

# LGR-ICOS™ GLA331-MCEA1

## Multi-gas carbon emissions analyzers



Precise, accurate and fast analyzers for measurement of CH<sub>4</sub>, CO, CO<sub>2</sub> and H<sub>2</sub>O in ambient air.

### Measurement made easy

LGR-ICOS™ GLA331-MCEA1 enhanced performance rack-mount analyzer

### Features and benefits

- Measure CH<sub>4</sub>, CO, CO<sub>2</sub> and H<sub>2</sub>O simultaneously
- Measurement rates selectable up to 10 Hz
- Extremely wide dynamic/linear range
- Highly specific: robust to cross interferences
- State-of-the-art stability and precision
- Lowest drift for long-term monitoring
- Fast response time option (down to 0.1 second)
- Installed and operational in minutes
- 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.

ABB's multi-gas carbon emissions analyzers report measurements of methane, carbon monoxide, carbon dioxide and water vapor simultaneously in an enhanced performance rackmount chassis optimized for accuracy, precision, speed and stability, while still offering the inherent ruggedness, wide dynamic range (more than 10 times typical ambient levels), ease of use and low maintenance of the ABB OA-ICOS design.

The overall performance and advantages of its unique design makes it ideal for air quality studies, greenhouse gas monitoring, high precision soil flux studies and wherever reliable measurements are needed quickly and sensitively, even on field studies.

## ... Overview

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 at lower cost.

The multi-gas carbon emissions analyzers have 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 analyzers include control and analysis software.

## Accessories & Options

DGES	<b>Dissolved Gas Extraction System</b> Including internal multi-channel datalogger
ACC-DP3H	<b>3-head Diaphragm External Pump</b> For Increased response time and flow
ACC-DP4H	<b>4-Head Diaphragm Pump</b> Available with Fast flow option only
ACC-DS10	<b>Dry Scroll Vacuum Pump - Model nXDS10i</b> Available with Fast flow option only
ACC-DS35	<b>Dry Scroll Vacuum Pump - Model XDS35i</b> Available with Fast flow option only
MIU-8 MIU-16	<b>Multiport Inlet Unit</b> - External hardware (includes 8 or 16 solenoid valves) and internal software package which enables fully integrated, programmable selection from up to 8 or 16 separate sources.
OPT-DATALOG	<b>Digital Data Logging Capability</b> Multi-channel data logging option records and synchronizes serial (RS-232) outputs from multiple ABB analyzers and other devices (GPS, anemometers)
OPT-FAST-FLOW	<b>Fast Flow Option</b> Enables the use of high flow pumps for faster response time.

\*Contact your sales representative for more accessories, maintenance kits and options, per product series.

## Ordering information

- LGR-ICOS™ GLA331-MCEA1

## Specifications

### Precision (1 $\sigma$ , 1 sec / 10 sec / 100 sec):

CH<sub>4</sub>: 3 ppb / 1 ppb / 0.3 ppb  
CO: 0.07 ppm / 0.025 ppm / 0.02 ppm  
CO<sub>2</sub>: 0.2 ppm / 0.07 ppm / 0.02 ppm  
H<sub>2</sub>O: 30 ppm / 9 ppm / 5 ppm

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

CH<sub>4</sub>: 3 ppb  
CO: 0.1 ppm  
CO<sub>2</sub>: 0.2 ppm

### Linear measurement ranges:

CH<sub>4</sub>: Up to 100 ppm  
CO: Up to 1,000 ppm  
CO<sub>2</sub>: Up to 3,000 ppm  
H<sub>2</sub>O: Up to 30,000 ppm

### Operational ranges:

CH<sub>4</sub>: 0 - 0.1%  
CO: 0 - 1%  
CO<sub>2</sub>: 0 - 3%

### Measurement rate:

0.01 – 1 Hz (user selectable)  
Up to 10Hz for fast flow option

### Flow time response:

<12 seconds (1/e)  
Down to 0.1 second (1/e) with external dry scroll pump

### Sampling conditions:

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

### Data outputs:

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

### Power requirements:

110/240 VAC, 170 watts (steady state)

### Dimensions:

40 cm (15.75 in.) H x 48 cm (19 in.) W x 61 cm (24 in.) D

### Weight:

40 kg (88 pounds)