

Model MKF 720 | Dynamic climate chambers for rapid temperature changes with humidity control

A BINDER MKF series environmental simulation chamber is ideally suited for any cold and heat testing based on current temperature and climate testing methods according to DIN and IEC standards. The comprehensive standard equipment for this environmental simulation chamber ensures ease of operation.

BENEFITS

- Homogeneous climate conditions thanks to APT.line™ technology
- Automatic water and wastewater management
- Pressure humidification with fast response times
- Comprehensive programming and data acquisition
- Large heated viewing window



Model 720



Model 720

IMPORTANT FEATURES

- Temperature range: -40 °C to +180 °C
- Humidity range: 10 % to 98 % RH
- Integrated water-storage tank, 20 liters
- 4 zero-voltage relay contacts
- APT.line™ preheating chamber technology
- Programmable condensation protection for test material
- Heated viewing window with LED interior lighting
- Humidity regulation with capacitative humidity sensor and vapor humidification
- BINDER Multi Management Software APT-COM™ 4 Basic Edition
- Troubleshooting system with visual and audible alarms
- Intuitive touchscreen controller with time-segment and real-time programming •
- Internal data logger, measured values can be read out in open format via USB Cooling with compressor cooling unit

- · 2 access ports with silicone plugs: 80 mm, left and right
- 4 castors, two with brakes
- Computer interface: Ethernet
- Adjustable ramp function
- Integrated chart recorder
- Real-time clock
- Door heating
- Alarm notification in the event of insufficient water in fresh water tank
- 1 stainless steel rack
- Complete safety connection kit for water supply and drainage, up to 1 m height
- Inner chamber made of stainless steel
- CFC-free refrigerant R-452A

OPTIONAL EQUIPMENT

- APT-COM Multi Management Software for managing, recording, and documenting unit parameters
- Racks option of stainless steel racks, depending on test requirements
- Systems for water treatment and compressed air supply
- Services wide range of services to ensure that the unit functions correctly

ORDERING INFORMATION

Interior volume [L]	Power supply - unit fuse	Plug*	Version	Model version	ArtNo.
Model MKF 720					



Interior volume [L]	Power supply - unit fuse	Plug*	Version	Model version	ArtNo.
	400 V 3~/N/PE 50 Hz -32,0 A	CEE 32 / 6 H plug 5- pin	/ 6 H plug 5- Standard MKF7	MKF720-400V	9020-0381
734	480 V 3~ 60 Hz -32,0 A	CEE 32 / 6 H plug 5- pin	with voltage and frequency converter		9020-0359



TECHNICAL DATA

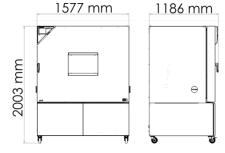
Data				
Designation	MKF720-400V	MKF720-480V-C		
Article Number	9020-0381	9020-0359		
Option model	Standard	with voltage and frequency converter		
Performance Data Temperature				
Temperature range	-40180 °C	-40180 °C		
Temperature uniformity dependent on set value	0.11.8 ± K	0.11.8 ± K		
Temperature fluctuation dependent on set value	0.10.5 ± K	0.10.5 ± K		
Average heating-up rate according to IEC 60068-3-5	4.8 K/min	4.8 K/min		
Cooling down time from 180°C to -40°C	120 min	120 min		
Average cooling down time according to IEC 60068-3-5	4.8 K/min	4.8 K/min		
Performance Data Climate				
Temperature range with humidity	1095 °C	1095 °C		
Humidity range	1098 % RH	1098 % RH		
Temperature fluctuation with humidity dependent on set value	0.21.5 ± K	0.21.5 ± K		
Humidity fluctuation with humidity dependent on set value	≤2,5 ± % r.F.	≤2,5 ± % r.F.		
Max. heat compensation at 25°C and 90% RH	1,000 W	1,000 W		
Electrical data				
Rated Voltage	400 V	480 V		
Power frequency	50 Hz	60 Hz		
Nominal power	11 kW	11 kW		
Unit fuse	32,0 A	32,0 A		
Phase (Nominal voltage)	3~/N/PE	3~		
Dimensions and weights				
Interior volume	734 L	734 L		
Net weight of the unit (empty)	590 kg	590 kg		
Load per rack	40 kg	40 kg		
Permitted load	160 kg	160 kg		
Wall clearance back	300 mm	300 mm		



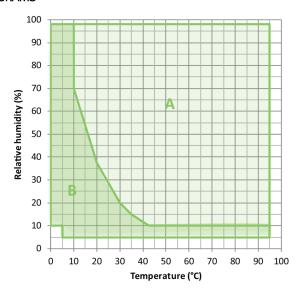
Wall clearance sidewise	200 mm	200 mm				
Housing dimensions not incl. fittings and connections	lousing dimensions not incl. fittings and connections					
Width net	1,580 mm	1,580 mm				
Height net	2,005 mm	2,005 mm				
Depth net	1,140 mm	1,140 mm				
Internal Dimensions						
Interior width	1,200 mm	1,200 mm				
Interior height	1,020 mm	1,020 mm				
Interior depth	600 mm	600 mm				
Unit doors	1	1				
Environment-specific data						
Sound-pressure level	65 dB(A)	67 dB(A)				
Energy consumption at 25°C and 60% RH	3,000 Wh/h	3,000 Wh/h				
Fixtures						
Number of shelves (std./max.)	1/11	1/11				

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]

