

GA4000 Laser Technology to accurately measure CH₄ and CO₂ beyond your expectations

The GA4000 uses tunable Laser Diode technology to enable accurate and reliable measurements with no drift over time or cross gas sensitivity. The GA4000 was designed specifically for use in monitoring landfill gas (LFG) extraction systems, flares, and biodigesters.

Features

- Tunable Laser Diode technology
- Measures % CH₄, CO₂, & O₂
- Each laser is tuned to a specific absorption wavelength (CH₄ & CO₂)
- Accuracy of 1.0% full scale (CH₄, CO₂ & O₂)
- 4 - 20 mA outputs
- Operates over a wide range of flow & temperature
- Options: Rack mounted or weatherproof enclosure
- Optional: Gas Conditioning unit

Benefits

- Highly accurate
- No cross gas contamination
- No drift on readings (CH₄ & CO₂)
- Continuous readings with rapid response
- Integrates to AEMS or existing SCADA Systems
- Low cost of ownership
- Low maintenance requirements



Applications

- Green House Gas/ Carbon Credit Projects - CDM
- Gas to energy projects
- Environmental compliance projects
- Anaerobic digesters projects
- Aerobic-Bioreactor projects
- Closed site monitoring
- Coal Mine Methane

GA4000

The GA4000 eliminates problems with drift, calibration, and cross gas contamination typically associated with other instruments. Maintenance is virtually eliminated thereby reducing cost of ownership.

The development of Geotech's GA4000 Laser Diode is the culmination of research by NASA's Jet Propulsion Laboratory for use on Mars. The optical system uses a laser to produce a specific wavelength of light tuned to an absorption line, the known light frequency of the target gas. This technique produces an analyser with a fast response speed, where the laser light stimulates vibrations and rotation in the molecule, resulting in energy absorption and enabling the sensing of gas

Technical Specifications

GAS ANALYSER -GA4000

Gas Ranges

Gases Measured	CH ₄ & CO ₂ by Laser Diode, O ₂ by internal electrochemical cell		
CH ₄	1 - 100%	O ₂	0 - 25%
CO ₂	1 - 100%		
Typical Accuracy	±1.0%		

Other Parameters

Flow Rate	200 - 1000ml/ min
Vacuum / Pressure	-120" W.C.Max/ +4 PSI Max
Power Requirements	90-240 VAC, 50-60 Hz 1.4A
Response Time, T90	<15 seconds @ 90% flow
Ambient Temperature Range	-20° C to +70°C
Relative Humidity	0-95% non-condensing
Optically Isolated Analogue Output	4-20mA (CH ₄ , CO ₂ , O ₂ & temp w/ optional temp probe)

Dimensions and weight:

19" Rack Mount	178mm x 483mm x 457mm (7"H x 19"W x 18"D) 14kg (31lbs)
NEMA 4x enclosure	645mm x 434mm x 249mm (25.4"H x 17.1"W x 9.8"D)

Gas Conditioning:

Particle removal	Particles > 20 microns
Liquid removal	Can sample on wet or dry basis: gas must be non-condensing

Optional Accessories

Conditioning Unit	Coalescing filter and membrane separator with 0.3-0.6 micron particle removal Efficiency of 99.97%
Temperature Probe	± 1°C of reading -30°C to +130°C



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