Model M 56 | Drying and heating chambers with forced convection and advanced program functions

With a maximum of +300 °C and various programming options the M series material test chambers are ideal for material and aging tests. With a high air flow, the powerful fans ensure rapid heating.

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
- Advanced programming options



Model 56



Model 56

IMPORTANT FEATURES

- Temperature range: +23°C above ambient temperature to +300°C
- High temperature accuracy thanks to APT.line™ technology with increased heating output
- Reinforced fan with adjustable speed
- Electromechanical control of the exhaust air flap
- Intuitive touchscreen controller with time-segment and real-time programming
- 2 chrome-plated racks
- Class 2 independent adjustable temperature safety device (DIN 12880) and class 3.1 independent temperature safety device (DIN 12880) with visual/ acoustic alarm available for selection on the controller
- Failsafe function – backup sensor Pt 100
- Computer interface: Ethernet
- Internal data logger, measured values can be read out in open format via USB

ORDERING INFORMATION

Interior volume [L]	Power supply - unit fuse	Plug*	Version	Model version	Art.-No.
Model M 56					
59	230 V 1~ 50/60 Hz -10,0 A	CEE 7/7	Standard	M056-230V	9010-0371

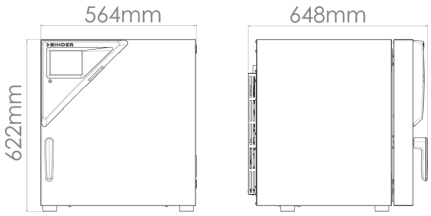
TECHNICAL DATA

Data	
Article Number	9010-0371
Designation	M056-230V
Option model	Standard
Performance Data Temperature	
Temperature range	+23 °C above ambient temperature to 300 °C
Temperature uniformity at 150°C	1.4 ± K
Temperature fluctuation at 150°C	0.2 ± K
Heating up time to 150°C	9 min
Recovery time after door was opened for 30 s at 150°C	4 min
Air change data	
Air change rate at 100°C	175 x/h
Electrical data	
Rated Voltage	230 V
Power frequency	50/60 Hz
Nominal power	2 kW
Unit fuse	10,0 A
Phase (Nominal voltage)	1~
Dimensions and weights	
Interior volume	59 L
Net weight of the unit (empty)	43 kg
Load per rack	30 kg
Permitted load	70 kg
Wall clearance back	160 mm
Wall clearance sidewise	100 mm
Housing dimensions not incl. fittings and connections	
Width net	560 mm
Height net	622 mm
Depth net	596 mm
Internal Dimensions	

Interior width	400 mm
Interior height	440 mm
Interior depth	335 mm
Unit doors	1
Environment-specific data	
Sound-pressure level	46 dB(A)
Energy consumption at 100°C	210 Wh/h
Energy consumption at 150°C	330 Wh/h
Fixtures	
Number of shelves (std./max.)	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	*	Art.-No.
	left		
	10 mm	01	8012-2296
	30 mm	01	8012-2302
	50 mm	01	8012-2305
	right		
Access port with silicone plug	10 mm	01	8012-2298
	30 mm	01	8012-2304
	50 mm	01	8012-2307
	top		
	10 mm	01	8012-2297
	30 mm	01	8012-2303

Designation	Description	*	Art.-No.
	50 mm	01	8012-2306
	100 mm	01	8012-2300
Analog output 4-20 mA	for temperature values (output not adjustable)	02	8012-2295
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	-	8012-2328
Calibration certificate, temperature	for temperature, measurement in center of chamber at specified temperature	-	8012-2324
	temperature measurement incl. certificate, 9 measuring points at specified temperature	-	8012-2327
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	-	8012-2325
	temperature measurement incl. certificate and 27 measuring points at specified temperature	-	8012-2326
Door gasket	made of FKM, silicone-free	-	8012-2331
Door lock	lockable door handle	-	8012-2335
Gas-tight option model	Incl. additional measures for the greatest possible impermeability to gas; not in conjunction with access port or interior lighting option	-	8012-2308
HEPA air filter	On fresh air supply for unit; filter classification H14 (acc. to. EN 1822-1:2009, > 99.995% at 0.3 µm)	-	8012-2311
Inert gas connection	With gas inlet and outlet, Ø 10 mm, incl. additional measures for the greatest possible impermeability to gas; not in conjunction with access port or interior lighting option	-	8012-2315
Inner chamber, reinforced	max. total load 85 kg	-	8012-2320
Interior lighting	with 27 W light bulb		
	230/240 V option model	-	8012-2318
Measurement of air exchange rate	in accordance with ASTM D5374, definition and protocol according to ambient temperature	-	8012-2329
Pt 100 temperature sensor	Additional flexible Pt 100, interior, for displaying the temperature on the unit display. (Not combined with specimen temperature control option)	-	8012-2330
Specimen temperature control	With additional specimen temperature sensor. Standard function 2 zero-voltage relay contacts not applicable.	-	8012-2343

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	-	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	-	9053-0042

Designation	Description	*	Art.-No.
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	-	9053-0040
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	-	8012-2250
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	-	7057-0005
	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_2, O_2, pressure, depending on unit		
	Digital in PDF format	-	7057-0001
	Hard copy inside folder	-	7007-0001
Rack	max. load per rack 30 kg		
	chrome plated	-	8012-2038
	stainless steel	-	8012-2085
Rubber pads	set anti-slip feet	-	8012-2030
Shelf, perforated	max. load per rack 30 kg		
	Stainless steel	-	8012-2175
Table on castors	stable cart, casters with locking brakes, dimensions: W 1,000 x D 800 x H 780 mm	-	9051-0018

SERVICES

Designation	Description	*	Art.-No.
Calibration services			
Calibration certificate, temperature	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate	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	05	DL30-0102
Measurement of air exchange rate	including certificate (in accordance with ASTM D5374)	05	DL33-0000
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate	05	DL30-0109
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points with a set value specified by the user, including certificate	05	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate	05	DL30-0127

Designation	Description	*	Art.-No.
Installation services			
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	DL10-0160
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming	05	DL10-0550
Maintenance contracts			
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	DL20-0720
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, 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
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
Maintenance services			
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	DL20-0602
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	05	DL41-0200
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	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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