OLYMPUS®

Your Vision, Our Future

Handheld XRF

DELTA Catalog

Portable XRF Analyzers

DELTA Handheld X-ray Fluorescence

Fast, Accurate, Nondestructive
Elemental Analysis of Materials

The DELTA Handheld XRF

for Elemental Analysis

Nondestructive DELTA Handheld X-ray fluorescence analyzers provide decisive results to multiple industries with varied applications. Elements such as lead, mercury, arsenic, copper, gold, silver, platinum, and more are detectable in concentrations of parts per million (PPM) up to 100%, with little or no sample preparation requirements.

The New Generation DELTA Handheld XRF analyzers are ergonomically advanced with a forward looking design incorporating the latest in electronics, components, and software technology. The newly available DELTA X-act Count Technology can provide even better sensitivity and precision in faster time for more materials than before.

Scrap Sorting and Recycling

The DELTA scrap sorting handheld XRF provides reliable identification in 1-2 seconds for most alloy grades and pure metals. It is designed for durability – to withstand the toughest environments. It is ideal for checking a wide variety of materials including ferrous and non-ferrous metals, glass, and plastics in seconds.

Alloy Positive Material Identification/QA/QC

The DELTA analytical and positive material inspection (PMI) analyzer is vital for quality control and assurance in the metal manufacturing and fabrication industries. It is used for compositional analysis and alloy grade identification, from critical components to raw materials to welds.

Precious Metals Identification

The DELTA provides fast, accurate alloy chemistry and karat classification with one nondestructive, non intrusive test. Whether importing precious metals, selling or producing jewelry, or processing scrap metal, the DELTA is the ideal choice.

Regulatory and Safety Screening

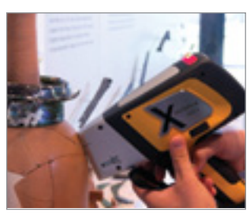
The DELTA screens for pollutants and poisons such as lead, cadmium, chromium, mercury, arsenic and other toxic elements. It is used to help ensure safety and to help comply with global regulatory programs directed by EPA, RoHS/WEEE EU Member States' Enforcement Bodies, CPSC, FDA, Border Patrol and more.

Geochemestry and Mining Exploration

The DELTA provides immediate results to help determine the next course of action throughout the entire mining process – exploration, grade/process control, and environmental sustainability. On-site detection of metals, minerals & contaminants and GPS-GIS XRF for instant metal mapping ensures time and cost savings.

Research and Education

The DELTA adds an amazing dimension to research and education in the classroom and in the field. It's versatility and rapid response engage students, making the periodic table of elements and science come alive. Environmental, forensics, archaeology and chemistry education benefit immediately.

