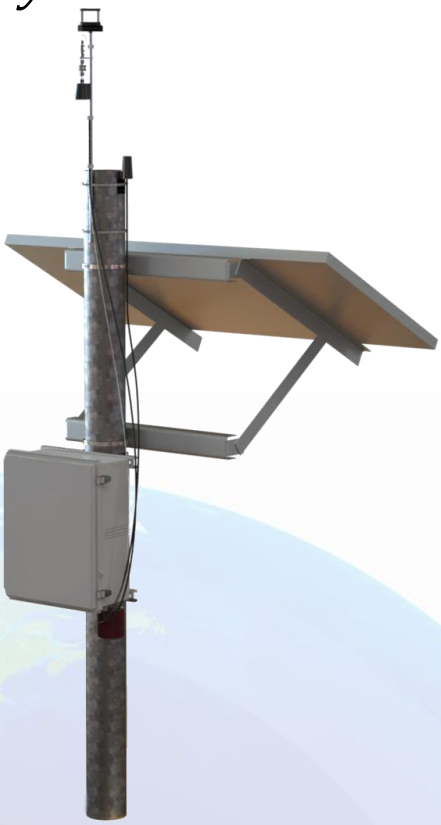
MIRA *Sentinel LDS*

Autonomous Natural Gas Leak Detection System

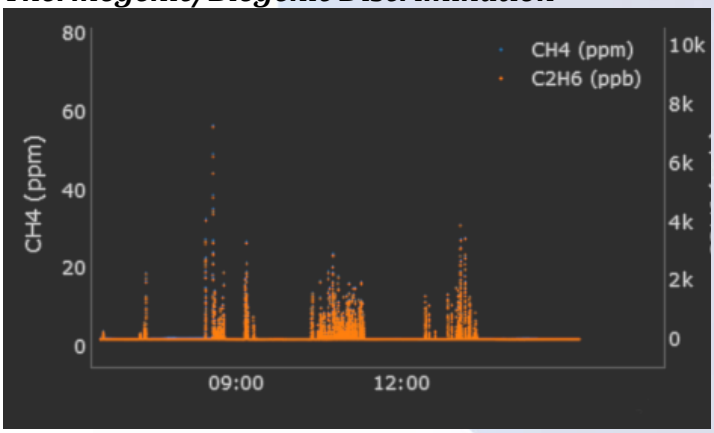


Monitor Natural Gas Leaks with Unmatched Sensitivity, Accuracy and Thermogenic vs. Biogenic Discrimination

Introducing the new autonomous MIRA *Sentinel LDS*, a high sensitivity/accuracy natural gas leak detection system from Aeris Technologies, Inc. The *Sentinel* LDS combines our breakthrough, real-time laser absorption spectrometer with built-in GPS and anemometer capability to produce the World's most powerful, autonomous leak-measurement tool.

The *Sentinel LDS* operates in the mid-infrared, achieving unparalleled, simultaneous methane and ethane quantification at the 1ppb/s level, while achieving long-term low ppt level repeatability. Natural gas is discriminated from common interfering methane sources such as vehicle exhaust and biogenic sources such as landfill and sewer gas. The unique ethane capability provides a natural gas discrimination capability *50 times greater* than that of other laser-based analyzers, reducing false alarms that otherwise trigger unnecessary and costly leak surveys. *Sentinel LDS* systems come in a autonomous package, with a solar panel, internal back-up battery and advanced sampling system.

Unmatched Sensitivity, Accuracy, and Response time with Superior Thermogenic/Biogenic Discrimination



Graph indicates when methane increases simultaneously with ethane, they are highly correlated, identifying persistent natural gas emission(s)

Key Features:

- *Superior sensitivity: <2ppb/s CH_4 , <300ppt/s C_2H_6*
- *Real-time analytics, statistics*
- *Ultra-High sensitivity and accuracy*
- *Low-Drift via thermally stabilized optical core*
- *1 or 2 Hz operation standard, up to 10 Hz optional*
- *High accuracy GPS, magnetically mounted antennae*
- *Wifi, RS232, 4G data streaming capability*
- *Low power consumption, solar powered options*
- *Robust optical platform: 100x less sensitive to contamination than "cavity-based" systems*
- *Water vapor measured to report dry mole fractions via polynomial correction up to 31000 ppm H_2O*
- *Data in ASCII format for rapid visualization*
- *Rapid install: no specific modifications required*

About Aeris Technologies, Inc.

Aeris Technologies, Inc. provides high accuracy, ultrasensitive natural gas leak detection solutions for fixed, mobile, and handheld LDAR applications. Aeris is redefining the *state-of-the-art* in natural gas leak detection, reaching unparalleled performance, size, weight, power, and price milestones for up, mid, and downstream markets.

