Model KB 470 | Cooling incubators with a large temperature range

The powerful virtuoso in cooling incubators for microorganisms: KB units are able to incubate with exceptional precision even when fully loaded, feature a hot-air disinfection routine, and can be programmed for weekend operation with ease. The new KB unit consumes as much as 40% less energy than the previous model.

BENEFITS

- Assured: highly precise incubation conditions thanks to power reserves
- Reliable: failsafe operation over the long term thanks to proven compressor technology and interior made of stainless steel
- Smart: hot-air disinfection and easy programming of a second set temperature
- Economical: up to 40% lower energy consumption than the previous model thanks to modern inverter cooling technology

Model 470

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IMPORTANT FEATURES

- Temperature range: 0 °C to +70 °C
- Proven APT.line™ preheating chamber technology
- Up to 40% lower energy consumption compared to the previous model
- Energy-efficient cooling with modern inverter cooling unit
- Cooling with climate-neutral R-600a refrigerant
- Door heating to prevent condensation
- Sturdy housing design with HIT sandwich technology
- Interior made completely of stainless steel
- Inner doors made of metal oxide-coated safety glass
- Two racks made of stainless steel
- 80 mm x 45 mm access port with silicone plug
- Floor-standing units featuring sturdy twin casters with brakes at the front
- Simple programming of a second set temperature value
- Internal data logger, measured values can be read out in open format via USB
- Class 3.3 independent temperature safety device (DIN 12880) with visual and acoustic alarms
- Unit self-test for comprehensive status analysis
- Data interfaces: Ethernet, USB

ORDERING INFORMATION

Interior volume [L]	Power supply - unit fuse	Plug*	Version	Model version	Art.-No.
Model KB 470					
472	220...240 V 1~ 50/60 Hz -16,0 A	CEE 7/7	Standard	KB470-230V	9020-0474
	120 V 1~ 50/60 Hz -16,0 A	NEMA 5-20	Standard	KB470UL-120V	9020-0502

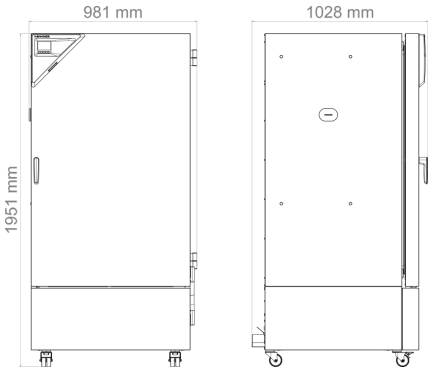
TECHNICAL DATA

Data		
Article Number	9020-0474	9020-0502
Designation	KB470-230V	KB470UL-120V
Option model	Standard	Standard
Performance Data Temperature		
Temperature range	0...70 °C	0...70 °C
Temperature uniformity at 37°C	0.2 ± K	0.2 ± K
Temperature fluctuation at 37°C	0.1 ± K	0.1 ± K
Max. heat compensation at 37°C	530 W	530 W
Recovery time after door was opened for 30 s at 37°C	3 min	3 min
Electrical data		
Rated Voltage	220...240 V	120 V
Power frequency	50/60 Hz	50/60 Hz
Nominal power	1,3 kW	1,3 kW
Unit fuse	16,0 A	16,0 A
Phase (Nominal voltage)	1~	1~
Dimensions and weights		
Interior volume	472 L	472 L
Net weight of the unit (empty)	212 kg	212 kg
Load per rack	40 kg	40 kg
Permitted load	200 kg	200 kg
Wall clearance back	100 mm	100 mm
Wall clearance sidewise	180 mm	180 mm
Housing dimensions not incl. fittings and connections		
Width net	930 mm	930 mm
Height net	1,951 mm	1,951 mm
Depth net	900 mm	900 mm
Internal Dimensions		
Interior width	656 mm	656 mm
Interior height	1,250 mm	1,250 mm

Interior depth	575 mm	575 mm
Inner doors	1	1
Unit doors	1	1
Environment-specific data		
Sound-pressure level at 25°C	51 dB(A)	51 dB(A)
Energy consumption at 25°C	135 Wh/h	170 Wh/h
Energy consumption at 37°C	140 Wh/h	165 Wh/h
Fixtures		
Number of shelves (std./max.)	2/16	2/16

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.

DIMENSIONS Incl. fittings and connections [mm]



OPTIONS

Designation	Description	KB 470	*	Art.-No.
	left			
	30 mm	•	01	8012-2465
	50 mm	•	01	8012-2466
	100 mm	•	01	8012-2467
Access port with silicone plug	right			
	30 mm	•	01	8012-2468
	50 mm	•	01	8012-2469
	100 mm	•	01	8012-2470
	top			

