NEO Monitors

HYDROGEN MEASUREMENTS WITH LASERGAS™

CONTACTLESS, FAST, SENSITIVE, SELECTIVE, RELIABLE

neoMONITORS

www.neomonitors.com

NEO Monitors' Hydrogen lineup

Hydrogen will become one of, if not the most important energy source in the coming decades. It is also used in industry, for example as a feedstock for chlorine and ammonia production.

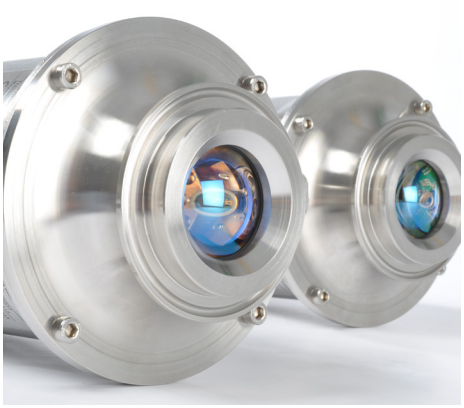
NEO Monitors' laser-based gas measurement technology offers the possibility of performing the concentration measurement without physical contact with the gas.

This combined with the advantages of tunable diode laser absorption spectroscopy (TDLAS), high selectivity and sensitivity, high reliability and low maintenance requirements makes our technology a unique tool for a wide range of applications in many industries, from chemicals and petrochemicals to energy and metals.

NEO Monitors' can provide gas analyzers for more than 40 gases and combinations. We can measure Hydrogen directly with our in-situ or extractive analyzers; we can also measure impurities like oxygen, carbon monoxide, carbon dioxide or methane in pure Hydrogen in an extractive setup.

/ LaserGas™ III SP Hydrogen analyzer and detector

Our latest product for the Hydrogen industry. Can be used as analyzer or detector for in-situ as well as open path applications. Designed for safety applications with high demands on fast response times and high selectivity. Extensive portfolio of certifications and approvals: IECEx/ATEX Zone 1, CSA Class I Div 2, IEC 61508 SIL2 capability.



- In-situ and open path real time H2 monitoring
- Fast response time, high selectivity
- Continuous internal health check
- Optional cell for H2 span check
- SIL2 capability

// Performance specifications

DL, % vol * m	0.1
Resolution, % vol * m	0.03
Respons time, s	< 2

DL (detection limit) is for ambient P&T, N2/Air background

	Min	Max
Range, % vol	5	100
OPL, m	0.5	30
Process pressure, bar Abs	0.5	10
Process temperature, °C	-50	250

neoMONITORS

www.neomonitors.com

/ LaserGas™ II SP Hydrogen analyzer

World's first in-situ TDLAS analyzer based on NEO Monitors' bestselling LaserGas™ II platform. Transmitter and receiver are mounted on diametrically opposite sides of a stack or duct; alternatively they can be mounted onto an extractive cell.

- In-situ real time H2 monitoring
- High selectivity
- Continuous internal health check
- Incorporated cell for H2 span check

// Performance specifications

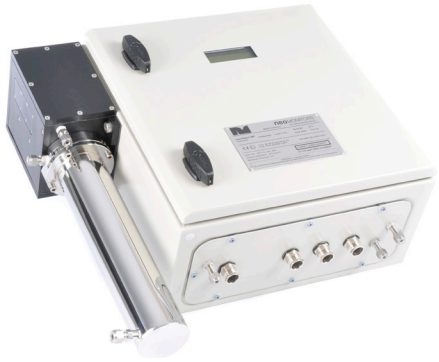
DL, % vol	0.1
Resolution, % vol	0.03
Respons time, s	< 2

DL (detection limit) is for ambient P&T, OPL=1 m, N2/Air background

	Min	Max
Range, % vol	5	100
OPL, m	0.5	5
Process pressure, bar Abs	0.5	10
Process temperature, °C	-50	250

/ LaserGas™ II MP Hydrogen analyzer

Extractive solution with a multipass cell for Hydrogen applications with high demands on sensitivity.



