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

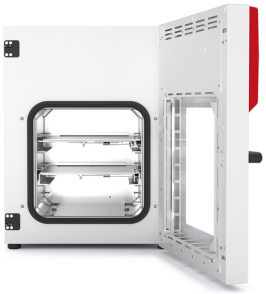
BINDER's VD series vacuum drying chambers deliver impressive performance through their precise temperature control and gentle drying. The patented expansion rack technology from BINDER also optimizes heat transfer. The shelves can be repositioned for flexible placement and the interior of the chamber 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		Power supply - unit fuse	Plug*	Version	Model version	Art.-No.
[cu.ft.]	[L]					
Model VD 56						
2	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

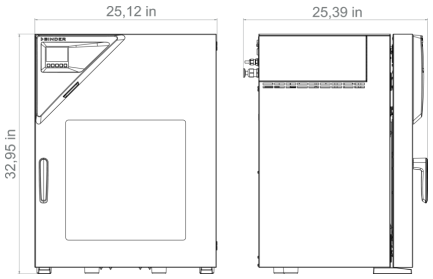
TECHNICAL DATA

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	2 cu.ft.	2 cu.ft.
Net weight of the unit (empty)	212 lbs	212 lbs
Load per rack	44 lbs	44 lbs
Permitted load	132 lbs	132 lbs
Wall clearance back	3,94 in	3,94 in
Wall clearance sidewise	2,76 in	2,76 in

Housing dimensions not incl. fittings and connections		
Width net	25.12 in	25.12 in
Height net	32.09 in	32.09 in
Depth net	18.15 in	18.15 in
Internal Dimensions		
Interior width	15.75 in	15.75 in
Interior height	15.75 in	15.75 in
Interior depth	13.5 in	13.5 in
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
		•	-	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
Expansion racks	aluminum	•	-	8012-2056
	stainless steel	•	-	8012-2258
Options/Accessories	For vacuum pump VP1 and VP2. Mounting kit for upgrading the pump with a condenser for recovering emissions.	•	-	8012-2615
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
	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.			
	120 V / 50-60 Hz option model	•	-	8012-2623
	230 V / 50-60 Hz option model	•	-	8012-2621
Qualification documents IQ/OQ	IQ/OQ documents digital in PDF format – supporting documents for validation consisting of: IQ/OQ checklists, comprehensive unit documentation covering:			
	temperature and pressure values under vacuum. Excluded: Document execution is separate	•	-	7057-0015
Qualification documents IQ/OQ/PQ	IQ/OQ/PQ documents digital in PDF format – supporting documents for validation customizied to customer requirements, PQ section added to the qualification folder IQ/OQ; supporting documents for validation consisting of: IQ/OQ checklists, comprehensive unit documentation covering:			
	temperature and pressure values under vacuum. Excluded: Document execution is separate	•	-	7057-0021
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			
Pressure calibration	Digital pressure display calibration at a specified test pressure of 20–900 mbar, including certificate. Travel to be quoted separate.	05	DL30-0410
	Expansion – Additional Digital pressure display calibration at a specified test pressure of 20–900 mbar, including certificate. Travel to be quoted separate.	05	DL30-0411
Temperature calibration	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate Travel to be quoted separate.	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 Travel to be quoted separate.	05	DL30-0102
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate. Travel to be quoted separate. A total of 3 shelves are required.	05	DL30-0109
Temperature measurement, 15 measuring points	Temperature measurement with 15 measuring points with a set value specified by the user, including certificate. Travel to be quoted separate.	05	DL30-0218

Designation	Description	*	Art.-No.
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) Travel to be quoted as separate.	05	DL10-0170
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming. Travel to be quoted as separate Limited to 3 hours.	05	DL10-0550
Maintenance services			
BRONZE 3-year maintenance contract	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate. 10% Discount on Spare Parts and Labor for any additional Services needed Wear + tear parts to be purchased or billed to customer. Travel to be quoted as separate.	05	DL20-0710
GOLD 3-year maintenance contract	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate of Temperature. 25% Discount on Spare Parts and Labor for any additional Services needed. One additional courtesy visit per year can be used for service visit or operator. Wear + tear parts to be purchased or billed to customer. Travel to be quoted separate.	05	DL20-0980
GOLD 3-year maintenance contract VD + VP1	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate of Temperature. 25% Discount on Spare Parts and Labor for any additional Services needed. One additional courtesy visit per year can be used for service visit or operator. Wear + tear parts to be purchased or billed to customer. Travel to be quoted separate.	05	DL20-0981
		05	DL20-0982
Preventive maintenance	One-off maintenance service in accordance with maintenance schedule. Visual inspection of mechanical and electrical components, testing of all key functions. Checking a test temperature specified by the user in center of usable space without certificate. Wear + tear parts need to be purchased or billed to customer. Travel to be quoted as separate.	05	DL20-0615
SILVER 3-year maintenance contract	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate 15% Discount on Spare Parts and Labor for any additional Services needed One additional courtesy visit per year can be used for service visit or operator training. Wear + tear parts to be purchased or billed to customer. Travel to be quoted separate.	05	DL20-0880
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. Travel to be quoted separate.	05	DL42-0310
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder. Travel to be quoted separate.	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).

BINDER GmbH
Tuttlingen, Germany
TEL +49 7462 2005 0
info@binder-world.com
www.binder-world.com

BINDER Inc.
Bohemia, NY, USA
TEL +1 631 224 4340
usa@binder-world.com
www.binder-world.us

BINDER Environmental Testing Equipment (Shanghai) Co., Ltd.
Shanghai, P.R. China
TEL +86 21 685 808 25
china@binder-world.com
www.binder-world.com