



OIL & FUEL · LUBRICANTS · REFINERY & LABORATORY

EDX9000E

Bench-Top XRF Oil Element Analyzer

EFFICIENCY MEETS ACCURACY



STANDARD COMPLIANCE

ASTM D4294 · D6481 · D7751 · D5059 · D8127 · D8252 · D7684 · D5839 · ISO 20847 · ISO 8754 · ISO 13032 · IP 336 · IP 496 · JIS K2541
· GB/T 17040 · SH/T 0742 · GB/T 39299 · DIN 51399

TOTAL SULFUR IN OIL — ASTM D4294

WEAR METALS IN LUBRICANTS

NO HELIUM OR GAS CONSUMPTION

RESULTS IN 30–130 SECONDS

Sulfur, Chlorine and Wear Metals — One Bench-Top Answer

The **EDX9000E** is a rugged bench-top XRF analyzer built to test and monitor total sulfur in oils and fuels in full compliance with **ASTM D4294**. Compliant, repeatable and accurate elemental analysis is a given — and its performance extends further: **wear metals in in-service lubricants**, vanadium and nickel in crude and fuel oils, trace metals in waste fuels, and **low-level chlorine** for optimal desalting and corrosion control.

Atmospheric compensation allows analysis **without helium or any purge gas**, minimizing cost per test, while automatic carbon/hydrogen (C/H) ratio correction lets multiple oil and fuel types run on a **single calibration** — simplifying setup and daily operation.

► Lab-Grade Ruggedness

Designed for repeatable, reproducible results in laboratories and production environments alike.

► Industrial Touchscreen

Intuitive interface on a large integrated display — streamlined software with one-touch measurement start.

► No Gas Consumption

Atmospheric compensation removes the need for helium or purge gases — minimal cost per analysis.

► Auto C/H Correction

Automatic carbon/hydrogen ratio correction — multiple oils and fuels on one calibration.

► HD Sample Camera

Built-in HD camera monitors the sample status in real time during every measurement.

► Built to Last

X-ray tube and detector run in conditions engineered for long-term reliability and low maintenance.



EDX9000E — INTEGRATED TOUCHSCREEN, KEYBOARD & MOUSE SUPPLIED



SAMPLE PREP KIT — PRINTER, MYLAR FILM, SAMPLE CUPS & PIPETTE

Minutes to master — place the sample cup, close the lid, touch Start. Training for routine analysis takes only minutes.

High precision, no daily calibration — factory-calibrated on certified oil standards, ready to measure straight out of the crate.

3 ppm

SULFUR LOD (3 Σ)

