LaserTrace 2.5 LP CH_2O

Trace Level Formaldehyde Analyzer

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

Designed for formaldehyde analysis in laboratory and process applications:

- Accuracy traceable to the world's major national reference labs
- Industry-proven technology
- Freedom from the need for span calibrations
- No periodic sensor replacement/maintenance
- Low ppb detection limit
- Wide dynamic range and no drift
- Modular design – up to two measurement points per electronics module

Advancing Accurate, Consistent & Drift-Free CH_2O Measurements

Formaldehyde (CH_2O) is a known human carcinogen and as such the accurate and effective measurement of this chemical in our environment is critical. Indoors, formaldehyde is present in many man-made materials such as pressed wood products, carpets, and adhesives. We are also exposed to formaldehyde when using modes of transport powered by the combustion of fossil fuels. As well as a harmful pollutant, CH_2O is a key impurity in fuel cell hydrogen, where it is responsible for the degradation of the proton exchange membrane, adversely affecting performance. Tiger Optics delivers a powerful analytical tool for the measurement of trace CH_2O for diverse applications.

Based on powerful Continuous-Wave Cavity Ring-Down Spectroscopy (CW-CRDS), with a proprietary laser-locked cell, the LaserTrace is free of drift, guaranteeing consistent and reliable trace CH_2O detection in air, nitrogen and other inert gases. Highly specific to the target molecule, CW-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, online service.

The LaserTrace CH2O gives you unsurpassed speed of response and ease of use. In sum, the LaserTrace CH2O analyzer serves a range of applications where trace gas measurement is extremely critical, such as sensor validation, gas standard preparation, and fuel cell hydrogen purity analysis. The LaserTrace CH2O builds on Tiger Optics longstanding leadership for trace monitoring of critical compounds in pressurized gases.

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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 (for 500 ppb intrusion)
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)
Outlet pressure	<2 Torr (2.7 mbar)
Flow rate	1 slpm (can be reduced with
	optional needle valve)
Sample gases	N_2, H_2 (other gases on request)
Gas temperature	Up to 60°C

Dimensions	H x W x D [in (mm)]
Electronics unit	14 x 19 x 14 (356 x 483 x 356)
Standard sensor	8.2 x 8.5 x 27.6 (208 x 216 x 701)
Sensor rack	8.75 x 19 x 28 (222 x 483 x 711)
(fits up to 2 standard sensors)	

Weight	
Electronics unit	35 lbs (15.9 kg)
Standard sensor	51 lbs (23.1 kg)

Electrical	
Alarm indicators	User programmable setpoints
	(1 per sensor)
	Form C relays
Power requirements	90 – 240 VAC, 50/60 Hz
Power consumption	200 Watts max.
Signal output	Isolated 4–20 mA per sensor
User interfaces	10.4" LCD touchscreen
	PS/2 for mouse and keyboard
	10/100 Base-T Ethernet
	2 USB ports, RS-232

Performance: CH_2O	Range	LDL*	Sensitivity
In Nitrogen	0 – 180 ppm	15 ppb	12 ppb
In Hydrogen	0 – 200 ppm	17 ppb	13 ppb

* LDL is dependent upon the quality of the sample gas and the integrity of the sampling system
Contact us for additional analytes and matrices.
U.S. Patent # 7,277,177

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