

FISCHERSCOPE® X-RAY XAN® 120

X-Ray Fluorescence Measuring Instrument
for fast and non-destructive Analysis and
Coating Thickness Measurement of Gold
and Silver Alloys



Main Features

The FISCHERSCOPE X-RAY XAN 120 is an optimized X-ray fluorescence measuring instrument for non-destructive analysis of jewelry, coins and precious metals.

It is designed to measure and analyse precious metals and their alloys in composition and coating thickness. Up to 24 elements in the range of Chlorine (17) to Uranium (92) can be determined simultaneously.

The XAN 120 is perfect to analyze:

- Yellow and white gold
- Platinum and silver
- Rhodium
- Alloys and coatings
- Multi layer coatings

Outstanding accuracy and long-term stability are characteristics of all FISCHERSCOPE X-RAY systems. The necessity for re-calibration is dramatically reduced, saving time and effort.

Excellent ergonomics, easy operation, and fast calculation and data presentation, are all features of the XAN 120, as well as the entire FISCHERSCOPE X-RAY family.

Design

XAN 120 is a state of-the-art energy dispersive X-ray fluorescence measuring instrument (EDXRF) and fulfills the requirements of DIN ISO 3497 and ASTM B 568.

Sample positioning is quick and easy. The X-ray source and semiconductor detector assembly is located in the XAN 120 lower chamber, so that the measuring direction is from underneath the sample, which is supported by a transparent window.

The integrated video-microscope with reticule and up to 184x zoom factor simplifies sample placement and allows precise measuring spot adjustment.

The entire operation, the analysis of the gauging and the display of all information is carried out by an evaluation PC with the easy to use WinFTM® software.

The XAN 120 is a fully protected instrument with type approval according to the German regulations „Deutsche Röntgenverordnung-RöV“.

General Specifications

Intended use	Energy dispersive X-ray fluorescence measuring instrument (EDXRF) according to DIN ISO 3497 und ASTM B 568
Element range	Chlorine (17) to Uranium (92), up to 24 elements simultaneously
Repeatability	≤ 1 ‰ for gold, Au (79)
Design	Table top unit, upwards opening hood
Measurement direction	Bottom-up method

X-ray source

X-Ray tube	Tungsten tube, thermally stabilized
High voltage	Three steps 10 kV, 30 kV, 50 kV
Aperture (collimator)	Ø 1 mm, (optional: Ø 2 mm)
Measurement spot	Aperture (collimator) plus 200 µm at the measurement distance Md = 0 mm

X-ray detection

X-Ray detector	Silicon PIN detector with peltier cooling
Resolution	≤ 180 eV , (fwhm for Mn-K α)

Sample positioning

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 of the measurement location
Video zoom factor	34x to 184x (optical: 34x to 46x; digital 1x, 2x, 3x, 4x)
Measuring distance	0 ... 20 mm (0 ... 0.8 in) Distance compensation with patented DCM method for simplified measurements at varying distances. For particular applications an additional calibration might be necessary.

Electrical Data

Line voltage	AC 115 V or AC 230 V ; 50 Hz / 60 Hz
Power consumption	Max. 120 W (XAN 120, without evaluation PC)
Protection class	IP40

Dimensions

External dimensions	Width x depth x height [mm]: 380 x 570 x 340
Weight	≤ 44 kg
Interior dimensions	Width x depth x height [mm]: 318 x 509 x 29 ... 86
Usable support area	Width x depth [mm]: 318 x 327
Maximum specimen mass	≤ 2 kg on the measurement window

Environmental conditions

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

Evaluation unit

Computer	Windows® PC with extension cards
Software	Standard: Fischer WinFTM® BASIC + PDM® Optional: Fischer WinFTM® SUPER

Standards

CE approvals	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

FISCHERSCOPE X-RAY XAN 120	604-397
	Special XAN product modification and XAN technical consultation on request

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