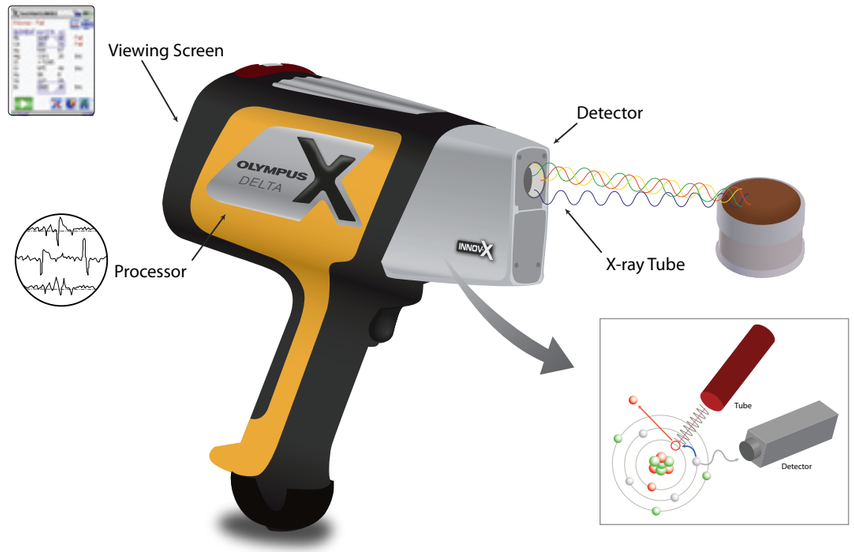


X-ray Fluorescense Technology

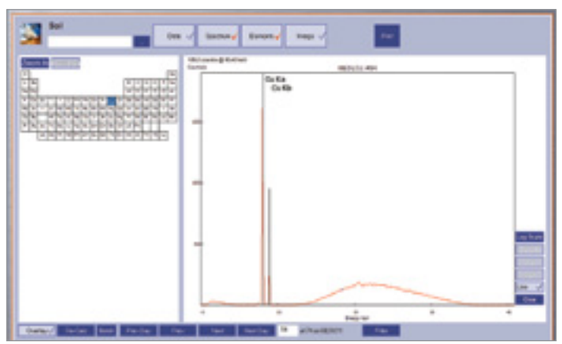
Thousands of units are in use worldwide, from show rooms and assembly lines to remote desert and arctic regions. DELTA Handheld XRF analyzers are optimized to be responsive and effective to meet the needs of both economically and regulatory driven businesses, from recycling, mining and fabrication to environmental assessment and consumer product safety, and to scientific research and education.

The DELTA series analyzers are configured with powerful miniature X-ray tubes, Si-PIN detectors or highly advanced Silicon Drift Detectors (SDD), specialized filters, and multi-beam optimization for the ultimate in XRF field analysis. The DELTA's real overall value is to help make decisions in real time with minimal reliance on off-site laboratory testing.

DELTA Handheld XRF Configuration



XRF for Composition Analysis



The energies (keV) at which the peaks appear identify the elements present in a material. The intensities (Counts/s) of peaks correlate with the concentrations of the elements present in the material.

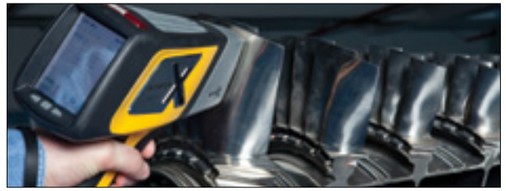
XRF Portable Workstation

DELTA workstation with integrated safety-lock shielding can be controlled with a PC.

The DELTA Handheld XRF

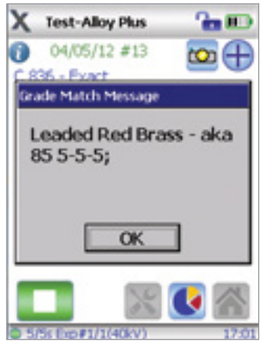
Provides Fast, Decisive Results

Alloy ID and Scrap Sorting



The DELTA can take results and compare them to a library of alloy compositions to “match” an unknown material to known alloys. Pop up messages can be preprogrammed for immediate sorting or coding instructions to increase efficiency and throughput.

Grade Match Messaging in real time



Popup Grade Match Messaging at end of test

Precious Metals ID

The DELTA can automatically identify and characterize a wide range of alloys, including precious metals including Au, Ag, Pt, and Pd. It can be preprogrammed to provide on-the-spot gold karat classification, 0-24 kt.

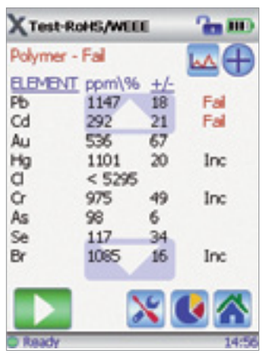
Automatic Karat determination

Camera and collimator view of sample

Regulatory and Safety Screening

The DELTA can provide positive/negative or pass/fail results for rapid regulatory and safety screening of Pb, Cd, As, Hg, Cr and other toxic metals in consumer products. Archived DELTA images and results make it the ideal tool for a Reasonable Testing Program.

