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**Analyzers by AP2E*

CEMGAS CH₄ LASER ANALYZER ADVANTAGES AND BENEFITS:

- Interference Free Gas Measurement
- Direct Measurement
 - Sample Conditioning
 - No Moisture Removal
 - Low Temperature Sampling
- Low Maintenance
- Pre-Calibrated
 - Prime Measurement
 - No Re-Zero
- Clean Sample Technology
 - Low- Pressure
 - Low-Flow



CH₄ molecule

CEMGAS 5000 CH₄ Laser Analyzer*

Direct CH₄ Laser Measurements - Low Pressure
Sampling - Extremely High Resolution Laser

The CEMGAS 5000 CH₄ Laser Analyzer is your innovative, cost effective solution to meeting the updated EPA's methane regulatory compliance requirements.

It is a complete pre-calibrated laser infrared spectrometer for the measurement of low level CH₄ in combustion process and pure gas. It's patented Optical Feedback Cavity Enhanced Absorption Spectroscopy (OFCEAS) IR technology allows for enhanced specificity, selectivity, accuracy and stability.

Pre-calibrated for your application and equipped with a patented low-pressure sampling system, this instrument allows for low-cost installation and low flow rates (3-9 L/h) without degrading response time.

With response times less than 2 seconds and zero drift the CEMGAS 5000 CH₄ Laser Analyzer a complete, reliable, robust, low-cost and easy-to-use solution for methane analysis.

DIRECT MEASUREMENT.

No sample pre-treatment.

Enables direct measurement. The low pressure in the sampling system minimizes any risk for chemicals absorption/desorption and/or condensation in the line.

CLEAN SAMPLE TECHNOLOGY

The low pressure sampling system enables low flow rates 3-9L/h (0.11-0.33 cfm) without degrading response time. Accumulation of contaminants in lines and filters are greatly reduced.

EASE-OF-USE AND INTEGRATION

The CEMGAS is pre-calibrated for the CEM's application. Initially packaged in a standard 19" rack, it includes a touch screen interface and on-board PC for local control and real-time display of results. Digital outputs are Ethernet protocol; RS485, RS232 and ModBus. Analog outputs are optional.

PRIME MEASUREMENT.

No Re-zero; No Drift

CEMGAS Laser 5000 technology is a prime measurement. The zero information is contained in the signal, enabling automated and intrinsic re-zero of the analyzer.

ROBUST LOW MAINTENANCE

In addition to containing no moving optical components, the IR sources (telecom laser) are characterized by MTBF's of 5-10 years. Designed and built strictly for industrial and on-board mobile applications.

NO INTERFERENCE

Provides exceptional selectivity, enabling simultaneous multi-component measurement without interference, regardless of the matrix.

SAFE

ATEX compliant configuration available.

SAMPLING SYSTEM

Flow Rate: 3-9 L/h (0.11-0.33 cfm)
 Max. Temp: 600°C (1,110 F)
 Max. Humidity: H₂O (g) < 65% vol. - Standard
 H₂O (g) > 65% vol. - Study Required
 Pressure: 1atm. ± 100 mBar @ sampling point
 Sampling Line: Ambient Temp. > 10°C and H₂O < 65% vol.
 →simple polytube (no heating)
 Ambient Temp. < 10°C or H₂O > 65% col.
 →80°C heated line.

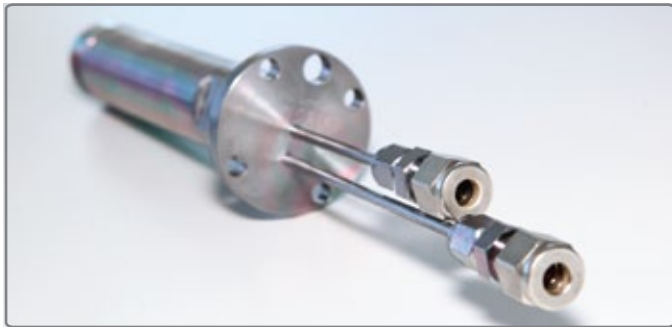
ANALYZER

Size: Standard 19" 4U rack.
 550 mm (21.9 in) depth
 Weight: 20 kg (44lbs)
 Options: Wall mounted.
 ATEX compliant integration.
 Display/Control: 5.7" diagonal color touch screen
 PC OS: Windows® XP®
 Software: WinProceas ©

INSTALLATION REQUIREMENTS

Operating Temp: 15-35°C (59-95°F) - Standard
 10-40°C (50-104°F) - Optional
 Power Requirements: 200W - 110 - 220VAC - 50-60Hz
 Compressed Air: 1-6 bar (oil free). Not provided.
 Air Cleanup Panels are available.

SAMPLING PROCESS



The Sonic Probe allows for extremely low intake flow rate which enables extremely low fouling of the sampling probe filter and reduced maintenance requirements. No moisture or particulate cleanup required.



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DATA I/O

Standard: Ethernet protocol; RS 485,
 RS 232; ModBus
 Optional: Analog I/O; TDR I/O.
 Other I/O's on request

ANALYTICAL SPECIFICATIONS

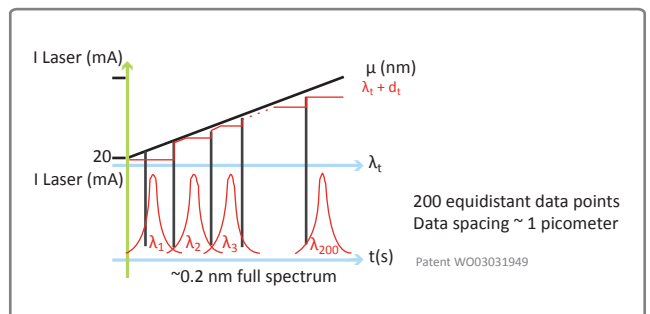
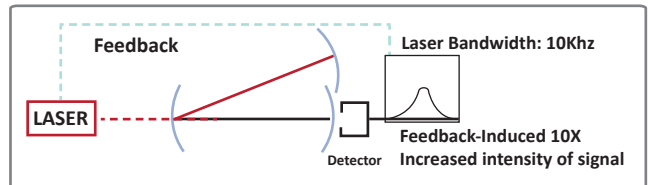
Response Time: < 2 seconds
 (with sample transfer time)
 Zero Drift: none

Gas	Range ^a		LOD ^b	
	min	max	min	max
CH ₄	50ppm	100%	1ppb	1000ppm
Optional N ₂ O	50ppm	100%	2ppb	1000ppm
NH ₃	50ppm	100%	1ppb	1000ppm

^a adjustable range on request
^b limit of detection 3 Sigma

PRINCIPLE OF OPERATIONS

Optical Feedback Cavity Enhanced Absorption Spectroscopy



SPECTRA - 200 equidistant data points over 0,2 nm

