



Trace Elemental  
Instruments



## // XPLORER-V

Next-Gen Nitrogen and Sulfur Analysis

The Xplorer-V is a fully automated Nitrogen and Sulfur analyzer that offers the most features out of the smallest footprint. Completely optimized for your (liquid) hydrocarbon sample analysis, offering fast combined TN/TS analysis, top detection performances, smart operation features, data-driven robustness, and a fully loaded method library. All in one single configuration.

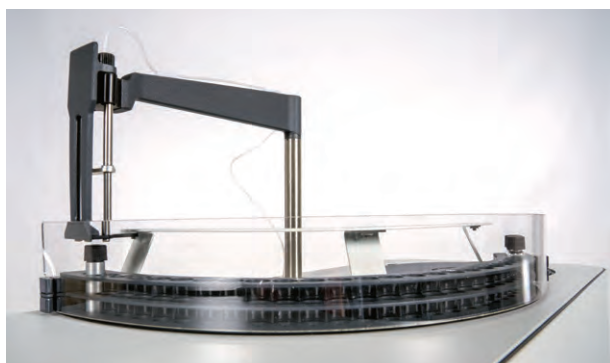
The analyzer produces accurate results rapidly and suggests user actions based on extensive data collection. A solution you can rely on. The Xplorer-V is designed to provide the best analytical experience when running (liquid) hydrocarbon applications according to relevant international test methods, such as ASTM, DIN, ISO, and UOP.

## Most Features out of the smallest Footprint

The Xplorer-V utilizes a 26 position liquid autosampler, vertically oriented furnace, and best-in-class detectors to deliver spot-on liquid sample results in 2.5 to 6 minutes, depending on the application. Optionally, the analyzer can be configured with sampling systems for the automated analysis of LPG and Gaseous matrices. The various system components are perfectly aligned, enabling accurate sample introduction, combustion, and conditioning, which create the ideal circumstances for unparalleled detection performances. This powerful configuration comes together in the smallest combined Nitrogen and Sulfur analyzer on the market.



## Run your Liquid Sample Analyses in 2.5 Minutes!



The XLS-26 liquid autosampler is standard included and integrated within the footprint of the analyzer. A unique automatic sampling and injection device that reduces your workload and improves analytical consistency. It operates with a constant rate injection mode and a high capacity microliter syringe. After each sample dispense, a selectable volume of solvent rinses the injection syringe. Cross-contamination is avoided because the sample never gets in contact with the syringe.

The analysis time is determined dynamically based on the selected sample volume or measuring method. The pre-loaded method library provides measuring methods that follow the guidelines of related ASTM, ISO, and UOP test methods. Calibration sequences are created effortlessly through the auto-dilution function and associated software wizard.

XLS-26 Features	Benefits
Auto-dilution function	Time saving - Auto calibration
Small footprint	Save bench space
Fast analysis time	Higher sample throughput
Efficient needle wash	Reduced carry over
Accurate and repeatable sampling of 5 - 250 $\mu$ L	Broadens application range
LED system status indication	Intuitive design

## Xpro-V™ - All Matrices Perfectly Combusted

All samples are oxidized completely in an oxygen-rich environment at high temperatures. TE Instruments offers a lifetime warranty on the robust dual-zone furnace. The specially developed Xpro-V™ combustion tube features a single-stage capturing and vertical collision flowpath technique.

The single-stage capturing filter protects the downstream flow path and is “self-cleaning,” as it continuously regenerates itself by the high temperatures and presence of an oxygen flow.

