



Be selective



L800 & G800

ONLINE MONITORING FOR
LIQUID & GAS ANALYSIS



IN OPTION

WIDE APPLICATION
RANGES



ACCURATE

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ONLINE LIQUID & GAS ANALYZERS

Hemera is an innovative company dedicated to the development, production, and sales of online liquid and gas analyzers. Based in Grenoble, a city recognized by Forbes magazine as one of the world's most innovative, Hemera has strong collaborations with universities and prestigious research institutions.

Our primary objective is to provide solutions that offer selective and sensitive measurements, particularly in detecting and quantifying pollutants at low concentrations.

Hemera's product range serves two distinct markets: those responsible for gas or liquid environmental monitoring to ensure regulatory compliance, and manufacturers seeking to optimize production processes, reduce costs, and enhance performance.

Our analyzers employ a high-resolution optical system, efficient mathematical algorithms, and an innovative sampling system, ensuring reliability and the capability to measure pollutants at extremely low concentrations without interference from the environment.

GAS ANALYSIS APPLICATIONS



LIQUID ANALYSIS APPLICATIONS










Ensure the best water quality

L800 WATER & LIQUID ANALYZER

- ✓ Powerful analytical method
- ✓ High reliability & robustness
- ✓ Customized to your requirements
- ✓ Quality after-sales service
- ✓ Wide application ranges
- ✓ Low maintenance
- ✓ Long life-time
- ✓ No interferences (Turbidity, Color, Salinity...)
- ✓ Highly selective
- ✓ Fast response time

Mono or multi-parameter may be required.

PARAMETERS	METHODS	RANGES	 ACCURACY	 DETECTION LIMIT	 RESPONSE TIME
AMMONIUM — NH_4^+	 UV Spectroscopy - Gas phase	0.1 ... 1000 mg/L*	From 0.1 % to 2 % of full scale	From 0.1 % to 2 % of full scale	From 10 s to 2 min
NITRATES — NO_3^-	 UV Spectroscopy	0.1 ... 100 mg/L*			
NITRITES — NO_2^-	 UV Spectroscopy	0.1 ... 10 mg/L*			
TOTAL NITROGEN — TN	 UV Spectroscopy	0.1 ... 100 mg/L*			
PHOSPHATES — PO_4^{3-}	Colorimetry	0.1 ... 10 mg/L*			
TOTAL PHOSPHATES — TP	Colorimetry	0.1 ... 10 mg/L*			
ORGANIC MATTER — COD_{eq}	UV Spectroscopy - Correlation	0.1 ... 10000 mg/L*			
TOTAL ORGANIC CARBON — TOC	IR Spectroscopy - Gas phase	0.1 ... 10000 mg/L*			
SULFIDES — S_2^-	UV Spectroscopy - Gas phase	0.1 ... 100 mg/L*			
SULFITES — SO_3^{2-}	UV Spectroscopy - Gas phase	0.1 ... 100 mg/L*			
TOTAL SULFUR — TS	UV Spectroscopy - Gas phase	0.1 ... 100 mg/L*			
TOTAL SUSPENDED SOLIDS — TSS	IR Nephelometry	0.1 ... 10000 mg/L*			
TURBIDITY — Turb	IR Nephelometry	0.1 ... 100 NTU*			
COLOR	Visible Spectroscopy	0.1 ... 1000 Pt-Co*			
CHLORINE — Cl_2	UV Spectroscopy - Gas phase	0.1 ... 10 mg/L*			
CHLORINE DIOXIDE — ClO_2	UV Spectroscopy - Gas phase	0.1 ... 10 mg/L*			
TOTAL CHLORINE — TC	UV Spectroscopy - Gas phase	0.1 ... 10 mg/L*			
HYDROCARBON (OIL) — OIW	UV Spectroscopy	0.1 ... 100 mg/L*			
AROMATIC COMPOUNDS — BTEX	UV Spectroscopy - Gas phase	0.1 ... 100 mg/L*			
PHENOL — $\text{C}_6\text{H}_5\text{OH}$	UV Spectroscopy - Gas phase	0.1 ... 100 mg/L*			
DISSOLVED OXYGEN — DO	Visible Fluorescence	0.1 ... 100 mg/L*			
CONDUCTIVITY — EC	Conductimeter	0.1 ... 1000 mS/cm*			
OZONE — O_3	UV Spectroscopy - Gas phase	0.1 ... 10 mg/L*			
pH — H^+	Potentiometry (probe)	0 ... 14*			

