

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 5 °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

ORDERING INFORMATION

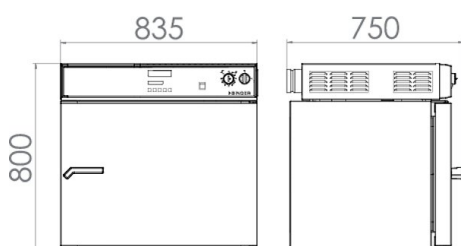
| Interior volume [cu.ft.] | Voltage | Option model | Version | Art.-No. |
|--------------------------|---------------------|--------------|-------------|-----------|
| Model FDL 115 | | | | |
| 4.1 | 230 V 1 ph 50/60 Hz | Standard | FDL115-230V | 9010-0292 |

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 | 0,8 ± K |
| 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] | 7 |
| Electrical data | |
| Rated Voltage [V] | 230 |
| Power frequency [Hz] | 50/60 |
| Nominal power [kW] | 2.9 |
| Phase (Nominal voltage) [ph] | 1 |
| Outer dimensions | |
| Width net [mm] | 830 |
| Height net [mm] | 805 |
| Depth net [mm] | 685 |
| Wall clearance back [mm] | 160 |
| Wall clearance sidewise [mm] | 100 |
| Internal Dimensions | |
| Width [mm] | 600 |
| Height [mm] | 435 |
| Depth [mm] | 435 |
| Measures | |
| Interior volume [L] | 115 |
| Net weight of the unit (empty) [kg] | 90 |
| permitted load [kg] | 60 |
| Load per rack [kg] | 30 |
| 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 AND ACCESSORIES

| 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 |
| Cart | Cart – stable cart, casters with locking brakes, dimensions: W 1,000 x D 800 x H 780 mm | - | 9051-0018 |
| 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 |
| pH-neutral detergent | concentrated, for gentle remove of residual contaminants; 1 kg | - | 1002-0016 |
| Rack | chrome plated | - | 6004-0003 |
| | stainless steel | - | 6004-0008 |
| Rubber pads | set of 4 anti-slip feet, for safe stacking of unit | 10 | 8012-0001 |
| Shelf, perforated | Stainless steel | - | 6004-0030 |
| Software | APT-COM™ communications software | | |
| | version 2 to 3, GLP edition | 19 | 9053-0016 |
| | version 3, BASIC edition | 19 | 9053-0014 |
| | version 3, GLP edition | 19 | 9053-0015 |
| | version 3, STANDARD edition | 19 | 9053-0013 |
| | APT-COM™ communications software, price: for free | | |
| | version 3, GLP DEMO Edition | 19 | 9053-0008 |
| Specimen temperature display | 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

SERVICES

| Designation | Description | * | Art.-No. |
|---|--|-------------------|------------------------|
| Installation services | | | |
| Installation | and set up of unit at operating location, connect to existing connections | 13, 18 | DL10-0100 |
| Instruction | unit function instructions for operation and programming of the controller | 18 | DL10-0500 |
| Preventive maintenance | | | |
| Preventive maintenance | Executive of equipment inspection according to maintenance plan | 14, 18 | DL20-0200 DL20-0300 |
| Calibration services | | | |
| Calibration temperature incl. certificate | including certificate, one measuring point in center of chamber at specified temperature | 14, 16, 17, 18 | DL30-0101 |
| Measurement of air exchange rate | including certificate (in accordance with ASTM D5374) | 14, 16, 17, 18 | DL33-0000 |

* Notes › See last page

| Designation | Description | * | Art.-No. |
|---|---|----------------|-----------|
| Temperature measurement 18 measuring points | including certificate, 18 measuring points at specified temperature | 14, 16, 17, 18 | DL30-0118 |
| Temperature measurement 27 measuring points | including certificate, 27 measuring points at specified temperature | 14, 16, 17, 18 | DL30-0127 |
| Temperature measurement 9 measuring points | including certificate, 9 measuring points at specified temperature | 14, 16, 17, 18 | DL30-0109 |
| Validation services | | | |
| Execution of IQ/OQ | in accordance with qualification folder | 15, 18, 20 | DL40-0100 |
| Execution of IQ/OQ/PQ | in accordance with customer's requirement, price: on request | 15, 18 | DL44-0500 |
| Qualification folder IQ/OQ | supporting documents for validation performed by customer, consisting of: IQ/OQ checklists, unit schematics, QM certificate in accordance with ISO 9001 | 15, 18, 20 | 8012-0857 |
| Qualification folder IQ/OQ/PQ | supporting documents for validation performed by customer, in accordance with customer's requirement, extension of Qualification folder IQ/OQ by chapter PQ | 15, 18 | 8012-0946 |
| Warranty service | | | |
| Extension of the warranty from 2 to 3 years | beginning with the date of delivery, wearing parts are not included | - | DL00-6041 |
| Extension of the warranty from 2 to 5 years | beginning with the date of delivery, wearing parts are not included | - | 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.
- 06 Heating-up time may increase as a result of the lower heat conductivity.
- 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.
- 20 When ordering IQ/OQ qualification folders and associated IQ/OQ execution on one order, we offer a 15 % discount for the item of the IQ/OQ folder.
When ordering IQ/OQ/PQ qualification folders and associated IQ/OQ/PQ execution on one order, we offer a 15 % discount for the item of the IQ/OQ/PQ folder.