OLYMPUS®

Your Vision, Our Future

INNOV-X

PORTABLE XRF FOR ENVIRONMENTAL ASSESSMENTS

- Screen Sites for Heavy Metal Pollutants Quickly and Effectively
- Monitor Contaminants and Nutrients for Safe and Appropriate Land Use
- Reduce the Time and Cost of Regulatory Compliance

920-237A-EN

www.olympus-ims.com

The DELTA Line

Rugged, High-Performance Handheld XRF

See and feel the DELTA difference. Our analyzers are compact and robust from probe to trigger to display, with sophisticated XRF technology that's better, faster and more responsive. From initialization to the final result, the DELTA is the optimum solution for all your analytical needs.

The DELTA line gives you the ultimate experience in field-portable handheld XRF analysis, providing fast measurements with accuracy, precision, detection-limit, and light-element capabilities built into a compact single-chassis frame wrapped in robust industrial-grade casing.

The DELTA Line

When you need reliable, intuitive and customizable environmental analysis solutions, bring portable XRF analyzers from Olympus Innov-X with you into the field. These analyzers provide anywhere, anytime testing with faster, more accurate results.

The ultimate in handheld XRF: built tough on the outside, and designed to be smart on the inside. Ideally suited for field work, the DELTA is equipped with our trademark weatherproof, dust-proof, protective housing. Its ruggedized casing is manufactured to industrial standards, and because there is no PDA or moveable screen, it offers superior reliability. The DELTA is engineered with advanced technology, but is amazingly simple to use, for both non-technical and advanced operators alike. Choosing the optimal DELTA analyzer for all your environmental analysis needs is easy.

DELTA Premium

The Premium combines a large-area, high-performance silicon drift detector (SDD), and a 4 watt optimized X-ray tube, making it the ideal solution for ultra-quick, analytically demanding applications, and superior light element (LE) analysis.

DELTA-50 Premium

With a 4 watt, 50kV X-ray tube, the ideal handheld analyzer for optimized sensitivity of Cd, Ag, and Sb, in addition to Ba and rare earth elements (REEs) is the DELTA-50. The large-area, high-performance SDD works in conjunction with the higher voltage output of the tube to enable better sensitivity for important high-Z elements.

DELTA Standard

The new standard in handheld XRF. The Silicon Drift Detector provides excellent speed and LODs, in addition to good light-element analysis capabilities.

DELTA Classic

Our classic DELTA analyzer is equipped with an Si PIN detector. A high-tech, flexible analyzer for typical XRF analysis.

Incorporating Everything You Need in Handheld XRF

with State-of-the-Art Innovations. The DELTA Line from Olympus Innov-X.

4 W, X-ray tube, 200 µA current (max), plus optimized beam settings

Tight geometry for exceptional LODs and high analysis throughput

Large-area SDD option provides great precision and sensitivity

Patent-pending automatic barometric pressure correction that adjusts calibration as needed

Lightning-fast bootup and data acquisition: faster testing, more results

Floating Point Processor: provides more calculations in less time, and leverages more advanced calibration algorithms

Integrated Bluetooth for data input and output

Ergonomic rubberized handle for enhanced grip

Integrated heat sink for high-power use in extreme temperatures

Analysis indicator lights with 360° visiblity

Bright, responsive, color touch screen display

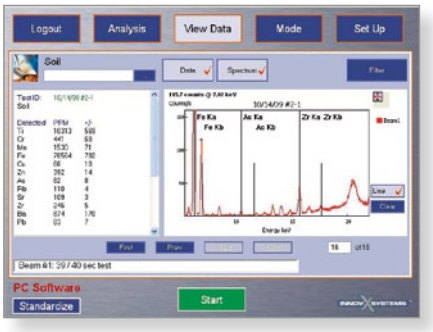
Accelerometer technology puts the unit into sleep mode when not in use to conserve power; logs impacts for tool management

USB interface port for high-speed data download and seamless PC control

Hot Swap: the rechargeable battery can be replaced without having to turn off or re-standardize the unit

Docking and Charging Station

Portable Workstation



PC Software

DELTA mounted on hands-free Soil Stick

Portable XRF Solutions

Test soils, sediments, solids, runoff streams, snow, ice, sludge, mixed waste and debris, wood, bagged soils, corings, filters, wipes, coatings, and more. Identify, monitor, screen, and quantify material composition with confidence. For even greater convenience in the field, outfit your DELTA with a holster for easy transport, a soil foot for long measurement times, or mount it on a soil stick for hands-free, extended in situ testing.