*The parameter ranges are examples. Customized ranges on request.

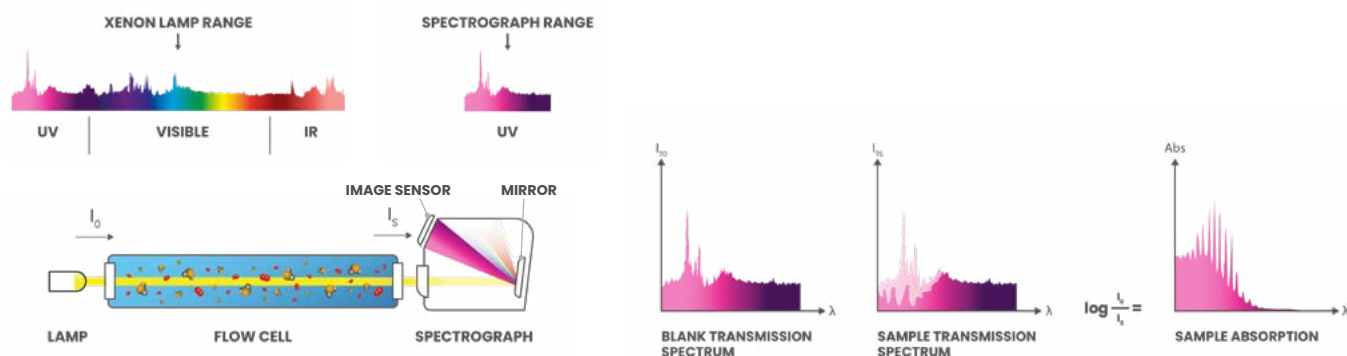
 = Patented

Our powerful analytical method allows us to be more selective and to offer a fast response time

UV FTLS SPECTROSCOPY IN LIQUID OR GAS PHASE

Thanks to the use of a high-resolution spectrograph combined with innovative mathematical processing, this technique allows us to achieve greater precision and selectivity.

The principle is based on the absorption of light. After performing the absorption measurement, Fourier Transform and Least Square calculations are applied through our software to determine the measurement result in real time. As no probe or instrument is in direct contact with the sample, the maintenance frequency is greatly reduced when the measurement is performed by UV absorption spectroscopy.



The gas phase measure

1. Sampling

The neutral fluid is injected into the measuring cell to obtain the blank.

2. Transformation of the ion into dissolved gas

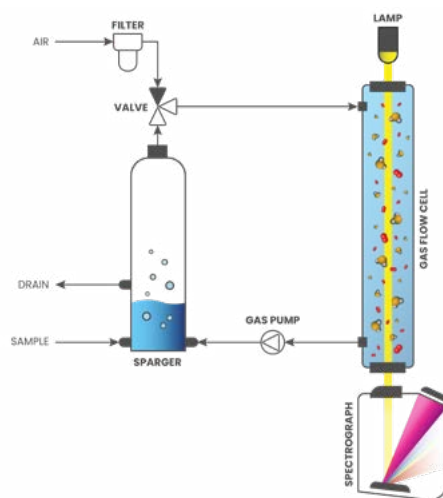
The ion is transformed into dissolved gas in water and extracted in gas phase through a sparger.

3. Acquisition of the absorption spectrum

The sample analyzed is injected into the measuring cell in order to obtain the absorption spectrum.

