MIR 9000 CLD

DASTEC
30 años de soluciones para la industria

envea

Multi-Gas Infrared GFC Analyzer (with CLD option)

PROCESS & EMISSIONS MONITORING SYSTEMS

The MIR 9000 CLD uses the chemiluminescence detection principle which is the most selective method for the measurement of NOx in the low to ultra-low concentration. It allows the MIR 9000 CLD to offer the lowest QAL 1 certified range of the CEMS market.

High performance for NOx measurements, including O_2 by paramagnetic sensor.

Unique: 20 mg/Nm$_3$ QAL 1 certified range.

SPECIFIC FEATURES:

- Real time graphic display
- Automatic cross interference correction
- Designed to measure dry and corrosive sample
- Measures from 1 to 10 gases simultaneously
- On-board oxygen measurement for environmental reporting
- Interactive menu-driven software allowing ease of operation
- Unheated sample line thanks to the permeation drying technology
- Concentrations measured and expressed on a dry sample
- Over 2500 installations worldwide, covering many applications and industries
- Highly accurate, excellent stability with automatic optical stability check
- Intrinsic security with on-board residual H_2O measurement
- Built-in data logger for 7 additional parameters (flow, pressure, temperature or any other analogue input)
- Available in 2 versions:
  - NOx (CLD) and O_2 (Paramagnetic) in 19'' Rack or Tight box
  - CO, CO_2, SO_2, HCl, HF, TOC, N_2O (IR) + NOx (CLD) + O_2 in Tight box

Offers excellent performance for multiple gas measurements, including HCl, NO, NO_2 (NOx), SO_2, CO, CO_2, HC, CH_4 (TOC), HF, and O_2

MIR 9000 CLD 19'' rack version

MAIN APPLICATIONS:

- Cogeneration, Gas Turbines
- Industrial Boilers
- Furnaces
- Power & Combustion

COMPLIANCE WITH:

EU Regulation IED (WID / LCPD / MCPD directives) and US EPA (40 CFR 60 & 75)

TÜV Rheinland®
TÜV CERTIFIED
EN 15267-3

U.S. EPA APPROVED
40 CFR 60 ET 75

MCERTS
Sira MC020010/13
MCERTs CERTIFIED
EN 15267-3

QAL 1
EN 15267-3

QAL 3
EN 15267-3

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

Model MIR 9000 is a multi-gas Non Dispersive Infra-Red analyzer, using the Gas Filter Correlation technique (GFC). Version CLD of Model MIR 9000 includes a built-in chemiluminescence module for the measurement of nitrogen oxides (NOx).

	Lowest / Highest available ranges
CO	0-75 / 10 000
CO_2	0-10 / 25 %
SO_2	0-75 / 5 000
N_2O	0-20 / 1 000
HCl	0-15 / 5 000
HF	0-20 / 300
CH_4	0-10 / 1 000
TOC	0-50 / 5 000
NO (CLD)	0-20 / 2 000
NOx (CLD)	0-20 / 2 000
NO_2 (CLD)	0-20 / 200
NO (IR)	0-200 / 5 000
NOx (IR)	0-200 / 5 000
NO_2 (IR)	0-200 / 5 000
O_2	0-10 / 25%

Expressed in mg/m³ or % when indicated

PRINCIPLE OF OPERATION:

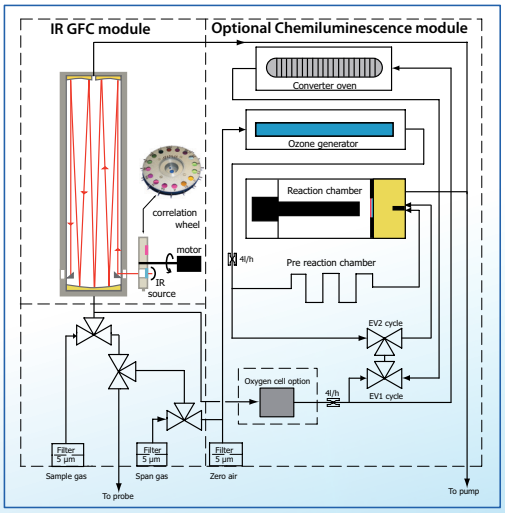
IR GFC principle: an optical ray, emitted by the IR source, passes through the measurement chamber and is focused on an IR detector. Each gas present on the path of the optical ray, absorbs the latter at defined wavelengths that are specific to it. An interference filter that defines a specific wavelength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

Chemiluminescence principle: applied to the monitoring of nitrogen oxides, the principle consists in detecting the photons emitted during the reaction between nitrogen oxide (NO) and ozone (O_3): NO + O_3 –> NO_2 + O_2. The energy (hv) generated is measured through a high-sensitivity photomultiplier, that delivers an electric signal which is proportional to the NO concentration in the sample.



MAIN OPTIONS:

- Pressure, temperature & gas velocity measurements (DTP)
- SEC® sampling system (permeation based)
- Analog outputs : 0/10V - 0/4-20 mA programmable
- Rack cabinet, cubicle or shelter integration
- Dryer MDS
- O_2, measurement by built-in paramagnetic cell, full scale: 0-25%
- TIG calibration / back flush module
- Multiplexing system MVS
- CEMS software WEX™
- **Special option for the rack version : CO_2 measurement module (range 0 - 2000 mg/m³)**

TECHNICAL SPECIFICATIONS

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
Communication port	RS232/RS422, Ethernet
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 IR (Rack 19")	Dim.: 490x483x177 mm (DxWxH) / Weight: 14 Kg

Complete system would normaly comprise of:

- Sample extraction and conditioning probe (with integrated temperature, pressure and flow measurement)
- Cold sample lines
- Calibration module
- Instrument air drying module
- Acquisition and data management system (DAHS) may complement the system

envea KNOWLEDGE IN ACTION

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