

# LaserGas™ III SP NH3 DeNOx



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NEO Monitors LaserGas™ III ammonia analyzer (3<sup>rd</sup> generation) is specially designed for operation in hazardous areas and it provides real time in-situ NH<sub>3</sub> measurements for virtually any type of DeNO<sub>x</sub> systems. The configuration is transmitter/receiver units for cross-duct/stack installation. An external junction (cable connection) box simplifies installation and maintenance. The operation principal is based on well proven Tunable Diode Laser Absorption Spectroscopy (TDLAS) implemented using fast scanning absorption technique with fully digital signal processing. Years of experience allowed us to carefully design this highly compact NH<sub>3</sub> analyzer which offers exceptional performance in harsh environments, is truly robust and provides immediate benefits in terms of operation ease and low cost ownership.

Features	Applications	Customer benefits
<ul style="list-style-type: none"> <li>• In-situ real time measurements</li> <li>• Fast response time</li> <li>• Compact design</li> <li>• Low power consumption (&lt; 10W)</li> <li>• TDLAS technology</li> <li>• Low detection limit</li> <li>• No interference from other gases</li> <li>• Not affected by high dust load</li> <li>• Lifetime calibration, no zero drift</li> <li>• Integrated span check</li> <li>• Additional H<sub>2</sub>O measurements available</li> <li>• Ethernet connectivity</li> <li>• Suitable for SIL2</li> </ul>	<ul style="list-style-type: none"> <li>• Selective catalytic reduction (SCR)</li> <li>• Selective non-catalytic reduction (SNCR)</li> <li>• Typical DeNO<sub>x</sub> outlet</li> <li>• Emission monitoring</li> </ul> <p>To;</p> <ul style="list-style-type: none"> <li>• Refineries</li> <li>• Powerplants</li> <li>• Chemical industries</li> <li>• Petrochemical industries</li> <li>• Steel industries</li> <li>• and more</li> </ul>	<ul style="list-style-type: none"> <li>• Reliable in-situ NH<sub>3</sub> measurements in real time</li> <li>• Process optimization</li> <li>• Reduction of NH<sub>3</sub>/Urea consumption</li> <li>• Monitoring of catalyst activity</li> <li>• Increase DeNO<sub>x</sub> efficiency and minimize emission</li> <li>• Simple installation, ease of use</li> <li>• Low maintenance cost</li> <li>• No consumables</li> <li>• No sampling systems</li> <li>• Compressed air purge (no need for Nitrogen)</li> <li>• No regular calibrations needed</li> <li>• Automatic span check available</li> </ul>

# LaserGas™ III SP NH3 DeNOx

## Technical Data

<p><b>Specifications</b></p> <p>Detection limit (NH<sub>3</sub>): 0.2 ppm **</p> <p>Default range: 0 - 50 ppm</p> <p>Other ranges on request</p> <p>Range H<sub>2</sub>O: 0 - 40% vol</p> <p>Max. process gas temperature: 500 °C</p> <p>Max. process gas pressure: 1.5 barA</p> <p>Optical path length: Typically 0.5 - 5 m ***</p> <p>Repeatability: +/- 0.2 ppm or +/- 1% relative, whichever is greater (application dependent)</p> <p>Linearity: &lt; 1 % of range</p> <p>Response time: 1 second or longer (configurable)</p>	<p><b>Ratings</b></p> <p>Power supply: 24VDC range 18-32 VDC</p> <p>Power consumption : Max. 10 W</p> <p>4 – 20 mA output: 500 Ohm max. load impedance, not isolated</p> <p>Relay output: 1 A at 30 V DC/AC</p> <p>Safety Laser class: Class 1 according to IEC 60825-1, eye safe</p> <p>CE: Certified</p> <p>EMC: Conformant with directive 2014/30/EU</p> <p><b>Approvals</b></p> <p>IECEX/ATEX zone 1: II 2 G Ex d [op is] IIC T4 Gb</p> <p>(TU/RU) II 2 D Ex tb IIIC T78°C Db II 2 D Ex tb IIIC T88°C Db (Lasergas III Ext)</p> <p>CSA: Class I Div. 1, Groups B, C and D</p> <p>ATEX rating connection box: II 2 GD Ex e IIC T5 Gb -40°C ≤TA≤65°C</p> <p>Functional safety: Designed according to SIL 2: IEC 61508</p>	<p>Purging of windows: Compressed dry and oil free air (recommended) or air blower</p> <p>Purge flow: 5 -100 l/min (application dependent)</p> <p><b>Maintenance</b></p> <p>Calibration: Check recommended every 12 months</p> <p><b>Dimension and weight</b></p> <p>Transmitter and receiver unit (TU/RU): 215 mm (length, add 50 mm for purge unit) x 125 mm (diameter), 3.5 kg each</p> <p>TU/RU connection box: 260 mm x 160 mm x 90 mm, 2.5kg</p>
<p><b>Environmental conditions</b></p> <p>Operating temperature: -40 °C to +65 °C (extended rating -40 °C to +65 °C on request)</p> <p>Storage temperature: -40 °C to +70 °C</p> <p>Protection classification: IP65</p> <p><b>Inputs / Outputs</b></p> <p>Analog output (3): 4-20 mA current loop (concentration NH<sub>3</sub>, transmission, concentration H<sub>2</sub>O)</p> <p>Digital output: 10/100 Base T Ethernet (Modbus TCP)</p> <p>Relay output (2): High gas, warning and fault (normally closed)</p> <p>Analog input: 4 - 20 mA process temperature and pressure reading</p>	<p><b>Installation and Operation</b></p> <p>Flange dimension: DN50/PN10 or ANSI 2"/150 lbs (other dimensions on request)</p> <p>Alignment tolerances: Flanges parallel within 1.5°</p>	<p>**NOTE: Detection limits are specified as the 95% confidence interval for 1 m optical path and gas temperature / pressure = 25°C / 1 barA. Measured in N<sub>2</sub>.</p> <p>*** Insertion tubes may be needed to shorten path length for very high dust loads.</p> <p>Special process conditions on request.</p>

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

Your local distributor:



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