TOTAL NITROGEN ANALYZER
HELIOS N

ACCORDING STANDARDS
ASTM D4629 / ASTM D6069
ASTM D5762 / ASTM D7184
UOP 981 / UOP 971 / SH/T 0657
ISO 11905

made in France

::Eraly
& Associés
The Elemental Analysis

HELIOS N

CHEMILUMINESCENCE NITROGEN ANALYZER

Made In France

ON/OFF

TotalEnergies **LICENSE**

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The Elemental Analysis

50 ANS YEARS
1972 - ERALY & ASSOCIES - 2022
MERCI - THANK YOU

HELIOS N

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

By Chemiluminescence principle, it detects rapidly Nitrogen in liquid, oil, biofuel, lubricating oil, 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 ergonomy, reliability and robustness.

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:

Thansk 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 N 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 nitrogen in all types of matrix.

It is possible to make various calibrations, according measurement ranges as well as method of calibration and save them in the software.
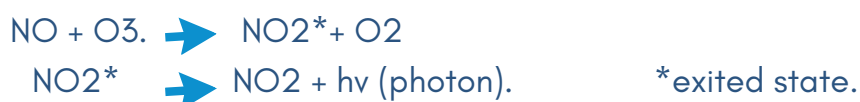
THE NEW DETECTOR - Generation E

The Nitrogen detector has an on/off function of measuring compensation of chamber pressure, sample pressure, internal temperature in accordance with the values during calibration.
This function among others, helps to increase accuracy of the measurements.
It has an innovative conception of the PM module for excellent sensitivity and signal stability.

Nitrogen detector generation E is capable of dosing very low contents up to 10 ppb of Nitrogen and high contents up to 10% of Nitrogen.

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

Animated synoptic - Touch screen 7":
at a glance, see, 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 assitance we can handle remotly the entire device.

CHEMILUMINESCENCE - PRINCIPLE ⌄

After sample injection, the pyrolysis occurs in the first zone followed by combustion in the second zone of the furnace. Then, combusted sample goes in the detector, where the Chemiluminescence takes place.

Luminescence is the characteristic of many substances to emit light under the effect of an excitation. This phenomenon, produced with good energy efficiency, takes the name of chemiluminescence when it is caused by a chemical reaction.

In our case, the principle consists in detecting the photons emitted during the reaction of the nitrogen– oxide NO with ozone O3.

$$NO + O3. \rightarrow NO2^* + O2$$
$$NO2^* \rightarrow NO2 + hv \text{ (photon).} \qquad \text{*exited state.}$$

This light energy of determined wavelength is filtered and measured by a photomultiplier tube.

Detection Limit / Quantification Limit	**5 ppb to 10% / 10 ppb to 10%.**
Accuracy RSD %	**At 0.1 ppm At 1 ppm At 100 ppm** **0.51 % 0.40 % 0.88 %.**
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.
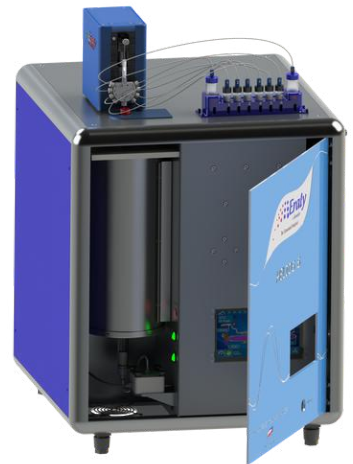
PYRO-COMBUSTION SYSTEM ⌄

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.

TThe combustion efficiency, has a direct impact to measurment results. Combustion with injection and oxydation temperature well controlled, whithout 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°C.
- No need to use gases (inert and oxygen) during heating, before reaching working temperature.
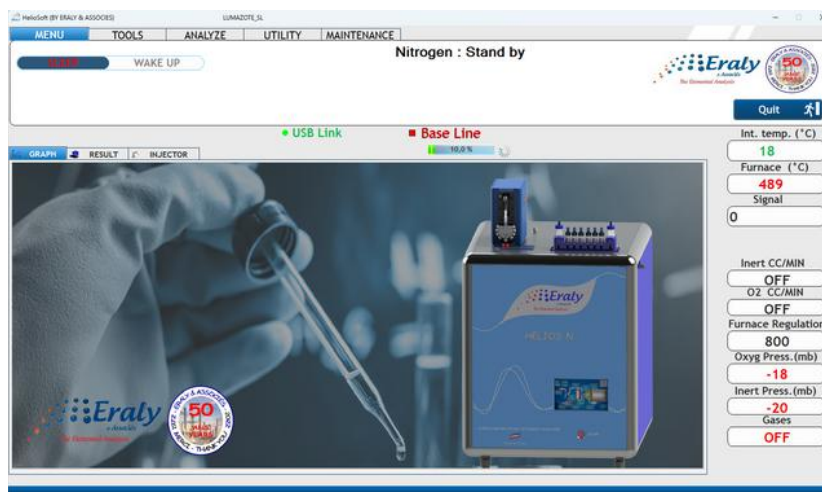
NEW SOFTWARE HELIO-SOFT ⌄

User-freindly 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.
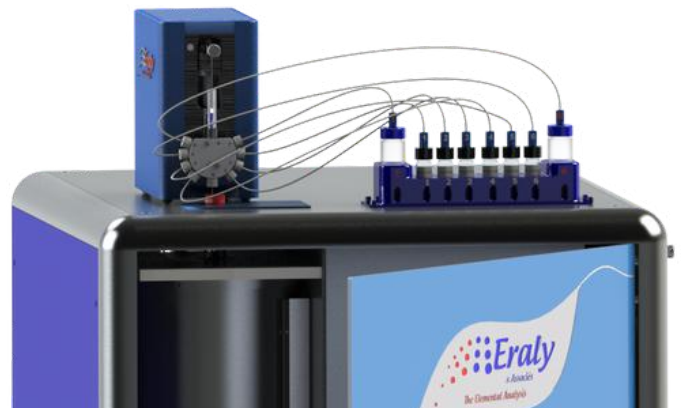
Mini AutoSampler / Auto-injector

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 SAMPLER
Compatible with standard: ASTM D6667.

Composed of 2 sampling loops, one for gas and one for LPG.

Used for sampling and injecting Butane, Propane, Methane, Natural Gas,

Hydrocarbons and their mixtures (ethylene, methane, calibration gas mixes, 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 µl and 80 µl. Sampling speed adjustable.