

# 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

- 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 56



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## MAIN 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
- 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 [L]	Voltage	Option model	Version	Art.-No.
60	230 V 1~ ph 50/60 Hz	Standard	FP056-230V	9010-0363
	120 V 1~ ph 60 Hz	Standard	FP056UL-120V	9010-0367

**TECHNICAL DATA**

Description	FP056-230V <sup>1</sup>	FP056UL-120V <sup>1</sup>
<b>Article Number</b>	<b>9010-0363</b>	<b>9010-0367</b>
<b>Performance Data Temperature</b>		
Temperature range +10 °C above ambient temperature to [°C]	300	300
Temperature variation at 150 °C [± K]	1.4	1.4
Temperature fluctuation at 150 °C [± K]	0.4	0.4
Heating-up time to 150 °C [min]	15	15
Recovery time after 30 seconds door open at 150 °C [min]	4	4
<b>Tabellen</b>		
Air change (approx.) at 100 °C [x/h]	80	80
<b>Electrical data</b>		
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~
<b>Measures</b>		
Interior volume [L]	60	60
Net weight of the unit (empty) [kg]	44	44
Permitted load [kg]	70	70
Load per rack [kg]	30	30
Wall clearance back [mm]	160	160
Wall clearance sidewise [mm]	100	100
<b>Internal Dimensions</b>		
Width [mm]	400	400
Height [mm]	400	400
Depth [mm]	342	342
<b>Doors</b>		
Unit doors	1	1
<b>Housing dimensions not incl. fittings and connections</b>		
Width net [mm]	560	560
Height net [mm]	622	622
Depth net [mm]	596	596
<b>Environment-specific data</b>		
Sound-pressure level [dB(A)]	43	43
<b>Fixtures</b>		
Number of shelves (std./max.)	2/5	2/5

<sup>1</sup> 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.

**OPTIONS**

Designation	Description	*	Art.-No.
<b>Access port with silicone plug</b>	left		
	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
	30 mm	01	8012-2211
50 mm	01	8012-2214	
100 mm	01	8012-2208	
<b>Analog output 4-20 mA</b>	for temperature values (output not adjustable)	02	8012-2188
<b>Calibration certificate, expanded</b>	for temperature; for extending the measurement in center of chamber to include another test temperature	-	8012-2231
<b>Calibration certificate, temperature</b>	for temperature, measurement in center of chamber at specified temperature	-	8012-2227
	temperature measurement incl. certificate and 27 measuring points at specified temperature	-	8012-2229
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	-	8012-2228
	temperature measurement incl. certificate, 9 measuring points at specified temperature	-	8012-2230
<b>Door gasket</b>	made of FKM, silicone-free	-	8012-2233
<b>Door lock</b>	lockable door handle	-	8012-2237
<b>Gas-tight option model</b>	Incl. additional measures for the greatest possible impermeability to gas; not in conjunction with access port or interior lighting option	-	8012-2216
<b>HEPA air filter</b>	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
<b>Inert gas connection</b>	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
<b>Inner chamber, reinforced</b>	max. total load 85 kg	-	8012-2223
<b>Interior lighting</b>	with 15 W light bulb		
	120 V option model	-	8012-2189
	230/240 V option model	-	8012-2190
<b>Measurement of air exchange rate</b>	in accordance with ASTM D5374, definition and protocol according to ambient temperature	-	8012-2232
<b>Pt 100 temperature sensor</b>	additional flexible Pt 100, interior, for displaying the temperature on the unit display	-	8012-2193

\* Notes › See last page

**ACCESSORIES**

Designation	Description	*	Art.-No.
<b>APT-COM™ 4 BASIC-Edition</b>	for simple logging and documentation requirements with up to 5 networked units. version 4, BASIC edition	-	9053-0039
<b>APT-COM™ 4 GLP-Edition</b>	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
<b>APT-COM™ 4 PROFESSIONAL-Edition</b>	convenient unit and user management built on the BASIC edition. Suitable for networking up to 100 units. version 4, PROFESSIONAL edition	-	9053-0040
<b>pH-neutral detergent</b>	concentrated, for gentle remove of residual contaminants; 1 kg	-	8012-2250

\* Notes › See last page

Designation	Description	*	Art.-No.
<b>Qualification documents</b>	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 <sub>2</sub> , O <sub>2</sub> , 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 <sub>2</sub> , O <sub>2</sub> – or pressure, depending on unit		
<b>Rack</b>	Digital in PDF format	–	7057-0005
	Hard copy inside folder	–	7007-0005
<b>Rack</b>	chrome plated	–	8012-2038
	stainless steel	–	8012-2085
<b>Rack accessories</b>	fasteners (1 set of 4) for additional security of racks	–	8012-0531
<b>Rubber pads</b>	set anti-slip feet	–	8012-2030
<b>Shelf, perforated</b>	Stainless steel	–	8012-2175
<b>Table on castors</b>	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.
<b>Installation services</b>			
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
<b>Maintenance contracts</b>			
<b>Maintenance services</b>			
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
<b>Calibration services</b>			
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

\* Notes › See last page

Designation	Description	*	Art.-No.
<b>Validation services</b>			
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
<b>Warranty service</b>			
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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