XRF Systems for Gold and Precious Metal Analysis

Tailor-made for analysing gold and precious metals with its GOLDSCOPE SD® series, Fischer offers a tailored solution for the non-destructive testing of gold and precious metals. The hardware and software of these robust X-ray fluorescence instruments is adapted to the unique requirements of the jewellery and gold sector.
Your benefit: Unbeatable value for money! With the GOLDSCOPE you buy only what you really need to test gold, jewellery and precious metals.

GOLDSCOPE SD®
510

GOLDSCOPE SD®
515, 520, 550

Features:

- Compact and sturdy desktop instrument for non-destructive material analysis using X-ray fluorescence
- Hardware and software geared to the measurement tasks most relevant for gold and precious metals
- Comfortable measuring thanks to a spacious chamber and bottom-up measurement direction
- 4 models, suited to any application
- Complaint with EN 61010, DIN ISO 3497 and ASTM B 568

Application:

- Purchase and sale of gold
- Analysis of precious metals, dental alloys
- Jewellery manufacture
- Certification: solutions for refineries, assay offices and hallmarking

The handling of the XRF devices is tailored to the needs of the precious metals and jewellery industry. The most important measuring tasks for analysing gold and precious metals are already pre-programmed in the operating software, WinFTM. All you have to do is place the sample on the measurement window and press start. This makes the valuation of jewellery and coins foolproof.

Explore more
https://www.harshad.com/fischer

General Specification	
Intended Use	Energy dispersive X-ray measuring instrument (EDXRF) to analyse 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 – 45 °C / 50 °F – 113 °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 jewellery

Standards	GOLDSCOPE SD® 510	GOLDSCOPE SD® 515	GOLDSCOPE SD® 520	GOLDSCOPE SD® 550
CE Approval	EN 61010, EN 61326			
X-Ray Standard	DIN ISO 3497 and ASTM B 568			
Approval	Individual acceptance inspection as a fully protected instrument according to German radiation protection law	Fully protected instrument with type approval according to current radiation protection legislation.		
Sample Stage				
Design Max. sample weight [kg/lb]	Fixed sample support 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		

	GOLDSCOPE SD® 510	GOLDSCOPE SD® 515	GOLDSCOPE SD® 520	GOLDSCOPE SD® 550
Applications				
Recommended area of application	Small retail shops	Highend retail showrooms, Small assaying offices	Refineries, Assaying offices and Hallmarking centers	Hallmarking centers, Jewellery manufacturing, Assaying offices
Dimensions				
External Dimensions W x D x H (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		
X-Ray Source				
X-Ray tube	Tungsten tube, thermally stabilized		Micro-focus tungsten tube with beryllium window	
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 Changable: 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 or 1.0/39; 2.0/79	Fixed Standard 1.0/39 Option 0.6/24 or 1.0/39; 2.0/79	4x Changable: 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		≤ 160	
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 high demand 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	605-686	605-687
	incl. Gold Setup GOLDSCOPE with factory calibrated measuring applications for gold and jewellery			

GOLDSCOPE SD 520/550 - DPP+

Digital Pulse Processor (DPP+)

Fischer X-ray Fluorescence (XRF) measuring devices are continuously optimized to achieve higher precision in shorter measurement times. That is why we have developed our new digital pulse processor DPP+ completely in-house.
The DPP+ is one of the central elements of an X-ray fluorescence spectrometer which processes high count rates.

Achieve up to 45% reduction in absolute standard deviation with same measuring time

Reduce your measurement time by a factor of 3 with the same absolute standard deviation

Secure your Silicon Drift Detector (SDD) detector with a Grid protection

Features:

* Modern Silicon Drift Detector (SDD) for high accuracy and a good detection sensitivity.
* High-resolution colour video camera for precise determination of the measurement spot.
* Bench-top unit with upward opening hood.
* Detector: new SDD detector with 20 mm2 (160 eV)
* Micro-focus tungsten tube with beryllium window
* Fitted with the new Digital Pulse Processor (DPP+)

Applications

* Jewellery, precious metals and dental alloys.
* Precious Metal Analysis eg. Gold, Silver and Platinum group elements such as Iridium, Ruthenium, Osmium, Rhenium.
* Measuring coating thickness on sterling silver, rhodium finishes or gold alloys.
* Determination of complex multi layer-coating system.

