

# Thermo Scientific Niton FXL Field X-ray Lab

Take your lab with you

The Thermo Scientific™ Niton™ FXL field x-ray lab delivers XRF-based elemental analysis with superior performance capabilities in a compact, portable package you can operate virtually anywhere on site. Experience superior test results in minutes rather than days, and save the significant expense of shipping samples to offsite testing labs.

The Thermo Scientific Niton FXL field x-ray lab offers unmatched performance, features, and mobility.

- New Thermo Scientific™ z-CAL™ mining mode with optimized light element performance
- Nondestructive with accurate, consistent analysis in minutes – or less
- Easy to use, with little operator training required
- Lightweight and ruggedized for field and manufacturing operations
- Available with spot sizes from 1 mm to 8 mm
- Closed-beam design requires minimal licensing in most countries



**More than 30,000 Thermo Scientific portable analyzers are hard at work today around the world, making our customers more efficient and competitive. We've now elevated our x-ray fluorescence (XRF) technology and product design to a totally new level.**

The Niton FXL field x-ray lab offers our highest XRF-based performance and lowest levels of detection for more than 40 critical elements. It is constructed from durable Lexan® plastic that is both dust- and water-resistant to operate flawlessly in harsh environments. Compact and weighing less than 30 pounds (14 kg), it's easy to transport and operate from the back of a truck, on a portable tripod, or at the loading dock or manufacturing line.

The Niton FXL is based on our proven, purpose-built software: there's no PC required, alleviating the worry of a computer crash and loss of data.

Not only does this breakthrough instrument include advanced batteries that support extended continuous operation on a single charge, it is also free of air filters that can clog if not maintained. Designed for operator ease of use.

# Take your lab anywhere you need it

## Designed for operator ease of use.

The Niton FXL field x-ray lab makes elemental analysis easy for everyone. Open the lid and place your sample into the 9" x 12" x 4.5" test chamber. Then simply press a button on the bright, 9" color touch screen to get accurate results within a few minutes or less. Thermo Scientific™ TestAll™ technology automatically selects the correct analytical testing mode for the operator.

Select pre-determined analysis settings for your specific applications.

While the Niton FXL is powerful, fast, easy to use, and extremely mobile, you also get the critical features you expect from a commercial-quality test lab:

- **Integrated camera with small-spot feature:** The Niton FXL allows you to test areas as small as 1 mm and conveniently store sample measurements for later reference.
- **X-Y positioning:** After placing your sample in the test chamber, this feature lets you position the XRF head quickly to the precise spot you want to test.
- **Sample spinner:** The sample is rotated within the chamber during testing, ensuring an overall accurate reading that best characterizes the entire sample.
- **Closed-beam design:** The Niton FXL uses a closed-beam design that simplifies licensing requirements in most countries.

## Niton FXL Technology: The GOLDD Standard for Superior Elemental Analysis

Thermo Scientific™ GOLDD™ technology makes it possible to deliver exceptionally sensitive results with remarkable speed – as much as 10-times faster than conventional Si-PIN detectors, and up to 3-times more precise than conventional silicon drift detectors (SDD).

By combining a 50 kV, 200 µA x-ray tube, closely optimized geometry, our industry-leading signal processing hardware and software, and proprietary drift detector, the Niton FXL achieves superior performance in the form of our fastest analysis and lowest detection limits. For example in mining and exploration, field personnel can now generate fast, reliable elemental results with the z-CAL, a fit-for-purpose calibration and operation methodology for light elemental analysis.

