

FISCHERSCOPE® X-RAY XAN® 120

X-ray spectrometer for non-destructive thickness measurement and material analysis of thin coatings and alloys



Main Features

FISCHERSCOPE-X-RAY XAN 120 is an optimized spectrometer for non-destructive analysis of jewellery, 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.

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.

Performance

XAN 120 is a state-of-the-art energy dispersive X-ray spectrometer (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

Specification

Intended use	Energy dispersive X-ray fluorescence spectrometer (EDXRF) according to DIN ISO 3497 und ASTM B 568
Element range	Chlorine, Cl (17), to Uranium, U (92), – up to 24 elements simultaneously
Repeatability	≤ 1 ‰ for gold, Au (79)
X-Ray tube	Tungsten tube, thermally stabilized
High voltage	Three steps 30 kV, 40 kV, 50 kV
Aperture (collimator)	Ø 2 mm, (optional: Ø 1 mm)
Measurement spot	Aperture (collimator) plus 200 µm at the measurement distance Md = 0 mm
Set back from surface	Correction with DCM method in the range of 0 to 22 mm (Patented Distance Controlled Measurement)
X-Ray detector	PIN silicon semiconductor detector, peltier-cooled
Resolution	≤ 180 eV , (fwhm for Mn-Kα).
Signal processor	Fast analog pulse processor
Max. count rate	≤ 10.000 counts/second
Design	Table top unit, upwards opening hood
Measurement direction	Bottom-up method

Sample positioning

Video microscope	High-resolution color CCD video camera providing an optical view of the measurement spot through the X-ray beam axis. Precise reticule, and LED sample illumination
Video zoom factor	34x to 184x (optical: 34x to 46x; digital 1x, 2x, 3x, 4x)
Sample positioning	Manually
Z-positioning	Manually; DCM compensation up to 22 mm

Technical 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	IP42

Dimensions

External dimensions	Width x depth x height [mm]: 380 x 570 x 340
Weight	≤ 42 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

FISCHERSCOPE X-RAY XAN 120

Environmental conditions

Operating temperature	+ 10 °C to + 40 °C
Storage temperature	0 °C to + 50 °C
Admissible air humidity	≤ 95 % non-condensing

Evaluation unit

Computer	PC unit with actual Windows® operating system and with additional expansion cards
Software	Fischer WinFTM Version 6 including PDM®

Standards

CE approvals	EN 61010
X-Ray standards	DIN ISO 3497 and ASTM B 568
Approval	Inherent protection according to the „Deutscher Röntgenverordnung“; type-approval

Order

XAN 120	604-397
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