ASPROC

UV-VISIBLE SPECTROSCOPY ANALYZERS

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ONLINE GAS ANALYSER

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Scan Me

Application

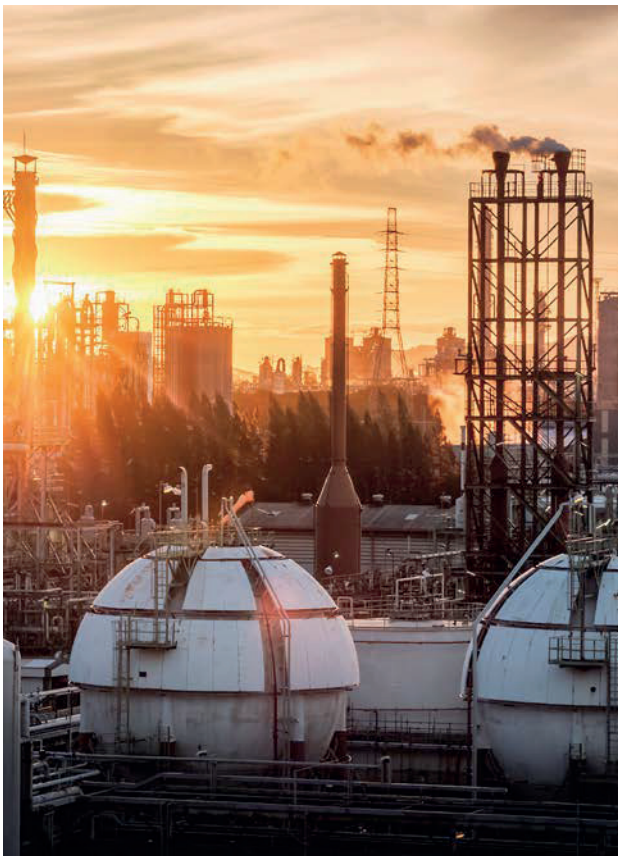
. Gas Processing Facilities

. Natural Gas Pipeline

. Chemical plants

. Gas Well Testing & Analysis

. Landfills & Biogas



Features

Measurement

. High resolution and sensitivity optical sensor

. Powerful mathematical treatment FTLS

Sampling

. Multiplexing system in option

. Heated or cooling system in option

Communication and interface

. On board memory for storage data (16 GB)

. Intuitive friendly interface on TFT color touch screen (glass to glass)

Enclosure

. ATEX Eexd Zone 1 and 2*

Maintenance

. 10 year lifetime UV lamp

. Once a year calibration

Main Components	Measurement range
Hydrogen Sulphide (H_2S)	0...1000 mg/m3
Methyl Mercaptan (R-SH)	0...1000 mg/m3
Carbonyl Suplhide (COS)	0...100 mg/m3
Sulfur Dioxide (SO_2)	0...10 mg/m3
Carbon Monoxide (CO)	0...10000 mg/m3
Carbon Dioxide (CO_2)	0...10000 mg/m3
Ammonia (NH_3)	0...100 mg/m3