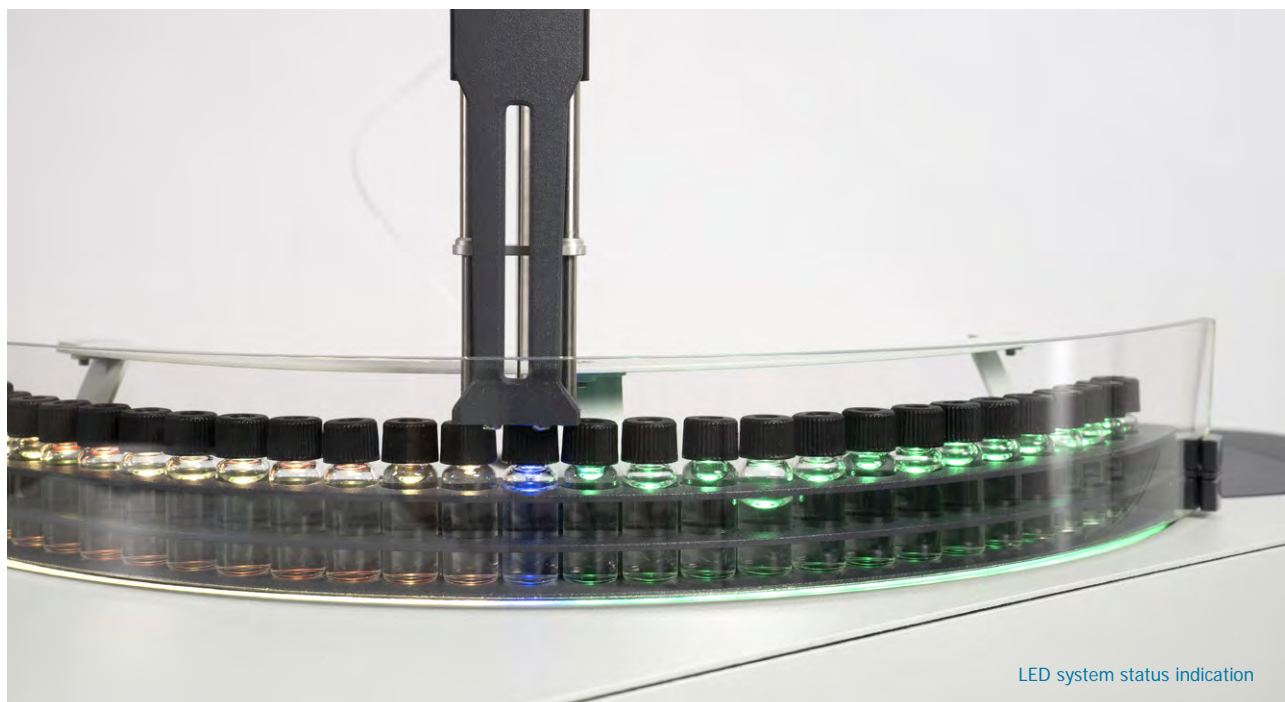
By special design and placement of the Xpro-V™, a forced collision flow heading down the tube is created. After passing the internal filter, all gases need to go up again to the exit. With this combustion setup, a longer pathway is created, forcing all the gasses to travel an extended pathlength. Due to its unique design, the Xpro-V™ combustion tube requires no consumables, such as catalysts or quartz wool. Custom introduction inlays are available for the most challenging applications. Combustion tubes and introduction inlays are easily exchanged in less than a minute without using a screwdriver.



lifetime warranty on the robust dual-zone furnace

## Unrivalled Detection Performances

Accurate sample introduction followed by complete combustion and proper conditioning creates the ideal circumstances for unparalleled detection performances. The Xplorer-V achieves detection limits of 10 ppb for Total Sulfur and 10 ppb for Total Nitrogen, without the use of add-ons such as a trap and release module. These outstanding detection limits have been determined independently following the methodology of the ISO 11843. On top of that, the analyzer provides unsurpassed signal stability over a longer period of time. The high signal stability reduces the calibration interval significantly and ensures you can rely on the precision of the analyzer.



LED system status indication

## Focus on what You do Best / The Analyzer that Works for You

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Instrument control should go smoothly, regardless of the operator level. Ease of use is at least as important as the analytical performance of a device. Success depends on the duration and accuracy of sample analyses, generated by the instruments and staff. The Xplorer-V provides intelligent hardware solutions and clear operating interfaces, which enable the user to perform sample analyses efficiently and cost-effectively with virtually no downtime. Surveyor, refinery, and QC labs must determine the Sulfur and Nitrogen content with a decreasing amount of staff in an increasing number of samples, fully compliant with a variety of test methods. The Xplorer-V makes sure you are ready for whatever lies ahead.

### Cost-effective - Best Return on Investment

- Save bench space and increase the value of your lab with the smallest Nitrogen and Sulfur analyzer.
- High sample throughput - advanced sampling systems for liquid, gas, and LPG matrices.
- Energy efficient - low consumption of power and inert gases.

