Model VDL 23 | Vacuum drying chambers for flammable solvents

BINDER VDL series safety vacuum drying chambers ensure maximum safety when drying organic solvents. Explosion-protected unit with classification according to ATEX directive 2014/34/EU: EX II 2/3/- G IIB T3 Gb/Gc/- X.

BENEFITS

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



Model 23



Model 23

IMPORTANT FEATURES

- Temperature range: +9°C above ambient temperature to +110 °C
- ATEX conformity for units: EX II 2/3/- G IIB T3 Gb/Gc/- X
- Intuitive touchscreen controller with graphical pressure and temperature display
- 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
- Pressure control device for heating activated from < 100 mbar
- 2 aluminum expansion racks, can be custom-positioned
- Universal connection for ventilation with ambient air or inert gas
- Universal access port DN 16 - for the introduction of external measuring devices
- Shatterproof, spring-mounted safety glass panel
- Large viewing window
- Computer interface: Ethernet

OPTIONAL EQUIPMENT

- 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 VDL 23					
24	100...120 V 1~ 50/60 Hz -10,0 A	NEMA 5-15	Standard	VDL023-120V	9630-0013
	200...230 V 1~ 50/60 Hz -6,3 A	CEE 7/7	Standard	VDL023-230V	9630-0009

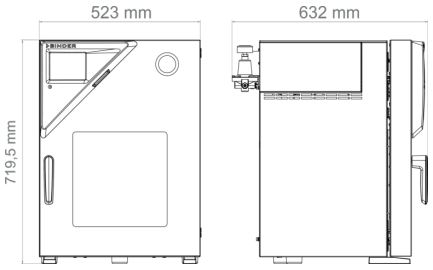
TECHNICAL DATA

Data		
Article Number	9630-0009	9630-0013
Designation	VDL023-230V	VDL023-120V
Option model	Standard	Standard
Performance Data Temperature		
Temperature range	+9 °C above ambient temperature to 110 °C	+9 °C above ambient temperature to 110 °C
Temperature uniformity at 100°C	1.0 ± K	1.0 ± K
Temperature fluctuation at 100°C	0.1 ± K	0.1 ± K
Heating up time to 100°C	110 min	110 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	0,9 kW	0,9 kW
Unit fuse	6,3 A	10,0 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
Dimensions and weights		
Interior volume	24 L	24 L
Net weight of the unit (empty)	72 kg	72 kg
Load per rack	20 kg	20 kg
Permitted load	50 kg	50 kg
Wall clearance back	100 mm	100 mm
Wall clearance sidewise	70 mm	70 mm
Housing dimensions not incl. fittings and connections		

Width net	523 mm	523 mm
Height net	698 mm	698 mm
Depth net	413 mm	413 mm
Internal Dimensions		
Interior width	285 mm	285 mm
Interior height	285 mm	285 mm
Interior depth	295 mm	295 mm
Unit doors	1	1
Environment-specific data		
Sound-pressure level	40 dB(A)	40 dB(A)
Energy consumption at 100°C	140 Wh/h	140 Wh/h
Fixtures		
Number of shelves (std./max.)	2/4	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. 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	VDL 23	*	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
Calibration certificate, temperature	for temperature, measurement in center of chamber at specified temperature	•	-	8012-1145

Designation	Description	VDL 23	*	Art.-No.
	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	•	-	8612-0007
Door lock	lockable door handle	•	-	8612-0002
Expansion racks	stainless steel expansion rack instead of standard aluminum expansion rack, incl. calibration	•	-	8612-0011
Temperature measurement of the specimen	with flexible Pt 100 sensor and digital specimen temperature display	•	-	8612-0006
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
Valves with FFKM seals for VDL	enhanced resistance to aldehydes, amines, esters, ketones, and polar-aprotic solvents	•	-	8012-2841

ACCESSORIES

Designation	Description	VDL 23	*	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 VDL VP5 PTFE	For vacuum pump VP5 EX. Consisting of antistatic PTFE hose 1.9 m long, with small flange DN 16 on both sides, 2 clamping rings and 2 universal centering rings.	•	-	8012-2614
Connection kit VDL VP5 stainless steel	For vacuum pump VP5 EX. Consisting of stainless steel hose 1.9 m long, with small flange DN 16 on both sides, 2 clamping rings and 2 universal centering rings.	•	-	8012-2724
Expansion racks	aluminum	•	-	8012-2055
	stainless steel	•	-	8012-2259
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	•	-	8012-2250
Pump chamber VDL 23 with vacuum pump VP5 EX	Pump chamber for installation of vacuum pumps. Including ATEX chemical membrane pump with nominal pumping speed 1.9 m^3/h, final pressure 12 mbar, 230V/50Hz. ATEX conformity: suction chamber (pumped gases): II 2G Ex h IIC T3 Gb X; exterior with inert gas flushing: II 2G Ex h IIB T4 Gb X; exterior without inert gas flushing: II 3G Ex h IIB T4 Gc X motor: II 2G Ex db IIB T4 Gb			
	230 V / 50-60 Hz option model	•	-	8012-2628

Designation	Description	VDL 23	*	Art.-No.
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 VP5 EX	ATEX chemical membrane pump with nominal pumping speed 1.9 m^3/h, final pressure 12 mbar, 230V/50Hz. ATEX conformity: maximum permissible pressure at inlet and 1.1 suction chamber (pumped gases): II 2G Ex h IIC T3 Gb X; exterior with inert gas flushing: II 2G Ex h IIB T4 Gb X; exterior without inert gas flushing: II 3G Ex h IIB T4 Gc X motor: II 2G Ex db IIB T4 Gb	•	-	5013-0258
VDL pressure gage test device	for the annual inspection of the function of the compressed air flushing pressure gage	•	-	9501-0048

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	DL30-0170
	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
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	DL10-0180
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming	05	DL10-0560
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

Designation	Description	*	Art.-No.
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	DL20-0960
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	DL20-0860
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	DL20-0612
Safety test	Testing of ATEX-specific safety systems: inert gas flushing and safety temperature shut-off. Testing of the specified systems also forms part of the more extensive maintenance service (DL20-0520)	05	DL34-0000
VAP 5 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	DL20-0430
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			
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