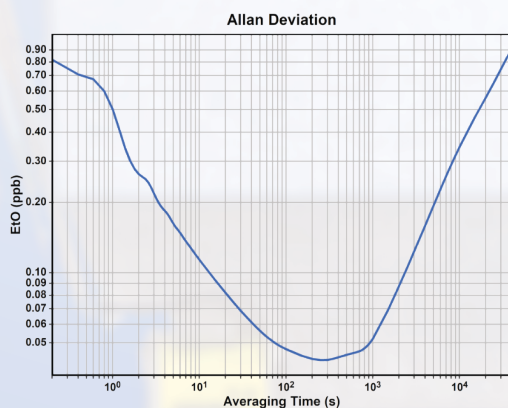


MONITOR ETHYLENE OXIDE LEVELS IN REAL TIME WITH SUB-PPB SENSITIVITY

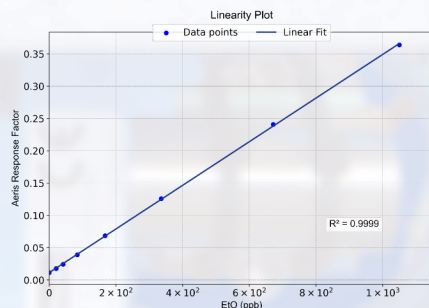
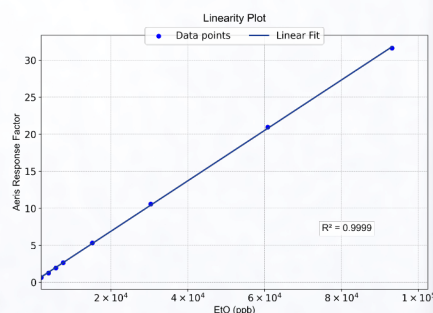


- Real-time, sub-ppb/s sensitivity
- Autonomous, built-in zero calibration
- GPS-enabled for generating spatial maps
- Built-in Wi-Fi, RS-232, and optional analog output
- Low power consumption at 27 W
- Maintenance-free sensor core
- User-serviceable filters
- Optional 3-hour battery, built-in sampling pump

Introducing the **MIRA Ultra EtO**, the world's first portable analyzer for ethylene oxide (EtO) monitoring and detection. EtO is a highly effective medical sterilization agent used in chemical manufacturing of several common products such as textiles, antifreeze and adhesives. EtO is also a well-known carcinogen and therefore monitoring EtO in and around these facilities is important for safeguarding both worker and community exposure. Leveraging Aeris' miniature laser sensor engine, this groundbreaking device achieves sub-parts-per-billion (ppb) sensitivity and accuracy in seconds, allowing for real time detection and response to elevated EtO concentrations from sub-ppb to parts-per-million (ppm). The real time data stream from the MIRA Ultra EtO analyzer is a significant advancement over traditional techniques that are costly, labor-intensive and provide poor time resolution preventing remediation in real time.



Allan deviation plot for the MIRA Ultra EtO analyzer, showing sub-ppb sensitivity when collecting at 5 Hz.



Analyzer response vs known EtO concentration showing a highly linear correlation ($R^2=0.9999$) for both high (top) and low (bottom) concentrations.

INDUSTRY-LEADING SUB PPB ACCURACY AND SENSITIVITY

Metric	Specification
Measurement Method	Mid-Infrared Direct Laser Absorption Spectroscopy
Sensitivity (1 σ) at 1 Hz	<1 ppb/60s
Sensitivity (1 σ) at 5 Hz	<450 ppt/60s
Temperature / Humidity	10-35° C, 10 to 95% RH (non-condensing)
Measurement Range*	EtO: 120 ppt to 100 ppm
Flow Rate	0.17 to 0.28 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)

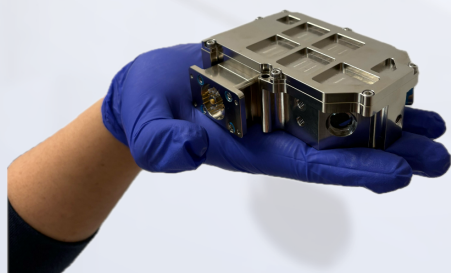
*Linear measurement range. Operational range configurable for specific applications.

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 Upgrade	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.

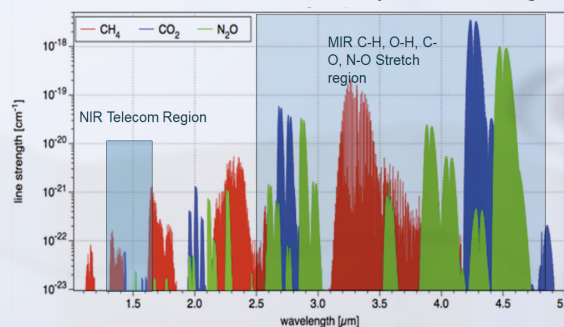


MIRA's compact optical core achieves a 13 meter path length in a 60 cc volume.

The Power of Mid-infrared

Spanning wavelengths from 2.5 to 5 micrometers (μm), 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



Absorption spectrum of greenhouse gases across the IR. Absorption line strength is orders of magnitude stronger in the Mid-IR than 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.

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