Model FP 56 | 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

- High temperature accuracy thanks to APT.line™ technology
- User-friendly controller with large display
- Computer interface: Ethernet
- Class 2 independent adjustable temperature safety device (DIN 12880) and class 3.1 independent temperature safety device (DIN 12880) with visual/ acoustic alarm available for selection on the controller

Model 56

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IMPORTANT FEATURES

- Temperature range: +10°C above ambient temperature up to +300°C
- High temperature accuracy thanks to APT.line™ technology
- Adjustable fan speed
- Controller with interval and real-time programming via APT-COM or RD4 program editor
- Electromechanical control of the exhaust air flap
- 2 chrome-plated racks
- Units up to 115 liters are stackable
- Class 2 independent adjustable temperature safety device (DIN 12880) and class 3.1 independent temperature safety device (DIN 12880) with visual/ acoustic alarm available for selection on the controller
- Ergonomic handle design
- Computer interface: Ethernet
- Internal data logger, measured values can be read out in open format via USB

ORDERING INFORMATION

Interior volume		Power supply - unit fuse	Plug*	Version	Model version	Art.-No.
[cu.ft.]	[L]					
Model FP 56						
2	60	230 V 1~ 50/60 Hz -10,0 A	CEE 7/7	Standard	FP056-230V	9010-0363
		120 V 1~ 60 Hz -16,0 A	NEMA 5-20	Standard	FP056UL-120V	9010-0367

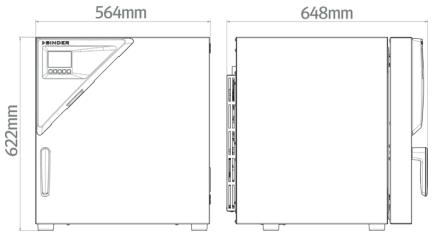
TECHNICAL DATA

Data		
Article Number	9010-0363	9010-0367
Designation	FP056-230V	FP056UL-120V
Option model	Standard	Standard
Performance Data Temperature		
Temperature range	+10 °C above ambient temperature to 300 °C	+10 °C above ambient temperature to 300 °C
Temperature uniformity at 150°C	1.4 ± K	1.4 ± K
Temperature fluctuation at 150°C	0.4 ± K	0.4 ± K
Heating up time to 150°C	15 min	15 min
Recovery time after door was opened for 30 s at 150°C	4 min	4 min
Air change data		
Air change rate at 100°C	80 x/h	80 x/h
Electrical data		
Rated Voltage	230 V	120 V
Power frequency	50/60 Hz	60 Hz
Nominal power	1,2 kW	1,2 kW
Unit fuse	10,0 A	16,0 A
Phase (Nominal voltage)	1~	1~
Dimensions and weights		
Interior volume	2 cu.ft.	2 cu.ft.
Net weight of the unit (empty)	90 lbs	90 lbs
Load per rack	66 lbs	66 lbs
Permitted load	154 lbs	154 lbs
Wall clearance back	6,3 in	6,3 in
Wall clearance sidewise	3,94 in	3,94 in
Housing dimensions not incl. fittings and connections		
Width net	22.05 in	22.05 in
Height net	24.49 in	24.49 in
Depth net	23.46 in	23.46 in
Internal Dimensions		

Interior width	15.75 in	15.75 in
Interior height	17.32 in	17.32 in
Interior depth	13.46 in	13.46 in
Unit doors	1	1
Environment-specific data		
Sound-pressure level	43 dB(A)	43 dB(A)
Energy consumption at 100°C	180 Wh/h	180 Wh/h
Energy consumption at 150°C	290 Wh/h	290 Wh/h
Fixtures		
Number of shelves (std./max.)	2/4	2/4

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	FP 56	*	Art.-No.
Access port with silicone plug	left			
	10 mm	•	01	8012-2198
	30 mm	•	01	8012-2210
	50 mm	•	01	8012-2213
	right			
	10 mm	•	01	8012-2206
	30 mm	•	01	8012-2212
	50 mm	•	01	8012-2215
	top			
	10 mm	•	01	8012-2199

