

VDL EX-Zone 2 series

Safety vacuum drying oven for flammable solvents

Same quality as the VDL series, but with some added safety features: The VDL series EX-Zone 2 is designed for operation in explosion hazard areas EX-Zone 2, in full compliance with ATEX requirements. Our special safety package eliminates any risk.

Leistungsmerkmale/Ausstattung:

- Electronically controlled APT.line™ preheating chamber technology with 2 aluminum expansion racks
- Temperature range of 15 °C (27 °F) above ambient temperature up to 200 °C (392 °F)
- MP controller with 2 programs with 10 sections each, or alternatively 1 program with 20 sections
- The time interval of single program sections can be adjusted up to a maximum of 99:59 hours or 999:59 hours. This adjustment applies to all program sections.
- Digital temperature setting with an accuracy of one or tenth of a degree
- Adjustable ramp function via program editor
- Integrated week program timer with real time function
- Elapsed time indicator
- Pressure monitor for controlled heating release at < 125 mbar (94 torr)
- Pressure encapsulated instrument compartment with controlled overpressure by means of compressed air
- Flame protection gasket
- Fine dosing ventilation valve
- Fine dosing inert gas valve with cross-flow technology
- Spring-mounted safety glass pane with splinter protection
- Analog pressure gauge (display pressure difference between the inner chamber and the ambient pressure)
- Electro polished inner chamber
- All suction and ventilation tubes, as well as the internally-welded pressure container, the removable rack support and the vacuum valve are made of stainless steel Mat. No. 1.4571 (V4A) / AISI 316 Ti
- Door gasket made of tempered silicone
- Independent adjustable temperature safety device, Class 2 (DIN 12880), with visual alarm
- DN 16 measuring port in rear wall
- RS 422 interface for communication software APT-COM™ DataControlSystem, or switch over to printer output with RS 232 / RS 422 interface converter
- BINDER test certificate

	VDL EX 23	VDL EX 53	VDL EX 115
Exterior dimensions			
Width (mm/inch)	515 / 20.3	634 / 25.0	740 / 29.1
Height (inclusive feet/castors) (mm/inch)	655 / 25.8	775 / 30.5	900 / 35.4
Height option vacuum module (mm/inch)	624 / 24.6	624 / 24.6	622 / 24.5
Total height VDL and option vacuum module (mm/inch)	1279 / 50.4	1400 / 55.1	1522 / 59.9
Depth (mm/inch)	500 / 19.7	550 / 21.7	670 / 26.4
Plus door handle, connection (mm/inch)	100 / 3.9	100 / 3.9	100 / 3.9
Wall clearance rear (mm/inch)	100 / 3.9	100 / 3.9	100 / 3.9
Wall clearance side (mm/inch)	135 / 5.3	135 / 5.3	135 / 5.3
Interior dimensions			
Width (mm/inch)	285 / 11.2	400 / 15.8	506 / 19.9
Height (mm/inch)	285 / 11.2	400 / 15.8	506 / 19.9
Depth (mm/inch)	285 / 11.2	330 / 13.0	450 / 17.7
Interior volume (l/cu.ft.)	23 / 0.8	53 / 1.9	115 / 4.1
Expansion shelves (Aluminium) (number standard/max.)	2 / 4	2 / 5	2 / 6
Distance between the racks (width x depth) (mm/inch)	53 / 2.1	62 / 2.4	68 / 2.7
Usable space per rack (width x depth) (mm/inch)	234 x 280 / 9.2 x 11	349 x 320 / 13.7 x 12.6	455 x 440 / 17.9 x 17.3
Load per rack (kg/lbs.)	20 / 44	20 / 44	20 / 44
Permitted total load (kg/lbs.)	35 / 77	45 / 99	65 / 143
Weight of the unit (empty) (kg/lbs.)	76 / 167.6	94 / 207.2	165 / 363.8
Temperature data			
Temperature range, 15 °C (27 °F) above ambient up to (°C/°F)	200 / 392	200 / 392	200 / 392
Temperature variation 3)			
at 100 °C (212 °F) (± °C)	2	2,5	4
at 200 °C (392 °F) (± °C)	4	4,5	7
Temperature fluctuation 3) (± °C)	0.4	0.4	0.4
Heating up time 2)			
to 100 °C (212 °F) (Min.)	80	70	80
to 200 °C (392 °F) (Min.)	110	130	150
Vacuum connection with small flange (DN mm/inch)	16 / 0.63	16 / 0.63	16 / 0.63
Measuring access port with small flange (DN mm/in)	16 / 0.63	16 / 0.63	16 / 0.63
Inert gas connection with flow limiter - thread (RP")	3 / 8	3 / 8	3 / 8
Inert gas connection with flow limiter Adapter with hose olive (DN mm/inch)	8 / 0.31	8 / 0.31	8 / 0.31
Permitted end vacuum (mbar / torr)	0.01 / 0.008	0.01 / 0.008	0.01 / 0.008
Leak rate (max. bar 1/h / torr 1/h)	0.01 / 0.008	0.01 / 0.008	0.01 / 0.008
Compressed air connect. f. pressure-encapsulation (Ø mm/in.)	8 / 0.32	8 / 0.32	8 / 0.32
Compressed air use (l/Min.)	50	50	50
Electrical data			
Housing protection acc. to EN 60529	IP 54	IP 54	IP 54
Nominal voltage (±10 %) 50/60 Hz (V)	230	230	230
Nominal power (W)	800	1200	1900
Energy consumption			
at 100 °C (212 °F) (W)	105	150	250
at 200 °C (392 °F) (W)	280	445	785

