



**Advancing Automation Together**

**XPLORER<sup>Plus</sup>**  
TN/TS/TX ANALYZER

Enhance efficiency, accuracy, and reproducibility in laboratory workflows



# Introduction



## The Next Generation of Precision in TN/TS/TX Analysis

Building on the legacy of the acclaimed Xplorer analyzers, trusted by professionals since 2009, the TRACE Xplorer<sup>Plus</sup> represents the next evolution in combustion elemental analysis. Designed by TRACE with direct input from end users and the use of available TSHR Combustion Technology, this advanced platform brings innovation, reliability, and performance together like never before and meet customers' expectations in production, commercial testing and R&D centres within the chemicals and energy market segments.

Positioned in the same space-saving benchtop format, the Xplorer<sup>Plus</sup> features a completely re-engineered internal flow path, delivering enhanced precision, increased robustness, and unmatched reliability for trace level total sulfur, nitrogen and chlorine analysis in a wide range of automotive fuels, chemicals, additives, solids and gas/LPG applications.

The heart of the new analyzer is the newly developed Xpro<sup>Plus</sup> combustion tube based on the TSHR NEX-Z combustion tube technology. This cutting-edge component supports a broader range

of sample matrices, offers exceptional detection limits, and ensures minimal carry-over for maximum performance.

Shaping the future of combustion elemental analysis with the Xplorer<sup>Plus</sup>.

### Get the best Features out of the smallest Footprint

The presence of the advanced auto-clean feature for the direct injection system, keeps the Xplorer<sup>Plus</sup> itself automatically in optimum condition. This will enhance the instrument uptime and reduce user maintenance work. The Xplorer<sup>Plus</sup> is standard equipped with mass flow controllers for both carrier gas and oxygen, which will result into consistent results and high-precision performance for every sample analysis. Additional leakage sensors ensure higher uptime by catching issues before they affect performance. Key components are easily accessible, no need to shut-down and open-up the analyzer. Total Nitrogen analysis is cleaner and more precise, thanks to integrated background elimination technology, standard available in every XplorerPlus Nitrogen/Sulfur configuration.

# Xpro<sup>Plus</sup> Furnace Tube

## The solution for advanced combustion capabilities

The newly developed Xpro<sup>Plus</sup> combustion tube features an innovative dual-collision technique combined with an extended flow path design. This advanced configuration creates a longer gas pathway, significantly enhancing precision and accuracy throughout the combustion process.

Engineered for performance and convenience, the Xpro<sup>Plus</sup> requires no consumables, such as catalysts or quartz wool, and is designed to handle virtually any sample matrix with ease. It ensures reliable results and seamless operation, redefining what's possible in combustion elemental analysis.

### Unrivaled Detection Performances

Based on many years knowledge and experiences the newly in-house designed TS- UV-F detector ensures a more robust alignment of the flasher lamp, resulting in increased lamp lifetime and improved long-term stability for trace level Total Sulfur analysis. The Xplorer<sup>Plus</sup> TN/TS analyzer achieves detection limits down to 10 ppb for both Total Sulfur and Total Nitrogen analysis, without the use of add-ons such as a trap and release module.

Micro-coulometric determinations of chlorine and sulfur are seamless with our system. The conditioned coulometric cell features a unique Auto-Gain function that ensures accurate measurements, while the preparation of the measuring cells is both simple and user-friendly.

### Enhanced versatility of sample introduction modules

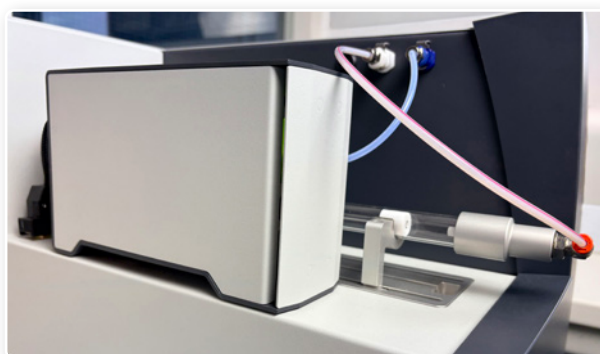
Accurate combustion and analysis begin with a precise and controlled introduction of sample material into the furnace tube. TRACE has redesigned the syringe and boat sample introduction modules, making them more versatile and easier to use, which enhance to improve precision of sample data and shorten analysis times.

