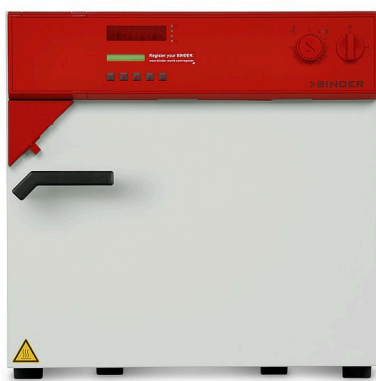


Model FP 53 | Drying and heating chambers with forced convection and program functions

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 53

MAIN FEATURES

- Temperature range: +5 °C above ambient temperature 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

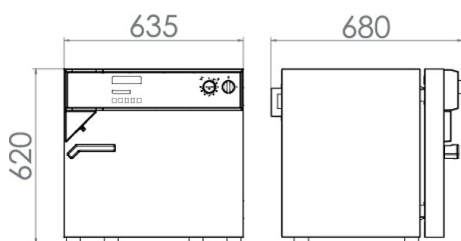
ORDERING INFORMATION

Interior volume [L]	Voltage	Option model	Version	Art.-No.
53	230 V 1~ ph 50/60 Hz	Standard	FP053-230V	9010-0153
	120 V 1~ ph 60 Hz	Standard	FP053UL-120V	9010-0175

TECHNICAL DATA

Description	FP053-230V ¹	FP053UL-120V ¹
Article Number	9010-0153	9010-0175
Performance Data Temperature		
Temperature range +5 °C above ambient temperature to	300 °C	300 °C
Temperature variation at 150 °C [± K]	2	2
Temperature fluctuation at 150 °C [± K]	0.3	0.3
Heating-up time to 150 °C [min]	24	24
Recovery time after 30 seconds door open at 150 °C [min]	5	5
Air change data		
Air change (approx.) at 150 °C [x/h]	64	64
Electrical data		
Rated Voltage [V]	230	120
Power frequency [Hz]	50/60	60
Nominal power [kW]	1.2	1.2
Unit fuse [A]	10	16
Phase (Nominal voltage)	1~	1~
Measures		
Interior volume [L]	53	53
Net weight of the unit (empty) [kg]	44	44
Permitted load [kg]	40	40
Load per rack [kg]	15	15
Wall clearance back [mm]	160	160
Wall clearance sidewise [mm]	100	100
Internal Dimensions		
Width [mm]	400	400
Height [mm]	400	400
Depth [mm]	340	340
Housing dimensions not incl. fittings and connections		
Width net [mm]	635	635
Height net [mm]	620	620
Depth net [mm]	575	575
Environment-specific data		
Energy consumption at 150 °C [Wh/h]	300	300
Fixtures		
Number of shelves (std./max.)	2/5	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.
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	8012-1510
	right		
	10 mm	01	8012-1272
	30 mm	01	8012-1357
	50 mm	01	8012-1374
	100 mm	01	8012-1507
	top		
	10 mm	01	8012-1265
	30 mm	01	8012-1366
	50 mm	01	8012-1382
	100 mm	01	8012-1389
Analog output 4-20 mA	for temperature values (output not adjustable)	02	8012-0481
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)	–	8012-1149
Door gasket	made of FKM, silicone-free	–	8012-0494
Door lock	lockable door handle	–	8012-1249
Fan, reinforced	to increase air change rates		
	230 V option model	–	8012-0197
Gas-tight option model	Incl. additional measures for the greatest possible impermeability to gas; not in conjunction with access port or interior lighting option	–	8012-0182
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
Measurement of air exchange rate	in accordance with ASTM D5374, definition and protocol according to ambient temperature	–	8012-1198
Pt 100 temperature sensor	additional flexible Pt 100, interior, for displaying the temperature on the unit display	–	8012-0504
Viewing window and interior lighting	viewing window in door, 230 x 230 mm, and 15 W interior lighting		
	120 V option model	–	8012-0237
	230 V option model	–	8012-0054
Zero voltage relay contacts	for controlling 3 relay contacts via program regulators, accessible via 6-pin DIN socket (max. 24 V - 2.5 A)		
	120/208 V option model	–	8012-0472
	230/400 V option model	–	8012-0471

* 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	–	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	–	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	–	9053-0040
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	–	8012-0714
Data Logger Software	LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable)	–	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
Rack	chrome plated	–	6004-0002
	stainless steel	–	6004-0007
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	–	6004-0029
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 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)	05	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			
Maintenance services			
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	05	DL20-0710
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	05	DL20-0910
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	05	DL20-0200
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	05	DL20-0810

* Notes › See last page

Designation	Description	*	Art.-No.
Calibration services			
Calibration certificate, temperature	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate	03, 04, 05	DL30-0101
	Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate	03, 04, 05	DL30-0102
Measurement of air exchange rate	including certificate (in accordance with ASTM D5374)	03, 04, 05	DL33-0000
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points with a set value specified by the user, including certificate	03, 04, 05	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate	03, 04, 05	DL30-0127
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate	03, 04, 05	DL30-0109
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	05	DL41-0200
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	05	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 › 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 Sensor calibration is performed in an accredited calibration laboratory.
- 04 Calibration is performed according to the BINDER factory standard.
- 05 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).

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