# 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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## MAIN FEATURES

- Temperature range: room temperature plus 5 °C to 300 °C
- APT.line™ preheating chamber technology
- Adjustable fan speed
- Program-controlled ventilation flap
- Color LCD controller with time-segment programming
- 2 chrome-plated racks
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm
- Computer interface: RS 422

## ORDERING INFORMATION

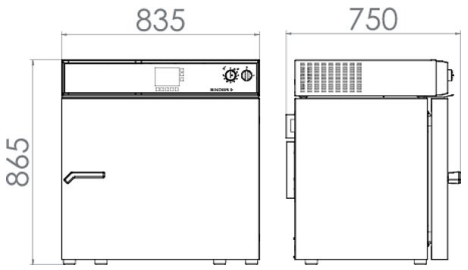
| Interior volume [L] | Voltage | Option model | Version | Art.-No. |
|---|---|---|---|---|
| 115 | 230 V 1~ ph 50/60 Hz | Standard | M115-230V | 9010-0202 |

## TECHNICAL DATA

| | |
|---|---|
| Description | M115-230V[1] |
| Article Number | 9010-0202 |
| Performance Data Temperature | |
| Temperature range 5 °C above ambient temperature to | 300 °C |
| Temperature variation at 150 °C [± K] | 1.5 |
| Temperature fluctuation at 150 °C [± K] | 0.3 |
| Heating-up time to 150 °C [min] | 16 |
| Recovery time after 30 seconds door open at 150 °C [min] | 3 |
| Air change data | |
| Air change (approx.) at 150 °C [x/h] | 96 |
| Electrical data | |
| Rated Voltage [V] | 230 |
| Power frequency [Hz] | 50/60 |
| Nominal power [kW] | 1.6 |
| Phase (Nominal voltage) | 1~ |
| Measures | |
| Interior volume [L] | 115 |
| Net weight of the unit (empty) [kg] | 89 |
| Permitted load [kg] | 50 |
| Load per rack [kg] | 20 |
| Wall clearance back [mm] | 160 |
| Wall clearance sidewise [mm] | 100 |
| Internal Dimensions | |
| Width [mm] | 600 |
| Height [mm] | 480 |
| Depth [mm] | 410 |
| Housing dimensions not incl. fittings and connections | |
| Width net [mm] | 835 |
| Height net [mm] | 865 |
| Depth net [mm] | 645 |
| Environment-specific data | |
| Energy consumption at 150 °C [Wh/h] | 544 |
| Fixtures | |
| Number of shelves (std./max.) | 2/6 |

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]



## OPTIONS

| Designation | Description | * | Art.-No. |
|---|---|---|---|
| Access port with silicone plug | back | | |
| | 10 mm | 01 | 8012-1287 |
| | 30 mm | 01 | 8012-1371 |
| | 50 mm | 01 | 8012-1387 |
| | left | | |
| | 10 mm | 01 | 8012-1280 |
| | 30 mm | 01 | 8012-1363 |
| | 50 mm | 01 | 8012-1379 |
| | 100 mm | 01, 11 | 8012-1511 |
| | right | | |
| | 10 mm | 01 | 8012-1273 |
| | 30 mm | 01 | 8012-1358 |
| | 50 mm | 01 | 8012-1375 |
| | 100 mm | 01, 11 | 8012-1508 |
| | top | | |
| | 10 mm | 01 | 8012-1266 |
| | 30 mm | 01 | 8012-1367 |
| | 50 mm | 01 | 8012-1383 |
| Analog output 4-20 mA | for temperature values (output not adjustable) | – | 8012-0480 |
| Calibration certificate, expanded | for temperature; for extending the measurement in center of chamber to include another test temperature | – | 8012-1123 |
| Calibration certificate, temperature | for temperature, measurement in center of chamber at specified temperature | – | 8012-1142 |
| | temperature measurement incl. certificate and 27 measuring points at specified temperature | – | 8012-1601 |
| | temperature measurement incl. certificate, 15- 18 measuring points at specified temperature | – | 8012-1580 |
| | temperature measurement incl. certificate, 9 measuring points at specified temperature | – | 8012-1559 |
| Door gasket | made of FKM, silicone-free | 03 | 8012-1308 |
| Door lock | lockable door handle | – | 8012-1251 |
| Gas-tight option model | Incl. additional measures for the greatest possible impermeability to gas; not in conjunction with access port or interior lighting option | 09 | 8012-0181 |
| HEPA air filter | On fresh air supply for unit; filter classification H14 (acc. to. EN 1822-1:2009, > 99.995% at 0.3 µm) | – | 8012-0222 |
| Inert gas connection | with gas inlet and outlet, Ø 10 mm, incl. additional measures to provide the greatest possible impermeability to gas | – | 8012-1545 |
| Lockable controller keyboard | Lockable controller keyboard with key-operated switch | – | 8012-0529 |
| Measurement of air exchange rate | in accordance with ASTM D5374, definition and protocol according to ambient temperature | – | 8012-1199 |
| Pt 100 temperature sensor | additional flexible Pt 100, interior, for displaying the temperature on the unit display | – | 8012-0334 |
| Viewing window and interior lighting | viewing window in door, 320 x 260 mm, and 15 W interior lighting | | |
| | 230 V option model | – | 8012-0057 |