Technical Specification

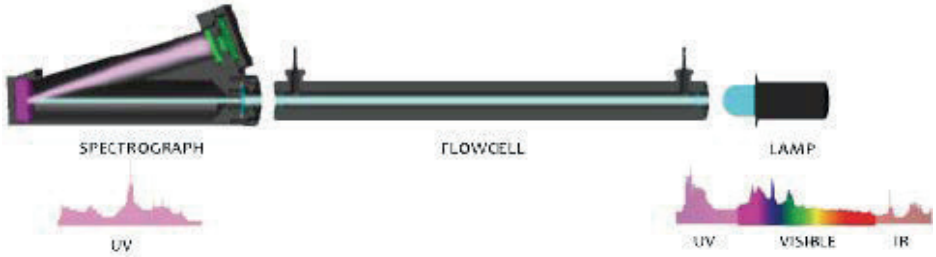
Accuracy	< ± 2 %
Repeatability	< ± 2 %
Detection limit	dependant by component
Response time	< 10 sec
Sample Condition	
Flow	0 ... 2 L/min
Pressure	0... 2 bars
Temperature	-10 ...50 °C (higher on request)
Controller	
Display	8.5" TFT colour screen 16/9 (LED backlight)
Resolution	800 x 480 pixels
Touch screen	Glass to glass
Memory	16 GB SD card
Data transfer	USB Type A
Operating temperature	-10 ...50 °C
Operating humidity	< 90 % RH
Communication output	
Analog	4-20 mA isolated (Active or Passive) / 500 Ω max.
Relay	Programmable limit or fault alarms / 5A (NO) 3A (NC) @ 277 VAC
Digital	RS485 / Modbus (Slave or Master)
Power supply	
Voltage	100 ... 240 VAC (50 - 60 Hz) or 24 VDC
Consumption	< 20 W (60 W max.)
Enclosure	
Type	Wall Mounted
Material	SS 316L / Aluminium epoxy painted
Dimensions	H570mmxW340mm xD200mm / 640 x 370 x 278 mm (HxWxD)
Weight	dependant by execution
Protection class	IP66

We are an innovative company that designs, manufactures and sells instruments for the real-time monitoring of compounds in liquids and gases. Our devices are designed to selectively measure multiple compounds in complex mixtures. This is possible thanks to the combination of three technologies, the result of many years of experience.

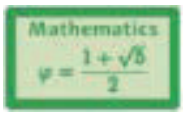
1

High resolution and high sensitivity optical system

Measurement principle based on UV / Vis / IR absorption spectroscopy.



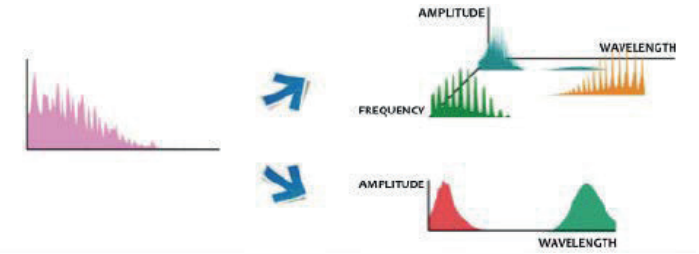
Optical system is designed to achieve high spectral resolution with very large scale dynamics.



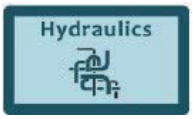
2

Innovative mathematical processing (FTLS)

Selective and precise measurement obtained thanks to the combination of innovative mathematical processing applied to the absorption spectra



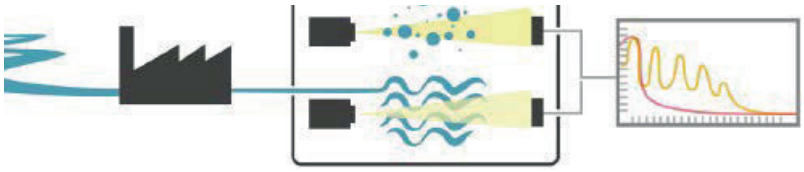
FTLS is the association of Fourier Transform and Least Squares calculations.



3

Selective sampling system without risk of contamination

An innovative fluidic system allows high selectivity of compounds.