- 1) value with aluminium racks
- 2) up to 98 % of the set value

All specified technical data apply for standard equipment operating at an ambient temperature of + 25 °C (77 °F), with line voltage fluctuations of $\pm 10\%$. These typical average values for series equipment were determined in accordance with the BINDER factory standard. They are based upon the recommended distances from the inner chamber walls, namely 10% of height, width and depth. Differing ambient temperatures or variances in the design of individual equipment may produce different performance data.

We therefore recommend that equipment be calibrated and/or validated on a case-by-case basis when working at the extremes of the permissible ambient temperature range.



Measuring port

Vacuum-tight bushing for instrument connection (9-pin) into the unit.



Specimen temperature display

Using a PT 100 sensor with digital temperature display.



Digital pressure display

The pressure in the interior chamber is measured with an installed pressure sensor and is displayed by a digital display to an accuracy of 1 mbar (0.8 torr).



Calibration certificates

Measurement in the center at specified values. Additional measuring points or test values according to your specification.

	VDL EX 23	VDL EX 53	VDL EX 115
Expansion racks, aluminium or stainless steel AISI 316 Ti*	O	O	O
Door gasket, viton	O	O	O
Measuring port	O	O	O
Specimen temperature measuring with PT 100 and specimen temperature display	-	O	O
Digital pressure display	O	O	O
Serial printer with interface converter for printing temperature logs	O	O	O
Connection kit with multiple components	O	O	O
Calibration certificate**	O	O	O
Evaporating dish with rim	O	O	O
Vacuum module for installation of vacuum pumps	O	O	O
Vacuum module with chemical membrane pump with separator and emission condenser (for VDL Ex-proof version)	O	O	O
Nominal airflow (DIN 28432) (m³/h / cu.ft./h)	1.9 / 67	1.9 / 67	1.9 / 67
End vacuum (mbar / torr)	12 / 9	12 / 9	12 / 9
Electrical connection (50/60 Hz) (V)	230	230	230

Vacuum module with chemical membrane pump with separator and emission condenser (for VDL Ex-proof version)	-	-	O
Nominal airflow (DIN 28432) (m³/h / cu.ft./h)	-	-	3.7 / 131
End vacuum (mbar / torr)	-	-	3 / 2
Electrical connection (50/60 Hz) (V)	-	-	230

* We recommend stainless steel racks in case of frequent removing

** not available in combination with stainless steel racks (VDL)

O Option - not available

Technical specifications subject to change

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