



All Rights Reserved, Copyright © June 2016, NEO Monitors AS

**NEO Monitors LaserGas™** is using Tuneable Laser Absorption Spectroscopy (TLAS) i.e a non-contact optical measurement method employing solid-state laser sources. The sensor remains unaffected by contaminants corrosives and does not require regular maintenance. The absence of extractive conditioning systems further improves availability of the measurements and eliminates errors related to sample handling. The monitor is mounted directly onto flanges, which include purge gas connections and a tilting mechanism for easy alignment. Continuous purge flow prevents dust and other contamination from settling on the optical windows. Once power and data lines are connected, measurements are performed in real-time.

## Features

- Response time down to 1 second
- No gas sampling: In-situ measurement
- No interference from background gases
- Applicable for many process conditions:
  - high/low temperature
  - high dust
  - corrosive gases
- Line measurement, integral concentration over the full stack diameter
- ATEX and CSA certified
- TÜV, MCERTS, GOST approved technology
- Integrated span check option available
- Suitable for harsh environment
- No zero drift
- Stable calibration
- Long OPLs

## Applications

LaserGas™ II SP is designed for reliable and fast measurement of all kinds of gases in any environment, most typically:

- Chemical industry
- Petrochemical industry
- Metal industry
- Power plants
- Waste incinerators
- Cement industry
- Automotive industry
- Scrubber technology
- Glass industry
- PVC production
- Pulp and paper
- and more

## Customer benefits

- In-situ monitoring
- Highly reliable real time analyzer
- Low maintenance cost
- Reduce emission to the environment
- Easy to install and operate
- Reduce daily operation costs
- Optimize process
- Well proven measurement technique

# LaserGas™ II SP

## Technical Data

<p><b>Specifications</b></p> <p>Optical path length: Typically 0.5-20m          Response time: 1 – 2 sec          Accuracy: Application dependent          Repeatability: 1% of range (gas &amp; application specific)</p> <p><b>Environmental conditions</b></p> <p>Operating temperature: -20 °C to +55 °C (special version up to +65 °C on request)          Storage temperature: -20 °C to +55 °C          Protection classification: IP66</p> <p><b>Inputs / Outputs</b></p> <p>Analog output (3): 4 - 20 mA current loop (concentration, transmission)          Digital output: TCP/IP, MODBUS, Optional fibre optic          Relay output (3): High gas, Maintenance Warning and Fault          Analog input (2): 4 – 20 mA process temperature and pressure reading</p> <p><b>Ratings</b></p> <p>Input power supply unit: 100 – 240 VAC, 50/60 Hz, 0.36 – 0.26 A          Output power supply unit: 24 VDC, 900 – 1000 mA</p>	<p>Input transmitter unit: 18 – 36 VDC, max. 20W          4 – 20 mA output: 500 Ohm max. isolated          Relay output: 1 A at 30 V DC/AC</p> <p><b>Installation and Operation</b></p> <p>Flange dimension alignment: DN50/PN10 or ANSI 2"/150lbs (other dimensions on request)</p> <p>Alignment tolerances: Flanges parallel within 1.5°</p> <p>Purge flow: Dry and oil-free pressurised air or nitrogen 10 - 50 l/min (application dependent)</p> <p><b>Maintenance</b></p> <p>Visual inspection: Recommended every 6 – 12 months          Calibration: Check recommended every 12 months          Validation: In-situ span check with optional internal cell (application dependent)</p> <p><b>Safety</b></p> <p>Laser class: Class 1 according to IEC 60825-1 Certified.          Conformant with directive 2014/30/EU</p> <p>CE:          EMC:</p>	<p><b>Explosion protection (optional)</b></p> <p>IECEX/ATEX zone 1: II 2 G Ex px IIC T5 Gb          II 2 D Ex p IIC T64°C Db</p> <p>Laser zone 1: II 2 G [Ex op is T4 Gb] IIC</p> <p>IECEX/ATEX zone 2: II 3 G Ex nA nC op is IIC T4 Gb          II 3 D Ex td A22 T100°C</p> <p>Laser zone 0: II 1 G [Ex op is T6 Ga]</p> <p>CSA: Class I, Div. 2, Groups A, B, C and D; Temp. Code T4; non-incendive</p> <p><b>Dimension and weight</b></p> <p>Transmitter unit: 405 (plus 65 for purge unit) x 270 x 170 mm, 6.2 kg          Transmitter unit: 405 (plus 65 for purge unit) x 270 x 310 mm, 7.9 kg (Ex version)          Receiver unit: 355 (plus 65 for purge unit) x 125 x 125 mm, 3.9 kg          Power supply unit: 180 x 85 x 70 mm, 1.6 kg</p>
---	--	--

Gas	Detection limit (ppm)	Max temp (°C)	Max pressure (bar abs)
NH <sub>3</sub>	0,15	600	2
HCl	0,05	600	2
HF	0,015	400	2
H <sub>2</sub> S	3	300	2
O <sub>2</sub>	100	1500	20
% H <sub>2</sub> O	50	1500	2*
ppm H <sub>2</sub> O	0,1	400	2
% CO	30	1500	2*
% CO <sub>2</sub>	30	1200	2*
ppm CO	0,3	1500	2
ppm CO <sub>2</sub>	0,2	300	2
NO	10	300	2
N <sub>2</sub> O	1	200	2
CH <sub>4</sub>	0,2	1000	3
NO <sub>2</sub>	2	200	1,5
HCN	0,3	300	2

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

**NOTE:** Detection limits are specified as the 95% confidence interval for 1m optical path and gas temperature / pressure = 25 °C / 1 bar abs. Measured in N<sub>2</sub>.

Other gases available on request.

Dual Gas: NH<sub>3</sub>+H<sub>2</sub>O, HCl+H<sub>2</sub>O, CO+CO<sub>2</sub>, CO+H<sub>2</sub>O, CO+CH<sub>4</sub>, O<sub>2</sub>+temp, CO+temp.

\*Higher pressure available on request for certain gases.

Please contact us for details.

TÜV and MCERTS, GOST approval available for some gases.

**Your local distributor:**



neomonitors

NEO Monitors as • A subsidiary of Norsk Elektro Optikk  
 Prost Stabels vei 22 • N-2019 Skedsmokorset, Norway • Phone +47 67 97 47 00 • [www.neomonitors.com](http://www.neomonitors.com)