FISCHERSCOPE® X-RAY XAN® 500

Mobile X-RAY Fluorescence Measuring Instrument for Fast and Non-Destructive Material Analysis and Coating Thickness Measurement

Description

The FISCHERSCOPE X-RAY XAN 500 is a mobile and universally applicable energy dispersive x-ray fluorescence measuring instrument. It is well suited for the non-destructive coating thickness measurement and material analysis. The instrument is perfectly suitable for measurements in quality assurance, incoming inspection and process control. Thanks to its small size, you can measure even on difficult geometries.

Typical fields of application:

- Determination of coating thickness and composition of a coating with only one measurement
- Measurements on large coated parts, like Machine components and housings
- Mobile measurements in electroplating shops
- Mobile measurements of precious metals
- Determination of the metal content of electroplating baths (Solution analysis)

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 drift 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

Fig.:1 XAN 500 as a handheld instrument

Fig.:2 Option compact measurement box, closed for transport

Fig.:3 Option compact measurement box, XAN 500 as a mobile bench-top instrument

With the **handheld instrument** XAN 500 you can easily and quickly perform measurements on large objects or in difficult-to-reach locations. The geometry is optimized for a safe placing onto the specimen and the coating or material composition can be measured reproducibly.

The optional **compact measurement box** (see Fig. 2) allows for safe and precise measurements on small parts in a mobile bench-top instrument (see Fig. 3), measurements on large and bulky parts with a handheld instrument and the simple transport of the complete measurement system. With the compact measurement box you achieve better radiation safety and higher-quality measuring results on small parts

The entire operation and evaluation of measurements as well as the clear presentation of measurement data is performed on a Tablet, using the powerful and user-friendly WinFTM® software. Thus, despite the compactness of the instrument, the entire range of features offered by the software is available.

The FISCHERSCOPE XAN 500 fulfills DIN ISO 3497 and ASTM B 568.

General Specification

Intended use	Energy dispersive x-ray fluorescence measuring instrument (EDXRF) for coating thickness measurement and material analysis
Element range	Sulfur S (16) to Uranium U (92) – up to 24 elements simultaneously
Design	• Handheld instrument • Mobile bench-top instrument with option compact measurement box
Measuring direction	Handheld instrument: variable, mobile bench-top instrument: bottom up

X-Ray Source

X-ray tube	Tungsten tube, thermally stabilized
High voltage, current, power	Max. 40 kV, anode current 100 µA max., electrical power 2 W typ., 4 W max.
Aperture (Collimator)	Ø 2 mm (79 mils)
Measurement spot	Ø 3 mm (118 mils)

X-Ray Detection

X-ray detector	Silicon Drift Detector (SDD), peltier-cooled
Resolution (fwhm for Mn-K_α)	≤ 160 eV

Sample Alignment

Sample positioning	Manually

Sample Stage with Option *Compact Measurement Box*

Design	Fixed sample support	Max. sample weight: 10 kg (22 lb)
Usable sample placement area	150 x 330 mm (5.9 x 13 in)	Max. sample height: 40 mm (1.6 in

Electrical data

Battery Charger	AC 115 – AC 230 V 50 / 60 Hz
Rechargeable battery	Lithium-ion battery 7.2 V / 6.2 Ah
Operating time with one battery charge	approx. 6 h
Power consumption	max. 20 W
Protection class	IP54

Dimensions

Dimensions Width x depth x height [mm/in]	Handheld instrument:	210 x 230 x 75 / 8.3 x 9 x 3
	Transportation case:	630 x 485 x 225 / 25 x 19 x 9
	Option compact measurement box:	380 x 220 x 385 / 15 x 9 x 15
Weight	Handheld instrument:	approx. 2 kg (4.4 lb)
	Complete with transportation case, rechargeable battery and Tablet:	approx. 11.5 kg (25 lb)
	Complete with option compact measure-ment box, rechargeable battery and tablet:	approx. 9 kg (20 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	Tablet with Windows® operating system
Software	Standard: Fischer WinFTM® BASIC including PDM®, Optional: Fischer WinFTM® SUPER

Standards

CE approval	EN 61010, EN 61326
X-Ray standards	DIN ISO 3497 and ASTM B 568
Approval	Individual acceptance inspection according to the German regulations „Deutsche Röntgenverordnung-RöV".

Order

FISCHERSCOPE X-RAY XAN 500	• 605-826: Instrument with one-hand operation, without Tablet, in a sturdy and waterproof transport case • 605-827: Instrument with two-hand operation, without Tablet, with additional second trigger switch. For use in countries where two-hand operation is required, e.g. Switzerland. In a sturdy and waterproof transport case	
Option Tablet 10 inches	• 605-861: English Version • 605-830: German Version	For operation of the instrument, Software Fischer WinFTM® installed, fits exactly in the cutout of the transport case.
Option Additional Battery	• 605-390: Additional Battery only • 605-831: Additional Battery w/ charger	A battery charge will last for approx. 6 hours in normal operation. For longer operating times order the additional battery.
Option compact measurement box	• 609-474: Compact measurement box for extended use of the XAN 500 as mobile bench-top instrument.	
Option Solution Analysis	• 605-391: For radiation-safe plugging in of measuring cells for solution analysis, contains accessory kit for solution analysis Molybdenum: 2 measuring cells (red) with Molybdenum reference plate, 1 roll of foil	

Special XAN product modification and technical consultation on request

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