

# LGR-ICOS™ GLA132-SOFX1/SOFX2

## Soil flux gas analyzers



Precise, accurate and rugged analyzers for measurement of  $\text{NH}_3$ ,  $\text{CH}_4$ ,  $\text{CO}_2$  and  $\text{H}_2\text{O}$  from soil gas.

### Measurement made easy

LGR-ICOS™ GLA132-SOFX1 Ultraportable analyzer

### Features and benefits

- Measure  $\text{NH}_3$ ,  $\text{CH}_4$ ,  $\text{CO}_2$  and  $\text{H}_2\text{O}$  simultaneously
- Measurement rates selectable up to 1 Hz
- Extremely wide dynamic/linear range
- Highly specific: robust to cross interferences
- State-of-the-art stability and precision
- 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 soil flux gas analyzers report measurements of ammonia, methane, carbon dioxide and water vapor simultaneously in a compact, crushproof and travel-friendly analyzer.

As with all LGR-ICOS analyzers, the soil flux gas analyzers are simple to use and offer a very wide dynamic range. The GLA132-SOFX1 measures sub-ppb levels while still linear at more than 10 times typical ambient levels. The GLA132-SOFX2 still offers a single-digit ppb precision but can measure up to 250 ppm of  $\text{NH}_3$  in agricultural settings. They both are extremely rugged which makes them ideal for field studies, air quality studies and soil flux studies, and wherever accurate and precise measurements are needed.

## ... Overview

The soil flux gas analyzers begin recording data within 20 seconds after power on so users do not have to wait for a long warm-up period for the system to thermally equilibrate.

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.

The soil flux gas 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
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.
ACC-UP-BP	<b>Backpack Harness for Ultraportable Analyzers</b>
ACC-DCCASE	<b>DC battery case with adapter power cable</b>
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)

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

## Ordering information

- LGR-ICOS™ GLA132-SOFX1
- LGR-ICOS™ GLA132-SOFX2

## Specifications

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

### SOFX1

NH<sub>3</sub>: 2 ppb / 0.6 ppb / 0.2 ppb  
CH<sub>4</sub>: 2 ppb / 0.6 ppb / 0.2 ppb  
CO<sub>2</sub>: 2.25 ppm / 0.75 ppm / 0.25 ppm  
H<sub>2</sub>O: 300 ppm / 100 ppm / 30 ppm

### SOFX2

NH<sub>3</sub>: 10 ppb / 3.5 ppb / 1.5 ppb @ 10ppm  
NH<sub>3</sub>: 20 ppb / 7 ppb / 2.5 ppb @ 200ppm  
CH<sub>4</sub>: 4 ppb / 1.3 ppb / 0.5 ppb  
CO<sub>2</sub>: 5 ppm / 1.5 ppm / 0.5 ppm  
H<sub>2</sub>O: 4.5 ppm / 1.5 ppm / 0.5 ppm

**Linear measurement ranges:**

SOFX1 - NH<sub>3</sub>: Up to 10 ppm  
SOFX2 - NH<sub>3</sub>: Up to 250 ppm  
CH<sub>4</sub>: Up to 100 ppm  
CO<sub>2</sub>: Up to 20,000 ppm  
H<sub>2</sub>O: Up to 30,000 ppm

**Operational ranges:**

SOFX1 - NH<sub>3</sub>: Up to 200 ppm  
SOFX2 - NH<sub>3</sub>: Up to 1,000 ppm  
CH<sub>4</sub>: Up to 500 ppm  
CO<sub>2</sub>: Up to 3%  
H<sub>2</sub>O: <99% relative humidity, non-condensing

**Measurement rate:**

0.01 – 1 Hz (user selectable)

**Flow response time:**

<8 seconds (1/e)

**Communication**

Serial RS232, USB (x2), AO (16-bits, 0 to 5 V DC), Ethernet LAN connection, VGA display, MIU, WiFi 802.11 b/g/n, 300 Mbps

**Power**

60 W (11–30 VDC)  
66 W (100–240 VAC, 50/60 Hz)

**Dimensions (H × W × D)**

18 × 47 × 36 cm (7 × 18.5 × 14 in)

**Weight**

- 16.9 kg (37.3 lb)