Gold Refinery

Gold Manufacturing

Tunch and Assaying

Explore more
https://www.harshad.com/fischer

GOLDSCOPE SD 520/550 - DPP+

General Specification	
Intended use	Energy Dispersive X-Ray Fluorescence measuring instrument (EDXRF) for precious metal, alloy analysis and coating thickness measurement in hallmarking, testing, tunch assaying offices, refineries and gold manufacturing.
Design	Bench top unit with upwards opening hood
Measuring direction	From bottom to top
X-Ray tube	Micro-focus tube with beryllium window
Measurement spot	Depending on the measuring distance and on the aperture, the actual measurement is shown in video image.

	GOLDSCOPE® SD 520 DPP+	GOLDSCOPE® SD 550 DPP+
High voltage (three steps [kV])	30, 40, 50	10, 30, 50
Measurement spot	Fixed Al 500	6x changeable: Ni 10, no filter, Al 1000, Al 500, Al 100, Mylar ® 100
Apertures (Collimators) Ø [mm]	Fixed, Standard 1.0 mm Option 0.6 / 2.0 mm	4x changeable: 0.2, 0.6, 1.0, 2.0 mm

Environmental Condition	
Operating temperature	10 °C – 40 °C
Storage/transport temperature	0 °C – 50 °C
Relative humidity	≤ 95 %

X-Ray Detector	Standard (20mm²)	Optional (50mm²)
X-ray detector Resolution (fwhm for Mn-Kα)	Silicon Drift detector with peltier cooling ≤ 140 eV	Silicon Drift detector with peltier cooling ≤ 140 eV
Element range	Aluminum Al (13) – Uranium U (92)	
Measuring distance*	0 – 25 mm	

*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.

GOLDSCOPE SD 520/550 - DPP+

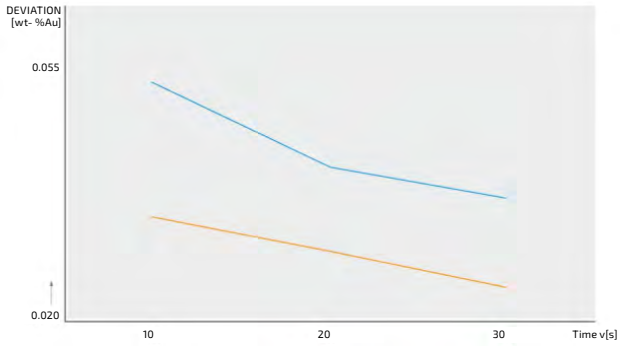
	GOLDSCOPE® SD 520 DPP+	GOLDSCOPE® SD 550 DPP+
Sample Alignment		
Video microscope	High-resolution CCD colour camera for optical monitoring of the measurement location along the primary beam axis, Crosshair with a calibrated scale (ruler) and spot-indicator, Adjustable LED illumination	
Zoom Factor	Digital 1x, 2x, 3x 4x	
Electrical Data		
Power source	AC 115 V or AC 230 V 50 / 60 Hz	
Power consumption	max. 120 W, without evaluation PC	
Protection class	IP 40	
Target Dimension		
External dimensions	403 x 588 x 365 mm (Width x depth x height)	
Usable sample placement area	310 x 320 mm / 12.2 x 12.6	
Maximum sample height	90 mm	
Weight approx	45 kg	
Evaluation Unit		
Computer	Windows based PC	
Software standard	Fischer WinFTM®	
Standards		
X-Ray standards	DIN ISO 3497 and ASTM B 568	

