

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 APT-COM™ 3 Basic Edition communication software
- 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

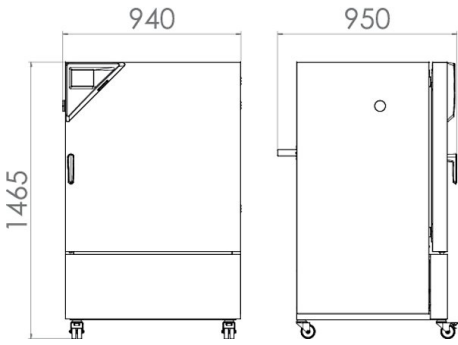
Interior volume [cu.ft.]	Voltage	Option model	Version	Art.-No.
Model KMF 240				
8.7	200...230 V 1 ph 50/60 Hz	Standard	KMF240-230V	9020-0343
	200...240 V 1 ph 50/60 Hz	Standard	KMF240-240V	9020-0344

TECHNICAL DATA

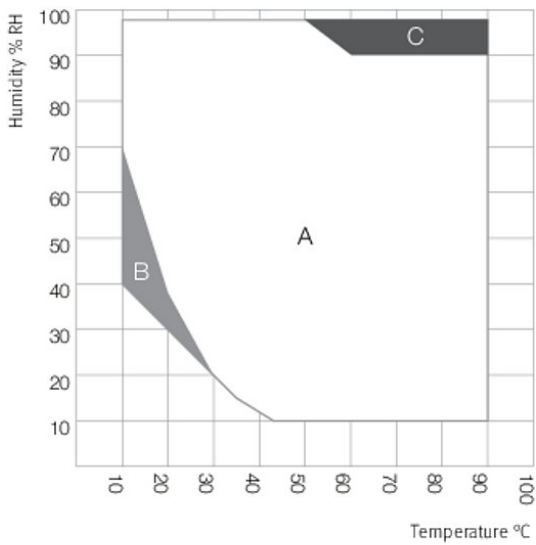
Description	KMF240-230V ¹	KMF240-240V ¹
Article Number	9020-0343	9020-0344
Performance Data Temperature		
Temperature range [°C]	-10...100	-10...100
Average heating-up rate according to IEC 60068-3-5 [K/min]	0.8	0.8
Average cooling down time according to IEC 60068-3-5 [K/min]	0.4	0.4
Max. heat compensation at 25 °C [W]	200	200
Performance Data Climate		
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
Electrical data		
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) [ph]	1	1
Outer dimensions		
Width net [mm]	930	930
Height net [mm]	1465	1465
Depth net [mm]	800	800
Doors		
Inner doors	1	1
Unit doors	1	1
Internal Dimensions		
Width [mm]	650	650
Height [mm]	785	785
Depth [mm]	485	485
Measures		
Interior volume [L]	247	247
Net weight of the unit (empty) [kg]	179	179
permitted load [kg]	100	100
Load per rack [kg]	30	30
Environment-specific data		
Energy consumption at 85 °C and 85 % RH [Wh/h]	570	570
Sound-pressure level [dB(A)]	52	52
Fixtures		
Number of shelves (std./max.)	1/9	1/9

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 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.

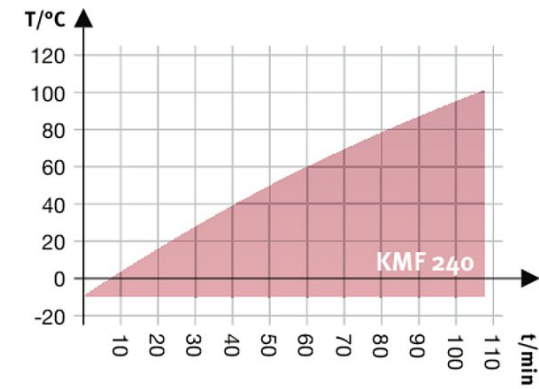
DIMENSIONS incl. fittings and connections [mm]



CHARTS

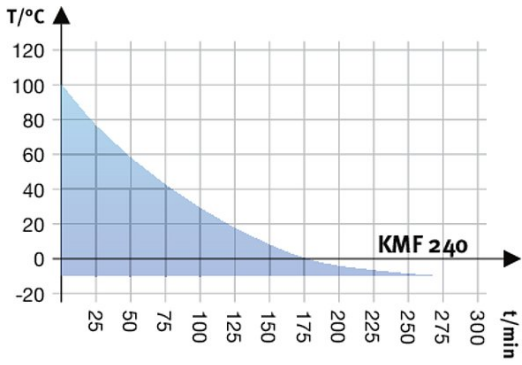


- A: Guaranteed condensation-free range
- B: Time-limited operation (max. 24 hours)
- C: Condensation in the inner chamber may be possible

