

TOTAL SULFUR ANALYZER HELIOS S

ACCORDING STANDARDS

ASTM D5453 / ASTM D6667
ASTM D7183 / ASTM D7551
UOP 987 / IP490 / SH/T 0689
ISO 20 846



 **TotalEnergies LICENSE**

 **Eraly**
s'Associés
The Elemental Analysis



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HELIOS S

HELIOS S is the most sensitive and accurate analyzer for sulfur measurement dedicated to Refineries, Quality Control as well as contract laboratories.

By Ultraviolet Fluorescence principle, it detects rapidly Sulfur in liquid, oil, biofuel, lubricating oil, hydrocarbon, solvent, water, gas, LPG and solid samples.

Developed in collaboration between ERALY and end users (laboratory technicians and researchers) this equipment offers unrivaled advantages in ergonomics, reliability and robustness.

Your tranquility counts:

With our new analyzers, you no longer need to choose an analysis method or a measurement range depending on the concentration of your samples.

The analyzer will do it automatically.

IT'S IMPORTANT TO HAVE CHOICE

For liquid samples:

- AutoInjector 1 position (single shot).
- Mini AutoSampler 6 positions, and rinsing vial plus trash.
- AutoSampler 50 positions, with several options (cooling, heating...).

For calibrations:

- Thanks to the linear response of the detector, it is possible to make,
 - Calibration multipoint with 3 certified samples or more (calibration curve).
 - Calibration one point (with single certified sample).

For gas and LPG samples:

- AutoSampler for both gases and LPG (even mixtures).
- AutoSampler only for LPG (even mixtures).
- AutoSampler only for gases.

For configurations:

- Analyzer with separated computer.
- Analyzer with touch screen.
- Horizontal furnace.
- Vertical furnace.

Our analyzer HELIOS S is the most stable, it has a very long term stability with no deviation of the calibration during several months.

The Software HELIO-SOFT export function allows to calibrate with single one or more certified samples, in solid, liquid, gas or LPG.

No matter the type of matrix used for calibration, it is possible to convert the coefficient and use it to measure sulfur in all types of matrix.

THE NEW DETECTOR - Back End SENSOR



Thanks to the configuration Back-end sensor this new generation of detector is more sensitive and **up to 20% more accurate** than the previous.

Equipped with a high-performance optical module, it is the device capable of dosing with excellent sensitivity and signal stability, the very low contents up to 10 ppb of Sulfur and high contents up to 10% of Sulfur.

Ultra low power consumption:
an environmentally-friendly and cost-saving analyzer. Pressure and temperature compensation for high measurement accuracy. Breakthrough design for power saving as well as thermal insulation.

Animated synoptic - Touch screen 7" :

at a glance, see, intensity of the UV Lamp signal, intensity of the PM signal; pressure of the measurement chamber, internal temperature, lifetime of filters.....

6 languages:

French, English, Spanish, German, Chinese, Russian.



Service assistance inside:

detects early signs of trouble, allows predictive maintenance, identifies the needed service. All alarms could be displayed directly on the detector screen. On this screen you can display a picture of the concerned component and/or area.

For each trouble a table will show the minimum and the maximum accepted values, as well as the real time value. Thanks to the online checking and assistance we can handle remotely the entire device.

UV FLUORESCENCE - PRINCIPLE



After sample injection, the pyrolysis occurs in the first zone followed by combustion (oxydation of Sulfur to SO₂) in the second zone of the furnace. Then, combusted sample goes in the detector, where the UV Fluorescence takes place.

The UV Fluorescent is based on the fluorescence of SO₂ due to absorption of ultraviolet (UV) energy. A photo-diode measures the ultraviolet radiation generated by the UV lamp.

This measurement is used during signal processing in order to compensate for any variation of the UV energy. Molecules restore a specific fluorescence in the ultraviolet: this fluorescence is visualized by the PM tube placed near the reaction chamber.

The hydrocarbons aromatic filter conception guarantees the total elimination of hydrocarbon interferences for an extremely accurate measurement.

