

# XRF for Nondestructive Precious Metals Analysis

**GOLD X PERT**

- Recyclers / Refiners
- Pawn Shops
- Retail
- Cash for Gold
- Jewelry Manufacturing

# Precious Metal Analysis and Karat Classification

XRF is a widely used, reliable, and recommended method for chemical analysis and determination of purity and fineness of precious metals. This analysis technique is a multielemental test that is quicker and less expensive than fire assay and chemical tests. Benchtop XRF provides on-the-spot analysis of gold, silver, platinum, and other precious metals and impurities, making it an easy way to boost customer confidence and ensure dealer reliability.

The Olympus GoldXpert® XRF analyzer provides an easy-to-use, cost-effective technique to obtain alloy chemistry

and karat classification with one nondestructive and nonintrusive test. Additionally, an exclusive GoldXpert software feature helps identify gold-plated objects and sends an alert to the screen.

Given the current high value of gold, quantifying its fineness and purity is more critical than ever. Whether you buy gold, sell or produce jewelry, fabricate metal, or recycle scrap metal, you need a fast, highly accurate method to determine karatage and other precious and non-precious metal content for quality control and pricing.

## Get Fast, Accurate Analysis Results with the Olympus GoldXpert



## Great Reasons to Own the Olympus GoldXpert

- Designed to be compact, requiring minimal countertop space.
- Attractive design suitable for a showroom floor.
- Easy-to-use analyzer providing karat and compositional analysis results with one push of a button.
- Provides accurate chemistry and karat classification within seconds.
- Innovative feature to help identify gold-plated objects.
- Provides the ability to quickly and easily create result certificates when connected to PC and using Olympus PC Software.
- Testing chamber window and interior lighting enable continuous sample viewing for utmost customer confidence.
- Battery operation for on-the-road testing when taking to customers or vendors.
- Network capability for easy access to testing results as they are being generated.
- Safe and secure closed-beam system that requires minimal training in most countries.

# Reliable and Easy to Use

The GoldXpert® XRF analyzer is ideal for pawnshops, cash-for-gold operations, the jewelry industry, museums, archaeologists, coin collectors, and scrap recyclers.

## GoldXpert XRF Benefits

- Price cash-for-gold pieces quickly and accurately.
- Identify and characterize a wide range of alloys, including silver, platinum, and others.
- Identify poisonous elements like Cd or Pb in solders.
- Manage quality control for refining and melting operations.
- Be alerted to possible gold plating.

## Applications

- On-the-spot gold karat classification, 0-24 kt.
- Identification of impurities.
- Accurate compositional analysis of gold, platinum, silver, and other precious and alloying elements.
- Verification of gold content in scrap metal.
- Unknown metals identification for pricing.
- Identifying gold, silver, platinum, and palladium in dental alloys.



Dental Alloy scrap

## Features

- Power: 4 W X-ray tube provides reliable and accurate analytical performance.
- Speed: Floating-point processor delivers fast results within seconds.
- Portability: Can be powered by a compact battery for on-the-road analysis.
- Easy and accurate measurement automatically adjusts for the shape and size of the sample.
- Automatic karat classification.
- Large data storage capacity for test archiving.
- Easy data export and reporting for immediate certification.
- Integrated camera and small spot collimation for focused analysis and sample image archiving.
- Completely nondestructive testing method.



## GoldXpert Sample Holder

The GoldXpert® is equipped with an articulating sample-holder arm to secure and orient samples for analysis. The sample holder is ideal for small-component and mixed-metal jewelry testing.



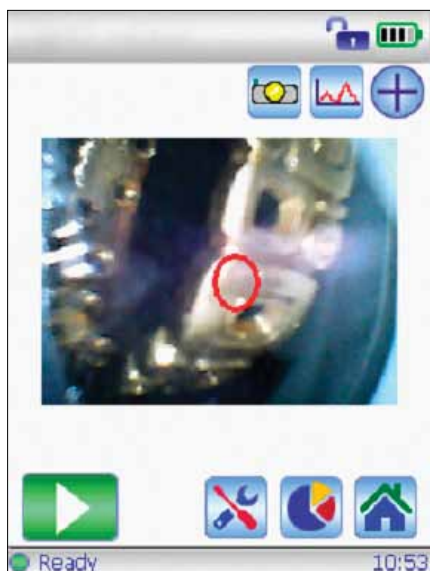
Sample Holder

# In Focus and on Target for Every Shot

## Camera and Collimator

The GoldXpert® comes equipped with an integrated CMOS camera, which records sample images to memory along with the analysis results for report generation.

The X-ray beam collimation is utilized for measurement of small components and samples. A simple tap on the touch screen in camera view activates the 3 mm diameter collimation, and an on-screen indicator shows the operator exactly where the analysis spot is focused.



