

پتروفرفهان گستر جنوب

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## Advantage X-5000+

### Performance & Power

The X-5000+ offers a high level of performance and power not found in field portable systems.

- Full 50kv/10W X-ray tube delivers unsurpassed in-the-field limits of detection (LODs) from Mg thru U. Multiple anode configurations are available:
  - Tantalum (Ta) anode configuration is utilized for excellent sensitivity measuring 25+ transition metals including Cd, Ba, Ag, Au, Pb, Cr, and many Rare Earth Elements – La, Ce, Nd, Pm, Sm.
  - Rhodium (Rh) anode configuration is offered when the application calls for optimized analysis of light elements including Mg & Al, along with mid range transition metals.
  - Silver (Ag) anode configuration for enhanced detection limits for light elements in petroleum focused applications.
- An innovative large silicon drift detector (SDD) allows for a wide array of elements with high precision.
- Six position primary beam filters allows for optimal performance across the periodic table.
- Outstanding light element performance for elements without vacuum or helium purge.

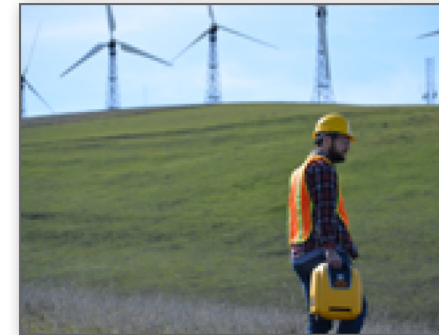
An on board PC offers full operation of the X-5000+ wherever your analysis takes you.

- A large display with virtual keyboard.
- Field hardened color touch screen.
- User friendly interface allows for:
  - spectral overlay
  - and easy peak identification
- Multiple algorithm options are available that include Fundamental Parameters, Compton Normalization, Empirical Calibration models, and Spectral Matching.



### Portability

Weighing just 22 lbs, the X-5000+ can go virtually anywhere for testing – from the field to the lab, and beyond. This self-contained, closed-beam unit provides the ultimate in user safety.



#### Take it anywhere.

Carry to work site, inspection station, production line, or stay at the lab bench.



#### Starts up immediately.

Open cover and place material on window; close cover; and start testing. Features interlocked, closed beam operation.



#### Get results.

In seconds, results are displayed on the industrial grade touch-screen.



#### Document.

Data is stored automatically in tamperproof format. Print material test reports (MTR), or RoHS Certification of Compliance (CoC) on-the-spot.



## Mining / Geochemistry

The X-5000+ is ideal for exploration and mining samples, from soils and sediments to rock chips, bagged drill cuttings, cut core, and liquid analysis including highly acidic samples. The X-5000+ delivers excellent precision and accuracy for critical measurements and low LODs required for specialized applications such as:

- Precious Metals
- Rare Earths
- Au and Au pathfinders
- Cassiterite, Cadmium and Antimony

Superior field analysis of light elements, such as Mg, Al, Si, P, S and Cl is achieved without vacuum or helium purge. With its rugged design and minimal sample prep, the X-5000+ meets the requirements for the Mining and Geochemical industries.

## Elemental Analysis in Petrochemical Fluids and Hydrocarbons

The X-5000+ analyzer provides accurate determination of trace to % level of elements in fuels, oils, and lubricants. This powerful, field-portable analytical instrument is used in a wide variety of industries. From identifying elements to determining the actual elemental concentrations present in a variety of matrices; solid, powdered, and liquid samples. No sample preparation required. Simply collect and analyze.

### Key Applications

- ASTM D4294 Sulfur Analysis
- ASTM D6481 Unused Lubricating Oils
  - Ca, P, Zn, S
  - In addition, monitor Mo, Ba, Mn
- Monitoring Wear Metals
  - Fe, V, Pb, Cr, Cu, Sb, Sn, Mo, Ti, Ni, Cd
- Heavy Fuel Oil analyzed on-board vessels
  - Sulfur content in SOx Emission Control Areas (SECA)
- Diagnose abnormal wear thru the analysis of wear debris and particulates
- Mercury and Arsenic contamination in 'tank bottoms' sludge



+982165565901

+982144584619

+989034119385

Tehran, Tehransar

## Alloy Analysis

The X-5000+ captures the power, speed, and precision of a dedicated industrial alloy analyzer in a rugged, totally portable unit. Its sealed, rugged housing is ideal for at-line operation in foundries, incoming inspection, scrap processing or the production line. Specific applications include:

- Analyzing small samples and turnings. Safer than handheld XRF and won't damage detector
- ID alloys from ultra small shavings and particles down to 50 µm or less. Ideal for tracing testing metal particles for failure analysis
- Detect residual, tramp or poison metals such as Cd, Sn, Ag, Cu and other elements <0.01%.
- Screen out alloys with high S or P levels in plating scrap or process scale



## General Materials Analysis

For the advanced user, the power of the X-5000+ resides in its sophisticated electronics. The 6 position filter wheel, a wide range of voltage and current settings, the SDD, plus fully integrated industrial PC yields multiple calibrations, dozens of turnkey settings, ease of adding new elements for analysis, spectral viewing, and more. Many applications require analysis where few, if any, known standards exist for instrument calibration. In other cases, calibration standards are proprietary to the customer. To overcome these issues, users can set factors and offsets (slope and y intercept) to optimize or specific samples.



## Specifications

<b>Excitation Source:</b> 10 Watt X-Ray tube
<b>50keV, 200 µA X-Ray tube</b>
<b>Application optimized X-Ray tube anode:</b>
› Rhodium Anode for light element focused applications
› Tantalum Anode for heavy transition metal focused applications
› Silver Anode for Petroleum, Oil focused applications
<b>High resolution Silicon Drift Detector</b>
<b>Resolution &lt;165 eV (FWHM Mn K-alpha line)</b>
<b>Powerful Pentium processor, embedded XP</b>
<b>Sealed, field hardened color touch screen:</b> 8.25 x 6.13 in / 20.9 x 15.9 cm
<b>Safety interlocks that create a closed beam system</b>
<b>Multiple analysis modes including:</b>
› Fundamental Parameters
› Compton Normalization
› Empirical Calibration models
› Spectral matching
<b>6-position primary beam filters for optimal performance across the periodic table</b>
<b>Rugged, injection molded, sealed carrying case and sealed test platform</b>
<b>Large sample platform with interlocked testing cover</b>
<b>Heavy duty carry case with wheels and telescoping handle</b>
<b>Power AC power adapter 110 -220 VAC, 50 -60 Hz, 70 W max</b>
<b>Optional 3+ hours Li-ion battery pack available</b>
<b>Operating Environment Temperature:</b> 10° C to 50° C
<b>Humidity:</b> 10 % to 90 % Relative Humidity, non-condensing
<b>Total weight:</b> 22 lbs / 10 kg
<b>Instrument Dimensions:</b> 15 x 13 x 11 in / 38 x 33 x 28 cm
<b>Sample Chamber dimensions:</b> 11 x 6 x 5 in / 29 x 15 x 11 cm