

Thermo Fisher Scientific has made a giant leap forward with the new generation of portable XRF analyzers: 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 analyzer continues to lead the market through excellence in innovation.

Thermo Scientific NITON® XL3t



A History of Innovation

In 2002, NITON, now a part of Thermo Fisher Scientific, pioneered the use of miniaturized x-ray tubes in handheld x-ray fluorescence (XRF) analyzers. The performance and features of NITON instruments have improved continuously since that time. Now we introduce a groundbreaking new generation of portable XRF analyzers, combining advanced electronics and materials technology with the most powerful x-ray tubes ever used in a handheld XRF instrument: presenting the 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 XL3t incorporates a host of new features directly benefiting the customer. From the integrated tilting color touch-screen display to the customizable menus for ease of use, the ergonomic new XL3t series analyzers are both the lightest weight and most ruggedly constructed x-ray tube sourced portable XRF analyzers ever made. XL3t instruments can be used

for many nondestructive testing applications, including analysis of metal alloys, screening of electronics for prohibited substances, mining exploration and grade control, and a host of other analytical applications. The NITON XL3t 800 series is the definitive tool for scrap metal recycling, casting & 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 Restriction of Hazardous Substances (RoHS) and other regulations is faster than ever before with the 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 XL3t's 50 kV x-ray tube sample excitation system.

The XL3t's analytical power alone puts it in a field by itself; with its many standard features and available options, the XL3t stands far above the competition. Integrated USB and Bluetooth™ communications provide direct data transfer to the user's PC or networked storage device, eliminating

NITON XL3t Series analyzers 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



Instant in-field results.

NITON XL3t Specifications



PMI for critical applications.

cumbersome data syncing procedures required by PDA-based XRF analyzers. A clip-on weld mask and folding test stand help users safely analyze difficult to measure samples, while the optional heat shield extends the hot-surface testing capability from 600 °F (315 °C) to 1,000 °F (538 °C), protecting both the XL3t and the operator's hand from these elevated temperatures. Add the optional integrated sample imaging system to locate areas of interest in a sample, then store the image of each sample analyzed along with measurement results; or chose the Helium Purge Light Element Analysis Package for direct analysis of Mg, Al, Si, P, and S. Use NITON's standard NDT® PC software suite to customize 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 analyzer for metal alloy analysis, RoHS or other regulatory compliance testing, mining or mineral exploration, art conservation or archeometric analysis, the Thermo Scientific 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 analyzers.

Thermo Scientific NITON XL3t analyzers are just one of Thermo Fisher's Portable NITON Analyzer Solutions which include analysis tools for metal alloy identification, lead-based paint testing, RCRA metals in soil, RoHS and WEEE compliance screening and a host of other analysis needs.

Weight	< 3.0 lbs (< 1.3 kg)
Dimensions	9.60 x 9.05 x 3.75 in (244 x 230 x 95.5mm)
Tube	Au anode 50 kV maximum, 40 uA maximum Ag anode with optional light element analysis package
Detector	High-performance Si PIN diode
System Electronics	533 MHz ARM 11 CPU 300 MHz Dedicated DSP 80 MHz ASICS DSP for Signal Processing 4096 Channel MCA 32Mb Internal System Memory/ 128Mb Internal User Storage
Batteries	Two 4 (or optional 6) Cell Lithium-ion Battery Packs
Display	Adjustable angle VGA color touch-screen display
Standard Analytical Range	>25 elements from Ti to U
Optional Light Elements	Additional elements Mg, Al, Si, P and S via Helium Purge
Data Storage	Internal >10,000 readings with spectra
Data Transfer	USB, Bluetooth and Serial Communication RS-232
Security	Password-protected user security
Mode (Varies by Application)	Compton Normalization (CN) Bulk Sample Analysis Fundamental Parameters (FP) Bulk Sample Analysis Thin Sample Analysis Empirical calibration and Combined FP plus empirical calibration analysis Pass/Fail Testing Signature Match and SuperChem™ Analysis
Data Entry	Touch-Screen Keyboard User-Programmable Pick Lists Optional Remote Barcode Reader
Standard Accessories	Locking shielded carrying case RFID Reader/Encoder Shielded belt holster Spare battery pack 110/220 VAC battery charger/ AC adaptor PC connection cable NDT (NITON data transfer) PC software Safety lanyard Check Samples/Standards
Optional Accessories	Portable test stand, Stationary test stand, Tripod stand Extension pole Welding mask HotFoot™ hot surface adapter Soil testing guard
Licensing/Registration	Varies by region. Contact your local distributor.
Compliance	CE, RoHS

©2007 Thermo Fisher Scientific Inc. All rights reserved. Bluetooth is a trademark of Bluetooth SIG, Inc. All other trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries. Specifications, terms and pricing are subject to change. Not all products are available in all countries. Please consult your local sales representative for details.

