Model VD 56 | Vacuum drying chambers for non-flammable solvents

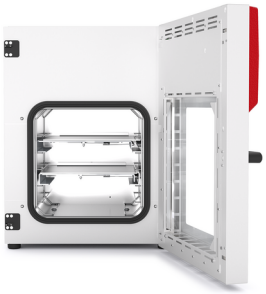
BINDER's VD series vacuum drying chambers deliver impressive performance through their precise temperature control and gentle drying. The patented expansion rack technology from BINDER also optimizes heat transfer. The shelves can be repositioned for flexible placement and the interior of the chamber is easy to clean.

BENEFITS

- Fast, gentle drying
- Optimum heat transfer through large thermal conducting plates
- Safe work thanks to proven safety concept
- Also option of modular complete system with vacuum pump and pump chamber



Model 56



Model 56

IMPORTANT FEATURES

- Temperature range: +9°C above ambient temperature to +220 °C
- Controller with digital display of pressure and temperature
- Program-controlled drying monitoring with automatic ventilation at end of process
- Internal data logger, measured values can be read out in open format via USB
- 1 aluminum expansion rack, can be custom-positioned
- Inert gas connection
- Universal access port DN 16 - for the introduction of external measuring devices
- Shatterproof, spring-mounted safety glass panel
- Large viewing window with option of interior lighting
- Computer interface: Ethernet

OPTIONAL EQUIPMENT

- Touchscreen Controller - Graphical display of main process parameter
- Expansion racks - Choice of aluminum or stainless steel racks depending on the application requirements
- Analogue output for temperature and pressure signals - for external monitoring and evaluation of the process parameters, integration into in-house systems is possible
- Universal ventilation - Selection of different ventilation by air or inert gas
- Universal access port DN 40 - for the introduction of external measuring devices
- Multi Management Software APT-COM - Manage, record and document device parameters
- Services - extensive services ensure correct device function

ORDERING INFORMATION

Interior volume [L]	Power supply - unit fuse	Plug*	Version	Model version	Art.-No.
Model VD 56					
55	200...230 V 1~ 50/60 Hz -8,0 A	CEE 7/7	Standard	VD056-230V	9630-0002
	100...120 V 1~ 50/60 Hz -16,0 A	NEMA 5-15	Standard	VD056UL-120V	9630-0006

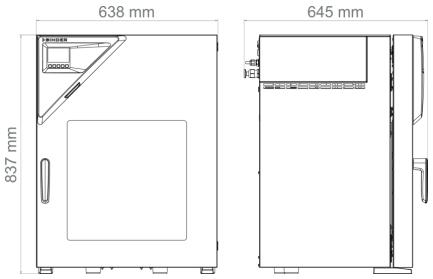
TECHNICAL DATA

Data		
Article Number	9630-0002	9630-0006
Designation	VD056-230V	VD056UL-120V
Option model	Standard	Standard
Performance Data Temperature		
Temperature range	+9 °C above ambient temperature to 220 °C	+9 °C above ambient temperature to 220 °C
Temperature uniformity at 100°C	1.2 ± K	1.2 ± K
Temperature fluctuation at 100°C	0.1 ± K	0.1 ± K
Heating up time to 100°C	80 min	80 min
Vacuum Data		
Leak rate	0,01 bar/h	0,01 bar/h
Pressure fluctuation over time at 50 mbar	1 ± mbar	1 ± mbar
Pressure fluctuation over time at 400 mbar	70 ± mbar	70 ± mbar
Electrical data		
Rated Voltage	200...230 V	100...120 V
Power frequency	50/60 Hz	50/60 Hz
Nominal power	1,4 kW	1,4 kW
Unit fuse	8,0 A	16,0 A
Phase (Nominal voltage)	1~	1~
Connections		
Vacuum connection with small flange	16 DN mm	16 DN mm
Measuring access port with small flange	16 DN mm	16 DN mm
Compressed air connection for pressure-encapsulation	5 NW	5 NW
Dimensions and weights		
Interior volume	55 L	55 L
Net weight of the unit (empty)	96 kg	96 kg
Load per rack	20 kg	20 kg
Permitted load	60 kg	60 kg
Wall clearance back	100 mm	100 mm
Wall clearance sidewise	70 mm	70 mm

Housing dimensions not incl. fittings and connections		
Width net	638 mm	638 mm
Height net	815 mm	815 mm
Depth net	461 mm	461 mm
Internal Dimensions		
Interior width	400 mm	400 mm
Interior height	400 mm	400 mm
Interior depth	343 mm	343 mm
Unit doors	1	1
Environment-specific data		
Sound-pressure level	40 dB(A)	40 dB(A)
Energy consumption at 100°C	180 Wh/h	180 Wh/h
Fixtures		
Number of shelves (std./max.)	1/5	1/5

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	VD 56	*	Art.-No.
Additional universal ventilation	Additional universal connection for ventilation with ambient air or inert gas. Flow limiter thread (G"), and connection with 3/8" male thread.	•	-	8612-0001
Analog output 4-20 mA	for temperature and pressure values (output not adjustable)	•	-	8612-0004
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	•	-	8012-1127
Calibration certificate, pressure	Calibration of the pressure display to a specified value, including certificate	•	-	8012-2021
	Extension of the calibration of the pressure display by another pressure value, including certificate	•	-	8012-2022

