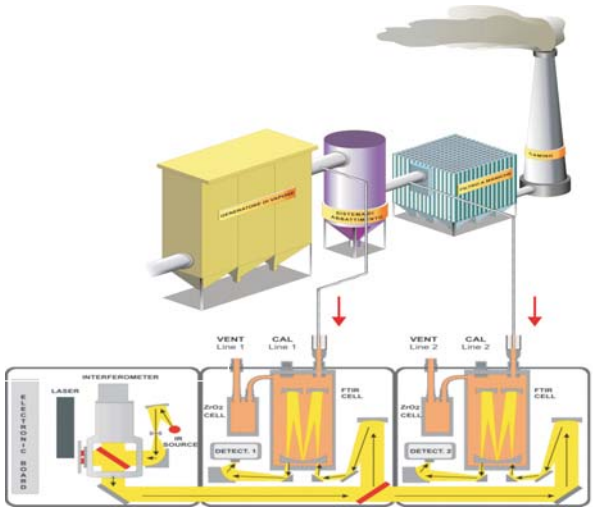
GIGAS Double Cell
FT-IR Multi-Component Gas Analyser



GIGAS FT-IR is the first and unique gas analyser designed and **Made in Italy**, developed to guarantee high quality, accuracy, reliability and strength.

GIGAS Double Cell is based on a TÜV certified GIGAS 10M FT-IR Spectrometer (EN 14181 and EN 14956).

The System

The signal getting out from the interferometer is divided into two beams having optical paths on two different cells. Analysis is performed in an independent way.
With one spectrometer and two cell modules it is possible to sample **two gas flows from two different sampling points**.
Each cell has its own detector, therefore **two different range configurations** can be set.
The system allows estimating gas scrubber system effectiveness, promoting a corrected regulation of the process and remarkable **saving reagents consumption**, and reducing considerably the problems of ammonia excess.
In order to control two production lines, the double-cell FT-IR configuration allows monitoring two gaseous streams with only one instrument, thus obtaining a significant **economic saving**.

Components	Minimum Full Scale		Detection limit	
H_2O	30 Vol%	300000 ppm	0,01 Vol%	100 ppm
CO_2	20 Vol%	200000 ppm	0,01 Vol%	100 ppm
CO	75 mg/m^3	60 ppm	0,31 mg/m^3	0,25 ppm
NO	200 mg/m^3	150 ppm	1,20 mg/m^3	0,90 ppm
NO_2	100 mg/m^3	50 ppm	1,03 mg/m^3	0,50 ppm
SO_2	75 mg/m^3	25 ppm	2,30 mg/m^3	0,80 ppm
HCl	15 mg/m^3	10 ppm	0,44 mg/m^3	0,27 ppm
HF	10 mg/m^3	10 ppm	0,36 mg/m^3	0,40 ppm
NH_3	15 mg/m^3	20 ppm	0,20 mg/m^3	0,25 ppm
N_2O	50 mg/m^3	25 ppm	0,40 mg/m^3	0,20 ppm
CH_4	50 mg/m^3	70 ppm	0,36 mg/m^3	0,50 ppm

Applications

- Waste incinerators
- Chemical and biomedical processes
- Power plant DeNOx and DeSOx
- Catalyst monitoring
- Scrubber efficiency in process controls
- Aluminum and steel smelters
- Cement kilns
- Gasification and pyrolysis processes
- Crematoria
- Combustion research plants

Advantages

- Continuous real time process control
- Simultaneous feed-forward analysis
- Saving until 15% of reagents
- Protection of For-heater of excessive NH_3 presence
- Reduction of NH_3 concentration in stack gas
- Monitoring of two streams with one analyser

Performances

Linearity	<2% of the smallest measuring range
Accuracy	<3% of the smallest measuring range
Repeatability	<1% of the smallest measuring range
Response time	T_{90}<150 s
Zero drift	Automatically corrected
Span drift	<4% in 6 months
Temperature drift	<1% of the smallest measuring range per 10K change
Cross sensitivity	<4% of the smallest measuring range
Availability	>95%
Air pressure influence	None
Voltage effect	None

Technical Data

Performances based on 60s data acquisition time, standard deviation 3σ and optical path length 5 m.
The acquisition time can be easily set, as well as the cell optical path length, which is configurable between 2 and 10 meters in steps of 1 meter.
Loccioni spectral library allows to identify and quantify more than 300 chemical compounds; other gases and different measuring ranges are available on customer request.

Status Signals

Measured signals	4-20 mA per measured component Optional: Ethernet, 3964r communication
Status signals	Not ready, Calibration
Input signals	Digital and analog possible

Power Supply

Input Voltage	400/230 VAC or 200/115 VAC, 48-62 Hz
Power consumption	Approx. 150 VA for Electronic (PC not included) Approx. 600 VA for heating system

Sample Gas Conditions

Temperature	<200 °C depending on gas conditioning
Pressure	From 500 to 1500 hPa depending on gas conditioning
Flow rate	Max 600 l/h (10 l/min)

Analyser Design

Analyser Dimension	141x30x50 cm (WxHxD)
Necessary min. distance	175x80x63 cm (WxHxD)
Analyser weight	Approx. 85 Kg
Analyser protection class	IP54 / NEMA 3 and 13
Colour	Light Grey (RAL 7032)

Environmental Conditions

Ambient temperature in operation	+15 to +30 °C in air conditioned room Max 50 °C for short periods
Ambient temperature in storage and transport	-25 to 65 °C
Relative Humidity	Max 95% during operation with purging system Max 30% without purging system

LOCCIONI
General Impianti, Via Monteschiavo 3
60030 Moie di Maiolati, Ancona, Italy
Phone +39 0731 8161 Fax +39 0731 814700
info@loccioni.com www.loccioni.com