

Dynamic gas diluter DLD3





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Description

DLD3 is the gas diluter designed and built by Dado Lab in compliance to the ISO 6145-7 standard to meet all the calibration and verification needs of automatic gas analyzers in the emissions conveyed into the atmosphere.

The possibility to choose and customize the configuration of the instrument makes it ideal for performing zero, span or linearity checks on all the main analyzers on the market.



DLD3 is the instrument suitable for the control and management of both portable and CEMs measuring combustion products such as O_2 , CO , CO_2 , NO , NO_2 , NO_x or SO_2 .

DLD3 allows the direct generation of mixtures at known concentration to carry out tests and calibration checks with ease and speed; in fact, it is sufficient to set the concentration of the cylinder in use, the desired output flow and the desired final concentration.

DLD3 is supplied with a spreadsheet for planning and creating the calibration curve found.

DLD3 is also used for the verification of FID analyzers for the measurement of TOC in emissions.

Characteristics

The technology implemented in DLD3 is based on the use of high accuracy mass flow controllers for the generation of gas mixtures at known concentration. DLD3 guarantees maximum flexibility in the choice of sample gas cylinders and dilution ratios, overcoming the limits associated with the use of mechanical capillary diluters.

The dilution system is realized in a rugged Pelican-type suitcase, with particularly low dimensions and weight, suitable for ensuring adequate practicality and robustness for use of the instrument both in the laboratory and in the field.

Pneumatic connections are made with Swagelok type fittings, guaranteeing tightness and safety in the connection of the gas cylinders to be mixed.

DLD3 allows to mix three gases, with the possibility of inserting a third optional line to evaluate interferers.

Each pneumatic line is equipped with a protection filter against the accidental ingress of condensate or impurities, with precision pressure gauges for checking the actual inlet gas pressure and adjustable vent, to avoid overpressures that could damage the instrumentation being tested connected to DLD3. The vent is equipped not only with a mechanical adjustment valve, but also with a connection to a variable area flow meter (included in the supply of the instrument).

DLD3 also allows a flexible and advanced use of the dilution system allowing the operator to freely act on the flows of the dilution lines. To ensure correct operation, DLD3 displays both set concentrations and flows and those actually generated, thus minimizing the uncertainty associated with the calibration of external systems.

Access from the display to the calibration curves of the individual massflow controllers allows you to manage DLD3 quality and time.

The technician has a calibration guided procedure that allows to change the preset calibration data, an operation that can be easily performed from the display if you have flow calibration systems such as CF1.

Technical Specifications

Massflow meter scale ranges	0.04 ÷ 2 nL/min 0.1 ÷ 5 nL/min 0.2 ÷ 10 nL/min others available
Rangeability	50:1
Accuracy and linearity	± 1% f.s.
Materials in contact	AISI316 e PTFE
Gaskets	Viton
Gas connectors	Swagelok 6/4
Vent connectors	quick connector 6/4
Temperature sensitivity zero	< 0.1% FS/°C
Temperature sensitivity span	< 0.1% Rd/°C
Warm-up time	30 min (w/ skip key)
Keyboard	Polycarbonate, tactile effect keys
Display	LCD Alphanumeric 150x30mm
Size	315x280x390 mm
Weight	6.5 Kg
Power supply	220 Vac ±10% 50/60Hz

Models and accessories



order codes

300 106 0 x y z

Mass flowmeter 1
2 = 0.04 ÷ 2 nL/min
5 = 0.1 ÷ 5.0 nL/min
1 = 0.2 ÷ 10 nL/min

Mass flowmeter 2
2 = 0.04 ÷ 2 nL/min
5 = 0.1 ÷ 5.0 nL/min
1 = 0.2 ÷ 10 nL/min

Mass flowmeter 3
2 = 0.04 ÷ 2 nL/min
5 = 0.1 ÷ 5.0 nL/min
1 = 0.2 ÷ 10 nL/min



Multiparameter calibrator

300 104 1101	CF1 Digital Flow calibrator (0.45÷45 nL/min)
300 104 1111	CF1-UR Digital Flow calibrator w/ rH/T probe (0.45÷45 nL/min)
300 104 1101	CF1-LF Digital Flow calibrator (0.05÷5 nL/min)
300 104 1111	CF1-LF-UR Digital Flow calibrator (0.05÷5 nL/min) w/ rH/T probe
300 104 2001	High accuracy calibration
200 110 1031	ISO17025 Flowrate on 5pts certification
200 110 1001	ISO17025 volume certification on 5 points
200 110 1011	ISO17025 Temperature sensor certification on 5 pts
200 110 1023	ISO17025 pressure sensor certification on 5 pts
200 110 1051	ISO17025 rH sensor certification on 3 pts from 10 ÷ 95%