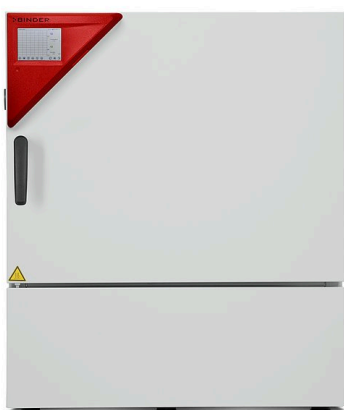


# Model KMF 115 | Humidity test chambers with expanded temperature / humidity range

The BINDER KMF ensures absolutely constant test conditions throughout the testing area. A big advantage of this humidity test chamber is its low space requirement and flexibility in terms of water supply. The wide temperature and humidity range make this humidity test 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 115

## 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

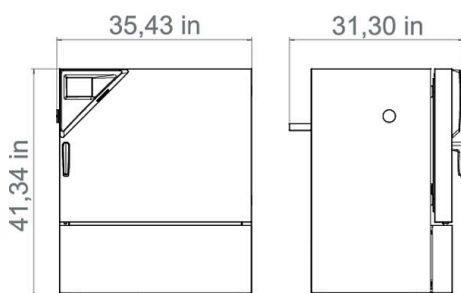
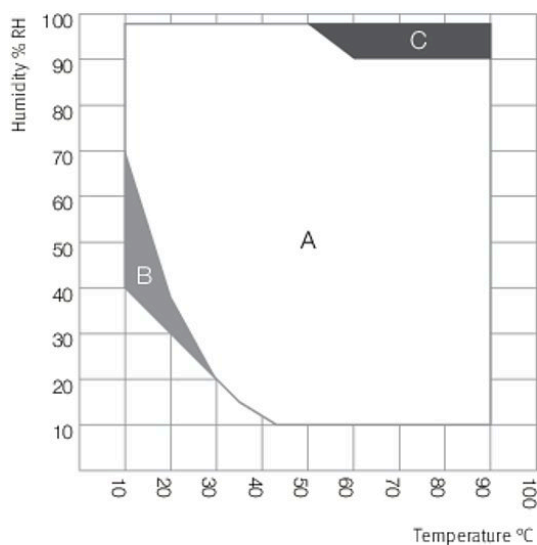
## ORDERING INFORMATION

Interior volume [cu.ft.]	Voltage	Option model	Version	Art.-No.
3.6	200...230 V 1~ 50/60 Hz	Standard	KMF115-230V	9020-0341
	200...240 V 1~ 50/60 Hz	Standard	KMF115-240V	9020-0342

**TECHNICAL DATA**

Description	KMF115-230V <sup>1</sup>	KMF115-240V <sup>1</sup>
<b>Article Number</b>	<b>9020-0341</b>	<b>9020-0342</b>
<b>Performance Data Temperature</b>		
Temperature range	-10...100	-10...100
Average heating-up rate according to IEC 60068-3-5 [K/min]	1.3	1.3
Average cooling down time according to IEC 60068-3-5 [K/min]	0.5	0.5
Max. heat compensation at 25 °C [W]	150	150
<b>Performance Data Climate</b>		
Temperature range [°C]	10...90	10...90
Temperature variation depending on setpoint [± K]	0.2...1	0.2...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	≤2,5 ± % RH	≤2,5 ± % 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	2
Unit fuse [A]	16	16
Phase (Nominal voltage)	1~	1~
<b>Measures</b>		
Interior volume [cu.ft.]	3.6	3.6
Net weight of the unit (empty) [lbs]	282	282
Permitted load [lbs]	220	220
Load per rack [lbs]	66	66
Wall clearance back [in]	3.94	3.94
Wall clearance sidewise [in]	3.94	3.94
<b>Internal Dimensions</b>		
Width [in]	23.64	23.64
Height [in]	19.03	19.03
Depth [in]	13.83	13.83
<b>Doors</b>		
Inner doors	1	1
Unit doors	1	1
<b>Housing dimensions not incl. fittings and connections</b>		
Width net [in]	34.67	34.67
Height net [in]	41.4	41.4
Depth net [in]	25.61	25.61
<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.)	1/5	1/5

<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		
<b>Access port with silicone plug</b>	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
<b>Alarm output, zero-voltage</b>	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	-	8012-1676
<b>Analog output 4-20 mA</b>	for temperature and humidity values (output not adjustable)	-	8012-1679
<b>Calibration certificate, expanded</b>	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.
<b>Calibration certificate, temperature</b>	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
<b>Calibration certificate, temperature and humidity</b>	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
<b>Class 3.3 independent temperature safety device</b>	with visual alarm (DIN 12880)	-	8012-1673
<b>Door lock</b>	lockable door handle	-	8012-1660
<b>Pt 100 temperature sensor</b>	additional flexible Pt 100, interior, for displaying the temperature on the unit display	-	8012-1682
<b>RS 485 interface, 2-wire</b>	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.
<b>BINDER PURE AQUA SERVICE</b>	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
<b>BINDER PURE AQUA SERVICE, accessories</b>	Single-use, replacement cartridge for BINDER PURE AQUA System	-	6011-0165
<b>Data Logger Kit</b>	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	-	8012-0715
<b>Data Logger Software</b>	LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable)	-	8012-0821
<b>LED light bars</b>	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
<b>Multi Management Software</b>	Multi Management Software APT-COM™		
	version 4, GLP edition	-	9053-0042
	version 4, PROFESSIONAL edition	-	9053-0040
<b>pH-neutral detergent</b>	concentrated, for gentle remove of residual contaminants; 1 kg	-	1002-0016
<b>Qualification documents</b>	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
	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
<b>Rack</b>	stainless steel	-	6004-0112
<b>Rack accessories</b>	fasteners (1 set of 4) for additional security of racks	-	8012-0620
<b>Rack, reinforced</b>	stainless steel, with fasteners (1 set of 4)	-	8012-0700
<b>RS 485 / RS 422 interface converter</b>	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
<b>Shelf, perforated</b>	Stainless steel	-	6004-0115
<b>Water supply set</b>	consisting of fresh- and waste-water containers (20 liters each), cabling and pump		
	external, for hanging from the back of the device	-	8012-0643
	external, free-standing	-	8012-1846

\* Notes › See last page

**SERVICES**

Designation	Description	*	Art.-No.
<b>Installation services</b>			
Unit installation	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	DL10-0300
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming	05	DL10-0700
<b>Maintenance services</b>			
Maintenance	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 chamber without certificate	05	DL20-0400
<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	03, 04, 05	DL30-0302
	Temperature and humidity calibration with 1 measuring point in center of chamber with 1 specified pair of values, including certificate	03, 04, 05	DL30-0301
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	03, 04, 05	DL30-0427
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 a pair of values specified by the user, including certificate	03, 04, 05	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 a pair of values specified by the user, including certificate	03, 04, 05	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 with a pair of values specified by the user, including certificate	03, 04, 05	DL30-0309
<b>Validation services</b>			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	05	DL42-0300
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	05	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 Sensor calibration is performed in an accredited calibration laboratory.
- 04 Calibration is performed according to the BINDER factory standard.
- 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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