0 – 900 ppm

WEAR-METAL CALIBRATION

30 – 130 s

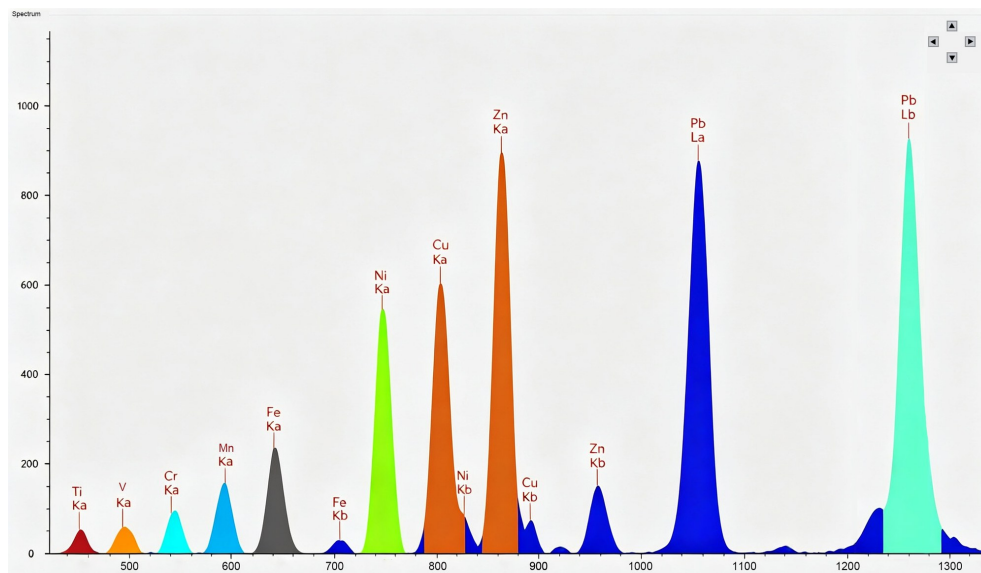
MEASURING TIME

50 W

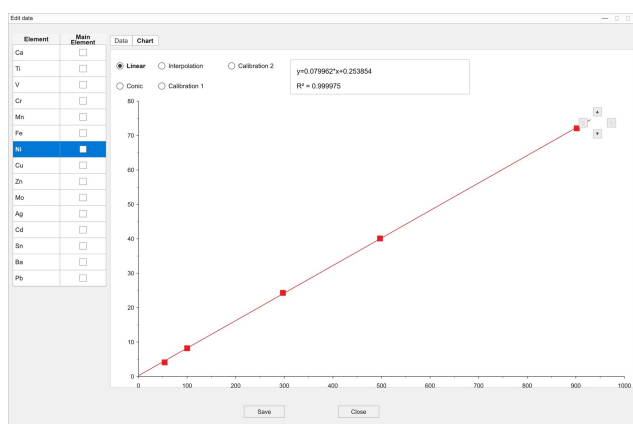
THIN-WINDOW X-RAY TUBE

Multi-Element Power in Every Spectrum

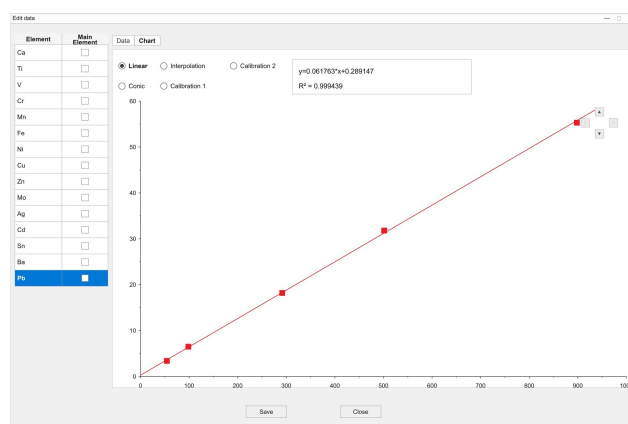
A high-resolution **USA-made SDD** and a 50 W thin-beryllium-window X-ray tube resolve every element of interest in a single 120-second run — from sulfur and chlorine to the full suite of wear, additive and contaminant metals in lubricating oil.



SPECTRUM OF METALS IN LUBRICANT — CLEARLY RESOLVED PEAKS ACROSS THE FULL ENERGY RANGE



NICKEL CALIBRATION — 0 TO 900 PPM



LEAD CALIBRATION — 0 TO 900 PPM

Linear across the working range — wear-metal calibrations from 0 to 900 ppm deliver excellent linearity, so a single curve covers everything from fresh oil to heavily worn samples.

Measurement & calibration QC follows IP 558 and ASTM D7343 — the quality framework that refineries, oil majors and commercial laboratories work to.

From Crude Oil to In-Service Lubricants

One bench-top analyzer supports quality control and compliance testing across oil production, refining, blending and machinery condition monitoring.

◆ Total Sulfur in Oils & Fuels

Production and refinery monitoring of sulfur in petroleum liquids — the industry-standard ASTM D4294 method.

ASTM D4294

ISO 8754

ISO 20847

◆ Wear Metals in Lubricants

Trend machinery condition through wear, additive and contaminant metals in in-service lubricants.

ASTM D6481

D7751

D5059

D7684

◆ Wear Particulates Fe & Cu

Quantify iron and copper wear debris in used oils for early fault detection.

ASTM D8127

◆ Vanadium & Nickel in Crude / Fuel Oil

Monitor V and Ni that poison catalysts and corrode turbines and boilers.