N3 T-201
PS44025_E0407B

Positive Material Identification and Analysis of Metals and Alloys in the Petrochemical Industries

Thermo Scientific NITON® XL3 Portable Alloy Analyzers – Simply Superior XRF



Introduction and Overview

It is critically important for workers in inspection, safety and maintenance departments in refineries and petrochemical plants to prevent the accidents that can occur as a result of the installation of incorrect or out-of-specification metal alloy parts. Field portable XRF alloy analysis has become the standard industry method of choice for material inspection for alloy verification (AV) and positive material identification (PMI), because XRF is nondestructive and provides immediate, accurate on-site test results. In the past three decades, a number of high-profile industrial accidents in refineries and petrochemical plants have made people around the world much more aware of the potential dangers caused by alloy mix-ups; this has led inspection departments to use more sophisticated, extensive and rigorous inspection techniques.

One accident can cost upwards of tens of millions of dollars and result in long-lasting environmental contamination, worker injuries and even loss of life. In today's industrial safety regulations and atmosphere of public scrutiny, it is absolutely essential for petroleum and petrochemical plants to discover and fix these material mix-ups. As a result, petroleum refineries and petrochemical facilities worldwide are now adopting best practices and a best technology approach to PMI for verifying the safety of operating plants. As PMI testing technology has advanced, former practices of testing only a fraction of all parts and assemblies have been replaced by 100% comprehensive materials testing in thousands of plants.

Modern PMI Technology

Today's inspectors have access to powerful new testing tools that change the way PMI is performed. Thanks to major advancements in handheld x-ray fluorescence (XRF) technology pioneered by NITON, now a part of Thermo Fisher Scientific, today's inspection and maintenance personnel are able to test miles of pipeline, piping systems, vessels and their associated refinery alloys during a single turnaround. The performance and ease of use of today's NITON handheld XRF analyzers enables inspection and maintenance personnel to test large numbers of samples with extremely high confidence in the integrity of the results. Just point and shoot: a 2 to 5 second analysis of an unknown metal alloy produces accurate metal identification and elemental analysis. The testing time is typically less than one second for a positive grade identification, and just a few seconds longer to obtain lab-quality chemistry. Little or no sample preparation is needed for alloy samples with relatively clean surfaces, regardless of shape or size, from single strands of 1mm wire to finished weld beads, to valves and flanges, to complete reaction vessels.

NITON Analyzers, an Industry-Wide Revolution

In 1999, NITON led an industry-wide revolution with its introduction of the XL-801S, the first handheld, lab-quality XRF analyzer for metal alloy analysis. Within one year of its introduction, the company had become the leading manufacturer of portable XRF analyzers for PMI and other alloy-testing applications. Since that time, Thermo Scientific NITON PMI analyzers have been continuously improved and have been adopted for use by plants in countries worldwide. Technical staff continue to work intensively with inspectors

and PMI technicians to constantly add useful new features and improve the performance and ease of use of handheld NITON XRF analyzers.

Rock-Solid Calibration

One of the most important keys to the success of Thermo Scientific NITON analyzers in alloy analysis has long been the instruments' fast, stable, accurate and precise fundamental parameters (FP) based factory calibration. Our proprietary FP sample analysis includes nearly every element of interest in nearly all types of metal alloys that require positive material inspection.

FP is a complex analytical technique that corrects automatically for the absorption, secondary excitation, geometric and other sample matrix effects to automatically give the correct chemical analysis of completely different alloy types without the need for special calibrations or other user inputs. As a result, the robust FP method utilized in Thermo Scientific NITON analyzers provides accurate analysis for all measured elemental concentrations ranging from trace to 100%. No other portable XRF analyzer provides the accuracy and reliability of a Thermo Scientific NITON analyzer.