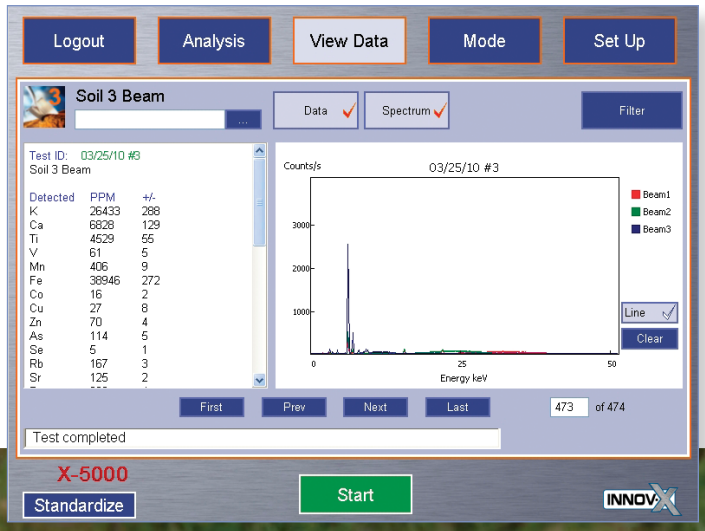
DELTA in Soil Foot

DELTA in Holster

X-5000 – Powerful Portable XRF

If you prefer your portable XRF to be closed-beam with onboard computing, and/or you primarily analyze bagged or prepped samples, the rugged X-5000 is ideal. It features a large-area Silicon Drift Detector (SDD) and an array of filtering and excitation options offering impressive analytical performance not usually available in the field:

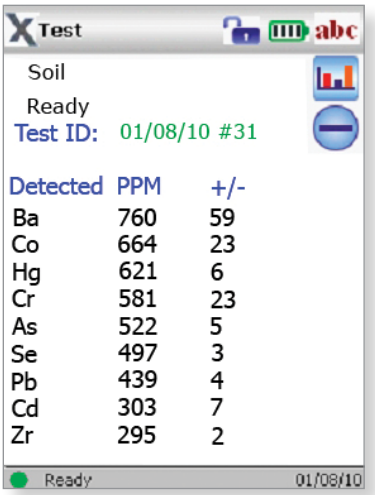
- 50 kV, 200 µA X-ray tube = 10 watt system.
- High-resolution, large-area silicon drift detector (SDD).
- Self-contained, closed beam with safety interlocks.
- Fully integrated onboard Windows XP PC with a large touch screen.
- Easy-to-use, intuitive Olympus Innov-X PC Software Suite.
- True portability at less than 10 kg with the battery option.
- Enhanced performance for REEs, Ag, Cd, Sn, Sb and Ba.



X-5000 Software Screenshot

Olympus Innov-X Knows Portable XRF Environmental Analysis

Factory-calibrated DELTAs or X-5000s can be used immediately for environmental site-assessment screening. Or, you can utilize the data analysis software to optimize the factory calibration models for improved precision and accuracy of quantitative analysis for your samples.



