

# 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

## MAIN 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 (Models 115, 240: 50 mm, left)
- 2 access ports with silicone plugs (Model 720: 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
- 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

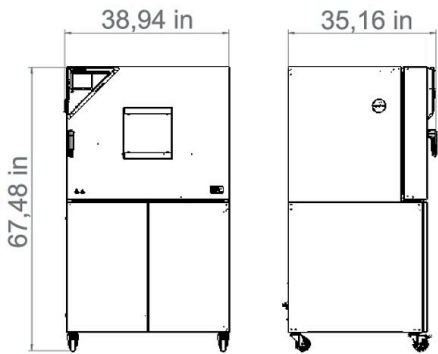
Interior volume [cu.ft.]	Voltage	Option model	Version	Art.-No.
4.1	400 V 3~ 50 Hz	Standard	MKT115-400V	9020-0385
	480 V 3~ 60 Hz	Standard	MKT115-480V-C	9020-0363

**TECHNICAL DATA**

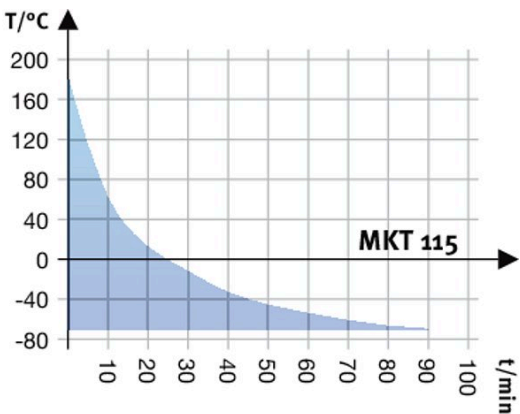
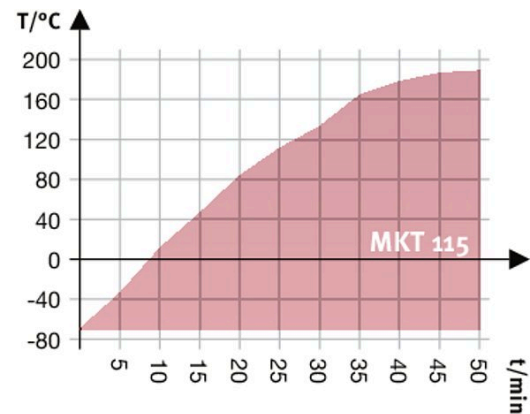
Description	MKT115-400V <sup>1</sup>	MKT115-480V-C <sup>1</sup>
Article Number	9020-0385	9020-0363
<b>Performance Data Temperature</b>		
Temperature range	-70...180	-70...180
Temperature variation depending on setpoint [± K]	0.2...1.8	0.2...1.8
Temperature fluctuation depending on setpoint [± K]	0.1...0.6	0.1...0.6
Average heating-up rate according to IEC 60068-3-5 [K/min]	5.3	5.3
Cooling down time from 180 °C to -70 °C [min]	110	110
Average cooling down time according to IEC 60068-3-5 [K/min]	4.2	4.2
Max. heat compensation at 25 °C [W]	1500	1500
<b>Electrical data</b>		
Rated Voltage [V]	400	480
Power frequency [Hz]	50	60
Nominal power [kW]	5.5	5.5
Unit fuse [A]	16	16
Phase (Nominal voltage)	3~	3~
<b>Measures</b>		
Interior volume [cu.ft.]	4.1	4.1
Net weight of the unit (empty) [lbs]	672	492
Permitted load [lbs]	132	132
Load per rack [lbs]	66	66
Viewing window width [in]	8.98	8.98
Viewing window height [in]	8.75	8.75
Wall clearance back [in]	11.82	11.82
Wall clearance sidewise [in]	7.88	7.88
<b>Internal Dimensions</b>		
Width [in]	23.64	23.64
Height [in]	18.91	18.91
Depth [in]	15.76	15.76
<b>Doors</b>		
Unit doors	1	1
<b>Housing dimensions not incl. fittings and connections</b>		
Width net [in]	38.61	38.61
Height net [in]	68	68
Depth net [in]	34.08	34.08
<b>Environment-specific data</b>		
Sound-pressure level [dB(A)]	64	67
<b>Fixtures</b>		
Number of shelves (std./max.)	1/4	1/4

1 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.

