FISCHERSCOPE® X-RAY XAN® 310

Cost-effective and compact entry-level X-Ray Fluorescence Measuring Instrument for fast and non-destructive Analysis of Gold and Silver Alloys

Description

The FISCHERSCOPE X-RAY XAN 310 is an X-ray fluorescence measuring instrument optimised for non-destructive analysis of the gold and silver content in jewellery and alloys.

The XAN 310 analyses quickly the ingredients and indicates values in Karat, weight% or ‰. Other alloy fractions will also be determined.

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

The XAN 310 is designed for gold and silver jewellery but not for dental alloys. Platinum alloys can be analysed if they do not contain gold. It also detects and displays base metals like brass under thin coatings.

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

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

Design

The XAN 310 is designed as a user-friendly bench-top instrument. Due to its compact design, the instrument is lightweight and requires only little space. 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.

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

The integrated video-microscope with zoom and crosshairs simplifies sample placement and allows for a 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 FISCHERSCOPE XAN 310 fulfills DIN ISO 3497 and ASTM B 568.

General Specification

Intended use	Gold and silver analysis in jewellery and jewellery alloys
Element range	Chlorine (17) to Uranium (92) – up to 24 elements simultaneously
Repeatability	≤ 1 ‰ for gold
Design	Bench top unit with towards the 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)	0.3 mm (11.8 mils)
Measurement spot	Aperture diameter plus 200 µm (8 mils), at measurement distance MD = 0 mm

X-Ray Detection

X-ray detector	Proportional counter tube
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	320 x 350 mm (12.6 x 13.8 in)
Max. sample weight	13 kg (29 lb)
Max. sample height	115 mm (4.5 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]: 404 x 455 x 367 mm, [in]: 16 x 18 x 14.5
Weight	Approx. 25 kg (55 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	Fischer WinFTM®

Standards

CE approval	EN 61010
X-Ray standards	DIN ISO 3497 and ASTM B 568
Approval	Individual acceptance inspection as a fully protected instrument according to the German regulations „Deutsche Röntgenverordnung-RöV“.

Order

FISCHERSCOPE X-RAY XAN 310	605-180
	Special XAN product modification and technical consultation on request

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