

# Model M 115 | Drying and heating chambers with forced convection and advanced program functions

With a maximum of +300 °C and various programming options the M series material test chambers are ideal for material and aging tests. With a high air flow, the powerful fans ensure rapid heating.

## BENEFITS

- Uniform drying conditions thanks to APT.line™ technology
- Identical test conditions throughout the chamber interior independent of sample size and quantity
- Outstanding thermal insulation saves operation costs
- Advanced programming options



Model 115



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## IMPORTANT FEATURES

- Temperature range: +23°C above ambient temperature to +300°C
- High temperature accuracy thanks to APT.line™ technology with increased heating output
- Reinforced fan with adjustable speed
- Electromechanical control of the exhaust air flap
- Intuitive touchscreen controller with time-segment and real-time programming
- 2 chrome-plated racks
- Class 2 independent adjustable temperature safety device (DIN 12880) and class 3.1 independent temperature safety device (DIN 12880) with visual/ acoustic alarm available for selection on the controller
- Failsafe function – backup sensor Pt 100
- Computer interface: Ethernet
- Internal data logger, measured values can be read out in open format via USB

## ORDERING INFORMATION

Interior volume	Power supply - unit fuse	Plug*	Version	Model version	Art.-No.
[L]	[L]				
<b>Model M 115</b>					
113	113	230 V 1~ 50/60 Hz -12,5 A	CEE 7/7	Standard	M115-230V 9010-0372

## TECHNICAL DATA

Data	
Designation	M115-230V
Article Number	9010-0372
Option model	Standard
Performance Data Temperature	
Temperature range	+23 °C above ambient temperature to 300 °C
Temperature uniformity at 150°C	1.0 ± K
Temperature fluctuation at 150°C	0.2 ± K
Heating up time to 150°C	11 min
Recovery time after door was opened for 30 s at 150°C	6 min
Air change data	
Air change rate at 100°C	105 x/h
Electrical data	
Rated Voltage	230 V
Power frequency	50/60 Hz
Nominal power	2,4 kW
Unit fuse	12,5 A
Phase (Nominal voltage)	1~
Measures	
Interior volume	113 L
Net weight of the unit (empty)	58 kg
Load per rack	30 kg
Permitted load	150 kg
Wall clearance back	160 mm
Wall clearance sidewise	100 mm
Housing dimensions not incl. fittings and connections	
Width net	710 mm
Height net	732 mm
Depth net	636 mm
Internal Dimensions	

Interior width	550 mm
Interior height	550 mm
Interior depth	375 mm
Unit doors	1

#### Environment-specific data

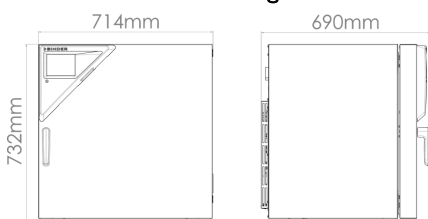
Sound-pressure level	46 dB(A)
Energy consumption at 100°C	250 Wh/h
Energy consumption at 150°C	410 Wh/h

#### Fixtures

Number of shelves (std./max.)	2/5
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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]



#### OPTIONS

Designation	Description	*	Art.-No.
	left		
	10 mm	01	8012-2296
	30 mm	01	8012-2302
	50 mm	01	8012-2305
	100 mm	01	8012-2299
Access port with silicone plug	right		
	10 mm	01	8012-2298
	30 mm	01	8012-2304
	50 mm	01	8012-2307
	100 mm	01	8012-2301

Designation	Description	*	Art.-No.
	top		
	10 mm	01	8012-2297
	30 mm	01	8012-2303
	50 mm	01	8012-2306
	100 mm	01	8012-2300
Analog output 4-20 mA	for temperature values (output not adjustable)	02	8012-2295
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	-	8012-2328
	for temperature, measurement in center of chamber at specified temperature	-	8012-2324
Calibration certificate, temperature	temperature measurement incl. certificate, 9 measuring points at specified temperature	-	8012-2327
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	-	8012-2325
	temperature measurement incl. certificate and 27 measuring points at specified temperature	-	8012-2326
Door gasket	made of FKM, silicone-free	-	8012-2332
Door lock	lockable door handle	-	8012-2335
Gas-tight option model	Incl. additional measures for the greatest possible impermeability to gas; not in conjunction with access port or interior lighting option	-	8012-2309
HEPA air filter	On fresh air supply for unit; filter classification H14 (acc. to. EN 1822-1:2009, > 99.995% at 0,3 µm); not in conjunction with reinforced heating output, reinforced fan	-	8012-2312
Inert gas connection	With gas inlet and outlet, Ø 10 mm, incl. additional measures for the greatest possible impermeability to gas; not in conjunction with access port or interior lighting option	-	8012-2316
Inner chamber, reinforced	max. total load 170 kg	-	8012-2321
Interior lighting	with 27 W light bulb		
	230/240 V option model	-	8012-2318
Measurement of air exchange rate	in accordance with ASTM D5374, definition and protocol according to ambient temperature	-	8012-2329
Pt 100 temperature sensor	additional flexible Pt 100, interior, for displaying the temperature on the unit display	-	8012-2330
Specimen temperature control	With additional specimen temperature sensor. Standard function 2 zero-voltage relay contacts not applicable.	-	8012-2343

## ACCESSORIES

Designation	Description	*	Art.-No.
APT-COM™ 4	Multi Management Software APT-COM™		

Designation	Description	*	Art-No.
	version 4, BASIC edition	-	9053-0039
	version 4, GLP edition	-	9053-0042
	version 4, PROFESSIONAL edition	-	9053-0040
Base	the base equipped with casters is used for the secure positioning and leveling of a BINDER drying and heating chamber	-	9051-0033
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 <sub>2</sub> , O <sub>2</sub> – 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 <sub>2</sub> , O <sub>2</sub> , pressure, depending on unit		
	Digital in PDF format	-	7057-0001
	Hard copy inside folder	-	7007-0001
Rack	max. load per rack 30 kg		
	chrome plated	-	8012-2040
	stainless steel	-	8012-2168
Rubber pads	set anti-slip feet	-	8012-2030
Shelf, perforated	max. load per rack 30 kg		
	Stainless steel	-	8012-2176
Table on castors	stable cart, casters with locking brakes, dimensions: W 1,000 x D 800 x H 780 mm	-	9051-0018
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	-	8012-2250

## SERVICES

Designation	Description	*	Art-No.
<b>Calibration services</b>			
Measurement of air exchange rate	including certificate (in accordance with ASTM D5374)	-	DL33-0000
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

Designation	Description	*	Art.-No.
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
<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) Travel to be quoted as separate.	–	DL10-0100
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.	–	DL10-0500
<b>Maintenance services</b>			
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	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate of Temperature. 25% 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. Wear + tear parts to be purchased or billed to customer. Travel to be quoted separate.	–	DL20-0910
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.	–	DL20-0200
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.	–	DL20-0810
<b>Validation services</b>			
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
<b>Warranty service</b>			
1-year warranty extension	The warranty is extended by 1 year from the delivery date, wear parts are excluded	–	DL50-0010

**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.

**BINDER GmbH**

Tuttlingen, Germany  
TEL +49 7462 2005 0  
FAX +49 7462 2005 100  
info@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

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

Shanghai, P.R. China  
TEL +86 21 685 808 25  
FAX +86 21 685 808 29  
china@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