

# Model KBF 240 | Constant climate chambers with large temperature / humidity range

The BINDER KBF is the specialist for unconditionally reliable stability testing and precise maintenance of constant climate conditions. From programming to documentation, this constant climate chamber meets all critical requirements.

## BENEFITS

- Safe thanks to climatic homogeneity that far exceeds the accuracy required by ICH guidelines, even with a fully loaded unit.
- Reliable thanks to failsafe operation without compromise. The interior and Longlife evaporator plate are made entirely from stainless steel.
- Smart, as a wide range of accessories makes it highly compatible for adaptation to specific customer requirements.
- Economical thanks to maximum effective volume which allows for 30% larger load compared to the competition.



Model 240



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## IMPORTANT FEATURES

- Temperature range: 0 °C to +70 °C
- Humidity range: 10 % to 80 % RH
- APT.line™ preheating chamber technology
- Humidity regulation with capacitive humidity sensor and vapor humidification
- Intuitive touchscreen controller with time-segment and real-time programming
- BINDER Multi Management Software APT-COM™ Basic Edition
- Internal data logger, measured values can be read out in open format via USB
- Unit self-test for comprehensive status analysis
- Tight-sealing inner door made of safety glass (ESG)
- Avoidance of glass corrosion by special TIMELESS coating
- Inner chamber made of stainless steel
- 2 stainless steel racks
- Access port with silicone plug, 30 mm, left
- 4 stable castors, two with brakes, from 240 liters
- Class 3.1 independent temperature safety device (DIN 12880) with visual and audible temperature alarm
- Computer interface: Ethernet
- Door heating

## ORDERING INFORMATION

Interior volume [L]	Power supply - unit fuse	Plug*	Version	Model version	Art.-No.
<b>Model KBF 240</b>					
247	200...230 V 1~ 50/60 Hz -16,0 A	CEE 7/7	Standard	KBF240-230V	9020-0322
	200...240 V 1~ 50/60 Hz -16,0 A	NEMA 6-20	Standard	KBF240UL-240V	9020-0323

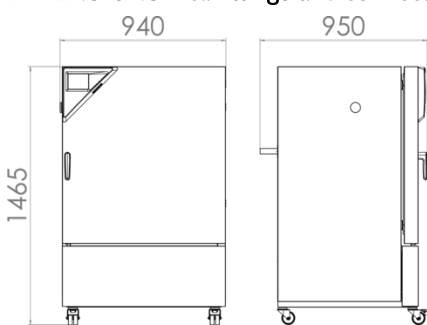
## TECHNICAL DATA

Data		
Designation	KBF240-230V	KBF240UL-240V
Article Number	9020-0322	9020-0323
Option model	Standard	Standard
Performance Data Temperature		
Temperature range	0...70 °C	0...70 °C
Max. heat compensation at 40°C	300 W	300 W
Performance Data Climate		
Temperature range with humidity	10...70 °C	10...70 °C
Humidity range	10...80 % RH	10...80 % RH
Temperature uniformity at 25°C and 60% RH	0.3 ± K	0.3 ± K
Temperature uniformity at 40°C and 75% RH	0.3 ± K	0.3 ± K
Temperature fluctuation at 25°C and 60% RH	0.1 ± K	0.1 ± K
Temperature fluctuation at 40°C and 75% RH	0.1 ± K	0.1 ± K
Recovery time after door was opened for 30 s at 25°C and 60% RH	5 min	5 min
Recovery time after door was opened for 30 s at 40°C and 75% RH	11 min	11 min
Electrical data		
Rated Voltage	200...230 V	200...240 V
Power frequency	50/60 Hz	50/60 Hz
Nominal power	2,1 kW	2,1 kW
Unit fuse	16,0 A	16,0 A
Phase (Nominal voltage)	1~	1~
Dimensions and weights		
Interior volume	247 L	247 L
Net weight of the unit (empty)	189 kg	189 kg
Load per rack	30 kg	30 kg
Permitted load	100 kg	100 kg
Wall clearance back	100 mm	100 mm

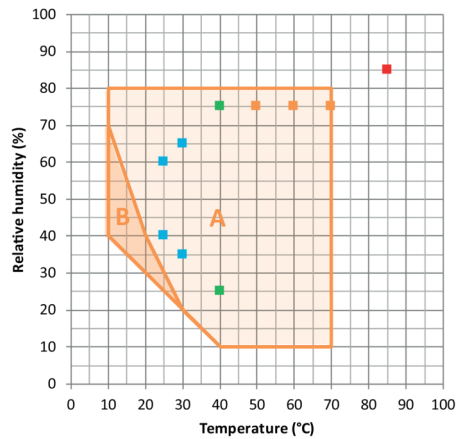
Wall clearance sidewise	100 mm	100 mm
<b>Housing dimensions not incl. fittings and connections</b>		
Width net	925 mm	925 mm
Height net	1,460 mm	1,460 mm
Depth net	800 mm	800 mm
<b>Internal Dimensions</b>		
Interior width	650 mm	650 mm
Interior height	785 mm	785 mm
Interior depth	485 mm	485 mm
Inner doors	1	1
Unit doors	1	1
<b>Environment-specific data</b>		
Sound-pressure level	52 dB(A)	52 dB(A)
Energy consumption at 40°C and 75% RH	650 Wh/h	650 Wh/h
<b>Fixtures</b>		
Number of shelves (std./max.)	2/9	2/9

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]



## DIAGRAMS



- ICH Long term stability testing
  - Accelerated stability testing
  - ICH Stress testing
  - Industrial THB testing (85/85)
- A: Guaranteed condensation-free range  
B: Time-limited operation (max. 24 hours)