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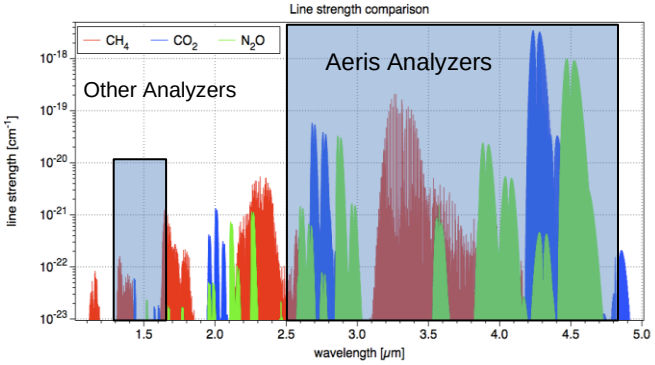
MIRA *Ultra Mobile LDS*

Metric	***Specification***
Measurement method	Mid-Infrared Laser Absorption Spectroscopy (Direct Absorption)
Species, Sensitivity	CH_4: <2ppb/s, C_2H_6: <300ppt/s
Drift , typical	<2ppb/24h over full temp range (50 min. soaking time)
Temp/Humidity	5-40°C, 10 to 90% RH (non-condensing)
Concentration Range*	10 ppb to 10,000ppm CH_4/1ppb-1000ppm C_2H_6
Size	H19.69" x W15.75" x D7.87" (Enclosure)
Weight	24 kg (52 lbs), w/o tablet and power supply
Power Consumption	22W (steady state) 60W (cold, peak) Solar Panel 12V 175W Battery is 12V 100Ah (appr. 43.2hrs of battery life)
Interface/Outputs	Built-in wifi, RS-232 out, USB, Ethernet, analog output and 4G optional
Memory	32GB default, scalable
Data Update Rate	1 or 2 Hz standard, up to 10 Hz optional

**Optional ranges, etc. can be configured for specific applications including higher concentration*

Core Technologies

MIRA series analyzers combine Aeris' Patented multipass cell technology with MIR solid-state lasers and custom electronics to achieve 1ppb sensitivity and ppb level accuracy in an extremely robust and compact platform. MIRA analyzers operate in the mid-IR, where CH_4 absorption is 200x and C_2H_6 is 6000x stronger than in the near-IR , resulting in a net 30x better ethane sensitivity than cavity-based systems.

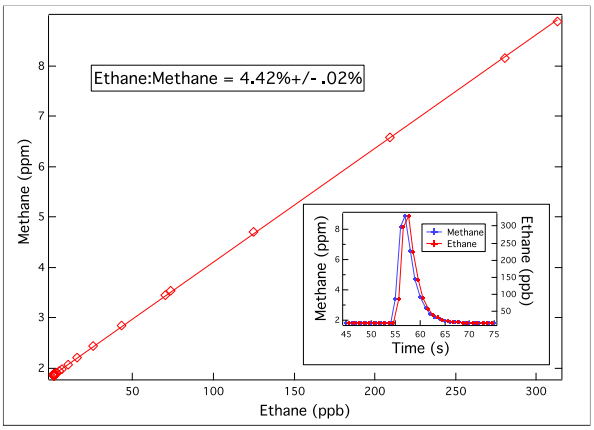


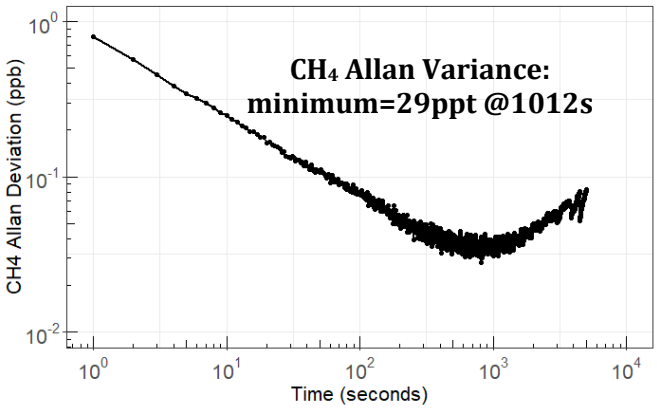
The Patented spectrometer used in every MIRA *Ultra* gas analyzer achieves a 13m absorption path length in an extremely small volume (60cc), resulting in ultra-high sensitivity, rapid response time, and low power consumption. Temperature and pressure are precisely controlled, providing low drift and high accuracy.

The MIRA sensor engine is based on a fixed, hermetic optical bench with integrated mid-IR laser and detector subassemblies, resulting in a miniature, ultrasensitive 13m path length spectrometer.

Unparalleled Leak Discrimination Capability via Superior Ethane:Methane Quantification

Ultra LDS systems have the unmatched ability to instantly determine if the leak source is thermogenic vs. biogenic via the rapid and accurate determination of ethane-to-methane ratios, eliminating false alarms triggered by other analyzers that have either inferior or no ethane detection capability whatsoever.





Top: *Time series (inset, C_2H_6 time shifted) and calculated C_2H_6:CH_4 ratio for a single leak event, with 4.42% +/- 0.02% ethane.*
Bottom: *Allan Variance: The temperature stability of the Ultra sensor core provides ultra-low drift and ultra-high accuracy.*

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