

PRODUCT DATASHEET

HALO 3 CO₂™

TRACE LEVEL CARBON DIOXIDE ANALYZER



The HALO 3 CO₂ offers best-in-class performance including:

- Low detection limit down to 8 ppb in nitrogen
- Wide dynamic range
- Freedom from drift
- No spectral interferences
- Compact standalone footprint or rack mountable
- Low Cost of Ownership
- Simple operation

Advancing Accurate, Consistent & Drift-Free CO₂ Measurements

The removal of contaminants prior to cooling and distillation is essential to the cryogenic air separation process. If not detected quickly, impurities such as CO₂ (carbon dioxide) can freeze in the downstream cryogenic equipment causing damage and product spoilage. The HALO 3 CO₂[™] analyzer affords fast, accurate response and clean-up, with no possibility of drift.

Based on powerful Cavity Ring-Down Spectroscopy (CRDS), with a proprietary laser-locked cell, the HALO 3 is free of drift, guaranteeing consistent and reliable trace CO₂ detection in nitrogen and other inert gases. Highly specific to the target molecule, CRDS also prevents cross-interferences from distorting your measurement.

Plus, there is no need to perform costly and time-consuming zero and span calibrations, saving both time and money with continuous, on-line service.

Compact and portable, the HALO 3 CO₂ gives you unsurpassed speed of response and ease of use. In sum, the HALO 3 CO₂ analyzer serves a range of applications where trace gas measurement is extremely critical, such as syngas production, fixed bulk gas continuous monitoring, gas cylinder quality control, auto-load truckfill and a multitude of other challenging applications. The HALO 3 CO₂ builds on our longstanding leadership for trace monitoring of critical compounds in pressurized gases.

Specifications

Performance

Operating range:	See table below
Detection limit (LDL, 3σ/24h):	See table below
Precision (1σ, greater of):	\pm 0.75% or 1/3 of LDL
Accuracy (greater of):	\pm 4% or LDL
Speed of response:	< 3 minutes to 95%
Environmental conditions:	10°C to 40°C, 30% to 80% RH (non-condensing)
Storage temperature:	-10°C to 50°C

Gas Handling System and Conditions

Wetted materials:	316L stainless steel (corrosive gas version optional) 10 Ra surface finish
Gas connections:	1/4" male VCR inlet and outlet
Leak tested to:	1 x 10 ⁻⁹ mbar l / sec
Inlet pressure:	10 – 125 psig (1.7 – 9.6 bara)
Flow rate:	Up to 1.8 slpm
Sample gases:	Most inert, toxic, passive and corrosive matrices
Gas temperature:	Up to 60°C

Dimensions & Weight

Standard sensor (in NEMA 4X enclosure): H × W × D: 8.73 x 8.57 x 23.6 in (222 x 218 x 599 mm)

Sensor rack (fits up to two sensors): H × W × D: 8.73 x 19.0 x 23.6 in (222 x 483 x 599 mm)

Standard sensor weight: 28 lbs (12.7 kg)

Electrical and Interfaces

Platform:	Max series analyzer
Alarm indicators:	2 user programmable, 1 system fault, Form C relays
Power requirements:	90 – 240 VAC, 50/60 Hz
Power consumption:	40 Watts max.
Signal output:	Isolated 4–20 mA per sensor
User interfaces:	5.7" LCD touchscreen, 10/100 Base-T Ethernet USB, RS-232, RS-485 Modbus TCP (optional)
Data storage:	Internal or external flash drive
Certification:	CE Mark

Performance in CO ₂	Range	LDL (3σ)	Precision (1σ) @ zero
In Nitrogen: Low range	0 – 12 ppm	8 ppb	3 ppb
In Nitrogen: High range	0 – 1500 ppm	250 ppb	100 ppb

Contact us for additional analytes, matrices and ranges.
U.S. Patent # 7,277,177

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Process Insights manufactures and delivers premium sensors, monitors, detectors, analyzers, instrumentation, and software that are mission-critical to keep your operations, personnel, and the environment safe – every day across the globe.

Get the most reliable, precision analytical technologies available on the market today. We will work to match your needs and budget, and provide the optimal, and most stable process analysis solution for your application.

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Process Insights is committed to solving our customers' most complex analytical, process, and measurement challenges everyday.

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For a complete range of products, applications, systems, and service options, please contact us at: info@process-insights.com

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REVOLUTIONIZING MEASUREMENT

EVERYWHERE