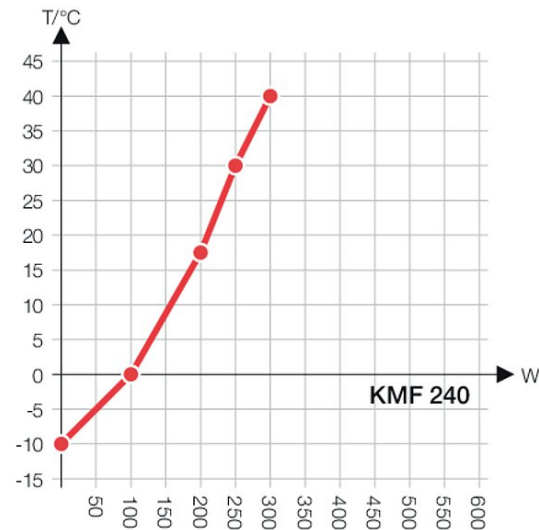


Heating up rate

Climate chart



Cooling down rate



Heat compensation chart

OPTIONS AND ACCESSORIES

Designation	Description	*	Art.-No.
Access port with silicone plug	left		
	30 mm	01	8012-1446
	50 mm	01	8012-1476
	100 mm	01	8012-1342
	right		
	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 (± 2 °C) and humidity (± 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
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	-	8012-1809
BINDER PURE AQUA SERVICE, accessories	PURE AQUA 300 single-use replaceable cartridge for the BINDER PURE AQUA SYSTEM, filter capacity approx. 700 liters (for a conductivity of 200 μ S/cm = 6.6 °dH)	-	6011-0179
	PURE AQUA 600 single-use replaceable cartridge for the BINDER PURE AQUA SYSTEM, filter capacity approx. 1,400 liters (for a conductivity of 200 μ S/cm = 6.6 °dH)	-	6011-0180
Calibration certificate, expanded	for temperature and humidity; for extending the measurement in center of chamber to include another test value	-	8012-1191
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
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	-	8012-1660
Inner chamber, reinforced	including 2 reinforced racks (max. total load 250 kg, max. load per rack 70 kg)	-	8012-0624
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		
	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

* Notes > See last page

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 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		
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	–	1002-0016
	Pt 100 temperature sensor	–	8012-1682
	additional flexible Pt 100, interior, for displaying the temperature on the unit display	–	8012-1682
Rack accessories	Rack accessories – fasteners (1 set of 4) for additional security of racks	–	8012-0620
Rack, reinforced	stainless steel, with fasteners (1 set of 4), max. load 70 kg	–	8012-0638
Racks	stainless steel	–	6004-0101
RS 422 interface, accessories	modular plug distributor for 10 RS 422 interfaces	–	8012-0295
	RS 422 connection cable (15 m) between plug distributor and RS 422 interface	–	5023-0036
	RS 422 extension cable (50 m) between interface converter and unit or RS 232 / RS 422 plug distributor	–	5023-0117
RS 485, 2-wire	Additional serial interface can be used parallel to Ethernet, for communication software	–	8012-1712
Shelf, perforated	Stainless steel	–	6004-0040
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
Water supply set	APT-COM™ communications software, price: for free		
	version 3, GLP DEMO Edition	19	9053-0008
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.
Installation services			
Installation	and set up of unit at operating location, connect to existing connections	13, 18	DL10-0300
Instruction	unit function instructions for operation and programming of the controller	18	DL10-0700
Preventive maintenance			
Preventive maintenance	Executive of equipment inspection according to maintenance plan	14, 18	DL20-0400
Calibration services			
Calibration temperature and humidity	including certificate, one measuring point in center of chamber at 25 °C / 60 % RH or at specified values	14, 16, 17, 18	DL30-0301
Temperature and humidity measurement according to DIN12880	including certificate (27 temperature measuring points and one humidity measuring point, at 25 °C / 60 % RH or at specified values)	14, 16, 17, 18	DL30-0427
Temperature measurement 18 temperature measuring points and 1 humidity measuring point	including certificate, 18 temperature measuring points and 1 humidity measuring point in center of chamber, at 25 °C / 60 % RH or at specified values	14, 16, 17, 18	DL30-0318
Temperature measurement 27 temperature measuring points and 1 humidity measuring point	including certificate, 27 temperature measuring points and 1 humidity measuring point in center of chamber, at 25 °C / 60 % RH or at specified values	14, 16, 17, 18	DL30-0327
Temperature measurement 9 temperature measuring points and 1 humidity measuring point	including certificate, 9 temperature measuring points and 1 humidity measuring point in center of chamber, at 25 °C / 60 % RH or at specified values	14, 16, 17, 18	DL30-0309
Validation services			
Execution of IQ/OQ	in accordance with qualification folder	15, 18, 20	DL42-0300
Execution of IQ/OQ/PQ	in accordance with customer's requirement, price: on request	15, 18	DL44-0500

* Notes › See last page

Designation	Description	*	Art.-No.
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	8012-0879
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	8012-0966
Warranty service			
Extension of the warranty from 2 to 3 years	beginning with the date of delivery, wearing parts are not included	-	DL02-4041
Extension of the warranty from 2 to 5 years	beginning with the date of delivery, wearing parts are not included	-	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.
- 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.