

# 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



Model 115

#### **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
- 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
- Intuitive touchscreen controller with time-segment and real-time programming Internal data logger, measured values can be read out in open format via USB

#### ORDERING INFORMATION

Interior volume [L]	Power supply - unit fuse	Plug*	Version	Model version	ArtNo.
Model M 115					
113	230 V 1~ 50/60 Hz -12,5 A	CEE 7/7	Standard	M115-230V	9010-0372



## TECHNICAL DATA

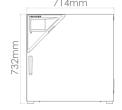
TECHNICAL DATA	
Data	
Designation	M115-230V
Article Number	9010-0372
Option model	Standard
Performance Data Temperature	
Temperature range	+23 °C above ambient temperature to 300 °C
Temperature uniformity at 150°C	1.0 ± K
Temperature fluctuation at 150°C	0.2 ± K
Heating up time to 150°C	11 min
Recovery 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~
Dimensions and weights	
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	



550 mm
550 mm
375 mm
1
46 dB(A)
250 Wh/h
410 Wh/h
2/5

All technical data is specified for unloaded units with standard equipment at an ambient temperature of  $\pm 22$  °C  $\pm 3$  °C and a power supply voltage fluctuation of  $\pm 10$  %. 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	*	ArtNo.
	left		
	10 mm	01	8012-2296
	30 mm	01	8012-2302
Access port with silicone plug	50 mm	01	8012-2305
	100 mm	01	8012-2299
	right		
	10 mm	01	8012-2298
	30 mm	01	8012-2304
	50 mm	01	8012-2307
	100 mm	01	8012-2301



Designation	Description	*	ArtNo.
	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 measurement incl. certificate, 9 measuring points at specified temperature	-	8012-2327
temperature	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 $\mu$ m); not in conjunction with reinforced heating output, reinforced fan	-	8012-2312
Inert gas connection	With gas inlet and outlet, $\emptyset$ 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		
Interior lighting	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. (Not combined with specimen temperature control option)	-	8012-2330
Specimen temperature control	With additional specimen temperature sensor. Standard function 2 zero-voltage relay contacts not applicable.	-	8012-2343

### **ACCESSORIES**

Designation	Description	*	ArtNo.
APT-COM™ 4 BASIC-Edition	for simple logging and documentation requirements with up to 5 networked units.		



Description	*	ArtNo.
version 4, BASIC edition	-	9053-0039
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.		
version 4, GLP edition	-	9053-0042
convenient unit and user management built on the BASIC edition. Suitable for networking up to 100 units.		
version 4, PROFESSIONAL edition	-	9053-0040
the base equipped with casters is used for the secure positioning and leveling of a BINDER drying and heating chamber	-	9051-0033
concentrated, for gentle remove of residual contaminants; 1 kg	-	8012-2250
$IQ/OQ/PQ$ 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, ${\rm CO_2}$ , opressure, depending on unit		
Digital in PDF format	-	7057-0001
Hard copy inside folder	-	7007-0001
max. load per rack 30 kg		
chrome plated	-	8012-2040
stainless steel	-	8012-2168
set anti-slip feet	-	8012-2030
max. load per rack 30 kg		
Stainless steel	-	8012-2176
stable cart, casters with locking brakes, dimensions: W 1,000 x D 800 x H 780 mm	-	9051-0018
	version 4, BASIC 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.  version 4, GLP edition  convenient unit and user management built on the BASIC edition. Suitable for networking up to 100 units.  version 4, PROFESSIONAL edition  the base equipped with casters is used for the secure positioning and leveling of a BINDER drying and heating chamber  concentrated, for gentle remove of residual contaminants; 1 kg  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>3</sub> — or pressure, depending on unit  Digital in PDF format  Hard copy inside folder  IQ/OQ documents — supporting documents for validation performed by customers, consisting of: IQ/OQ excludes and comprehensive unit documentation; parameters: temperature, CO <sub>2</sub> , O <sub>3</sub> , pressure, depending on unit  Digital in PDF format  Hard copy inside folder  max. load per rack 30 kg  chrome plated  stainless steel  set anti-slip feet  max. load per rack 30 kg  Stainless steel	version 4, BASIC 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.  version 4, GLP edition  convenient unit and user management built on the BASIC edition. Suitable for networking up to 100 units.  version 4, PROFESSIONAL edition  the base equipped with casters is used for the secure positioning and leveling of a BINDER drying and heating chamber  concentrated, for gentle remove of residual contaminants; 1 kg  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>3</sub> – or pressure, depending on unit  Digital in PDF format  Hard copy inside folder  IQ/OQ documents – supporting documents for validation performed by customers, consisting of: IQ/OQ pressure, depending on unit  Digital in PDF format  Hard copy inside folder  TQ/OQ documents – supporting documents for validation performed by customers, consisting of: IQ/OQ pressure, depending on unit  Digital in PDF format  Hard copy inside folder  TQ/OQ documents – supporting documents for validation performed by customers, consisting of: IQ/OQ pressure, depending on unit  Digital in PDF format  Hard copy inside folder  TQ/OQ documents – supporting documents for validation performed by customers, consisting of: IQ/OQ pressure, depending on unit  Digital in PDF format  TQ/OQ documents – supporting documents for validation performed by customers, consisting of: IQ/OQ pressure, depending on unit  Digital in PDF format  TQ/OQ documents – supporting documents for validation performed by customers, consisting of: IQ/OQ pressure, depending on unit  Digital in PDF format  TQ/OQ documents – supporting documents for validation performed by customers, consisting of: IQ/OQ pressure, depending on unit

### **SERVICES**

Designation	Description	*	ArtNo.
Calibration services			
Calibration certificate, temperature	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate	-	DL30-0120
	Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate	-	DL30-0102



Designation	Description	*	ArtNo.
Measurement of air exchange rate	including certificate (in accordance with ASTM D5374)	-	DL33-0000
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate	-	DL30-0109
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points with a set value specified by the user, including certificate	-	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate	-	DL30-0127
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)	-	DL10-0100
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming	05	DL10-0500
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	-	DL20-0720
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 test temperature specified by the user in the center of the usable space, including certificate	-	DL20-0910
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	-	DL20-0810
Maintenance services			
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	-	DL20-0602
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	-	DL41-0200
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	-	DL44-0500
Warranty service			
1-year warranty extension	The warranty is extended by 1 year from the delivery date, wear parts are excluded	-	DL50-0010



#### **NOTES**

- O1 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.
- 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).

## BINDER GmbH

Tuttlingen, Germany TEL +49 7462 2005 0 info@binder-world.com www.binder-world.com BINDER Inc.

Bohemia, NY, USA TEL +1 631 224 4340 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 china@binder-world.com www.binder-world.com

## BINDER Asia Pacific (Hong Kong) Ltd.

Kowloon, Hong Kong, P.R. China TEL +852 39070500 asia@binder-world.com www.binder-world.com