

## Thermo Scientific Portable XRF Analyzers



**Powerful precious metals analysis**  
from refining to retail to recycling

**Thermo**  
SCIENTIFIC

# Fast. Accurate. Non-destructive.

With x-ray fluorescence (XRF) technology, Thermo Scientific™ Niton™ precious metal analyzers deliver reliable results at every stage of the precious metal life cycle. Niton analyzers provide lab-quality performance in a simple, easy-to-use format. Non-destructive, simultaneous analysis of all precious metals ensures results are more comprehensive than fire assay, with comparable accuracy, and eliminate the toxicity associated with nitric acid methods. Test results appear in seconds.



## Which Analyzer Is Right for You?

### Niton DXL Desktop Analyzer

- Designed for retail use
- Windows keep jewelry in sight
- Built-in CCD camera makes precise sample positioning effortless



### Niton XL2 Precious Metal Analyzer

- Specially calibrated, value solution
- Ultimate in portability
- Test stand and accessories customize the solution



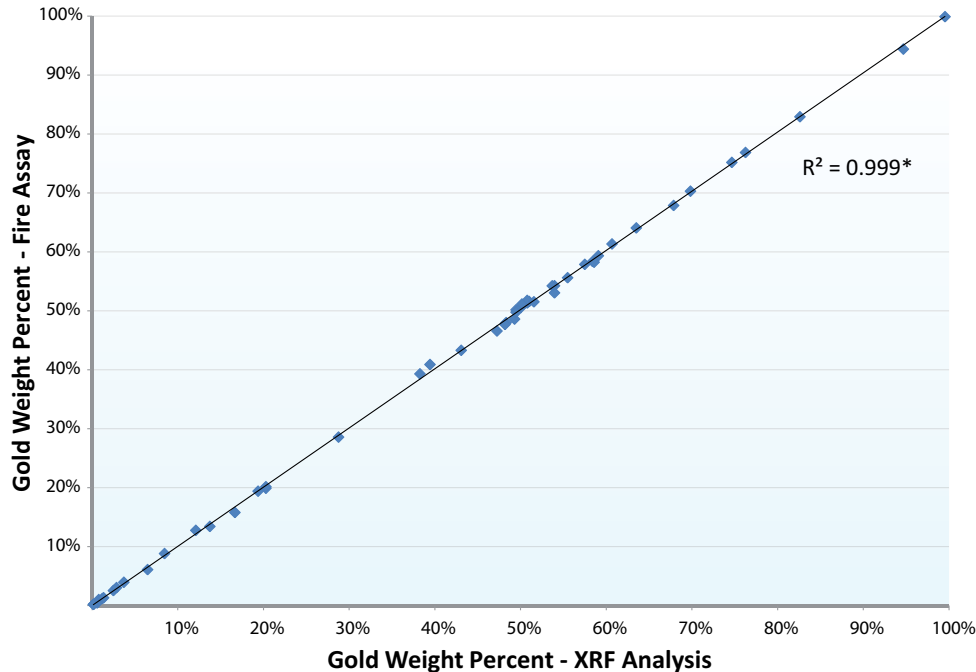
### Niton XL3t GOLDD+ Analyzer

- Powered for high-sensitivity applications
- Ideal for quality control and refining
- Geometrically optimized large area drift detector (Thermo Scientific™ GOLDD™) technology enhances performance



