

Rugged and reliable

Fast, accurate, versatile XRF analysis

When durability, performance and productivity are top of mind, industrial businesses rely on the Thermo Scientific™ Niton™ XL2 Plus handheld XRF analyzer. Offering superior analysis and enhanced robustness, the Niton XL2 Plus is built for the way you work. Founded on a reputation of dependability and reliability, you can count on the Niton XL2 Plus for years to come.

Applications

- Verification of metals and alloys in manufacturing
- Quality Assurance testing for positive material identification
- Point-and-shoot sorting at scrap recycling operations
- Coating thickness measurements from single element layers
- Precious metal assay of bullion and jewelry
- Geochemical analysis for ore trading and grade control
- On-site heavy metal screening of polluted soils
- Lead in paint inspection of industrial facilities
- Screening of hazardous substances in consumer goods

Analytical performance

Designed to provide fast analysis and low detection limits, the Niton XL2 Plus ensures reliable results. Powered by a proprietary 2W x-ray tube, dynamic current adjustment and a next generation silicon drift detector, the Niton XL2 Plus delivers optimal sensitivity for each measurement. Leveraging a smart Fundamental Parameter (FP) calibration, the Niton XL2 Plus corrects for sample matrix effects to generate accurate results.

Purpose built

Maximizing form and function, the Niton XL2 Plus is engineered to conquer your toughest environments. Analyze sharp items while minimizing puncture risk with standard Detector ProGuard protection. Backed by a certified IP54 rating, the Niton XL2 Plus is sealed against moisture and dust, ensuring uninterrupted operation, even in the harshest of industrial environments.

Functionality

A simplified application interface eases navigation and maintains point-and-shoot simplicity. Utilize touchscreen functionality or optional directional keys for speedy navigation. A hot-swap battery keeps you up and running



The Thermo Scientific™ Niton™ XL2 Plus handheld XRF analyzer.

when it's time to replace a low battery. While an integrated micro camera and nose guard alignment provide precise sample positioning for each measurement.

Versatility

Whether in the field, or on the shop floor, the Niton XL2 Plus keeps you primed and prepped for the most challenging industrial environments. Operators have the ability to scan a broad range of materials for diverse applications. Identify pure metals and alloys, detect tramp elements, or obtain geochemical data- the Niton XL2 Plus is up for the challenge.

Product Specifications

Weight	3.4 lbs with battery (1.53 kg)
Dimensions	10 x 10.8 x 3.9 in (25.6 x 27.5 x 10 cm)
X-Ray Source	X-Ray Tube: Ag anode (6-45kV, 1-200uA, 2W max) Dynamically adjustable current for optimal sensitivity on every analysis
Detector	Silicon drift detector (SDD) Detector ProGuard protection included
Spot Size	8 mm collimation
Analytical Range	Mg-U
Calibration Modes	General Metals, Precious Metals, Coatings, Mining, Soils, Electronic Alloys, Plastics, Industrial Lead in Paint, Lead in Paint Products
Libraries	Default alloy libraries based on SAE, AISI, ASTM, AA standards Users may create and edit libraries
System Check	Built-in standardization via automatic system check
IP Rating	IP54 (splash and dust proof)
Operating Environment	Temperature: -10°C to 50°C Humidity: 0% to 80% relative humidity non-condensing
Display	Fixed angle, color, resistive touchscreen display
Power	7.4V lithium-ion battery, or 12V DC, 3A, 36W power supply Hot swap functionality keeps analyzer powered during battery replacements
Camera	Integrated CCD micro camera for locating and recording measurement positions
Global Positioning System	Optional external GPS (via Bluetooth)
Bluetooth	Supports print functionality, external GPS connectivity and barcode reader
Memory / Data Storage	64 MB internal system memory / 128 MB internal user storage Stores approximately 10,000 readings with spectra (fewer if images are saved)
Data Entry	Touchscreen keyboard User customizable data entry Optional wireless remote barcode reader
Data Transfer	USB, Bluetooth, and RS-232 serial communication
Operating System	Proprietary
Support Software	Niton Data Transfer (NDT) PC software
Security	Password-protected user security
Languages	English, Chinese, Spanish, Portuguese, Russian, Japanese, German, Korean, French, Italian, Czech
Standard Accessories	Locking shielded carrying case Two (2) lithium-ion battery packs One (1) 110/220 VAC battery charger/ AC adaptor Check samples Belt holster Safety lanyard PC connection cables (USB and RS-232)
Optional Accessories	Thermo Scientific™ portable test stand Thermo Scientific™ mobile test stand Thermo Scientific™ field mate test stand Thermo Scientific™ soil guard
Compliance	CE, RoHS, FCC, Industry Canada, Safety to IEC 61010-1, UL 61010-1
Licensing / Registration	Varies by region. Contact your local distributor.

Learn more at thermofisher.com/XL2Plus

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Low limits, high standards

Elemental limits of detection

The Thermo Scientific™ Niton™ XL2 Plus handheld XRF analyzer is built for your most demanding applications. When low detection limits and high sample throughput is critical, the Niton XL2 Plus' combination of hardware and software provides you with solutions designed to meet your most difficult analytical requirements.

The chart below details the typical sensitivity, or limits of detection (LODs)¹, of the Niton XL2 Plus in parts per million (PPM) for various elements in aluminum (Al), titanium (Ti), iron (Fe) and copper (Cu) base metals. LODs are calculated as three standard deviations (99.7% confidence interval) for each element using a 60 second analysis time per filter (120 seconds total analysis time).



Limits of Detection in ppm (mg/kg)				
Time: 60s per filter				
Element	Al base Metal	Ti base Metal	Fe base Metal	Cu base Metal
Bi	20	40	50	65
Pb	20	40	30	70
W	70	150	275	160
Sb	40	75	80	110
Sn	25	60	70	100
Pd	20	25	45	65
Ru	20	50	70	80
Mo	N/A	A/S	A/S	A/S
Nb	40	100	150	150
Zr	N/A	40	70	70
Se	N/A	30	40	50
Zn	30	60	80	350
Cu	40	110	150	N/A
Ni	80	175	275	150
Co	60	130	950	140
Fe	110	250	N/A	150
Mn	150	300	300	180
Cr	330	700	110	150
V	750	2600	175	225
Ti	1500	N/A	250	400
S	N/A	N/A	75	N/A
P	N/A	N/A	210	200
Si	400	650	300	350
Al	N/A	3500	2000	2500
Mg	3500	N/A	N/A	N/A

Values detailed above are preliminary and subject to change. A/S= Application Specific N/A= Not Applicable

Limits of detection (LODs) are dependent on the following factors:

- Testing time
- Interferences/matrix
- Level of statistical confidence
- Line overlaps

Please note:

Ongoing research and advancements in our Niton XL2 Plus analyzers will lead to continual improvement in many of the values detailed in this chart. Contact a Thermo Fisher Scientific office or your local representative for the latest performance specifications.

Actual analysis time is based on your requirements. In most cases, shorter times will provide you with the detection limits required. For example, if analysis time is reduced from 60 seconds per filter to 15 seconds per filter, then the detection limits obtained would be twice the values shown in the chart. Similarly, increasing the time of analysis will reduce the detection limits by the square root of the increased time.



1. Definition and Procedure for the Determination of the Method of Detection Limit, 40 CFR, Part 136, Appendix B, Revision 1.11 U.S. Environmental Protection Agency, U.S. Government Printing Office, Washington, DC, 1995.

Learn more at thermofisher.com/XL2Plus

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