Designation	Description	VD 56	*	Art.-No.
Calibration certificate, temperature	for temperature, measurement in center of chamber at specified temperature	•	-	8012-1145
	temperature measurement incl. certificate, 9 measuring points at specified temperature	•	-	8012-0916
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	•	-	8012-0919
Door gasket	made of FKM, silicone-free	•	-	8612-0008
Door lock	lockable door handle	•	-	8612-0002
Expansion racks	stainless steel expansion rack instead of standard aluminum expansion rack, incl. calibration	•	-	8612-0012
Interior lighting	LED light strips on the left and right in the door	•	-	8612-0005
Temperature measurement of the specimen	with flexible Pt 100 sensor and digital specimen temperature display	•	-	8612-0006
Touchscreen controller	Large display panel with intuitive operation, actual and set values of main process parameters are shown simultaneously on the display. In addition, the graphic chronological evaluation of process parameters is displayed.	•	-	8612-0015
Universal access port	Additional DN 40 small flange universal access port with blind flange, for positioning sensors or supply lines in the chamber.	•	-	8612-0003

ACCESSORIES

Designation	Description	VD 56	*	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
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
Connection kit VD VP1-VP2	For vacuum pump VP1 and VP2. Consisting of plastic hose 1.9 m long, clamping ring, universal centering ring and small flange adapter DN 16 to hose nozzle DN 10.	•	-	8012-2613
Emissions condenser VP1-VP2	For vacuum pump VP1 and VP2. Mounting kit for upgrading the pump with a condenser for recovering emissions.	•	-	8012-2615
Expansion racks	aluminum	•	-	8012-2056
	stainless steel	•	-	8012-2258
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	•	-	8012-2250

Designation	Description	VD 56	*	Art.-No.
Pump chamber VD 56 with vacuum pump VP1	Pump chamber for installation of vacuum pumps, with switchable power socket. Including chemical membrane pump with a nominal air flow of 2.0 m^3/hour, final pressure 7 mbar and connection kit VD VP1-VP2.			
	120 V / 50-60 Hz option model	•	-	8012-2622
Pump chamber VD 56 with vacuum pump VP 2	Pump chamber for installation of vacuum pumps, with switchable power socket.			
	120 V / 50-60 Hz option model	•	-	8012-2623
Pump chamber VD 56 with vacuum pump VP1	Pump chamber for installation of vacuum pumps, with switchable power socket. Including chemical membrane pump with a nominal air flow of 2.0 m^3/hour, final pressure 7 mbar and connection kit VD VP1-VP2.			
	230 V / 50-60 Hz option model	•	-	8012-2620
Pump chamber VD 56 with vacuum pump VP 2	Pump chamber for installation of vacuum pumps, with switchable power socket.			
	230 V / 50-60 Hz option model	•	-	8012-2621
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
Vacuum pump VP1	Chemical membrane pump with a nominal air flow of 2.0 m^3/h and final pressure 7 mbar. Option model can be switched between 230V/50Hz and 120V/60Hz.	•	-	5013-0256
Vacuum pump VP2	Chemical membrane pump with a nominal air flow of 3.4 m^3/h and final pressure 1.5 mbar. Option model can be switched between 230V/50Hz and 120V/60Hz.	•	-	5013-0257

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	DL30-0160
	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
Pressure calibration	Digital pressure display calibration at a specified test pressure of 20–900 mbar, including certificate	05	DL30-0410
	Expansion – Digital pressure display calibration at a specified test pressure of 20–900 mbar, including certificate	05	DL30-0411

Designation	Description	*	Art.-No.
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, 15 measuring points	Temperature measurement with 15 measuring points with a set value specified by the user, including certificate	05	DL30-0218
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	DL10-0170
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	DL20-0710
GOLD 3-year aintenance contract VD + VP1	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	DL20-0981
		05	DL20-0982
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	DL20-0980
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	DL20-0880
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	DL20-0615
VAP 1 vacuum pump maintenance	Maintenance service of the vacuum pump according to the maintenance schedule, visual inspection, replacement of the diaphragms, O-rings and seals, (Service Kit included in the scope of services) as well as final functional test	05	DL20-0410
VAP 2 vacuum pump maintenance	Maintenance service of the vacuum pump according to the maintenance schedule, visual inspection, replacement of the diaphragms, O-rings and seals, (Service Kit included in the scope of services) as well as final functional test	05	DL20-0420
VP 1 vacuum pump maintenance	Maintenance service of the vacuum pump according to the maintenance schedule, visual inspection, replacement of the diaphragms, O-rings and seals, (Service Kit included in the scope of services) as well as final functional test	05	DL20-0415
VP2 vacuum pump maintenance	Maintenance service of the vacuum pump according to the maintenance schedule, visual inspection, replacement of the diaphragms, O-rings and seals, (Service Kit included in the scope of services) as well as final functional test	05	DL20-0425
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	05	DL42-0310
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	05	DL44-0500
Warranty service			

Designation	Description	*	Art.-No.
1-year warranty extension	The warranty is extended by 1 year from the delivery date, wear parts are excluded	05	DL50-0020

NOTES

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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