Detection Limit / Quantification Limit	5 ppb to 10% / 10 ppb to 10%.		
Accuracy RSD %	At 0.1 ppm 0.48 %	At 1 ppm 0.32 %	At 100 ppm 0.84 %.
Injections	20 to 80 µl liquids 10 ml gas 20 µL LPG		
Supply gas	Oxygen 99.998% - 3 bar Argon 99.995 % - 3 bar.		
Electric	110 V / 230 V / 60Hz - 50 Hz / 800W		
Furnace	Temperature Furnace F2 up to 1100°C		
Dimensions (W x H x D)	51 cm x 78 cm x 56 cm / weight 32 kg		

Analyzer with vertical furnace configuration and analyzer with horizontal configuration furnace has the same performances mainly for liquid and gas samples.

PYRO-COMBUSTION SYSTEM



As a manufacturer of tubular furnaces for industry and scientific research, we pay particular attention to the design and manufacturing of the combustion systems and combustion tube for our analyzers.

Nowadays, some famous international brands use our furnaces for their analyzers, this is the sign and proof that we have wide know-how and better technology.

The combustion efficiency, has a direct impact to measurement results. Combustion with injection and oxydation temperature well controlled, without soot production is one of the key of reliable measurement.

- Very robust furnace, guaranteed up to 5 years with no extra cost.
- Designed to facilitate quick replacement of thermocouple and combustion tube.
- Very low energy consumption with temperature accuracy better than $+/- 1^{\circ}\text{C}$.
- No need to use gases (inert and oxygen) during heating, before reaching working temperature.



NEW SOFTWARE HELIO-SOFT



User-friendly and intuitive software.

Function export results to LIMS, to Excel and others commonly used formats such as PDF, HTML, XLS, CSV, or TXT.



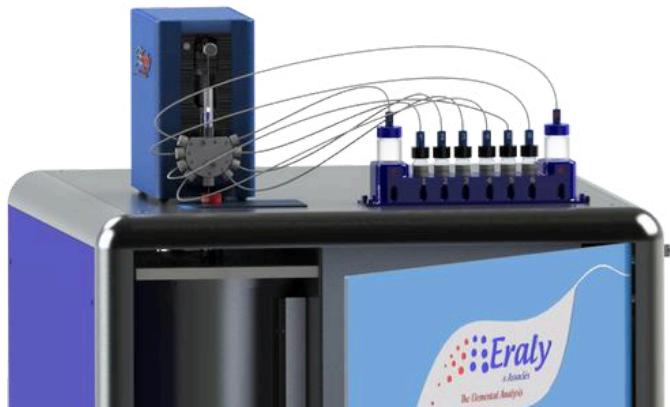
- Verification of calibration stability with graph (type control card).
- Alert function for tracking and replacement of spare parts and consumables.

ACCESSORIES

Mini AutoSampler / Auto-injector

Tray of 1 position (single shot) or 6 positions, plus trash can and rinsing bottle.

Used for sampling and injecting liquids samples (e.g: methanol, petrolether, ethanol, toluene, naphtha, additives, kerosene, gasoline, diesel, bio diesel, bio ethanol, lubricant oil, waxes, organic solvents.....)



Gas and LPG AUTOSAMPLER

According ASTM D6667.

a sampling loop for Gaz and LPG....up to 10 ml.

two regulators of pressure, at the inlet.

two flowmeters

an expansion Loop with 15 ml of volume / LPG.

Used for sampling and injecting Butane, Propane, Methane, Natural Gas, Hydrocarbons and their mixtures (ethylene, methane, etc.).



AutoSampler - 50 Positions

Tray of 50 positions, with cooling and/or heating options.

Used for sampling and injecting liquids samples (e.g: methanol, petrolether, ethanol, toluene, naphtha, additives, kerosene, gasoline, diesel, bio oil, lubricant oil, waxes, organic solvents.....).

Sampling volume adjustable between 10 μ l and 80 μ l. Sampling speed adjustable.

