

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

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

MAIN 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 that can be activated via MCS controller
- APT.line™ preheating chamber technology
- Programmable condensation protection for test material
- Heated viewing window with LED interior lighting
- Humidity regulation with capacitive humidity sensor and vapor humidification
- BINDER APT-COM™ 3 Basic Edition communication software
- Troubleshooting system with visual and audible alarms
- Controller with time-segment programming
- 2 access ports with silicone plugs: 80 mm, left and right
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm
- 4 castors, two with brakes
- Computer interface: Ethernet
- 230 V power socket on the right-side control panel
- Display via color LCD monitor
- 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
- BINDER test confirmation
- Inner chamber made of stainless steel
- Pt 100 temperature sensor
- Thermal insulation using PUR foam
- CFC-free refrigerant R-404A
- Cooling with compressor cooling unit
- Fin evaporator

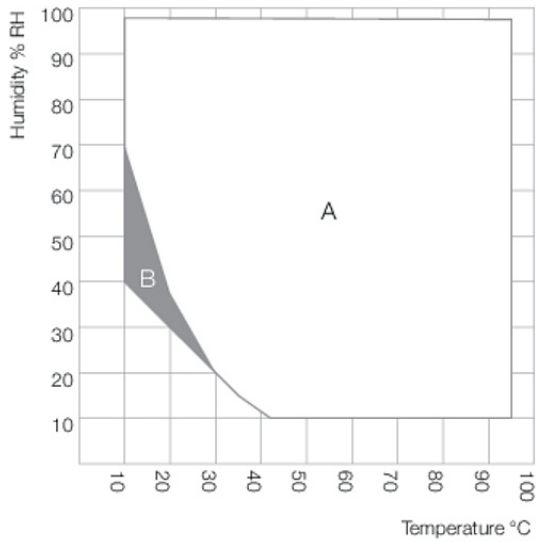
ORDERING INFORMATION

Interior volume [L]	Voltage	Option model	Version	Art.-No.
Model MKF 720				
734	400 V 3~ 50 Hz	Standard	MKF720-400V	9020-0287
	480 V 3~ 60 Hz	with voltage and frequency converter	MKF720-400V-C	9020-0299

TECHNICAL DATA

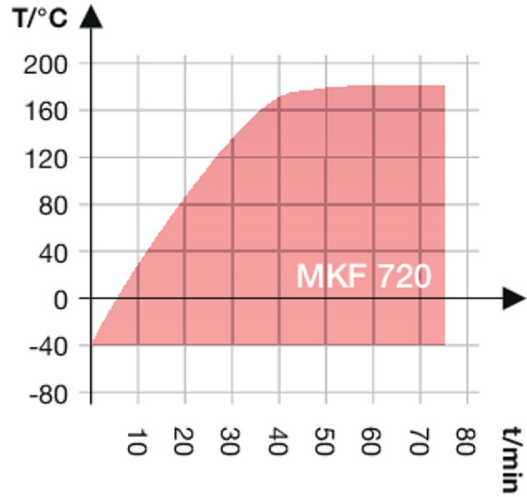
Description	MKF720-400V	MKF720-400V-C
Article Number	9020-0287	9020-0299
Performance Data Temperature		
Temperature range [°C]	-40...180	-40...180
Temperature variation depending on setpoint [± K]	0.1...1.8	0.1...1.8
Temperature fluctuation depending on setpoint [± K]	0.1...0.5	0.1...0.5
Average heating-up rate according to IEC 60068-3-5 [K/min]	4.8	4.8
Cooling down time from 180 °C to -40 °C [min]	118	118
Average cooling down time according to IEC 60068-3-5 [K/min]	4.8	4.8
Max. heat compensation at 25 °C [W]	6500	6500
Max. heat compensation at 25 °C at 90 % RH [W]	1000	1000
Performance Data Climate		
Temperature range [°C]	10...95	10...95
Temperature fluctuation depending on setpoint [± K]	0.2...1.5	0.2...1.5
Humidity range [% RH]	10...98	10...98
Humidity fluctuation depending on setpoint	≤2,5 ± % RH	≤2,5 ± % RH
Dew point temperature range [°C]	5...94	5...94
Electrical data		
Rated Voltage [V]	400	480
Power frequency [Hz]	50	60
Nominal power [kW]	11	11
Unit fuse [A]	32	32
Phase (Nominal voltage)	3~	3~
Measures - Outer dimensions		
Width net [mm]	1580	1580
Height net [mm]	2005	2005
Depth net [mm]	1140	1140
Wall clearance back [mm]	335	335
Wall clearance sidewise [mm]	300	300
Viewing window width [mm]	508	508
Viewing window height [mm]	300	300
Measures - Doors		
Unit doors	1	1
Measures - Internal Dimensions		
Width [mm]	1200	1200
Height [mm]	1020	1020
Depth [mm]	600	600
Measures		
Interior volume [L]	734	734
Net weight of the unit (empty) [kg]	590	590
permitted load [kg]	160	160
Load per rack [kg]	40	40
Environment-specific data		
Sound-pressure level [dB(A)]	65	67
Fixtures		
Number of shelves (standard/maximum)	1/11	1/11