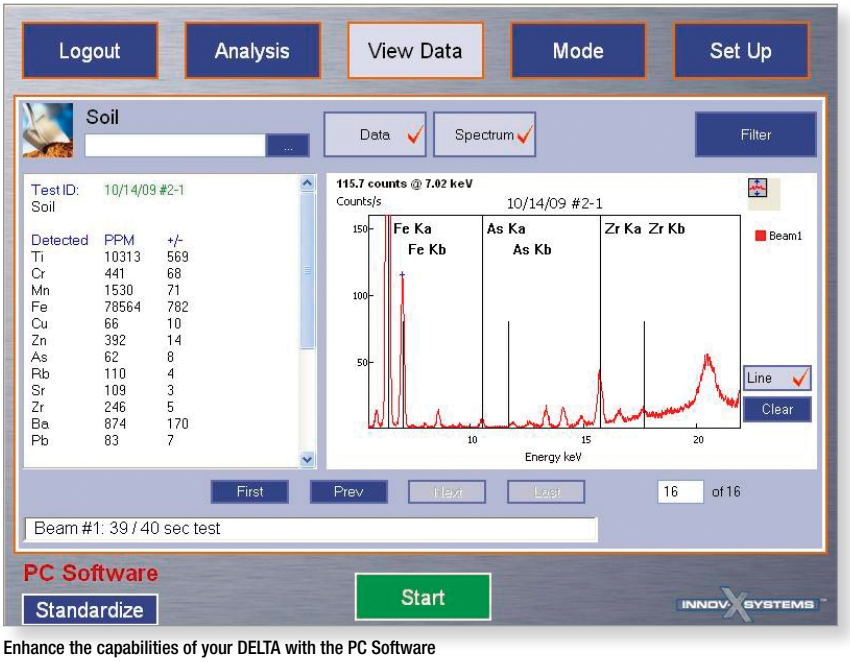
DELTA Handheld Screenshot

Data Analysis

- Fast qualitative identification of elements
- Rapid site screening with semiquantitative analysis of elements
- Compton Normalization: “Internal Standard” for quantitative analysis without site-specific calibrations
- Fundamental Parameters available: “standardless” for samples with high and low concentrations of several elements
- Reevaluate stored data sets with added elements, new parameters, models or calibrations curves
- Moisture-content corrections

Collect and View Data, Optimize Quantitative Analysis, and Create Reports

- Intuitive PC software can be utilized to remotely control the DELTA analyzer in a benchtop configuration
- Sort comprehensive analysis results, quickly create reports, view and export spectra
- Empirical Calibrations: Refine factory calibrations with user-generated, site-specific factors (slope, y-intercept), including ore-matrix-specific calibrations
- Combination algorithms: Fundamental Parameters with Empirical for light elements (LE) and complicated matrices
- Transfer new PC calibration models to your DELTA

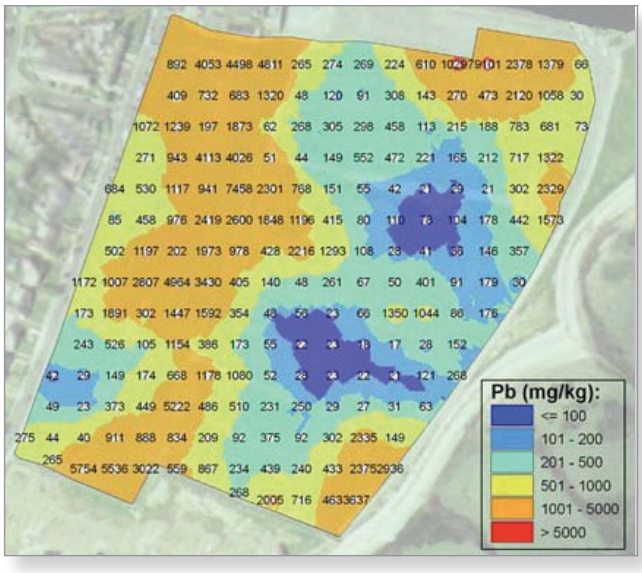


Enhance the capabilities of your DELTA with the PC Software

The DELTA Xplorer

Metal Characterization Contour Mapping

Get the big picture with GPS-XRF. Get quick snapshots, instant visualization of data trends, or analyze for comprehensive, defendable reports. From rapid, infield decision making to command-center monitoring, you get instant, pinpoint, location-specific sample chemistry or multidimensional metal content intensity plots. You can optimize sampling plans to reduce lab costs and reporting times for site assessments, delineate RCRA, heavy and priority pollutant metals, identify metal pollutant hot spots, screen cores to determine metal pollutant depth, track metal pollutant plume contours, establish contamination boundaries, and perform due diligence phase assessments, remediation and long-term monitoring.

