

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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MAIN FEATURES

- Temperature range: ambient temperature plus 10 °C to 300 °C
- 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
- Units up to 115 L are stackable
- Class 2 independent temperature safety device (DIN 12880) with visual temperature alarm
- Ergonomic handle design
- USB port for recording data

ORDERING INFORMATION

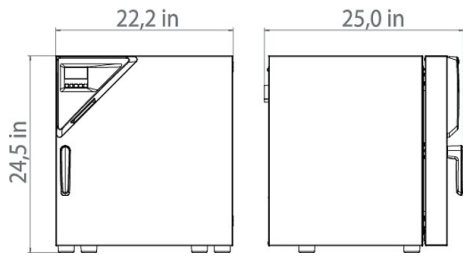
Interior volume [cu.ft.]	Voltage	Option model	Version	Art.-No.
2.1	230 V 1~ 50/60 Hz	Standard	FD056-230V	9010-0303
	120 V 1~ 60 Hz	Standard	FD056UL-120V	9010-0304

TECHNICAL DATA

Description	FD056-230V ¹	FD056UL-120V ¹
Article Number	9010-0303	9010-0304
Performance Data Temperature		
Temperature range +10 °C above ambient temperature to [°C]	300	300
Temperature variation at 150 °C [± K]	1.7	1.7
Temperature fluctuation at 150 °C [± K]	0.3	0.3
Heating-up time to 150 °C [min]	15	15
Recovery time after 30 seconds door open at 150 °C [min]	4	4
Air change data		
Air change (approx.) at 100 °C [x/h]	80	80
Electrical data		
Rated Voltage [V]	230	120
Power frequency [Hz]	50/60	60
Nominal power [kW]	1.1	1.2
Unit fuse [A]	6.3	12.5
Phase (Nominal voltage)	1~	1~
Measures		
Interior volume [cu.ft.]	2.1	2.1
Net weight of the unit (empty) [lbs]	90	90
Permitted load [lbs]	154	154
Load per rack [lbs]	66	66
Wall clearance back [in]	6.3	6.3
Wall clearance sidewise [in]	3.94	3.94
Internal Dimensions		
Width [in]	15.76	15.76
Height [in]	17.34	17.34
Depth [in]	13.59	13.59
Doors		
Unit doors	1	1
Housing dimensions not incl. fittings and connections		
Width net [in]	22.06	22.06
Height net [in]	24.63	24.63
Depth net [in]	22.26	22.26
Environment-specific data		
Energy consumption at 150 °C [Wh/h]	290	290
Sound-pressure level [dB(A)]	43	43
Fixtures		
Number of shelves (std./max.)	2/4	2/4

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 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.
Calibration certificate, temperature	temperature measurement incl. certificate and 27 measuring points at specified temperature	-	8012-1594
	additional flexible Pt 100, interior, for displaying the temperature on the unit display	-	8012-1620
	battery-backed	-	8012-1641
	For faster heating up time and improved recovery time; max. 300 °C; not in conjunction with load management option 120/230 V option model	-	8012-1056
	for Multi Management Software APT-COM™	-	8012-0988
	for temperature values (output not adjustable)	02	8012-1624
	for temperature; for extending the measurement in center of chamber to include another test temperature	-	8012-1116
	in accordance with ASTM D5374, definition and protocol according to ambient temperature	-	8012-1195
	Incl. additional measures for the greatest possible impermeability to gas; not in conjunction with access port or interior lighting option	09	8012-1683
	left		
	10 mm	01	8012-1276
	30 mm	01	8012-1016
	50 mm	01	8012-1020
	lockable door handle	-	8012-1665
	made of FKM, silicone-free	03	8012-1648
	max. total load 85 kg	-	8012-1053
	Measurement in center of chamber at specified temperature	-	8012-1135
	On fresh air supply for unit; filter classification H14 (acc. to. EN 1822-1:2009, > 99.995% at 0.3 µm)	-	8012-1050
Options/Accessories	right		
	10 mm	01	8012-1269
	30 mm	01	8012-1015
	50 mm	01	8012-1019
	Switchable acoustic alarm, with adjustable limit value on the independent temperature safety device	-	8012-1636
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	-	8012-1573
	temperature measurement incl. certificate, 9 measuring points at specified temperature	-	8012-1552
	top		
	10 mm	01	8012-1263
	30 mm	01	8012-1364
	50 mm	01	8012-1380
	100 mm	01, 10	8012-1671
	viewing window (triple insulating glass) in door, 240 x 240 mm, and 15 W interior		
	120 V option model	-	8012-1702
	230 V option model	-	8012-1700
	with 15 W light bulb		
	120 V option model	-	8012-1632
	230/240 V option model	-	8012-1628
	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
	with visual alarm (DIN 12880)	04, 12	8012-1643

* Notes › See last page

ACCESSORIES

Designation	Description	*	Art.-No.
Multi Management Software	Multi Management Software APT-COM™		
	version 4, BASIC edition	19	9053-0039
	version 4, GLP edition	19	9053-0042
	version 4, PROFESSIONAL edition	19	9053-0040
Options/Accessories	chrome plated	–	6004-0166
	Stainless steel	–	6004-0182
	stainless steel	–	6004-0150
	concentrated, for gentle remove of residual contaminants; 1 kg	–	1002-0016
	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
	Hard copy inside folder	–	7007-0005
	LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable)	19	8012-0821
	set of 4 anti-slip feet, for safe stacking of units	–	8012-1887
	stable cart, casters with locking brakes, dimensions: W 1,000 x D 800 x H 780 mm	–	9051-0018
	Stainless steel, max. load per rack 50 kg	–	6004-0198
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	
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	

* Notes › See last page

SERVICES

Designation	Description	*	Art.-No.
Installation services			
Services	Unit function instructions for operation and programming of the controller	18	DL10-0500
	Unpacking and setting up of unit, connecting to existing connections, and checking function	13, 18	DL10-0100
Preventive maintenance			
Services	Executive of equipment inspection according to maintenance plan	14, 18	DL20-0200
Calibration services			
Services	Expansion – including certificate, each additional measuring point in center of chamber at specified test temperature	14, 16, 17, 18	DL30-0102
	including certificate (in accordance with ASTM D5374)	14, 16, 17, 18	DL33-0000
	Temperature calibration with 1 measuring point in center of chamber at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0101
	Temperature measurement with 18 measuring points at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0118
	Temperature measurement with 27 measuring points at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0127
	Temperature measurement with 9 measuring points at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0109
Validation services			
Services	Execution of IQ/OQ in accordance with qualification folder	15, 18	DL40-0100
	Execution of IQ/OQ/PQ in accordance with qualification folder	15, 18	DL44-0500

* Notes › See last page

Designation	Description	*	Art.-No.
Warranty service			
Services	The warranty is extended from 2 to 3 years from the delivery date, wear parts are excluded	-	DLo0-3041
	The warranty is extended from 2 to 5 years from the delivery date, wear parts are excluded	-	DLo0-3042

* 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.
- 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.

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