A Library of Knowledge

Providing accurate alloy chemistry is only part of the equation. Using our extensive experience with the metals industry, we have incorporated an alloy grade library that simultaneously provides users with the common trade name of the alloy on the instrument display. Incorporating a hybrid approach, combining the book value alloy grade

specifications with knowledge of the "as produced" chemistries of these alloys, the NITON XL3 provides unmatched accuracy in grade identification.

Keys to Success

In addition to the most accurate and stable FP calibration model, the Thermo Scientific brand has pioneered many other advances in portable XRF alloy analysis for PMI inspection:

- The first handheld, lab quality XRF alloy analyzer
- Economical pricing that made portable XRF technology affordable for thousands of customers worldwide
- The first-and-only maintenance free, patented Infiniton™ excitation source
- The first portable handheld XRF analyzer sealed against moisture and dust
- The first XRF analyzer to incorporate Bluetooth™ wireless communications technology
- The first XRF analyzer to incorporate space-age plastics and HotFoot™ accessories that enable users to reliably test in-use alloy parts at temperatures up to 1000°F (538°C)
- The first portable XRF analyzer able to measure critical light elements in alloy samples including Mg, Si, P and Al

As a result of this commitment to innovation and continuous improvement, Thermo Scientific NITON XRF analyzers are the world standard for portable XRF technology – instruments that are fast, rugged, easy to use and at the same time, capable of laboratory-grade sample analysis. When compared to instruments manufactured less than 10 years ago, they are far more accurate, up to 100 times faster and much easier to operate.

The NITON XL3 Series – Simply Superior XRF Analysis

Thermo Fisher continues to lead the portable alloy analysis field with technology that responds directly to the needs and requests of the petroleum refining and petrochemical industries. The NITON XL3 Series brings to these industries the latest in a series of cutting-edge, rugged, dependable tools with improved ergonomics, speed and performance, while still retaining the point-and-shoot simplicity that has been a hallmark of NITON analyzers.

Available in both x-ray tube source and radioisotope source configurations, the NITON XL3 Series is the only portable XRF analyzer that allows customers to select the x-ray source that best suits the needs of their business. The XL3 Series provides a number of important key features common to all configurations:

Examples of sample surfaces that may require sample preparation (generally minimal grinding):

- Zn coated or galvanized surfaces
- Painted, coated or plated surfaces
- Process scale or heavy oxidation
- Grease and/or significant dirt build-up
- Any non-representative surface



Fast, reliable positive material identification (PMI).

- Tilting color touch-screen display for easy viewing
- Large touch-screen icons and sealed control buttons for easy navigation and use under all conditions
- Splash-proof and dust-proof – can be used with confidence outdoors in rain or in dirty industrial environments
- Two rechargeable lithium ion battery packs provide 8 to 12+ hours each of continuous operation
- In-field upgradeability for new software versions and other features
- Integrated USB and Bluetooth – providing freedom in choosing the ability to transfer results, update the instrument, or control or monitor the instrument operation wirelessly on an external PC or PDA
- A robust, high-performance software operating system optimized for XRF sample analysis combined with pipelined parallel multiprocessors, the same ones used by many top manufacturers of feature-rich, high-performance consumer electronics such as smartphones, digital video recorders, mobile gaming consoles and GPS receivers

NITON XL3t – Lightning Speed and Laboratory Quality in an X-ray Tube-based System

The NITON XL3t represents the next major leap in the performance of portable XRF analyzers. The XL3t features the most powerful (up to 50kV) x-ray tube ever placed in a portable instrument. Combined with multiple primary filters for optimal sample excitation and a helium-purge option to target light elements from magnesium (12) to sulfur (16), the NITON XL3t provides the greatest analytical range, speed and precision of any portable XRF instrument.

NITON XL3p – A Rugged Isotope-based Workhorse

The NITON XL3p Alloy analyzer, equipped with Thermo Fisher's Infiniton isotope technology, consistently delivers instantaneous, accurate readings. The Infiniton features a patented ²⁴¹Am isotope source and algorithms coupled with a high performance electrically-cooled Si PIN diode x-ray detection system. The NITON XL3p provides fast, reliable, nondestructive alloy ID with accuracy that compares favorably to lab XRF instrumentation, in a rugged, dependable Infiniton radioisotope configuration that is virtually maintenance-free.