Positive/Negative results screen

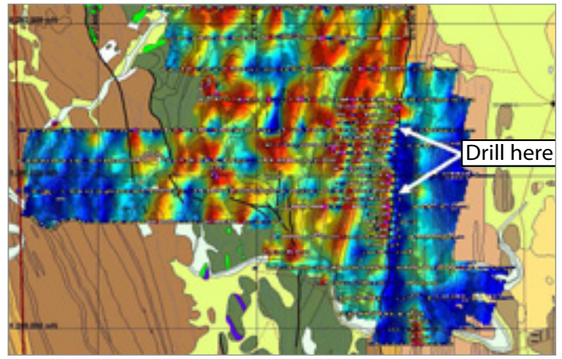


Pass/Fail and composition screen

DELTA Handheld XRF for Overall Value

Geochemistry and Mining Exploration

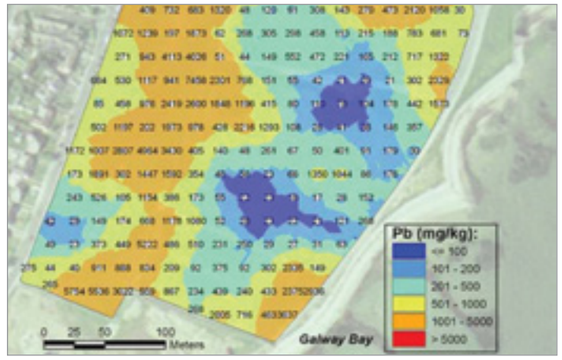
The DELTA metal and light element compositional results can be transferred wirelessly for XRF-GPS-GIS “instant geochemistry”. It provides the ability to map, visualize, assess and follow up on targets immediately for better mining exploration decision making.



Instant geochemistry for exploration drilling

Environmental Assessments

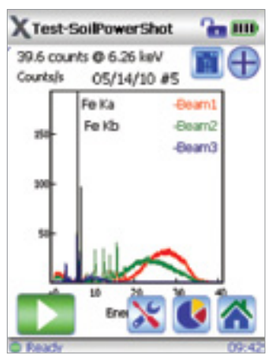
The DELTA can take pollutant metals results and transfer them wirelessly for XRF-GPS-GIS “instant pollutant metal mapping”. It provides fast decisive results for site characterizations, assessments, property evaluations and contamination tracking.



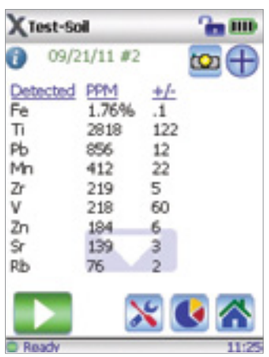
Instant metal mapping for site characterizations

Research and Education

The DELTA can provide qualitative and semi-quantitative elemental information to guide research and identification of unknown or complex materials. It can provide results fast and relevant enough to keep students engaged in applicable science-based projects.



Qualitative Analysis for Elemental ID



Semi-Quantitative analysis of composition

The DELTA Series

Everything You Need in Handheld XRF with State-of-the-Art Innovation

The New Generation DELTA Handheld XRF Analyzers are ergonomically advanced with a forward looking design incorporating the latest in electronics, components, and software technology.

DELTA Professional

The DELTA Professional with a 40kV tube and SDD detector is the best value solution from Olympus for handheld XRF analyzers. It provides superior performance in speed, LODs, and elemental range.

DELTA Premium

The DELTA Premium with advanced 40kV tube and large area SDD detector is best for ultra quick, analytically demanding applications, such as trace levels and light elements in low alloy steel, soil, mining, and metallurgical samples.

DELTA Classic Plus

The DELTA Classic Plus with a 40kV tube and Si-PIN detector is ideal for simple applications. It provides quick ID, screening, sorting, and elemental and metals analysis.

Some DELTA Premium models can be configured with a 50kV tube to optimize LODs for high-Z and challenging elements, such as Ag, Cd, Sn, Ba, Cr, Sb, Te, and Rare Earth Elements (REEs).

The newly available DELTA X-act Count Technology can provide even better sensitivity and precision in faster time for more materials than before. Throughput is increased with the same or better precision in half the time for most elements.

Features and Benefits
Powerful 4W X-ray tube, 200 µA current (max), optimized beam settings
Tight geometry for exceptional LODs and high analysis throughput
Large-Area SDD and customized X-ray tube options for exceptional sensitivity and precision for more elements and materials
Patent-pending automatic barometric pressure correction that adjusts calibration as needed for more accurate analysis of light element.
Lightning-fast data acquisition for faster testing time
Floating Point Processor: Provides more calculations in less time, and leverages more advanced calibration algorithms
Integrated Bluetooth® for data input and output available in most countries
Integrated wide area heat sinks throughout the DELTA body for high power use in extreme temperatures
Analysis indicator lights visible from 360° to help ensure safe use
Advanced colortouch LCD screen for clarity, brightness, responsiveness, and energy efficiency for indoor/outdoor use
Accelerometer technology puts the unit into sleep mode to save energy when not in use; logs impacts for tool management
DELTA PC Software for enhanced data analysis, calibration modeling, and optional closed beam workstation operation
USB interface port for high-speed downloads and seamless PC control
Ergonomic rubberized handle for enhanced grip
Docking Station and Hot Swap Batteries

The unique DELTA Docking Station frees you from having to power down the analyzer. The station charges the analyzer battery and a spare, and performs periodic calibration checks. DELTAs can be operated 24/7 in the field with hot swap battery replacement.