CHARTS

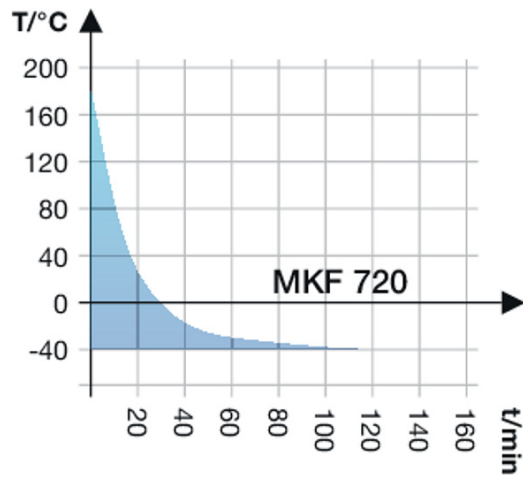


A: Standard Climate range
 B: Time-limited operation (max. 24 hours)

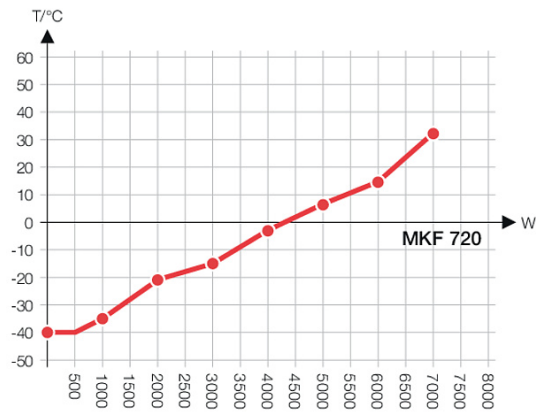
Climate chart



Heating up rate



Cooling down rate



Heat compensation chart

OPTIONS AND ACCESSORIES

Designation	Description	*	Art.-No.	
Access port	notch-type access port in door, 100 x 35 mm	-	8012-0683	
	30 mm, left	01	8012-0509	
	30 mm, right	01	8012-0508	
	50 mm, left	01	8012-0511	
	50 mm, right	01	8012-0510	
	80 mm, left	01	8012-0513	
	80 mm, right	01	8012-0512	
	Access port with silicone plug	80 mm, top	01	8012-0834
		100 mm, left	01, 11	8012-0836
		100 mm, right	01, 11	8012-0835
		100 mm, top	01, 11	8012-0832
		125 mm, left	01, 11	8012-0533
		125 mm, right	01, 11	8012-0532
		125 mm, top	01, 11	8012-0833
	Analog output, 4 – 20 mA	for temperature and humidity values (output not adjustable)	-	8012-0516
BINDER Pure Aqua Service	system for preparation or complete desalination of tap water, containing single-use cartridge, hoses and measuring device	-	8012-0759	
BINDER Pure Aqua Service, accessories	Single-use, replacement cartridge for BINDER Pure Aqua System	-	6011-0165	
Calibration certificate, expanded	for temperature and humidity, each additional measurement at additional points or sets of values	-	8012-0155	
Calibration certificate, temperature	temperature measurement incl. certificate and 27 measuring points at specified temperature	-	8012-0923	
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	-	8012-0920	
	temperature measurement incl. certificate, 9 measuring points at specified temperature	-	8012-0917	
Calibration certificate, temperature and humidity	for temperature and humidity, measurement in center of chamber at 25 °C / 60 % RH or at specified values	-	8012-0154	
	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	-	8012-0924	
Converter, voltage and frequency	to operate the device at a nominal voltage of 480 V 3 ph 60 Hz, 32 A	-	8009-0807	
Data Logger Kit	T 220: temperature logging from -90 °C to 220 °C	19	8012-0715	
	TH 100/70: temperature and humidity logging from -40 °C to 100 °C and 0 % to 100 % RH and additional combination sensor for recording environmental conditions	19	8012-0719	
	TH 100: temperature and humidity logging from -40 °C to 100 °C and 0 % to 100 % RH	19	8012-0718	
Data Logger Kit, 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	-	8012-0606	
Dry-air purge	regulated, incl. connection	-	8012-0751	
Dry-air purge, connection	for the connection to an existing pressurized air network	-	8012-0936	
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	
Lockable controller keyboard	Lockable controller keyboard with key-operated switch	-	8012-0530	
Magnetic Pouch (A4)	insert pouch with magnetic strip	-	1007-0065	

