

# Model KB 53 | Cooling incubators with compressor technology

## BENEFITS

- Safe and reproducible incubation conditions even at high environmental conditions
- Disinfection routine at 100 °C



Model 53



Model 53

## MAIN FEATURES

- Temperature range: -5 °C to 100 °C
- APT.line™ preheating chamber technology
- Cooling with compressor cooling unit
- Adjustable fan speed
- Controller with time-segment and real-time programming
- Elapsed time indicator
- Inner door made of tempered safety glass
- 2 stainless steel 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 KB 53				
53	230 V 1~ 50 Hz	Standard	KB053-230V	9020-0243
	120 V 1~ 60 Hz	Standard	KB053UL-120V	9020-0252

## TECHNICAL DATA

Description	KB053-230V	KB053UL-120V
Article Number	9020-0243	9020-0252
Performance Data Temperature		
Temperature range [°C]	-5...100	-5...100
Temperature uniformity at 25 °C [± K]	0.2	0.2
Temperature uniformity at 5 °C [± K]	0.6	0.6
Temperature uniformity at 40 °C [± K]	0.3	0.3
Temperature fluctuation at 5 °C [± K]	0.1	0.1
Temperature fluctuation at 40 °C [± K]	0.1	0.1
Heating-up time to 40 °C [min]	5	5
Recovery time after 30 seconds door open 90° aperture angle at 5 °C [min]	4	4
Recovery time after 30 seconds door open 90° aperture angle at 40 °C [min]	1	1

Description	KB053-230V	KB053UL-120V
Article Number	9020-0243	9020-0252
Electrical data		
Rated Voltage [V]	230	120
Power frequency [Hz]	50	60
Nominal power [kW]	0.46	0.46
Nominal current [A]	2	3.2
Phase (Nominal voltage)	1~	1~
Measures - Outer dimensions		
Width net [mm]	635	635
Height net [mm]	835	835
Depth net [mm]	580	580
Wall clearance back [mm]	100	100
Wall clearance sidewise [mm]	100	100
Steam space volume [L]	77	77
Measures - Doors		
Inner doors	1	1
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]	72	72
Load per rack [kg]	15	15
Environment-specific data		
Energy consumption at 5 °C	260 Wh/h	260 Wh/h
Energy consumption at 40 °C	215 Wh/h	215 Wh/h
Sound-pressure level [dB(A)]	0	0

## OPTIONS AND ACCESSORIES

Designation	Description	*	Art.-No.
Access port with silicone plug	10 mm, back	01	8012-0395
	10 mm, left	01	8012-0393
	10 mm, right	01	8012-0392
	10 mm, top	01	8012-0391
	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, top	01	8012-0049
	100 mm, top	01, 10	8012-0053
Analog output, 4 – 20 mA	for temperature values (output not adjustable)	02	8012-0434
Calibration certificate, expanded	each measurement at additional measuring point or testing temperature	–	8012-0022

\* Notes › See last page

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>Class 3.3 independent temperature safety device</b>	with visual alarm (DIN 12880)	–	8012-0450
		–	8012-0455
<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	–	8012-0557
	120 V, 60 Hz option model		
<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	–	8012-0556
	230 V, 50/60 Hz option model		
<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	–	8012-0405
	120 V, 60 Hz option model		
<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	–	8012-0380
	230 V, 50/60 Hz option model		
<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 lighting</b>	120 V, 15 W option model	–	8012-0361
	230 V, 15 W option model	02	8012-0116
<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>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>	stainless steel	–	6004-0007
<b>Rack, accessories</b>	set of 4 fasteners for additional security	–	8012-0531
<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>Shelf, reinforced</b>	positioned at bottom level, max. load 67 kg, with additional attachment for operation of shaking device, stirring device or roller bottle system	–	8012-0287
<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		
<b>Zero voltage relay outputs</b>	version 3, GLP DEMO Edition	19	9053-0008
	for controlling 3 relay outputs via program regulators, accessible via 6-pin DIN socket (max. 24 V - 2.5 A)		
	120 V option model	–	8012-0474
	230 V option model	–	8012-0473

\* Notes › See last page

## SERVICES

Designation	Description	*	Art.-No.
<b>Installation services</b>			
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	DL100500
<b>Preventive maintenance</b>			
Preventive maintenance	Executive of equipment inspection according to maintenance plan	14, 18	DL200300
<b>Calibration services</b>			
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
<b>Validation services</b>			
Execution of IQ/OQ	in accordance with qualification folder	15, 18, 20	DL410200
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	8012-0873
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	8012-0960

\* 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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