



MIRA Pico Mobile LDS

Natural Gas Leak Detection System w/GPS

Locate Natural Gas Leaks with Unmatched Sensitivity, Precision and Thermogenic vs. Biogenic Discrimination

Introducing the new MIRA Pico Mobile LDS, a high sensitivity natural gas leak detection system from Aeris Technologies, Inc. The Pico Mobile combines a breakthrough, real-time laser absorption spectrometer with built-in GPS capability to produce the Worlds smallest, most powerful leak-mapping tool.

The Pico Mobile LDS operates in the mid-IR, achieving unparalleled, simultaneous methane and ethane sensitivity at the 1ppb/s level. Natural gas is unambiguously discriminated from other, biogenic sources such as landfill gas, cattle operations, swamp gas, and permafrost. This unique capability provides a discrimination capability 30 times greater than that of other laser-based analyzers at 1/10th the size, reducing false alarms and enabling accurate ethane/methane ratio data in real-time. Pico Mobile LDS systems provide accurate ethane/methane ratios at levels rivaling mass spectrometric methods, without associated sample handling or consumables.



Key Features include:

- Unmatched <1ppb/s sensitivity for CH₄ and C₂H₆
- 30x better ethane sensitivity than competing systems
- Portable, handheld operation- 6 hr. battery
- 1 or 2Hz operation
- High accuracy GPS, magnetically mounted antennae
- Wifi, RS232, streaming capability
- 10x + smaller and lighter than competition
- Low 15W power consumption
- Robust optical platform: 100x more optically robust than competing "cavity-based" systems
- Water vapor measured to report dry mole fractions
- Data formatted for viewing in Google Earth™

Unmatched Sensitivity, Accuracy, and Speed with Superior Thermogenic/Biogenic Discrimination



Red indicates highly correlated ethane to methane concentrations in the Houston area on two different passes through the same region at highway speeds, identifying a persistent natural gas leak.



Green indicates the spatial mapping of a significant methane-only plume on repeated passes over several hours, in this case from a nearby landfill, unambiguously ruling out natural gas as the source.

About Aeris Technologies, Inc.

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

MIRA Pico Mobile LDS w/GPS System Specifications

Metric	Specification*
Measurement method	Mid-Infrared Laser Absorption Spectroscopy
Species, Sensitivity	CH ₄ : <1ppb/s, C ₂ H ₆ : <500ppt/s
Drift, σ	30ppb or 1% of reading over full temp range
Temp/Humidity	10-40°C, 10 to 95% RH (non-condensing)
Concentration Range	Configurable, ppb to % levels
Size	11.5"Wx8"Dx3.75"H
Weight	2.75 kg (6lbs)
Power Consumption	15W
Voltage, current	12-15V DC: 1.5A, 110-220VAC: 0.2A,
Interface/Outputs	wifi, RS-232, analog output (optional)
Memory	32GB
Data Update Rate	1 or 2 Hz

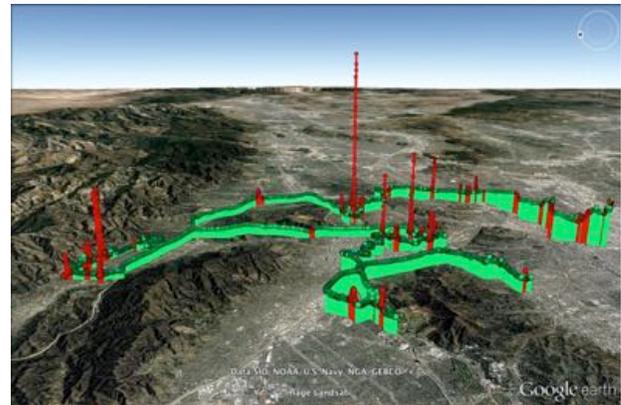
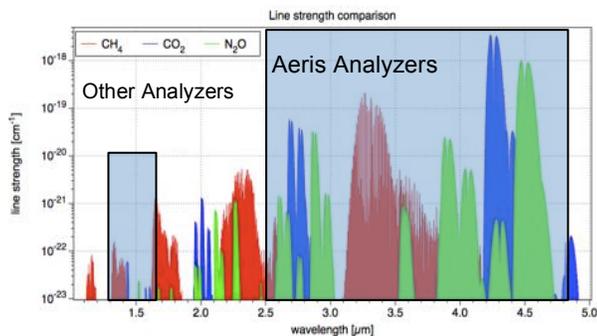
*Optional ranges, etc. can be configured for specific applications

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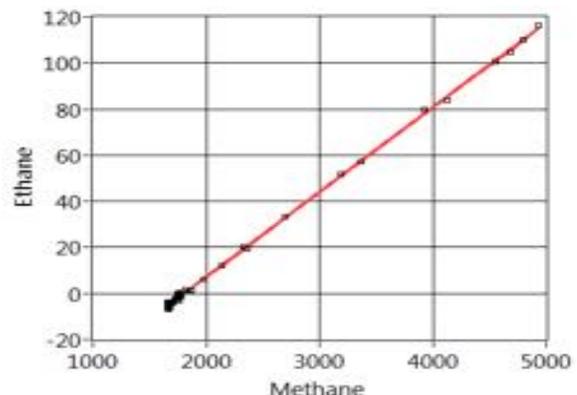
MIRA series analyzers combine Patented multipass cell technology, MIR solid-state lasers and custom electronics to achieve 1ppb sensitivity and ppb level accuracy in an extremely robust and compact package. The MIRA Platform operates in the mid-IR, where ethane absorption is 6000 times stronger than the near-IR where competing approaches operate.

Unparalleled Leak Discrimination via Superior Ethane:Methane Quantification

Pico Mobile LDS systems have the unique ability to instantly determine if the leak source is thermogenic vs. biogenic via the clear correlation of ethane and methane, eliminating false alarms triggered by other analyzers that have either inferior or no ethane detection capability whatsoever.



The Patent Pending sensor engine used in the Pico Mobile LDS uniquely achieves a long absorption path length in an extremely small volume, providing ultra-high sensitivity and rapid response time with reduced pumping requirements. Additionally, the system is not cavity-based, eliminating the need for the associated periodic servicing/replacement of the High R cavity.



Top: more than two-dozen natural gas leaks (Red) are identified via simultaneous, correlated ethane and methane detection.

Bottom: Ethane concentrations are accurately measured in real-time with the Pico Mobile LDS, in this case with 3.97% ethane.

MIRA laser-based sensor engine, comprising a fixed, hermetic optical bench, integrated laser and detector subassemblies, and ultra-compact, 60cc, 13m path length optical multipass cell.

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