4. Mathematical treatment

The mathematical treatment is applied to obtain the concentration of the compound.



The liquid phase measure

1. Sampling

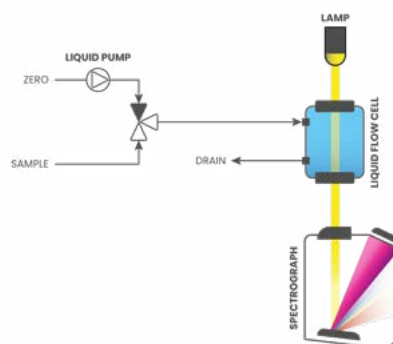
The neutral fluid is injected into the measuring cell to obtain the blank.

2. Acquisition of the absorption spectrum

The sample analyzed is injected into the measuring cell in order to obtain the absorption spectrum.

3. Mathematical treatment

The mathematical treatment is applied to obtain the concentration of the compound.



As some compounds require additional technology, our reference method can be combined with different elements (probes, sensors...) to offer you an analysis of up to 8 compounds.

Our leading product

TOTAL NITROGEN (TN) ANALYZER



In our case, TN analysis corresponds to the concentration of Organic Nitrogen (Norg), Nitrite Nitrogen ($\text{NO}_2\text{-N}$), Nitrate Nitrogen ($\text{NO}_3\text{-N}$) and Ammonium Nitrogen ($\text{NH}_4\text{-N}$). Analyzing total nitrogen is crucial across various sectors for environmental monitoring, agriculture, wastewater treatment, industry compliance, and public health. It helps assess water quality, optimize fertilization practices, gauge treatment efficiency, ensure regulatory compliance, and prevent health hazards associated with high nitrogen levels in drinking water. Overall, total nitrogen analysis is essential for environmental protection, sustainable practices, regulatory adherence, and public health preservation.