* Notes › See last page

Data Sheet Model MKF 720

Designation	Description	*	Art.-No.
Measuring channel for digital display of specimen temperature	with flexible Pt 100 temperature sensor, measured data recorded via unit interface	-	8012-0447
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	-	1002-0016
Rack	stainless steel	-	6004-0102
Rack, accessories	set of 4 fasteners for additional security	-	8012-0620
Rack, reinforced	stainless steel, with 1 set of 4 fasteners, max. load 70 kg	-	8012-0684
RS 422 interface	in place of Ethernet, for communication software	-	8012-0788
	modular plug distributor for 10 RS 422 interfaces	-	8012-0295
RS 422 interface, cable (15 m)	RS 422 connection cable (15 m) between plug distributor and RS 422 interface	-	5023-0036
RS 422 interface, cable (50 m)	RS 422 extension cable (50 m) between interface converter and unit or RS 232 / RS 422 plug distributor	-	5023-0117
Shelf, perforated	stainless steel	-	8009-0511
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
	APT-COM™ communications software, price: for free version 3, GLP DEMO Edition	19	9053-0008
Temperature safety device	for over- and under-temperature, Class 2 - with visual alarm (DIN 12880)	-	8012-0310
Water circuit	allows water to be reused	-	8012-0785
Water cooling	for reduced heat loss to ambient air	-	8012-0804

* 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	DL100300
Instruction	unit function instructions for operation and programming of the controller	18	DL100700
Preventive maintenance			
Preventive maintenance	Executive of equipment inspection according to maintenance plan	14, 18	DL200500
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	DL300301
Temperature and humidity measurement according to DIN12880	including certificate (27 temperature measuring points and 1 humidity measuring point, at 25 °C / 60 % RH or at specified values)	14, 16, 17, 18	DL300427
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	DL300318
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	DL300327
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	DL300309
Validation services			
Execution of IQ/OQ	in accordance with qualification folder	15, 18, 20	DL420300
Execution of IQ/OQ/PQ	in accordance with customer's requirement, price: on request	15, 18	DL440500
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	8012-0865

* Notes › See last page

Designation	Description	*	Art.-No.
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	8012-0953
Warranty service			
Extension of the warranty from 2 to 3 years	beginning with the date of delivery, wearing parts are not included	-	DL013041
Extension of the warranty from 2 to 5 years	beginning with the date of delivery, wearing parts are not included	-	DL013042

* 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.
- 05 Attention: The pump is delivered separately. The electric connection for the pump (230 V/1~/50 Hz) must be carried out by an authorized electrician.
- 06 Heating-up time may increase as a result of the lower heat conductivity.
- 07 The additional heat input may affect the temperature behavior.
- 08 The pump (packaged separately) is ready for connection.
- 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 (see the chapter on BINDER Service) 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 both items.
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.
- 21 ATEX conformity:
Pumping chamber (pumped gases): II 2G IIC T3 X
Environment with inert purge gas: II 2G IIB T4 X
Environment without inert purge gas: II 3G IIB T4 X
Motor: II 2G Ex d IIB T4 Gb

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.ru

**BINDER Environmental Testing
Equipment (Shanghai) Co., Ltd.**
Shangha, 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