DELTA Field Accessories

A variety of accessories and options are available to take full advantage of the DELTA Handheld XRF in the field. From portable bench-top setups for prepped samples to XRF-GPS-GIS setups for full-scale, large area, in-situ instant metal mapping, these accessories help maximize efficiency of field XRF testing.

DELTA accessories and options on this page are optional and can be coupled with an initial purchase or at any time after.

1. DELTA Portable Workstation

Portable workstation with integrated safety-lock shielding is convenient for bagged, prepped, filters, dust wipes and liquid samples or for multiple small objects; a PC is connected for remote control of this closed-beam DELTA set-up.

2. DELTA Holster

The holster keeps the DELTA by your side and within easy reach.

3. DELTA Soil Foot

The soil foot provides hands-free analysis with the DELTA for long testing times.

4. DELTA 50kV Safety Shield

The safety shield provides additional shielding from open beam radiation for field use of the full 50kV power.

5. DELTA Xplorer

The Delta XRF-GPS-GIS Xplorer Configuration provides seamless connectivity between XRF and GIS for rapid targeting and real time decision making.

6. DELTA Soil Stick

The soil stick minimizes wear and tear on your back and knees and provides push button operation of the DELTA from an adjustable height. It's most applicable for in-situ testing on large scale soil geochemistry and environmental programs.

The DELTA Line

The DELTA series handheld XRF analyzers are configured with powerful miniature X-ray tubes, Si-PIN, or highly advanced Silicon Drift Detector (SDD) detection, specialized filters, and multi-beam optimization for the ultimate in XRF field analysis.

DELTA Specifications*

	DELTA Premium	DELTA Professional	DELTA Classic Plus
Excitation Source	4W Rh, Au, or Ta anode (per application) X-ray tube	4W Ag, Rh, Au, or Ta anode (per application) X-ray tube	4W Au or Ta anode X-ray tube
Detector	Large-Area Silicon Drift Detector	Silicon Drift Detector	Si-PIN Diode Detector
Analytical Range	Alloy and Mining: Mg and up for Rh/Ag and Al and up for Ta/Au; Soil: P and higher		Alloy and Mining: Ti and higher; Soil: P and higher
Weight	1.5 kg (3.25 lbs) without battery		
Dimensions	260 × 240 × 90 mm (10.25 × 9.5 × 3.5 in.)		
Environmental Temp Range	-10 ºC to 50 ºC (14 ºF to 122 ºF)		
Processing Electronics	530 MHz CPU with integrated FPU with 128 MB RAM; Proprietary Olympus Digital Pulse Processor (DPP)		
Smart Electronics	Accelerometer; Barometer for atmosphere pressure correction of light elements' measurements		
Power	Rechargeable Li-ion battery; Hot-swap maintains analyzer power during battery charge		
Data Display	32 bit Color QVGA resolution, Blanview transmissive backlit touchscreen; 57 × 73 mm (2.25 × 2.9 in.)		
Data Storage	1 GB microSD (stores ~75,000 readings)		
Data Transfer	USB, Bluetooth®		

Standard Accessories

- Waterproof Carrying Case
- Two (2) Li-ion Batteries
- Electronic User Manual and User Interface Guide and Printed Quick Start Guide
- Docking Station
- Mini USB Cable
- 316 Stainless Steel Calibration Check Reference Coin
- Ten (10) Spare Windows
- Integrated Wrist Strap
- DELTA PC Software
- Factory Authorized Training and Support

OLYMPUS NDT INC. is ISO 9001 and 14001 certified

*All specifications are subject to change without notice.

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DELTA_Product_Line_201305_EN • Printed in the USA • P/N: 920-259-EN Rev. E