

Model FD 23 | Drying and heating chambers Classic.Line with forced convection

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



MAIN FEATURES

- Temperature range: room temperature plus 5 °C to 300 °C
- APT.line™ preheating chamber technology
- Forced convection
- Adjustable exhaust air flap
- Controller with timer functions
- 2 chrome-plated racks
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm

ORDERING INFORMATION

Interior volume [L]	Voltage	Option model	Version	Art.-No.
Model FD 23				
20	230 V 1~ 50/60 Hz	Standard	FD023-230V	9010-0194
	120 V 1~ 60 Hz	Standard	FD023UL-120V	9010-0196

TECHNICAL DATA

Description	FD023-230V	FD023UL-120V
Article Number	9010-0194	9010-0196
Performance Data Temperature		
Temperature range 5 °C above ambient temperature to [°C]	300	300
Temperature variation at 150 °C [± K]	2.5	2.5
Temperature fluctuation at 150 °C [± K]	0.3	0.3
Heating-up time to 150 °C [min]	25	25
Recovery time after 30 seconds door open at 150 °C [min]	6	6

Description	FD023-230V	FD023UL-120V
Article Number	9010-0194	9010-0196
Air change data		
Air change (approx.) at 150 °C [x/h]	64	64
Electrical data		
Rated Voltage [V]	230	120
Power frequency [Hz]	50/60	60
Nominal power [kW]	0.8	0.8
Unit fuse [A]	10	12.5
Phase (Nominal voltage)	1~	1~
Measures - Outer dimensions		
Width net [mm]	435	435
Height net [mm]	495	495
Depth net [mm]	520	520
Wall clearance back [mm]	160	160
Wall clearance sidewise [mm]	100	100
Measures - Doors		
Unit doors	1	1
Measures - Internal Dimensions		
Width [mm]	222	222
Height [mm]	330	330
Depth [mm]	300	300
Measures		
Interior volume [L]	20	20
Net weight of the unit (empty) [kg]	27	27
permitted load [kg]	25	25
Load per rack [kg]	12	12
Environment-specific data		
Energy consumption at 150 °C	300 Wh/h	300 Wh/h
Fixtures		
Number of shelves (standard/maximum)	2/4	2/4

OPTIONS AND ACCESSORIES

Designation	Description	*	Art.-No.	
Access port with silicone plug	10 mm, back	01	8012-0390	
	10 mm, left	01	8012-0388	
	10 mm, right	01	8012-0387	
	10 mm, top	01	8012-0386	
	30 mm, back	01	8012-0540	
	30 mm, left	01	8012-0537	
	30 mm, right	01	8012-0536	
	30 mm, top	01	8012-0539	
	50 mm, back	01	8012-0546	
	50 mm, left	01	8012-0542	
	50 mm, right	01	8012-0541	
	50 mm, top	01	8012-0545	
	Analog output, 4 – 20 mA	for temperature values (output not adjustable)	02	8012-0431
	Calibration certificate, expanded	each measurement at additional measuring point or testing temperature	–	8012-0022

* Notes › See last page

Designation	Description	*	Art.-No.
Calibration certificate, temperature	for temperature, measurement in center of chamber at specified temperature	-	8012-0030
	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
Class 3.1 independent temperature safety device	with visual alarm (DIN 12880)	04, 12	8012-0032
Data Logger Kit	T 350: temperature logging from 0 °C to 350 °C	19	8012-0714
Data Logger Kit, software	LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable)	19	8012-0821
Door gasket	made of FKM, silicone-free	03	8012-0493
Door lock	lockable door handle	-	8012-0318
Instrument tray	large	-	4022-0124
	small	-	4022-0123
Magnetic Pouch (A4)	insert pouch with magnetic strip	-	1007-0065
Measurement of air exchange rate	in accordance with ASTM D5374, definition and protocol according to ambient temperature	-	8012-0195
Overheating alarm	audible, can be switched off, adjustable limit on the independent temperature safety device		
	120 V, 208 V option model	-	8012-0470
	230 V, 400 V option model	-	8012-0469
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	-	1002-0016
Pt 100 temperature sensor	additional Pt 100, with flexible cable installed with external connection, incl. LEMO connector (3-pin)	-	8012-0115
Rack	chrome plated	-	6004-0050
	stainless steel	-	6004-0051
Rack, accessories	set of 4 fasteners for additional security	-	8012-0531
Shelf, perforated	stainless steel	-	6004-0052
Viewing window and interior lighting	viewing window in door, 180 x 180 mm, and 15 W interior lighting		
	120 V option model	-	8012-0379
	230 V option model	-	8012-0378

* Notes > See last page

SERVICES

Designation	Description	*	Art.-No.
Installation services			
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
Preventive maintenance			
Preventive maintenance	Executive of equipment inspection according to maintenance plan	14, 18	DL200200
Calibration services			
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
Temperature measurement 9 measuring points	including certificate, 9 measuring points at specified temperature	14, 16, 17, 18	DL300109

* Notes > See last page

Designation	Description	*	Art.-No.
Validation services			
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
Warranty service			
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.
- 06 Heating-up time may increase as a result of the lower heat conductivity.
- 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 (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

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