XL3 Series Performance

Thermo Scientific NITON XL3 Series analyzers provide alloying chemistry for up to 30 of the most common elements in tens of thousands of alloy grades, with additional elements available on request. Families of alloys that can be accurately

analyzed with a standard system include:

- Stainless Steels
- 12 Cr Steels
- Chromium-Molybdenum (Cr-Mo) Steels including V stabilized versions
- Low alloy Steels such as 4140, 4340, etc.
- Nickel (Ni) alloys such as Hastelloy® and Inconel®
- Tool Steels
- Copper (Cu) alloys
- Titanium (Ti) alloys
- Wrought Al alloys

Additional grades that can be accurately sorted with the addition of the Helium (He) Purge Light Element Analysis package include:

- Zecor™ SS alloys containing 5-6 % Si
- Monel®, including direct measurement of Al in Monel 500
- Ti alloys including direct measurement of Al content
- Aluminum (Al) and Silicon (Si) Bronzes
- Aluminums for Si and Mg content



Nondestructive – test finished products with confidence.

Incredibly Fast Measurement Time

Typical total testing times are less than 5 seconds for difficult alloy separations, with as little as 1-2 seconds for routine grade identification.

Service and Support

Thermo Scientific NITON XL3 Series analyzers are designed to be the most rugged and dependable analyzers in the history of portable XRF. From the durable Lexan EXL plastic instrument body to the high-performance Si PIN diode x-ray detector, each individual component has been carefully designed

and engineered to be highly dependable as well as easily serviceable. When routine service is required, it is handled promptly through one of our 30 service centers located on six continents worldwide to provide the world-class support expected from the industry leader.

Configurations and Accessories

Thermo Scientific NITON analyzers offer the widest range of choices in excitation, configurations and accessories to provide the optimum alloy analysis systems meeting the needs of any organization's analytical and budgetary requirements.

With a variety of x-ray tube options, as well as an improved Infiniton radioisotope configuration with dramatically improved analytical performance across its entire analysis range, these powerful tools have again revolutionized the PMI inspection business.

All NITON XRF analyzers come with a shielded, waterproof carrying case, shielded belt holster, and PC-compatible NITON Data Transfer (NDT[™]) software for remote operation, file transfer, data management and advanced data analysis. Optional items include test stands, welding masks, hot surface adaptors and extension handles.



Why Choose the NITON XL3 for your PMI Needs?

The bottom line is that NITON analyzers provide the versatility, the greatest number of options and the best alloy ID performance and throughput in the industry. With users performing more than 1000 readings in an 8-hour shift, confidence in the correct ID is absolutely critical, and the results from NITON analyzers remain far and away the best in the business. Thermo Fisher Scientific is the world's foremost analytical instrument company. Our portable XRF instruments are designed to meet your quality inspection needs. It's no coincidence that many of our users tell us that NITON analyzers have been a key component of their business success.

The XL3 800 Series remains the clear choice for PMI alloy analysis as well as other alloy testing applications. Thermo Scientific NITON analyzers have set new standards for alloy analysis performance in all key areas: speed, accuracy, ease of use, reliability, ruggedness, minimum down time, and maximum expert support. When the choice comes down to knowing which analyzer will best maximize productivity, NITON XL3 analyzers from Thermo Fisher Scientific will always come out on top.

Summary

With today's emphasis on process safety, minimization of accidents, and community-friendly and environmentally responsible operations, the PMI inspector's job of assuring the safety and integrity of the operating plant environment has never been more demanding. Fortunately, Thermo Fisher's technology has kept up with the increasing PMI testing demands. Over the past decade, more than 2 of every 3 portable XRF analyzers used for PMI testing worldwide, have been manufactured by Thermo Fisher Scientific. PMI inspectors have never had a faster, more accurate or more productive testing tool than a Thermo Scientific NITON XL3 800 Series analyzer. The future of PMI testing is now.

