

# LGR-ICOS™ GLA151-N2OCM

## N<sub>2</sub>O & CO analyzer – QC Portable



Highly sensitive and accurate analyzer for reliable measurement of N<sub>2</sub>O and CO.

### Measurement made easy

— LGR-ICOS™ GLA151-N2OCM N<sub>2</sub>O & CO – Quantum cascade portable analyzer

### Features and benefits

- Simultaneous measurements of N<sub>2</sub>O and CO
- High precision and robust to cross-interferences
- Installed and operational in minutes
- Extremely high dynamic range
- Unsurpassed ruggedness and 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).

Since CO is an excellent tracer of anthropogenic emissions, simultaneous measurements of CO and N<sub>2</sub>O can allow scientists to correlate the sources of N<sub>2</sub>O emissions. The GLA151-N2OCM quantum cascade (QC) portable analyzer also simultaneously measures water vapor mole fraction. As a result, the analyzer reports N<sub>2</sub>O 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 GLA151-N2OCM analyzer is designed for many demanding field applications, as proven by its track record, including trace-gas air quality monitoring and chamber flux measurements, where highest precision, accuracy, ruggedness and mobility are required.

### ... Overview

ABB's patented OA-ICOS technology, a fourth-generation cavity enhanced absorption technique, has many advantages over older

### Ordering information

- **LGR-ICOS™ GLA151-N2OCM**  
N<sub>2</sub>O & CO analyzer – QC portable

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 GLA151-N2OCM 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

|             |                                                                                                                                                                                               |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MIU-16      | <b>Multiport Inlet Unit</b><br>Automated control of up to 16 inlet ports                                                                                                                      |
| MIU-8       | <b>Multiport Inlet Unit</b><br>Automated control of up to 8 inlet ports                                                                                                                       |
| ACC-DP3H    | <b>3-head Diaphragm External Pump</b>                                                                                                                                                         |
| OPT-DATALOG | <b>Digital Data Logging Capability</b><br>Multi-channel data logging option records and synchronizes serial (RS-232) outputs from multiple ABB analyzers and other devices (GPS, anemometers) |

## Specifications

### Precision (1 $\sigma$ , 1 sec / 10 sec):

N<sub>2</sub>O: 0.5 ppb / 0.2 ppb [ $<500$  ppb]  
CO: 0.5 ppb / 0.2 ppb [ $<500$  ppb]  
H<sub>2</sub>O: 100 ppm / 40 ppm

### Linear measurement ranges (meets all specifications):

N<sub>2</sub>O: Up to 4 ppm  
CO: Up to 4 ppm  
H<sub>2</sub>O: Up to 30 000 ppm

### Operational ranges:

N<sub>2</sub>O: Up to 40 ppm  
CO: Up to 40 ppm  
H<sub>2</sub>O:  $<99\%$  RH, non-condensing

### Measurement rate:

0.01 – 1 Hz (user selectable)

### Flow response time:

$<30$  seconds (1/e)  
 $<10$  seconds (1/e) with external diaphragm pump ACC-DP3H

### Sampling conditions:

Operating temperature: 5 – 45 °C  
Ambient humidity:  $<99\%$  relative humidity non-condensing

### Data outputs:

WiFi, Ethernet, USB, Serial (RS-232)

### Power requirements:

24-30VDC  
110/240 VAC, 50/60 Hz  
180 watts (steady state)  
max 300 watts with ACC-DP3H

### Dimensions:

51 cm (20 in.) x 61cm (24 in.) x 20 cm (8 in.)

### Weight:

23 kg (51 pounds)