The most powerful and selective solution on the market

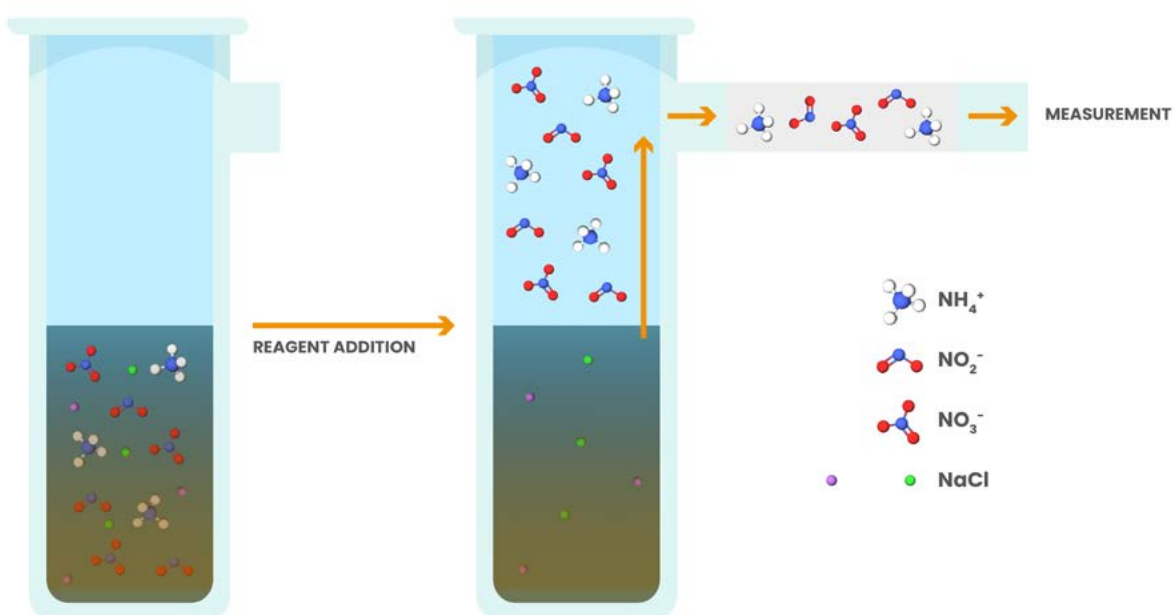


IN OPTION

- ✓ Wide dynamic range: 0.1 to 1000 ppm
- ✓ Detection limit: 0.1 ppm
- ✓ High reliability & robustness
- ✓ Low maintenance and long life-time
- ✓ No interferences (turbidity, color, salinity,...)
- ✓ Highly selective
- ✓ Fast response time: ≤ 1 min

Why is our method so selective?

Our method allows us to avoid interferences such as turbidity, color or salinity, and to have a good accuracy of the concentration of TN.





Assessing and understanding the composition, quality, and safety of gases in various applications


G800 AIR & GAS ANALYZER

- ✓ Powerful analytical method
- ✓ High reliability & robustness
- ✓ Customized to your requirements
- ✓ Quality after-sales service
- ✓ Wide application ranges
- ✓ Low maintenance
- ✓ Long life-time
- ✓ No interferences (CO, CO₂, CH₄, H₂O...)
- ✓ Highly selective
- ✓ Fast response time

Mono or multi-parameter may be required.

PARAMETERS	METHODS	RANGES	ACCURACY	DETECTION LIMIT	RESPONSE TIME
AMMONIA — NH ₃	UV FTLS Spectroscopy	0.1 ... 10 ppm*	From 0.1 % to 2 % of full scale	From 0.1 % to 2 % of full scale	From 10 s to 2 min
NITRIC OXIDE — NO	UV FTLS Spectroscopy	0.1 ... 1000 ppm*			
NITROGEN DIOXIDE — NO ₂	UV FTLS Spectroscopy	0.1 ... 1000 ppm*			
HYDROGEN SULFIDE — H ₂ S	 UV FTLS Spectroscopy	0.1 ... 100 ppm*			
TETRAHYDROTHIOPHENE — THT	UV FTLS Spectroscopy	0.1 ... 10 ppm*			
MERCAPTANS — R-SH	UV FTLS Spectroscopy	0.1 ... 100 ppm*			
CARBONYL SULFIDE — COS	UV FTLS Spectroscopy	0.1 ... 100 ppm*			
CARBON DISULFIDE — CS ₂	UV FTLS Spectroscopy	0.1 ... 10 ppm*			
SULFUR DIOXIDE — SO ₂	UV FTLS Spectroscopy	0.1 ... 1000 ppm*			
SULFUR TRIOXIDE — SO ₃	IR Nephelometry	0.1 ... 100 ppm*			
TOTAL SULFUR — TS	UV FTLS Spectroscopy	0.1 ... 10 ppm*			
CHLORINE — Cl ₂	 UV FTLS Spectroscopy	0.1 ... 10 ppm*			
CHLORINE OXIDE — ClO	UV FTLS Spectroscopy	0.1 ... 10 ppm*			
CHLORINE DIOXIDE — ClO ₂	UV FTLS Spectroscopy	0.1 ... 10 ppm*			
NITROGEN TRICHLORIDE — NCl ₃	UV FTLS Spectroscopy	0.1 ... 100 ppm*			
OXYGEN — O ₂	Visible Fluorescence	0.1 ... 21 %*			
OZONE — O ₃	UV FTLS Spectroscopy	0.1 ... 1000 ppm*			
CARBON DIOXIDE — CO ₂	IR Spectroscopy	0.1 ... 100 %*			
METHANE — CH ₄	IR Spectroscopy	0.1 ... 100 %*			
VOLATILE ORGANIC COMPOUNDS — VOC	PID	0.1 ... 10 ppm*			

*The parameter ranges are examples. Customized ranges on request.