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

NITON Analyzers
Headquarters
Billerica, MA USA
+1 978 670 7460
niton@thermofisher.com

NITON Analyzers Europe
Munich, Germany
+49 89 3681 380
niton.eur@thermofisher.com

NITON Analyzers Asia
Central, Hong Kong
+852 2869 6669
niton.asia@thermofisher.com

www.thermo.com/niton

©2007 Thermo Fisher Scientific Inc. All rights reserved. Bluetooth is a trademark of Bluetooth SIG, Inc. Zecor is a trademark of Mecs, Inc. Hastelloy is a trademark of Haynes International, Inc. Inconel is a trademark of Huntington Alloys Corporation. Monel is a trademark of Inco Alloys International, Inc. All other trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries.

Specifications, terms and pricing are subject to change. Not all products are available in all countries. Please consult your local sales representative for details.

N3 8-302
44029_E0407B

Sorting, Identification and Analysis of Metals and Alloys in the Recycling Industry

Thermo Scientific NITON® XL3 Handheld Alloy Analyzers - Simply Superior



Introduction and Overview

Today, fast and accurate metal alloy sorting and analysis is critically important to maximizing the efficiency and profitability of a scrap yard. In the past, many metal recycling companies used little analytical testing equipment. Expert sorters with decades of experience could sort many alloys using a combination of common sense, simple chemical tests and sparking alloy samples with grinding wheels. Even so, sorting was slow, throughput was limited and sorting mistakes were common. As a result, scrap consumers such as mills and foundries often resorted to re-testing incoming loads – or simply settled for the occasional costly mix-up. As sorting technology has advanced in recent years, the practice of accepting misidentified material is no longer tolerated. Today such errors result in rejection of entire loads, as well as a loss of confidence and damaged business relationships.

Modern Sorting Technology

At a time when many of the older, experienced metal sorters have left the industry, and their replacements are often less knowledgeable, the need for fast, accurate alloy identification and sorting has never been greater in scrap yards. Fortunately, today's advanced portable alloy testing equipment allows scrap yard workers to identify and sort alloy samples faster and more accurately than ever before using a new Thermo Scientific NITON XL3 Series handheld XRF analyzer. Point-and-shoot is truly a reality with these powerful, versatile and easy-to-use tools. With just a short measurement on an unknown sample, the alloy grade and chemistry are displayed on the built-in tilting touch screen

color display. The testing time is often less than one second for routine sorting, and just a few seconds longer to obtain a lab-quality chemistry. Little or no sample preparation is needed for alloy samples with relatively clean surfaces, regardless of shape or size (see sidebar on page 2). From a single strand of 1mm wire to turnings, to massive structures such as reaction vessels, all can be easily tested with a simple trigger pull.

The Role of NITON Analyzers

In 1999, NITON led an industry-wide revolution with its introduction of the XL-801S, the first handheld, lab-quality XRF analyzer for metal alloy analysis. Within one year of its introduction, the company had become the dominant supplier of portable XRF analyzers in many industries, including scrap metal recycling. Since then, rapid growth has been fueled largely by technological advances, and partly by a vigorous recycling industry that has responded favorably to the smaller size, faster speed, ease of use and powerful capabilities of these constantly improving NITON analyzers. Thermo Fisher Scientific continues to work intensively with recyclers to improve existing capabilities and add new features, enabling our customers to increase productivity, streamline operations and maximize profits.

Rock-Solid Calibration

One of the most important features that has made Thermo Scientific NITON analyzers the number one name in alloy analysis instrumentation is the rock solid fundamental parameters (FP) calibration. This proprietary FP calibration method covers

every element of interest, whether major alloying elements or trace contaminants, in all alloy types. FP is a complex modeling method that is based on the physics of x-ray absorption and emission of elements and their interactions with each other. As a result, the robust FP method utilized in Thermo Scientific NITON analyzers provides accurate analysis for many element concentrations ranging from trace to 100% for all alloying elements in most combinations. No other portable XRF analyzer provides the accuracy and reliability of a Thermo Scientific NITON analyzer.

A Library of Knowledge

Providing accurate alloy chemistry is only part of the equation. Using our extensive experience with the metals industry, we have incorporated an alloy grade library that simultaneously provides users with the common trade name of the alloy on the instrument display. Incorporating a hybrid approach, combining the book value alloy grade specifications with knowledge of the “as produced” chemistries of these alloys, the NITON XL3 provides unmatched accuracy in grade identification.

