

Model MKT 720 | Dynamic climate chambers for rapid temperature changes with extended low temperature range

Temperature ranges between -70 °C and 180 °C , with the added benefit of natural simulation, are what make the BINDER MKT series so unique. At the same time, this environmental simulation chamber fulfills the very highest precision and performance requirements for cyclical temperature tests.

BENEFITS

- Homogeneous climate conditions thanks to APT.line™ technology
- Comprehensive programming and data acquisition
- Large heated viewing window



Model 720



Model 720

IMPORTANT FEATURES

- Temperature range: -70 °C to $+180\text{ °C}$
- 4 zero-voltage relay contacts
- APT.line™ preheating chamber technology
- Programmable condensation protection for test material
- Heated viewing window with LED interior lighting
- BINDER Multi Management Software APT-COM™ 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
- 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
- Adjustable ramp function
- Integrated chart recorder
- Real-time clock
- Door heating
- 1 stainless steel rack
- Inner chamber made of stainless steel
- CFC-free refrigerants R-452A and R-23
- Cooling with cascade compressor cooling unit

ORDERING INFORMATION

Interior volume		Power supply - unit fuse	Plug*	Version	Model version	Art.-No.
[L]	[L]					
Model MKT 720						
734	734	400 V 3~ 50 Hz -32,0 A	CEE 32 / 6 H plug 5-pin	Standard	MKT720-400V	9020-0387
		480 V 3~ 60 Hz -32,0 A	CEE 32 / 6 H plug 5-pin	Standard	MKT720-480V-C	9020-0365

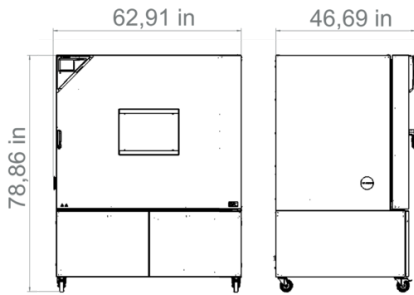
TECHNICAL DATA

Data		
Designation	MKT720-400V	MKT720-480V-C
Article Number	9020-0387	9020-0365
Option model	Standard	Standard
Performance Data Temperature		
Temperature range	-70...180 °C	-70...180 °C
Temperature uniformity dependent on set value	0.1...2.0 ± K	0.1...2.0 ± K
Temperature fluctuation dependent on set value	0.1...0.5 ± K	0.1...0.5 ± K
Average heating-up rate according to IEC 60068-3-5	4.5 K/min	4.5 K/min
Cooling down time from 180°C to -70°C	120 min	120 min
Average cooling down time according to IEC 60068-3-5	4.0 K/min	4.0 K/min
Electrical data		
Rated Voltage	400 V	480 V
Power frequency	50 Hz	60 Hz
Nominal power	13 kW	13 kW
Unit fuse	32,0 A	32,0 A
Phase (Nominal voltage)	3~	3~
Measures		
Interior volume	734 L	734 L
Net weight of the unit (empty)	610 kg	610 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		
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

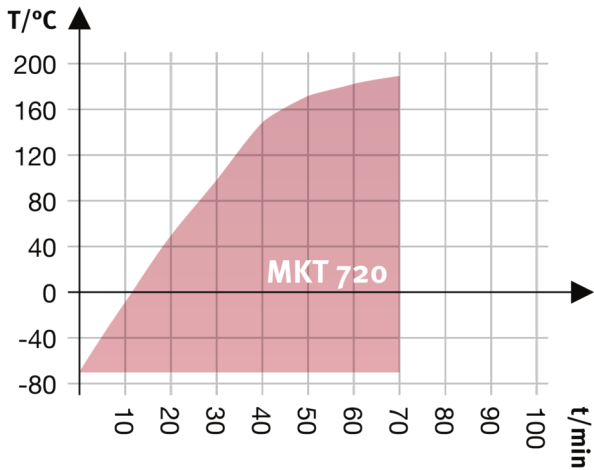
Interior height	1,020 mm	1,020 mm
Interior depth	600 mm	600 mm
Unit doors	1	1
Environment-specific data		
Sound-pressure level	65 dB(A)	67 dB(A)
Energy consumption at 20°C	1,900 Wh/h	1,900 Wh/h
Fixtures		
Number of shelves (std./max.)	1/11	1/11

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.

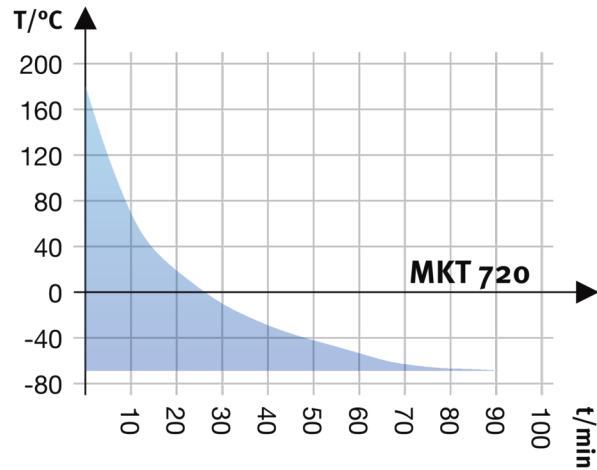
DIMENSIONS Incl. fittings and connections [mm]



