



Fast and precise methane  
measurements: from trace  
levels to 1000 ppmv  
LGR delivers

## Fast Methane Analyzer

### Features and Benefits

- Measure methane at up to 20 Hz
- High resolution absorption spectra are viewable for diagnostics
- Requires only 80 watts (with internal pump)
- Measurements over extremely wide range (up to 1000 ppmv)
- Eddy covariance flux measurements
- Chamber studies

The Los Gatos Research (LGR) Fast Methane Analyzer (FMA) provides extremely precise (0.1 ppbv) measurements of methane ( $\text{CH}_4$ ) at up to 20 Hz. In addition to accurately monitoring typical ambient methane levels, the unprecedented response of LGR's FMA allows measurements at very high mixing ratios (up to 1000 ppmv) for applications including landfills, peatlands and chamber flux studies. The FMA is simple to use, low power, and rugged which makes it ideal for field studies that involve measurements of this key greenhouse gas.

The Fast Methane Analyzer is available in two packaging options to allow users to select the package most suitable for their needs. LGR's benchtop package includes an embedded keyboard, mouse, and video monitor. LGR's rackmount package fits in a standard instrumentation rack and requires an external keyboard, mouse, and video monitor. In addition, a suite of options and accessories expands the usability for just about any application.

The Fast Methane Analyzer uses LGR's patented Off-axis ICOS technology, a third generation cavity enhanced absorption technique. Off-axis ICOS has many advantages over conventional cavity ringdown spectroscopy (CRDS) techniques such as being alignment insensitive, having a much shorter measurement time, and not requiring expensive and power consuming auxiliary components.

As with all LGR analyzers, the FMA has an internal computer (Linux OS) that can store data practically indefinitely on its hard disk drive and send real time data to a data logger via the digital (RS232), analog or Ethernet outputs.

In addition, the FMA may be controlled remotely via the Internet using suitable "KVM over IP" devices. This capability allows the user to operate the analyzer using a web browser practically anywhere Internet access is available. Furthermore, remote access allows bios-level control of the instrument and provides the opportunity to obtain data and to diagnose the instrument operation without being on site.

# Fast Methane Analyzer

## Performance Specifications

### Precision (1 $\sigma$ , 1 sec / 100 sec):

1 ppbv / 0.1 ppbv

### Measurement Rates:

10 second data rates with internal pump

Up to 20 Hz data rates with external pump

### Accuracy:

Total uncertainty <1% of reading without calibration

### Measurement Range (meets all specs):

0.1 – 25 ppmv

### Operational Range

(external calibration may be required):

CH<sub>4</sub>: 0.005 – 1000 ppmv

### Sampling Conditions:

Sample Temperature: 0 – 50 °C

Operating Temperature: 5 – 45 °C

Ambient Humidity: <98% RH non-condensing

### Outputs:

Digital (RS232), Analog, Ethernet, USB

### Power Requirements:

115/230 VAC, 50/60 Hz

80 watts

### Dimensions:

Benchtop Package: 10" × 38" × 14"

Rackmount Package: 8.75" × 19" × 24"

### Weight:

60 pounds (27 kg)



## Ordering Information

908-0001: Benchtop package

907-0001: Rackmount package

## Accessories

908-0003-9001: Multiport Inlet Unit –  
Automated control of up to 16 inlet port

908-0008-9009: N920 Pump –  
Measurements at speeds up to 1.2 seconds

908-0001-9011: N940 Pump –  
Measurement speeds up to 0.7 seconds

908-0001-9001: Dry Scroll Pump –  
Measurement speeds up to 20 Hz

907-0005-9002: Dynamic Dilution System –  
Extends upper measurement range by factor  
of 100 through sample dilution

## Options

High Concentration Performance –  
Extends measurement range of the analyzer (without  
Dynamic Dilution System) to 5% v/v (50,000 ppmv)