

# Model MK 115 | Dynamic climate chambers for rapid temperature changes

The BINDER MK series chamber is suitable for all heat and cold tests between -40 °C and 180 °C. The MK is a clever alternative to complex individual solutions 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: -40 °C to 180 °C
- 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 56, 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 (Models 115, 240, 720)
- Adjustable ramp function
- Integrated chart recorder
- Real-time clock
- Door heating
- 1 stainless steel rack
- Inner chamber made of stainless steel
- CFC-free refrigerant R-452A
- Cooling with compressor cooling unit

## ORDERING INFORMATION

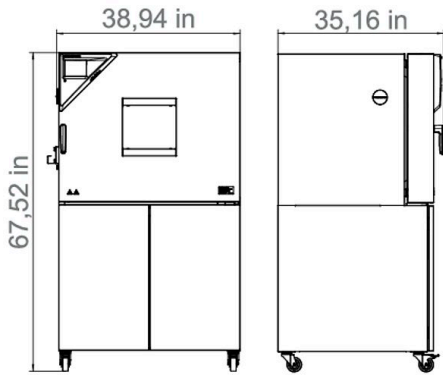
Interior volume [cu.ft.]	Voltage	Option model	Version	Art.-No.
4.1	400 V 3~ 50 Hz	Standard	MK115-400V	9020-0375
	480 V 3~ 60 Hz	Standard	MK115-480V-C	9020-0303

**TECHNICAL DATA**

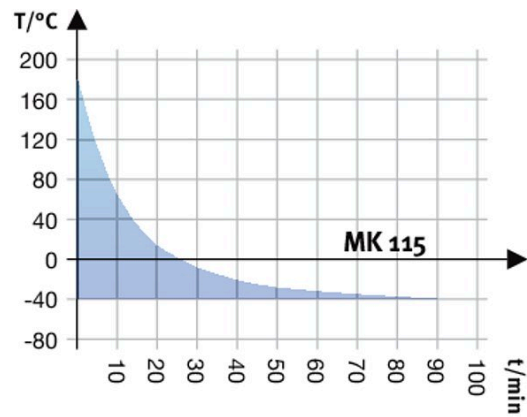
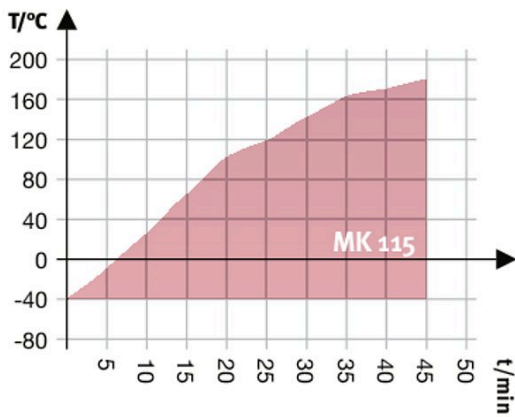
Description	MK115-400V <sup>1</sup>	MK115-480V-C <sup>1</sup>
<b>Article Number</b>	<b>9020-0375</b>	<b>9020-0303</b>
<b>Performance Data Temperature</b>		
Temperature range	-40...180	-40...180
Temperature variation depending on setpoint [± K]	0.1...2	0.1...2
Temperature fluctuation depending on setpoint [± K]	0.1...0.5	0.1...0.5
Average heating-up rate according to IEC 60068-3-5 [K/min]	5.3	5.3
Cooling down time from 180 °C to -40 °C [min]	90	90
Average cooling down time according to IEC 60068-3-5 [K/min]	5	5
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]	3.5	3.5
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]	573	430
Permitted load [lbs]	132	132
Load per rack [lbs]	66	66
Viewing window width [in]	11.35	11.35
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)]	62	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.

