set and RS 422 / Ethernet interface converter for connection to 10-way plug distributor or for connection to a unit	-	8012-0405
	120 V, 60 Hz option model		
Interface converter, RS422 - 230V	RS 422 cable set and RS 422 / Ethernet interface converter for connection to 10-way plug distributor or for connection to a unit	-	8012-0380
	230 V, 50/60 Hz option model		
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
Interior socket	coverable, with associated LEMO connector (nominal voltage, max. 500 W, max. 90 °C, protection class IP67)	07	8012-0077
Magnetic Pouch (A4)	insert pouch with magnetic strip	-	1007-0065
Overheating alarm	audible, can be switched off, adjustable limit on the independent temperature safety device	-	8012-0470
	120 V, 208 V option model		
	230 V, 400 V option model		
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. LEMO connector (3-pin)	-	8012-0115
Rack	chrome plated	-	6004-0002
	stainless steel	-	6004-0007
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
Rubber pads	set of 4 anti-slip feet, for safe stacking of unit	10	8012-0001
Shelf, perforated	stainless steel	-	6004-0029
Software	APT-COM™ communications software	19	9053-0016
	version 2 to 3, GLP edition		
	version 3, BASIC edition		
	version 3, GLP edition		
	version 3, STANDARD edition		
	APT-COM™ communications software, price: for free		
version 3, GLP DEMO Edition	19	9053-0008	

* 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	DL100100
Instruction	unit function instructions for operation and programming of the controller	18	DL100400
Preventive maintenance			
Preventive maintenance	Executive of equipment inspection according to maintenance plan	14, 18	DL200200
Calibration services			
Calibration temperature	including certificate, one measuring point in center of chamber at specified temperature	14, 16, 17, 18	DL300101
Temperature measurement 18 measuring points	including certificate, 18 measuring points at specified temperature	14, 16, 17, 18	DL300118
Temperature measurement 27 measuring points	including certificate, 27 measuring points at specified temperature	14, 16, 17, 18	DL300127
Temperature measurement 9 measuring points	including certificate, 9 measuring points at specified temperature	14, 16, 17, 18	DL300109
Validation services			
Execution of IQ/OQ	in accordance with qualification folder	15, 18, 20	DL400100
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	8012-0870
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	8012-0958

* 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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