Order

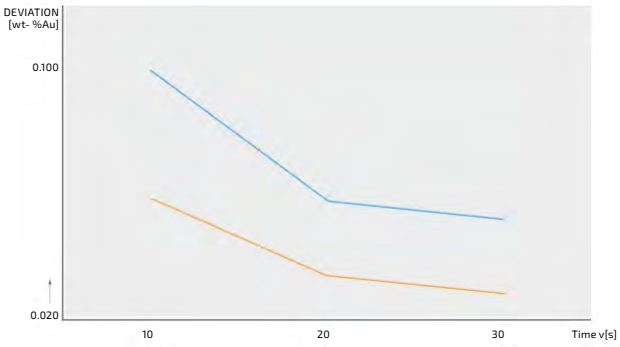
GOLDSCOPE SD 520 / 550 DPP+
Part No.
GOLDSCOPE SD 520 - DPP+ IN1003066
GOLDSCOPE SD 550 - DPP+ IN1003063

Solution for Hallmarking Centres

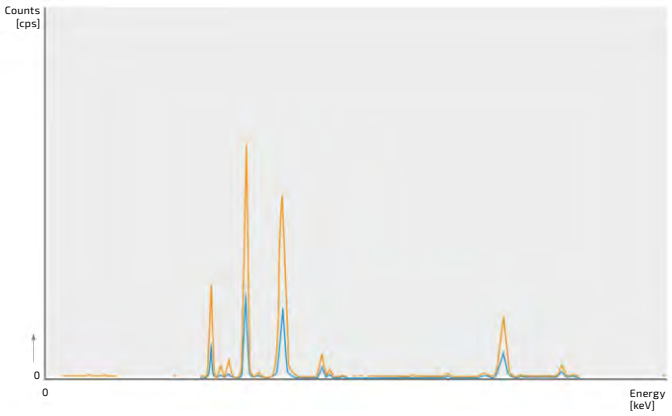
GOLDSCOPE® SD 520 and GOLDSCOPE® SD 550 devices are equipped with the new digital pulse processor DPP+ as a standard option



950 gold (23 carat): Absolute standard deviation (precision) against measurement time



585 gold (14 carat): Absolute standard deviation (precision) against measurement time



Old DPP

New SDD Detector with DPP+

Higher count rates with very good energy resolution: New SDD Detector with DPP+

Fischer XAN 220

X-Ray Source	
X-ray tube	Micro-focus tungsten tube with beryllium window
High voltage, three steps (kV)	10, 30, 50
Aperture (Collimator) Ø (mm/mils)	0.2/7.9, 0.6/23.6, 1.0/39.4, 2.0/78.7;
Measurement spot* Ø (mm/mils)	approx. 0.3/11.8*
X-Ray Detection	
Detector type	Silicon Drift Detector, peltier-cooled
Resolution fwhm for Mn-Kα (eV)	≤ 160
Measuring distance*	0 ... 25 mm (0 ... 1 in)
Repeatability for gold, measurement time 60 sec	≤ 0.5 ‰ with aperture 1.0 mm
Usable sample placement area (mm/in)	310 x 320 / 12.2 x 12.6
Max. sample height (mm/in)	90/3.5
Dimensions	
External dimensions W x D x H (mm / in)	403 x 588 x 365 / 16 x 23.2 x 14.4
Weight	approx. 45 kg

Fischer XAN 250

X-Ray Source	
X-ray tube	Micro-focus tungsten tube with beryllium window
High voltage, three steps (kV)	10, 30, 50
Aperture (Collimator) Ø (mm/mils)	0.2/7.9, 0.6/23.6, 1.0/39.4, 2.0/78.7;
Measurement spot* Ø (mm/mils)	approx. 0.3/11.8*
X-Ray Detection	
Detector type	Silicon Drift Detector, peltier-cooled
Resolution fwhm for Mn-Kα (eV)	≤ 160
Measuring distance*	0 ... 25 mm (0 ... 1 in)
Repeatability for gold, measurement time 60 sec	≤ 0.5 ‰ with aperture 1.0 mm
Usable sample placement area (mm/in)	310 x 320 / 12.2 x 12.6
Max. sample height (mm/in)	90/3.5
Dimensions	
External dimensions W x D x H (mm / in)	403 x 588 x 365 / 16 x 23.2 x 14.4
Weight	approx. 45 kg

Explore more
https://www.harshad.com/fischer