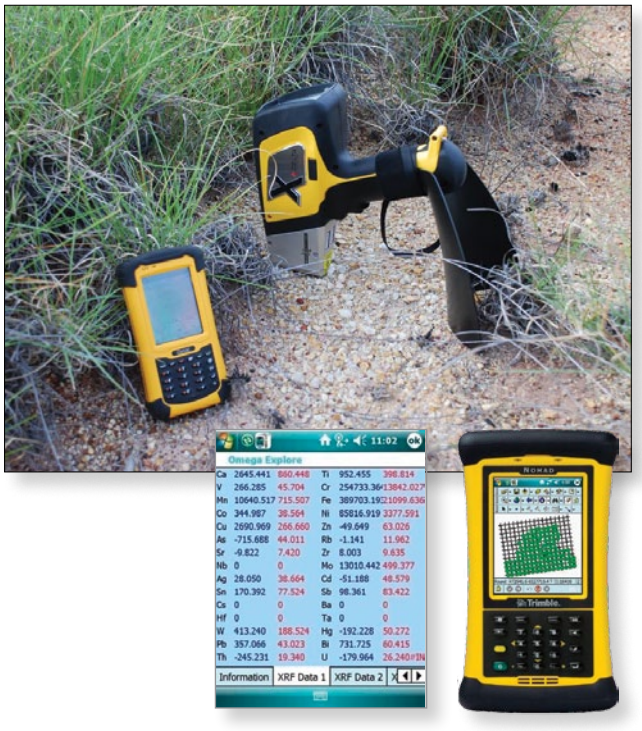


Lead (Pb) Concentration Contour Map of 20x20m Park

GPS-GIS XRF for Instant Metal Mapping

The most cost-effective tool for large sites, handheld XRF enables large, inexpensive, geochemical data sets to be generated very quickly. The Xplorer provides important data management and validation frameworks to ensure the quality and integrity of your sampling program in the field. Olympus Innov-X XRF/GIS integration, the first of its kind in the industry, addresses the needs of the total project.

- Field Portable XRF data is transferred wirelessly, and spatially registered in real time using industry standard Mobile GIS & state-of-the art Trimble GPS Hardware and GIS Software (ArcPAD or Discover Mobile)
- The result is live geochemical mapping in the field, which enables visualization, gridding and contouring in GIS for rapid, informed decision making
- Seamless integration into powerful geochemical analysis software such as ioGAS for first class data validation and QA/QC
- Reduces human error related to XRF data transfer, GPS coordinate merging, and GIS integration



Key Portable XRF Environmental Applications

DELTA handheld XRF analyzers have completely revolutionized environmental testing. In the past, assessments relied exclusively on expensive and time-consuming lab analyses that were based on samples collected at and shipped from the site. You can now assess the environment immediately on-site. DELTA handheld XRF analyzers provide cost-effective, timely analysis of data in real time, leading to rapid and comprehensive investigations that can be used to determine the next course of action. This means you can take action at the site and won't lose precious time or resources collecting non-representative samples, or running up unnecessary lab costs.

Community and Residential Development

The DELTA immediately identifies heavy metals in soil at low PPM levels, and is an important tool to help ensure safety prior to developing or renovating schools, community centers, residences, playgrounds and athletic fields. The DELTA is an essential tool for developing properties built on former landfills, industrial sites, orchards, animal farms, Brownfields, or any other site where toxic metals are likely to be found in high concentrations. In addition, during renovation, redevelopment, restoration and painting of buildings and older homes, the DELTA can quickly detect lead (Pb) in soil and dust, on surfaces, and in lead-based paint (LBP), thereby helping to reduce regulatory compliance analysis costs and time.

