

# Next generation of XRF analysers

## The XL3t Series of XRF Analysers

XRF technology has taken a giant leap forward with the next generation of portable analysers – the handheld Thermo Scientific Niton XL3t. Building on the success of the award-winning Niton® XLt Series, the Niton XL3t x-ray tube-based XRF analyser continues to lead the market through excellence in innovation.

### A History of Innovation

A history of breakthrough technologies distinguishes Thermo Scientific Niton x-ray fluorescence (XRF) analysers. In 2002, we pioneered the use of miniaturised x-ray tubes in handheld XRF analysers.

Since that time, the performance and features of Niton XRF instruments have improved continuously. Now we introduce a groundbreaking new generation of portable XRF analysers, combining advanced electronics and materials technology with the most powerful x-ray tubes ever used in a handheld XRF instrument: presenting the Niton XL3t.

Featuring a high-performance thermoelectrically cooled detector, 80 MHz real-time digital signal processing, and dual state-of-the-art embedded processors for computation, data storage, communication, and other functions, the Niton XL3t incorporates many new features directly benefiting the customer.

From the integrated, tilting, colour, touch screen display to the customisable menus for ease of use, these ergonomic new analysers are both the lightest weight and most ruggedly constructed x-ray tube-sourced handheld XRF analysers ever made.

Niton XL3t instruments can be used for many non-destructive testing applications, including analysis of metal alloys, screening of electronics and consumer goods for prohibited substances, mining exploration and grade control, and more. For example, the Thermo Scientific Niton XL3t 800 Series is the definitive tool for scrap metal recycling, casting and fabrication, manufacturing and Positive Material Identification (PMI).

Alloy grade ID and QC testing typically take 1 to 2 seconds, with accurate alloy chemistry in as little as 3 to 5 seconds. Similarly, compliance testing for meeting the demands set forth in the Consumer Product Safety Improvement Act (CPSIA), Proposition 65, Restriction of Hazardous Substances (RoHS), and other regulations is faster than ever before with the Niton XL3t 700 Series, including screening of incoming materials, stocks and outgoing finished goods. Detection limits for all banned substances are improved – especially for cadmium – with the 50 kV x-ray tube sample excitation system.



PMI for critical applications

Niton XL3t Series analysers provide many distinct advantages:

- Very easy to use – even by non-technical personnel
- Lab-quality performance in a handheld instrument
- Improved cycle time for high sample throughput

The Niton XL3t's analytical power alone puts it in a field by itself. With its many standard features and available options, it stands far above the competition. Integrated USB and Bluetooth™ communications provide direct data transfer to the user's PC or networked storage device, eliminating cumbersome data syncing procedures required by PDA-based XRF analysers. A clip-on weld mask and folding test stand help users safely analyse difficult to measure samples. Additionally, the optional heat shield extends the hot-surface testing capability from 600°F (315°C) to 1,000°F (538°C), protecting both the analyser and the operator's hand from these elevated temperatures. Add the optional integrated sample imaging system and 3 mm small spot feature to locate areas of interest in a sample, such as a small component or button, then store the image of each sample analysed along with measurement results; or choose the Helium Purge Light Element Analysis Package for direct analysis of Mg, Al, Si, and P.



# Product Specification



Screen toys and consumer goods with confidence

Take advantage of the standard Niton Data Transfer (NDT©) PC software suite to customise the instrument, set user permissions, generate custom reports and print certificates of analysis, or to remotely monitor and operate the instrument hands-free. Whether you need an analyser for metal alloy analysis, RoHS compliance or toy and consumer goods screening, mining or mineral exploration, art conservation, or archaeometric analysis, the Niton XL3t combines the analytical performance of lab-grade instrumentation with the high-speed performance, ease of use, and cutting-edge technology customers have come to expect from their Niton analysers.

Thermo Scientific Niton XL3t analysers represent just one of our handheld analyser solutions, which include XRF tools for metal alloy identification, lead-based paint testing, RCRA metals in soil, toy and consumer goods screening, RoHS and WEEE compliance screening, and many other analysis needs.

Weight	<3.0 lbs (<1.3 kg)
Dimensions	9.60 x 9.05 x 3.75 in (244 x 230 x 95.5 mm)
Tube	Au anode 50kV maximum, 100uA maximum Ag anode with optional light element analysis package
Detector	High performance semiconductor
System Electronics	533 MHz ARM 11 CPU 300 MHz dedicated DSP 80 MHz ASICS DSP for signal processing 4096 channel MCA 32 MB internal system memory/128 MB internal user storage
Batteries	Two 4 (or optional 6) cell lithium-ion battery packs
Display	Adjustable angle, colour, touch-screen display
Standard Analytical Range	>25 elements S to U
Optional Light Elements	Additional elements Mg, Al, Si, and P via helium purge
Data Storage	Internal >10,000 readings with spectra
Data Transfer	USB, Bluetooth, and RS-232 serial communication
Security	Password-protected user security
Mode (Varies by application)	Alloy Modes: Metal Alloy, Electronics Alloy, Precious Metals Bulk Modes: Mining, Soil Plastic Modes: RoHS Plastics, Toy & Consumer Goods Plastics, TestAll™, Painted Products Other Modes: Lead Paint, Thin Sample Custom Modes: Upon request (based on application feasibility)
Standard Accessories	Locking shielded carrying case RFID reader Shielded belt holster Spare battery pack 110/220 VAC battery charger/ AC adaptor PC connection cables (USB and RS-232) NITON Data Transfer (NDT) PC software Safety lanyard Check samples/standards
Optional Features and Accessories	Portable test stand, stationary test stand, tripod stand Extend-a-Pole™ extension pole Welding mask HotFoot™ hot surface adapter Soil testing guard Internal CCD sample imaging system Variable spot size aperture
Licensing/Registration	Varies by region. Contact Niton UK
Compliance	CE, RoHS

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