**Now your commercial lab comes to you – a valuable resource you can carry on the back of a truck or move easily throughout your inspection department, warehouse, or store. The Niton FXL is engineered for your applications:**

- **Exploration and mining:** from base metals and Au mining to mineral sands and PGE
- **Oil and gas exploration:** infer mineralogical properties favorable to oil and gas production and light element analysis required for gas shale applications
- **Industrial minerals:** limestone, clay, steel slag, cement, and more
- **Consumer goods testing:** more precise testing for Pb, Cd in toys, jewelry, packaging, and more
- **RoHS compliance:** analysis of populated circuit board and consumer electronics with complete confidence
- **Precious metal alloys:** ideal tool for refiners and distributors
- **Environmental:** test for RCRA metals at less than 10 ppm in soils

## COMPARISON AT-A-GLANCE:

### Legend:

+++ Superior




++ Excellent

+ Good

– Not applicable/not available



	Handheld XRF analyzers	Handheld XRF analyzer in optional test stand	Field x-ray lab
Maximum portability	+++	++	+
Ease of use	+++	+++	+++
Highest performance and lowest levels of detection	++	++	+++
Laboratory features	–	–	+++
Ease of regulatory compliance	+	++	+++

	Thermo Scientific Niton FXL Mining 	Thermo Scientific Niton FXL Mining Small Spot Analysis 	Thermo Scientific Niton FXL Consumer Goods/RoHS 
<b>Model Number</b>	Niton FXL 950	Niton FXL 959	Niton FXL 970
<b>Weight</b>	< 30 lbs. (<14 kg)		
<b>Dimensions</b>	Outer: 10 x 14 x 12 in. (250 x 350 x 300 mm) Chamber: 9 x 12 x 4.5 in. (229 x 305 x 114 mm)		
<b>Tube</b>	Ag anode, 50 kV/200 µA/4 W		
<b>Detector</b>	Geometrically Optimized Large Area Drift Detector (GOLDD)		
<b>System Electronics</b>	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 storage
<b>Display</b>	9 in. tilting, color, touch-screen display		
<b>Standard Analytical Range</b>	Up to 42 elements from Mg to U		
<b>Data Storage</b>	Up to 10,000 readings with spectra (internal)		
<b>Data Transfer</b>	USB		
<b>Security</b>	Password-protected user security		
<b>Mode (Varies by application)</b>	TestAll Geo: Soil, Mining z-CAL Other Available Modes: General Alloy, Electronic Metals, Plastics, Consumer Paint, Precious Metals, Coatings	TestAll Geo: Soil, Mining z-CAL Other Available Modes: General Alloy, Electronic Metals, Plastics, Consumer Paint, Precious Metals, Coatings	TestAll: Plastics, Electronic Metals, Consumer Paint Other Available Modes: General Alloy, Precious Metals, Coatings, Soil, Mining z-CAL
<b>Data Entry</b>	Touch-screen keyboard User-programmable pick lists		
<b>Standard Accessories</b>	<ul style="list-style-type: none"> <li>• Sample spinner</li> <li>• 8 mm spot size</li> </ul>	<ul style="list-style-type: none"> <li>• Sample spinner</li> <li>• X-Y positioning</li> <li>• 1 mm, 3 mm, and 8 mm spot size</li> </ul>	<ul style="list-style-type: none"> <li>• X-Y positioning</li> <li>• 1 mm, 3 mm, and 8 mm spot size</li> </ul>
	<ul style="list-style-type: none"> <li>• Integrated CCD camera for locating and storing images</li> <li>• One lithium-ion battery pack</li> <li>• USB cable</li> <li>• Niton Data Transfer (NDT™) software</li> </ul>		
<b>Optional Features and Accessories</b>	<ul style="list-style-type: none"> <li>• X-Y positioning</li> <li>• 1 mm, 3 mm small-spot size</li> <li>• Tripod</li> <li>• Field sample preparation kits</li> <li>• Helium purge (for ultra-low Mg-S)</li> <li>• Carrying bag</li> </ul>	<ul style="list-style-type: none"> <li>• Tripod</li> <li>• Field sample preparation kits</li> <li>• Helium purge (for ultra-low Mg-S)</li> <li>• Carrying bag</li> </ul>	<ul style="list-style-type: none"> <li>• Sample spinner</li> <li>• Carrying bag</li> </ul>
<b>Licensing/Registration</b>	Varies by region. Contact your local distributor		
<b>Compliance</b>	CE, RoHS		



Niton FXL Mining Analyzer (left)  
Niton FXL Consumer Goods/RoHS Analyzer

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In addition to these offices, Thermo Fisher Scientific maintains a network of representative organizations throughout the world.

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