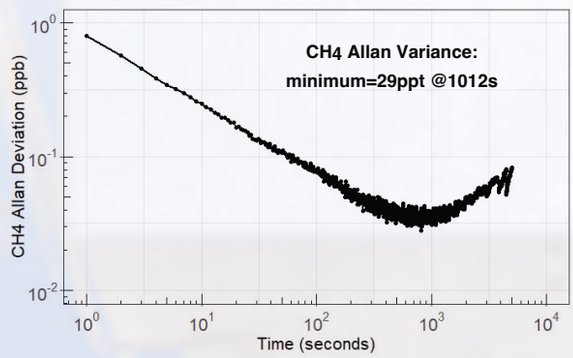
MIRA Ultra CH_4/C_2H_6

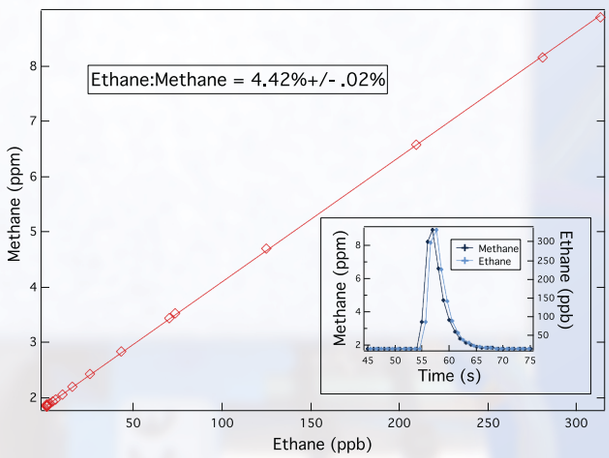
MEASURE NATURAL GAS LEAKS WITH UNMATCHED SENSITIVITY, ACCURACY AND THERMOGENIC VS BIOGENIC DISCRIMINATION

- *Superior sensitivity: CH_4: <900 ppt/s, C_2H_6: <230 ppt/s*
- *Real-time analytics, statistics*
- *Operates up to 5 Hz*
- *Ultra-high sensitivity and accuracy*
- *Low drift via thermally stabilized optical core*
- *Data compatible with multiple GIS software*
- *Maintenance-free sensor, user-serviceable filters*

The **MIRA Ultra CH_4/C_2H_6** analyzer operates in the mid-infrared (mid-IR) spectrum, delivering unmatched simultaneous quantification of methane (CH_4) and ethane (C_2H_6), effectively distinguishing natural gas from common interfering methane sources, such as vehicle exhaust, and landfill and waste gas. Its unique ethane detection capability provides natural gas discrimination with an accuracy significantly greater than that of other laser-based analyzers, minimizing false alarms that could otherwise lead to unnecessary and costly leak surveys. The Ultra LDS systems are available in both portable and rackmount configurations, with an optional internal battery (up to 3 hours) for portability and continuous use even without a power source.



Typical Allan deviation plot for the MIRA Ultra CH_4/C_2H_6 showing a precision of less than 100 ppt with a 60-second average.



Ethane to methane ratio plotted from a single leak event (insert) showing a ratio of 4.42% ethane.

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Industry-leading
sub ppb accuracy and sensitivity

Metric	Specification
Measurement Method	Mid-Infrared Direct Laser Absorption Spectroscopy
Sensitivity (1σ) at 1 Hz	CH_4: <2 ppb/s / C_2H_6: <500 ppt/s
Sensitivity (1σ) at 5 Hz	CH_4: <900 ppt/s / C_2H_6: <230 ppt/s
Max Drift (24 hrs)	CH_4: <2 ppb / C_2H_6: <3 ppb
Temperature / Humidity	10-35° C, 10 to 95% RH (non-condensing)
Measurement Range*	CH_4: 10 ppb to 6,000 ppm / C_2H_6: 1 ppb to 1,000 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 configureable for specific applications.**

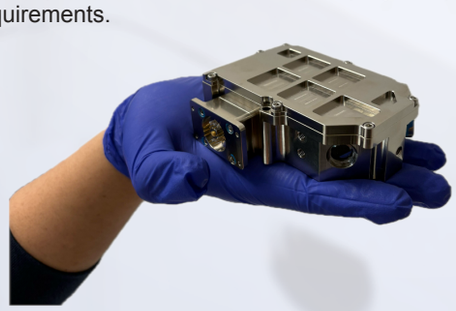
Included:	GPS
Rugged Shipping Case	Tablet
User-Friendly Software	12 V and 110/240 V Power Plug

Optional:	Advanced GPS Upgrade
Scrubber	Nafion Dryer
Stainless Steel Sampling	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.

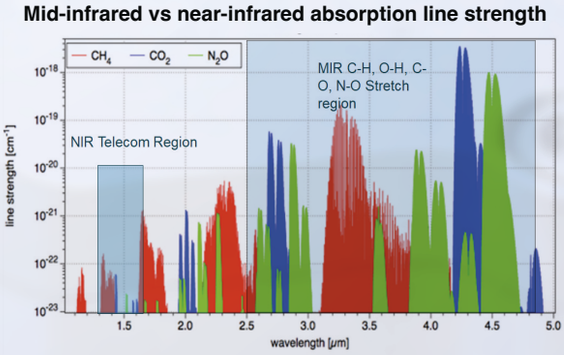


MIRA's compact optical core achieves a 13 meter path length in a 60 cc volume.

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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