Multi-gas Infra Red Fourier Transform (FTIR) Analyzer

MIR FT

One single analyzer for the measurement of: HCl, NO, NO_2 (NOx), N_2O, SO_2, CO, CO_2, HC, CH_4 (TOC), HF, N_2O, O_2 ,H_2O, NH_3...

MIR FT rack cabinet

eSAM FT software for on-board data acquisition and processing

Compliance with IED 2010 applications
MCERTs certified to EN15267-3
QAL1 certified as defined in EN14181
QAL3 compliance to EN14181
U.S. EPA 40 CFR 60 and 75 Compliant

MCERTS QAL 1 EN 14181 QAL 3 EN 14181

With the emissions limits tightening and new gases being introduced, this monitoring system allows future gas upgrades, providing the solution for today and what may happen tomorrow. Designed to operate under legislation such as 2000/76/EC (WID) and 2001/80/EC (LCPD), the MIR-FT offers maximum availability and complete compliance with QAL 1 of EN14181 & EN15267-3.

SPECIFIC FEATURES:

- Based on a leading edge technology for simultaneous, multi-gas measurement of: HCl, NO, NO_2 (NOx), SO_2, CO, CO_2, HC, CH_4 (TOC), NH_3, HF, H_2O...
- Fast and simultaneous measurements of up to 50 parameters
- Especially designed to measure wet and corrosive sample gases, including trace concentrations
- Perfectly suited for hot/wet measurement of soluble gases such as HCl, HF, NH_3
- Excellent calibration stability
- Automatic correction of spectral interferences
- Unmatched accuracy and reliability
- Rugged & insensitive to vibrations
- Low maintenance required
- 180°C heated sample line / measurement cell (in association with HOFI sampling system according to the application), ensuring no sample loss or composition changes
- Industrial PC with Windows based eSAM FT software for on-board data acquisition and processing
- TOC measurement by FID possible, using the complementary Graphite 52M analyzer

MAIN APPLICATIONS:

- Municipal, Industrial, Hospital waste incinerators
- Biomass, Cement Kilns, Pulp & Paper, Glass Plants
- DeNOx (SNCR, SCR) applications
- Power & Combustion...

Multi-gas Fourier Transform Infra Red Analyzer **MIR FT**

SPECIFICATIONS:

	QAL1 certified ranges
NO	0-150 / 200 / 600 / 2 000 mg/m3
NO2	0-200 / 500 mg/m3
CO	0-75 / 300 / 1 500 mg/m3
CO2	0-25 %
SO2	0-75 / 300 / 1 500 mg/m3
N2O	0-100 / 500 mg/m3
HCl	0-15 / 90 mg/m3
HF	0-3 / 10 mg/m3
CH4	0-15 / 50 / 150 mg/m3
COT (*)	0-15 / 500 mg/m3
NH3	0-15 / 50 mg/m3
H2O	0-30 / 40 %
O2	0-25%
CH2O	0-20 / 30 / 90 mg/m3

(*) by FID measurement

Other ranges available upon request

- Zero drift: ± 1% full scale / 30 days
- Span drift: ± 1% full scale / 30 days
- Repeatability: ± 2% full scale
- Lower detectable limit: 2% full scale
- Response time: < 120s depending on the gas
- Interferometer resolution: 8 cm^{-1}
- Measurement cell: multi-reflexion, 5 m
- Power supply: 220 V, ± 15%, 50-60 Hz, 200 VA
- Digital output: Ethernet
- Dim.: rack 19“, 616 x 483 x 220 mm (DxWxH)
- Weight: 20 kg approx
- Operating temperature: + 10°C to + 35°C

MAIN OPTIONS:

- O_2 measurement (heated zirconia sensor)
- Graphite 52M (FID analyzer) for TOC measurements
- Analog Outputs: 0/10V - 0/4-20mA, programmable
- Solenoid valves for dynamic calibration
- Integration into A/C or ventilated rack cabinet

COMPLETE SYSTEM WOULD NORMALLY COMPRISE OF:

- Sample extraction and conditioning probe (with integrated temperature, pressure and flow measurement).
- Heated sample line
- Automatic calibration unit
- Instrument Air drying system
- **Data acquisition and processing software (eSAM FT)**

OPERATING PRINCIPLE:

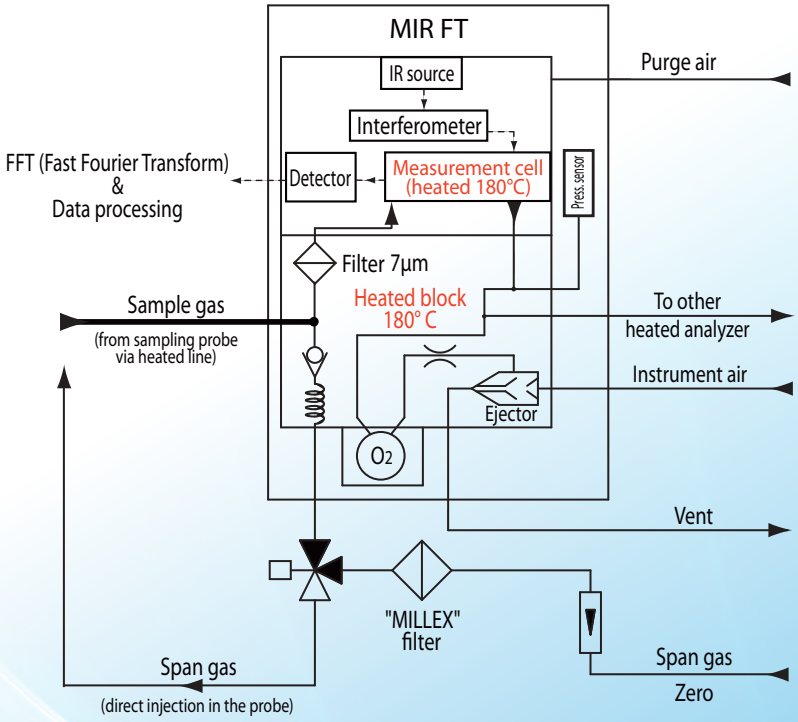
Fourier Transform Infra Red (FTIR) spectroscopy is based on the absorption of an infra-red beam by the sample gas molecules, which induces vibrational state changes for each molecule at specific frequencies.

An IR source emits a polychromatic radiation in the medium infrared, which is sent to a Michelson interferometer. This interferometer consists of a beam splitter and two mirrors placed in nearly orthogonal planes (one being static, the other oscillating).

The beam splitter is used to separate the incident beam into two identical rays, to send them be reflected on each mirror and to recombine the rays in order to obtain an interference image, which depends on the difference of the optical path induced by the mirror oscillation.

The obtained interference image or «interferogram» corresponds to an energy variation as a function of each wavelength time, with maximum when waves are in phase, and minimum when waves are in phase opposition.

Therefore, the interferogram corresponds to an energy variation as a function of time, and the optical spectrum corresponding to an energy variation as a function of frequency is obtained by Fourier Transform signal processing.



Fluid diagram

Environnement S.A has a policy of continuous improvement of its products and we reserve the right to upgrade or change specifications without prior notice.

MIR FT-EN_PSO - InDes - 11/16

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