

# Model KMF 240 | Constant climate chambers with expanded temperature / humidity range

The BINDER KMF ensures absolutely constant test conditions throughout the testing area. A big advantage of this constant climate chamber is its low space requirement and flexibility in terms of water supply. The wide temperature and humidity range make this constant climate chamber ideally suited for stress testing series.

## BENEFITS

- Homogeneous climate conditions thanks to APT.line™ technology
- Automatic water and wastewater management
- Humidification with fast response times
- Wide humidity range up to 98 % RH
- Long-term stress testing, e.g. at 85 °C / 85 % RH



Model 240



Model 240

## MAIN FEATURES

- Temperature range: -10 °C to 100 °C
- Humidity range: 10 % RH to 98 % RH
- APT.line™ preheating chamber technology
- Humidity regulation with capacitive humidity sensor and vapor humidification
- Inner chamber made of stainless steel
- BINDER Multi Management Software APT-COM™ Basic Edition
- Intuitive touchscreen controller with time-segment and real-time programming
- 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
- 1 stainless steel rack
- Access port with silicone plug, 30 mm, left
- Class 3.1 independent temperature safety device (DIN 12880) with visual and audible temperature alarm
- Computer interface: Ethernet
- Door heating

## ORDERING INFORMATION

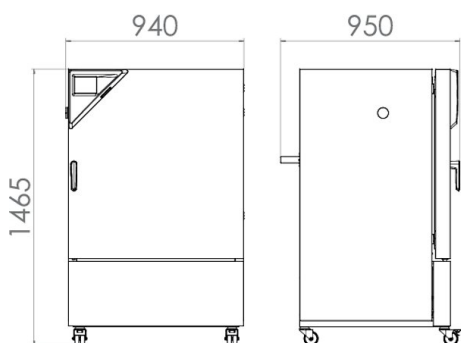
Interior volume [L]	Voltage	Option model	Version	Art.-No.
247	200...230 V 1~ ph 50/60 Hz	Standard	KMF240-230V	9020-0343
	200...240 V 1~ ph 50/60 Hz	Standard	KMF240-240V	9020-0344

## TECHNICAL DATA

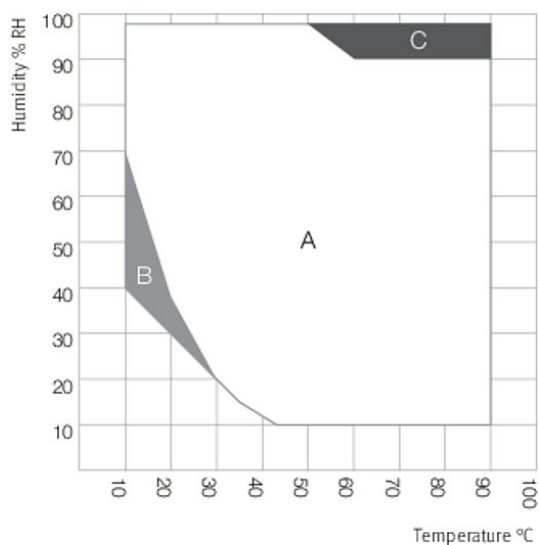
Description	KMF240-230V <sup>1</sup>	KMF240-240V <sup>1</sup>
Article Number	9020-0343	9020-0344
<b>Performance Data Temperature</b>		
Temperature range	-10...100	-10...100
Average heating-up rate according to IEC 60068-3-5 [K/min]	0.8	0.8
Average cooling down time according to IEC 60068-3-5 [K/min]	0.4	0.4
Max. heat compensation at 25 °C [W]	200	200
<b>Performance Data Climate</b>		
Temperature range [°C]	10...90	10...90
Temperature variation depending on setpoint [± K]	0.1...1	0.1...1
Temperature fluctuation depending on setpoint [± K]	0.1...0.3	0.1...0.3
Humidity range [% RH]	10...98	10...98
Humidity fluctuation depending on setpoint	≤2 ± % RH	≤2 ± % RH
Dew point temperature range [°C]	5...90	5...90
<b>Electrical data</b>		
Rated Voltage [V]	200...230	200...240
Power frequency [Hz]	50/60	50/60
Nominal power [kW]	2.1	2.1
Unit fuse [A]	16	16
Phase (Nominal voltage)	1~	1~
<b>Measures</b>		
Interior volume [L]	247	247
Net weight of the unit (empty) [kg]	189	189
Permitted load [kg]	100	100
Load per rack [kg]	30	30
Wall clearance back [mm]	100	100
Wall clearance sidewise [mm]	100	100
<b>Internal Dimensions</b>		
Width [mm]	650	650
Height [mm]	785	785
Depth [mm]	485	485
<b>Doors</b>		
Inner doors	1	1
Unit doors	1	1
<b>Housing dimensions not incl. fittings and connections</b>		
Width net [mm]	930	930
Height net [mm]	1465	1465
Depth net [mm]	800	800
<b>Environment-specific data</b>		
Energy consumption at 85 °C and 85 % RH [Wh/h]	570	570
Sound-pressure level [dB(A)]	52	52
<b>Fixtures</b>		
Number of shelves (std./max.)	1/9	1/9

<sup>1</sup> 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 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]



## CHARTS



- A: Guaranteed condensation-free range  
 B: Time-limited operation (max. 24 hours)  
 C: Condensation in the inner chamber may be possible

