

Multi-Gas Infrared GFC Analyzer

MIR 9000



Designed to measure dry and corrosive sample, the MIR 9000 measures up to 10 gases simultaneously: HCl, HF, NO, NO₂ (NOx), SO₂, CO, CO₂, N₂O, CH₄, TOC and O₂



MIR 9000 19" rack version



MIR 9000 - customized installation

Infra-Red Gas Filter Correlation allows the MIR 9000 to offer up to ten gas measurements simultaneously, including Nitrogen Oxide (NO), Nitrogen Dioxide (NO₂), Sulphur Dioxide (SO₂), Carbon Monoxide (CO), even Hydrogen Chloride (HCl) and Hydrogen Fluoride (HF).

Designed to comply with legislation such as **2000/76/EC (WID)** and **2001/80/EC (LCPD)**, the MIR 9000 offers maximum availability and complete compliance with applicable regulations.

EXCLUSIVE FEATURES:

- Over 2.500 installations worldwide, in a wide range of applications and industries
- External data acquisition of up to 7 additional parameters (flow, pressure, temperature or other analog input)
- Optional Chemiluminescence module (CLD) for low NO, NOx and NO₂ measurement
- Built-in paramagnetic cell for O₂ monitoring
- Real time graphic display
- Interactive menu-driven software allowing ease of operation
- Unheated sample line thanks to the permeation drying technology
- Concentrations measured and expressed on a dry basis
- On-board oxygen correction for environmental reporting
- Automatic cross interference correction
- Highly accurate, excellent stability with automatic optical stability check
- Intrinsic security with on-board residual H₂O measurement
- Available in 19" Rack or Tight box version

MAIN APPLICATIONS:

- Municipal and Hazardous Waste Incinerators
- Cogeneration, Gas Turbines (MIR 9000 with CLD option)
- Industrial Boilers and Furnaces
- Power & Combustion
- Cement Kilns, Glass, Chemical & Petrochemical Plants

Compliance with LCPD and WID applications

TÜV certified to EN15267-3

MCERTs certified to EN15267-3

QAL1 as defined by EN14181

QAL3 compliance to EN14181

U.S. EPA 40 CFR 60 and 75 Compliant



QAL 1 QAL3
EN 14181 EN 14181



Multi-Gas Infrared GFC Analyzer **MIR 9000**

SPECIFICATIONS:

| | Lowest / Highest available ranges |
|------------------|-----------------------------------|
| CO | 0-75 / 10 000 |
| CO ₂ | 0-10 / 25 % |
| SO ₂ | 0-75 / 5 000 |
| N ₂ O | 0-20 / 1 000 |
| HCl | 0-15 / 5 000 |
| HF | 0-20 / 300 |
| CH ₄ | 0-10 / 1 000 |
| TOC | 0-50 / 5 000 |
| O ₂ | 0-10 / 25 % |
| NO _x | 0-200 / 5000 |

Expressed in mg/m³ or % when indicated. For other gases or ranges, please contact us.

- Repeatability: <2% of Full Scale (F.S.)
- Zero drift: <2% F.S. / 30 days
- Span drift: < 1% F.S. / 7 days
- Linearity: < 1% F.S.
- Power supply: 80 - 230V, 50-60 Hz
- Consumption: 300 VA
- Serial link: RS232, RS 422
- Communication: TCP IP
- Operating temperature: +5 °C to +40 °C
- Version with CLD (tight box):
Dim.: 200x600x600 mm (DxWxH)
Weight: 32 Kg
- Version without CLD (tight box):
Dim.: 200x400x600 mm (DxWxH)
Weight: 24 Kg
- Version without CLD (19" Rack):
Dim.: 490x483x177 mm (DxWxH)
Weight: 14 Kg

MAIN OPTIONS:

- Pressure, temperature & gas velocity measurements
- SEC® sampling system (permeation based drying system)
- Analog outputs: 0/10V - 0/4-20 mA programmable
- Rack cabinet, cubicle or shelter integration
- Software for remote maintenance
- O₂ measurement via built-in paramagnetic cell
- TIG calibration / back flush module
- MDS dryer
- Multiplexing system MVS
- Data acquisition and management system WEX®
- CLD module for low concentrations of NO, NO_x and NO₂

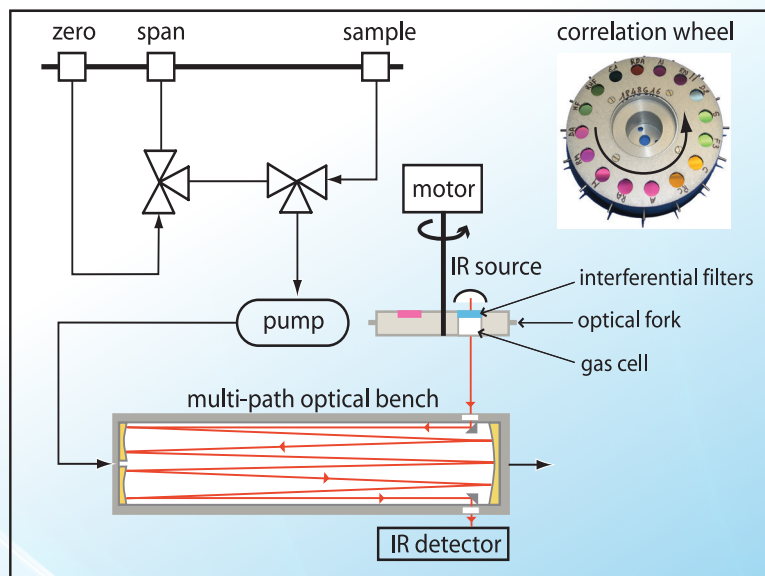
Model MIR 9000 is a multi-gas Non Dispersive Infra-Red analyzer, using the Gas Filter Correlation technique (GFC).

PRINCIPLE OF OPERATION:

IR GFC principle: an optical ray, emitted by the IR source, passes through the measurement chamber and is focused on an IR detector. Each gas present on the path of the optical ray, absorbs the latter at defined wavelengths that are specific to it. An interference filter that defines a specific wavelength area is positioned on the optical path above the measurement chamber.

A cell filled with highly concentrated gas that needs to be measured and a cell filled with nitrogen, which does not absorb any wavelength, are positioned on the optical path alternately. The highly concentrated gas, which is in the cell called the reference cell, absorbs all wavelengths that are specific to it.

Some milliseconds later, the cell filled with nitrogen is positioned on the optical path. Absorption of the infrared energy is due to the gas in the measurement chamber, according to the Beer Lambert law. Therefore, after absorption by the gas, the ratio between the reference energy and the "I" energy is known at any moment. Hence, the gas concentration can be deduced, using the following formula: $C=f(I/IR)$



Complete systems would normally comprise of: Sample extraction and conditioning probe (with integrated temperature, pressure and flow measurement) • Sample lines • Automatic calibration units • Instrument air drying system • Data acquisition & management system

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