

**HORIBA**  
Scientific

# X-5000



## On-Site, In-Field Industrial XRF Analyzer

Optimized for S, P, Cl and 18 Metals in  
Energy and Fuel Related Materials



## Energy Dispersive X-ray Fluorescence

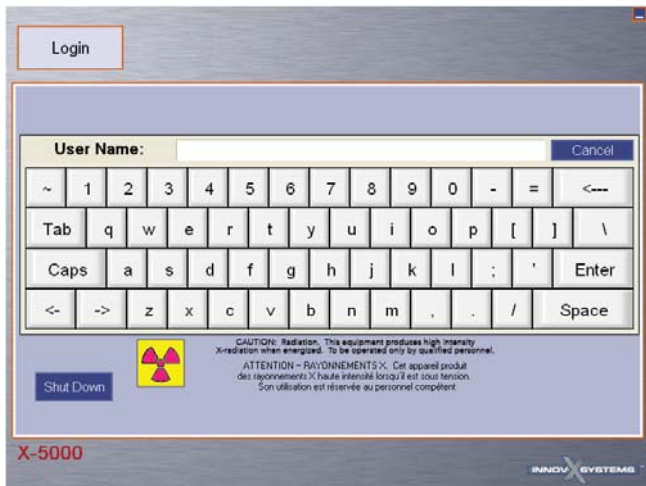
The X-5000 integrates advanced 3-beam (kV-mA-filter) technology with a silver anode X-ray tube and large area Silicon Drift Detector (SDD). This powerful EDXRF combination is optimized to analyze 20+ elements in oils along with providing the highest possible sensitivity for sulfur. Analyzers are precalibrated with NIST standards in a clean mineral oil matrix without interfering elements.

## Onboard PC Operation

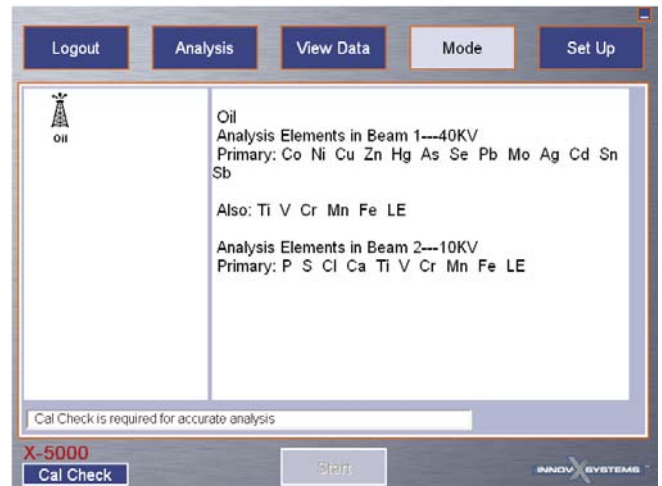
- The onboard PC controls full operation of the X-5000 in any analysis environment.
- Large display with virtual keyboard
- Field-hardened color touch screen
- User-friendly data analysis interface
  - Spectral overlay
  - Easy peak identification
  - Elemental concentrations with RSD

## Sample Loading

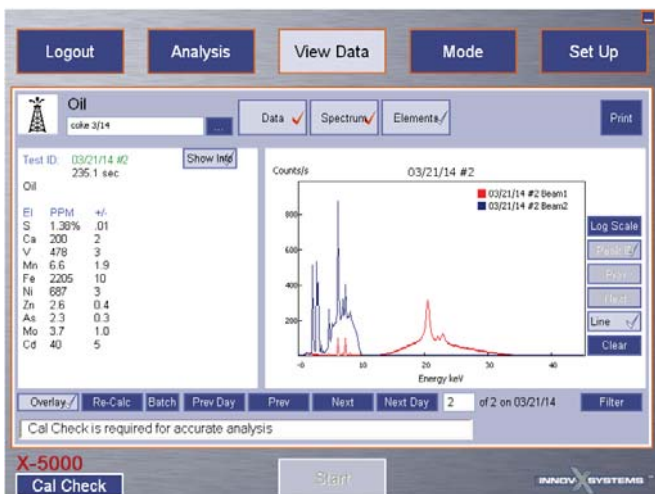
A sample guide/holder is attached to the X-5000 sample deck to accurately and securely placed sample cups or bottles with a secondary spill containment for liquid samples.



