Model VDL 53 | Vacuum drying chambers for flammable solvents

A BINDER safety vacuum drying oven of the VDL series ensures maximum safety when drying organic solvents standard with TÜV/GS. The inner chamber of the VDL safety vacuum drying oven is designed according to ATEX guidelines 2014/34/EU Ex II 3/-G Ex h IIB T1-T3 Gc X.

BENEFITS

- Fast and gentle drying
- Direct heat transfer through large thermal conducting plates
- Safe work with one-of-a-kind safety concept
- Coordinated, modular system with vacuum pump and vacuum module



Model 53

MAIN FEATURES

- Temperature range: room temperature plus 15 °C to 200 °C
- ATEX compliance chamber's interior: Ex II 3/-G Ex h IIB T1-T3 Gc X
- APT.line™ preheating chamber technology
- Controller with time-segment and real-time programming
- 2 aluminum expansion racks
- Inert gas connection
- Shatterproof, spring-mounted safety glass panel
- Pressurized instrument panel with compressed air connection
- Pressure control device for heating activated < 125 mbar
- Flame protection gasket
- 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.
53	230 V 1~ ph 50/60 Hz	Standard	VDL053-230V	9030-0039

TECHNICAL DATA

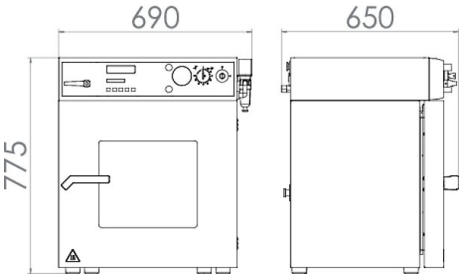
Description	VDL053-230V[1]
Article Number	9030-0039
Performance Data Temperature	
Temperature range 15 °C above ambient temperature to [°C]	200
Temperature variation at 100 °C [± K]	2
Temperature fluctuation [± K]	0.1
Heating-up time to 100 °C [min]	80

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. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

Description	VDL053-230V[1]
Article Number	9030-0039
Vacuum Data	
Permitted end vacuum [mbar]	0.01
Leak rate [bar/h]	0.01
Electrical data	
Rated Voltage [V]	230
Power frequency [Hz]	50/60
Nominal power [kW]	1.2
Unit fuse [A]	10
Phase (Nominal voltage)	1~
Connections	
Vacuum connection with small flange [DN mm]	16
Measuring access port with small flange [DN mm]	16
Inert gas connection with flow limiter (RP")	3/8
Compressed air connection for pressure-encapsulation	8 mm
Measures	
Interior volume [L]	53
Net weight of the unit (empty) [kg]	95
Permitted load [kg]	45
Load per rack [kg]	20
Viewing window width [mm]	350
Viewing window height [mm]	307
Wall clearance back [mm]	100
Wall clearance sidewise [mm]	135
Internal Dimensions	
Width [mm]	400
Height [mm]	400
Depth [mm]	340
Doors	
Unit doors	1
Housing dimensions not incl. fittings and connections	
Width net [mm]	635
Height net [mm]	775
Depth net [mm]	550
Fixtures	
Number of shelves (std./max.)	2/5

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. 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.
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	–	8012-1128
Calibration certificate, temperature	for temperature, measurement in center of chamber at specified temperature	–	8012-1146
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	–	8012-1583
	temperature measurement incl. certificate, 9 measuring points at specified temperature	–	8012-1562
Door gasket	made of FKM, silicone-free	03	8012-1317
Electric access port	9-pin, vacuum-tight access port for transmitting electrical currents, voltages, or signals (max. 50 V / 2 A per pin; vacuum connection DN 16 ISO-KF)	–	8012-1238
Expansion racks	stainless steel expansion rack instead of standard aluminum expansion rack, incl. calibration	–	8012-1423
Temperature measurement of the specimen	using flexible Pt 100 sensor (EX-proof via current-measurement access port) and digital temperature display	–	8012-0574

* 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
Expansion rack	stainless steel	–	8009-0102
	aluminum	–	8009-0371
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
Vacuum module	to receive vacuum pumps	–	8012-0691
Vacuum module with vacuum pump VP 4	Chemical membrane pump with nominal pumping speed 1.9 m³/h, final pressure 12 mbar, with separator and emission condenser, ATEX conformity: suction chamber (pumped gases): II 2G IIC T3 X, exterior with inert-gas flushing: II 2G IIB T4 X, exterior without inert-gas flushing: II 3G IIB T4 X, motor: II 2G Ex d IIB T4 Gb, including all necessary parts for vacuum connection		
	230 V / 50 Hz option model	–	8012-0382
Vacuum pump connection kit (ATEX)	for vacuum pump VP 4; consisting of clamping rings, universal centering rings, transition piece, anti-static vacuum hose, union nut, and elbow	–	8012-0621
Vacuum pump VP 4	Chemical membrane pump with nominal pumping speed 1.9 m³/h, final pressure 12 mbar, with separator and emission condenser, ATEX conformity: Suction chamber (pumped gases): II 2G IIC T3 X, exterior with inert-gas flushing: II 2G IIB T4 X, exterior without inert-gas flushing: II 3G IIB T4 X, motor: II 2G Ex d IIB T4 Gb		
	230 V / 50 Hz option model	–	5013-0049

* 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	DL20-0400
Calibration services			
Pressure calibration	Digital pressure display calibration at a specified test pressure of 20–900 mbar, including certificate	14, 16, 17, 18	DL32-0000
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, 15 measuring points	Temperature measurement with 15 measuring points at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0218
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	DL42-0300
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	–	DL00-9041
Warranty extension from 2 to 5 years	The warranty is extended from 2 to 5 years from the delivery date, wear parts are excluded	–	DL00-9042

* Notes › See last page

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.
03 Heat resistant only to max. 200 °C.
04 Only available on units rated for 230 V.
07 The additional heat input may affect the temperature behavior.
09 Not in conjunction with the optional access port, door with window and interior lighting.
10 Not available on 23-liter units.
11 Not available on 23- or 53-liter units.
12 Only available on units rated for 230 V or 400 V.
13 Installation and connections take place at unit location; transport within the company only upon consultation.
14 We recommend a BINDER service contract to cover unit inspections, calibrations and validations.
15 OQ according to Yellow Paper = completed factory validation documentation of all OQ checklists.
16 Sensor calibration is performed in an accredited calibration laboratory.
17 Calibration is performed according to the BINDER factory standard.
18 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).
19 For additional accessories, refer to the Process documentation chapter.

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