

LI-7835 Hydrogen (H₂) & Methane (CH₄) Analyzer



Hot-swappable, lithium ion batteries last all day.

On-board display shows concentration measurements and status updates.

Air filters are easily replaced from outside of case.

Wired Ethernet, or Wi-Fi connectivity.

AC power. When connected to AC, batteries charge automatically.

Weather-resistant case.

LI-COR's LI-7835 H₂/CH₄/H₂O Trace Gas Analyzer provides direct and precise trace concentration measurements of both hydrogen H₂ and methane CH₄ in air simultaneously. The analyzer automatically compensates for humidity in the airstream and the concentrations of H₂ and CH₄ are reported as dry mole fractions. Water concentration is also reported. The compact and rugged battery-powered analyzer is ideal for mobile and field survey applications. It can also be AC powered for in-facility monitoring and continuous field deployments.

Built with LI-COR's patented Optical Feedback - Cavity Enhanced Absorption Spectroscopy (OF-CEAS) technology, the LI-7835 Analyzer is uniquely suited for two critical applications: Leak Detection and Repair (LDAR) and Hydrogen Geological Prospecting, thanks to its in-situ, real-time measurement capabilities, portability, and fast response time.

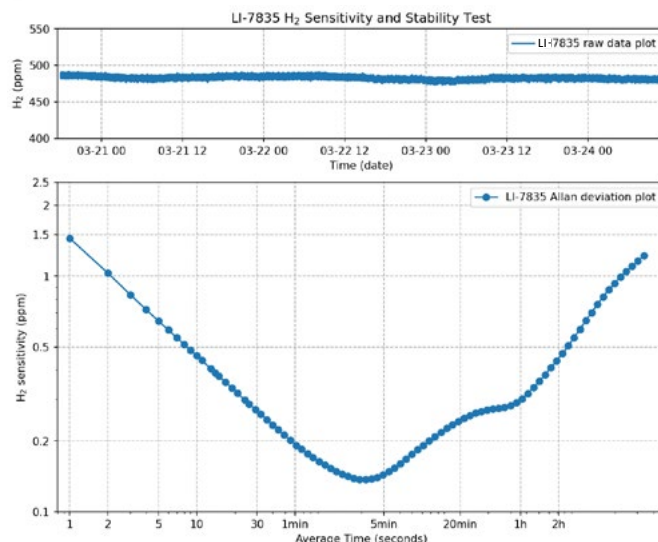
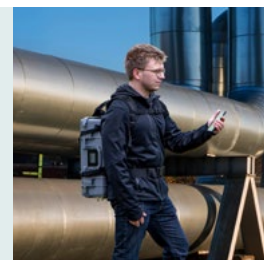


Figure 1. The Stability and Allan Deviation of LI-7835 measuring a primary H₂ gas standard at 498.1 ppm ($\pm 2\%$) in air

LEAK DETECTION AND REPAIR (LDAR)

For LDAR, the LI-7835 allows field teams to rapidly detect and localize hydrogen leaks across industrial infrastructures—minimizing downtime and ensuring compliance with safety and emissions regulations. Its lightweight, battery-powered design enables easy maneuvering in complex environments like pipelines, valves, and storage facilities.



HYDROGEN GEOLOGICAL PROSPECTING

In the realm of geological prospecting, the analyzer empowers researchers and exploration teams to assess soil gas composition directly on-site, identifying natural hydrogen seeps and mapping potential subsurface reservoirs with unprecedented speed and accuracy. The LI-7835's ability to deliver immediate results eliminates the delays of lab-based analysis and supports high-resolution, spatially distributed sampling across wide terrains.

H₂ MEASUREMENTS

Response Time (T_{10} - T_{90}): ≤ 3 seconds

Range: 0 to 2.5%

Precision (1σ):

5 ppm at 500 ppm with 1 second averaging

3 ppm at 500 ppm with 5 second averaging

CH₄ MEASUREMENTS

Range: 0 to 2.5%

Precision (1σ):

0.5 ppm at 2 ppm with 1 second averaging

0.25 ppm at 2 ppm with 5 second averaging

H₂O MEASUREMENTS

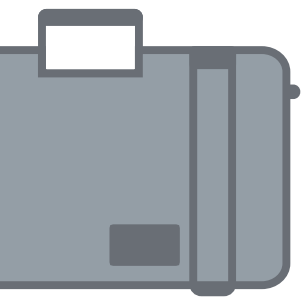
Range: 0 to 60,000 ppm

Precision (1σ):

45 ppm at 10,000 ppm with 1 second averaging

20 ppm at 10,000 ppm with 5 second averaging

**Specifications subject to change without notice.*



SCAN TO LEARN MORE

GENERAL SPECIFICATIONS

Measurement Technique: OF-CEAS (Optical Feedback – Cavity Enhanced Absorption Spectroscopy) direct molecule measurements

Measurement Rate: 1 sample per second (1 Hz)

Optical Cavity Volume: 6.4 cm³

Flow Rate: 150 sccm nominal

Total Weight: 10.5 kg (including batteries)

Case Dimensions: 51 cm × 33 cm × 18 cm (L × W × H)

Operating Temperature Range: -25 °C to 45 °C
(without solar load, under normal operating conditions)

Operating Humidity Range: 0 to 85% RH (non-condensing, without solar load, under normal operating conditions)

Sample Line Humidity Range: 0 to 99% non-condensing

Operating Pressure Range: 50 to 110 kPa

Connectivity: Ethernet and Wi-Fi*

Wi-Fi Compatibility: 2.4 GHz, 802.11 a/b/g/n/ac*

Power Consumption:

Steady State Operation: 22 Watts at 25 °C without batteries charging

Warmup: up to 100 W with batteries charging

DC Power Supply Requirements:

Pins 1 and 5 (24 VDC Input): Minimum 6 A at 24 V

Pins 3 and 4 (10.5 to 33 VDC Input): Minimum 14 A at 10.5 VDC; 6 A at 24 VDC

Power Supply Adapter (included): Universal Power Adapter (Input: 100 to 240 VAC, 50-60 Hz; Output: 24 VDC)

Battery Life: 8 hours typical with 2 batteries

U.S. Patents: 8,659,758; 8,665,442; 8,885,167; 9,116,047; 9,194,742; 9,304,080; 9,581,492; 9,678,003; 9,759,654; 9,759,655; 9,989,729; 10,514,299; 10,527,492 and 11,441,944.

***not available in some countries**