### Maximum Uptime - Intelligent Hardware Features

- Auto-Clean Function - Instrument flow path is automatically cleaned when put in standby mode or whenever desired.
- Optimum Nitrogen determination - background noise elimination kit standard included.
- Optimum Sulfur Determination - NO-CT™ corrects results for potential Nitrogen Interference.
- Ease of Use - Combustion tubes and introduction inlays are easily exchanged in less than a minute, without using screwdrivers or touching hot clamps.
- Easy accessible inline filters and permeation tube gas dryer at front compartment.
- Easy accessible particulate filter at sample introduction port protects the permeation tube gas dryer.

### Data-driven Robustness

- Obtain valuable data insights - TEIS Software Counter-Center™ monitors hundreds of instrument variables translated into clear dashboards.
- Stay ahead and maximize uptime - the Counter-Center™ notifies users on upcoming consumable replacements, status of system components, and projected maintenance.
- Determine the source of a flow-loss, if there is any, by doing a Self-Test through the wizard.

### Check on your Instrument - Anytime, Anywhere

- Operate the analyzer through the PC or incorporated touch screen.
- Check and control your instrument on remote through the browser interface.
- All devices run on the highly intuitive TEIS software platform.



"self-cleaning" Combustion Tube Xpro-V™



## TEIS Analytical Software Platform

TEIS Analytical 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 such as PDF, HTML, XLS, CSV, or TXT. All devices run on the same software platform; multiple instruments can be operated from one PC.

- **Method Manager**  
Use default or customized methods from the pre-loaded library
- **Device Status**  
Status overview of every connected device
- **Sample Manager**  
Clear data collection, processing, and (customized) reporting
- **Task Manager**  
Schedule or prioritize tasks automatically
- **Counter-Center™**  
Large-scale operational data collection
- **Dashboards**  
All important parameters at a glance



## Test Method Compliance & Typical Applications

The demand for accurate analysis of low Nitrogen and Sulfur concentrations is growing. The Xplorer-V TN/TS easily meets this demand by producing unmatched results in repeatability- as well as reproducibility tests of different test methods and related matrices.

### Test Method Compliance at a Fingertip

TEIS Software features an extensive method library - system settings are automatically adjusted based on the selected method, following specific application- or international test method requirements.

### 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. A software wizard to calculate and correct for the possible Nitrogen interference is standard included in the Xplorer-V TN/TS.

### Test Method Compliance

Total Sulfur by Pulsed UV-Fluorescence	Total Nitrogen by Chemiluminescence
ASTM D5453	ASTM D4629
ASTM D6667	ASTM D5176
ASTM D7183	ASTM D7184
ASTM D7551	UOP 981
EN ISO 20846	UOP 936
NEN 17178	
UOP 987-A	



## Typical Industries & Applications

Refinery	(Petro)chemical	Biofuels
Crude Oil	Aromatic Hydrocarbons (e.g. Ethylbenzene, Nitrobenzene, Xylene, Toluene)	Bio diesel
Fuels (e.g. Diesel, ULSD, Gasoline, Kerosene, Jet fuel)	Organic Solvents (e.g. Hexane, Octane, Acetone, Methanol, Ethanol, Benzene, Isopropanol)	Bio ethanol
Liquid Hydrocarbons	Mixtures	Renewables
LPG & Gas (e.g. Butane, Propane, Methane, Natural Gas, Gaseous Hydrocarbons)	Ethylene, Propylene	UCO / UCOME
Condensates	Polymers (e.g. PE, PP, PET)	Fatty Acids
Distillates (Naphtha, Petroleum ether)	Additives	Palm Oil
Lubricating Oils & Waxes		Waste-based Feedstocks
Catalysts		



## The Combustion Experts

TE Instruments has a rich history in the development and production of trace elemental combustion solutions. Since 1993, our home base in Delft, the Netherlands, facilitates a strong network of well-integrated departments such as Application Development, Research & Development, Glass Manufacturing and Production/Assembly. This allows us to quickly respond to customer needs. TE Instruments controls the entire production process of its analyzers, starting from fundamental research up to warehouse shipments. All glassware, including combustion tubes and introduction inlays, are designed, developed, and manufactured by TE Instruments. We are dedicated to developing targeted solutions for elemental combustion analysis, with the quality you expect and the attention you deserve.