Designation	Description	FP 56	*	Art.-No.
	30 mm	•	01	8012-2211
	50 mm	•	01	8012-2214
	100 mm	•	01	8012-2208
Analog output 4-20 mA	for temperature values (output not adjustable)	•	02	8012-2188
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	•	-	8012-2231
Calibration certificate, temperature	for temperature, measurement in center of chamber at specified temperature	•	-	8012-2227
	temperature measurement incl. certificate, 9 measuring points at specified temperature	•	-	8012-2230
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	•	-	8012-2228
	temperature measurement incl. certificate and 27 measuring points at specified temperature	•	-	8012-2229
Door gasket	made of FKM, silicone-free	•	-	8012-2233
Door lock	lockable door handle	•	-	8012-2237
Gas-tight option model	Incl. additional measures for the greatest possible impermeability to gas; not in conjunction with access port or interior lighting option	•	-	8012-2216
HEPA air filter	On fresh air supply for unit; filter classification H14 (acc. to. EN 1822-1:2009, > 99.995% at 0.3 µm); not in conjunction with reinforced heating output, reinforced fan	•	-	8012-2219
Inert gas connection	With gas inlet and outlet, Ø 10 mm, incl. additional measures for the greatest possible impermeability to gas; not in conjunction with access port or interior lighting option	•	-	8012-2195
Inner chamber, reinforced	max. total load 85 kg	•	-	8012-2223
Interior lighting	with 27 W light bulb			
	230/240 V option model	•	-	8012-2190
Measurement of air exchange rate	in accordance with ASTM D5374, definition and protocol according to ambient temperature	•	-	8012-2232
Pt 100 temperature sensor	additional flexible Pt 100, interior, for displaying the temperature on the unit display	•	-	8012-2193

ACCESSORIES

Designation	Description	FP 56	*	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.			

Designation	Description	FP 56	*	Art.-No.
	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
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	•	-	8012-2250
Qualification documents IQ/OQ	IQ/OQ documents digital in PDF format – supporting documents for validation consisting of: IQ/OQ checklists, comprehensive unit documentation covering: temperature. Excluded: Document execution is separate			
	temperature. Excluded: Document execution is separate	•	-	7057-0010
Qualification documents IQ/OQ/PQ	IQ/OQ/PQ documents digital in PDF format – supporting documents for validation customizied to customer requirements, PQ section added to the qualification folder IQ/OQ; supporting documents for validation consisting of: IQ/OQ checklists, comprehensive unit documentation covering: temperature values. Excluded: Document execution is separate			
	temperature values. Excluded: Document execution is separate	•	-	7057-0016
Rack	max. load per rack 30 kg			
	chrome plated	•	-	8012-2038
	stainless steel	•	-	8012-2085
Rack accessories	fasteners (1 set of 4) for additional security of racks	•	-	8012-0531
Rubber pads	set anti-slip feet	•	-	8012-2030
Shelf, perforated	max. load per rack 30 kg			
	Stainless steel	•	-	8012-2175
Table on castors	stable cart, casters with locking brakes, dimensions: W 1,000 x D 800 x H 780 mm	•	-	9051-0018

SERVICES

Designation	Description	*	Art.-No.
Calibration services			
Temperature calibration	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate Travel to be quoted separate.	05	DL30-0120
	Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate Travel to be quoted separate.	05	DL30-0102
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate. Travel to be quoted separate. A total of 3 shelves are required.	05	DL30-0109
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points with a set value specified by the user, including certificate. Travel to be quoted separate. A total of 2 shelves are required.	05	DL30-0118

Designation	Description	*	Art.-No.
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate. Travel to be quoted separate. A total of 3 shelves are required.	05	DL30-0127
Installation services			
Unit installation	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) Travel to be quoted as separate.	05	DL10-0160
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming. Travel to be quoted as separate Limited to 3 hours.	05	DL10-0550
Maintenance services			
BRONZE 3-year maintenance contract	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate. 10% Discount on Spare Parts and Labor for any additional Services needed Wear + tear parts to be purchased or billed to customer. Travel to be quoted as separate.	05	DL20-0720
GOLD 3-year maintenance contract	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate of Temperature. 25% Discount on Spare Parts and Labor for any additional Services needed. One additional courtesy visit per year can be used for service visit or operator. Wear + tear parts to be purchased or billed to customer. Travel to be quoted separate.	05	DL20-0910
Preventive maintenance	One-off maintenance service in accordance with maintenance schedule. Visual inspection of mechanical and electrical components, testing of all key functions. Checking a test temperature specified by the user in center of usable space without certificate. Wear + tear parts need to be purchased or billed to customer. Travel to be quoted as separate.	05	DL20-0602
SILVER 3-year maintenance contract	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate 15% Discount on Spare Parts and Labor for any additional Services needed One additional courtesy visit per year can be used for service visit or operator training. Wear + tear parts to be purchased or billed to customer. Travel to be quoted separate.	05	DL20-0810
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder. Travel to be quoted separate.	05	DL41-0200
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder. Travel to be quoted separate.	05	DL44-0500
Warranty service			
1-year warranty extension	The warranty is extended by 1 year from the delivery date, wear parts are excluded	05	DL50-0010

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.

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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