ABB MEASUREMENT & ANALYTICS | DATA SHEET

OA-ICOS™ GLA431-LWIA
Liquid water isotope analyzer

Fast and accurate analyzer for measurement of δ²H and δ¹⁸O in liquid water – anywhere

Measurement made easy

Features and benefits

- Unsurpassed precision and unmatched accuracy
- Simple to operate - no need for factory return for service
- High precision and unmatched accuracy
- Easy switch between high throughput and high performance mode – no extra hardware required
- Compatible with “LIMS for Lasers”
- High-resolution absorption spectra are viewable continuously for real-time diagnostics
- Post-Analysis Software simplifies analyses and enables highest performance
- Spectral Contamination Identification

Overview

The ABB OA-ICOS 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).

ABB’s GLA431-LWIA liquid water isotopic analyzer provides measurements of δ²H and δ¹⁸O in liquid with unsurpassed precision and speed. ABB’s GLA431 series incorporates proprietary thermal control for ultra-stable measurements with unsurpassed precision, accuracy and drift as validated at leading labs throughout the world.

The GLA431-LWIA is ideal for a wide variety of hydrological, analytical, and biological applications that involve measurements of fresh water, seawater, and other liquids. The Analyzer’s ease-of-use, field durability, and high throughput make it the industry standard. ABB’s Triple Liquid Water Isotope Analyzer is used by researchers, scientists, governmental agencies and intergovernmental organizations on all 7 continents.
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. As a result, ABB analyzers provide higher performance and reliability with minimal operational cost.

Equipped with the optional ACC-AUTOINJECT, the GLA431’s are capable of unattended operation with automated injection of liquid samples.

Accessories

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<th>ACC-AUTOINJECT</th>
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<td>Accurate</td>
<td>Automated injection of liquid water samples</td>
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<td>ACC-DP4H 4-head diaphragm pump</td>
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<td>Heater and power supply</td>
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<td>Spectral contamination identifier</td>
<td>Identifies and flags contaminants</td>
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<tr>
<td>Post-analysis software</td>
<td>Advanced software simplifies analytical procedure to enable high precision measurements quickly</td>
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Ordering information

- OA-ICOS™ GLA431-LWIA

Specifications

Precision (1σ):
- High Throughput Mode
  - δ²H: 0.4 ‰ (400 per meg)
  - δ¹⁸O: 0.1 ‰ (100 per meg)
- High Performance Mode
  - δ²H: 0.2 ‰ (200 per meg)
  - δ¹⁸O: 0.03 ‰ (30 per meg)

Throughput:
- 800 injections per day (with autoinjector)

Sample Volume:
- 1 μL per injection

Salinity:
- <4% (Total dissolved solids < 40 parts per thousand)

Temperature/Humidity:
- Sample Temperature: 0 to 50 °C
- Operating Temperature: 0 to 45 °C

Outputs:
- Digital (RS-232), Ethernet, USB

Power Requirements:
- 115/230 VAC, 50/60 Hz
- 180 watts total (steady state)

Dimensions:
- 28cm (11”) H × 97cm (38”) W × 56cm (22”) D

Weight:
- 50 kg
- Analyzer only