

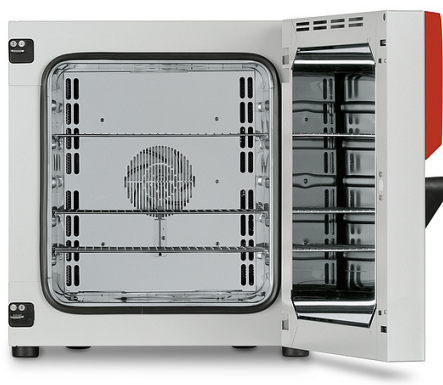
# Model FD 56 | Drying and heating chambers Avantgarde.Line with forced convection

## BENEFITS

- Excellent temporal and spatial temperature accuracy
- High energy efficiency
- USB connection for recording data
- Temperature range up to 300 °C



Model 56



Model 56

## 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
- 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 [L]	Voltage	Option model	Version	Art.-No.
Model FD 56				
60	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	FD056UL-120V
<b>Article Number</b>	<b>9010-0303</b>	<b>9010-0304</b>
<b>Performance Data Temperature</b>		
Temperature range 10 °C above ambient temperature to [°C]	300	300
Temperature uniformity 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]	5	5

## Data Sheet Model FD 56

Description	FD056-230V	FD056UL-120V
<b>Article Number</b>	<b>9010-0303</b>	<b>9010-0304</b>
<b>Electrical data</b>		
Rated Voltage [V]	230	120
Power frequency [Hz]	50/60	60
Nominal power [kW]	1.1	1.1
Unit fuse [A]	6.3	12.5
Phase (Nominal voltage)	1~	1~
<b>Measures - Outer dimensions</b>		
Width net [mm]	560	560
Height net [mm]	625	625
Depth net [mm]	565	565
Wall clearance back [mm]	160	160
Wall clearance sidewise [mm]	100	100
<b>Measures - Doors</b>		
Unit doors	1	1
<b>Measures - Internal Dimensions</b>		
Width [mm]	400	400
Height [mm]	440	440
Depth [mm]	345	345
<b>Measures</b>		
Interior volume [L]	60	60
Net weight of the unit (empty) [kg]	40	40
Load per rack [kg]	15	15
<b>Environment-specific data</b>		
Energy consumption at 150 °C	290 W	290 W
<b>Fixtures</b>		
Number of shelves (standard/maximum)	2/4	2/4

## OPTIONS AND ACCESSORIES

Designation	Description	*	Art.-No.
<b>Access port with silicone plug</b>	10 mm, left	01	8012-0388
	10 mm, right	01	8012-0387
	10 mm, top	01	8012-0386
	30 mm, left	01	8012-1016
	30 mm, right	01	8012-1015
	30 mm, top	01	8012-0539
	50 mm, left	01	8012-1020
	50 mm, right	01	8012-1019
	50 mm, top	01	8012-0545
	100 mm, top	01, 10	8012-1029
<b>Analog output, 4 – 20 mA</b>	for temperature values (output not adjustable)	02	8012-0941
<b>Calibration certificate, expanded</b>	each measurement at additional measuring point or testing temperature	–	8012-0022
	for temperature, measurement in center of chamber at specified temperature	–	8012-0030
<b>Calibration certificate, temperature</b>	temperature measurement incl. certificate and 27 measuring points at specified temperature	–	8012-0921
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	–	8012-0918
	temperature measurement incl. certificate, 9 measuring points at specified temperature	–	8012-0915
<b>Cart</b>	stable cart, casters with locking brakes	–	9051-0018

\* Notes > See last page

## Data Sheet Model FD 56

Designation	Description	*	Art.-No.
<b>Class 3.1 independent temperature safety device</b>	with visual alarm (DIN 12880)	04, 12	8012-0985
<b>Clock, battery-backed</b>	Real-time clock	–	8012-0981
<b>Data Logger Kit</b>	T 350: temperature logging from 0 °C to 350 °C	19	8012-0714
<b>Data Logger Kit, software</b>	LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable)	19	8012-0821
<b>Door gasket</b>	made of FKM, silicone-free	03	8012-1008
<b>Door lock</b>	lockable door handle	–	8012-1025
<b>Ethernet interface</b>	for communication software	–	8012-0988
<b>Instrument tray</b>	large	–	4022-0124
	small	–	4022-0123
<b>Interior lighting</b>	with 1x 15 W (not available in combination with interior socket)		
	120 V option model	–	8012-0971
	230 V option model	–	8012-0969
<b>Measurement of air exchange rate</b>	in accordance with ASTM D5374, definition and protocol according to ambient temperature	–	8012-0195
<b>Overheating alarm</b>	audible, can be switched off, adjustable limit on the independent temperature safety device	–	8012-0979
<b>pH-neutral detergent</b>	concentrated, for gentle remove of residual contaminants; 1 kg	–	1002-0016
<b>Pt 100 temperature sensor</b>	additional Pt 100, with flexible cable	–	8012-0940
<b>Rack</b>	chrome plated	–	6004-0166
	stainless steel	–	6004-0150
<b>Rubber pads</b>	set of 4 anti-slip feet, for safe stacking of unit	10	8012-0001
<b>Shelf, perforated</b>	stainless steel	–	6004-0182
<b>Software</b>	APT-COM™ communications software		
	version 2 to 3, GLP edition	19	9053-0016
	version 3, BASIC edition	19	9053-0014
	version 3, GLP edition	19	9053-0015
	version 3, STANDARD edition	19	9053-0013
	APT-COM™ communications software, price: for free		
	version 3, GLP DEMO Edition	19	9053-0008
<b>Viewing window</b>	viewing window in door	–	8012-0973