ASTM D8252

◆ Trace Metals in Waste Fuel Oil

Screen waste-derived fuels before blending, recovery or disposal.

ASTM D5839

◆ Low-Level Chlorine

Chlorine determination for optimal desalting and corrosion control in refinery operations.

Desalting

Corrosion Control

Liquids

OILS & FUELS

Powders

ADDITIVES & CATALYSTS

Solids

WEAR DEBRIS & MORE

30 kg

COMPACT BENCH-TOP

Who relies on it — oil and fuel producers, gasoline and diesel blenders, refinery and blending QC laboratories, used-oil and condition-monitoring labs, power plants, marine and fleet maintenance programs, and third-party testing services.

Single calibration, multiple matrices — automatic C/H ratio correction lets crude oil, refined fuels and lubricants run on the same setup, with no daily recalibration between sample types.

Precision You Can Defend

Ten consecutive runs on certified mineral-oil sulfur standards, and five runs across thirteen certified wear-metal elements at 300 ppm — the EDX9000E holds its numbers at every level.

Run	S — 20 ppm	S — 50 ppm	S — 100 ppm
1	20.1	50.3	100.5
2	20.3	50.6	100.2
3	19.2	48.7	98.5
4	20.5	50.8	97.9
5	19.0	48.4	98.2
6	18.9	48.0	100.0
7	19.5	49.2	98.9
8	20.0	50.1	99.8
9	19.1	48.5	98.0
10	19.8	49.7	99.3
Certified Value	20.00	50.00	100.00
Average (ppm)	19.6	49.5	99.2
Std. Deviation	0.55	0.96	0.93
RSD	2.81 %	1.94 %	0.94 %

SULFUR-IN-OIL PRECISION — 10 CONSECUTIVE RUNS, MINERAL-OIL CALIBRATION (VALUES IN ppm)

Element	Certified	Average	RSD	Element	Certified	Average	RSD
Ca	300	303.2	7.47 %	Cu	300	301.4	0.96 %
Ti	300	306.0	1.11 %	Zn	300	303.6	0.83 %
V	300	298.8	0.90 %	Mo	300	308.0	1.32 %
Cr	300	305.4	1.68 %	Ag	300	309.6	2.61 %
Mn	300	305.4	0.59 %	Cd	300	309.2	4.21 %
Fe	300	305.6	0.72 %	Pb	300	296.6	0.51 %
Ni	300	302.8	1.43 %	5 runs × 120 s · lubricant calibration			

METALS-IN-LUBRICANT PRECISION — 13 CERTIFIED ELEMENTS AT 300 PPM (VALUES IN ppm)

EDX9000E at a Glance

SPECIFICATIONS — EDX9000E

Detector	USA-made high-resolution SDD
Excitation Source	50 W high-efficiency thin beryllium-window tube, max. 50 kV / 2000 μ A
Sulfur Detection Limit	3 ppm (LOD, 3 σ)
Factory Calibration	Low sulfur 10 – 100 ppm · High sulfur 0.01 – 5 % — concentration ranges expandable on demand
Metals-in-Lubricant Calibration	0 – 900 ppm (optional upgrade)
Measuring Time	30 – 130 seconds per sample
Measurement & Calibration QC	Complies with IP 558, ASTM D7343
Sample Types	Liquids, powders and solids
Sample Monitoring	Built-in HD camera — real-time sample status
Instrument Size	380 × 372 × 362 mm (L × W × H)
Weight	30 kg
Connectivity	USB · Bluetooth · Wi-Fi · GPS
Test Report	Excel · PDF
Operating Temperature	–20 °C to +50 °C

SUPPLIED AS STANDARD

- ◆ Sample cups — 50 sets
- ◆ Mylar film — 1 roll
- ◆ Sampling pipettes — 50 pieces
- ◆ Bluetooth keyboard & mouse, USB hub
- ◆ Copper calibration standard
- ◆ Power cable · CE certificate & warranty card

OPTIONS

- ◆ Metals-in-lubricant calibration, 0 – 900 ppm
- ◆ NIST calibration oil standard samples
- ◆ Bluetooth printer
- ◆ Custom calibrations on request

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