

Model FDL 115 | Safety drying chambers for limited quantities of solvent

The BINDER FDL 115 with silicone and dust-free inner chamber, as well as symmetric airflow dries specimens containing solvents and thus this safety drying oven meets all EN 1539 requirements.

BENEFITS

- Safety concept meets the DIN EN 1539-2010-08 standard
- Short drying time with high temperature accuracy and defined ventilation
- Silicone free and dust-free inner chamber
- Replaceable fresh air cartridges are easy to change and ensure constant fresh air quality



Model 115

MAIN FEATURES

- Temperature range: room temperature plus 10 °C to 300 °C
- APT.line™ preheating chamber technology
- Controller with time-segment and real-time programming
- 2 chrome-plated racks
- Fresh-air monitoring with audible and visual alarm and automatic deactivation of heating
- Replaceable filter cartridge, Class M6
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm
- Computer interface: RS 422
- Standard door gasket made from solvent-resistant FKM for use at up to 200 °C
- Optional door gasket made from silicone with limited solvent resistance for use at up to 300 °C

ORDERING INFORMATION

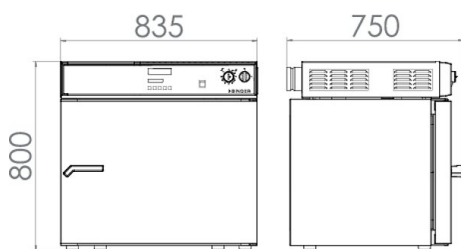
| Interior volume [cu.ft.] | Voltage | Option model | Version | Art.-No. |
|--------------------------|-------------------|--------------|-------------|-----------|
| 4.1 | 230 V 1~ 50/60 Hz | Standard | FDL115-230V | 9010-0292 |

TECHNICAL DATA

| | |
|--|--------------------------|
| Description | FDL115-230V ¹ |
| Article Number | 9010-0292 |
| Performance Data Temperature | |
| Temperature range 10 °C above ambient temperature to [°C] | 300 |
| Temperature variation at 150 °C [± K] | 2.5 |
| Temperature fluctuation [± K] | 0.8 |
| Heating-up time to 150 °C [min] | 20 |
| Recovery time after 30 seconds door open at 150 °C [min] | 12 |
| Air change data | |
| Air circulation (approx.) [x/min] | 20 |
| Volumetric flow rate of exhaust air acc. to EN 1539 at 50 °C [ca. L/min] | 400 |
| Solvent quantity | |
| Highest permitted solvent quantity (at T-180 °C, M-100g/mol, U-40g/m ³ , K=0,5) [g] | 6.65 |
| Electrical data | |
| Rated Voltage [V] | 230 |
| Power frequency [Hz] | 50/60 |
| Nominal power [kW] | 2.9 |
| Phase (Nominal voltage) | 1~ |
| Measures | |
| Interior volume [cu.ft.] | 4.1 |
| Net weight of the unit (empty) [lbs] | 198 |
| Permitted load [lbs] | 132 |
| Load per rack [lbs] | 66 |
| Wall clearance back [in] | 6.3 |
| Wall clearance sidewise [in] | 3.94 |
| Internal Dimensions | |
| Width [in] | 23.64 |
| Height [in] | 17.14 |
| Depth [in] | 17.14 |
| Housing dimensions not incl. fittings and connections | |
| Width net [in] | 32.7 |
| Height net [in] | 31.72 |
| Depth net [in] | 26.99 |
| Environment-specific data | |
| Energy consumption at 150 °C [Wh/h] | 1200 |
| Sound-pressure level [dB(A)] | 57 |
| Fixtures | |
| Number of shelves (std./max.) | 2/5 |

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. |
|--------------------------------------|--|----|-----------|
| | back | | |
| | 10 mm | 01 | 8012-1284 |
| | left | | |
| Access port with silicone plug | 10 mm | 01 | 8012-1277 |
| | 30 mm | 01 | 8012-1360 |
| | right | | |
| | 10 mm | 01 | 8012-1270 |
| | 30 mm | 01 | 8012-1355 |
| Calibration certificate, expanded | for temperature; for extending the measurement in center of chamber to include another test temperature | - | 8012-1117 |
| | for temperature, measurement in center of chamber at specified temperature | - | 8012-1136 |
| Calibration certificate, temperature | temperature measurement incl. certificate and 27 measuring points at specified temperature | - | 8012-1595 |
| | temperature measurement incl. certificate, 15- 18 measuring points at specified temperature | - | 8012-1574 |
| | temperature measurement incl. certificate, 9 measuring points at specified temperature | - | 8012-1553 |
| Coil coating door flap | door flap for coil coating tests | - | 8012-0179 |
| Door gasket | made from silicone, resistant to high temperatures for operating temperatures above 200 °C. Note: The gasket wears out more quickly in temperatures above 250 °C | - | 8012-0499 |
| Door lock | lockable door handle | - | 8012-1248 |
| Measurement of air exchange rate | in accordance with ASTM D5374, definition and protocol according to ambient temperature | - | 8012-1196 |
| Pt 100 temperature sensor | with clip temperature sensor and 4-20 mA analog output (e.g., for chart recorder connection), accessible via 6-pin DIN socket | - | 8012-0602 |

* 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 |
| pH-neutral detergent | concentrated, for gentle remove of residual contaminants; 1 kg | - | 1002-0016 |

* Notes › See last page

| Designation | Description | * | Art.-No. |
|-------------------------|---|---|-----------|
| 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 | | |
| Rack | Digital in PDF format | – | 7057-0005 |
| | Hard copy inside folder | – | 7007-0005 |
| Shelf, perforated | chrome plated | – | 6004-0003 |
| | stainless steel | – | 6004-0008 |
| Table on castors | Stainless steel | – | 6004-0030 |
| | 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 | DL40-0100 |
| 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 | – | DL00-6041 |
| Warranty extension from 2 to 5 years | The warranty is extended from 2 to 5 years from the delivery date, wear parts are excluded | – | DL00-6042 |

* 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 Heat resistant only to max. 200 °C.
- 04 Only available on units rated for 230 V.
- 07 The additional heat input may affect the temperature behavior.
- 09 Not in conjunction with the optional access port, door with window and interior lighting.
- 10 Not available on 23-liter units.
- 11 Not available on 23- or 53-liter units.
- 12 Only available on units rated for 230 V or 400 V.
- 13 Installation and connections take place at unit location; transport within the company only upon consultation.
- 14 We recommend a BINDER service contract to cover unit inspections, calibrations and validations.
- 15 OQ according to Yellow Paper = completed factory validation documentation of all OQ checklists.
- 16 Sensor calibration is performed in an accredited calibration laboratory.
- 17 Calibration is performed according to the BINDER factory standard.
- 18 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).
- 19 For additional accessories, refer to the Process documentation chapter.

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

Representative Office for CIS
Moscow, Russia
TEL +7 495 988 15 16
FAX +7 495 988 15 17
russia@binder-world.com
www.binder-world.com

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 Inc.
Bohemia, NY, USA
TEL +1 631 224 4340
FAX +1 631 224 4354
usa@binder-world.com
www.binder-world.us