## Optional Sampling systems for Gaseous Matrices and LPG

### GLS - Pressurized Gas & LPG Autosampler

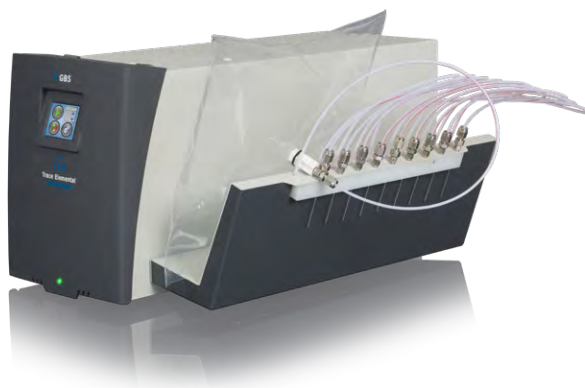
The GLS is the most advanced automated sampling system for LPG and gas samples contained in pressurized cylinders. The GLS excels in terms of safety, ease of use and accurate sampling through a combination of unique hardware and software features.



Features	Benefits
Fully Automated Sampling	Ease of use & Accuracy - No manual valve handling
Multiple Loop Injection Calibration	Ease of use & Cost-effective - Accurate creation of calibration curves
Liquid Solvent Calibration	Ease of use & Cost-effective - Accurate creation of calibration curves
Internal Gas Leakage Sensor	Safety - GLS aborts all activity when hydrocarbons are detected
Automatic Safety Lock	Safety - No sample cylinder disconnect when pressure is detected
Sample Cylinder Pressure Read Out	Warns if sample pressure is too high for selected configuration
Safety Notifications in TEIS Software	Safety - Guides the operator in Safe handling of pressurized cylinders

### GBS - Pressure-less Gas Bag Autosampler

The GBS autosampler is a reliable and safe solution for the analysis of gaseous hydrocarbons. Samples are taken from Tedlar™ gasbags at atmospheric pressure, eliminating the need to handle pressurized cylinders. Transportation of samples is safe and convenient. The use of Tedlar™ gasbags is also cost-effective for low-pressure samples due to the inertness of the material. As a result, high priced protective coatings can be omitted for low concentration gaseous Sulfur samples.



Features	Benefits
Ten Sampling Channels	Efficiency - High sample throughput
Internal Gas Leakage Sensor	Safety - GBS aborts all activity when hydrocarbons are detected
Multiple Volume Injection Calibration	Ease of use & Cost-effective - Accurate creation of calibration curves
Pressure-less Gas Bag Sampling	Ease of Use - No pressurized cylinder handling required

## System Specifications

<b>Configurations</b>	<ul style="list-style-type: none"> <li>• Xplorer-V TN/TS, Nitrogen and Sulfur analyzer</li> <li>• Xplorer-V TN, Nitrogen analyzer</li> <li>• Xplorer-V TS, Sulfur analyzer</li> </ul>
<b>Dimensions (W x H x D)</b>	25 x 58 x 66 cm (9.8 x 23 x 26 inch)
<b>Weight</b>	40 kg (88 lbs.)
<b>Voltage</b>	100 - 240 VAC, 50 - 60 Hz
<b>Power Requirement</b>	750 W
<b>Inert Gases</b>	O <sub>2</sub> > 99.6 % (2.6) Argon 99.998 % (4.8) Helium 99.998 % (4.8)
<b>Furnace</b>	Dual Zone, Max. 1150 °C, 2100 °F
<b>Sample Matrices</b>	Liquids, Gas & LPG
<b>Sample volume</b>	Liquids 5 - 250 µL, Gas 10 mL sample loop, LPG 50 or 100 µL sample loop
<b>Detector Nitrogen</b>	Chemiluminescence
<b>Detector Sulfur</b>	Xenon Pulsed, UV-Fluorescence
<b>Flow Control</b>	Mass Flow
<b>Software</b>	TEIS Software



Configuration Xplorer-V with GLS