HALO 3 CH_4
Trace Level Methane Analyzer

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

Designed for trace level methane analysis, the HALO 3 CH_4 offers:

- Low single-digit parts per billion (ppb) moisture detection capability in an array of gases
- Absolute measurement (freedom from calibration gases)
- Wide dynamic range
- Low cost of ownership and operational simplicity
- Clean technology – no external calibration gases required
- Compact analyzer footprint

The HALO 3 CH_4 trace level methane gas analyzer provides users with the unmatched accuracy, reliability, speed of response and ease of operation that users of Tiger Optics analyzers have come to know and expect. Featuring Tiger Optics' proven Cavity Ring-Down Spectroscopy-based trace gas sensor in a very compact and economic analyzer design, this versatile analyzer allows users to measure methane in most inert and passive gases with just one device.

Users also enjoy freedom from requirements such as periodic sensor maintenance, span calibrations, purifier replacement and pump rebuilds. As a result, the HALO is ideally suited to many applications where trace gas measurement is extremely critical. These applications include silicon wafer manufacturing monitoring, fixed bulk gas continuous quality control, process tool monitoring, air separation, gas cylinder quality control and many other demanding applications.

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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 95%
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	30 – 125 psig (3.1 – 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, CH_4:	Range	LDL	Sensitivity
In Nitrogen	0 – 8 ppm	2.0 ppb	1.6 ppb
In Helium	0 – 5 ppm	1.3 ppb	1.1 ppb
In Argon	0 – 7 ppm	1.7 ppb	1.4 ppb
In Hydrogen	0 – 8 ppm	2.0 ppb	1.6 ppb
In Oxygen	0 – 6 ppm	1.4 ppb	1.1 ppb

Contact us for additional analytes and matrices.
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