



HALO 3 CO

Trace Level Carbon Monoxide Analyzer

GASES & CHEMICALS

CEMS

ENERGY

SEMI & HB LED

ATMOSPHERIC

LAB & LIFE SCIENCE

The HALO 3 CO ensures purity and process protection with:

- Parts per billion (ppb) carbon monoxide detection capability
- Wide measurement range, from 0–2500 ppm (in hydrogen)
- Freedom from calibration (absolute measurement technology)
- Low cost of ownership
- Compact design
- Simple software interface

Measure CO with Confidence

Whether for process control or quality control, gas suppliers need accurate, low-level contaminant monitoring to ensure gas quality with no impurities. For refineries and chemical plants it is especially critical to measure carbon monoxide in hydrogen since high levels can poison a customer's process and a supplier's reputation. CO is also a critical impurity in fuel-cell-grade hydrogen that can poison the fuel cell's catalyst.

Monitor purity with the HALO 3 CO analyzer, designed to provide unparalleled accuracy and reliability for your most critical carbon monoxide

measurements. Compact and easy to use, this analyzer features Tiger Optics' proven Cavity Ring-Down Spectroscopy to detect carbon monoxide as low as 40 ppb in your gas.

Users enjoy freedom from periodic sensor maintenance, and with no calibration gases required, operating costs are nearly eliminated. With drift-free stability and rapid response time, the HALO 3 CO is ideal for the continuous, online gas monitoring that is critical to process control in gas and chemical industries or anywhere purity is a necessity.

HALO 3 CO

Trace Level Carbon Monoxide Analyzer



Performance	
Operating range	See table below
Detection limit (LDL, 3σ/24h)	See table below
Precision (1σ, greater of)	± 0.75% or 1/3 of LDL
Accuracy (greater of)	± 4% or LDL
Speed of response	< 1 minute to 90%
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	H x W x D [in (mm)]
Standard sensor	8.73 x 8.57 x 23.6 (222 x 218 x 599)
Sensor rack (fits up to two sensors)	8.73 x 19.0 x 23.6 (222 x 483 x 599)

Weight	
Standard sensor	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, CO:	Range	LDL (3σ)	Precision (1σ) @ zero
In Nitrogen	0 – 2000 ppm	40 ppb	15 ppb
In Oxygen	0 – 1800 ppm	35 ppb	12 ppb
In Clean Dry Air (CDA)	0 – 2000 ppm	40 ppb	15 ppb
In Argon	0 – 1600 ppm	30 ppb	10 ppb
In Helium	0 – 1800 ppm	35 ppb	12 ppb
In Hydrogen	0 – 2500 ppm	50 ppb	20 ppb

Contact us for additional analytes and matrices.
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