 = Patented

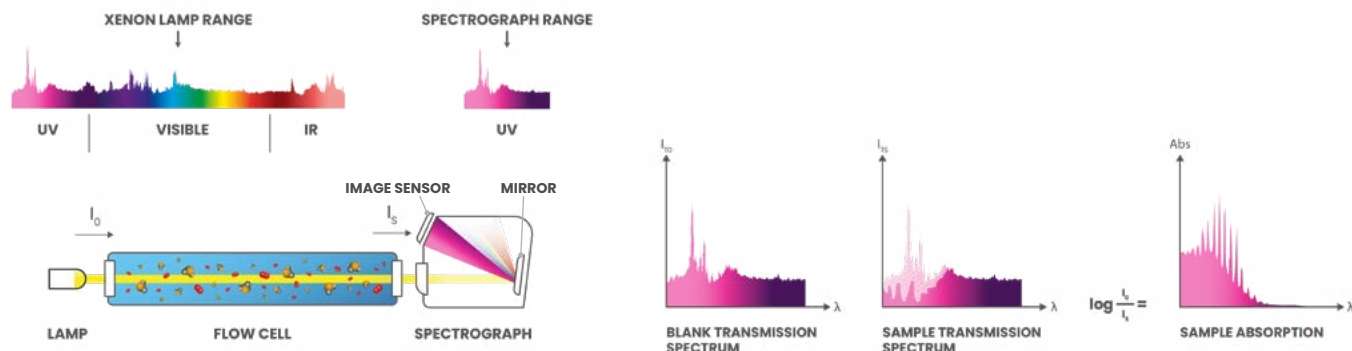
As some compounds require additional technology, our reference method can be combined with different other methods to offer you an analysis of up to 8 compounds.

Our powerful analytical method allows us to be more selective and to offer a fast response time

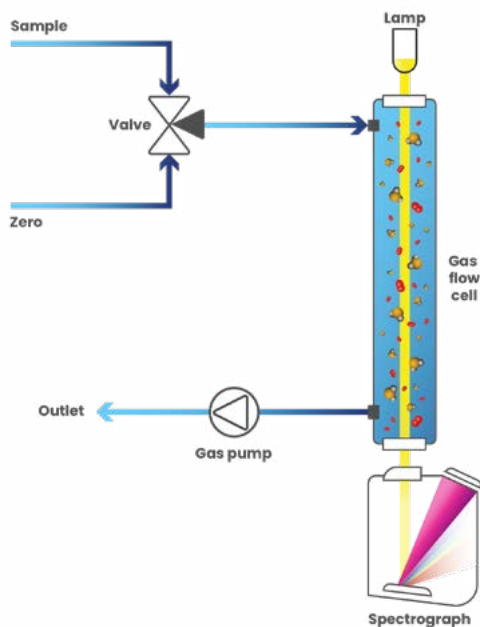
UV FTLS SPECTROSCOPY

Thanks to the use of a high-resolution spectrograph combined with innovative mathematical processing, this technique allows us to achieve greater precision and selectivity.

The principle is based on the absorption of light. After performing the absorption measurement, Fourier Transform and Least Square calculations are applied through our software to determine the measurement result in real time. As no probe or instrument is in direct contact with the sample, the maintenance frequency is greatly reduced when the measurement is performed by UV absorption spectroscopy.



Principle



1. Sampling

The neutral gas is injected into the measuring cell to obtain the blank. Then, the gas sample is injected into the analyzer.

2. Acquisition of the absorption spectrum

The sample analyzed is injected into the measuring cell in order to obtain the absorption spectrum.

3. Mathematical treatment

The mathematical treatment FTLS is applied to obtain the concentration of the compounds of interest.

