

FISCHERSCOPE® X-RAY XAN® 315

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



Description

The FISCHERSCOPE X-RAY XAN 315 is the cost-effective entry-level X-ray fluorescence measuring instrument for non-destructive analysis of jewellery, coins and precious metals.

It is particularly suited for the analysis of 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.

Typical fields of application are the analysis of:

- Jewellery, precious metals and dental alloys
- 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 of recalibration is considerably 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 XAN 315 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 315 fulfills DIN ISO 3497 and ASTM B 568.

General Specification

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| Intended use | Energy dispersive X-ray measuring instrument (EDXRF) to analyse precious metals and their alloys in composition and coating thickness. |
| Element range | Chlorine (17) to Uranium (92) – up to 24 elements simultaneously |
| Repeatability | ≤ 1 ‰ for gold, measurement time 60 sec |
| Design | Bench top unit with towards the front opening hood |
| Measuring direction | Bottom up |

X-Ray Source

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| 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 | Aperture diameter plus 200 µm (8 mils), at measurement distance MD = 0 mm |

X-Ray Detection

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| 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

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| Sample positioning | Manually |
| Video microscope | High-resolution CCD colour 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

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| 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

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

Dimensions

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| 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

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| 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

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

Standards

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| 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

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| FISCHERSCOPE X-RAY XAN 315 | 605-216 Special XAN product modification and technical consultation on request |
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