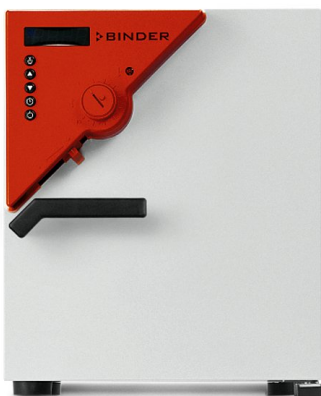


Model ED 23 | Drying and heating chambers with natural convection

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: room temperature plus 5 °C 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

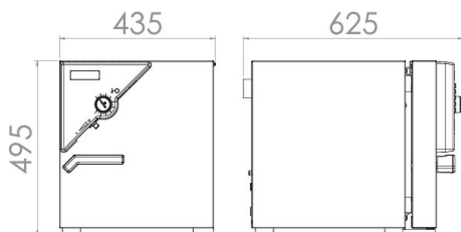
Interior volume [L]	Voltage	Option model	Version	Art.-No.
20	230 V 1~ ph 50/60 Hz	Standard	ED023-230V	9010-0190
		with RS 422	ED023-230V-I	9010-0191
	120 V 1~ ph 60 Hz	Standard	ED023UL-120V	9010-0192
		with RS 422	ED023UL-120V-I	9010-0193

TECHNICAL DATA

Description	ED023-230V ¹	ED023-230V-I ¹	ED023UL-120V ¹	ED023UL-120V-I ¹
Article Number	9010-0190	9010-0191	9010-0192	9010-0193
Performance Data Temperature				
Temperature range 5 °C above ambient temperature to [°C]	300	300	300	300
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
Air change data				
Air change (approx.) at 150 °C [x/h]	13	13	13	13
Electrical data				
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~
Measures				
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
Internal Dimensions				
Width [mm]	222	222	222	222
Height [mm]	330	330	330	330
Depth [mm]	300	300	300	300
Doors				
Unit doors	1	1	1	1
Housing dimensions not incl. fittings and connections				
Width net [mm]	435	435	435	435
Height net [mm]	495	495	495	495
Depth net [mm]	520	520	520	520
Environment-specific data				
Energy consumption at 150 °C [Wh/h]	148	148	148	148
Fixtures				
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.
	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
Access port with silicone plug	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, 10	8012-0547
Alarm function for overheating	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
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 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
Class 3.1 independent temperature safety device	with visual alarm (DIN 12880)	04, 12	8012-0032
Door gasket	made of FKM, silicone-free	03	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 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.
APT-COM™ 4 BASIC-Edition	for simple logging and documentation requirements with up to 5 networked units. version 4, BASIC edition	19	9053-0039
APT-COM™ 4 GLP-Edition	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	19	9053-0042
APT-COM™ 4 PROFESSIONAL-Edition	convenient unit and user management built on the BASIC edition. Suitable for networking up to 100 units. version 4, PROFESSIONAL edition	19	9053-0040
Data Logger Kit	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	19	8012-0714
Data Logger Software	LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable)	19	8012-0821
Instrument tray	with lid made from 18/8 stainless steel, stackable, dimensions: 230 x 133 x 45 mm	–	4022-0123
	with lid made from 18/8 stainless steel, stackable, dimensions: 315 x 215 x 60 mm	–	4022-0124
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	–	1002-0016
Qualification documents	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 ₂ , O ₂ , 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 ₂ , O ₂ – or pressure, depending on unit Digital in PDF format	–	7057-0005
	Hard copy inside folder	–	7007-0005
Rack	chrome plated	–	6004-0050
	stainless steel	–	6004-0051
Rubber pads	set anti-slip feet	–	8012-1887
Shelf, perforated	Stainless steel	–	6004-0052

* Notes › See last page

SERVICES

Designation	Description	*	Art.-No.
Installation services			
Unit installation	Unpacking and setting up of unit, connecting to existing connections, and checking function	13, 18	DL10-0100
Unit instructions	Unit function instructions for operation and programming of the controller	18	DL10-0500
Preventive maintenance			
Maintenance	Functional testing of all electrical and mechanical components, short calibration, documentation in the maintenance schedule	14, 18	DL20-0200
Calibration services			
Measurement of air exchange rate	including certificate (in accordance with ASTM D5374)	14, 16, 17, 18	DL33-0000
Temperature calibration	Expansion – including certificate, each additional measuring point in center of chamber at specified test temperature	14, 16, 17, 18	DL30-0102
	Temperature calibration with 1 measuring point in center of chamber at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0101
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0127
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0109
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	15, 18	DL40-0100

* Notes › See last page

Designation	Description	*	Art.-No.
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	15, 18	DL44-0500
Warranty service			
Warranty extension from 2 to 3 years	The warranty is extended from 2 to 3 years from the delivery date, wear parts are excluded	-	DL00-2041
Warranty extension from 2 to 5 years	The warranty is extended from 2 to 5 years from the delivery date, wear parts are excluded	-	DL00-2042

* 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.
- 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 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.

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