

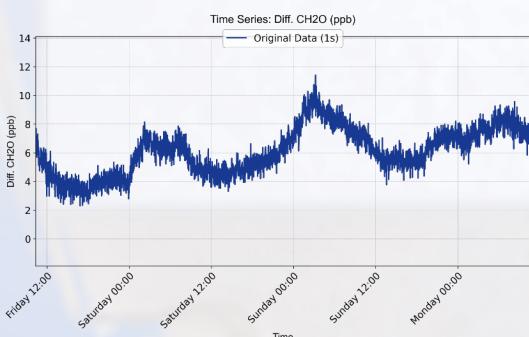
MEASURE FORMALDEHYDE SOURCES WITH UNMATCHED SENSITIVITY AND ACCURACY



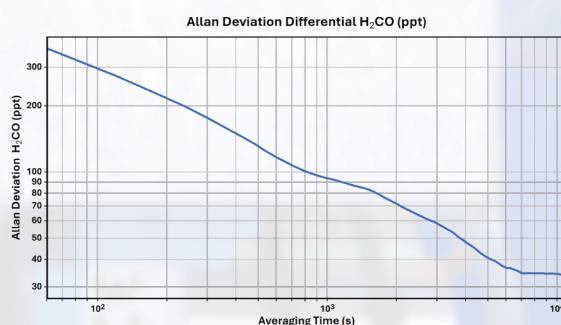
- Superior sensitivity: <1 ppb CH₂O
- Real-time analytics, statistics
- Up to 5 Hz operation, 1 Hz standard
- Ultra-high sensitivity and accuracy
- Low drift via thermally stabilized optical core
- Data in .kml format for viewing in Google Earth™
- Maintenance-free sensor, user-serviceable filters

The **MIRA Ultra CH₂O** harnesses mid-infrared (mid-IR) technology to deliver exceptional formaldehyde quantification at an industry-leading 1 ppb/30s sensitivity. This innovative analyzer is designed for both laboratory research and field investigations of this critical gas. Its remarkably low power consumption, paired with a lightweight and compact form factor, unlocks new field applications that were once impractical with traditional analyzers. Available in portable or fixed rackmount configurations, it offers continuous monitoring without supervision.

Formaldehyde, a potent volatile organic compound (VOC), demands vigilant monitoring due to its classification as a human carcinogen and its presence in industrial, indoor, and environmental settings. Exposure can cause respiratory irritation, and long-term health risks like cancer, while its environmental release contributes to air pollution. The MIRA Ultra CH₂O provides the precision and adaptability needed to address these hazards, ensuring compliance with stringent regulations and protecting human health and ecosystems.



A typical time series from MIRA Ultra HC₂O analyzer showing HC₂O averaged over 1 second, demonstrating stability over several days.



Allan deviation plot for the MIRA Ultra Formaldehyde analyzer, showing sub-ppb sensitivity.

INDUSTRY-LEADING SUB PPB ACCURACY AND SENSITIVITY

| Metric | Specification |
|-----------------------------------|---|
| Measurement Method | Mid-Infrared Direct Laser Absorption Spectroscopy |
| Sensitivity (1 σ) at 1 Hz | CH ₂ O: <1 ppb/30s |
| Sensitivity (1 σ) at 5 Hz | CH ₂ O: <450 ppt/30s |
| Temperature / Humidity | 10-35° C, 10 to 95% RH (non-condensing) |
| Measurement Range* | CH ₂ O: 1 ppb to 250 ppm |
| Flow Rate | 0.37 to 0.73 L/min |
| Size | 37.3 cm W (14.7") x 30.2 cm H (11.9") x 18.6 cm D (7.3") |
| Weight | 6.4 kg (14.1 lbs.), 6.8 kg (15 lbs.) with battery |
| Power Consumption | 27 W steady state, 50 W at startup |
| Voltage / Current | 12-15 VDC 4.2 A, 100-240 VAC 0.50 A (50-60 Hz) |
| Interface / Outputs | Wi-Fi, USB-A, USB to DB9 RS232 adapter (optional Ethernet, analog out) |
| Memory | 32 GB (expandable) |
| Data Update Rate | 1 Hz (selectable options up to 5 Hz) |
| Metric | Ultra Rackmount Specification |
| Size / Weight | 48.3 cm W (19.0") x 17.7 cm H (7.0") x 27.9 cm D (11.0") / 8.8 kg (19.4 lbs.) |
| Power Consumption | 26 W steady state, 50W at startup |
| Voltage / Current | 100-240 VAC 0.50 A (50-60 Hz) |
| Interface / Outputs | Wi-Fi, USB-A, DB9 RS232, Ethernet (optional analog out) |

*Linear measurement range. Operational range configurable for specific applications.

| Included: | Scrubber | Optional: | Internal Battery |
|--------------------------|-------------------------------|--------------|------------------|
| Rugged Shipping Case | Tablet | Ethernet | Nafion Dryer |
| Stainless Steel Sampling | 12 V and 110/240 V Power Plug | Advanced GPS | Anemometer |

Offered in both Rackmount and Portable configurations, MIRA Ultra systems ensure stable, low-drift performance with a temperature- and pressure-controlled sensor core, delivering exceptional accuracy and reproducibility for simultaneous gas measurements. This stability extends calibration intervals and, in some cases, eliminates the need for calibration. The system features two programmable sampling ports for calibration, re-zeroing, or differential measurements, supporting a wide variety of applications.

Core Sensor Technology

MIRA series analyzers combine Aeris' patented multipass cell technology with mid-IR solid-state lasers and custom electronics to achieve superior sensitivity and accuracy in an extremely robust and compact platform. The proprietary sensor engine used in every MIRA analyzer uniquely achieves a long absorption path length in an extremely small volume resulting in a fast response time with reduced pumping and power requirements.

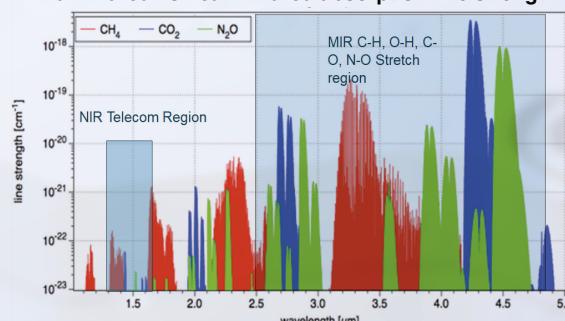


MIRA's compact optical core achieves a 13 meter path length in a 60 cc volume.

The Power of Mid-infrared

Spanning wavelengths from 2.5 to 5 micrometers (μ m), the Aeris mid-IR technology achieves the same or superior short-term sensitivity as fragile NIR cavity-based techniques. The robust design of the mid-IR core is well suited for a wide range of applications including airborne analysis and environmental monitoring.

Mid-infrared vs near-infrared absorption line strength



The Mid-infrared absorption spectrum of common greenhouse gases showing an increase of several orders of magnitude over their absorption in the NIR.

Aeris Technologies, Inc. provides ultrasensitive gas analyzers for trace gas monitoring applications. Aeris is redefining the state of the art in laser-based gas analysis systems, reaching unparalleled size, weight, power, and cost milestones.

Aeris Technologies, Inc. 26252 Eden Landing Road, Hayward CA 94545
PH 650.620-9421 FAX 9451
www.aerissensors.com

