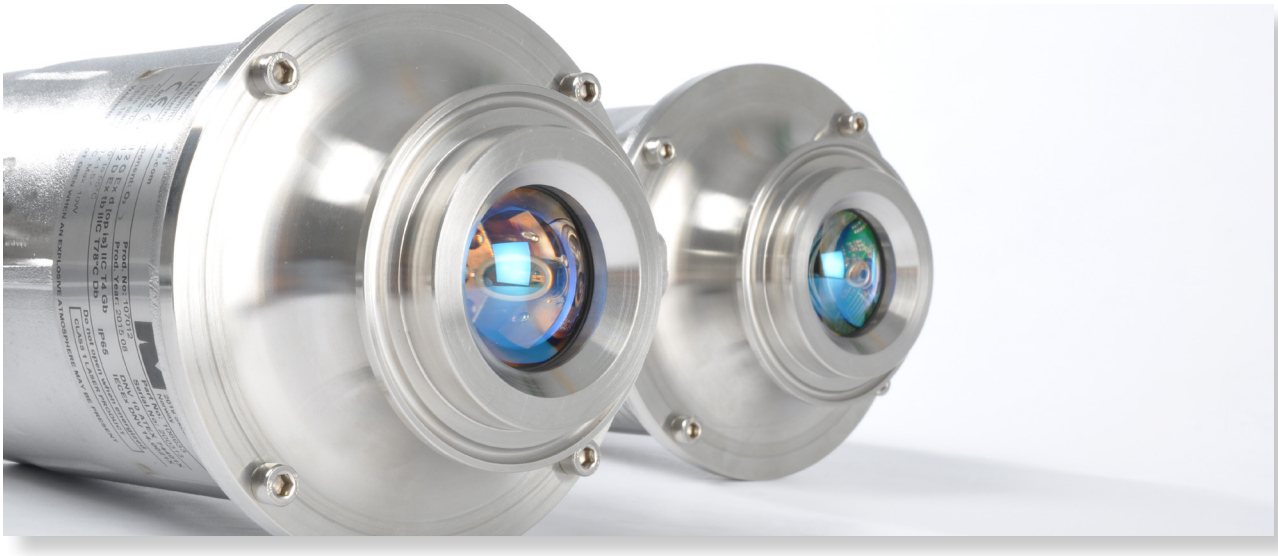
/ LaserGas™ III Ultra SP CO Combustion



LaserGas™ III Ultra uses the innovative baseline-insensitive TDLAS technique specifically designed for combustion analysis. The Ultra simultaneously meets the requirements of combustion control and safety. That is, high measurement accuracy and high dynamic range with simultaneous real-time measurement capability. Applications with very long path lengths and high gas concentrations are no problem for the Ultra.
Thanks to the baseline insensitivity and the use of the proprietary IROSS signal processing, high measurement accuracy is achieved even with complex gas mixtures.
LaserGas™ III Ultra CO in combination with LaserGas™ III O2 are a perfect combination for proper combustion control and safety.

Features

- In-situ real time measurements
- TDLAS technology
- Baseline-insensitive
- High dynamic range
- Fast response time
- Low detection limit
- No interference from other gases
- Not affected by high dust load
- Lifetime calibration, no zero drift
- Integrated span check
- Compact design
- Low power consumption (< 10W)
- Ethernet connectivity

Applications

- Combustion control
- Boilers
- Heaters

To:

- Refineries
- Powerplants
- Chemical industries
- Petrochemical industries
- Steel industries
- and more

Customer benefits

- Process control & process safety in a single analyzer
- Reliable in-situ CO measurements in real time
- Designed for long OPLs & high ranges
- Reduce fuel consumption
- Minimize pollutants emission
- Simple installation, ease of use
- Low maintenance cost
- No consumables
- No sampling systems
- Compressed air purge (no need for Nitrogen)
- No regular calibrations needed
- Designed for applications with complex gas mixtures

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Technical data

Specifications

Detection limit (CO):	0.5 ppm **
Max process gas temperature:	1300 ˚C
Max process gas pressure:	1.5 barA
Optical path length:	Typically 0.5 - 20m
Repeatability:	+/- 0.5 ppm or +/-1% relative, whicever is greater (application dependent)
Linearity:	< 1 % of range
Response time:	≤ 5 sec

Environmental conditions

Operating temperature:	-40 ˚C to +65 ˚C
Storage temperature:	-40 ˚C to +70 ˚C
Protection classification:	IP65

Inputs / Outputs

Analog output (3):	4 - 20 mA current loop (concentration CO, transmission, concentration CH_4)
Digital output:	10/100 Base T Ethernet (Modbus TCP)
Relay output (2):	High gas, warning and fault (normally closed)
Analog input:	4 - 20 mA process temperature and pressure reading

Ratings

Power supply:	24VDC range 18-32 VDC
Power consumption :	Max. 20 W
4 – 20 mA output:	500 Ohm max. load impedance, not isolated
Relay output:	1 A at 30 V DC

Safety

Laser class:	Class 1 M according to IEC 60825-1, eye safe
CE:	Certified
EMC:	Conformant with directive 2014/30/EU

Approvals

ATEX zone 1:	Ex db [op is Ga] IIC T4 Gb Ex tb [op is Da] IIIC T100°C Db
CSA:	Class I Div. 2, Groups B, C and D, T4
ATEX rating connection box:	II 2 GD Ex e IIC T5 II 2 D Ex e tb IIIC T85°C Db
Functional safety:	PENDING

Installation and Operation

Flange dimension:	DN50/PN10 or ANSI 2”/150 lbs (other dimensions on request)
Alignment tolerances:	Flanges parallel within 1.5˚
Purging of windows:	Dry and oil-free pressurised air or gas, or by fan
Purge flow:	10-50 l/min (application dependent)

Maintenance

Calibration:	Check recommended every 12 months
Validation:	In-situ span check with optional internal cell (application depenent)

Dimension and weight

Transmitter and receiver unit (TU/RU):	215 mm (length, add 50 mm for purge unit) x 125 mm (diameter), 3,5 kg each
TU/RU connection box:	260 mm x 160 mm x 90 mm, 2.5kg

**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_2.

Special process conditions on request

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

Process temperature below 500°C

	Min	Max	LDL/precision
CO	0-50ppm	0-100.000ppm*m	0.5ppm**
CH_4 add-on	0-1%*m	0-60%*m	0.01%
Process path length	0.5	30m	
Process temperature	-40 °C	500 °C	
Process pressure	0.7 BarA	1.5 BarA	

Process temperature above 500°C

	Min	Max	LDL/precision
CO	0-200ppm	0-200.000ppm*m	3ppm
CH_4 add-on	0-5%*m	0-100%*m	0.05%
H_2O add-on	-	0-40%	2%
Temperature add-on	500 °C	1300 °C	30 °C
Process path length	0.5m	30m	
Process temperature	500 °C	1300 °C	
Process pressure	0.7 BarA	1.5 BarA	

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