

LaserGas™ III Portable HF Analyser

Cutting edge technology



Key Features

Gen. 3 compact
LaserGas electronics

Portable close to 2 kg weight

Low power < 10 Watt

Sub ppm HF detection in seconds

No interference from other gases

Stable calibration, no zero drift

Other gases on request

The TDLS portable Solution

NEO Monitors new portable analyser is compact, lightweight, and battery powered for HF measurement on the spot (other gases such as HCl, NH₃, H₂S on request). With on-board pump and connections for Teflon tubing the target gas is continuously transferred into the internal measurement cell. Due to the instrument's digital low power design it may be operated for an entire working shift with one battery charge.

Fast and Reliable

The LaserGas III Portable HF Analyser allows for fast and reliable operation with sufficient dynamic range to measure sub ppm and several hundreds ppm HF concentrations. The laser scans the absorption line in milliseconds. The results are averaged and subsequently output every second. In contrast to many other measurement techniques short-term HF peaks are uncovered with the LaserGas III. The LaserGas III is our most reliable and repeatable gas sensor with all electronics designed according to IEC 61508, SIL 2 (safety integrity level).

State of the Art Technology

NEO Monitors LaserGas is using Tuneable Diode Laser Spectroscopy (TDLS) i.e. a non-contact optical measurement method employing solid-state laser sources. Therefore, the sensor remains unaffected by contaminants and corrosives and does not require regular maintenance. The highly selective laser source scans a single gas absorption line specific to the target gas, thus eliminating cross interference from other gases.

Key Application Areas

The LaserGas III Portable HF Analyser is the solution for reliable detection of short-term HF concentrations, wherever diffuse emissions occur representing a risk to the work force. Focused applications are:

- Aluminium smelters: Worker protection during active pot work
- Aluminium smelters: Mapping plant emissions
- Refinery alkylation plants: Worker safety
- HF stack gas testing

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Instrument Data

Specifications

Detection limit (HF)*	50 ppb **
Response time	1 – 2 sec
Repeatability	+/- Detection limit or +/- 1% of reading, whichever is greater
Linearity	< 1%

Environmental conditions

Operating temperature	-20 °C to +55 °C
Storage temperature	-20 °C to +55 °C
Protection classification	IP65

Outputs

Analogue output (2)	4 – 20 mA current loop, source or sink
Digital output	10/100 Base T Ethernet (Modbus TCP), USB, RS-485

Ratings

Power consumption	Max. 10 W
4 – 20 mA output	500 Ohm max. load impedance, not isolated
Battery	Lithium Ion Battery (14.4 V, 5 A, approx. 10 hours usage time per charge)

Installation and Operation

Gas inlet / outlet	6 mm SMC one touch fittings (series KQG)
Sample gas flow	3 l/min
Sample inlet pressure	+/- 50 mbar G / 0.8 PSIG (higher pressures possible with different pump)
Sample inlet temperature	85 °C (185 F)
Calibration	Check recommended every 12 months

Security

Laser class	Class 1 according to IEC 60825-1, eye safe
CE	Certified
EMC	Conformant with directive 2004/108/EC

Physical

Dimensions	110 x 120 x 250 mm (4.3" x 4.7" x 9.8")
Weight (incl. battery)	2.3 kg (5 lbs)
Display	2.7" colour LCD panel (touch screen)
Sample Cell	Teflon coated Aluminium

* Other gases on request

** At gas temperature / pressure = 25 °C / 1 bar abs.

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