The Boat Cooling<sup>Plus</sup> is an optional boat cooling module, for introduction of liquids samples, utilizing Peltier cooling technique for faster cool down of sample cups, shortening analysis times to less than 5 minutes.

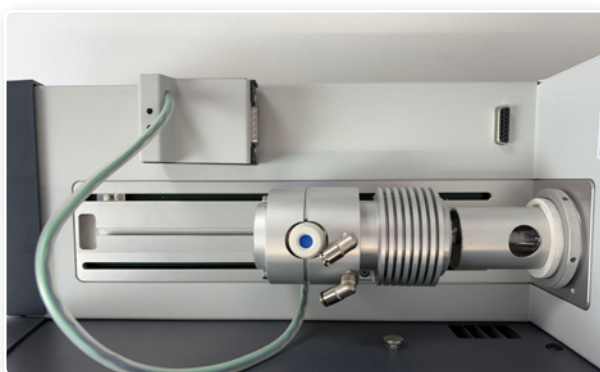
With faster internal temperature monitoring and control, the Liquids Module<sup>Plus</sup> delivers more accurate temperatures and a higher range (max temperature of 600 °C). This enlarges the range of sample matrices and improves productivity.



XPro<sup>Plus</sup>, combustion tube



Boat Cooling<sup>Plus</sup>



Liquids Module<sup>Plus</sup>

# Procedure

## Excellent Productivity for solids, liquids and gas/LPG analysis

Xplorer<sup>Plus</sup> analyzer configurations can be extended with optional autosamplers to increase the productivity of your workflow and automate your daily-lab work.

The Vectra liquids autosampler is standard equipped with 2 trays of 50 positions and can be optional extended with 2 conditioned sample trays and a conditioned syringe to cool or warm up the syringe during sample handling and injection. This unique feature of temperature control of both syringe and sample tray will ensure optimal sample integrity, improved reproducibility, and reliable handling of temperature-sensitive samples across a wide range of analytical applications

The newly developed GLS<sup>Plus</sup> module is capable of analyzing pressurized LPG up to 100 bar and pressurized gas samples up to 50 bar. For applications involving non-pressurized gas samples, an optional configuration extends the functionality of the GLS<sup>Plus</sup> to accommodate these sample types. As a result, the GLS<sup>Plus</sup> offers a comprehensive solution for the analysis of LPG samples, as well as both pressurized and non-pressurized gas samples.

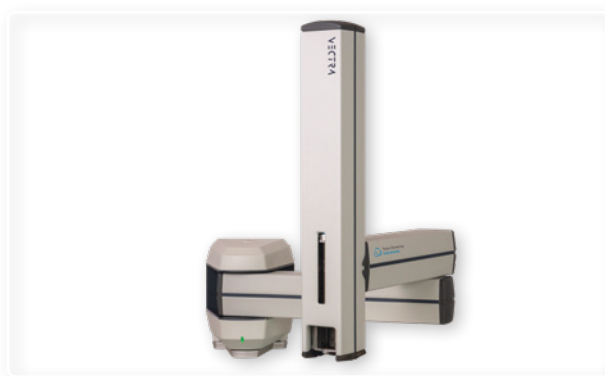
For the analysis of solid sample materials, the Newton Solid Sampler can be mounted on any Xplorer<sup>Plus</sup> model, enabling fully automated analysis of 20 samples, with an optional expansion to a maximum of 40 samples.

### **Nitrogen Oxide Correction Technology (NO-CT™)**

NO-CT™ technology corrects and eliminates the possible interference of Nitrogen to the Sulfur signal as stipulated in the ASTM D5453 method and reported non-biased Total Sulfur data of your samples which may contain high nitrogen content. The software wizard corrects for the possible Nitrogen interference which is standard included in TraceLINK software package.

