Model MKT 115 | 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 115

Model 115

IMPORTANT FEATURES

- Temperature range: -70 °C to +180 °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
- Access port with silicone plug: 50 mm, left
- 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 [L]	Power supply - unit fuse	Plug*	Version	Model version	Art.-No.
Model MKT 115					
115	400 V 3~/N/PE 50 Hz -16,0 A	CEE 16 / 6 H plug 5-pin	Standard	MKT115-400V	9020-0385
	480 V 3~ 60 Hz -16,0 A	CEE 16 / 6 H plug 5-pin	with voltage and frequency converter	MKT115-480V-C	9020-0363

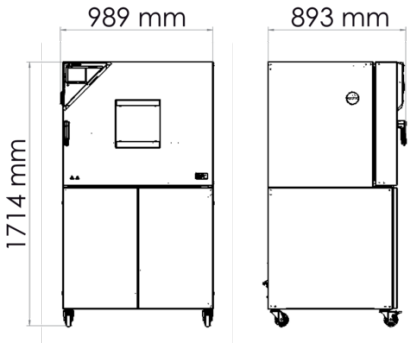
TECHNICAL DATA

Data		
Article Number	9020-0385	9020-0363
Designation	MKT115-400V	MKT115-480V-C
Option model	Standard	with voltage and frequency converter
Performance Data Temperature		
Temperature range	-70...180 °C	-70...180 °C
Temperature uniformity dependent on set value	0.2...1.8 ± K	0.2...1.8 ± K
Temperature fluctuation dependent on set value	0.1...0.6 ± K	0.1...0.6 ± K
Average heating-up rate according to IEC 60068-3-5 between -40°C and 180°C	5.3 K/min	5.3 K/min
Cooling down time from 180°C to -70°C	110 min	110 min
Average cooling down time according to IEC 60068-3-5 between 180°C and -40°C	4.2 K/min	4.2 K/min
Electrical data		
Rated Voltage	400 V	480 V
Power frequency	50 Hz	60 Hz
Nominal power	5,5 kW	5,5 kW
Unit fuse	16,0 A	16,0 A
Phase (Nominal voltage)	3~/N/PE	3~
Dimensions and weights		
Interior volume	115 L	115 L
Net weight of the unit (empty)	305 kg	305 kg
Load per rack	30 kg	30 kg
Permitted load	60 kg	60 kg
Wall clearance back	300 mm	300 mm
Wall clearance sidewise	200 mm	200 mm
Housing dimensions not incl. fittings and connections		
Width net	980 mm	980 mm
Height net	1,725 mm	1,725 mm
Depth net	865 mm	865 mm
Internal Dimensions		

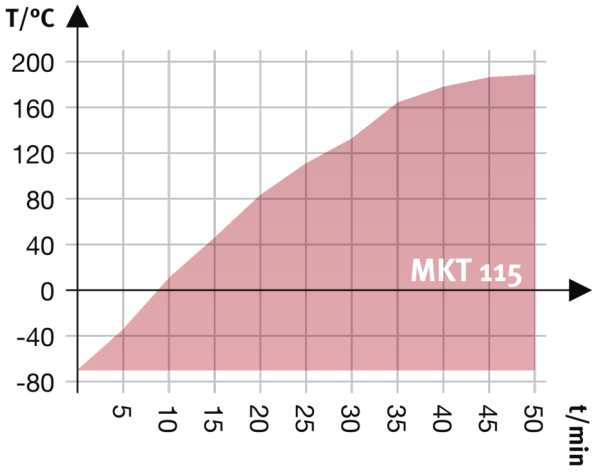
Interior width	600 mm	600 mm
Interior height	480 mm	480 mm
Interior depth	400 mm	400 mm
Unit doors	1	1
Environment-specific data		
Sound-pressure level	64 dB(A)	67 dB(A)
Fixtures		
Number of shelves (std./max.)	1/4	1/4

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.

