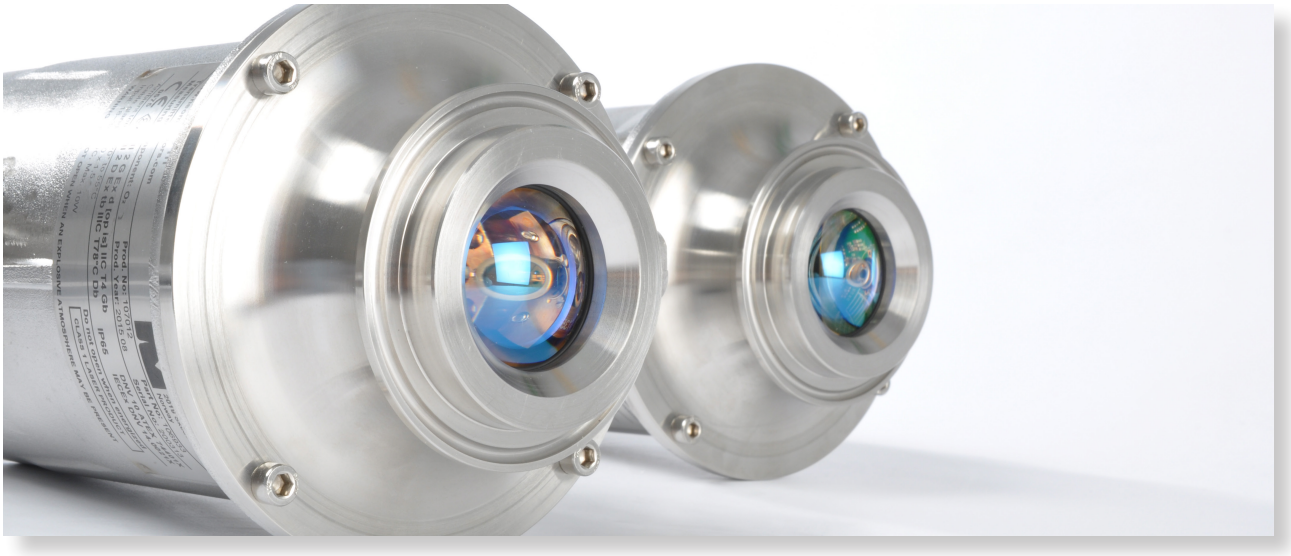
/ LaserGas™ III Ultra SP % CO_2



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LaserGas™ III Ultra % CO_2 uses the innovative baseline-insensitive TDLAS technique specifically designed for high performance percent level CO_2 applications in complex sample streams and where high dynamic range is required including challenging applications with long path lengths and high gas concentrations.

Thanks to the baseline insensitivity and the use of NEO Monitors' proprietary IROSS™ signal processing algorithm, such applications are no problem for the Ultra.

LaserGas™ III Ultra CO_2 is the perfect partner for reliable % CO_2 measurement in these demanding applications.

Features

- In-situ real time measurements
- TDLAS technology
- Baseline-insensitive
- IROSS™ signal processing
- 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

- Fluidized catalytic cracker units (FCCU)
- Basic oxygen furnace (BOF)
- Blast furnace (BF)
- De-coke
- Carbon capture, utilization and storage (CCUS)

In:

- Refineries
- Power Plants
- Chemical industries
- Steel industry
- and more

Customer benefits

- Process control & process safety in a single analyzer
- Reliable in-situ CO_2 measurements in real time
- Designed for long OPLs & high ranges
- 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

IROSS™ - *In-situ Real-time Overlapping Spectral Separation*

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Technical data

Specifications

Detection limit (LDL):	See Table below
Process gas temperature range:	See Table below
Process gas pressure range:	See Table below
Optical path length:	See Table below
Repeatability:	+/- 0.5 ppm or +/-1% relative, whicever is greater (application dependent)
Linearity:	< 1 % of range
Response time:	≤ 5 s

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 and transmission)
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

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 N_2 or CO_2 free gas
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

Special process conditions on request

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

Spesifications LaserGas™ III Ultra SP % CO_2

	Min	Max
Measurement range	0-1%	0-100%*m
Process temperature	-50˚C	1200˚C
Process pressure	0.5 barA	3.5 barA
Detection limit (LDL)**	0.001%	
Precision	LDL or 1% of reading	
Optical path length	0.5 m	30 m

**NOTE:
LDL is defined as the maximum peak-to-peak value of a 24 hour temperature cycle test (-40 to +65˚C) using 1 s update time. LDL also includes typical background interferences not explicitly defined in the table.

PERFORMANCE YOU CAN TRUST

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