

**NEW**

# Fast, accurate, and ultra-stable



## New Enhanced Performance version provides measurements of carbon dioxide and water vapor *with minimal drift*

### Carbon Dioxide Analyzer (CO<sub>2</sub>, H<sub>2</sub>O)

#### Features and Benefits

- CO<sub>2</sub> and H<sub>2</sub>O measured simultaneously
- High resolution absorption spectra provides data validation
- CO<sub>2</sub> (dry and wet mol basis) obtained from measured high resolution CO<sub>2</sub> and H<sub>2</sub>O absorption spectra
- Ideal for applications requiring highest accuracy (Enhanced Performance model)
- New EP model reports over extremely large ranges with ultra-high stability
- New Ultraportable model (15 kg, 60 watts) allows measurements anywhere

The Los Gatos Research (LGR) Carbon Dioxide Analyzer (CDA) provides measurements of carbon dioxide (CO<sub>2</sub>) and water vapor (H<sub>2</sub>O) simultaneously with unsurpassed precision, accuracy and dynamic range. The instrument reports CO<sub>2</sub> on a dry basis (accurately corrects for dilution and absorption line broadening effects) by analyzing high resolution lineshape spectra and without the need for sample drying.

All LGR analyzers are simple to use, rugged and require low power which makes them ideal for a wide variety of field studies and lab applications.

LGR's new "Enhanced Performance" series incorporates proprietary internal thermal control for ultra-stable measurements with unsurpassed precision and accuracy. Moreover, only LGR's analyzers provide reliable measurements (*with guaranteed specs*) at concentrations more than 10 times higher than typical ambient levels.

Also, LGR's new "Ultraportable" series allows users to hand carry the instrument anywhere and to operate directly on DC or AC power.

The Analyzer uses LGR's patented Off-Axis ICOS technology, a fourth-generation cavity enhanced absorption technique. Off-axis ICOS has many advantages over conventional cavity ringdown spectroscopy (CRDS) techniques such as being simpler to build, alignment insensitive, having a much wider dynamic range, and not requiring expensive, power consuming auxiliary components.

The Analyzer has an internal computer 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 and Ethernet outputs.

As with all LGR analyzers, the CDA may be controlled remotely via the Internet. 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.

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## Performance Specifications

### Precision (1 $\sigma$ , 5 sec / 100 sec):

CO<sub>2</sub>: 150 ppb / 50 ppb  
H<sub>2</sub>O: 100 ppm / 30 ppm

### Maximum Drift (Enhanced Performance model) (15 min average, at STP, over 24 hrs):

CO<sub>2</sub>: 120 ppb  
H<sub>2</sub>O: 100 ppm or 1% reading, whichever greater

### Measurement Rates:

0.01 – 10 Hz (Standard model)  
0.01 – 1 Hz (Enhanced Performance model)  
(external pump required for <10 second flow response)

### Accuracy (over entire temperature range):

< 1% (reading) without calibration (Standard models)  
< 0.25% (reading) without calibration (EP model)  
(much higher accuracy with calibration)

### Measurement Range (meets all specs; all models):

CO<sub>2</sub>: 200 – 20000 ppm  
H<sub>2</sub>O: 7000 – 70000 ppm

### Operational Range (all models)

#### (external calibration may be required):

CO<sub>2</sub>: 0 – 200,000 ppm  
H<sub>2</sub>O: 0 – 70,000 ppm (< 100% relative humidity)

### Sampling Conditions (all models):

Sample Temperature: -10 – 50 °C  
Operating Temperature (standard model): 5 – 45 °C  
Operating Temperature (EP model): 0 – 40 °C  
Ambient Humidity: 0-100% RH non-condensing

### Outputs (all models):

Digital (RS232), analog (both gases), Ethernet, USB

### Power Requirements:

115/230 VAC, 50/60 Hz  
Standard models: 100 watts  
Enhanced Performance model: 300 watts on startup  
Enhanced Performance model: 150 watts steady state  
Ultraportable model: 60 watts steady state

### Dimensions:

~~Benchtop Package (Standard model): 10" x 38" x 14"~~  
Rackmount Package (Standard model): 8.75" x 19" x 24"  
Rackmount Package (Enhanced Performance model): 14" x 19" x 24"  
Ultraportable Package: 18.5" x 14" x 7"

### Weight:

65 pounds (Standard models)  
90 pounds (Enhanced Performance model)  
35 pounds (Ultraportable model)



## Ordering Information

Rackmount (Standard model): 907-0002

~~Benchtop (Standard model): 908-0002~~

Rackmount (Enhanced Performance model): 911-0002

Ultraportable: 915-0002

## Accessories

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

908-0001-9011: N940 Pump –  
provides flow-through (1/e) time = 0.7 secs



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