### **Analytical Software Platform**

TraceLINK software improves the productivity of your lab. It guides the user in performing reliable routine analyses efficiently. The intuitive user interface hardly needs any explanation. Modify sample lists and evaluate data in just a few clicks. Sample data is transferred easily to LIMS or exported in commonly used formats.



Vectra, liquids autosampler



Newton, solids autosampler



GLS<sup>Plus</sup>, gas & LPG sampler

# Test Method Compliance

| Total Sulfur by Pulsed UV-Fluorescence | Total Nitrogen by Chemiluminescence | Total Sulfur by Micro coulometric titration | Total Halogens by Micro coulometric titration |
|--|-------------------------------------|---|---|
| ASTM D5453                             | ASTM D4629                          | ASTM D3120                                  | ASTM D4929                                    |
| ASTM D6667                             | ASTM D5176                          | ASTM D3246                                  | ASTM D5194                                    |
| ASTM D7183                             | ASTM D5762                          | ASTM D3961                                  | ASTM D5808                                    |
| EN ISO 20846                           | ASTM D7184                          |   | ASTM D7457                                    |
| NEN 17178                              | UOP 981                             |   | UOP 910                                       |
| UOP 987-A                              | UOP 936                             |   | UOP 779                                       |
| JIS 2541                               | DIN 51444                           |   | EN 14077                                      |
|  | JIS 2609                            |   |   |

\*The Xplorer<sup>Plus</sup> complies with, but is not limited to, the above international standards. Review our website for the complete overview.

## Typical Applications

|                    |   |
|--------------------|---|
| Refinery products  | Diesel, gasoline, naphtha's, distillates, crude oil, mineral oil and pyrolysis oil. |
| Renewable Fuels    | UCO, FAME, SAF, HVO, VGO, HAFAS, B100 and Biodiesel blends                          |
| General Chemicals  | Organic chemicals, light hydrocarbons, refinery intermediates.                      |
| Polymers, Plastics | Lubricants, synthetic rubber, plastic-derived materials, and solid like polymers.   |
| Gases and LPG      | Liquefied petroleum gas (LPG), industrial gases, and other (bio) gaseous streams.   |

## Analyzer Configurations

|                            | Xplorer <sup>Plus</sup> S | Xplorer <sup>Plus</sup> N   | Xplorer <sup>Plus</sup> NS           | Xplorer <sup>Plus</sup> TX     |
|----------------------------|---------------------------|---|--------------------------------------|--------------------------------|
| Parameter                  | Total Sulfur              | Total Nitrogen  | Total Sulfur/Nitrogen (simultaneous) | Total Halogens<br>Total Sulfur |
| Detection                  | UV-F                      | CLD   | UV-F & CLD                           | MCT                            |
| Sample introduction        |                           | Direct injection Module <sup>Plus</sup> (liquids)<br>Boat Module (liquids & solids)<br>Boat Cooling <sup>Plus</sup> module (liquids only)   |                                      |                                |
| Autosampler liquid samples |                           | Vectra: (Standard supplied with 2 X 50 position tray for 2 mL vials<br>- Upgradable to max sample trays of 5 (up to 250 positions)<br>Optional: Conditioned tray for cooling and warming (Max 2 X 50 position)<br>Optional: Conditioned syringe setup for cooling and warming the syringe |                                      |                                |
| Autosampler Solid samples  |                           | Newton: standard with 20 positions<br>Optional: additional sample tray to extend to 40 positions  |                                      |                                |
| Autosampler Gas/LPG        |                           | GLS <sup>Plus</sup> : pressurized Gas/LPG and non-pressurized Gas (Optional)  |                                      |                                |
| Autosampler Gas            |                           | GBS (10 position Gas bag sampler)   |                                      |                                |

# Get in Touch!



## Visit our website

Additional information can be found on our website

[www.trace-instruments.com](http://www.trace-instruments.com)



## Ask a Question

Contact us via E-mail and we will get back to you as soon as possible

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## Call us

If you require direct assistance, don't hesitate to call us!

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## Worldwide automation solutions



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Velaris reserves the right to change the specifications and the appearance of the equipment without further notification.

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