Example of 3 mm small-diameter spot collimation

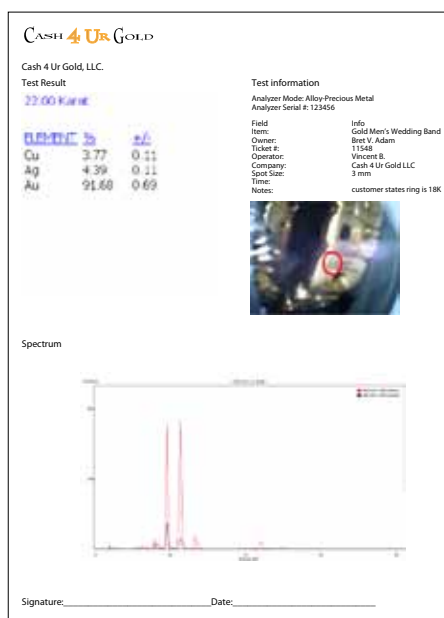
Collimation can be easily reverted to a 10 mm diameter with a simple tap for standard bulk analysis.



Example of 10 mm spot collimation

## Customized Reporting

Data can be exported easily to spreadsheet format. Memory can be accessed remotely with the Windows CE operating system via network. Customized reporting certificates with results, images, logo and more can be generated with the click of a button via PC Software.



Example of a customized reporting certificate via PC software

## Exclusive Plate Alert Feature

The GoldXpert® has an exclusive feature that detects possible gold plating or coating when analyzing the composition of gold pieces. If the GoldXpert determines that there is a possibility of gold coating or plating, it alerts the user by displaying an on-screen message.



Example Gold Coating alert

# Performance You Can Count On

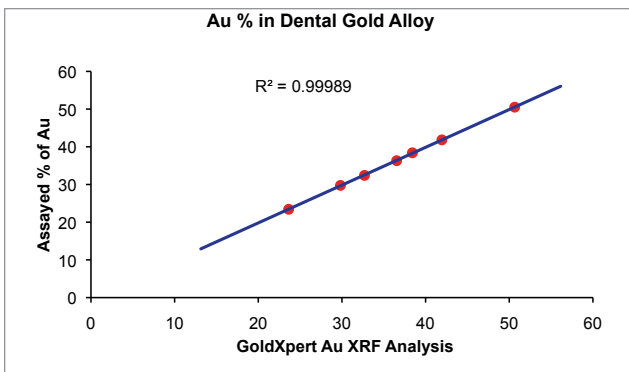
The GoldXpert® is available in two configurations: the standard GoldXpert and the high-performance GoldXpert SDD. The standard GoldXpert is equipped with a Si PIN detector providing excellent precision and sensitivity for most applications. The high-performance GoldXpert SDD is equipped with an advanced Silicon Drift Detector for better precision and sensitivity.

The high performance GoldXpert SDD with a two-fold improvement in precision and sensitivity over the Standard GoldXpert provides better detection limits. It is recommended for refiners who need very fast reading times and the utmost in analytical precision. The standard GoldXpert is ideal for general karating and trading applications.



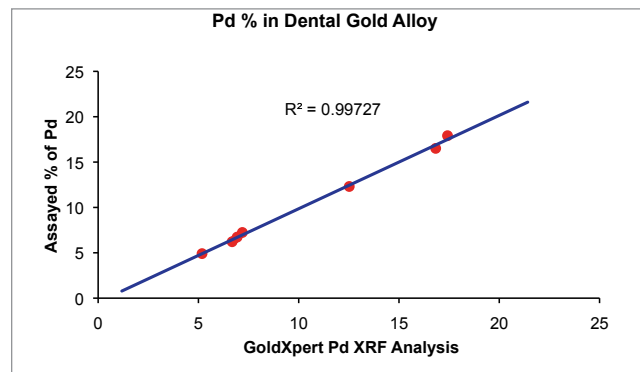
## GoldXpert Accuracy for Au and Pd in Assayed Dental Alloys

GoldXpert Au Result vs. Certified Au, wt%



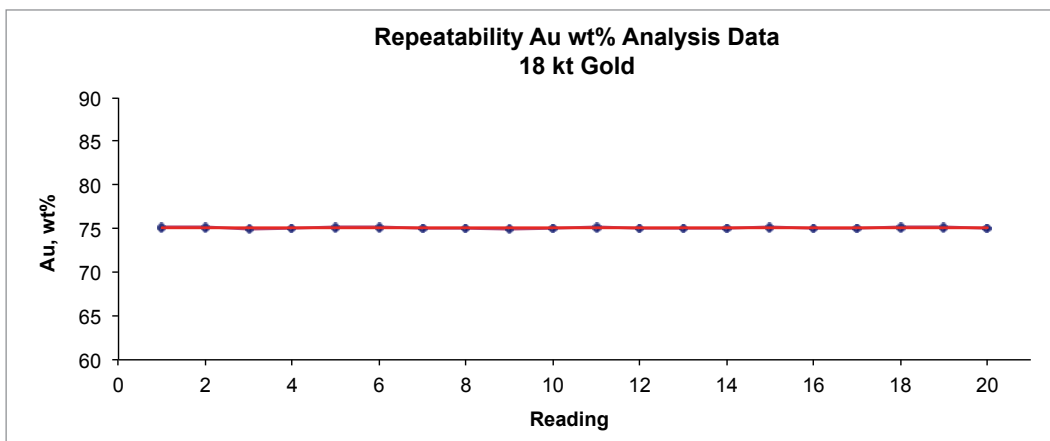
GoldXpert accuracy for Au in assayed dental amalgams

