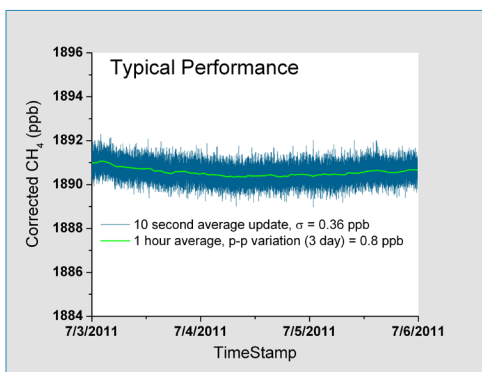


State-of-the-art laser-based analyzer using mid-infrared absorption spectroscopy for the precise and accurate measurement of ambient methane.

Thermo Scientific IRIS 5500 Mid-IR Laser-Based CH₄ Analyzer



Performance chart of the IRIS 5500 MID-IR Laser-Based Methane Analyzer



Key Features

- Mid-IR Laser Absorption Spectroscopy
- Unique Difference Frequency Generation (DFG) laser technology
- Exceeds World Meteorological Organization (WMO) ambient Greenhouse Gas specifications
- Single-box solution with internal pump
- Simplified maintenance requirements

The Thermo Scientific IRIS 5500 Mid-IR Laser-Based CH₄ Analyzer uses state-of-the-art mid-infrared laser absorption spectroscopy to simultaneously measure methane (CH₄) and water vapor concentrations with high precision and accuracy. Continuous measurement of methane gas and water vapor allow for the calculation of the methane dry-mole fraction at sub-ppb levels.

The IRIS 5500 analyzer features a unique Difference Frequency Generation (DFG) laser technology which effectively leverages commodity telecom laser sources with a non-linear frequency conversion crystal to access the mid-infrared spectral region. This unique and robust use of direct absorption spectroscopy within a small absorption cell is relatively insensitive to contamination of the optical surfaces.

The laser incorporated within IRIS 5500 analyzer is approximately 100 times narrower in frequency than the intrinsic absorption line-width. The signal sweeps continuously through the associated lines at a repetition rate of 500 Hz. The minimal passes within the cell reduce the risk for mirror contamination and simplifies maintenance requirements.

This single box solution, featuring an integrated internal pump, is designed for continuous operation and can be used in conjunction with external sampling interfaces. In addition, the IRIS 5500 analyzer provides numerous diagnostic monitoring features such as temperature, pressure, and line strength. It also includes web-based remote access to enable continuous monitoring of system performance and health in the field.

Product Specifications

To maintain optimal product performance, you need immediate access to experts worldwide, as well as priority status when your air quality equipment needs repair or replacement. We offer comprehensive, flexible support solutions for all phases of the product life cycle. Through predictable, fixed-cost pricing, our services help protect the return on investment and total cost of ownership of your Thermo Scientific air quality products.

Thermo Scientific IRIS 5500 Mid-IR Laser-Based Methane Analyzer

Concentration measurement range	500 - 20,000 ppb
Precision	< ±0.5ppb (1 sigma, 10 second averaging)
Variation (24 hour)	< 2 ppb (peak-to-peak, 60 minute averaging)
Ambient temperature dependent variation	< ±1 ppb, 15°C - 30°C
Accuracy	1% of reading traceable to NIST calibration gas
Resolution	< 1ppb absolute concentration
Flow rate range	< 500 sccm, set at factory or other as specified
Concentration averaging time	Adjustable, 0.1 to 10 seconds
Data logging interval	Same as averaging time
Total memory logging data points	> 20,000,000
Available storage space	> 10 GB
Logged data	Time and date, concentration data, temperature, gas cell pressure, system operating and diagnostic parameters, and data fit parameters
Elapsed time range	0 to 100 hours (resets to 0 at 100 hours)
Time keeping and data retention	Variable based on chosen number of averages, 1 year default
System interface	Ethernet (remote desktop), High speed USB
Computer requirements	IBM-PC compatible, Pentium or higher, Windows™ XP or higher, ≥64 MB memory, 16 GB hard disk drive, CD Drive, VGA or higher resolution monitor
Power requirements	100-240 VAC, 50-60 Hz
Fuses	6 amp, time delay fuse at 115 VAC, 3 amp time delay fuse at 240 VAC
Operating environment	10°C - 35°C (14°F to 122°F), 10 to 95% RH, non-condensing
Physical dimensions	8.62" H x 16.75" W x 23"D
Weight	60 lbs.

Ordering Information

Choose from the following configurations/options to customize your own IRIS 5500 Analyzer

1. Voltage options:

A = 115 VAC 50/60 Hz (standard)
 B = 220/240 VAC 50/60 Hz
 J = 100 VAC 50/60 Hz
 D = 220 VAC 50/60 Hz (China)

2. Enclosure:

M = Thermal enclosure with Methane Optical Core

3. Standard Configuration:

X = None (standard)

4. Optional Configuration:

Y = None (standard)

5. Optional I/O:

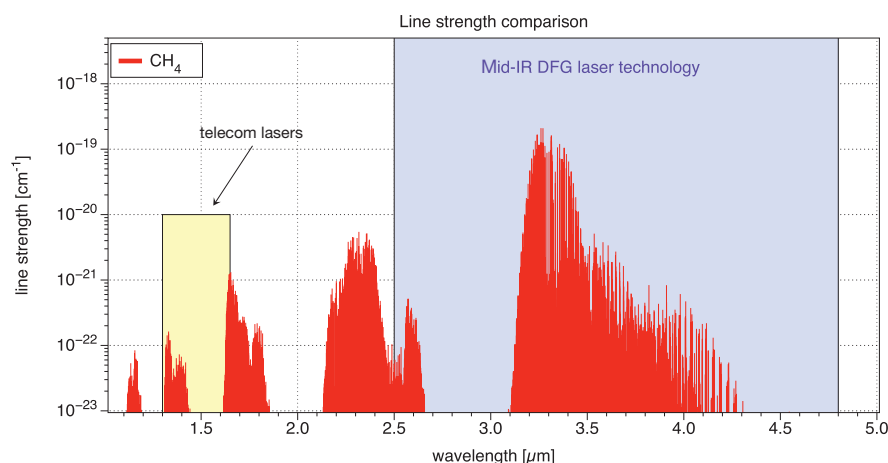
A = None (standard)

6. Mounting Options:

A = Bench mounting (standard)
 B = Ears & Handles, EIA
 C = Ears & Handles, Retrofit

Your Order Code: 5500- __ M X Y A __

Additional Information



Accessing methane in the mid-infrared using DFG technology is advantageous, as the associated absorption strength is 200 times stronger than in the near-infrared region, as displayed by the basic telecom laser output.

The ability to monitor greenhouse gases in the mid-infrared spectrum is desirable as simple, direct absorption approaches can be used to access many species with high specificity, sensitivity and accuracy.

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