

FI-RXF100-G

FI-RXF100-G Portable High-Temperature FTIR Gas Analyser

A compact FTIR gas analyser with an integrated multi-pass gas cell of 5–9.8 m path length, heated to 180 °C. A dedicated coupling chamber joins spectrometer, gas cell, temperature controller, thermocouple and heat sink, so the beam path is short and practically unaffected by the ambient atmosphere.

Best for: Waste incineration and stack emissions, online environmental and process gas monitoring, and emergency monitoring on site.



5–9.8 m

Gas-cell path length

180 °C

Heated gas cell

T90 < 120 s

Response time

50 gases

Quantitative calibrations

Overview

Easy to use, capable, compact and robust: the FI-RXF100-G is an infrared spectrometer that anyone can use, anywhere. A practically maintenance-free optical system and a proven interferometer design give accurate, repeatable measurements day after day, and its fully integrated, reliable sampling and portable accessories suit it to the laboratory and to field testing.

The compact gas analyser integrates a long-path gas cell. A purpose-designed coupling chamber combines the spectrometer with the gas cell, temperature controller, thermocouple and heat sink, so the beam path is short and practically unaffected by the surrounding atmosphere. The online system is designed for waste incineration and online environmental gas monitoring.

Features

Hardware

- Interferometer: excellent performance, reliability and stability, with strong immunity to interference; 10-year service life
- Optics: gold-coated mirrors throughout, with reflectance more than 5 % higher than aluminium; oxidation-resistant for more stable optical performance
- Detectors: high-sensitivity DTGS, TE-cooled MCT and liquid-nitrogen-cooled MCT
- Solid-state laser: stable performance, service life over 10 years
- Source: high performance, service life over 10 years

For gas analysis

- Small, for integration into online analysis systems at industrial sites
- Advanced cube-corner interferometer, permanently aligned beam path, excellent stability
- ZnSe beamsplitter and windows, suited to industrial sites and protected against moisture
- Gas cells of different path lengths to suit the concentrations you measure
- Built-in high-sensitivity DTGS detector runs at ambient temperature, with no liquid nitrogen or other cooling; TE-cooled MCT optional
- Optional purge port for the beam path, depending on site conditions
- Optional heated line and temperature controller for use with the FTIR
- Simultaneous analysis of several gas components, with real-time monitoring of concentration trends
- Runs on a laboratory bench or installed in a portable mobile case for online monitoring

Specifications

Spectrometer	
Interferometer	High-stability cube-corner Michelson interferometer, suited to industrial sites
Beamsplitter	Moisture-resistant ZnSe
IR source	Air-cooled mid-infrared ceramic source, 1550 K
Detector	High-sensitivity DTGS
Laser	Solid-state laser
Spectral range	500–5000 cm^{-1}
Spectral resolution	Better than 1 cm^{-1} (2, 4 or 8 cm^{-1} selectable in the software)
Spectral repeatability	< 0.01 cm^{-1}
Linearity error	$\leq \pm 2\%$ F.S.
Repeatability	$\leq 2\%$
Response time	T90 < 120 s
System dimensions	590 × 430 × 176 mm (L × W × H, with gas cell, without handles)
Weight	18 kg with main unit, gas cell, coupling chamber, base plate, gold-coated mirror set, heating system and heat sink; depends on configuration
Power	220 V, 50 Hz

Gas cell	
Type	Multi-pass long-path gas cell, stainless steel
Path length	5–9.8 m; other path lengths to order
Mirrors	Multi-layer gold coating with anti-corrosion treatment
Heating	Heating system and temperature controller, 180 °C
Inlet and outlet	6 mm diameter
Acquisition	Single, continuous or fully automatic

Sampling and calibration	
Heated sampling	1.5 m heated sampling probe and 3 m heated line, operating temperature 200 °C
Warm-up time	≤ 15 min
Calibration libraries	Quantitative calibrations for 50 gases included; user-built spectra; qualitative library upgradeable to more than 40,000 spectra

Applications

- Environmental emergency monitoring
- Occupational health monitoring on site
- Industrial process analysis and control
- Catalytic conversion research
- Stack emission testing

- Waste incineration and combustion emission monitoring

Especially suited to

- Simultaneous analysis of several components
- Hot, humid sample gas
- Complex gas composition
- Demanding test conditions

Figures



FI-RXF100-G rear panel.

Request a quotation

Tell us what you measure and we will configure the FI-RXF100-G — sampling accessories, detector and libraries — for it.

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