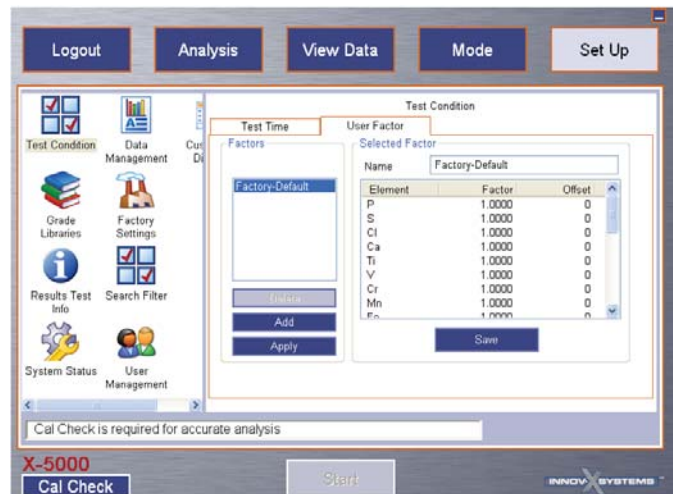
Virtual keyboard



Choose testing mode



Set up test conditions



View Results

## Portable High Performance EDXRF for Critical on-the-go or in-the-lab Elemental Analysis Needs

- Exploration and production
- Pipeline and transmission
- Refining and marketing
- Drilling engineering equipment
- Catalyst feedstock contamination
- Engine and generator attrition
- Environmental sustainability
- Marine and aviation fuels



### On-Site, In-Field Testing of S, P, Cl and 18 Metals in Energy & Fuel Related Materials

HORIBA continues to deliver advanced analytical solutions to fuel and energy industries. We've teamed up with Olympus Scientific Solutions to provide a high performance portable XRF analyzer optimized for key elements and metals like S, P, Fe, V, and Pb in an easy-to-use and safe configuration.

The X-5000 is a rugged, fully integrated closed beam XRF system. It combines the performance and power of traditional bench top EDXRF with simple industrial-grade touch screen operation for on-the-go testing. The X-5000 is ergonomically packaged, easy to carry and battery operated to provide critical answers where and when they are needed.

The X-5000 performs for upstream, midstream, downstream, oil field service and environmental sustainability applications. It enables analysis of crude and refined fuels, additives, and wear metal oils. It also facilitates screening for toxic metals in soils, sediment, sludge, runoff streams and debris. It is a fast and flexible alternative solution to time and cost intensive traditional laboratory testing methods.

### Key Applications

- ASTM D4294 Sulfur Analysis
- ASTM D6481 Unused Lubricating Oils Testing  
Ca, P, Zn, S, Mo, Mn
- Wear Metals Monitoring  
Fe, V, Pb, Cr, Cu, Sb, Sn, Mo, Ti, Ni, Cd
- Sulfur content at well drilling sites
- Mercury and Arsenic Contaminate Testing in Tank Bottom Sludge
- RCRA and Other Pollutant Metals Screening in Soils, sediments, and runoff streams

Elements can be analyzed from trace PPM to high percentage concentration levels. The X-5000 is preconfigured for optimized testing of phosphorous, sulfur, chlorine, calcium, titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper, zinc, arsenic, selenium, molybdenum, cadmium, tin, antimony, mercury and lead in oils, liquids, and soils.



## X-5000 Specifications

50kV, 200µA X-ray tube
Silver anode X-ray tube optimized for oil, liquid and soil applications
High resolution Silicon Drift detector that delivers < 165eV resolution (FWHM Mn K-alpha line) in a proven, field-rugged package
Rugged, injection molded, sealed carrying case and sealed test platform
Powerful Pentium® processor, embedded XP and sealed, field-hardened color touchscreen
Multiple analysis modes, including Fundamental Parameters, Compton Normalization, Empirical Calibration models, Spectral Matching
6-position primary beam filters for optimal performance across the periodic table
Sample platform with interlocked testing cover
AC Power or an optional 3 hour lithium ion battery pack (typical duty cycles)
Total weight 20 lbs/9 kg
Dimensions (approximate) 12" x 13" x 8"/30 x 33 x 20 cm
Sample chamber dimensions 12" x 8" x 5"/30 x 20 x 12.5 cm

## Detection Limits on the X-5000 with a silver anode X-ray tube

Element		LOD's
Arsenic	As	1
Antimony	Sb	27
Cadmium	Cd	17
Calcium	Ca	5
Chlorine	Cl	15
Chromium	Cr	2
Cobalt	Co	1
Copper	Cu	1
Iron	Fe	1
Lead	Pb	1
Manganese	Mn	1
Molybdenum	Mo	1
Mercury	Hg	1
Nickel	Ni	1
Phosphorus	P	30
Selenium	Se	1
Sulfur	S	7
Tin	Sn	24
Titanium	Ti	10
Vanadium	V	1
Zinc	Zn	1



- LOD's were found in a clean mineral oil matrix without interfering elements, with test times of 180's per beam.

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Please read the operation manual before using this product to ensure safe and proper handling.