GOLDSCOPE SD® 510

X-Ray Fluorescence Measuring Instrument Optimized for Fast, Cost-effective and Non-destructive Analysis of Jewellery, Coins and Precious Metals for Jewellery Retail Store, Banks and Gold Exchange.

Description

The GOLDSCOPE SD® 510 is the cost-effective entry-level X-ray fluorescence measuring instrument for non-destructive analysis of jewelry, coins and precious metals.Furthermore, the instruments are well suited for determining the thickness of gold coatings on sterling silver and rhodium coatings on gold alloys.

The GOLDSCOPE series comprises four different instruments to fulfill the specific demands from the fast purchase and sale of gold up to the high-precision analysis of precious metals.

Typical fields of application are the analysis of:

- Classical gold alloys like yellow, red and green gold
- Modern white gold alloys
- Rhodium coated gold and silver alloys
- Platinum alloys, if they do not contain gold

Outstanding accuracy and long-term stability are characteristics of all GOLDSCOPE systems. The necessity of recalibration is dramatically reduced, saving time and effort.

The modern silicon PIN detector achieves high accuracy and good detection sensitivity.

The fundamental parameter method by FISCHER allows for the analysis of solid and liquid specimens as well as coating systems without calibration.

Design

The GOLDSCOPE SD® 510 is designed as a user-friendly bench-top instrument.

Specimen positioning is quick and easy. The X-ray source and semiconductor detector assembly is located in the instrument's lower chamber, so that the measuring direction is from underneath the sample, which is supported by a transparent window.

The door of the measurement chamber does not open upwards, but towards the front. Thus, you can place a notebook for operation onto the instrument, which saves even more space.The integrated video-microscope with zoom and crosshairs simplifies sample placement and allows precise measuring spot adjustment.

The entire operation and evaluation of measurements as well as the clear presentation of measurement data is performed on a PC, using the powerful and user-friendly WinFTM® software.

The GOLDSCOPE SD® 510 fulfills DIN ISO 3497 and ASTM B 568. It is a fully protected instrument with type approval according to the German regulations „Deutsche Röntgenverordnung-RöV".

Application

Retail shops, Banks and Gold Lending, Pawn Shops, Gold Exchange, Personal Use.

General Specification

Intended use	Energy dispersive X-ray measuring instrument (EDXRF) to analyze precious metals and their alloys in composition and coating thickness.
Element range	Sulfur (16) to Uranium (92) – up to 24 elements simultaneously
Repeatability	≤ 1 ‰ for gold, measurement time 60 sec
Design	Bench top unit with front opening hood
Measuring direction	Bottom up

X-Ray Source

X-ray tube	Tungsten tube, thermally stabilized
High voltage	Three steps: 30 kV, 40 kV, 50 kV
Aperture (Collimator)	Ø 1 mm (39 mils)
Measurement spot	Ø 1.2 mm (47 mils) with aperture Ø 1 mm (39 mils) and flat lying sample (measurement distance 0 mm)

X-Ray Detection

X-ray detector	Silicon PIN detector with peltier cooling
Resolution (fwhm for Mn-K_α)	≤ 180 eV
Measuring distance	0 … 25 mm (0 … 1 in) Distance compensation with patented DCM method for simplified measurements at varying distances. For particular applications or for higher demands on accuracy an additional calibration might be necessary.

Sample Alignment

Sample positioning	Manually
Video microscope	High-resolution CCD color camera for optical monitoring of the measurement location along the primary beam axis, Crosshairs with a calibrated scale (ruler) and spot-indicator, Adjustable LED illumination
Zoom factor	Digital 1x, 2x, 3x, 4x

Sample Stage

Design	Fixed sample support
Usable sample placement area	305 x 490 mm (12 x 19.3 in)
Max. sample weight	13 kg (29 lb)
Max. sample height	90 mm (3.5 in)

Electrical data

Power supply	AC 115 V or AC 230 V 50 / 60 Hz
Power consumption	max. 120 W, without evaluation PC
Protection class	IP40

Dimensions

External dimensions	Width x depth x height [mm]: 405 x 588 x 426 mm, [in]: 16 x 23 x 17
Weight	Approx. 45 kg (99 lb)

Environmental Conditions

Operating temperature	10 °C – 40 °C / 50 °F – 104 °F
Storage/Transport temperature	0 °C – 50 °C / 32 °F – 122 °F
Admissible air humidity	≤ 95 %, non-condensing

Evaluation unit

Computer	Windows®-PC
Software	Standard: Fischer WinFTM® BASIC including PDM®, Optional: Fischer WinFTM® SUPER

Standards

CE approval	EN 61010
X-Ray standards	DIN ISO 3497 and ASTM B 568
Approval	Fully protected instrument with type approval according to the German regulations „Deutsche Röntgenverordnung-RöV“.

Order

GOLDSCOPE SD® 510	605-684

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