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

Absorbance (A) is defined with the formula: $A = \log I_{T0}/I_{TS}$

The concentration 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: $\epsilon = A/lc$

Our leading product

HYDROGEN SULFIDE (H₂S) PPB ANALYZER



The analysis of hydrogen sulfide (H₂S) in industry is vital for various reasons. Firstly, it ensures worker safety as H₂S is toxic and flammable, commonly found in industries like oil and gas, refining, and wastewater treatment. Secondly, it ensures compliance with regulatory standards regarding safety and environmental protection. Additionally, monitoring H₂S levels helps in preserving the environment by controlling emissions. Moreover, it assists in optimizing industrial processes by minimizing H₂S formation or capturing it effectively. Lastly, H₂S analysis ensures product quality by preventing contamination, particularly in industries like oil refining. Overall, it plays a critical role in safeguarding workers, meeting regulations, preserving the environment, optimizing processes, and maintaining product quality.



The most powerful and selective solution on the market



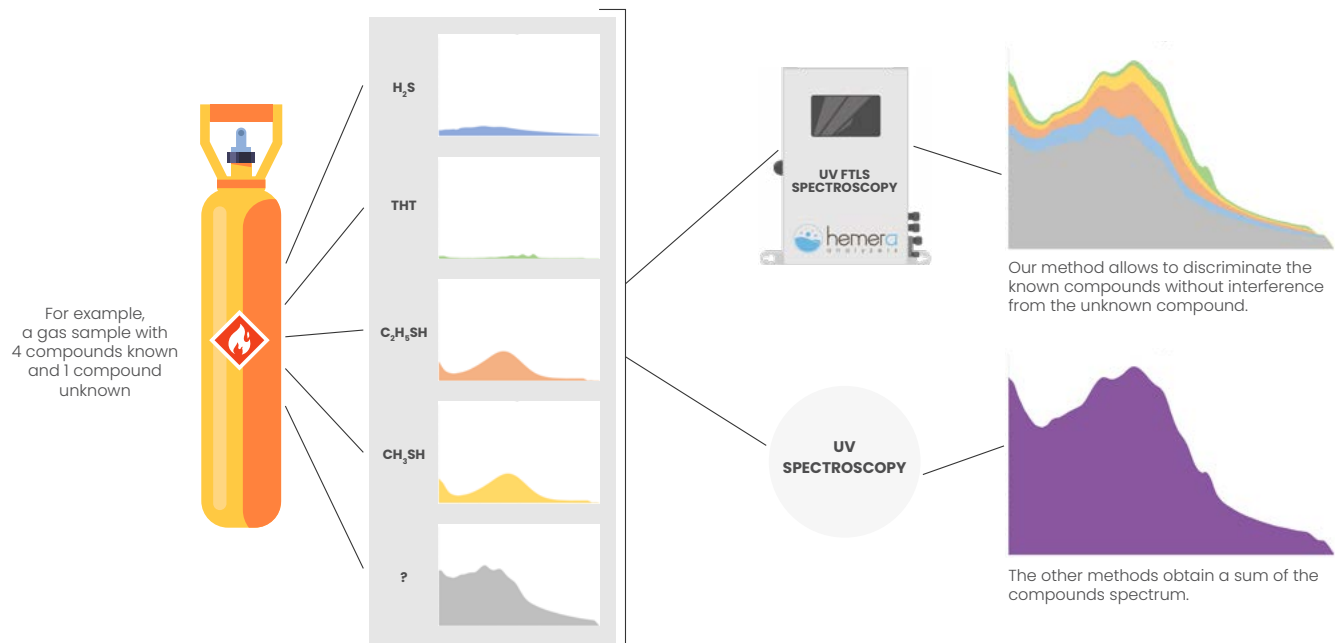
IN OPTION

RACK ENCLOSURE
AVAILABLE

- ✓ Range: 1 to 1000 ppb
- ✓ Detection limit: 1 ppb
- ✓ High reliability & robustness
- ✓ Low maintenance and long life-time
- ✓ No interferences (CO, CO₂, CH₄, H₂O...)
- ✓ Highly selective
- ✓ Fast response time: ≤ 10 s.