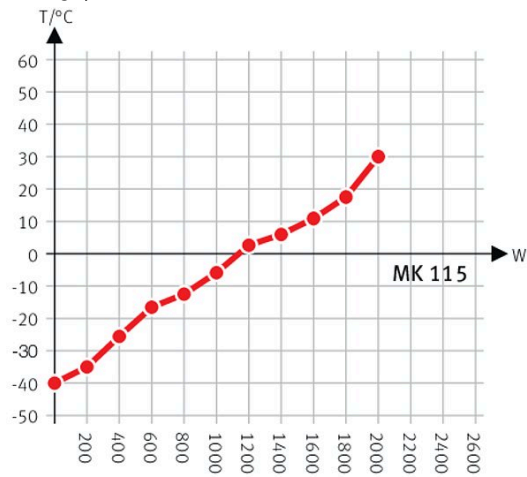
**DIMENSIONS INCL. FITTINGS AND CONNECTIONS [MM]**



**CHARTS**



Heating up rate



Heat compensation with a set value of -40°C

Cooling down rate

Heat compensation chart

**OPTIONS**

Designation	Description	*	Art.-No.
<b>Calibration certificate, temperature</b>	temperature measurement incl. certificate and 27 measuring points at specified temperature	-	8012-1602
	additional flexible Pt 100, interior, for displaying the temperature on the unit display	-	8012-1093
	Additional serial interface can be used parallel to Ethernet, for Multi Management Software APT-COM™	-	8012-1768
	for controlling 3 relay contacts via program regulators, accessible via 6-pin DIN socket (max. 24 V - 2.5 A)	-	8012-1095
	for temperature values (output not adjustable)	-	8012-1084
	for temperature; for extending the measurement in center of chamber to include another test temperature	-	8012-1124
	for the connection to an existing pressurized air network	-	8012-1801
	left		
	30 mm	01	8012-1322
	50 mm	01	8012-1328
	80 mm	01	8012-1334
	100 mm	01, 11	8012-1542
	125 mm	01, 11	8012-1351
	lockable door handle	-	8012-1861
Measurement in center of chamber at specified temperature	-	8012-1143	
<b>Options/Accessories</b>	notch-type access port in door, 100 x 35 mm	-	8012-1849
	right		
	30 mm	01	8012-1319
	50 mm	01	8012-1325
	80 mm	01	8012-1331
	100 mm	01, 11	8012-1539
	125 mm	01, 11	8012-1348
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	-	8012-1581
	temperature measurement incl. certificate, 9 measuring points at specified temperature	-	8012-1560
	top		
	80 mm	01	8012-1536
	100 mm	01, 11	8012-1530
	125 mm	01, 11	8012-1533
	uncontrolled, incl. connection; for preventing condensation	-	8012-1087
with visual alarm (DIN 12880)	-	8012-1792	

\* Notes › See last page

**ACCESSORIES**

Designation	Description	*	Art.-No.
<b>Multi Management Software</b>	Multi Management Software APT-COM™		
	version 4, GLP edition	19	9053-0042
	version 4, PROFESSIONAL edition	19	9053-0040

\* Notes › See last page

Designation	Description	*	Art.-No.
	Stainless steel	-	6004-0030
	stainless steel	-	6004-0008
	concentrated, for gentle remove of residual contaminants; 1 kg	-	1002-0016
	fasteners (1 set of 4) for additional security of racks	-	8012-0620
	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
<b>Options/Accessories</b>	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
	LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable)	19	8012-0821
	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
	stainless steel, with fasteners (1 set of 4)	-	8012-0709
	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	19	8012-0715

\* Notes › See last page

## SERVICES

Designation	Description	*	Art.-No.
<b>Installation services</b>			
Services	Unit function instructions for operation and programming of the controller	18	DL10-0700
	Unpacking and setting up of unit, connecting to existing connections, and checking function	13, 18	DL10-0300
<b>Preventive maintenance</b>			
Services	Executive of equipment inspection according to maintenance plan	14, 18	DL20-0500
<b>Calibration services</b>			
	Expansion – including certificate, each additional measuring point in center of chamber at specified test temperature	14, 16, 17, 18	DL30-0102
	Temperature calibration with 1 measuring point in center of chamber at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0101
Services	Temperature measurement with 18 measuring points at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0118
	Temperature measurement with 27 measuring points at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0127
	Temperature measurement with 9 measuring points at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0109
<b>Validation services</b>			
Services	Execution of IQ/OQ in accordance with qualification folder	15, 18	DL41-0200
	Execution of IQ/OQ/PQ in accordance with qualification folder	15, 18	DL44-0500
<b>Warranty service</b>			
Services	The warranty is extended from 2 to 3 years from the delivery date, wear parts are excluded	-	DL01-1041
	The warranty is extended from 2 to 5 years from the delivery date, wear parts are excluded	-	DL01-1042

\* Notes › See last page

**NOTES**

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