Model FD 56 | Drying and heating chambers with forced convection

A BINDER FD series Avantgarde.Line heating oven is always used when fast drying and sterilization is required. Thanks to its fully homogeneous temperature distribution, quick dynamics and powerful fan, this heating oven saves valuable time.

BENEFITS

- Best energy efficiency on the market
- Excellent temporal and spatial temperature accuracy
- USB connection for recording data
- Temperature range up to +300 °C



Model 56



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IMPORTANT FEATURES

- Temperature range: +10°C above ambient temperature to +300 °C
- Up to 30% lower energy consumption compared to conventional units on the market
- High temperature accuracy thanks to APT.line™ technology
- Forced convection
- Controller with LCD display
- Electromechanical control of the exhaust air flap
- 2 chrome-plated racks
- Stackable
- Class 2 integrated independent adjustable temperature safety device (DIN 12880) with visual alarm
- Ergonomic handle design
- USB port for recording data

ORDERING INFORMATION

Interior volume [L]	Power supply - unit fuse	Plug*	Version	Model version	Art.-No.
Model FD 56					
60	230 V 1~ 50/60 Hz -6,3 A	CEE 7/7	Standard	FD056-230V	9010-0303
	120 V 1~ 60 Hz -12,5 A	NEMA 5-15	Standard	FD056UL-120V	9010-0304

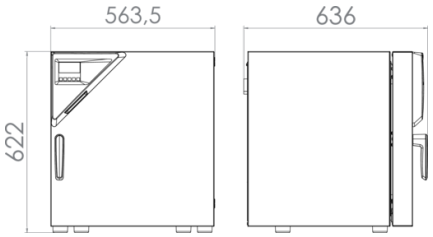
TECHNICAL DATA

Data		
Article Number	9010-0303	9010-0304
Designation	FD056-230V	FD056UL-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	1.7 ± K	1.7 ± K
Temperature fluctuation at 150°C	0.3 ± K	0.3 ± 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	1,1 kW	1,2 kW
Unit fuse	6,3 A	12,5 A
Phase (Nominal voltage)	1~	1~
Dimensions and weights		
Interior volume	60 L	60 L
Net weight of the unit (empty)	41 kg	41 kg
Load per rack	30 kg	30 kg
Permitted load	70 kg	70 kg
Wall clearance back	160 mm	160 mm
Wall clearance sidewise	100 mm	100 mm
Housing dimensions not incl. fittings and connections		
Width net	560 mm	560 mm
Height net	625 mm	625 mm
Depth net	565 mm	565 mm
Internal Dimensions		

Interior width	400 mm	400 mm
Interior height	440 mm	440 mm
Interior depth	345 mm	345 mm
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 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	FD 56	*	Art.-No.
	left			
	10 mm	•	01	8012-1276
	30 mm	•	01	8012-1016
	50 mm	•	01	8012-1020
	right			
Access port with silicone plug	10 mm	•	01	8012-1269
	30 mm	•	01	8012-1015
	50 mm	•	01	8012-1019
	top			
	10 mm	•	01	8012-1263
	30 mm	•	01	8012-1364

Designation	Description	FD 56	*	Art.-No.
	50 mm	•	01	8012-1380
	100 mm	•	01	8012-1671
Alarm function for overheating	switchable acoustic alarm, with adjustable limit value on the independent temperature safety device. Not in combination with the following option: Door with window	•	-	8012-1636
Analog output 4-20 mA	for temperature values (output not adjustable)	•	02	8012-1624
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	•	-	8012-1116
Calibration certificate, temperature	for temperature, measurement in center of chamber at specified temperature	•	-	8012-1135
	temperature measurement incl. certificate, 9 measuring points at specified temperature	•	-	8012-1552
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	•	-	8012-1573
	temperature measurement incl. certificate and 27 measuring points at specified temperature	•	-	8012-1594
Class 3.1 independent temperature safety device	with visual alarm (DIN 12880)	•	-	8012-1643
Clock	battery-backed	•	-	8012-1641
Door gasket	made of FKM, silicone-free	•	-	8012-1648
Door lock	lockable door handle	•	-	8012-1665
Ethernet interface	for Multi Management Software APT-COM™	•	-	8012-0988
Gas-tight option model	Incl. additional measures for the greatest possible impermeability to gas; not in conjunction with access port or interior lighting option	•	-	8012-1683
Heating output, reinforced	for faster heating up time and improved recovery time; max. 300°C			
	230 V option model	•	-	8012-1056
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	•	-	8012-1050
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	•	-	8012-1689
Inner chamber, reinforced	max. total load 85 kg	•	-	8012-1053
Interior lighting	with 25 W light bulb			
	120 V option model	•	-	8012-1632
	with 27 W light bulb			
	230/240 V option model	•	-	8012-1628
Measurement of air exchange rate	in accordance with ASTM D5374, definition and protocol according to ambient temperature	•	-	8012-1195

Designation	Description	FD 56	*	Art.-No.
Pt 100 temperature sensor	additional flexible Pt 100, interior, for displaying the temperature on the unit display	•	-	8012-1620
Viewing window and interior lighting	Viewing window (triple-glazed insulating glass) 240 x 240 mm in the door and interior lighting 15 W. Not in combination with the following option: Alarm function for overheating			
	120 V option model	•	-	8012-1702
	230 V option model	•	-	8012-1700

ACCESSORIES

Designation	Description	FD 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.			
	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/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
	Hard copy inside folder	•	-	7007-0005
	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
Rack	max. load per rack 30 kg			
	chrome plated	•	-	8012-2038
	stainless steel	•	-	8012-2085
Rubber pads	set anti-slip feet	•	-	8012-2030
Shelf, perforated	max. load per rack 30 kg			
	Stainless steel	•	-	8012-2175

Designation	Description	FD 56	*	Art.-No.
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			
Calibration certificate, temperature	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate	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	05	DL30-0102
Measurement of air exchange rate	including certificate (in accordance with ASTM D5374)	05	DL33-0000
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate	05	DL30-0109
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points with a set value specified by the user, including certificate	05	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate	05	DL30-0127
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	DL10-0160
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming	05	DL10-0540
Maintenance contracts			
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	DL20-0720
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
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
Maintenance services			
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	DL20-0602
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	05	DL40-0100
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	05	DL44-0500

Designation	Description	*	Art.-No.
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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