Model M 400 | 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 400

Model 400

MAIN FEATURES

- Temperature range: room temperature plus 5 °C to 300 °C
- APT.line™ preheating chamber technology
- Adjustable fan speed
- Program-controlled ventilation flap
- Color LCD controller with time-segment programming
- 2 chrome-plated racks
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm
- Computer interface: RS 422

ORDERING INFORMATION

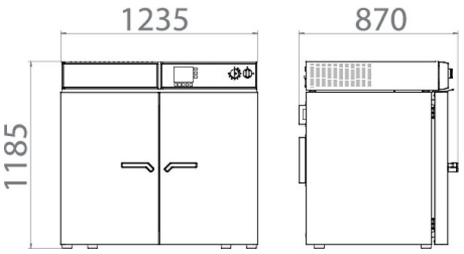
Interior volume [L]	Voltage	Option model	Version	Art.-No.
400	400 V 3~ ph 50/60 Hz	Standard	M400-400V	9010-0204

TECHNICAL DATA

Description	M400-400V[1]
Article Number	9010-0204
Performance Data Temperature	
Temperature range 5 °C above ambient temperature to	300 °C
Temperature variation at 150 °C [± K]	1.5
Temperature fluctuation at 150 °C [± K]	0.3
Heating-up time to 150 °C [min]	18
Recovery time after 30 seconds door open at 150 °C [min]	3
Air change data	
Air change (approx.) at 150 °C [x/h]	54
Electrical data	
Rated Voltage [V]	400
Power frequency [Hz]	50/60
Nominal power [kW]	3.4
Phase (Nominal voltage)	3~
Measures	
Interior volume [L]	400
Net weight of the unit (empty) [kg]	173
Permitted load [kg]	90
Load per rack [kg]	35
Wall clearance back [mm]	160
Wall clearance sidewise [mm]	100
Internal Dimensions	
Width [mm]	1000
Height [mm]	800
Depth [mm]	510
Housing dimensions not incl. fittings and connections	
Width net [mm]	1235
Height net [mm]	1190
Depth net [mm]	795
Environment-specific data	
Energy consumption at 150 °C [Wh/h]	1200
Fixtures	
Number of shelves (std./max.)	2/10

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. 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.
Access port with silicone plug	back		
	10 mm	01	8012-1287
	30 mm	01	8012-1371
	50 mm	01	8012-1387
	left		
	10 mm	01	8012-1280
	30 mm	01	8012-1363
	50 mm	01	8012-1379
	100 mm	01, 11	8012-1511
	right		
	10 mm	01	8012-1273
	30 mm	01	8012-1358
	50 mm	01	8012-1375
	100 mm	01, 11	8012-1508
	top		
	10 mm	01	8012-1266
	30 mm	01	8012-1367
	50 mm	01	8012-1383
Analog output 4-20 mA	for temperature values (output not adjustable)	–	8012-0480
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	–	8012-1123
Calibration certificate, temperature	for temperature, measurement in center of chamber at specified temperature	–	8012-1142
	temperature measurement incl. certificate and 27 measuring points at specified temperature	–	8012-1601
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	–	8012-1580
	temperature measurement incl. certificate, 9 measuring points at specified temperature	–	8012-1559
Door gasket	made of FKM, silicone-free	03	8012-1312
Door lock	lockable door handle	–	8012-1256
HEPA air filter	On fresh air supply for unit; filter classification H14 (acc. to. EN 1822-1:2009, > 99.995% at 0.3 µm)	–	8012-0222
Inner chamber, reinforced	including 2 reinforced racks	–	8012-0342
Lockable controller keyboard	Lockable controller keyboard with key-operated switch	–	8012-0529
Measurement of air exchange rate	in accordance with ASTM D5374, definition and protocol according to ambient temperature	–	8012-1199
Pt 100 temperature sensor	additional flexible Pt 100, interior, for displaying the temperature on the unit display	–	8012-0334
Viewing window and interior lighting	viewing window in each door, 290 x 470 mm, and 30 W interior lighting		
	400 V option model	–	8012-0061

* 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

* Notes › See last page

Designation	Description	*	Art.-No.
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
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	–	6004-0005
	stainless steel	–	6004-0011
Rack accessories	fasteners (1 set of 4) for additional security of racks	–	8012-0531
Rack, reinforced	stainless steel, with fasteners (1 set of 4)	–	8012-0346
Rubber pads	set anti-slip feet	–	8012-1887
Shelf, perforated	Stainless steel	–	6004-0032
Table on castors	stable cart, casters with locking brakes, dimensions: W 1,300 x D 800 x H 780 mm	–	9051-0019

* 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	DL41-0200
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	–	DL01-0041
Warranty extension from 2 to 5 years	The warranty is extended from 2 to 5 years from the delivery date, wear parts are excluded	–	DL01-0042

* Notes › See last page

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