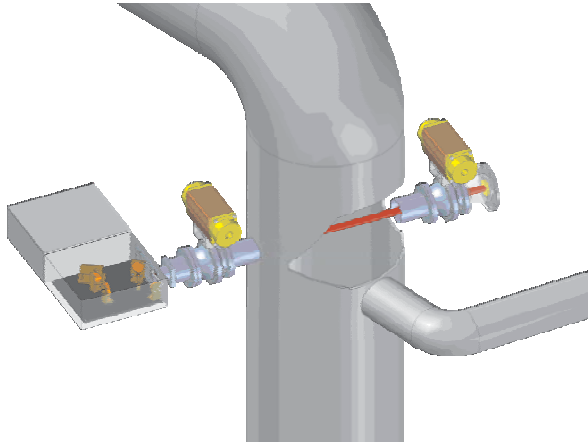


## GIGAS Cross Stack FT-IR Multi-Component Gas Analyser



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

### The System

The base unit containing interferometer, laser, source and electronic can be coupled with different accessories, made up of variable path-length multi-pass gas cell 10 meters or 80 meters and frame for insertion in stack in-situ system.

The rack system, including different types of analysers and sensors, sampling system, sample gas condition units, control and display items, purging system, is completely configurable to be best suitable to the customer application.

The software and the measuring compounds can be totally set up for the best solution as well.

GIGAS Cross Stack is designed for applications needing **fast response** and **instantaneous data analysis** and processing.

Direct installation on pipes allows avoiding sampling and conditioning gas system.

### Applications

- Municipal waste incinerators
- Hazardous waste incinerators
- Chemical plants
- Biomedical plants and processes
- Solvent and recovery destruction
- Power plant DeNOx and DeSOx
- Catalyst monitoring
- Scrubber efficiency
- Aluminum and steel smelters
- Cement kilns
- Gasification and pyrolysis processes
- Combustion research plants
- Process control

### 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.

Loccioni spectral library allows to identify and quantify more than 300 chemical compounds; other gases and different measuring ranges available on customer request.

Some compounds need special detector analytical studies.

Minimum response times of 10 seconds are achievable with Cross Stack solution.

Components	Minimum Full Scale		Detection limit	
H <sub>2</sub> O	30 Vol%	300000 ppm	0,01 Vol%	100 ppm
CO <sub>2</sub>	20 Vol%	200000 ppm	0,01 Vol%	100 ppm
CO	75 mg/m <sup>3</sup>	60 ppm	0,19 mg/m <sup>3</sup>	0,15 ppm
NO	200 mg/m <sup>3</sup>	150 ppm	0,90 mg/m <sup>3</sup>	0,70 ppm
NO <sub>2</sub>	100 mg/m <sup>3</sup>	50 ppm	0,40 mg/m <sup>3</sup>	0,20 ppm
SO <sub>2</sub>	75 mg/m <sup>3</sup>	25 ppm	0,60 mg/m <sup>3</sup>	0,20 ppm
HCl	15 mg/m <sup>3</sup>	10 ppm	0,20 mg/m <sup>3</sup>	0,12 ppm
HF	10 mg/m <sup>3</sup>	10 ppm	0,20 mg/m <sup>3</sup>	0,22 ppm
NH <sub>3</sub>	15 mg/m <sup>3</sup>	20 ppm	0,08 mg/m <sup>3</sup>	0,10 ppm
N <sub>2</sub> O	50 mg/m <sup>3</sup>	25 ppm	0,20 mg/m <sup>3</sup>	0,10 ppm
CH <sub>4</sub>	50 mg/m <sup>3</sup>	70 ppm	0,20 mg/m <sup>3</sup>	0,30 ppm

### Performances

Linearity	<2% of the smallest measuring range
Accuracy	<2% of the smallest measuring range
Repeatability	<2% of the smallest measuring range
Response time	T <sub>90</sub> <10 s
Zero drift	Automatically corrected - Synthetic background
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

### Engineering Feasibility

	Temp <400 °C	Temp >400 °C	Press <Amb	Press >Amb	H <sub>2</sub> O <5%	H <sub>2</sub> O <15%	H <sub>2</sub> O <30%	Diam 1m	Diam 3m	Diam 6m	Dust <0.1 g/m <sup>3</sup>	Dust <1 g/m <sup>3</sup>	Dust <15 g/m <sup>3</sup>
Temp <400 °C	U	U	O	V	O	O	V	O	O	O	O	O	O
Temp >400 °C	U	U	V	V	V	V	V	V	V	V	V	V	V
Press <Amb	O	V	U	U	O	O	O	O	O	O	O	O	O
Press >Amb	V	V	U	U	V	V	V	V	V	V	V	V	H
H <sub>2</sub> O <5%	O	V	O	V	U	U	U	O	O	O	O	O	V
H <sub>2</sub> O <15%	O	V	O	V	U	U	U	O	O	V	O	V	H
H <sub>2</sub> O <30%	V	V	O	V	U	U	U	O	V	H	O	H	H
Diam 1m	O	V	O	V	O	O	O	U	U	U	O	O	V
Diam 3m	O	V	O	V	O	O	V	U	U	U	O	O	H
Diam 6m	O	V	O	V	O	V	H	U	U	U	O	H	H
Dust <0.1 g/m <sup>3</sup>	O	V	O	V	O	O	O	O	O	O	U	U	U
Dust <1 g/m <sup>3</sup>	O	V	O	V	O	V	H	O	O	H	U	U	U
Dust <15 g/m <sup>3</sup>	O	V	O	H	V	H	H	V	H	H	U	U	U

**O**  
Optimal  
Easy installation and analysis conditions

**V**  
To verify  
Feasibility study needed

**H**  
Hard  
Difficult installation special materials and devices needed

**U**  
Undefined

### Status Signals

Measured signals	4-20 mA per measured component Optional: Ethernet, 3964r communication
Status signals	Not ready, Calibration
Input signals	Pipe temperature and pressure Stand-by status setting by remote Other 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 and automation system not included)

### Analysers Design

Analyser Dimension	91x30x50 cm (WxHxD)
Necessary min. distance from stack (included analyser)	250 cm with protection system 150 cm with easy stack link
Analyser weight	Approx. 70 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