Peri-Urban Farming and Agronomy

The safety of food sources is becoming increasingly important as the human population expands. With this growing demand, peri-urban farming is gaining in popularity. However, farming in areas adjacent to industrial and other urban facilities raises the risk of food crops being grown in soil, or irrigated with water contaminated with elevated levels of arsenic (As), mercury (Hg), cadmium (Cd), chromium (Cr) and lead (Pb). DELTA handheld XRF offers rapid detection of these toxic metals, in addition to confirming the presence of nutrients and fertilizers, such as calcium (Ca), magnesium (Mg), phosphorus (P) and potassium (K). The DELTA XPLORER GPS-XRF is ideal for precision agriculture, as it allows for high-intensity soil analysis in the field with results obtained and spatially modeled on-site.

Regulatory Compliance

Portable XRF is a well documented and valuable tool for both private and government regulatory-driven analysis of heavy and priority pollutant metals in residential and industrial soils. This non-destructive method, with its quick analysis time and high-quality measurement capability, make it ideal for field assessments, particularly those covering large areas. In fact, US EPA Method 6200 encourages portable XRF screening for high-density, high-volume sampling for correct site characterization.

Dangerously High Levels of Toxic Metals in Developing Countries

Dangerously high levels of Pb, As, Hg, Cr, Cd and other toxic metals can be found in residential and recreational areas in developing countries, where knowledge of their dangers is not well-known, or where regulations are not in force. Handheld XRF analyzers can be used to quickly identify the presence and quantity of such contaminants, thereby enabling world health advocacy groups to determine a course of corrective action to help developing countries prosper with local resources, and with safe working practices and living conditions.

Hazardous Waste Screening and Sustainable Industry

Most industries are now under pressure to follow a sustainable development plan to help minimize the environmental and health impact of their manufacturing and packaging processes. Handheld XRF systems are used on-site by industry, engineering firms, and regulators to ensure that any heavy metal contamination is quickly identified, and that remediation steps are working effectively.

Your Partner...

Olympus Innov-X is your partner. We understand the issues and regulatory implications involved in environmental testing. We have engineered our analyzers to be rugged and reliable. Whether you need to screen a small area for dangerously high levels of heavy metals, perform high-intensity soil analysis in the field for on-site spatial modeling with GIS-GPS-XRF, or generate reports for regulatory remediation or compliance, our aim is to keep you up and running with the best portable XRF analyzers and support available.

Return on Investment

The DELTA is FAST. We know that the faster the test, the more tests you can run. The DELTA will maximize your field-testing throughput and assessment process. The DELTA is also SMART. You can screen a large site quickly for 25+ potential toxic metal pollutants with excellent LODs in the fastest testing time possible, or you can get the lowest LODs possible by fully optimizing on a specific element or group of elements. Olympus Innov-X makes your investment easy with simple purchases, rentals , rental buyouts, and leasing options. (May not be available in all regions. Contact your local distributor for available options.) We can also configure analyzers specific to your analysis requirements.

Outstanding Customer Support

From initial demonstration, to identification of your testing needs, to thorough user training, and fielding any questions or needs going forward, we are here to support you. We take pride in the comprehensive training provided by our local representatives, distributors, and support department, as well as our responsiveness to our customers' needs. We are committed to your satisfaction.

Global Support Coverage

With offices around the world, we have local support centers to support you and your analyzers wherever they're being utilized.

OLYMPUS

www.olympus-ims.com

info@innovx.com

OLYMPUS INNOV-X
100 Sylvan Road, Woburn, MA 01801, USA, Tel.: 1-781-938-5005

INNOV-X SYSTEMS EUROPE BV
Kasteleinenkampweg 9R • 5222 AX 's-Hertogenbosch • The Netherlands • Tel: (31) 73-62 72 590

OLYMPUS NDT INC.
48 Woerd Avenue, Waltham, MA 02453, USA, Tel.: (1) 781-419-3900

OLYMPUS AUSTRALIA PTY. LTD.
31 Gilby Road, Mount Waverly, Victoria, 3149, Tel.: (61) 130-013-2992