



ETG 9500 FTIR

multicomponent gas analysis for

CEMS, indoor air pollution, engine emissions, food processing, Biogas & Syngas, petro-chemistry, anaesthetic gases, marine, fire fighting, food processing, oil & gas, aerospace and many more.



RUGGED

Forget about problems and expensive maintenance. The ETG 9500 is the most flexible and cost-effective solution for FTIR analysis. We have developed a spectrometer with the best materials, resulting in a high signal, low noise and long lifetime of its components. Its simple interface and practical functions make it the number one ally in industrial monitoring.

HIGHLY EFFICIENT

There is no limit to the potential of the ETG 9500. Thanks to the long path and small cell volume, we achieved excellent stability, high sensitivity and fast response time. ETG 9500 analyzes the Infrared Spectrum in its entirety and at the same time. Adding new compounds is a straightforward and quick process.

USER FRIENDLY

The analyzer has a large touchscreen. It allows numerous automated and convenient functions, such as separate data logs and customised alarms. The ETG 9500 can be remote-controlled over a LAN or Wi-Fi network, and is compatible with most industrial communication protocols.



Besides the standard 19" Rack format, available in both heated and non-heated versions for seamless integration into complex systems or research laboratories, ETG Risorse e Tecnologia now offers two additional configurations of the **ETG 9500 FTIR** analyser. The **transportable model**, featuring a heated line to prevent gas condensation, is the perfect solution for VOCs, industrial emissions, and filtration system monitoring. The new portable model, compact and battery-powered, delivers the same high analytical performance in a smaller, lightweight design, ideal for field measurements such as anaesthetic gas monitoring, greenhouse gas analysis, and leak detection in Biogas and Syngas plants. Thanks to its versatility and ease of use, the ETG 9500 FTIR family sets a new benchmark for both laboratory and on-site gas analysis.

PORTABLE VERSION

	ETG 9500 FTIR	ETG 9500 P FTIR	ETG 9500 P FTIR (battery powered)
Enclosure	19" rack	Rugged Case	Rugged Case
Display	10.1" touchscreen	External (remotely controlled)	External (remotely controlled)
Dimensions (L x W x D)	19" x 6hE x 550 mm	625 x 500 x 297 mm	500 x 280 x 400 mm
Weight	16 kg	14 kg	15 kg
Power Supply	230/115 VAC 50/60 Hz	230/115 VAC 50/60 Hz	42 VDC Power adapter (230/115 VAC 50/60 Hz)
Battery life	N/A	N/A	Up to 10 hours
Analyzer Power Consumption	100W(max) - 70W(typ)	90W (max) - 60W(typ)	165W (max) - 100W(typ)
Heater Power Consumption	450W (max) - 70W(typ)	450W (max) - 70W (typ)	N/A
Heated Line Power Consumption	80 W/m	80 W/m	N/A
Sample Pump	Included	Included	Included
IP Class	N/A	IP54 (optional)	IP54 (optional)
Certification	CE	CE	CE

TECHNICAL DATA

Measurement Technique	FTIR Spectrometry
Measurable Gases and Vapors	Most molecules except for He, Ar, N ₂ , H ₂ , and O ₂
Ranges	Concentration setting between 10ppb and 100% Full Scale (depending on gas type)
Spectral Resolution	0.5 cm ⁻¹
Spectral Range	5000-830 cm ⁻¹ (2-12µm)
Scan Frequency	0.7 s ⁻¹
Light Source	Broadband SiC, 1550 K
Reference Laser	Stabilized semiconductor laser
Detector	MCT (4-TE cooled)
Detectivity D	>2.5x10 ⁹ cmHz ^{1/2} W ⁻¹
Signal-to-noise ratio	>3500:1 (for one single scan)
Pneumatic Connections	Swagelock 6 mm O.D.
Communications	RJ45 Ethernet, USB, WiFi
Output Options	Modbus, Profinet, Profibus...

Gas cell

Path Length	5 m
Internal Volume	0.2 l
Transmission	>50%
Temperature Range	20 to 180°C
Construction	Aluminum with inert coating
Mirrors Parabolic	Rhodium protected, gold coated aluminum
Windows	BBAR ZnSe

Performance specifications

Zero-point Drift	< 2 % of measuring range per 48 h background measurement interval
Sensitivity Drift	None
Linearity Deviation	< 2 % of measuring range
Temperature Drift	< 1 % of measuring range per 10 K temperature change. Ambient temperature changes are measured and compensated.
Pressure Influence	1 % change of measuring value for 1 % sample pressure change. Ambient pressure changes are measured and compensated
Background Measurement Interval	Every 48h (recommended)

SUITABLE APPLICATIONS

STACK EMISSIONS MONITORING:

Continuous emissions monitoring (CEMS)
Portable stack emissions monitoring (PEMS)

TOXIC EMISSIONS:

Toxic Industrial Chemicals (TICs) Monitoring
Toxic and Harmful Gas Monitoring System in Fire Fighting
Toxic gas control for containers

HEALT CARE ANALYSIS:

Medical anesthetic Gas Detection

GREEN HOUSE GASES MONITORING:

Greenhouse gases produced by agricultural activity, landfills and digesters monitoring

MEASURABLE SUBSTANCES:

Measurement of Siloxanes deriving from the Biogas production process

THE CEMS APPLICATION

CEMS (Continuous Emissions Monitoring System) technology is an advanced monitoring system that provides real-time measurement and monitoring of industrial emissions. It is widely used in power plants, refineries, and other heavy industrial facilities to measure and control the release of pollutants into the atmosphere.

CEMS technology uses various sensors and instruments, such as gas analyzers, particulate analyzers, and flow meters, to accurately measure and report the levels of pollutants such as sulfur dioxide, nitrogen oxides, and particulate matter.

CEMS is an essential tool for ensuring compliance with environmental regulations and promoting sustainable production processes. The data collected by CEMS helps facilities to track their emissions and identify areas for improvement, reducing the impact of industrial activities on air quality. In addition,

CEMS can be used to optimize production processes, increase efficiency, and reduce costs by detecting and addressing issues in real-time.

TARGET GASES

GAS	RANGE
CH ₄	0-100 ppm
CO	0-500 ppm
CO ₂	0-50000 ppm
H ₂ O	0-60%
HCl	0-100 ppm
HF	0-100 ppm
N ₂ O	0-100 ppm
NH ₃	0-100 ppm
NO	0-150 ppm
NO ₂	0-250 ppm
SO ₂	0-150 ppm
O ₂	0-25%

*O₂ values are measured using a ZrO₂ sensor, which is compliant with most CEMS requirements. Other kinds of sensors can be used, based on customer or regulator request.
All ranges can be adapted to customer or regulator request