* Notes › See last page

## ACCESSORIES

| Designation | Description | * | Art.-No. |
|---|---|---|---|
| APT-COM™ 4 BASIC-Edition | for simple logging and documentation requirements with up to 5 networked units. | | |
| | version 4, BASIC edition | 19 | 9053-0039 |
| 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. | | |
| | version 4, GLP edition | 19 | 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 | 19 | 9053-0040 |

* Notes › See last page

| Designation | Description | * | Art.-No. |
|---|---|---|---|
| Base | the base equipped with casters is used for the secure positioning and leveling of a BINDER $CO_2$ incubator | – | 9051-0033 |
| Data Logger Kit | T 350: For continuous temperature logging from 0 °C to 350 °C; kit includes 1 data logger, Pt 100 sensor with 2 m extension cable and 1 magnetic fixture for mounting to the BINDER unit | 19 | 8012-0714 |
| Data Logger Software | LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable) | 19 | 8012-0821 |
| pH-neutral detergent | concentrated, for gentle remove of residual contaminants; 1 kg | – | 1002-0016 |
| Qualification documents | 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 |
| | 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 |
| Rack | chrome plated | – | 6004-0003 |
| | stainless steel | – | 6004-0008 |
| Rack accessories | fasteners (1 set of 4) for additional security of racks | – | 8012-0531 |
| Rubber pads | set anti-slip feet | – | 8012-1887 |
| Shelf, perforated | Stainless steel | – | 6004-0030 |
| Table on castors | stable cart, casters with locking brakes, dimensions: W 1,000 x D 800 x H 780 mm | – | 9051-0018 |

* Notes › See last page

## SERVICES

| Designation | Description | * | Art.-No. |
|---|---|---|---|
| Installation services | | | |
| Unit installation | Unpacking and setting up of unit, connecting to existing connections, and checking function | 13, 18 | DL10-0100 |
| Unit instructions | Unit function instructions for operation and programming of the controller | 18 | DL10-0500 |
| Preventive maintenance | | | |
| Maintenance | Functional testing of all electrical and mechanical components, short calibration, documentation in the maintenance schedule | 14, 18 | DL20-0200 |
| Calibration services | | | |
| Measurement of air exchange rate | including certificate (in accordance with ASTM D5374) | 14, 16, 17, 18 | DL33-0000 |
| Temperature calibration | 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 |
| Temperature measurement, 18 measuring points | Temperature measurement with 18 measuring points at a specified test temperature, including certificate | 14, 16, 17, 18 | DL30-0118 |
| Temperature measurement, 27 measuring points | Temperature measurement with 27 measuring points at a specified test temperature, including certificate | 14, 16, 17, 18 | DL30-0127 |
| Temperature measurement, 9 measuring points | Temperature measurement with 9 measuring points at a specified test temperature, including certificate | 14, 16, 17, 18 | DL30-0109 |
| Validation services | | | |
| Execution of IQ/OQ | Execution of IQ/OQ in accordance with qualification folder | 15, 18 | DL41-0200 |
| Execution of IQ/OQ/PQ | Execution of IQ/OQ/PQ in accordance with qualification folder | 15, 18 | DL44-0500 |
| Warranty service | | | |
| Warranty extension from 2 to 3 years | The warranty is extended from 2 to 3 years from the delivery date, wear parts are excluded | – | DL01-0041 |
| Warranty extension from 2 to 5 years | The warranty is extended from 2 to 5 years from the delivery date, wear parts are excluded | – | DL01-0042 |

* Notes › See last page

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