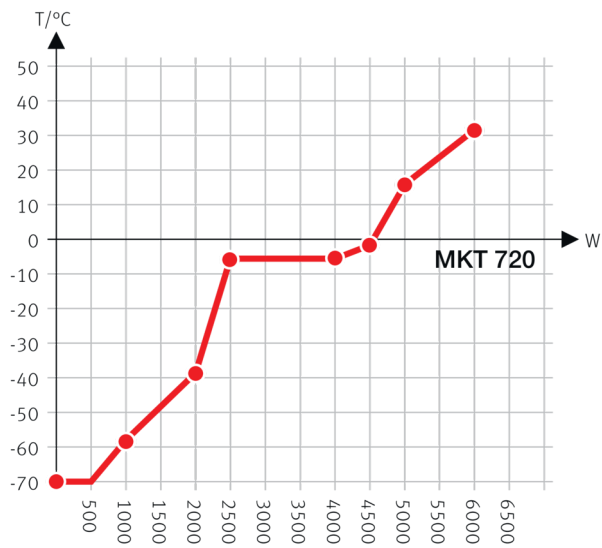
DIAGRAMS



Heating up rate



Cooling down rate



Heat compensation with a set value of -70°C

Heat compensation chart

OPTIONS

Designation	Description	MKT 720	*	Art.-No.
	left			
	30 mm	•	01	8012-1324
	50 mm	•	01	8012-1330
	80 mm	•	01	8012-1336
	100 mm	•	01	8012-1544
	125 mm	•	01	8012-1353
	right			
	30 mm	•	01	8012-1321
	50 mm	•	01	8012-1327
	80 mm	•	01	8012-1333
	100 mm	•	01	8012-1541
	125 mm	•	01	8012-1350
	top			
	80 mm	•	01	8012-1538
	100 mm	•	01	8012-1532
	125 mm	•	01	8012-1535

Designation	Description	MKT 720	*	Art.-No.
Analog output 4-20 mA	for temperature values (output not adjustable)	•	-	8012-1785
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	•	-	8012-1125
Calibration certificate, temperature	for temperature, measurement in center of chamber at specified temperature	•	-	8012-1144
	temperature measurement incl. certificate, 9 measuring points at specified temperature	•	-	8012-1561
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	•	-	8012-1582
	temperature measurement incl. certificate and 27 measuring points at specified temperature	•	-	8012-1603
Compressed air connection	for the connection to an existing pressurized air network	•	-	8012-1800
Door lock	lockable door handle	•	-	8012-1784
Dry-air purge	uncontrolled, incl. connection; for preventing condensation	•	-	8012-1868
Notch-type access port	notch-type access port in door, 100 x 35 mm	•	-	8012-1858
Pt 100 temperature sensor	additional flexible Pt 100, interior, for displaying the temperature on the unit display	•	-	8012-1790
RS 485 interface, 2-wire	Additional serial interface can be used parallel to Ethernet, for Multi Management Software APT-COM™	•	-	8012-1770
Temperature safety device class 2	with visual alarm (DIN 12880)	•	-	8012-1794

ACCESSORIES

Designation	Description	MKT 720	*	Art.-No.
APT-COM™ 4	Multi Management Software APT-COM™			
	version 4, GLP edition	•	-	9053-0042
	version 4, PROFESSIONAL edition	•	-	9053-0040
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, CO ₂ , O ₂ – or pressure, depending on unit			
	Digital in PDF format	•	-	7057-0005
	Hard copy inside folder	•	-	7007-0005
	IQ/OQ documents – supporting documents for validation performed by customers, consisting of: IQ/OQ checklists incl. calibration guide and comprehensive unit documentation; parameters: temperature, CO ₂ , O ₂ , pressure, depending on unit			
	Digital in PDF format	•	-	7057-0001
	Hard copy inside folder	•	-	7007-0001

Designation	Description	MKT 720	*	Art.-No.
RS 485 / RS 422 interface converter	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
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
Shelf, perforated	Stainless steel	•	-	8012-2253
WLAN kit	The kit contains a client bridge that establishes a wireless connection between BINDER units and APT-COM4, LIMS, or customer-specific software via an Ethernet interface. It provides an alternative solution in situations where units need to be positioned in locations without an on-site Ethernet connection. In secured networks, installation and configuration must be performed by the customer's IT service.	•	-	8012-2262
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	•	-	8012-2250

SERVICES

Designation	Description	*	Art.-No.
Calibration services			
Temperature calibration	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate Travel to be quoted separate.	-	DL30-0101
	Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate Travel to be quoted separate.	-	DL30-0102
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate. Travel to be quoted separate. A total of 3 shelves are required.	-	DL30-0109
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points with a set value specified by the user, including certificate. Travel to be quoted separate. A total of 2 shelves are required.	-	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate. Travel to be quoted separate. A total of 3 shelves are required.	-	DL30-0127
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
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
Maintenance services			

Designation	Description	*	Art.-No.
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	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 temperature and CO ₂ value, including certificate	–	DL20-0940
Leakage test	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	–	DL00-0034
Preventive maintenance	One-off maintenance service in accordance with maintenance schedule. Visual inspection of mechanical and electrical components, testing of all key functions. Checking a test temperature specified by the user in center of usable space without certificate. Wear + tear parts need to be purchased or billed to customer. Travel to be quoted as separate.	–	DL20-0500
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.	–	DL20-0830
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder. Travel to be quoted separate.	–	DL41-0200
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	–	DL50-0040

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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