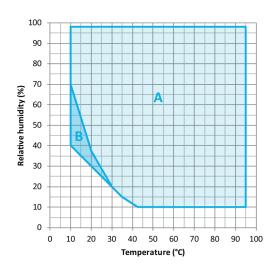


DIAGRAMS



A: Standard Climate range

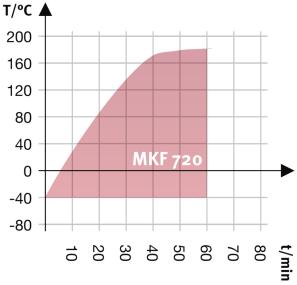
B: Expanded range with controlled dry-air purge



A: Standard Climate range

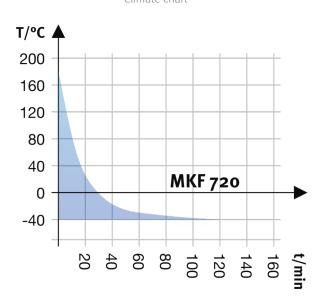
B: Time-limited operation (max. 24 hours)





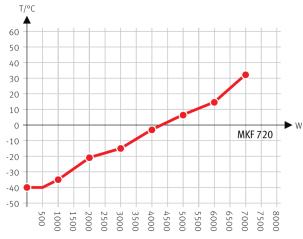
Heating up rate

Climate chart



Cooling down rate





Heat compensation with a set value of -40°C

Heat compensation chart

OPTIONS

Designation	Description	MKF 720	*	ArtNo.
	left			
	30 mm	•	01	8012-1323
	50 mm	•	01	8012-1329
	8o mm	•	01	8012-1335
	100 mm	•	01	8012-1543
	125 mm	•	01	8012-1352
	right			
Access newtwith silicens alve	30 mm	•	01	8012-1320
Access port with silicone plug	50 mm	•	01	8012-1326
	8o mm	•	01	8012-1332
	100 mm	•	01	8012-1540
	125 mm	•	01	8012-1349
	top			
	8o mm	•	01	8012-1537
	100 mm	•	01 01 01 01 01 01 01 01	8012-1531
	125 mm	•	01	8012-1534
Analog output 4-20 mA	for temperature and humidity values (output not adjustable)	•	-	8012-1085



Designation	Description	MKF 720	*	ArtNo.
Calibration certificate, expanded	for temperature and humidity; for extending the measurement in center of chamber to include another test value	•		8012-1194
	temperature measurement incl. certificate, 9 measuring points at specified temperature	•	-	8012-1568
Calibration certificate, temperature	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	•	-	8012-1589
	temperature measurement incl. certificate and 27 measuring points at specified temperature	•	-	8012-1609
	Measurement in center of chamber at 25°C / 60% RH or at specified test values	•	-	8012-1188
Calibration certificate, temperature and humidity	temperature (according to DIN1288o) and humidity measurement incl. certificate, 27 temperature measuring points and 1 humidity measuring point, at 25 °C / 60 % RH or at specified values	•	-	8012-1615
Compressed air connection	for the connection to an existing pressurized air network	•	-	8012-1798
Door lock	lockable door handle	•	-	8012-1862
Dry-air purge	controlled, incl. connection; suitable for the simulation of current automobile industry standards	•	-	8012-1870
Notch-type access port	notch-type access port in door, 100 x 35 mm	•	-	8012-1859
Pt 100 temperature sensor	additional flexible Pt 100, interior, for displaying the temperature on the unit display	•	-	8012-1094
RS 485 interface, 2-wire	Additional serial interface can be used parallel to Ethernet, for Multi Management Software APT-COM™	•	-	8012-1769
Temperature safety device class 2	with visual alarm (DIN 12880)	•	-	8012-1864
Water circuit	allows condensed water to be reused	•	-	8012-1512
Water cooling	for reduced heat loss to ambient air	•	-	8012-0804

ACCESSORIES

Designation	Description	MKF 720	*	ArtNo.
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



Designation	Description	MKF 720	*	ArtNo.
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	•	-	8012-2250
	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
Qualification documents	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
Rack	stainless steel	•	-	8012-2054
Rack, reinforced	stainless steel, with fasteners (1 set of 4)	•	-	8012-0684
Rack accessories	fasteners (1 set of 4) for additional security of racks	•	-	8012-2280
	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
Shelf, perforated	Stainless steel	•	-	8012-2253

SERVICES

Designation	Description	*	ArtNo.
Calibration services			
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	-	DL30-0330
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



Designation	Description	*	ArtNo.
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
Installation services			
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	05	DL10-0700
Maintenance contracts			
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 test temperature specified by the user in the center of the usable space, including certificate	-	DL20-0935
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	-	DL20-0835
Maintenance services			
Leakage test	Testing and logging of the leak-tightness of systems containing hydrofluorocarbons in accordance with Regulation EC842/2006, incl. test book	-	DL00-0034
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	-	DL20-0610
Validation services			
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
Warranty service		_	
1-year warranty extension	The warranty is extended by 1 year from the delivery date, wear parts are excluded	-	DL50-0040



NOTES

- O1 Condensation may occur in the area around the access port. Access ports may be placed in custom locations for an additional charge.
- 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).

BINDER GmbH

Tuttlingen, Germany TEL +49 7462 2005 0 info@binder-world.com www.binder-world.com BINDER Inc.

Bohemia, NY, USA TEL +1 631 224 4340 usa@binder-world.com www.binder-world.us BINDER Environmental Testing Equipment (Shanghai) Co., Ltd.

Shanghai, P.R. China TEL +86 21 685 808 25 china@binder-world.com www.binder-world.com

BINDER Asia Pacific (Hong Kong) Ltd.

Kowloon, Hong Kong, P.R. China TEL +852 39070500 asia@binder-world.com www.binder-world.com