

GHG Analyzer Travels Anywhere



Ultraportable Greenhouse Gas Analyzer (CH₄, CO₂, H₂O)

Features and Benefits

- 15 kg, 60 watts
- Gases measured simultaneously
- All spectra always viewable
- CH₄ and CO₂ reported on dry mole basis directly
- Ideal for chamber flux, soil studies, emissions compliance monitoring, leak detection
- Wide measurement range
- New *Extended Range* option allows methane measurements at levels up to 10%
- Species specific - no cross interferences
- Operates directly on DC power

LGR's new Ultra-Portable Greenhouse Gas Analyzer (UGGA) reports measurements of methane, carbon dioxide and water vapor simultaneously in a package that is compact, crushproof and travels anywhere. Small enough to be carried on-board aircraft (TSA approved size) and requiring less than 70 watts, the UGGA offers opportunities to measure GHG anywhere. As with all LGR instruments, the UGGA is simple to use which makes it ideal for field studies, compliance monitoring, leak detection, air quality studies and soil flux studies, and wherever measurements of methane, carbon dioxide and water vapor are needed.

In addition, the UGGA reports and stores all measured absorption spectra which allows the instrument to accurately correct for water vapor dilution and absorption line broadening effects and thus to report CH₄ and CO₂ on a dry mole fraction basis without drying or post processing. Furthermore, LGR's "*Extended Range*" option provides accurate methane measurements at levels up to 10% mole fraction (without dilution) without reducing precision and sensitivity at

typical ambient levels - a unique capability to LGR. Moreover, only LGR's analyzers provide reliable *guaranteed* measurements at mole fractions greater than 100 times ambient levels.

LGR's patented technology, a fourth-generation cavity enhanced absorption technique, has many advantages (simpler, easier to build, rugged) over older, conventional cavity ringdown spectroscopy (CRDS) and direct absorption techniques. As a result, LGR Analyzers provide higher performance at lower cost.

LGR Analyzers have an internal computer (Linux OS) that can store data practically indefinitely on a hard disk drive and send real time data to a data logger via the digital (RS232), analog or Ethernet outputs. In addition, LGR analyzers may be controlled remotely via the Internet. This capability allows the user to operate the analyzer using a web browser anywhere. Furthermore, remote access allows full control of the instrument and provides the opportunity to obtain data and diagnose the instrument operation without being on site.

Ultraportable Greenhouse Gas Analyzer (CH₄, CO₂, H₂O)

Performance Specifications

Precision (1σ, 5 sec / 100 sec):

CH₄: 2 ppb / 0.6 ppb
CO₂: 300 ppb / 100 ppb
H₂O: 200 ppm / 60 ppm

Measurement Rates:

0.01 – 1 Hz (user selectable)

Accuracy:

uncertainty < 1% w/o calibration (10-35 °C)

Measurement Range (meets all specifications):

CH₄: 0.01 – 100 ppm
CO₂: 200 – 20000 ppm
H₂O: 7000 – 70000 ppm

Operational Range

(external calibration may be required):

CH₄: 0 – 1000 ppm
CH₄: 0 – 10% (Extended Range option)
CO₂: 0 – 20%
H₂O: 0 – 70000 ppm (0 – 100% relative humidity)

Sampling Conditions:

Sample Temperature: -10 – 50 °C
Operating Temperature: 5 – 45 °C
Ambient Humidity: 0 - 100% RH non-condensing

Outputs (all models):

Digital (RS232), analog (all 3 gases), Ethernet, USB

Power Requirements:

60 watts (10-30 VDC)
66 watts (115/230 VAC, 50/60 Hz)

Dimensions:

18.5" x 14" x 7"

Weight:

15 kg



Ordering Information

Model: 915-0011

Accessories (optional)

908-0003-9001: Multiport Inlet Unit – 16 inlet port multiplexer

908-0003-9002: Multiport Inlet Unit – 8 inlet port multiplexer

908-0008-9009: N920 Pump – provides flow-through (1/e) time = 1.2 secs

904-0002: Data Logging System – multi-channel data logging system records and synchronizes serial (RS-232) outputs from multiple LGR analyzers and other devices (GPS, anemometers)

Options

Extended Range – Increases upper range to 10% methane



Instrument complies with 21 CFR 1040.10 and 1040.11