

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

The strengths of a BINDER ED series drying chamber include routine drying and sterilization tasks up to 300 °C. Thanks to the gravity 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
- · Gravity 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 [cu.ft.]	Voltage	Option model	Version	ArtNo.
0.7	230 V 1~ 50/60 Hz	Standard	ED023-230V	9010-0190
		with RS 422	ED023-230V-I	9010-0191
	120 V 1~ 60 Hz	Standard	ED023UL-120V	9010-0192
		with RS 422	ED023UL-120V-I	9010-0193



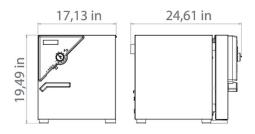
## **TECHNICAL DATA**

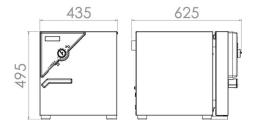
Description	ED023-230V1	EDo23-230V-I1	ED023UL-120V <sup>1</sup>	ED023UL-120V-l1		
Article Number	9010-0190	9010-0191	9010-0192	9010-0193		
Performance Data Temperature	Performance Data Temperature					
Temperature range +5 °C above ambient temperature to	300 °C	300 °C	300 °C	300 °C		
Temperature variation 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		
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 [cu.ft.]	0.7	0.7	0.7	0.7		
Net weight of the unit (empty) [lbs]	60	60	60	60		
Permitted load [lbs]	55	55	55	55		
Load per rack [lbs]	26	26	26	26		
Wall clearance back [in]	3.94	3.94	3.94	3.94		
Wall clearance sidewise [in]	3.94	3.94	3.94	3.94		
Internal Dimensions						
Width [in]	8.75	8.75	8.75	8.75		
Height [in]	13	13	13	13		
Depth [in]	11.82	11.82	11.82	11.82		
Doors						
Unit doors	1	1	1	1		
Housing dimensions not incl. fittings an	d connections					
Width net [in]	17.14	17.14	17.14	17.14		
Height net [in]	19.5	19.5	19.5	19.5		
Depth net [in]	20.49	20.49	20.49	20.49		
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		

<sup>1</sup> 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	*	ArtNo.
	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 blug	right		
Mug	10 mm	01	8012-1268
	30 mm	01	8012-0536
	50 mm	01	8012-054
	top		
	10 mm	01	8012-126
	30 mm	01	8012-053
	50 mm	01	8012-054
	100 mm	01	8012-054
Alarm function for overheating	Switchable acoustic alarm, with adjustable limit value on the independent temperature safety device		
	120/208 V option model	-	8012-130
overneating	230/400 V option model	-	8012-129
Analog output 4-20 mA	for temperature values (output not adjustable)	-	8012-043
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 measurement incl. certificate and 27 measuring points at specified temperature	=	8012-159
temperature	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)	-	8012-003
Door gasket	made of FKM, silicone-free	=	8012-049
Door lock	lockable door handle	=	8012-124
Measurement of air exchange rate	in accordance with ASTM D5374, definition and protocol according to ambient temperature	-	8012-019
Pt 100 temperature sensor	additional flexible Pt 100, interior, with external connection incl. LEMO connector (3-pin)	-	8012-1173
	viewing window in door, 180 x 180 mm, and 15 W interior lighting		
Viewing window and interior lighting	120 V option model	-	8012-037
menor ugnung	230 V option model	_	8012-037

<sup>\*</sup> Notes > See last page



## **ACCESSORIES**

Designation	Description	*	ArtNo.
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	-	8012-0714
Data Logger Software	LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable)	_	8012-0821
1	with lid made from 18/8 stainless steel, stackable, dimensions: 230 x 133 x 45 mm	-	4022-0123
Instrument tray	with lid made from 18/8 stainless steel, stackable, dimensions: 315 x 215 x 60 mm	-	4022-012
	Multi Management Software APT-COM™		
Multi Management	version 4, BASIC edition	-	9053-0039
Software	version 4, GLP edition	-	9053-004
	version 4, PROFESSIONAL edition	-	9053-004
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	-	1002-0010
	$IQ/OQ$ 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	-	7057-000
D116 41 4 4 -	Hard copy inside folder	-	7007-000
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, $CO_2$ , $O_2$ – or pressure, depending on unit		
	Digital in PDF format	_	7057-000
	Hard copy inside folder	-	7007-000
	chrome plated	-	6004-005
Rack	stainless steel	-	6004-005
Rubber pads	set anti-slip feet	-	8012-188
Shelf, perforated	Stainless steel	-	6004-005
* Notes > See last page			

<sup>\*</sup> Notes > See last page

## **SERVICES**

Designation	Description	*	ArtNo.
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)	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
Maintenance services			
Maintenance	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 chamber without certificate	05	DL20-0200
Calibration services			
Measurement of air exchange rate	including certificate (in accordance with ASTM D5374)	03, 04, 05	DL33-0000
Temperature calibration	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
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
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	05	DL40-0100

<sup>\*</sup> Notes > See last page



Designation	Description	*	ArtNo.
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	05	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

<sup>\*</sup> Notes > See last page



#### **NOTES**

- Condensation may occur in the area around the access port. Access ports may be placed in custom locations for an additional charge. UL mark is not granted when this option is used.
- 02
- Sensor calibration is performed in an accredited calibration laboratory. 03
- Calibration is performed according to the BINDER factory standard.
- 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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