

E-lite

Portable Sulfur Analyzer for Petroleum

Quantify Sulfur and other low-Z elements



The E-lite series deliver high-precision D4294 sulfur analysis across a broad measurement range in addition to elements from Mg to Ca, for rapid monitoring of critical elements like Ca, K, Cl, and P at a few ppm levels.

ASTM D4294

ISO 8754

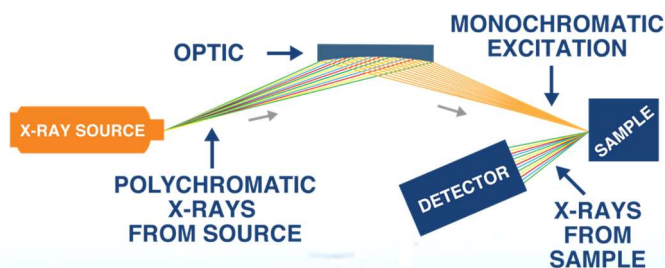
ISO 13032



Advanced Sulfur Analysis with MXRF

E-lite is powered by Monochromatic X-ray Fluorescence (MXRF) technology: an elemental analysis technique offering significantly enhanced detection performance over traditional Energy Dispersive X-ray Fluorescence (EDXRF) technology. This technique applies state-of-the-art monochromating and focusing optics, enabling dramatically higher signal-to-background ratio compared to traditional polychromatic X-ray Fluorescence. **Figure 1** shows the basic configuration of MXRF and its use of focused monochromatic excitation.

Figure 1: MXRF Technology



Advanced Precision

E-lite complies with ASTM D4294, ISO 8754 and ISO 13032 for sulfur analysis in hydrocarbons like crude oil, diesel, gasoline, jet fuel, and lubricants. E-lite delivers precise sulfur analysis with limits of detection as low as 0.5 ppm.

The data in Table 1 represents ten separate aliquots of crude oil that were analyzed for 300 seconds by E-lite to demonstrate the advanced precision and excellent repeatability for Sulfur achievable with MXRF technology.



Features & Benefits

- Onboard, offshore, or on-land testing
- Portable with built-in battery
- Advanced detector to ensure long-term stability
- Trusted precision with lab-quality results
- Robust calibration with one curve covering entire range
- Complies with ASTM D4294, ISO 8754 and ISO 13032



Easy-to-use and Robust Design

E-lite provides reliable, rapid, and robust sulfur analysis. Sample preparation is as easy as loading the sample into the pre-filmed disposable cup using a pipette and mounting the cup onto the sample carrier as shown in Figure 2. The sample is inserted with the sample window vertical, ensuring that any accidental spills stay away from the detector and can be easily removed. This analyzer can be operated by a crew member with minimal training, in as little as 15 minutes.

Table 1: Oil Sulfur Analysis by E-lite				
Repeats	5 ppm	10 ppm	100 ppm	0.1%
1	5.48	9.73	99.83	0.1014
2	5.42	9.48	99.86	0.1018
3	5.34	10.48	99.77	0.1016
4	4.87	10.51	99.69	0.1018
5	4.82	10.45	100.52	0.1015
6	5.10	9.70	100.94	0.1015
7	5.06	9.55	100.64	0.1015
8	5.40	9.80	100.81	0.1014
9	5.29	10.04	100.37	0.1012
10	5.47	9.83	100.20	0.1012
Average	5.22	9.96	100.36	0.1015
Standard Deviation	0.25	0.39	0.63	0.0002
RSD%	4.8%	3.9%	0.6%	0.2%


Figure 2. Disposable sample cup





Technical Specifications

E-lite	Dynamic Range, LOD & Applications				
	Dynamic Range	Sulfur 1 ppm – 10 wt%			
	Limit of Detection (ppm@ 300 s)	K	Ca	Cl	S
		0.3	0.3	0.4	0.5
		P	Si	Al	Mg
		1.5	3	30	400
Applications		Sulfur in hydrocarbons like crude oil, mineral oil, diesel, gasoline, jet fuel, kerosene, and lubricants			

E-lite Specifications	
Method Compliance	ASTM D4294, ISO 8754 & ISO 13032
Measurement Time	30-900 seconds
Calibration	- 30 calibration curves - Linear (automatic customer calibration available)
Sample Cup Volume	2 mL
Data Output	Printout, USB, and Ethernet to PC connection
I/O Ports	Ethernet 10/100, USB
AC Power Supply	110-240 VAC \pm 10%, 50-60 Hz (hertz)
Battery Power	98 Wh for >4 hours continuous operation
Operating Temperature	5°C to 40°C (41°F to 104°F)
Operating Humidity	30 – 85 %
Weight	8.8 kg (19.5 lbs)
Dimensions	23 cm W x 30 cm L x 26 cm H 



Z-Spec & XOS

Z-Spec and XOS have partnered together to provide an easy-to-use, robust solution for sulfur analysis. By combining XOS' industry-leading XRF technology with Z-Spec's product-development expertise in the petroleum industry, we're able to deliver the most practical and effective solution to meet customer's application needs.

Z-SPEC

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