# Gold Standard Results

## Comparison of Thermo Scientific Niton XRF Analyzers to Fire Assay



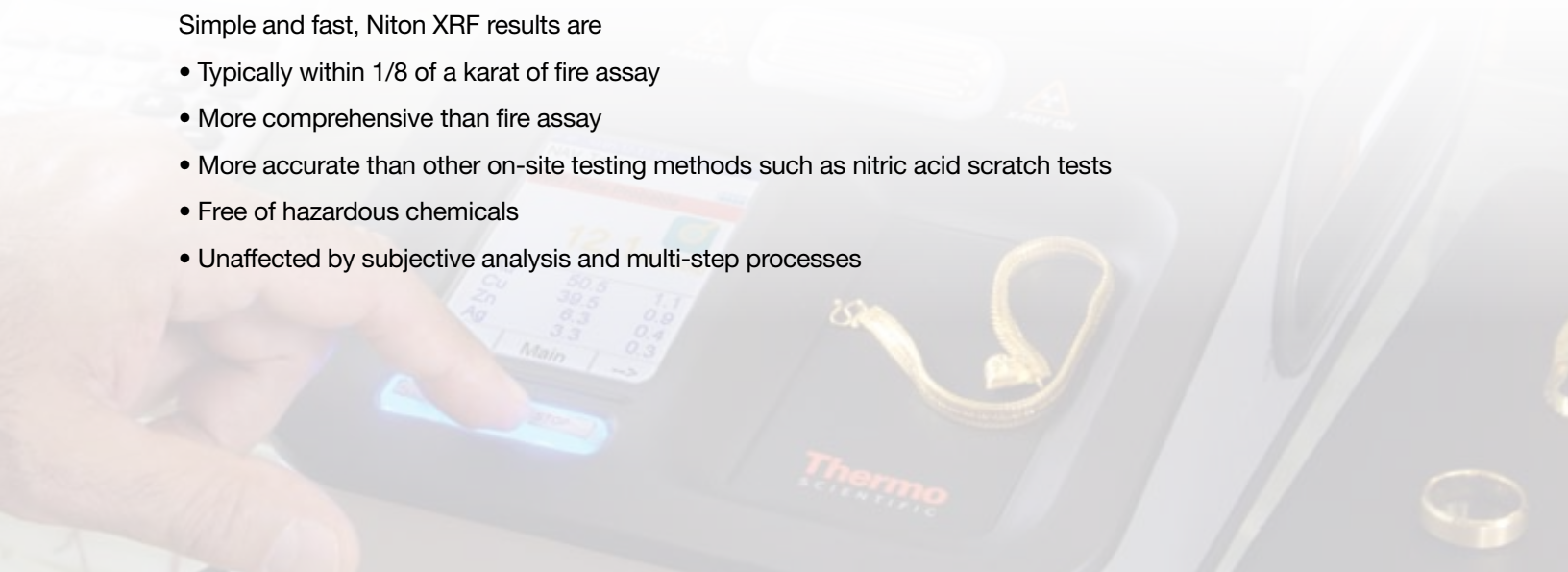
\*Shows a high correlation between XRF analysis and fire assay.

While fire assay is widely used and considered to be one of the most accurate methods to determine the gold content in jewelry, it requires a destructive, multi-step process that separates gold from all the other metals in a sample. Skilled precision is required.

In comparison, our analyzers determine the exact karat weight and percentages of the gold present in a sample, simultaneously testing all precious metals along with common alloying elements. Get reliable results without altering samples. Minimal training is required.

Simple and fast, Niton XRF results are

- Typically within 1/8 of a karat of fire assay
- More comprehensive than fire assay
- More accurate than other on-site testing methods such as nitric acid scratch tests
- Free of hazardous chemicals
- Unaffected by subjective analysis and multi-step processes



# Au (gold) Detection and Identification Technology (AuDIT)



The price of a solid gold bracelet is significantly more than a gold plated bracelet, yet it can be challenging to determine the difference. With the simple touch of a button or pull of a trigger, you can rapidly and reliably determine the presence of gold plating on a non-gold substrate. While limited to the thickness of gold typically used in the jewelry industry to plate items, Thermo Scientific™ AuDIT™ technology accurately confirms the presence of

- Vermeil (gold-plated silver)
- Steel
- Any other non-gold substrates
- Gold-plated copper
- Tungsten

## Our precious metal analyzers offer a patented solution for detecting gold plating

- A primary, direct test measures the energy levels of fluorescence x-rays coming from the plating and substrate
- Secondary, indirect tests simultaneously warn of the presence of gold plating by confirming
  - High nickel (Ni) content
  - Low karat values
  - Non-standard karat values

## Be Confident in Your Plate Detection

# 33 - 10/05/12 13:35 - 15.0s		
NAV Tools		
Gold Plate Not Detected		
18.0 Kt Gold		
Au	75.0	0.6
Ag	11.9	0.3
Cu	11.0	0.3
Zn	2.1	0.1
<--	Main	-->

# 30 - 10/05/12 13:34 - 3.5s		
NAV Tools		
Gold Plate Probable		
12.1 Kt Gold		
Au	50.5	1.1
Cu	39.5	0.9
Zn	6.3	0.4
Ag	3.3	0.3
<--	Main	-->