Why is our method so selective?

Our method allows us to avoid interferences such as carbon monoxide (CO), carbon dioxide (CO₂), methane (CH₄), humidity (H₂O), and unknown gases.



Technical specifications

SAMPLE CONDITION	
Flow	0...2 L/min
Pressure	< 2 bars
Temperature	5 ... 35°C
CONTROLLER	
Display	8.5" TFT colour screen 16/9 (LED backlight)
Resolution	800 x 480 px
Touch screen	Glass to glass
Memory	16 GB SD card
Data transfer	USB type A
Operating temperature	5 ... 45°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) - Show value, calibration status, fault status...
POWER SUPPLY	
Voltage	100 ... 240 VAC (50 - 60 Hz) or 24 VDC
Consumption	< 20 W (60 W max.)



Our analyzers come with a 2-year parts and labor warranty, subject to normal use.

STANDARD ENCLOSURE



Type	Wall mounted / On a table / Portable (optional handles)
Material	SS316L
Dimensions (HxWxD)	3 SIZES (Depends on the parameter and the method of measurement) — 430x340x195 mm 570x340x195 mm 900x340x195 mm
Weight	± 20 kg
Protection class	IP54 / IP65 in option
Area classification	Safe



**TOUCH SCREEN
GLASS TO GLASS 8.5"**
adapted to several
environment
even aggressive ones



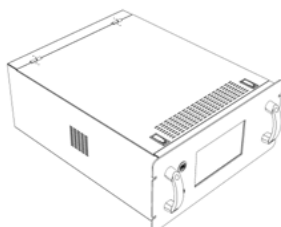
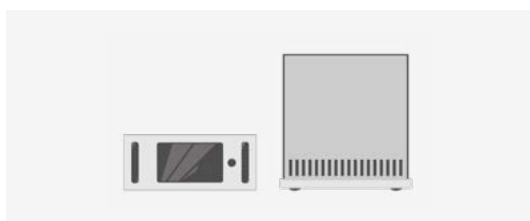
RACK ENCLOSURE Only for gas analysis



Type	Rack 19"
Material	SS316L
Dimensions (HxWxD)	220.5x431x571.5 mm
Weight	± 20 kg
Protection class	IP30
Area classification	Safe



**TOUCH SCREEN
GLASS TO GLASS 8.5"**
adapted to several
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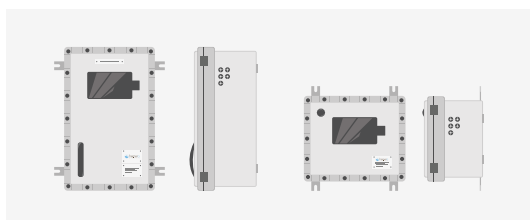
EXPLOSION PROOF ENCLOSURE



Type	Wall mounted - Explosion proof - ATEX
Material	Copper Free Aluminium Alloy (Cu<0.1%)
Dimensions (HxWxD)	2 SIZES (Depends on the parameter and the method of measurement) 413x488x320 mm 640x370x278 mm
Weight	± 50 kg
Protection class	IP66
Area classification	Zone 1 or 2



INTEGRATED SCREEN 8.5"
**CONTROLLABLE WITH
A MOUSE SUPPLIED
WITH THE ANALYZER**
adapted to several
environment
even aggressive ones



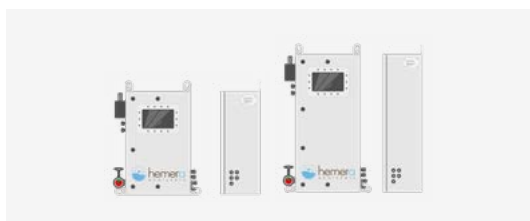
PRESSURISED ENCLOSURE



Type	Wall mounted - Pressurised - ATEX
Material	SS316L
Dimensions (HxWxD)	2 SIZES (Depends on the parameter and the method of measurement) 570x430x205 mm 900x430x205 mm
Weight	± 40 kg
Protection class	IP65
Area classification	Zone 1 or 2