Keys to Success

In addition to the most accurate and stable FP calibration model, Thermo Fisher Scientific pioneered a number of additional features that have been instrumental to the widespread adoption of portable XRF analyzer use for alloy scrap sorting:

- The first handheld, lab-quality XRF alloy analyzer
- The first value-based pricing model making the technology affordable to a variety of users
- The first-and-only maintenance free, patented Infinitem™ excitation source
- The first handheld XRF analyzer sealed against moisture and dust
- The first XRF analyzer to incorporate Bluetooth™ wireless communications technology
- The first portable XRF analyzer able to measure critical light elements in alloy samples including Mg, Si, P, and Al

As a result of this commitment to innovation and continuous improvement, Thermo Scientific NITON XRF analyzers are the world standard for portable XRF technology – instruments that are fast, rugged, easy to use and at the same time, capable of laboratory-grade sample analysis. When compared to instruments manufactured less than 10 years ago, they are far more accurate, up to 100 times faster and much easier to operate.



Lab-quality analysis at your fingertips.

Thermo Scientific NITON XL3 Series Analyzers – Simply Superior XRF Analysis

Thermo Fisher continues to lead the portable alloy sorting field with technology that responds directly to the needs and requests of the recycling industry. The NITON XL3 800 Series brings the scrap recycling industry the latest in a series of cutting-edge, rugged, dependable tools with improved ergonomics, speed and performance, while still retaining the trademark point-and-shoot simplicity that has been a hallmark of NITON analyzers.

Available in both x-ray tube and radioisotope source configurations, the NITON XL3 800 Series is the only portable XRF analyzer that allows the customer to select the x-ray source that best suits the needs of his or her business. The XL3 Series provides a number of important key features common to all configurations:

- Tilting color touch-screen display for easy viewing
- Large touch-screen icons and sealed control buttons for easy navigation and use under all conditions
- Splash-proof and dust-proof – can be used with confidence outdoors in rain or in dirty industrial environments
- Two rechargeable lithium-ion batteries provide 8 to 12+ hours each of continuous operation
- In field upgradeability for new software versions and other features

Samples that may require preparation (generally consisting of minimal grinding):

- Painted, coated or plated parts
- Shot-blasted material (shot blasting deposits iron on the surface of the material)
- Parts with heavy scale or oxidation
- Parts with significant grease or dirt buildup (wipe with rag)
- Any surface that is not representative of the underlying material

- Integrated USB and Bluetooth – providing freedom in choosing the ability to transfer results, update the instrument, or control or monitor the instrument operation wirelessly on an external PC or PDA
- Robust, high-performance software operating system optimized for XRF sample analysis combined with pipelined parallel multiprocessors, the same ones used by many top manufacturers of feature-rich, high-performance consumer electronics such as smartphones, digital video recorders, mobile gaming consoles and GPS receivers

NITON XL3t – Lightning Speed and Laboratory Quality in an X-ray Tube-Based System

The NITON XL3t represents the next major leap in the performance of portable XRF analyzers. The XL3t features the most powerful (up to 50kV) x-ray tube ever placed in a portable instrument. Combined with multiple primary filters for optimal sample excitation and a helium-purge option to target light elements from magnesium (12) to sulfur (16), the NITON XL3t provides the greatest analytical range, speed and precision of any portable XRF instrument.

NITON XL3p – A Rugged Isotope-based Workhorse

The NITON XL3p Alloy Analyzer, equipped with Thermo Fisher's Infiniton isotope technology, consistently delivers instantaneous, accurate readings. It features a specially-packaged ²⁴¹Am isotope source and algorithms coupled with a high performance electrically-cooled Si PIN diode x-ray detections system. The NITON XL3p provides fast, reliable, nondestructive alloy ID with accuracy that compares favorably to lab XRF instrumentation, in a rugged, dependable Infiniton radioisotope configuration that is virtually maintenance-free.