Temperature-humidity chart with ICH checkpoints

## OPTIONS

Designation	Description	KBF 240	*	Art.-No.
	left			
	30 mm	•	01	8012-1442
	50 mm	•	01	8012-1472
	100 mm	•	01	8012-0515
	right			
Access port with silicone plug	30 mm	•	01	8012-1436
	50 mm	•	01	8012-1466
	100 mm	•	01	8012-0514
	top			
	30 mm	•	01	8012-1448
	50 mm	•	01	8012-1454
	100 mm	•	01	8012-1460
Alarm output, zero-voltage	for temperature ( $\pm 2$ °C) and humidity ( $\pm 5$ % RH), accessible via 6-pin DIN socket (max. 24 V - 2.5 A), with audible signal that can be switched off	•	-	8012-1037
Analog output 4-20 mA	for temperature and humidity values (output not adjustable)	•	-	8012-1040
Calibration certificate, expanded	for temperature and humidity; for extending the measurement in center of chamber to include another test value	•	-	8012-0155

Designation	Description	KBF 240	*	Art.-No.
Calibration certificate, temperature	temperature measurement incl. certificate, 9 measuring points at specified temperature	•	-	8012-0917
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	•	-	8012-0920
	temperature measurement incl. certificate and 27 measuring points at specified temperature	•	-	8012-0923
Calibration certificate, temperature and humidity	Measurement in center of chamber at 25°C / 60% RH or at specified test values	•	-	8012-0154
	temperature (according to DIN12880) and humidity measurement incl. certificate, 27 temperature measuring points and 1 humidity measuring point, at 25 °C / 60 % RH or at specified values	•	-	8012-0924
Class 3,3 independent temperature safety device	with visual alarm (DIN 12880)	•	-	8012-1033
Door lock	lockable door handle	•	-	8012-1023
Pt 100 temperature sensor	additional flexible Pt 100, interior, for displaying the temperature on the unit display	•	-	8012-1042
RS 485 interface, 2-wire	Additional serial interface can be used parallel to Ethernet, for Multi Management Software APT-COM™	•	-	8012-1066

## ACCESSORIES

Designation	Description	KBF 240	*	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
BINDER PURE AQUA SERVICE	System for preparation or complete desalination of tap water, complete set containing PURE AQUA 300 single-use cartridge, measuring device, and all necessary connecting parts	•	-	8012-0759
BINDER PURE AQUA SERVICE, accessories	Single-use, replacement cartridge for BINDER PURE AQUA System	•	-	6011-0165
Converter, voltage	to operate the device at a nominal voltage of 120 V 1 ph 60 Hz			
	240 V option model	•	-	8009-0821
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

Designation	Description	KBF 240	*	Art.-No.
	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
	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 and humidity values			
	Digital in PDF format	•	-	7057-0006
	Hard copy inside folder	•	-	7007-0006
Qualification documents				
	IQ/OQ documents – supporting documents for validation performed by customers, consisting of: IQ/OQ checklists incl. calibration guide and comprehensive unit documentation; parameters: temperature and humidity values			
	Digital in PDF format	•	-	7057-0002
	Hard copy inside folder	•	-	7007-0002
	RS 422 cable set and RS 485 / RS 422 interface converter for connection to 10-way plug distributor			
RS 485 / RS 422 interface converter	115 V option model	•	-	8012-0599
	230 V option model	•	-	8012-0589
Rack	stainless steel	•	-	8012-2050
Rack, reinforced	stainless steel, with fasteners (1 set of 4)	•	-	8012-0638
Rack accessories	fasteners (1 set of 4) for additional security of racks	•	-	8012-2280
Shelf, perforated	Stainless steel	•	-	8012-2163
	consisting of fresh- and waste-water containers (20 liters each), cabling and pump			
Water supply set	external, for hanging from the back of the device	•	-	8012-0643
	external, free-standing	•	-	8012-1846
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	•	-	8012-2250

## SERVICES

Designation	Description	*	Art.-No.
<b>Calibration services</b>			
Temperature and humidity calibration	Expansion –Temperature and humidity calibration with 1 measuring point in center of chamber with 1 specified pair of values, including certificate	–	DL30-0302
	Temperature and humidity calibration with 1 measuring point in center of chamber with 1 specified pair of values, including certificate	–	DL30-0301

Designation	Description	*	Art.-No.
Temperature and humidity measurement, 9-1 measuring points	Temperature measurement with 9 temperature measuring points and 1 humidity measuring point in center of chamber with a pair of values specified by the user, including certificate	–	DL30-0309
Temperature and humidity measurement, 18-1 measuring points	Temperature measurement with 18 temperature measuring points and 1 humidity measuring point in center of chamber with a pair of values specified by the user, including certificate	–	DL30-0318
Temperature and humidity measurement, 27-1 measuring points	Temperature measurement with 27 temperature measuring points and 1 humidity measuring point in center of chamber with a pair of values specified by the user, including certificate	–	DL30-0327
Temperature and humidity measurement according to DIN12880	Temperature measurement in accordance with DIN 12880 with 27 temperature measuring points and 1 humidity measuring point in center of chamber with a pair of values specified by the user, including certificate	–	DL30-0427
<b>Installation services</b>			
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)	–	DL10-0300
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming	–	DL10-0700
<b>Maintenance contracts</b>			
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	–	DL20-0710
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 temperature/humidity value, including certificate	–	DL20-0920
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	–	DL20-0820
<b>Maintenance services</b>			
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	–	DL20-0400
<b>Validation services</b>			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	–	DL42-0300
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	–	DL44-0500
<b>Warranty service</b>			
1-year warranty extension	The warranty is extended by 1 year from the delivery date, wear parts are excluded	–	DL50-0030

## NOTES

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

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