BINDER

Model KB 400 | Cooling incubators with compressor technology

The powerful virtuoso in cooling incubators for microorganisms: the KB masters temperature ranges from -5 °C to 100 °C. The new KB series consumes up to 30% less energy compared to its predecessor. With its extensive programming options and homogenous incubation conditions even when fully loaded, this cooling incubator covers a wide range of applications.

BENEFITS

• Safe, reproducible incubation, even at high ambient temperatures
• Disinfection routine at 100 °C
• Up to 30% lower energy consumption compared to the previous model

Model 400

Model 400

MAIN FEATURES

• Temperature range: -5 °C to 100 °C
• APT.line™ preheating chamber technology
• Up to 30% lower energy consumption compared to the previous model
• Cooling with compressor cooling unit
• Door heating
• Adjustable fan speed
• Controller with time-segment and real-time programming

• Inner door made of tempered safety glass
• 2 stainless steel racks
• 4 casters, two with locking brakes
• Access port with silicone plug, 30 mm, left
• Class 3.1 independent temperature safety device (DIN 12880) with visual and acoustic alarm
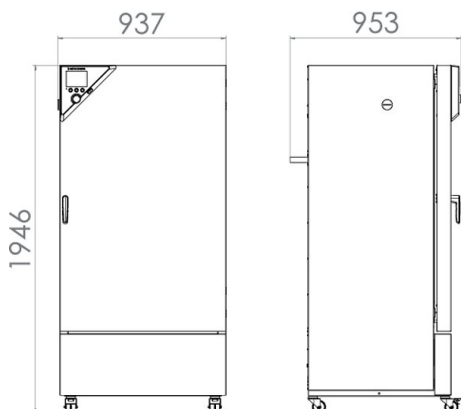• Computer interface: Ethernet

ORDERING INFORMATION

Interior volume [cu.ft.]	Voltage	Option model	Version	Art.-No.
Model KB 400				
14.1	200…240 V 1 ph 50/60 Hz	Standard	KB400-230V	9020-0203
	100…120 V 1 ph 50/60 Hz	Standard	KB400UL-120V	9020-0305

BINDER Data Sheet | As of: 20.11.2017
Technical specifications are subject to change.

Page 1 / 6

TECHNICAL DATA

Description	KB400-230V[1]	KB400UL-120V[1]
Article Number	9020-0203	9020-0305
Performance Data Temperature		
Temperature range [°C]	-5…100	-5…100
Temperature variation at 37 °C [± K]	0.2	0.2
Temperature fluctuation at 37 °C [± K]	0.1	0.1
Recovery time after 30 seconds door open at 37 °C [min]	4	4
Electrical data		
Rated Voltage [V]	200…240	100…120
Power frequency [Hz]	50/60	50/60
Nominal power [kW]	1.4	1.4
Unit fuse [A]	16	16
Phase (Nominal voltage) [ph]	1	1
Outer dimensions		
Width net [mm]	925	925
Height net [mm]	1950	1950
Depth net [mm]	805	805
Wall clearance back [mm]	100	100
Wall clearance sidewise [mm]	100	100
Doors		
Inner doors	1	1
Unit doors	1	1
Internal Dimensions		
Width [mm]	650	650
Height [mm]	1270	1270
Depth [mm]	485	485
Measures		
Interior volume [L]	400	400
Net weight of the unit (empty) [kg]	221	221
permitted load [kg]	120	120
Load per rack [kg]	30	30
Environment-specific data		
Energy consumption at 37 °C [Wh/h]	330	330
Sound-pressure level [dB(A)]	53	53
Fixtures		
Number of shelves (std./max.)	2/15	2/15

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. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

BINDER Data Sheet | As of: 20.11.2017
Technical specifications are subject to change.