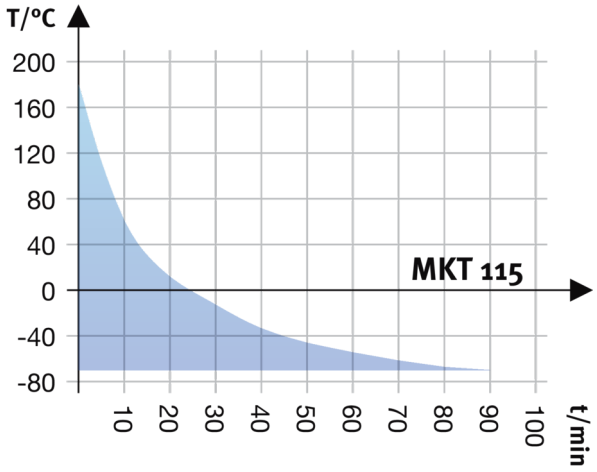
DIMENSIONS Incl. fittings and connections [mm]



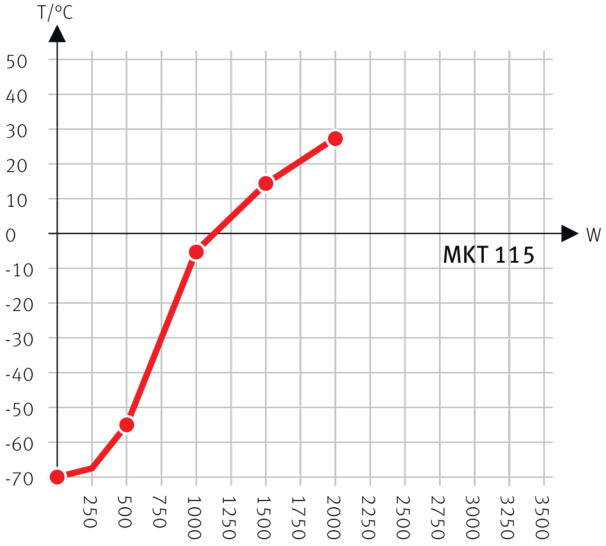
DIAGRAMS



Heating up rate



Cooling down rate



Heat compensation with a set value of -70°C

Heat compensation chart

OPTIONS

Designation	Description	MKT 115	*	Art.-No.
	left			
	30 mm	•	01	8012-1324
	50 mm	•	01	8012-1330
Access port with silicone plug	80 mm	•	01	8012-1336
	100 mm	•	01	8012-1544
	125 mm	•	01	8012-1353
	right			

Designation	Description	MKT 115	*	Art.-No.
	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
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	•	-	8012-1804
Door lock	lockable door handle	•	-	8012-1784
Dry-air purge	uncontrolled, incl. connection; for preventing condensation	•	-	8012-1805
Notch-type access port	notch-type access port in door, 100 x 35 mm	•	-	8012-1852
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 115	*	Art.-No.
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.			

Designation	Description	MKT 115	*	Art.-No.
	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
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	•	-	8012-2250
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
Rack	stainless steel	•	-	8012-2048
Rack, reinforced	stainless steel, with fasteners (1 set of 4)	•	-	8012-0709
Rack accessories	fasteners (1 set of 4) for additional security of racks	•	-	8012-2280
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

SERVICES

Designation	Description	*	Art.-No.
Calibration services			
Calibration certificate, temperature	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate	05	DL30-0130
	Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate	05	DL30-0102
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate	05	DL30-0109
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points with a set value specified by the user, including certificate	05	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate	05	DL30-0127

Designation	Description	*	Art.-No.
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)	05	DL10-0170
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming	05	DL10-0560
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	05	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/humidity/pressure value, including certificate	05	DL20-0930
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	05	DL20-0830
Maintenance services			
Leakage test	Testing and logging of the leak-tightness of systems containing hydrofluorocarbons in accordance with Regulation EC842/2006, incl. test book	05	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	05	DL20-0607
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	05	DL41-0200
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	05	DL44-0500
Warranty service			
1-year warranty extension	The warranty is extended by 1 year from the delivery date, wear parts are excluded	05	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.

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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