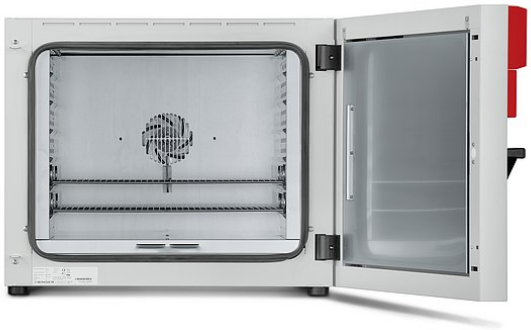
Model FP 115 | Drying and heating chambers with forced convection and program functions

A BINDER material test chamber with mechanical convection of the FP series provides reliably short drying times and particularly fast heating – even for chambers under full loads.

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

MAIN FEATURES

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

ORDERING INFORMATION

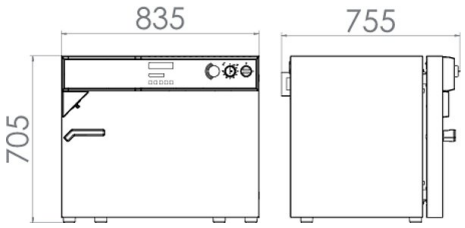
Interior volume [cu.ft.]	Voltage	Option model	Version	Art.-No.
Model FP 115				
4.1	230 V 1~ 50/60 Hz	Standard	FP115-230V	9010-0255
	120 V 1~ 60 Hz	Standard	FP115UL-120V	9010-0262

TECHNICAL DATA

Description	FP115-230V[1]	FP115UL-120V[1]
Article Number	9010-0255	9010-0262
Performance Data Temperature		
Temperature range 5 °C above ambient temperature to [°C]	300	300
Temperature variation at 150 °C [± K]	1.8	1.8
Temperature fluctuation at 150 °C [± K]	0.3	0.3
Heating-up time to 150 °C [min]	30	30
Recovery time after 30 seconds door open at 150 °C [min]	8	8
Air change data		
Air change (approx.) at 150 °C [x/h]	32	32
Electrical data		
Rated Voltage [V]	230	120
Power frequency [Hz]	50/60	60
Nominal power [kW]	1.6	1.6
Unit fuse [A]	10	16
Phase (Nominal voltage)	1~	1~
Measures		
Interior volume [cu.ft.]	4.1	4.1
Net weight of the unit (empty) [lbs]	137	137
Permitted load [lbs]	110	110
Load per rack [lbs]	44	44
Wall clearance back [in]	6.3	6.3
Wall clearance sidewise [in]	3.94	3.94
Internal Dimensions		
Width [in]	23.64	23.64
Height [in]	18.91	18.91
Depth [in]	16.15	16.15
Housing dimensions not incl. fittings and connections		
Width net [in]	32.9	32.9
Height net [in]	27.78	27.78
Depth net [in]	25.41	25.41
Environment-specific data		
Energy consumption at 150 °C [Wh/h]	544	544
Fixtures		
Number of shelves (std./max.)	2/6	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 AND ACCESSORIES

Designation	Description	*	Art.-No.
Access port with silicone plug	back		
	10 mm	01	8012-1286
	30 mm	01	8012-1370
	50 mm	01	8012-1386
	left		
	10 mm	01	8012-1279
	30 mm	01	8012-1362
	50 mm	01	8012-1378
	100 mm	01, 11	8012-1510
	right		
	10 mm	01	8012-1272
	30 mm	01	8012-1357
	50 mm	01	8012-1374
	100 mm	01, 11	8012-1507
	top		
	10 mm	01	8012-1265
	30 mm	01	8012-1366
	50 mm	01	8012-1382
	100 mm	01, 10	8012-1389
Analog output 4-20 mA	for temperature values (output not adjustable)	02	8012-0481
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
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	–	8012-1119
Calibration certificate, temperature	for temperature, measurement in center of chamber at specified temperature	–	8012-1138
	temperature measurement incl. certificate and 27 measuring points at specified temperature	–	8012-1597
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	–	8012-1576
	temperature measurement incl. certificate, 9 measuring points at specified temperature	–	8012-1555
Class 3.1 independent temperature safety device	with visual alarm (DIN 12880)	04, 12	8012-1149
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
Door gasket	made of FKM, silicone-free	03	8012-0495
Door lock	lockable door handle	–	8012-1249
Fan, reinforced	to increase air change rates		
	230 V option model	–	8012-0198
Gas-tight option model	incl. additional measures for gas containment	09	8012-0182
HEPA air filter	On fresh air supply for unit; filter classification H14 (acc. to. EN 1822-1:2009, > 99.995% at 0.3 µm)	–	8012-1169
Inert gas connection	with gas inlet and outlet, Ø 10 mm, incl. additional measures to provide the greatest possible impermeability to gas	–	8012-0841
Instrument tray	with lid made from 18/8 stainless steel, stackable, dimensions: 230 x 133 x 45 mm	–	4022-0123
	with lid made from 18/8 stainless steel, stackable, dimensions: 315 x 215 x 60 mm	–	4022-0124
Measurement of air exchange rate	in accordance with ASTM D5374, definition and protocol according to ambient temperature	–	8012-1198

* Notes › See last page

Designation	Description	*	Art.-No.
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	–	1002-0016
Pt 100 temperature sensor	additional flexible Pt 100, interior, for displaying the temperature on the unit display	–	8012-0504
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
Viewing window and interior lighting	viewing window in door, 320 x 260 mm, and 15 W interior lighting		
	120 V option model	–	8012-0238
	230 V option model	–	8012-0056
Zero voltage relay contacts	for controlling 3 relay contacts via program regulators, accessible via 6-pin DIN socket (max. 24 V - 2.5 A)		
	120 V option model	–	8012-0472
	230 V option model	–	8012-0471

* 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
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
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	DL41-0200
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	8012-0856
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	8012-0945
Warranty service			
Extension of the warranty from 2 to 3 years	beginning with the date of delivery, wearing parts are not included	–	DL00-5041
Extension of the warranty from 2 to 5 years	beginning with the date of delivery, wearing parts are not included	–	DL00-5042

* 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.

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