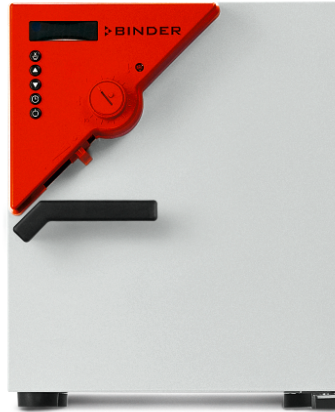


## Model ED 23 | Drying and heating chambers with natural convection

The strengths of a BINDER ED series drying chamber include routine drying and sterilization tasks up to +300 °C. Thanks to the natural convection, all thermal processes which use this drying chamber are highly efficient. The ED series ensures fast, uniform drying.

### 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

### IMPORTANT FEATURES

- Temperature range: +5°C above ambient temperature to +300 °C
- APT.line™ preheating chamber technology
- Natural 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]	Power supply - unit fuse	Plug*	Version	Model version	Art.-No.
<b>Model ED 23</b>					
20	230 V 1~ 50/60 Hz -10,0 A	CEE 7/7	Standard	ED023-230V	9010-0190
	120 V 1~ 60 Hz -12,5 A	NEMA 5-20	Standard	ED023UL-120V	9010-0192

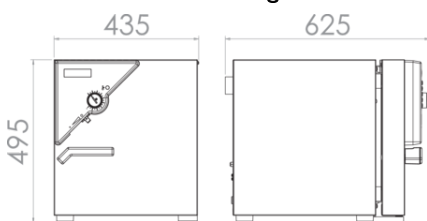
## TECHNICAL DATA

Data				
Designation	ED023-230V	ED023-230V-I	ED023UL-120V	ED023UL-120V-I
Article Number	9010-0190	9010-0191	9010-0192	9010-0193
Option model	Standard	with RS 422	Standard	with RS 422
Performance Data Temperature				
Temperature range	+5 °C above ambient temperature to 300 °C	+5 °C above ambient temperature to 300 °C	+5 °C above ambient temperature to 300 °C	+5 °C above ambient temperature to 300 °C
Temperature uniformity at 150°C	2.8 ± K	2.8 ± K	2.8 ± K	2.8 ± K
Temperature fluctuation at 150°C	0.5 ± K	0.5 ± K	0.5 ± K	0.5 ± K
Heating up time to 150°C	28 min	28 min	28 min	28 min
Recovery time after door was opened for 30 s at 150°C	5 min	5 min	5 min	5 min
Air change data				
Air change rate at 150°C	13 x/h	13 x/h	13 x/h	13 x/h
Electrical data				
Rated Voltage	230 V		120 V	
Power frequency	50/60 Hz	50/60 Hz	60 Hz	60 Hz
Nominal power	0,8 kW	0,8 kW	0,8 kW	0,8 kW
Unit fuse	10,0 A	10,0 A	12,5 A	12,5 A
Phase (Nominal voltage)	1~	1~	1~	1~
Dimensions and weights				
Interior volume	20 L	20 L	20 L	20 L
Net weight of the unit (empty)	27 kg	27 kg	27 kg	27 kg
Load per rack	12 kg	12 kg	12 kg	12 kg
Permitted load	25 kg	25 kg	25 kg	25 kg
Wall clearance back	100 mm	100 mm	100 mm	100 mm
Wall clearance sidewise	50 mm	50 mm	50 mm	50 mm
Housing dimensions not incl. fittings and connections				
Width net	435 mm	435 mm	435 mm	435 mm
Height net	495 mm	495 mm	495 mm	495 mm
Depth net	520 mm	520 mm	520 mm	520 mm

Internal Dimensions				
Interior width	222 mm	222 mm	222 mm	222 mm
Interior height	330 mm	330 mm	330 mm	330 mm
Interior depth	300 mm	300 mm	300 mm	300 mm
Unit doors	1	1	1	1
Environment-specific data				
Energy consumption at 150°C	148 Wh/h	148 Wh/h	148 Wh/h	148 Wh/h
Fixtures				
Number of shelves (std./max.)	2/4	2/4	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. 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	ED 23	*	Art.-No.
	back			
	10 mm	•	01	8012-1282
	30 mm	•	01	8012-0540
	50 mm	•	01	8012-0546
	left			
Access port with silicone plug	10 mm	•	01	8012-1275
	30 mm	•	01	8012-0537
	50 mm	•	01	8012-0542
	right			
	10 mm	•	01	8012-1268
	30 mm	•	01	8012-0536

Designation	Description	ED 23	*	Art.-No.
	50 mm	•	01	8012-0541
	top			
	10 mm	•	01	8012-1262
	30 mm	•	01	8012-0539
	50 mm	•	01	8012-0545
	Switchable acoustic alarm, with adjustable limit value on the independent temperature safety device			
Alarm function for overheating	120/208 V option model	•	-	8012-1303
	switchable acoustic alarm, with adjustable limit value on the independent temperature safety device. Not in combination with the following option: Door with window			
	230/400 V option model	•	-	8012-1299
Analog output 4-20 mA	for temperature values (output not adjustable)	•	-	8012-0430
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	•	-	8012-1115
	for temperature, measurement in center of chamber at specified temperature	•	-	8012-1134
Calibration certificate, temperature	temperature measurement incl. certificate, 9 measuring points at specified temperature	•	-	8012-1551
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	•	-	8012-1572
	temperature measurement incl. certificate and 27 measuring points at specified temperature	•	-	8012-1593
Class 3.1 independent temperature safety device	with visual alarm (DIN 12880)	•	-	8012-0032
Door gasket	made of FKM, silicone-free	•	-	8012-0493
Door lock	lockable door handle	•	-	8012-1246
Measurement of air exchange rate	in accordance with ASTM D5374, definition and protocol according to ambient temperature	•	-	8012-0195
Pt 100 temperature sensor	additional flexible Pt 100, interior, with external connection incl. LEMO connector (3-pin)	•	-	8012-1173
Viewing window and interior lighting	Viewing window 180 x 180 mm in the door and interior lighting 15 W. Not in combination with the following option: Alarm function for overheating			
	230 V option model	•	-	8012-0378

## ACCESSORIES

Designation	Description	ED 23	*	Art.-No.
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	•	-	8012-2250

Designation	Description	ED 23	*	Art.-No.
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 <sub>2</sub> , O <sub>2</sub> – 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 <sub>2</sub> , O <sub>2</sub> , pressure, depending on unit			
Rack	Digital in PDF format	•	-	7057-0001
	Hard copy inside folder	•	-	7007-0001
Rack	chrome plated	•	-	8012-2031
	stainless steel	•	-	8012-2046
Rubber pads	set anti-slip feet	•	-	8012-2030

## SERVICES

Designation	Description	*	Art.-No.
<b>Calibration services</b>			
Calibration certificate, temperature	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate	–	DL30-0110
	Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate	–	DL30-0102
Measurement of air exchange rate	including certificate (in accordance with ASTM D5374)	–	DL33-0000
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate	–	DL30-0109
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points with a set value specified by the user, including certificate	–	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate	–	DL30-0127
<b>Installation services</b>			
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)	–	DL10-0100
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming	–	DL10-0500
<b>Maintenance contracts</b>			
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	–	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,	–	DL20-0915

Designation	Description	*	Art.-No.
	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		
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	–	DL20-0815
<b>Maintenance services</b>			
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	–	DL20-0601
<b>Validation services</b>			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	–	DL40-0100
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	–	DL44-0500
<b>Warranty service</b>			
1-year warranty extension	The warranty is extended by 1 year from the delivery date, wear parts are excluded	–	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.

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