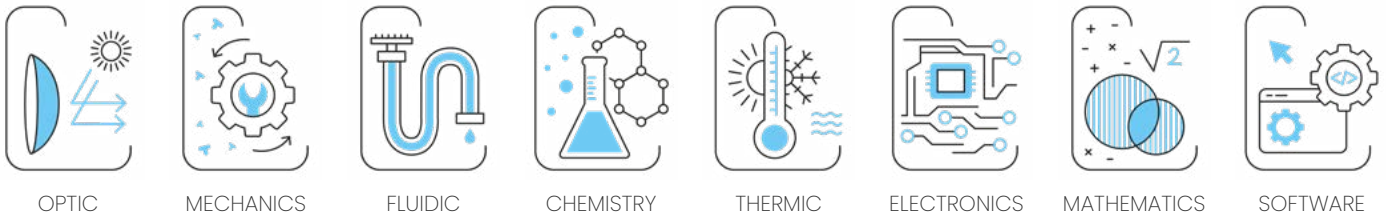
**TOUCH SCREEN
GLASS TO GLASS 8.5"**
adapted to several
environment
even aggressive ones



We are able to offer a detailed analysis and a fitted and customized solution

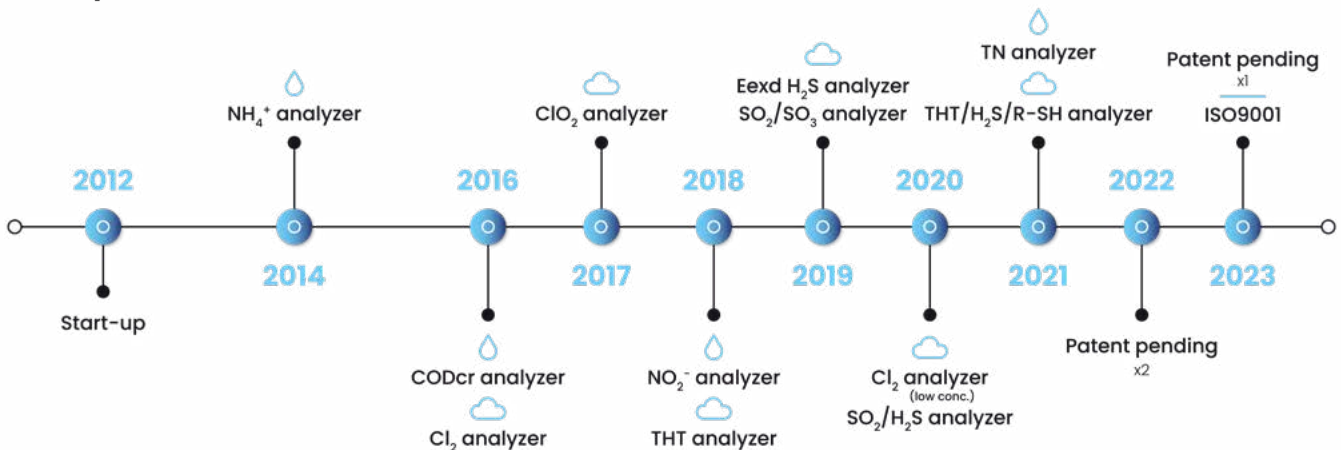
Our skills

“ We attach particular importance in research and development. Our team of engineers works every time to offer you the best solution.



Our multiple skills allow us to have a precise view of any type of situation. We manufacture our own electronics as well as optical equipment such as spectrograph and UV lamps. We have also developed our own software integrated to our analyzer which allows us to have the measurement in real time.

Our footprints



They trust in us





hemera
a n a l y z e r s

*Online liquid & gas
analyzers*



DO NOT HESITATE
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REPRESENTATIVE

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