



ETG 6900 P

Portable TDL Analyzer (CH₄, HCl, or NH₃)

The ETG 6900 P is a Tunable Diode Laser Spectrometry (TDLS) based portable analyzer designed to measure the toughest gases accurately and reliably in a large variety of applications.

Description

The **ETG 6900 P** is a complete portable solution to meet the requirement of measuring Methane (CH₄), Hydrogen Chloride (HCl) or Ammonia (NH₃) with high accuracy and specificity. It's designed for ease of use, simplicity of maintenance, and the ultimate in reliability.

ETG uses a technology-enhanced TDLS for gas detection, where a 0.1 nm narrow bandwidth diode laser beam is scanned across an absorption band of the target gas, performing a high-resolution near-infrared absorption measurement.

Electronic lock-in technology allows separating the gas absorption information from electro-optical system information, leading to a detection method eliminating the need for a physical reference channel and offering continuous sensor status monitoring.

The ETG 6900 P presents a clear alternative to current sub-optimal detection solutions and combines precise, contact-less optical measurements with high target gas selectivity, calibration-free operation, and low-cost-of-ownership.

Features and Benefits:

- > Very fast detection with Tunable Diode Laser (TDL) based technology
- > Internal sample pump
- > Complete system in robust case
- > Continuous sensor status monitoring
- > Zero & Span Calibration
- > Long Laser Life (10+ years)
- > Low cost-of-ownership
- > Touch screen monitor
- > Ethernet and USB Remoting
- > Digital and Analog I/O, Modbus, Profibus, Ethernet output
- > Low maintenance – high reliability
- > “Hot-Wet” measurement for NH₃
- > Utilizes heated line and sample probe



APPLICATIONS

- > CH₄ in Landfills
- > HCl in Incinerators
- > NH₃ – pre- and post-SCR
- > Upstream and downstream of treatment systems

MONITORING SOLUTIONS

Complete source for all your Continuous Emissions Monitoring (CEMS) needs:

- > Both Dilution and Extraction CEMS systems
- > Data Acquisition Systems (DAS)
- > Flow Monitoring
- > Opacity Monitoring
- > Oxygen Monitoring Systems
- > Particulate (PM) Monitoring
- > Process Monitoring Systems

The ETG 6900 P for Landfills: Methane (CH₄) plays a critical role in the radiation balance and chemistry of the atmosphere.

The major anthropogenic sources are anaerobic production from landfills, ruminant animals and their waste, release from the mining and use of fossil fuel, burning of biomass, etc.

On average, over the global scale, landfill methane emissions contribute between 10-19% of the anthropogenic methane burden in the atmosphere.

CH₄ is a potent greenhouse gas - about 25 times stronger than CO and outgases from reservoirs, landfills, and permafrost soils.

The ETG 6900P can reliably & selectively measure methane in low ppm concentrations without the need for frequent recalibrations.

The ETG 6900P for CH₄ is thus ideally suited for studying methane emissions in landfills or remote-site applications (i.e., environmental research).

The ETG 6900 P for Hydrogen Chloride (HCl): HCl continuous emissions monitoring systems (CEMS) applications have been around for years – starting in the waste incineration industry. The chlorines in the plastics that are burned in trash incinerators will combine with the moisture in the trash to form HCl during the combustion process.

HCl, in addition to other acid gases, has typically been controlled by post combustion clean up systems, such as acid gas scrubbers (either wet or dry). These systems will typically address several acid gases in addition to various air toxics. Exhaust levels of HCl downstream of the pollution control devices are typically low on most applications – 30 ppm typically down to single digit ppm concentrations.

The ETG 6900P is the perfect cost-effective way to measure these low HCl levels in a variety of applications.

The ETG6900 for Ammonia (NH₃): Ammonia (NH₃) emissions are an important contributor to fine particulate matter (PM) formation. Consequently, increased attention is being paid to accurate quantification and characterization of NH₃ emissions.

Oxides of nitrogen are gaseous pollutants primarily formed during combustion processes. Selective noncatalytic reduction (SNCR) and SCR are post-combustion control technologies based on the chemical reduction of NO_x. In both SCR and SNCR, a nitrogen-based reducing agent, such as NH₃ or urea [NH₂CONH₂], is injected into the post-combustion flue gas.

The ETG 6900P is designed specifically for measuring low levels of ammonia in hot-wet exhaust streams.

CONTACT

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Gas	NH ₃ (H ₂ O _{wet})	CH ₄	HCl
Measurement Technology	Tunable Diode Laser Spectrometry (TDLS)		
Measuring Range	0-15 ppm to 0-50 ppm	0-100 ppm (higher ranges possible)	0-50 to 0-100 ppm
Accuracy	±2% full scale depending on integration stability (temp. & pressure)		
Precision	0.2 ppm	1.0 ppm @ 1s integration, 0.4 ppm @ 10s integration	0.1 ppm detection limit
Measurement Type	Hot Extractive 190°C	Extractive	Hot Extractive 190°C
Zero Drift over 2 hours	Within accuracy		
Span Drift over 8 Hours	Within accuracy		
Max. Error on Temperature Compensation	<0.1% of reading/°C		
Cross Talk/Interference	Gas Matrix & Application Dependent		
Displayed Resolution	0.1 ppm		
Refresh Rate	1s to 120s		
T90 Time	2s (at gas flow rate of 3 lpm)		
Ambient Temperature Compensation	-10 to 65 °C		
Measured Gas Max. Humidity	Abs. H ₂ O needs calibration		
Parameter Compensation		Press., Temp., or matric gas conc.	
Max. Measurement Gas Flow		5000 ml/min.	
Probe Material	Stainless Steel		
Electrical Supply	110 VAC/ 60 Hz		

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Specifications (cont.)

Case Dimensions	50 cm x 28 cm x 40 cm
Weight	~16 lbs.
Pneumatic Connections	Swagelok 6 mm OD
Sample Pump	Internal
Heated Hose	3 or 5 meter length - 180°C Thermo-controlled



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