

# 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

## MAIN 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

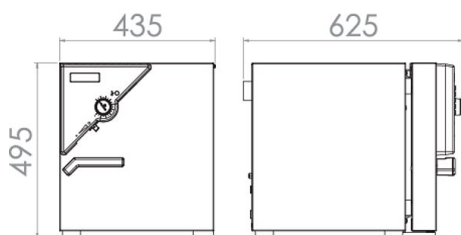
## ORDERING INFORMATION

Interior volume [L]	Voltage	Option model	Version	Art.-No.
20	230 V 1~ ph 50/60 Hz	Standard	ED023-230V	9010-0190
		with RS 422	ED023-230V-I	9010-0191
	120 V 1~ ph 60 Hz	Standard	ED023UL-120V	9010-0192
		with RS 422	ED023UL-120V-I	9010-0193

**TECHNICAL DATA**

Description	ED023-230V <sup>1</sup>	ED023-230V-I <sup>1</sup>	ED023UL-120V <sup>1</sup>	ED023UL-120V-I <sup>1</sup>
Article Number	9010-0190	9010-0191	9010-0192	9010-0193
<b>Performance Data Temperature</b>				
Temperature range +5 °C above ambient temperature to	300 °C	300 °C	300 °C	300 °C
Temperature variation at 150 °C [± K]	2.8	2.8	2.8	2.8
Temperature fluctuation at 150 °C [± K]	0.5	0.5	0.5	0.5
Heating-up time to 150 °C [min]	28	28	28	28
Recovery time after 30 seconds door open at 150 °C [min]	5	5	5	5
<b>Air change data</b>				
Air change (approx.) at 150 °C [x/h]	13	13	13	13
<b>Electrical data</b>				
Rated Voltage [V]	230	230	120	120
Power frequency [Hz]	50/60	50/60	60	60
Nominal power [kW]	0.8	0.8	0.8	0.8
Unit fuse [A]	10	10	12.5	12.5
Phase (Nominal voltage)	1~	1~	1~	1~
<b>Measures</b>				
Interior volume [L]	20	20	20	20
Net weight of the unit (empty) [kg]	27	27	27	27
Permitted load [kg]	25	25	25	25
Load per rack [kg]	12	12	12	12
Wall clearance back [mm]	100	100	100	100
Wall clearance sidewise [mm]	100	100	100	100
<b>Internal Dimensions</b>				
Width [mm]	222	222	222	222
Height [mm]	330	330	330	330
Depth [mm]	300	300	300	300
<b>Doors</b>				
Unit doors	1	1	1	1
<b>Housing dimensions not incl. fittings and connections</b>				
Width net [mm]	435	435	435	435
Height net [mm]	495	495	495	495
Depth net [mm]	520	520	520	520
<b>Environment-specific data</b>				
Energy consumption at 150 °C [Wh/h]	148	148	148	148
<b>Fixtures</b>				
Number of shelves (std./max.)	2/4	2/4	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 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	*	Art.-No.
<b>Access port with silicone plug</b>	back		
	10 mm	01	8012-1282
	30 mm	01	8012-0540
	50 mm	01	8012-0546
	left		
	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
	50 mm	01	8012-0541
	top		
	10 mm	01	8012-1262
30 mm	01	8012-0539	
50 mm	01	8012-0545	
100 mm	01	8012-0547	
<b>Alarm function for overheating</b>	Switchable acoustic alarm, with adjustable limit value on the independent temperature safety device		
	120/208 V option model	-	8012-1303
	230/400 V option model	-	8012-1299
<b>Analog output 4-20 mA</b>	for temperature values (output not adjustable)	-	8012-0430
<b>Calibration certificate, expanded</b>	for temperature; for extending the measurement in center of chamber to include another test temperature	-	8012-1115
<b>Calibration certificate, temperature</b>	for temperature, measurement in center of chamber at specified temperature	-	8012-1134
	temperature measurement incl. certificate and 27 measuring points at specified temperature	-	8012-1593
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	-	8012-1572
	temperature measurement incl. certificate, 9 measuring points at specified temperature	-	8012-1551
<b>Class 3.1 independent temperature safety device</b>	with visual alarm (DIN 12880)	-	8012-0032
<b>Door gasket</b>	made of FKM, silicone-free	-	8012-0493
<b>Door lock</b>	lockable door handle	-	8012-1246
<b>Measurement of air exchange rate</b>	in accordance with ASTM D5374, definition and protocol according to ambient temperature	-	8012-0195
<b>Pt 100 temperature sensor</b>	additional flexible Pt 100, interior, with external connection incl. LEMO connector (3-pin)	-	8012-1173
<b>Viewing window and interior lighting</b>	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

## ACCESSORIES

Designation	Description	*	Art.-No.
<b>APT-COM™ 4 BASIC-Edition</b>	for simple logging and documentation requirements with up to 5 networked units. version 4, BASIC edition	-	9053-0039
<b>APT-COM™ 4 GLP-Edition</b>	for working under GLP-compliant conditions. Measured values are documented in a tamper-proof way in line with the requirements of FDA Regulation 21 CFR 11. version 4, GLP edition	-	9053-0042
<b>APT-COM™ 4 PROFESSIONAL-Edition</b>	convenient unit and user management built on the BASIC edition. Suitable for networking up to 100 units. version 4, PROFESSIONAL edition	-	9053-0040
<b>Data Logger Kit</b>	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	-	8012-0714
<b>Data Logger Software</b>	LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable)	-	8012-0821
<b>pH-neutral detergent</b>	concentrated, for gentle remove of residual contaminants; 1 kg	-	1002-0016
<b>Qualification documents</b>	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 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 <sub>2</sub> , O <sub>2</sub> – or pressure, depending on unit Digital in PDF format	-	7057-0005
	Hard copy inside folder	-	7007-0005
<b>Rack</b>	chrome plated	-	6004-0050
	stainless steel	-	6004-0051
<b>Rubber pads</b>	set anti-slip feet	-	8012-1887
<b>Shelf, perforated</b>	Stainless steel	-	6004-0052

\* Notes › See last page

## SERVICES

Designation	Description	*	Art.-No.
<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)	05	DL10-0100
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming	05	DL10-0500
<b>Maintenance contracts</b>			
<b>Maintenance services</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	05	DL20-0710
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, 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	05	DL20-0910
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	05	DL20-0200
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	05	DL20-0810
<b>Calibration services</b>			
Calibration certificate, temperature	Calibration of one (1) test temperature specified by the user in center of chamber including certificate	03, 04, 05	DL30-0101
	Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate	03, 04, 05	DL30-0102

\* Notes › See last page

Designation	Description	*	Art.-No.
Measurement of air exchange rate	including certificate (in accordance with ASTM D5374)	03, 04, 05	DL33-0000
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points with a set value specified by the user, including certificate	03, 04, 05	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate	03, 04, 05	DL30-0127
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate	03, 04, 05	DL30-0109
<b>Validation services</b>			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	05	DL40-0100
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	05	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 › 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 Sensor calibration is performed in an accredited calibration laboratory.
- 04 Calibration is performed according to the BINDER factory standard.
- 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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