Page 2 / 6

BINDER

DIMENSIONS incl. fittings and connections [mm]

937   953

1946

OPTIONS AND ACCESSORIES

Designation	Description	*	Art.-No.
	left		
	30 mm	01	8012-0648
	50 mm	01	8012-0653
	right		
	30 mm	01	8012-0647
	50 mm	01	8012-0652
Access port with silicone plug	top		
	30 mm	01	8012-0649
	50 mm	01	8012-0650
	100 mm	01	8012-0651
Alarm output, zero-voltage	for temperature (±2 °C), accessible via 6-pin DIN socket (max. 24 V - 2.5 A), with audible signal that can be switched off	–	8012-1083
Analog output 4-20 mA	for temperature values (output not adjustable)	02	8012-1073
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	–	8012-1120
	for temperature, measurement in center of chamber at specified temperature	–	8012-1139
Calibration certificate, temperature	temperature measurement incl. certificate and 27 measuring points at specified temperature	–	8012-1598
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	–	8012-1577
	temperature measurement incl. certificate, 9 measuring points at specified temperature	–	8012-1556
Class 3.3 independent temperature safety device	with visual alarm (DIN 12880)	–	8012-1081
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	19	8012-0715
Data Logger 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	–	8012-1774
	RS 422 cable set and RS 232 / RS 422 interface converter for connection to 10-way plug distributor or for connection to a unit		
Interface converter	120 V, 60 Hz option model	–	8012-0557
	230 V, 50/60 Hz option model	–	8012-0556
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
	with two 15 W light bulbs		
Interior lighting	120 V option model	02	8012-1070
	230/240 V option model	02	8012-1071
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)	07	8012-1075

* Notes › See last page

BINDER Data Sheet | As of: 20.11.2017
Technical specifications are subject to change.

Page 3 / 6

◢BINDER

Designation	Description	*	Art.-No.
LED light bars	Basic set consisting of 2 pieces, attachment material, control unit for max. 4 light strips, 100-240 V, 50/60 Hz		
	Basic set 500, length 50 cm	–	8012-1108
	Basic set 900, length 90 cm	–	8012-1109
	Expansion set consisting of 2 pieces, attachment material: clips. For expanding the basic set of light bars		
	Expansion set 500, length 50 cm	–	8012-1717
	Expansion set 900, length 90 cm	–	8012-1718
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	–	1002-0016
Pt 100 temperature sensor	additional flexible Pt 100, interior, for displaying the temperature on the unit display	–	8012-1079
Rack accessories	Rack accessories – fasteners (1 set of 4) for additional security of racks	–	8012-0620
Rack, reinforced	stainless steel, with 1 set of 4 fasteners, max. load 70 kg	–	8012-0638
Racks	stainless steel	–	6004-0101
RS 422 interface	in place of Ethernet, for communication software	–	8012-1077
	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	–	6004-0040
Shelf, reinforced	positioned at bottom level, max. load 67 kg, with additional attachment for operation of shaking device, stirring device or roller bottle system	–	8012-0639
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
	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			
Data Logger Kit installation service	unit function instructions for operation and programming of the controller	18	DL10-0500
Installation	and set up of unit at operating location, connect to existing connections	13, 18	DL10-0100
Preventive maintenance			
Preventive maintenance	Executive of equipment inspection according to maintenance plan	14, 18	DL20-0300
Calibration services			
Calibration temperature incl. certificate	including certificate, one measuring point in center of chamber at specified temperature	14, 16, 17, 18	DL30-0101
Temperature measurement 18 measuring points	including certificate, 18 measuring points at specified temperature	14, 16, 17, 18	DL30-0118
Temperature measurement 27 measuring points	including certificate, 27 measuring points at specified temperature	14, 16, 17, 18	DL30-0127
Temperature measurement 9 measuring points	including certificate, 9 measuring points at specified temperature	14, 16, 17, 18	DL30-0109
Validation services			
Execution of IQ/OQ	in accordance with qualification folder	15, 18, 20	DL41-0200
Execution of IQ/OQ/PQ	in accordance with customer's requirement, price: on request	15, 18	DL44-0500
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

* Notes › See last page

BINDER Data Sheet | As of: 20.11.2017
Technical specifications are subject to change.

Page 4 / 6

BINDER

Designation	Description	*	Art.-No.
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
Warranty service			
Extension of the warranty from 2 to 3 years	beginning with the date of delivery, wearing parts are not included	–	DL01-8041
Extension of the warranty from 2 to 5 years	beginning with the date of delivery, wearing parts are not included	–	DL01-8042

* Notes › See last page

BINDER Data Sheet | As of: 20.11.2017
Technical specifications are subject to change.

Page 5 / 6

BINDER

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.
06	Heating-up time may increase as a result of the lower heat conductivity.
07	The additional heat input may affect the temperature behavior.
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 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 the item of the IQ/OQ folder.
	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.

BINDER Data Sheet | As of: 20.11.2017
Technical specifications are subject to change.

Page 6 / 6