

Simultaneous NO and CO₂ measurements without interference

Only LGR



Nitric Oxide Analyzer (NO, CO₂, H₂O)

Features and Benefits

- Simultaneous and continuous measurements of NO and CO₂
- Real time NO with high precision (unlike chemiluminescence analyzers, no ozone required)
- Real time CO₂ with high precision at elevated levels
- Measurement rates to 5 Hz (with external pump - please inquire)
- H₂O measured simultaneously and used to report values on dry mol basis accurately in real time (without post processing)
- Installed in minutes
- High-resolution absorption spectra always viewable
- Linear over extremely wide ranges
- Developed for applications requiring highest accuracy (Enhanced Performance model)

LGR's Nitric Oxide Analyzer (NOA) reports nitric oxide and carbon dioxide simultaneously and continuously with extremely high precision and accuracy. In addition, the NOA also measures water vapor (H₂O) to allow for reporting of the NO and CO₂ on a dry mole basis without the need for sample drying. The Analyzer is extraordinarily simple to use, may be set up in minutes and does not require cryogenics or water cooling or, unlike chemiluminescence analyzers, ozone.

LGR's NOA is designed for the most demanding applications including industrial process monitoring, trace gas monitoring, and combustion diagnostics. LGR Analyzers are particularly well suited for measurements in the field and have been successfully deployed on-board commercial aircraft for measurements in the upper troposphere and lower stratosphere. LGR's NOA is essentially unaffected by other atmospheric gases or changes in atmospheric pressure.

LGR's new "Enhanced Performance" series incorporates proprietary internal thermal control for ultra-stable measurements with unsurpassed precision, accuracy and drift.

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 alignment insensitive, having a much shorter measurement time, and not requiring expensive and power consuming auxiliary components.

The Analyzer includes an internal computer that can store data practically indefinitely on its internal hard drive (for applications requiring unattended longer term operation), and send real-time data to a data logger through its analog and digital (RS232) outputs. Several optional features are available which improve the flow time response, allow multiple inlet sources, or provide for remote access and control of the analyzer via the Internet.

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Performance Specifications

Precision (1 σ , 10 seconds):

NO: 0.1 ppb
CO₂: 0.5 ppm

Measurement Rates:

All parameters measured simultaneously
at user-selectable rates up to 5 Hz
(external pump required for flow rates >0.1 Hz)

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

NO: 1 ppb
CO₂: 1 ppm

Measurement Range (meets all specs):

NO: 1 ppb – 10 ppm
CO₂: 50 ppm – 75%

Operational Range:

NO: 0 – 30 ppm
CO₂: 0 – 100%

Temperature/Humidity:

Sample Temperature: 0 – 50 °C
Operating Temperature:
 10 – 35 °C (Standard Model)
 0 – 45 °C (Enhanced Performance Model)
Ambient Humidity: non-condensing (0-100% RH)

Fittings:

Inlet: 3/8"
Outlet (internal pump): 1/4"
Outlet (optional external vacuum pump): 1/2"

Outputs:

digital (RS-232), analog, Ethernet, USB

Power Requirements:

115/230 VAC, 50/60 Hz
180 watts (Standard model; steady state)
300 watts (Enhanced Performance model; steady state)

Dimensions:

19"(W)×31.5"(D)×8.75" (H) (Standard Model)
19"(W)×31.5"(D)×19.25"(H) (Enhanced Performance)

Weight:

36 kg (Standard Model)
68 kg (Enhanced Performance Model)



Ordering Information

Part Number 907-0047 (Standard Model)

Part Number 913-0047 (Enhanced Performance Model)

Accessories

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

908-0003-9002: Multiport Inlet Unit –
Automated control of up to 8 inlet ports

908-0008-9009: N920 Pump –
Provides flow-through response (1/e) time of 1.2 seconds

908-0001-9011: N940 Pump –
Provides flow-through response (1/e) time of 0.5 seconds

907-0005-9002: Dynamic Dilution System –
Extends upper measurement range by 100x

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)



Instrument complies with 21 CFR 1040.10 and 1040.11