XL3 Series Performance

Thermo Scientific NITON XL3 Series analyzers provide alloying chemistry for up to 30 of the most common elements in tens of thousands of alloy grades, with additional elements available on request. Families of alloys that can be accurately analyzed with a standard system include:

- Stainless Steels
- Nickel (Ni) alloys
- Cobalt (Co) alloys
- Ni/Co alloys
- Tool steels
- Chromium-Molybdenum (Cr-Mo) Steels
- Copper (Cu) alloys
- Titanium (Ti) alloys
- Wrought Aluminum (Al) alloys
- Low alloy steels

- Zirconium (Zr) alloys
- Zinc (Zn) alloys
- Exotic alloys of most types, e.g., alloys of Tantalum (Ta), Hafnium (Hf), Tungsten (W)

Additional grades that can be accurately sorted with the addition of the Helium Purge Light Element Analysis Package include:

- Aluminum alloys including cast alloys and those sorted based on Si or Mg content
- Al and Si Bronzes
- Ti alloys including direct measurement of aluminum content
- Mg alloys
- Zinc alloys based on Al content

Incredibly Fast Measurement Time

Typical total testing times are less than 5 seconds for difficult alloy separations, with as little as 1-2 seconds for routine sorting.



Analyze turnings directly in the barrel.

Service and Support

Thermo Scientific NITON XL3 800 Series analyzers are designed to be the most rugged and dependable analyzers in the history of portable XRF. From the durable Lexan EXL plastic instrument body to the high-performance Si PIN diode x-ray detector, each individual component has been carefully designed and engineered to be highly dependable as well as easily serviceable. When routine service is required, it is handled promptly through one of our 30 service centers located on six continents worldwide to provide the world-class support expected from the industry leader.

Configurations and Accessories

Thermo Scientific NITON analyzers offer the widest range of choices in excitation, configurations and accessories to provide the optimum alloy analysis and sorting systems meeting the needs of any scrap recycler's analytical and budgetary requirements. With a variety of x-ray tube options, as well as a new and improved Infiniton radioisotope configuration with dramatically improved analytical performance across its entire analysis range, these powerful tools will again change the way recyclers conduct business. All NITON XRF analyzers come with a shielded, waterproof carrying case, shielded belt holster and PC-compatible NITON Data Transfer (NDT[®]) software for remote operation, file transfer, data management and advanced data analysis. Optional items include test stands, welding masks, hot surface adaptors and extension handles.



Why Choose the NITON XL3 for your Sorting Needs?

The bottom line is that Thermo Scientific NITON analyzers provide the versatility, the greatest number of options and the best sorting performance and throughput – bar none! With users performing more than 1000 readings in an 8-hour shift, confidence in the correct ID is absolutely critical, and the results from NITON analyzers remain far and away the best in the business. The sorting speed of NITON analyzers continues to improve with each generation of instruments and remains unrivaled in the industry. Doing business with Thermo Fisher Scientific means that you are dealing with a company that understands alloys, understands the recycling business and understands what the recycler needs to be profitable. It's no coincidence that many of our users tell us that their NITON XRF analyzers have been a key component of their business success. Never before has there been such a clear choice for the number-one-selling and top-performing alloy analyzer. With these tools, we have set new standards for scrap sorting performance in all key areas: speed, accuracy, ease of use, reliability, ruggedness, minimum down time, and maximum expert support. When the choice comes down to knowing which analyzer will best maximize bottom line profits, NITON XL3 analyzers from Thermo Fisher Scientific will always come out on top.

Summary:

With an estimated 50,000 alloy grades in use today, the recycler's job of sorting the wide range of material types, shapes and sizes with both speed and accuracy has never been more challenging. Fortunately, the technology has kept up with the demands. Hand-in-hand with the industry, Thermo Fisher provides the tools of choice for more than 90% of all recyclers worldwide. Together, we sort the unknown alloys with ease and confidence. Never has the alloy sorter had the potential to be so effective, accurate and productive. The future of metal recycling is now.

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

NITON Analyzers
Headquarters
Billerica, MA USA
+1 978 670 7460
niton@thermofisher.com

NITON Analyzers Europe
Munich, Germany
+49 89 3681 380
niton.eur@thermofisher.com

NITON Analyzers Asia
Central, Hong Kong
+852 2869 6669
niton.asia@thermofisher.com

www.thermo.com/niton

©2007 Thermo Fisher Scientific Inc. All rights reserved. Bluetooth is a trademark of Bluetooth SIG, Inc. All other trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries.

Specifications, terms and pricing are subject to change. Not all products are available in all countries. Please consult your local sales representative for details.

N3 8-301
44027_E0407B