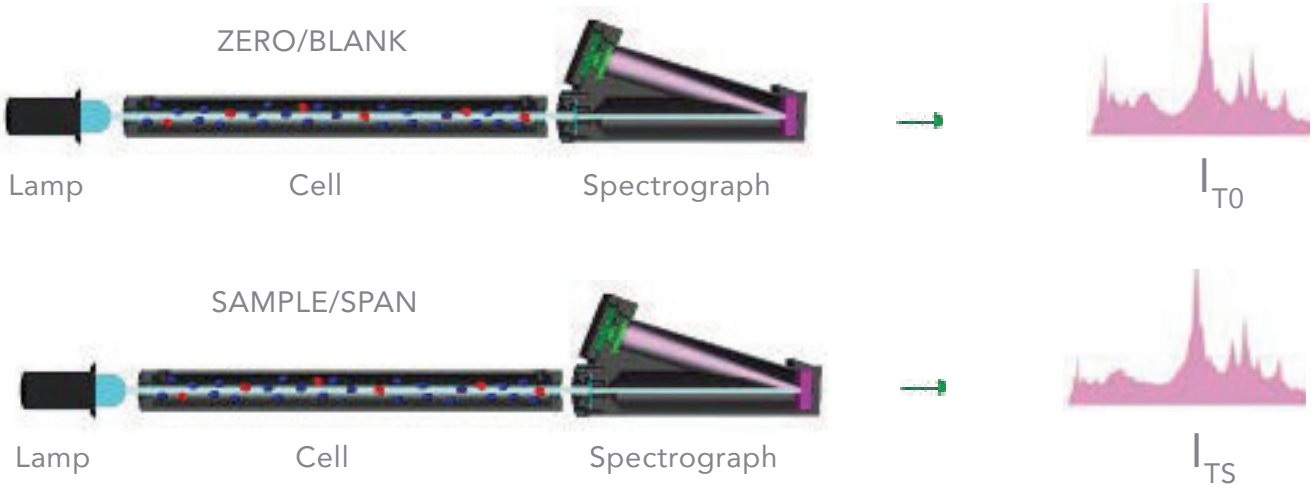
The liquid or gaseous sample is not altered from the point of collection to the analysis cell. With extremly low memory effect.

The use of a high-resolution optical system combined with a powerful mathematical algorithm and an innovative process for selecting compounds ensures the reliability and precision of the instruments

Principle

UV-Visible-IR Spectroscopy

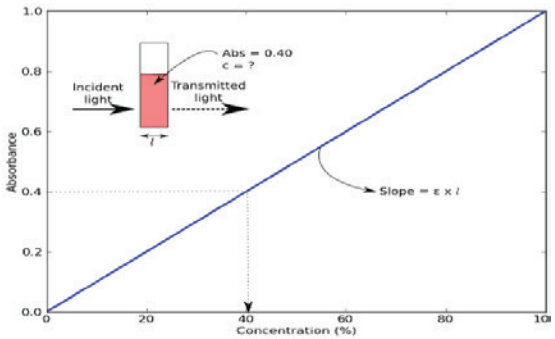
The measuring principle is based on UV spectroscopy according to the Beer-Lambert law. The spectrograph scans from 180 to 280 nm.



The absorption spectrum calculation is the difference between incident light (I_{T0}) on zero and transmitted light (I_{TS}) on the sample. Absorbance is defined with the formula :

$$A = \log \frac{I_{T0}}{I_{TS}}$$

The concentrations of molecules (c) are linear to the absorbance spectrum (A) and the optical path (l) of the measuring cell. The absorption coefficient (ε) is defined with the formula :



$$\varepsilon = \frac{A}{l.c}$$

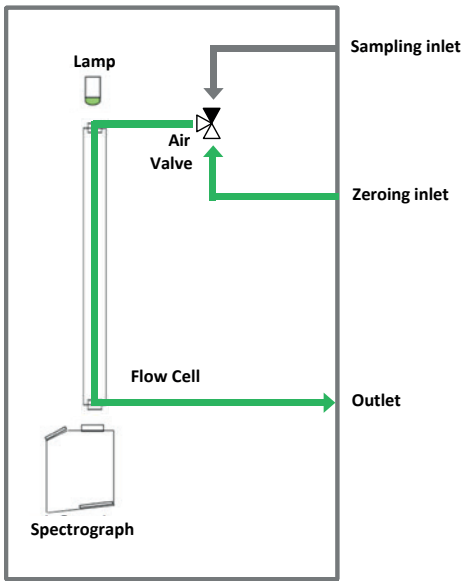
The absorption spectrum of the sample is processed using Fourier Transform and Least Squares (FTLS)

Measure cycle

Absorption Spectroscopy in Gas phase

Compounds are measured by spectroscopy in gas phase with the following steps:

