

Manufacturing and  
Quality Control



## Thermo Scientific Niton XRF Analyzers

▶ *Eliminating the guesswork – verifying metal alloys for manufacturing quality assurance*



## Positive material identification in seconds, with point-and-shoot simplicity.

**The verification of metal alloys for manufacturing quality assurance and control has never been more important for product reliability and safety. From metal production to service centers and distributors, and component fabrication to final product assembly, the potential for material mix-ups is very real, and the need for traceability is now a priority.**

### Take control of material verification with Thermo Scientific Niton XRF analyzers

Fortunately, with Thermo Scientific Niton XRF analyzers, a worry-free solution is literally right in your hand.

Now you don't have to risk your business and its reputation on the accuracy of your suppliers' documentation for material identification. Our easy-to-use XRF analyzers are the leading handheld analyzers available today for rapid, accurate positive material identification (PMI) and elemental analysis. For thousands of companies in the aerospace, metal fabrication, foundry, and related industries, Thermo Scientific Niton analyzers deliver dependable alloy grade identification and chemical analysis in seconds.

Lab-quality results are available almost instantly on the unit's bright, color, touch-screen display, allowing quick decision-making with total confidence. You can set user permissions on the analyzer, print certificates of analysis, and even remotely monitor and operate the unit hands-free from your PC.

Compared to the time consuming and high cost of shipping samples to off-site labs, our analyzers are a great investment that can pay for themselves in weeks or months, rather than years. Now you can rapidly verify alloys, recover lost material traceability, isolate finished welds to validate filler material and dilution, and confirm finished products – all with a nondestructive testing method that leaves samples undamaged in any way, saving you valuable time and additional testing expense.



***Fast, accurate elemental analysis and positive identification for your manufacturing requirements:***

- ***Components***
- ***Wire strands as fine as 1 mm***
- ***Rods***
- ***Finished welds***
- ***Bolts, rivets, and other fasteners***
- ***Complete fabricated assemblies***

# Thermo Scientific Niton XRF Analyzers

Thermo Scientific Niton handheld x-ray fluorescence (XRF) analyzers are revolutionizing elemental analysis with the simple pull of the trigger.

► **Exceptionally fast, easy to use**

Just point and shoot for results in seconds on a bright, color, touch-screen display.

► **Purpose-built**

Ruggedized with sealed construction, our analyzers are built with tough LEXAN® plastic and weigh approximately three pounds (1.36 kg) each; dust- and waterproof for worry-free use virtually anywhere. One-step system check requires no external accessories while advanced batteries support up to 10 hours of continuous operation on a single charge.

► **Nondestructive**

Unlike destructive testing methods, samples remain intact and undamaged.

► **Application-optimized**

High-performance x-ray system design with features matched specifically for PMI applications.

► **Flexible communications**

Bluetooth™ wireless and USB communications interfaces are included in every analyzer. Advanced Thermo Scientific Niton Data Transfer (NDT©) PC software lets you set user permissions, print certificates of analysis to document results, or operate the analyzer right from your PC.



**Niton XL2**  
VALUE LEADER

**Niton XL2 GOLDD**  
PERFORMANCE LEADER

**Niton XL3t**  
FEATURE LEADER

**Niton XL3t GOLDD+**  
ULTIMATE PERFORMANCE AND FEATURES

Element	Concentration 1	Concentration 2
Si	0.023	0.351
S	0.194	0.099
Cr	16.78	0.24
Mo	0.572	0.076
Tu	0.509	0.096
	8.38	0.42

Niton XL2 Series	Niton XL3t Series	Niton XL3t GOLDD+ Series
Ruggedized for harsh shop environments	Optional CamShot™ CCD camera to capture image for traceability	Highest sensitivity and measurement accuracy; shortest testing time
Rapid results for confident decision making	Optional WeldSpot™ small-spot feature	CamShot CCD camera standard, WeldSpot optional
Fixed angle, color, touch-screen display	Higher performance and sensitivity for challenging applications	Identify free-machining stainless steels based on S content without helium purge or vacuum
High performance plus light element detection (Mg-S) with Niton® XL2 GOLDD™	Tilting, color, touch-screen display	Superior light element performance (Mg-S) without helium purge or vacuum; helium purge option available for ultra-low Mg detection

# Manufacturing

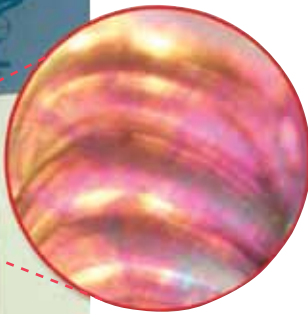
*Purpose-built for unmatched accuracy in Grade ID*



*With a unique library of 400+ alloy grades, Thermo Scientific Niton analyzers provide superior accuracy in grade identification unsurpassed by any other handheld XRF analyzer.*

