

# LaserGas™ II MP



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NEO Monitors' LaserGas™ series of gas monitors utilizes Tunable Diode Laser Absorption Spectroscopy (TDLAS); a contactless optical measurement technique employing a narrow band semiconductor laser source. The monitor is unaffected by background gases or drift and therefore requires little regular maintenance or calibration. The LaserGas™ II MP (Multipass) laser beam is coupled into a Herriott cell, where it is reflected multiple times between two spherical mirrors to create a long optical path that greatly enhances measurement sensitivity. The LaserGas™ II MP monitor is a self-contained unit, simply requiring connection of power, sample gas inlet/outlet and purge gas (application dependent). The monitor is designed to work in conjunction with a suitable sample conditioning system to ensure that a clean and dry sample is delivered to the MP cell.

Features	Applications	Customer benefits
<ul style="list-style-type: none"><li>• Fast response time</li><li>• Very low detection limits (ppb for many gases)</li><li>• No interference from background gases</li><li>• Long term calibration stability</li><li>• No zero drift</li><li>• No moving parts, no consumables, turn-key instrument</li><li>• ATEX and CSA certified</li></ul>	<ul style="list-style-type: none"><li>• Chemical industry</li><li>• Petrochemical industry contaminants monitoring</li><li>• Natural gas treatment (sweetening plants; H<sub>2</sub>S in NG)</li><li>• Industrial gas (impurities in pure gases)</li><li>• Semiconductor industry trace impurity measurements</li><li>• Power plants (stack testing of corrosive emission gases)</li><li>• H<sub>2</sub>S emission monitoring (pulp &amp; paper, refineries, biogas production)</li><li>• Hydrogen impurity</li><li>• and many more</li></ul>	<ul style="list-style-type: none"><li>• High performance compact design</li><li>• Reliable trace level gas measurement</li><li>• Precise optimisation of your process</li><li>• Reduce your emissions to the environment</li><li>• Easy to install and operate, reducing your daily operation costs</li><li>• Low maintenance &amp; calibration costs provides excellent ROI</li><li>• Up to 12 months between calibration checks</li><li>• Superior contactless optical technique ensures you can have full confidence in the measurement</li></ul>

# LaserGas™ II MP

## Technical Data

<p><b>Specifications</b></p> <p>Optical path length: 2.7 or 11.4 m          Response time: &lt; 20 sec          (depending on sample gas flow)</p> <p>Accuracy: Application dependent          Repeatability: 1% of range (gas and application specific)</p> <p><b>Environmental conditions</b></p> <p>Operating temperature: 0 °C to +55 °C          (32 °F to 131 °F)</p> <p>Storage temperature: -20 °C to +55 °C          (-4 °F to 131 °F)</p> <p>Protection classification: IP64</p> <p><b>Inputs / Outputs</b></p> <p>Analog output(s) ^ (1-3): 4 – 20 mA current loop</p> <p>^ Single gas measurements have as standard 1 analog output, dual gas has 2 analog outputs. Optional 2nd and 3rd analog outputs available for second scaled range and/or transmission output</p> <p>Digital output (Optional): TCP/IP, MODBUS, Optional fibre optic</p> <p>Relay output (3): High gas-, Maintenance, Warning - and Fault relays</p> <p>Analog input: 4 – 20 mA process temperature and pressure reading</p>	<p><b>Ratings</b></p> <p>Input power: 100 – 240 VAC, 50/60 Hz, 0.36 – 0.26 A or 18 - 36 VDC, max 20W</p> <p>4 – 20 mA output: 500 Ohm max. isolated          Relay output: 1 A at 30 V DC</p> <p><b>Safety</b></p> <p>Laser class: Class 1 according to IEC 60825-1          CE: Certified          EMC: Conformant with directive 2014/30/EU</p> <p><b>Approvals</b></p> <p>IECEX/ATEX zone 2: II 3 G Ex nA nC op is IIC T4 Gb</p> <p>CSA: Class I, Div 2 Groups A, B, C and D; Temp. Code T4; non-incendive</p>	<p><b>Installation and Operation</b></p> <p>Gas inlet / outlet: 6 mm or 1/4 " / 8 mm (5/16") Swagelok (other dimensions on request)</p> <p>Sample gas flow: Recommended 2 – 10 l/min (2.1 - 8.4 ft³/hr)</p> <p>Sample inlet pressure: 1 – 4.0 BarA (14.5 – 58.0 psia)</p> <p>Cell temperature: 0 °C to +55 °C (32 °F to 131 °F)</p> <p>Purging of laser chamber (optional): Dry and oil free pressurised air and gas, Nitrogen for O<sub>2</sub> and CO<sub>2</sub> applications</p> <p>Purge flow: Maximum 0.5 l/min (1.06ft³/hr)</p> <p><b>Maintenance</b></p> <p>Calibration: Check recommended every 12 months</p> <p><b>Dimension and weight</b></p> <p>Cabinet: 500 mm (19.68") x 510mm (20.08") x 215mm (8.46")</p> <p>18.4 kg (40.56 lbs)</p>
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Gas	Detection limit
O <sub>2</sub>	10 ppm
H <sub>2</sub> S	0.5 ppm
CH <sub>4</sub>	20 ppb
CO	20 ppb
CO <sub>2</sub>	0.2 ppm
HCN	50 ppb
NH <sub>3</sub>	30 ppb
HCl	10 ppb
H <sub>2</sub>	200 ppm

NOTE: Detection limits are specified as the 95% confidence interval for the standard 11.4 m cell and gas temperature / pressure = 25 °C / 1 BarA measured in N<sub>2</sub>.

Also available are NO<sub>2</sub>, CH<sub>2</sub>CHCl (VCM), C<sub>2</sub>H<sub>4</sub>O (EtO), CH<sub>2</sub>Cl<sub>2</sub> (DCM).

Other gases are available, please contact us with your request.

Dual Gas: CO+CO<sub>2</sub>, CO+CH<sub>4</sub>

Your local distributor:

\* NEO Monitors reserves the right to change specifications without prior notice



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NEO Monitors AS • Part of the Nederman Group • Prost Stabels vei 22 • N-2019 Skedsmokorset, Norway

Phone +47 67 97 47 00 • www.neomonitors.com

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