HALO 3 CO

Trace Level Carbon Monoxide Analyzer

GASES & CHEMICALS | CEMS | ENERGY | ATMOSPHERIC | SEMI & HB LED | SYNGAS | LABORATORY

The HALO 3 CO ensures purity and process protection with:

- Parts per billion (ppb) carbon monoxide detection capability
- Wide measurement range, from 0 – 2000 parts per million (ppm)
- 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.

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 less than 100 ppb of carbon monoxide in your process streams.

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.

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Performance	
Operating range	See table below
Detection limit (LDL,	See table below
24 h peak-to-peak variation)	
Sensitivity (3σ)	See table below
Precision (1σ, greater of)	± 0.75% or 1/3 of Sensitivity
Accuracy (greater of)	± 4% or 1/2 of LDL
Speed of response	< 1 minute to 90%
Environmental conditions	10°C – 40°C
	30% – 80% RH (non-condensing)
Storage temperature	-10°C – 50°C

Gas Handling System and Conditions	
Wetted materials	316L stainless steel
	(optional Hastelloy©)
	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	8.75 x 8.5 x 23.6 (222 x 216 x 599)
Sensor rack	8.75 x 19 x 23.6 (222 x 483 x 599)
(fits up to two sensors)	

Weight	
Standard sensor	28 lbs (12.7 kg)

Electrical	
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
	802.11g Wireless (optional)
	RS-232

Performance, CO:	Range	LDL	Sensitivity
In Nitrogen	0 – 2000 ppm	100 ppb	70 ppb
In Hydrogen	0 – 2000 ppm	100 ppb	70 ppb

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

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