GOLDSCOPE SD® 510
GOLDSCOPE SD® 515
GOLDSCOPE SD® 520
GOLDSCOPE SD® 550

X-Ray Fluorescence Measuring Instruments
Optimized for Fast, Cost-effective and Non-destructive
Analysis of Jewelry, Coins and Precious Metals

GOLDSCOPE SD 510

GOLDSCOPE SD 515
GOLDSCOPE SD 520
GOLDSCOPE SD 550

Description

The X-ray fluorescence measuring instruments of the GOLDSCOPE SD series are optimized for fast, cost-effective and non-destructive analysis of jewelry, coins and precious metals. Furthermore, the instruments are well suited for determining the thickness of gold coatings on sterling silver and rhodium coatings on gold alloys.

The GOLDSCOPE SD series comprises four different instruments to fulfill the specific demands from the fast purchase and sale of gold up to the high-precision analysis of precious metals.

Typical fields of application are the analysis of:
- Jewelry, precious metals and dental alloys
- Yellow and white gold
- Platinum and silver
- Rhodium
- Alloys and coatings

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

The GOLDSCOPE SD 510 and SD 515 instruments are equipped with a modern silicon PIN detector, which achieves high accuracy and good detection sensitivity. For even higher resolution, the GOLDSCOPE SD 520 and SD 550 instruments with their Silicon Drift Detectors (SDD) are available.

The fundamental parameter method by FISCHER allows for the analysis without calibration.

Design

The GOLDSCOPE SD instruments are designed as user-friendly bench-top instruments. Due to their compact design, the instruments are lightweight and require only little space.

The GOLDSCOPE SD 510 offers the smallest footprint, because the measurement chamber door does not open upwards, but towards the front. Thus, you can place a notebook for operation onto the instrument, which saves 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.

All GOLDSCOPE SD instruments fulfill DIN ISO 3497 and ASTM B 568.

Application	GOLDSCOPE SD 510	GOLDSCOPE SD 515	GOLDSCOPE SD 520	GOLDSCOPE SD 550
Recommended area of application	Small retail shops	High end retail showrooms, small assaying offices	Refineries, assaying offices and hallmarking centers	Hallmarking centers, jewelry manufacturing, assaying offices

General Specification

Intended use	Energy dispersive X-ray measuring instrument (EDXRF) to analyze precious metals
Design	GOLDSCOPE SD 510: Bench top unit with towards the front opening hood, GOLDSCOPE SD 515, 520, 550: Bench top unit with upwards opening hood
Measuring direction	Bottom up

Electrical Data

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

Environmental Conditions

Operating temperature	10 °C – 40 °C / 50 °F – 104 °F
Storage/Transport temperature	0 °C – 50 °C / 32 °F – 122 °F
Relative humidity	≤ 95 %

Sample Alignment

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

Evaluation Unit

Computer	Windows®-PC
Software	WinFTM® optimized for GOLDSCOPE SD, including Gold Setup GOLDSCOPE with measuring applications for gold and jewelry

Standards	GOLDSCOPE SD 510	GOLDSCOPE SD 515	GOLDSCOPE SD 520	GOLDSCOPE SD 550
CE approval, X-Ray standards	EN 61010, EN 61326; DIN ISO 3497 and ASTM B 568			
Approval	Fully protected instrument with type approval according to current radiation protection legislation			
Sample Stage				
Design	Fixed sample support			
Max. sample weight [kg/lb]	13/29			
Usable sample placement area [mm/in]	305 x 490/ 12 x 19.3	310 x 320/ 12.2 x 12.6		
Max. sample height [mm/in]	130/5.1	90/3.5		
Dimensions				
External dimensions Width x depth x height [mm/in]	405 x 588 x 426/ 16 x 23 x 17	403 x 588 x 365/16 x 23.2 x 14.4		
Weight [kg/lb]	approx. 45/99	approx. 45/99		

GOLDSCOPE SD®

X-Ray Source	GOLDSCOPE SD 510	GOLDSCOPE SD 515	GOLDSCOPE SD 520	GOLDSCOPE SD 550
X-ray tube	Tungsten tube, thermally stabilized		Micro-focus tube, thermally stabilized	
High voltage, three steps	30, 40, 50 kV	30, 40, 50 kV	30, 40, 50 kV	10, 30, 50 kV
Max. anode current	1 mA			
Primary filter, Material and thickness [µm/mils]	none	none	fixed Al 500/19.7	6x changeable: Ni 10/0.4 no filter Al 1000/39.4 Al 500/19.7 Al 100/3.9 Mylar® 100/3.9
Aperture (Collimator) Ø [mm/mils]	Fixed Standard 1,0/39 Option 0.6/24;	Fixed Standard 1,0/39 Option 0.6/24; 1.0/39 or 2.0/79	Fixed, Standard 1.0/39 Option 0.6/24; 1.0/39 or 2.0/79	4x changeable: 0.2/8; 0.6/24; 1.0/39; 2.0/79
Smallest measurement spot* Ø [mm/mils]	approx. 0.7/28*	approx. 0.7/28*	approx. 0.7/28*	approx. 0.3 /12*
	* depends on the measuring distance and on the aperture, the actual measurement spot size is shown in the video image			
X-Ray Detection				
Detector type	Silicon PIN detector peltier-cooled		Silicon Drift Detector (SDD), peltier-cooled	
Resolution fwhm for Mn-K_α [eV]	≤ 180		Version with SDD 20 mm²**: ≤ 135 Version with SDD 50 mm²**: ≤ 140	Version with SDD 20 mm²**: ≤ 135 Version with SDD 50 mm²**: ≤ 140
	** effective detector area, with the SDD 50 mm² you can achieve even higher count rates, thus reducing the measuring time and/or improving repeatability			
Element range	S (16) to U (92)		Al (13) to U (92)	
Measuring distance [mm/in]	0 – 25/0 – 1, 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.			
Repeatability for gold, measurement time 60 sec	≤ 1 ‰ with aperture 1.0 mm	≤ 1 ‰ with aperture 1.0 mm	≤ 0,5 ‰ with aperture 1.0 mm	≤ 0,5 ‰ with aperture 1.0 mm
Order				
Order number	605-684	605-685	Please inquire	Please inquire
	Incl. Gold Setup GOLDSCOPE with factory-calibrated measuring applications for gold and jewelry			

Special GOLDSCOPE SD product modification and technical consultation on request

952-107dppp July 14, 2020

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