

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

- Safe thanks to climatic homogeneity that far exceeds the accuracy required by ICH guidelines as well as THB (85/85), 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 115



Model 240

IMPORTANT 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		Power supply - unit fuse	Plug*	Version	Model version	Art.-No.
[L]	[L]					
Model KMF 115						
		200...230 V 1~ 50/60 Hz -16,0 A	CEE 7/7	Standard	KMF115-230V	9020-0341
102	102	200...240 V 1~ 50/60 Hz -16,0 A	NEMA 6-20	Standard	KMF115-240V	9020-0342

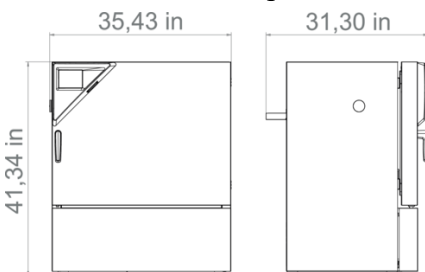
TECHNICAL DATA

Data		
Designation	KMF115-230V	KMF115-240V
Article Number	9020-0341	9020-0342
Option model	Standard	Standard
Performance Data Temperature		
Temperature range	-10...100 °C	-10...100 °C
Average heating-up rate according to IEC 60068-3-5	1.3 K/min	1.3 K/min
Cooling down time from 22°C to -80°C	240 min	240 min
Average cooling down time according to IEC 60068-3-5	0.5 K/min	0.5 K/min
Performance Data Climate		
Temperature range with humidity	10...90 °C	10...90 °C
Humidity range	10...98 % r.F.	10...98 % r.F.
Temperature uniformity with humidity dependent on set value	0.2...1.0 ± K	0.2...1.0 ± K
Temperature fluctuation with humidity dependent on set value	0.1...0.3 ± K	0.1...0.3 ± K
Humidity fluctuation with humidity dependent on set value	≤2,5 ± % r.F.	≤2,5 ± % r.F.
Electrical data		
Rated Voltage	200...230 V	200...240 V
Power frequency	50/60 Hz	50/60 Hz
Nominal power	2 kW	2 kW
Unit fuse	16,0 A	16,0 A
Phase (Nominal voltage)	1~	1~
Dimensions and weights		
Interior volume	102 L	102 L
Net weight of the unit (empty)	128 kg	128 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
Housing dimensions not incl. fittings and connections		

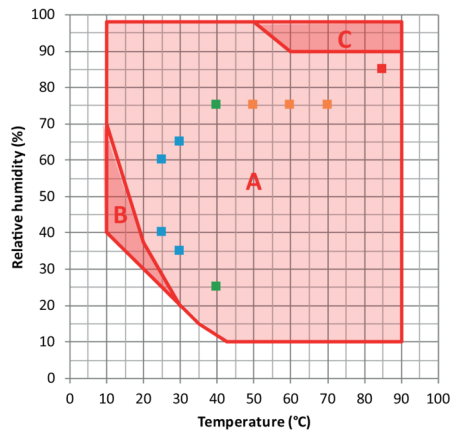
Width net	880 mm	880 mm
Height net	1,050 mm	1,050 mm
Depth net	650 mm	650 mm
Internal Dimensions		
Interior width	600 mm	600 mm
Interior height	483 mm	483 mm
Interior depth	351 mm	351 mm
Inner doors	1	1
Unit doors	1	1
Environment-specific data		
Sound-pressure level	52 dB(A)	52 dB(A)
Energy consumption at 85°C and 85% RH	570 Wh/h	570 Wh/h
Fixtures		
Number of shelves (std./max.)	1/5	1/5

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]



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)
 - C: Condensation in the inner chamber may be possible

Climate chart

OPTIONS

Designation	Description	KMF 115	*	Art.-No.
	left			
	30 mm	•	01	8012-1446
	50 mm	•	01	8012-1476
	100 mm	•	01	8012-1342
	right			
	30 mm	•	01	8012-1440
Access port with silicone plug	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	•	-	8012-1676
Analog output 4-20 mA	for temperature and humidity values (output not adjustable)	•	-	8012-1679
Calibration certificate, expanded	for temperature and humidity; for extending the measurement in center of chamber to include another test value	•	-	8012-1191

Designation	Description	KMF 115	*	Art.-No.
Calibration certificate, temperature	temperature measurement incl. certificate, 9 measuring points at specified temperature	•	-	8012-1565
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	•	-	8012-1586
	temperature measurement incl. certificate and 27 measuring points at specified temperature	•	-	8012-1606
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)	•	-	8012-1673
Door lock	lockable door handle	•	-	8012-1660
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

ACCESSORIES

Designation	Description	KMF 115	*	Art.-No.
APT-COM™ 4	Multi Management Software APT-COM™			
	version 4, GLP edition	•	-	9053-0042
	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
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
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 and humidity values			

Designation	Description	KMF 115	*	Art.-No.
	Digital in PDF format	•	-	7057-0006
	Hard copy inside folder	•	-	7007-0006
	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	•	-	8012-2049
Rack, reinforced	stainless steel, with fasteners (1 set of 4)	•	-	8012-0700
Rack accessories	fasteners (1 set of 4) for additional security of racks	•	-	8012-2280
Shelf, perforated	Stainless steel	•	-	8012-2165
	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.
Calibration services			
Temperature and humidity calibration	Expansion –Additional Temperature and humidity calibration with 1 measuring point in center of chamber with 1 specified pair of values, including certificate. Travel to be quoted separate.	–	DL30-0302
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
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. Travel to be quoted separate. A total of 3 shelves are required.	–	DL30-0309
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. Travel to be quoted separate. A total of 2 shelves are required.	–	DL30-0318

Designation	Description	*	Art.-No.
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. Travel to be quoted separate. A total of 3 shelves are required.	–	DL30-0327
Installation services			
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) Travel to be quoted as separate.	–	DL10-0300
		–	DL10-0310
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming. Travel to be quoted as separate Limited to 3 hours.	–	DL10-0700
		–	DL10-0710
Maintenance services			
BRONZE 3-year maintenance contract	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate. 10% Discount on Spare Parts and Labor for any additional Services needed Wear + tear parts to be purchased or billed to customer. Travel to be quoted as separate.	–	DL20-0710
GOLD 3-year maintenance contract	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate of both Temperature and Humidity. 25% Discount on Spare Parts and Labor for any additional Services needed. One additional courtesy visit per year can be used for service visit or operator. Wear + tear parts to be purchased or billed to customer. Travel to be quoted separate.	–	DL20-0920
SILVER 3-year maintenance contract	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate 15% Discount on Spare Parts and Labor for any additional Services needed One additional courtesy visit per year can be used for service visit or operator training. Wear + tear parts to be purchased or billed to customer. Travel to be quoted separate.	–	DL20-0820
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder. Travel to be quoted separate.	–	DL42-0300
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder. Travel to be quoted separate.	–	DL44-0500
Warranty service			
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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