Thermo Scientific Niton analyzers with GOLDD technology provide alloy chemistry for up to 30 of the most common elements in tens of thousands of alloy grades. Families of alloys that can be accurately identified and analyzed include, but are not limited to:

- **Stainless steels**
- **Cr-Mo steels including V stabilized versions**
- **Low alloy steels**
- **Tool steels**
- **Nickel alloys**
- **Monel® and other Cu-Ni alloys**
- **Copper alloys, brasses, and bronzes**
- **Titanium alloys**
- **Aluminum alloys**
- **Exotics, such as zirconium and tantalum alloys**



*Optional CamShot and WeldSpot*



# and Quality Control

*Maximum performance and features*

*More than 25,000 Thermo Scientific Niton XRF analyzers are in use daily in more than 75 countries on six continents.*



## **Thermo Scientific Geometrically Optimized Large Area Drift Detector (GOLDD) technology**

Thermo Scientific GOLDD technology brings true lab-quality performance to handheld XRF analyzers. Delivering up to 10X faster measurement times than conventional technologies, it also provides the highest sensitivity and measurement accuracy, plus the capability of measuring light elements (magnesium, aluminum, silicon, phosphorus, and sulfur) without helium purge or vacuum.

Our advanced GOLDD technology allows you to accurately sort additional grades, including:

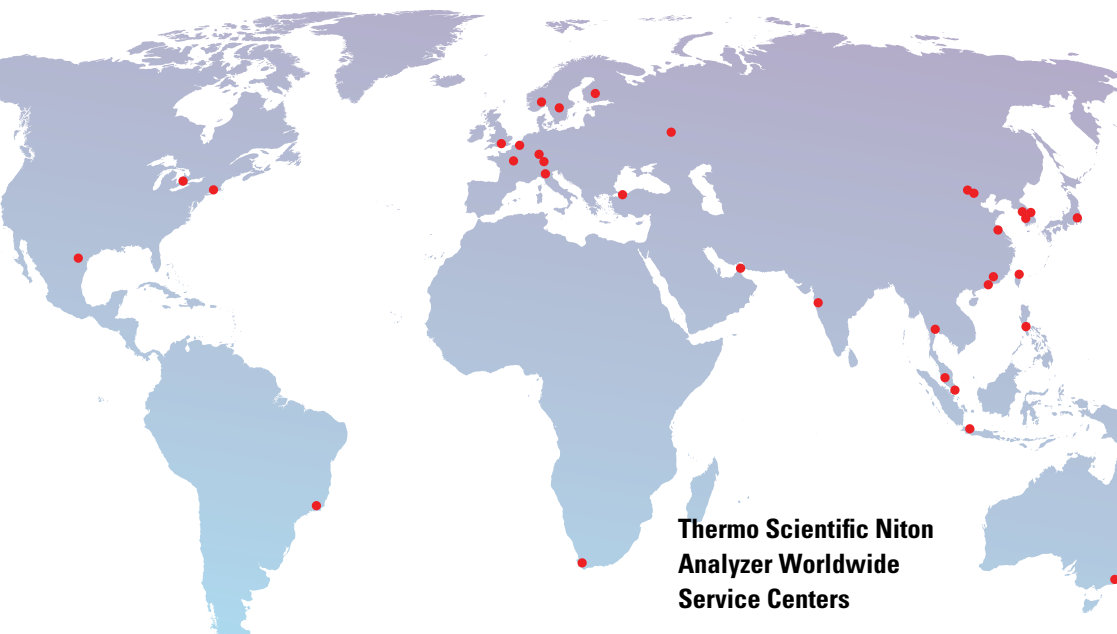
- **Zecor® SS alloys containing 5-6% silicon**
- **Titanium alloys, including direct measurement of aluminum content**
- **Aluminum and silicon bronzes**
- **Aluminums for silicon and magnesium content**

*"After working with the [Niton] XL3, we found that it gives us faster and what we feel are even more accurate results. This means quicker verification times. With the gain in speed, we can accept materials faster and get them into production faster, so we can also increase our percentage of testing – with the same amount of labor."*

**Brian Uhlenkamp, vice president of engineering, DCI Inc.**

*"...When we do verification in house, we have it categorized so we know what ASTM category it is, and the report prints out that we have the right material for this project... For us, that's a one-shot benefit. There's no more going back and forth with outside testing facilities."*

**Bill Ellis, technical director, Weir Minerals Floway® Pumps**



**Thermo Scientific Niton  
Analyzer Worldwide  
Service Centers**

**Superior XRF analysis solutions,  
backed by our worldwide sales and service**

We are recognized as the leader in XRF analysis technology, serving companies in more than 75 countries on six continents. We serve our customers through corporate resources and a dedicated network of more than 70 distributors and 30 factory-trained service centers around the world to provide the most effective customer service possible. Our global reach and resources not only ensure worry-free product support, we also offer comprehensive services including application consulting and training anywhere you need them.



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