



Tiger-i 2000 CH₂O

Trace Formaldehyde Monitor for Ambient Air Applications

GASES & CHEMICALS

CEMS

ENERGY

ATMOSPHERIC

SEMI & HB LED

SYNGAS

LAB & LIFE SCIENCE

Designed for formaldehyde analysis in laboratory, process, and indoor air quality applications, as well as the detection of Airborne Molecular Contaminants (AMCs), the Tiger-i 2000 CH₂O offers:

- Accuracy traceable to the world's major national reference labs
- Freedom from the need for span calibrations
- No periodic sensor replacement/maintenance
- Single figure ppb detection limit
- Wide dynamic range and no drift
- Fast response
- Compact and rugged design

Advancing Accurate, Consistent & Drift-Free CH₂O Measurements

Formaldehyde (CH₂O) is a known human carcinogen and as such the accurate and effective measurement of this pollutant 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. CH₂O is also a key impurity in fuel cell hydrogen, where it is responsible for the degradation of the proton exchange membrane within the fuel cell, adversely affecting performance.

Tiger Optics delivers a powerful analytical tool for the measurement of trace CH₂O for diverse applications. Based on powerful Cavity Ring-Down Spectroscopy (CRDS), with a proprietary laser-locked cell, the Tiger-i 2000 is free of drift, guaranteeing consistent

and reliable trace CH₂O detection in ambient air. 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.

The Tiger-i 2000 CH₂O gives you unsurpassed speed of response and ease of use. In sum, the Tiger-i 2000 CH₂O analyzer serves a range of applications where trace gas measurement is extremely critical, such as indoor air quality monitoring, assessing outgassing from building materials, and optimization of vehicle powertrains. The Tiger-i 2000 CH₂O builds on Tiger Optics longstanding leadership for trace monitoring of critical compounds.

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21ST CENTURY SPECTROSCOPY

Tiger-i 2000 CH₂O

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Performance	
Operating range	See table below
Detection limit (LDL, 24 h peak-to-peak variation)	See table below
Sensitivity (3σ)	See table below
Precision (1σ, greater of)	± 0.75% or 1/3 of Sensitivity
Accuracy (greater of)	± 4% or LDL
Speed of response	3 min 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 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	0 – 15 psig (1 – 2 bara)
Outlet pressure	Vacuum (<10 Torr)
Flow rate	1 slpm
Sample gases	Ambient air, dry air (CDA) or N ₂
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	33 lbs (15 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 Modbus TCP (optional)

Performance, CH ₂ O:	Range	LDL (peak-to-peak)	Sensitivity (3σ)
In ambient air	0 – 70 ppm	7 ppb	5 ppb

*Oil-free vacuum source required, <10 Torr ultimate vacuum, >1 m³/h pumping speed
U.S. Patent # 7,277,177

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