Climate chart

## OPTIONS

Designation	Description	*	Art.-No.
	left		
	30 mm	01	8012-1446
	50 mm	01	8012-1476
	100 mm	01	8012-1342
	right		
Access port with silicone plug	30 mm	01	8012-1440
	50 mm	01	8012-1470
	100 mm	01	8012-1339
	top		
	30 mm	01	8012-1452
	50 mm	01	8012-1458
	100 mm	01	8012-1464
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	-	8012-1677
Analog output 4-20 mA	for temperature and humidity values (output not adjustable)	-	8012-1680
Calibration certificate, expanded	for temperature and humidity; for extending the measurement in center of chamber to include another test value	-	8012-1191

\* Notes › See last page

Designation	Description	*	Art.-No.
Calibration certificate, temperature	temperature measurement incl. certificate and 27 measuring points at specified temperature	-	8012-1606
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	-	8012-1586
	temperature measurement incl. certificate, 9 measuring points at specified temperature	-	8012-1565
Calibration certificate, temperature and humidity	Measurement in center of chamber at 25 °C / 60% RH or at specified test values	-	8012-1185
	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	-	8012-1612
Class 3.3 independent temperature safety device	with visual alarm (DIN 12880)	-	8012-1674
Door lock	lockable door handle	-	8012-1660
Inner chamber, reinforced	including 2 reinforced racks	-	8012-0624
Pt 100 temperature sensor	additional flexible Pt 100, interior, for displaying the temperature on the unit display	-	8012-1682
RS 485 interface, 2-wire	Additional serial interface can be used parallel to Ethernet, for Multi Management Software APT-COM™	-	8012-1712

\* Notes › See last page

## ACCESSORIES

Designation	Description	*	Art.-No.
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	19	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	19	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
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
	TH 100/70: For continuous temperature and humidity logging from -40 °C to 100 °C / 0% to 100% RH and additional logging of ambient conditions. Kit includes 1 data logger, 2 attachable combined humidity/temperature sensors, 2 m extension cable and 1 fixture for mounting to the BINDER unit	19	8012-1838
	TH 100: For continuous temperature and humidity logging from -50 °C to 100 °C; 0% to 100% RH. Kit includes 1 data logger, Pt 100 sensor with 2 m extension cable, and 1 magnetic fixture for mounting to the BINDER unit	19	8012-1837
Data Logger Software	LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable)	19	8012-0821
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
pH-neutral detergent	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
Qualification documents	concentrated, for gentle remove of residual contaminants; 1 kg	-	1002-0016
	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
Rack	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
	stainless steel	-	6004-0101
Rack accessories	fasteners (1 set of 4) for additional security of racks	-	8012-0620
Rack, reinforced	stainless steel, with fasteners (1 set of 4)	-	8012-0638

\* Notes › See last page

Designation	Description	*	Art.-No.
RS 485 / RS 422 interface converter	RS 422 cable set and RS 485 / RS 422 interface converter for connection to 10-way plug distributor		
	115 V option model	-	8012-0599
	230 V option model	-	8012-0589
Shelf, perforated	Stainless steel	-	6004-0040
Water supply set	consisting of fresh- and waste-water containers (20 liters each), cabling and pump external, for hanging from the back of the device	-	8012-0643

\* Notes › See last page

## SERVICES

Designation	Description	*	Art.-No.
<b>Installation services</b>			
Unit installation	Unpacking and setting up of unit, connecting to existing connections, and checking function	13, 18	DL10-0300
Unit instructions	Unit function instructions for operation and programming of the controller	18	DL10-0700
<b>Preventive maintenance</b>			
Maintenance	Functional testing of all electrical and mechanical components, short calibration, documentation in the maintenance schedule	14, 18	DL20-0400
<b>Calibration services</b>			
Temperature and humidity calibration	Expansion – including certificate, each additional measuring point in center of chamber at 25 °C / 60% RH or at specified values	14, 16, 17, 18	DL30-0302
	Temperature and humidity calibration with 1 measuring point in center of chamber with 1 specified pair of values, including certificate	14, 16, 17, 18	DL30-0301
Temperature measurement in accordance with DIN 12880, 27 temperature measuring points and 1 humidity measuring point	Temperature measurement in accordance with DIN 12880 with 27 temperature measuring points and 1 humidity measuring point in center of chamber at specified values, including certificate	14, 16, 17, 18	DL30-0427
Temperature measurement, 15 measuring points	Temperature measurement with 15 measuring points at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0218
Temperature measurement, 18 temperature measuring points and 1 humidity measuring point	Temperature measurement with 18 temperature measuring points and 1 humidity measuring point in center of chamber with 1 specified pair of values, including certificate	14, 16, 17, 18	DL30-0318
Temperature measurement, 27 temperature measuring points and 1 humidity measuring point	Temperature measurement with 27 temperature measuring points and 1 humidity measuring point in center of chamber with 1 specified pair of values, including certificate	14, 16, 17, 18	DL30-0327
Temperature measurement, 9 temperature measuring points and 1 humidity measuring point	Temperature measurement with 9 temperature measuring points and 1 humidity measuring point in center of chamber at specified values, including certificate	14, 16, 17, 18	DL30-0309
<b>Validation services</b>			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	15, 18	DL42-0300
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	15, 18	DL44-0500
<b>Warranty service</b>			
Warranty extension from 2 to 3 years	The warranty is extended from 2 to 3 years from the delivery date, wear parts are excluded	-	DL02-4041
Warranty extension from 2 to 5 years	The warranty is extended from 2 to 5 years from the delivery date, wear parts are excluded	-	DL02-4042

\* 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.
- 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.

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.com

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