

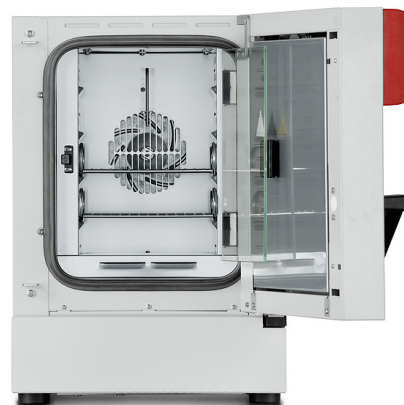
# Model KB 23 | Cooling incubators with compressor technology

## BENEFITS

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



Model 23



Model 23

## MAIN FEATURES

- Temperature range: 0 °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 23				
20	230 V 1~ 50/60 Hz	Standard	KB023-230V	9020-0112
	120 V 1~ 60 Hz	Standard	KB023UL-120V	9020-0113

## TECHNICAL DATA

Description	KB023-230V	KB023UL-120V
<b>Article Number</b>	<b>9020-0112</b>	<b>9020-0113</b>
<b>Performance Data Temperature</b>		
Temperature range [°C]	0...100	0...100
Temperature uniformity at 40 °C [± K]	0.3	0.3
Temperature fluctuation at 40 °C [± K]	0.1	0.1
Heating-up time to 40 °C [min]	11	11
Recovery time after 30 seconds door open 90° aperture angle at 40 °C [min]	2	2
<b>Electrical data</b>		
Rated Voltage [V]	230	120
Power frequency [Hz]	50/60	60
Nominal power [kW]	0.34	0.34

## Data Sheet Model KB 23

Description	KB023-230V	KB023UL-120V
<b>Article Number</b>	<b>9020-0112</b>	<b>9020-0113</b>
Unit fuse [A]	10	12.5
Phase (Nominal voltage)	1~	1~
<b>Measures - Outer dimensions</b>		
Width net [mm]	435	435
Height net [mm]	620	620
Depth net [mm]	520	520
Wall clearance back [mm]	100	100
Wall clearance sidewise [mm]	100	100
<b>Measures - Doors</b>		
Inner doors	1	1
Unit doors	1	1
<b>Measures - Internal Dimensions</b>		
Width [mm]	222	222
Height [mm]	330	330
Depth [mm]	277	277
<b>Measures</b>		
Interior volume [L]	20	20
Net weight of the unit (empty) [kg]	44	44
Load per rack [kg]	10	10
<b>Environment-specific data</b>		
Energy consumption at 40 °C	60 Wh/h	60 Wh/h
Sound-pressure level [dB(A)]	0	0

## OPTIONS AND ACCESSORIES

Designation	Description	*	Art.-No.
<b>Access port with silicone plug</b>	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
<b>Analog output, 4 – 20 mA</b>	for temperature values (output not adjustable)	02	8012-0434
<b>Calibration certificate, expanded</b>	each measurement at additional measuring point or testing temperature	–	8012-0022
<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>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

\* Notes › See last page

Designation	Description	*	Art.-No.
Interface converter	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
	230 V, 50/60 Hz option model	-	8012-0556
	RS 422 cable set and RS 422 / Ethernet interface converter for connection to 10-way plug distributor or for connection to a unit		
Interface converter, USB / RS422	120 V, 60 Hz option model	-	8012-0405
	230 V, 50/60 Hz option model	-	8012-0380
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
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	stainless steel	-	6004-0051
Rack, accessories	set of 4 fasteners for additional security	-	8012-0531
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
Shelf, perforated	stainless steel	-	6004-0052
Software	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
Zero voltage relay contacts	APT-COM™ communications software, price: for free		
	version 3, GLP DEMO Edition	19	9053-0008
Zero voltage relay contacts	for controlling 3 relay contacts via program regulators, accessible via 6-pin DIN socket (max. 24 V - 2.5 A) 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

\* Notes › See last page

Designation	Description	*	Art.-No.
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
<b>Warranty service</b>			
Extension of the warranty from 2 to 3 years	beginning with the date of delivery, wearing parts are not included	-	DL018041
Extension of the warranty from 2 to 5 years	beginning with the date of delivery, wearing parts are not included	-	DL018042

\* 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

### **BINDER GmbH**

Tuttlingen, Germany  
TEL +49 7462 2005 0  
FAX +49 7462 2005 100  
info@binder-world.com  
www.binder-world.com

### **BINDER Asia Pacific (Hong Kong) Ltd.**

Kowloon, Hong Kong, P.R. China  
TEL +852 39070500  
FAX +852 39070507  
asia@binder-world.com  
www.binder-world.com

### **Representative Office for CIS**

Moscow, Russia  
TEL +7 495 988 15 16  
FAX +7 495 988 15 17  
russia@binder-world.com  
www.binder-world.ru

### **BINDER Environmental Testing Equipment (Shanghai) Co., Ltd.**

Shanghai, P.R. China  
TEL +86 21 685 808 25  
FAX +86 21 685 808 29  
china@binder-world.com  
www.binder-world.com

### **BINDER Inc.**

Bohemia, NY, USA  
TEL +1 631 224 4340  
FAX +1 631 224 4354  
usa@binder-world.com  
www.binder-world.us