Zeroing

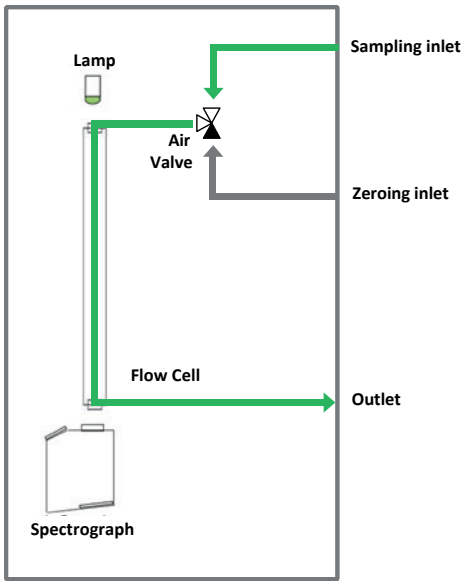


Before starting measurements, an auto-zeroing can be programmed to set up the blank*

You can set up the frequency of auto-zeroing depends on your need.

*Blank: light transmission signal when flow cell doesn't contain compounds that absorbs in the UV range.

Sampling, Measuring and Venting



After zeroing, we can start to measure the sample.

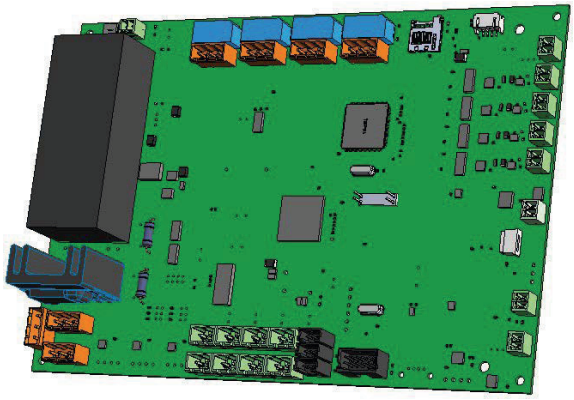
The sample will be introduced from the sampling inlet and go through the gas flow cell where the sample can absorb the UV and IR emitted from the lamp.

The spectrograph will collect the data of light absorbance by the compounds..

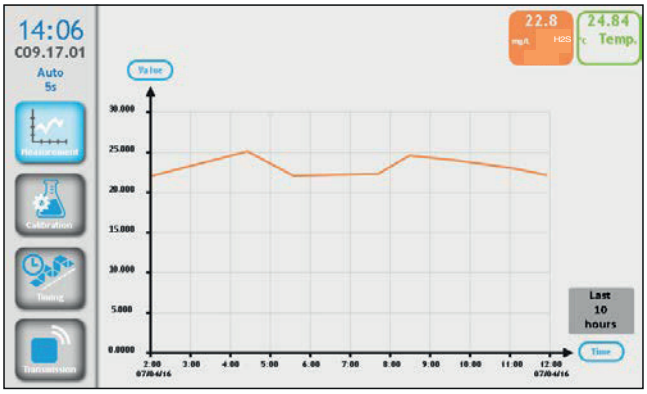
The sample will finally be vented out from the outlet.

We develop:

Our Electronics

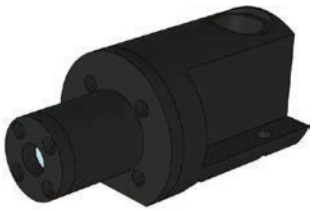


Our HMI



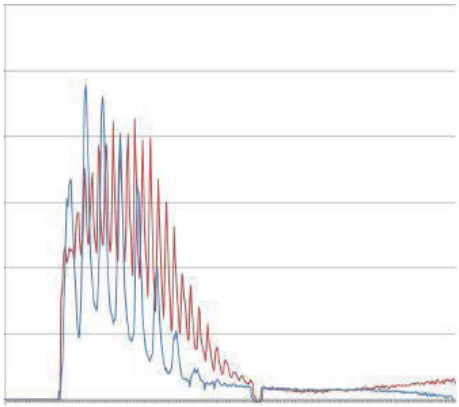
Our Optics

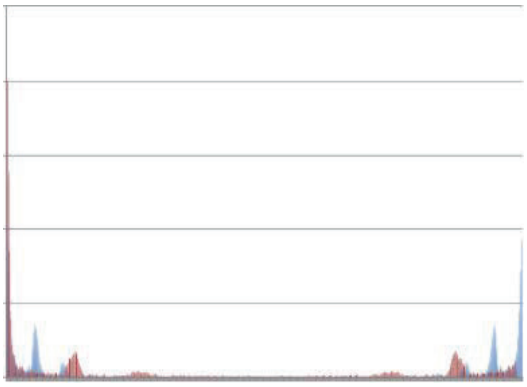
Spectrographe HD

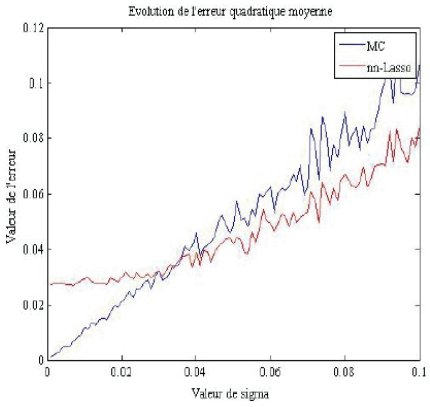


Lamp

Our signal processing



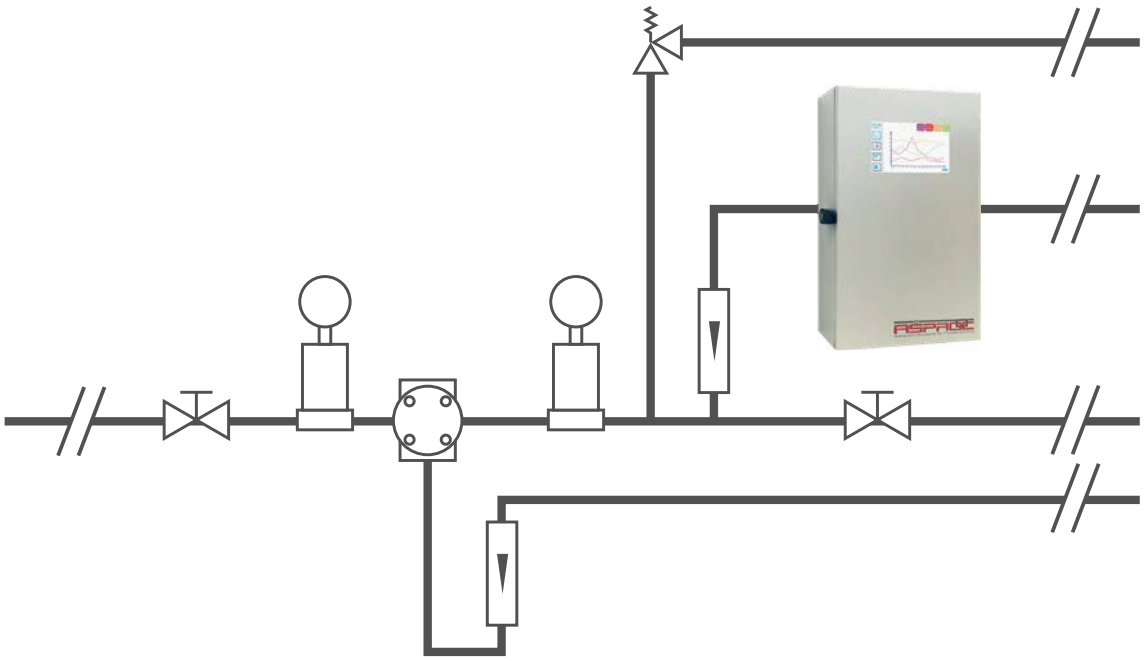




Fourier transform and least squares

Typical conditioning system

General Purpose Area



ATEX Version