

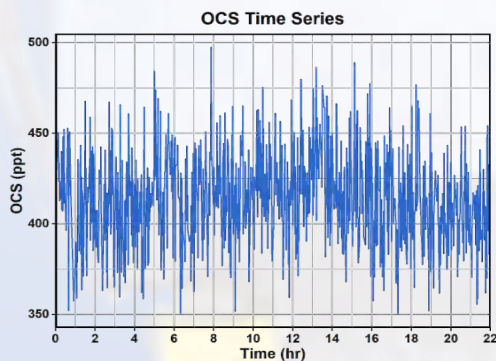
THE WORLD'S FIRST TRULY PORTABLE, HIGH-ACCURACY CARBONYL SULFIDE SENSOR



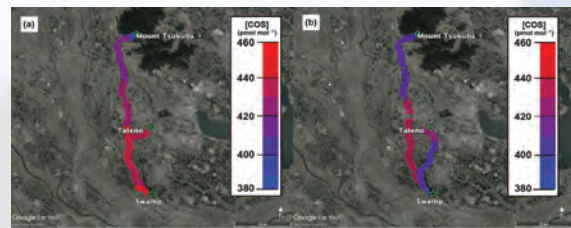
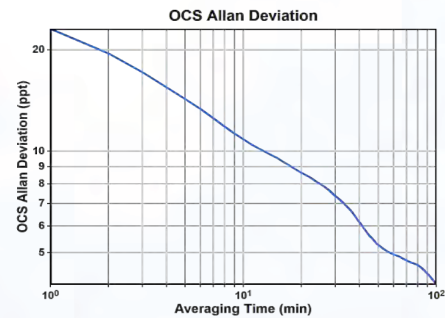
- Simultaneous, real-time monitoring of OCS 1 Hz
- Industry-leading sub ppb accuracy and sensitivity
- Autonomous with 2 inlet ports
- Low power consumption
- Robust and maintenance free

The **MIRA Ultra OCS** is a high-performance analyzer available in portable and rackmount configurations for both fixed and mobile deployments. It's compact, lightweight design and low power draw enable access to field sites that were previously impractical with competing instruments.

Using an absorption-based technique, the Ultra OCS delivers excellent accuracy and linearity across a broad dynamic range, making it suitable for ecosystem studies, aircraft and vehicle campaigns, and long-term monitoring. Carbonyl sulfide (OCS) is a valuable atmospheric tracer: it serves as a proxy for photosynthetic CO₂ uptake and, with its long lifetime, contributes to stratospheric sulfate aerosol formation and radiative forcing — making precise OCS measurements critical for carbon-cycle and climate research.



OCS concentrations over 24 hours using the Differential mode, demonstrating excellent stability.



Average 15-minute OCS concentration mapped in Google Earth, showing the Outbound route from Tsukuba site to Mount Tsukuba. Kazuki Kamezaki et al., 2024.

INDUSTRY-LEADING SUB PPB ACCURACY AND SENSITIVITY

Metric	Specification
Measurement Method	Mid-Infrared Direct Laser Absorption Spectroscopy
Sensitivity (1 σ) at 1 Hz	OCS: <50 ppt/60s / CO ₂ : <440 ppb/s
Sensitivity (1 σ) at 5 Hz	OCS: <25 ppt/60s / CO ₂ : <200 ppb/s
Temperature / Humidity	10-35° C, 10 to 95% RH (non-condensing)
Measurement Range*	OCS: 1 ppb to 100 ppm / CO ₂ : 10 ppm to 100,000 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)
Aquisition Rate	1 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, 50 W 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)

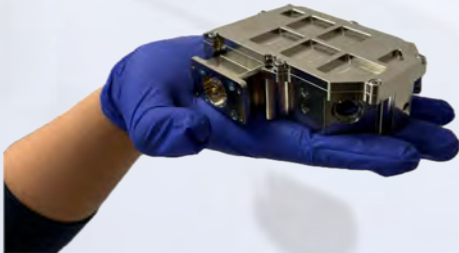
*Linear measurement range. Operational range configurable for specific applications.

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

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.

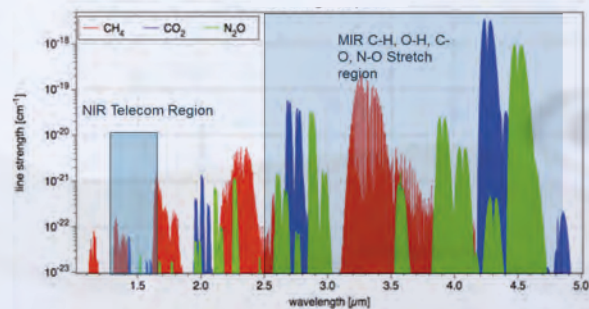


MIRA's compact optical core achieves a 13 meter path length in a 60 cc volume.

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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