GoldXpert Pd Result vs. Certified Pd, wt%



GoldXpert accuracy for Pd in assayed dental amalgams

## Repeatability Plot



Twenty repeat GoldXpert readings on an 18 kt certified gold alloy standard

# Olympus GoldXpert

## Reliable and Easy to Use



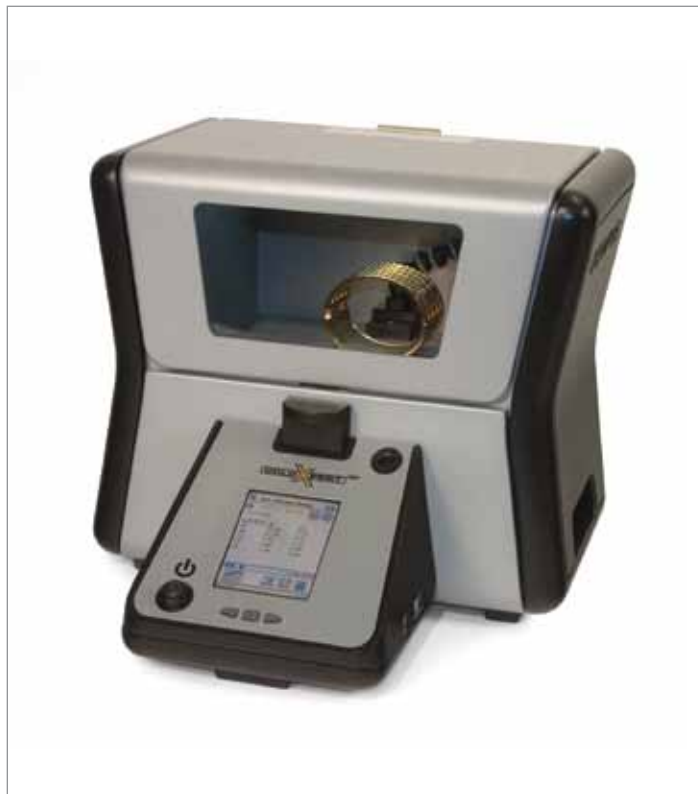
The GoldXpert is easy to use. Place large objects directly on the analysis window



Secure small objects in the sample-holder to orient on the analysis window



Use small spot collimation for very small objects or for small areas on an object



Close the chamber door and press Start to get results you can count on

## GoldXpert

The GoldXpert provides a fast, highly accurate way to determine karatage (gold content) for quality control, pricing, and usage purposes. It allows the user to perform an on-the-spot, cost-effective, and completely non-destructive test to check for gold content and verify alloy chemistry.

In addition to gold, the GoldXpert provides a high level of performance for other precious metals of interest. The analyzers come standard with a precious metals suite that includes Ag, Au, Pt, Pd, Ir, Rh, Ni, Pb, Cu, Zn, Fe, Co, and other elements.

## Specifications\*

|                                 |  |
|---------------------------------|--|
| <b>Dimensions</b>               | 267 mm x 310 mm x 340 mm (10.5 in. x 12.5 in. x 13.4 in. ) (with door closed)  |
| <b>Weight</b>                   | 10 kg (22 lb)  |
| <b>Power Requirements</b>       | Provided with 100 VAC to 240 VAC, 50 Hz to 60 Hz, 70 watts power supply  |
| <b>Excitation Source</b>        | 4 W, 40 kV, 100 $\mu$ A (max.) X-ray tube<br>Anode choices: Au or Ta   |
| <b>Detector</b>                 | Si PIN diode detector<br>Si Drift detector   |
| <b>Environmental Temp Range</b> | -10 °C to 50 °C (14 °F to 122 °F)  |
| <b>Camera and Collimator</b>    | Integrated with measurement geometry; small-spot collimator; selectable diameter sizes (3 mm or 10 mm)               |
| <b>Power</b>                    | AC power adaptor or rechargeable Li-ion battery  |
| <b>Data Display</b>             | 55 x 73 mm (2.2 x 2.9 in.) Color LCD touch screen<br>Resolution: 800 x 600<br>16-bit LCD interface                   |
| <b>Data Transfer</b>            | USB, Bluetooth®  |
| <b>Precious Metals</b>          | Cr, Mn, Fe, Co, Ni, Cu, Zn, Ir, Pt, Au, Rh, Ru, Pb, Bi, Zr, Pd, Ag, Sn, Sb, Cd, In, Ga, Ge, and W. (Plus Os for SDD) |

## Standard Accessories

- Collimator Test Coin
- Sample Holder Clip with Articulating Arm
- USB cable
- 316 Stainless Steel Calibration Check Reference Coin
- Ten (10) spare windows
- Three (3) styluses
- Factory Authorized Training and Support

\*All specifications are subject to change without notice.

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