LGR-ICOS™ GLA351-N2OM1
N₂O & CH₄ analyzer – EP QC Rackmount

Highly sensitive, accurate and stable analyzer for reliable measurement of N₂O and CH₄.

Measurement made easy

Features and benefits
- Simultaneous measurements of N₂O and CH₄
- Highest accuracy, precision and low drift
- Measurement rates selectable up to 10 Hz
- Installed and operational in minutes
- Batch operation via syringe injection option
- Robust to cross-interferences
- Extremely high dynamic range
- Unsurpassed reliability
- Real-time diagnostics

Overview
The ABB LGR-ICOS gas analyzers build on the heritage and extensive track record of Los Gatos Research analyzers, using patented Off-Axis Integrated Cavity Output Spectroscopy (OA-ICOS) technology, the latest evolution in tunable diode laser absorption spectroscopy (TDLAS).

The GLA351-N2OM1 enhanced performance quantum cascade (EP QC) rackmount analyzer simultaneously measures water vapor mole fraction. As a result, the analyzer reports N₂O and CO on a dry mole basis. It accurately corrects for water vapor dilution and absorption line broadening effects without the need for sample drying or empirical corrections.

The GLA351-N2OM1 analyzer is designed for the most demanding applications generally focused on greenhouse gases emission studies and atmospheric monitoring, where highest precision, accuracy and stability are required.
… Overview

ABB’s enhanced performance (EP) OA-ICOS analyzers incorporate proprietary internal thermal control for ultra-stable measurements with unsurpassed precision, accuracy and drift. Moreover, only ABB’s analyzers provide reliable guaranteed measurements at mole fractions more than 20 times ambient levels.

ABB’s patented OA-ICOS technology, a fourth-generation cavity enhanced absorption technique, has many advantages over older conventional and delicate cavity ringdown spectroscopy and direct absorption techniques. OA-ICOS analyzers are simpler, easier to operate and more rugged. They exhibit negligible zero and span drift and a significantly reduced need for regular calibration with expensive reference gases. As a result, ABB analyzers provide higher performance and reliability with minimal operational cost.

The GLA351-N2OM1 has an internal computer that can store data practically indefinitely (for applications requiring unattended longer term operation), and send real-time recordings to a data logger through its analog and digital (RS232) outputs. The analyzer includes control and analysis software.

Accessories

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIU-16</td>
<td>Multiport Inlet Unit</td>
<td>Automated control of up to 16 inlet ports</td>
</tr>
<tr>
<td>MIU-8</td>
<td>Multiport Inlet Unit</td>
<td>Automated control of up to 8 inlet ports</td>
</tr>
<tr>
<td>ACC-DP3H</td>
<td>3-head Diaphragm External Pump</td>
<td>Fast flow option only</td>
</tr>
<tr>
<td>ACC-DP4H</td>
<td>4-head Diaphragm External Pump</td>
<td>Fast flow option only</td>
</tr>
<tr>
<td>ACC-DS10</td>
<td>Dry Scroll External Pump</td>
<td>Fast flow option only</td>
</tr>
<tr>
<td>ACC-DS35</td>
<td>Dry Scroll External Pump</td>
<td>Fast flow option only</td>
</tr>
<tr>
<td>OPT-DATALOG</td>
<td>Digital Data Logging Capability</td>
<td>Multi-channel data logging option records and synchronizes serial (RS-232) outputs from multiple ABB analyzers and other devices (GPS, anemometers)</td>
</tr>
</tbody>
</table>

Ordering information

• LGR-ICOS™ GLA351-N2OM1
  N<sub>2</sub>O & CH<sub>4</sub> analyzer – EP QC rackmount

Specifications

Precision (1σ, 1 sec / 10 sec / 100 sec):
- N<sub>2</sub>O: 0.2 ppb / 0.1 ppb / 0.05 ppb
- CH<sub>4</sub>: 1 ppb / 0.3 ppb / 0.2 ppb
- H<sub>2</sub>O: 500 ppm / 200 ppm / 100 ppm

Maximum Drift (15 min. average, at STP, over 24 hrs):
- N<sub>2</sub>O: <2 ppb
- CH<sub>4</sub>: <5 ppb
- > 10x improvement achieved with periodic referencing

Linear measurement ranges (meets all specifications):
- N<sub>2</sub>O: Up to 4 ppm
- CH<sub>4</sub>: Up to 100 ppm
- H<sub>2</sub>O: Up to 30 000 ppm

Operational ranges:
- N<sub>2</sub>O: Up to 40 ppm
- CH<sub>4</sub>: Up to 600 ppm
- H<sub>2</sub>O: <99% RH, non-condensing

Measurement rate:
- 0.01 – 1 Hz (user selectable)
- Up to 10 Hz with fast flow option

Flow response time:
- <24 seconds (1/e) with standard internal pump
- Up to 10 Hz with fast flow option

Sampling conditions:
- Operating temperature: 0 – 45 °C
- Ambient humidity: <99% relative humidity non-condensing

Data outputs:
- WiFi, Ethernet, USB, Serial (RS-232)

Power requirements:
- 110/240 VAC, 50/60 Hz
- 300 watts (steady state)
- max 420 watts with ACC-DP3H
- max 550 watts with ACC-DP4H

Dimensions:
- 50 cm (19.5 in.) H x 48 cm (19 in.) W x 86 cm (34 in.) D

Weight:
- 68 kg (88 pounds)