\* Notes › See last page

## SERVICES

Designation	Description	*	Art.-No.
<b>Installation services</b>			
Installation	and set up of unit at operating location, connect to existing connections	13, 18	DL100100
Instruction	unit function instructions for operation and programming of the controller	18	DL100400
<b>Preventive maintenance</b>			
Preventive maintenance	Executive of equipment inspection according to maintenance plan	14, 18	DL200200
<b>Calibration services</b>			
Calibration temperature	including certificate, one measuring point in center of chamber at specified temperature	14, 16, 17, 18	DL300101
Measurement of air exchange rate	including certificate (in accordance with ASTM D5374)	14, 16, 17, 18	DL330000
Temperature measurement 18 measuring points	including certificate, 18 measuring points at specified temperature	14, 16, 17, 18	DL300118
Temperature measurement 27 measuring points	including certificate, 27 measuring points at specified temperature	14, 16, 17, 18	DL300127

\* Notes › See last page

## Data Sheet Model FD 56

Designation	Description	*	Art.-No.
Temperature measurement 9 measuring points	including certificate, 9 measuring points at specified temperature	14, 16, 17, 18	DL300109
<b>Validation services</b>			
Execution of IQ/OQ	in accordance with qualification folder	15, 18, 20	DL400100
Execution of IQ/OQ/PQ	in accordance with customer's requirement, price: on request	15, 18	DL440500
Qualification folder IQ/OQ	supporting documents for validation performed by customer, consisting of: IQ/OQ checklists, unit schematics, QM certificate in accordance with ISO 9001	15, 18, 20	8012-0792
Qualification folder IQ/OQ/PQ	supporting documents for validation performed by customer, in accordance with customer's requirement, extension of Qualification folder IQ/OQ by chapter PQ	15, 18	8012-0943
<b>Warranty service</b>			
Extension of the warranty from 2 to 3 years	beginning with the date of delivery, wearing parts are not included	-	DL003041
Extension of the warranty from 2 to 5 years	beginning with the date of delivery, wearing parts are not included	-	DL003042

\* 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.
- 05 Attention: The pump is delivered separately. The electric connection for the pump (230 V/1~/50 Hz) must be carried out by an authorized electrician.
- 06 Heating-up time may increase as a result of the lower heat conductivity.
- 07 The additional heat input may affect the temperature behavior.
- 08 The pump (packaged separately) is ready for connection.
- 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 (see the chapter on BINDER Service) 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.
- 20 When ordering IQ/OQ qualification folders and associated IQ/OQ execution on one order, we offer a 15 % discount for both items.  
When ordering IQ/OQ/PQ qualification folders and associated IQ/OQ/PQ execution on one order, we offer a 15 % discount for the item of the IQ/OQ/PQ folder.
- 21 ATEX conformity:  
Pumping chamber (pumped gases): II 2G IIC T3 X  
Environment with inert purge gas: II 2G IIB T4 X  
Environment without inert purge gas: II 3G IIB T4 X  
Motor: II 2G Ex d IIB T4 Gb

**BINDER GmbH**  
Tuttlingen, Germany  
TEL +49 7462 2005 0  
FAX +49 7462 2005 100  
info@binder-world.com  
www.binder-world.com

**BINDER Asia Pacific (Hong Kong) Ltd.**  
Kowloon, Hong Kong, P.R. China  
TEL +852 39070500  
FAX +852 39070507  
asia@binder-world.com  
www.binder-world.com

**Representative Office for CIS**  
Moscow, Russia  
TEL +7 495 988 15 16  
FAX +7 495 988 15 17  
russia@binder-world.com  
www.binder-world.ru

**BINDER Environmental Testing  
Equipment (Shanghai) Co., Ltd.**  
Shanghai, P.R. China  
TEL +86 21 685 808 25  
FAX +86 21 685 808 29  
china@binder-world.com  
www.binder-world.com

**BINDER Inc.**  
Bohemia, NY, USA  
TEL +1 631 224 4340  
FAX +1 631 224 4354  
usa@binder-world.com  
www.binder-world.us