- High selectivity
- Low detection limit
- Continuous internal health check

// Performance specifications

DL, % vol	0.015
Resolution, % vol	0.005
Respons time, s	< 20

DL (detection limit) is for ambient P&T, OPL=11.4 m, N2/Air background; response time is flow-dependend

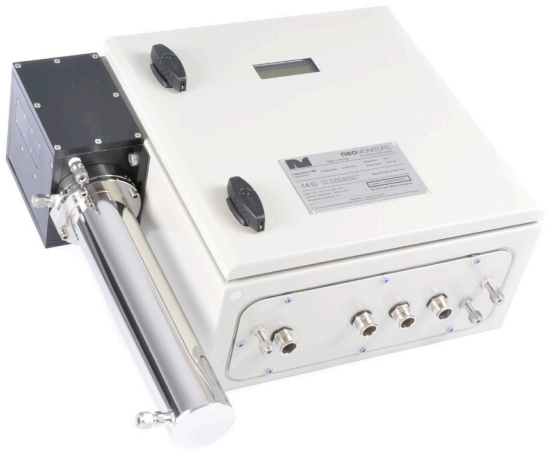
	Min	Max
Range	1	100
Process pressure, bar Abs	0.5	5
Process temperature, °C	-10	50

neoMONITORS

www.neomonitors.com

/ LaserGas™ II MP for impurity measurements

Extractive solution for impurity measurements in Hydrogen.



// Performance specifications

		LDL (in H2)	Range
Oxygen (O2)		15 ppm	0-1000 ppm
Carbon monoxide (CO)		0.05 ppm	0-5 ppm
Methane (CH4)		0.05 ppm	0-5 ppm
Carbon dioxide (CO2)		0.2 ppm	0-20 ppm
Combo	CO	0.05 ppm	0-5 ppm
	CH4	0.2 ppm	0-20 ppm

NEO Monitors reserves the right to change spesifications without prior notice.

/ Our Offices

Norway

NEO Monitors AS
Prost Stabels vei 22
2019 Skedsmokorset

Switchboard +47 67 97 47 00
Sales and application +47 400 01 613
neosales@neomonitors.com

China

NEO Monitors AS Beijing Representative Office
C613A, Lufthansa Center
No. 50 Liangmaqiao Road
Beijing, P.R. China

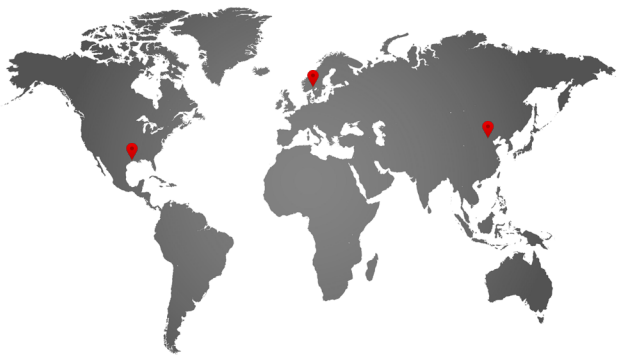
Tel +86 10 5830 2877
info@neomonitors.com.cn

USA

NEO Monitors Corp.
11200 Westheimer Rd, Suite 500
Houston, TX 77042

us@neomonitors.com

PERFORMANCE YOU CAN TRUST



www.neomonitors.com

NEO Monitors AS

BERNT MESSTECHNIK
40472 Düsseldorf
Wahlerstraße 12
Tel: +49 211 6696998-0
info@berntgmbh.de

81245 München
Petzetstraße 8
Tel: +49 89 8110330
www.berntgmbh.de

76646 Bruchsal
Werner-von-Siemens-Str. 2-6
Tel: +49 7251 3084436

neoMONITORS
www.neomonitors.com