Model FD 23 | Drying and heating chambers with forced convection

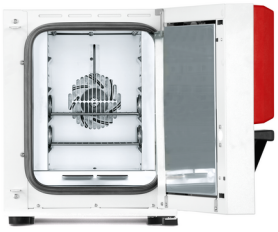
A BINDER FD series heating oven is always used when fast drying and sterilization is required. Thanks to its fully homogeneous temperature distribution, quick dynamics and powerful fan, this heating oven saves valuable time.

BENEFITS

- 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



Model 23



Model 23

IMPORTANT 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		Power supply - unit fuse	Plug*	Version	Model version	Art.-No.
[cu.ft.]	[L]					
Model FD 23						
1	20	230 V 1~ 50/60 Hz -10,0 A	CEE 7/7	Standard	FD023-230V	9010-0194
		120 V 1~ 60 Hz -12,5 A	NEMA 5-15	Standard	FD023UL-120V	9010-0196

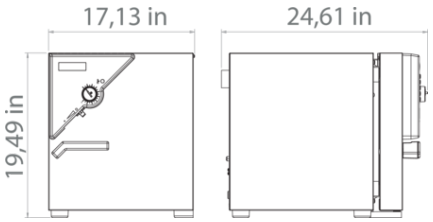
TECHNICAL DATA

Data		
Article Number	9010-0194	9010-0196
Designation	FD023-230V	FD023UL-120V
Option model	Standard	Standard
Performance Data Temperature		
Temperature range	+5 °C above ambient temperature to 300 °C	+5 °C above ambient temperature to 300 °C
Temperature uniformity at 150°C	2.5 ± K	2.5 ± K
Temperature fluctuation at 150°C	0.3 ± K	0.3 ± K
Heating up time to 150°C	25 min	25 min
Recovery time after door was opened for 30 s at 150°C	6 min	6 min
Air change data		
Air change rate at 150°C	64 x/h	64 x/h
Electrical data		
Rated Voltage	230 V	120 V
Power frequency	50/60 Hz	60 Hz
Nominal power	0,8 kW	0,8 kW
Unit fuse	10,0 A	12,5 A
Phase (Nominal voltage)	1~	1~
Dimensions and weights		
Interior volume	1 cu.ft.	1 cu.ft.
Net weight of the unit (empty)	60 lbs	60 lbs
Load per rack	26 lbs	26 lbs
Permitted load	55 lbs	55 lbs
Wall clearance back	3,94 in	3,94 in
Wall clearance sidewise	1,97 in	1,97 in
Housing dimensions not incl. fittings and connections		
Width net	17.13 in	17.13 in
Height net	19.49 in	19.49 in
Depth net	20.47 in	20.47 in
Internal Dimensions		

Interior width	8.74 in	8.74 in
Interior height	12.99 in	12.99 in
Interior depth	11.81 in	11.81 in
Unit doors	1	1
Environment-specific data		
Energy consumption at 150°C	300 Wh/h	300 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 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.

DIMENSIONS Incl. fittings and connections [mm]



OPTIONS

Designation	Description	FD 23	*	Art.-No.
Access port with silicone plug	back			
	10 mm	•	01	8012-1283
	left			
	10 mm	•	01	8012-1276
	30 mm	•	01	8012-1359
	50 mm	•	01	8012-1376
	right			
	10 mm	•	01	8012-1269
	30 mm	•	01	8012-1354
	50 mm	•	01	8012-1372
	top			
	10 mm	•	01	8012-1263

Designation	Description	FD 23	*	Art.-No.
	30 mm	•	01	8012-1364
	50 mm	•	01	8012-1380
Alarm function for overheating	Switchable acoustic alarm, with adjustable limit value on the independent temperature safety device			
	120 V option model	•	-	8012-1304
	230 V option model	•	-	8012-1300
Analog output 4-20 mA	for temperature values (output not adjustable)	•	02	8012-0431
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)	•	-	8012-1147
Door gasket	made of FKM, silicone-free	•	-	8012-1306
Door lock	lockable door handle	•	-	8012-1247
Measurement of air exchange rate	in accordance with ASTM D5374, definition and protocol according to ambient temperature	•	-	8012-1195
Pt 100 temperature sensor	additional flexible Pt 100, interior, with external connection incl. LEMO connector (3-pin)	•	-	8012-1174
Viewing window and interior lighting	viewing window in door, 180 x 180 mm, and 15 W interior lighting			
	230 V option model	•	-	8012-1259

ACCESSORIES

Designation	Description	FD 23	*	Art.-No.
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	•	-	8012-2250
Qualification documents IQ/OQ	IQ/OQ documents digital in PDF format – supporting documents for validation consisting of: IQ/OQ checklists, comprehensive unit documentation covering: temperature. Excluded: Document execution is separate			
	temperature. Excluded: Document execution is separate	•	-	7057-0010
Qualification documents IQ/OQ/PQ	IQ/OQ/PQ documents digital in PDF format – supporting documents for validation customizied to customer requirements, PQ section added to the qualification folder IQ/OQ; supporting documents for validation consisting of: IQ/OQ checklists, comprehensive unit documentation covering: temperature values. Excluded: Document execution is separate			

Designation	Description	FD 23	*	Art.-No.
	temperature values. Excluded: Document execution is separate	•	-	7057-0016
Rack	chrome plated	•	-	8012-2031
	stainless steel	•	-	8012-2046
Rack accessories	fasteners (1 set of 4) for additional security of racks	•	-	8012-0531
Shelf, perforated	Stainless steel	•	-	8012-2164

SERVICES

Designation	Description	*	Art.-No.
Calibration services			
Temperature calibration	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate Travel to be quoted separate.	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 Travel to be quoted separate.	05	DL30-0102
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate. Travel to be quoted separate. A total of 3 shelves are required.	05	DL30-0109
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points with a set value specified by the user, including certificate. Travel to be quoted separate. A total of 2 shelves are required.	05	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate. Travel to be quoted separate. A total of 3 shelves are required.	05	DL30-0127
Installation services			
Unit installation	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) Travel to be quoted as separate.	05	DL10-0160
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming. Travel to be quoted as separate Limited to 3 hours.	05	DL10-0540
Maintenance services			
BRONZE 3-year maintenance contract	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate. 10% Discount on Spare Parts and Labor for any additional Services needed Wear + tear parts to be purchased or billed to customer. Travel to be quoted as separate.	05	DL20-0720
GOLD 3-year maintenance contract	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate of Temperature. 25% Discount on Spare Parts and Labor for any additional Services needed. One additional courtesy visit per year can be used for service visit or operator. Wear + tear parts to be purchased or billed to customer. Travel to be quoted separate.	05	DL20-0910
Preventive maintenance	One-off maintenance service in accordance with maintenance schedule. Visual inspection of mechanical and electrical components, testing of all key	05	DL20-0602

Designation	Description	*	Art.-No.
	functions. Checking a test temperature specified by the user in center of usable space without certificate. Wear + tear parts need to be purchased or billed to customer. Travel to be quoted as separate.		
SILVER 3-year maintenance contract	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate 15% Discount on Spare Parts and Labor for any additional Services needed One additional courtesy visit per year can be used for service visit or operator training. Wear + tear parts to be purchased or billed to customer. Travel to be quoted separate.	05	DL20-0810
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder. Travel to be quoted separate.	05	DL40-0100
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder. Travel to be quoted separate.	05	DL44-0500
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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