Designation	Description	KB 470	*	Art.-No.
	30 mm	•	01	8012-2497
	50 mm	•	01	8012-2471
	100 mm	•	01	8012-2472
Alarm output, zero-voltage	accessible via 3-pin clamping sleeve (max. 24 V - 2.5 A)	•	-	8012-2370
Analog output 4-20 mA	for temperature values (output not adjustable)	•	-	8012-2371
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	•	-	8012-2372
Calibration certificate, temperature	for temperature, measurement in center of chamber at specified temperature	•	-	8012-2571
	temperature measurement incl. certificate, 9 measuring points at specified temperature	•	-	8012-2376
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	•	-	8012-2380
	temperature measurement incl. certificate and 27 measuring points at specified temperature	•	-	8012-2424
Door lock	lockable door handle	•	-	8012-2529
Door lock, electromechanical	can be opened with PIN code via controller	•	-	8012-2531
Inner chamber, reinforced	permitted load with U rails 300 kg	•	-	8012-2508
Interior lighting	With climate-resistant LEDs, switches when the unit door is opened	•	-	8012-2559
Shipping pallet	with unloading ramp for installing unit without forklift	•	-	8012-2545
Specimen temperature display	Flexible Pt 100 indoor temperature sensor, for object temperature display or control	•	-	8012-2549
Swivel casters, height-adjustable	For horizontal alignment of the unit on uneven floors	•	-	8012-2541

ACCESSORIES

Designation	Description	KB 470	*	Art.-No.
APT-COM™ 4 BASIC-Edition	for simple logging and documentation requirements with up to 5 networked units.			
	version 4, BASIC edition	•	-	9053-0039
APT-COM™ 4 GLP-Edition	for working under GLP-compliant conditions. Measured values are documented in a tamper-proof way in line with the requirements of FDA Regulation 21 CFR 11.			
	version 4, GLP edition	•	-	9053-0042
APT-COM™ 4 PROFESSIONAL-Edition	convenient unit and user management built on the BASIC edition. Suitable for networking up to 100 units.			
	version 4, PROFESSIONAL edition	•	-	9053-0040

Designation	Description	KB 470	*	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 300, length 30 cm	•	-	8012-1107
	Basic set 500, length 50 cm	•	-	8012-1108
	Expansion set consisting of 2 pieces, attachment material: clips. For expanding the basic set of light bars			
	Expansion set 300, length 30 cm	•	-	8012-1716
	Expansion set 500, length 50 cm	•	-	8012-1717
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	•	-	8012-2250
Qualification documents	IQ/OQ/PQ documents – supporting documents for validation performed by customers, according to customer requirements, PQ section added to qualification folder IQ/OQ; parameters: temperature, CO_2, O_2 – or pressure, depending on unit			
	Digital in PDF format	•	-	7057-0005
	Hard copy inside folder	•	-	7007-0005
	IQ/OQ documents – supporting documents for validation performed by customers, consisting of: IQ/OQ checklists incl. calibration guide and comprehensive unit documentation; parameters: temperature, CO_2, O_2, pressure, depending on unit			
	Digital in PDF format	•	-	7057-0001
	Hard copy inside folder	•	-	7007-0001
Reinforced rack	Shelf rack in set with pair of retaining rails (U rails), made entirely of stainless steel			
	Load-bearing capacity 80 kg	•	-	8012-2413
Shelf rack, perforated	Shelf rack in set with pair of retaining rails (U rails), made entirely of stainless steel			
	Load-bearing capacity 40 kg	•	-	8012-2407
Standard rack	Shelf rack in set with pair of retaining rails (ball bearing mounted telescopic rails), made entirely of stainless steel			
	Load-bearing capacity 40 kg	•	-	8012-2384
	Shelf rack in set with pair of retaining rails (U rails), made entirely of stainless steel			
	Load-bearing capacity 40 kg	•	-	8012-2390

SERVICES

Designation	Description	*	Art.-No.
Calibration services			
Calibration certificate, temperature	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate	05	DL30-0135

Designation	Description	*	Art.-No.
	Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate	05	DL30-0102
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate	05	DL30-0109
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points with a set value specified by the user, including certificate	05	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate	05	DL30-0127
Installation services			
Unit commissioning	Connect the unit to the customer-side connections (electricity, water, wastewater, gas), basic functions check, brief operating instructions. (excl.: unpacking, setup, controller instructions, programming, installation work)	05	DL10-0170
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming	05	DL10-0550
Maintenance contracts			
BRONZE 3-year maintenance contract	Maintenance service as contractually agreed, visual inspection of mechanical and electrical components, check of control response, 20% discount on spare parts	05	DL20-0720
GOLD 3-year maintenance contract	Maintenance service as contractually agreed, visual inspection of mechanical and electrical components, check of control response, 20% discount on spare parts, testing of all key functions, replacement of wear parts, calibration of one test temperature specified by the user in the center of the usable space, including certificate	05	DL20-0945
SILVER 3-year maintenance contract	Maintenance service as contractually agreed, visual inspection of mechanical and electrical components, check of control response, 20% discount on spare parts, testing of all key functions, calibration of one test temperature specified by the user in the center of the usable space, without certificate	05	DL20-0845
Maintenance services			
Maintenance	One-off maintenance service in accordance with maintenance schedule. Visual inspection of mechanical and electrical components, testing of all key functions. Calibration of a test temperature specified by the user in center of usable space without certificate	05	DL20-0604
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	05	DL41-0200
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	05	DL44-0500
Warranty service			
1-year warranty extension	The warranty is extended by 1 year from the delivery date, wear parts are excluded	05	DL50-0010

NOTES

01 Condensation may occur in the area around the access port. Access ports may be placed in custom locations for an additional charge.

05 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).

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