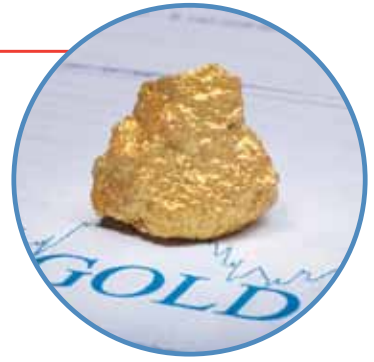


# Increase Your Profitability

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## Rapidly Recover Your Investment

With daily changes in the prices of precious metals, small inaccuracies in testing can significantly affect your bottom line. Accurate and reliable results remove variability in determining the value of sample items and ensure a fair transaction.



Screen jewelry for toxic substances such as lead and cadmium or measure coating thickness for known plated materials to maintain quality control of your process. Whether you are in the business of buying and selling or refining and manufacturing precious metals, a Niton analyzer will positively affect your profitability by accurately identifying precious metal compositions.

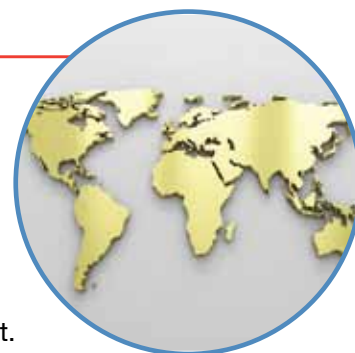
Purchasing one of our analyzers is a sound investment decision. A simple payback calculation shows that even modest jewelry transactions of about one troy ounce per day will result in a payback period of one year or less. Make the investment today and earn the return.



# Outstanding Service and Support

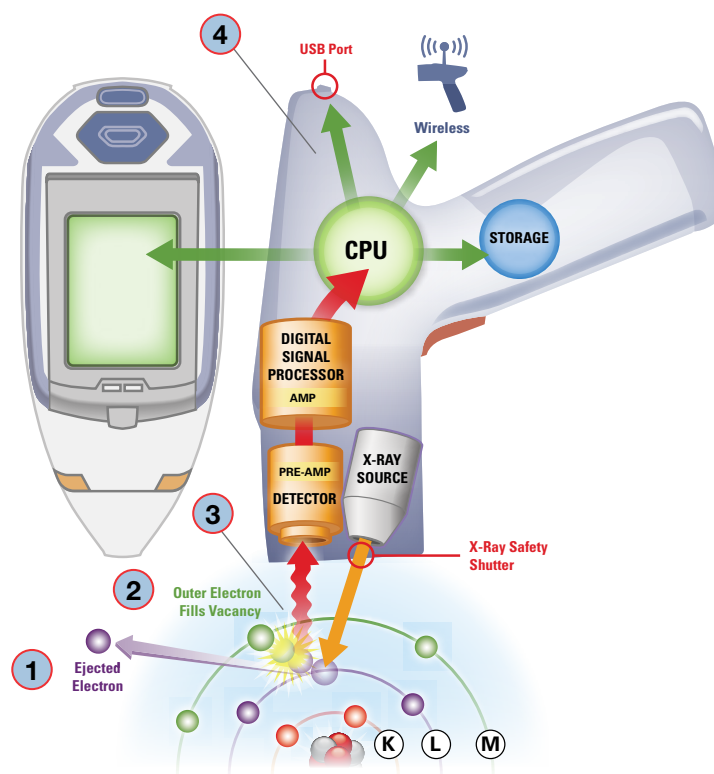
## The World Leader in Serving Science

You can count on Thermo Fisher Scientific to provide outstanding service and support. With sales and service centers located around the world, we have the experience and global presence to help you achieve a rapid return on your investment. Our portfolio of handheld XRF analyzers delivers lab-quality results that you can trust.



## How XRF Works

- 1 X-ray ejects electron from sample
- 2 Outer electron fills vacancy
- 3 Electron emits element specific fluorescence x-rays received by analyzer detector
- 4 On-board library analyzes x-ray energies and quantifies composition, converting gold concentration to karat weight



[www.thermoscientific.com](http://www.thermoscientific.com)

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