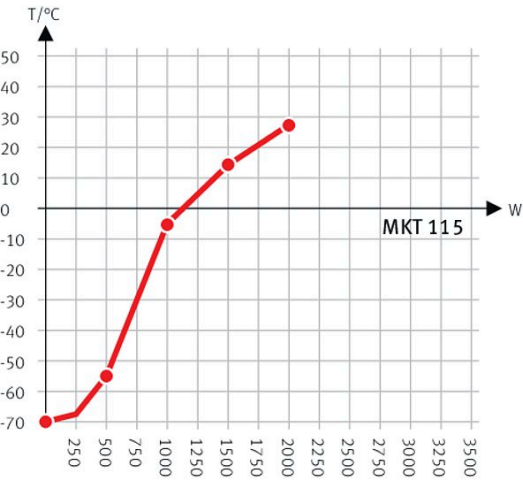
DIMENSIONS INCL. FITTINGS AND CONNECTIONS [MM]



CHARTS



Heating up rate



Heat compensation with a set value of -70°C

Heat compensation chart

Cooling down rate

## OPTIONS

Designation	Description	*	Art.-No.
<b>Access port with silicone plug</b>	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
<b>Analog output 4-20 mA</b>	for temperature values (output not adjustable)	–	8012-1785
<b>Calibration certificate, expanded</b>	for temperature; for extending the measurement in center of chamber to include another test temperature	–	8012-1125
<b>Calibration certificate, temperature</b>	for temperature, measurement in center of chamber at specified temperature	–	8012-1144
	temperature measurement incl. certificate and 27 measuring points at specified temperature	–	8012-1603
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	–	8012-1582
	temperature measurement incl. certificate, 9 measuring points at specified temperature	–	8012-1561
<b>Compressed air connection</b>	for the connection to an existing pressurized air network	–	8012-1804
<b>Door lock</b>	lockable door handle	–	8012-1784
<b>Dry-air purge</b>	uncontrolled, incl. connection; for preventing condensation	–	8012-1805
<b>Notch-type access port</b>	notch-type access port in door, 100 x 35 mm	–	8012-1852
<b>Pt 100 temperature sensor</b>	additional flexible Pt 100, interior, for displaying the temperature on the unit display	–	8012-1790
<b>RS 485 interface, 2-wire</b>	Additional serial interface can be used parallel to Ethernet, for Multi Management Software APT-COM™	–	8012-1770
<b>Temperature safety device class 2</b>	with visual alarm (DIN 12880)	–	8012-1794

\* Notes › See last page

## ACCESSORIES

Designation	Description	*	Art.-No.
<b>Data Logger Kit</b>	T 220: For continuous temperature logging from -90 °C to 220 °C. The kit includes 1 data logger, Pt 100 sensor with 2 m extension cable and 1 magnetic fixture for mounting to the BINDER unit	–	8012-0715
<b>Multi Management Software</b>	Multi Management Software APT-COM™		
	version 4, GLP edition	–	9053-0042
	version 4, PROFESSIONAL edition	–	9053-0040
<b>pH-neutral detergent</b>	concentrated, for gentle remove of residual contaminants; 1 kg	–	1002-0016

\* Notes › See last page

Designation	Description	*	Art.-No.
<b>Qualification documents</b>	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 <sub>2</sub> , O <sub>2</sub> , pressure, depending on unit		
	Digital in PDF format	–	7057-0001
	Hard copy inside folder	–	7007-0001
	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 <sub>2</sub> , O <sub>2</sub> – or pressure, depending on unit		
	Digital in PDF format	–	7057-0005
	Hard copy inside folder	–	7007-0005
<b>Rack</b>	stainless steel	–	6004-0008
<b>Rack accessories</b>	fasteners (1 set of 4) for additional security of racks	–	8012-0620
<b>Rack, reinforced</b>	stainless steel, with fasteners (1 set of 4)	–	8012-0709
<b>RS 485 / RS 422 interface converter</b>	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
<b>Shelf, perforated</b>	Stainless steel	–	6004-0030

\* Notes › See last page

## SERVICES

Designation	Description	*	Art.-No.
<b>Installation services</b>			
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)	05	DL10-0300
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming	05	DL10-0700
<b>Maintenance services</b>			
Leakage test	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 chamber without certificate	05	DL00-0034
Maintenance	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 chamber without certificate	05	DL20-0500
<b>Calibration services</b>			
Temperature calibration	Calibration of one (1) test temperature specified by the user in center of chamber including certificate	03, 04, 05	DL30-0101
	Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate	03, 04, 05	DL30-0102
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points with a set value specified by the user, including certificate	03, 04, 05	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate	03, 04, 05	DL30-0127
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate	03, 04, 05	DL30-0109
<b>Validation services</b>			
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
<b>Warranty service</b>			
Warranty extension from 2 to 3 years	The warranty is extended from 2 to 3 years from the delivery date, wear parts are excluded	–	DL01-2041
Warranty extension from 2 to 5 years	The warranty is extended from 2 to 5 years from the delivery date, wear parts are excluded	–	DL01-2042

\* 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    Sensor calibration is performed in an accredited calibration laboratory.  
04    Calibration is performed according to the BINDER factory standard.  
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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