

Simultaneous measurements of methane and acetylene anywhere



Ultraportable Methane/Acetylene Analyzer (CH_4 , C_2H_2 , H_2O)

Features and Benefits

- 15 kg, 60 watts
- Gases measured simultaneously
- All spectra always viewable
- CH_4 and C_2H_2 reported on dry mole basis directly
- Ideal for landfill tracer 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 on AC or DC power

LGR's new Ultraportable Methane/Acetylene Analyzer (UMAA) reports measurements of methane, acetylene 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 60 watts, the UMAA offers opportunities to measure anywhere. As with all LGR instruments, the UMAA is simple to use and starts recording data immediately after power on which makes it ideal for landfill tracer studies, compliance monitoring, leak detection, air quality studies, process monitoring, and wherever measurements of methane, acetylene and water vapor are needed.

In addition, the UMAA 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 CH_4 and C_2H_2 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 Methane/Acetylene Analyzer (CH₄, C₂H₂, H₂O)

Performance Specifications

Precision (1σ, 5 sec / 100 sec):

CH₄: 2 ppb / 0.6 ppb
C₂H₂: 1 ppb / 0.6 ppb
H₂O: 100 ppm / 60 ppm

Measurement Rates:

0.01 – 1 Hz (user selectable)

Accuracy:

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

Measurement Range (meets all specifications):

CH₄: 0.002 – 100 ppm
C₂H₂: 0.002 – 100 ppm
H₂O: 200 – 70000 ppm

Operational Range

(external calibration may be required):

CH₄: 0 – 1000 ppm
C₂H₂: 0 – 1000 ppm
H₂O: 0 – 70000 ppm (0 – 100% relative humidity)

Sampling Conditions:

Sample Temperature: -10 – 50 °C
Operating Temperature: 5 – 45 °C
Ambient Humidity: 0 - 98% RH non-condensing

Outputs (all models):

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

Power Requirements:

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

Dimensions:

18.5" x 14" x 7"

Weight:

15 kg



Ordering Information

Model 915-0043

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)

