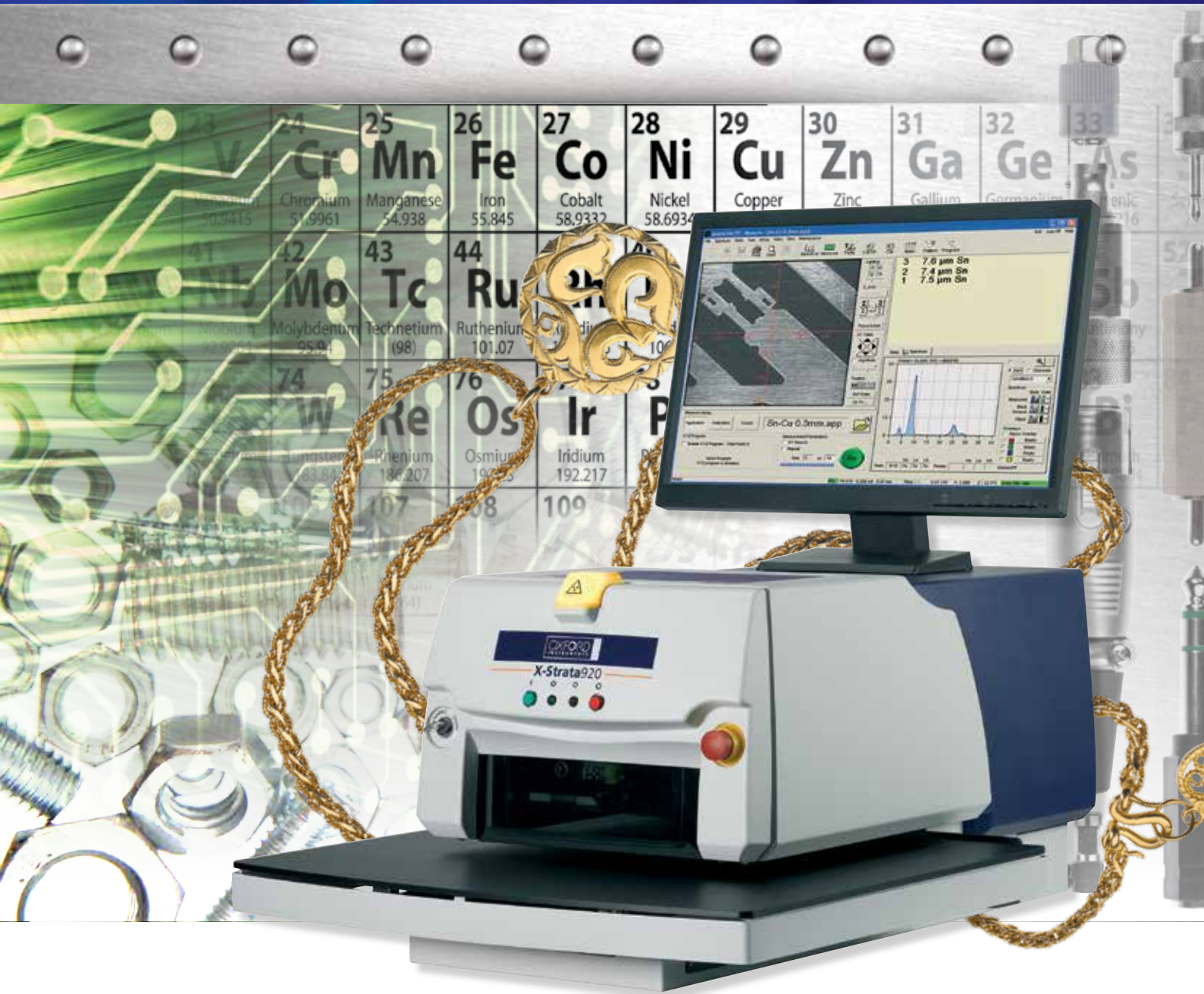


COATINGS

X-Strata920

Cost-effective, rapid and reliable XRF for coating thickness measurement and materials analysis



OXFORD
INSTRUMENTS

The Business of Science®

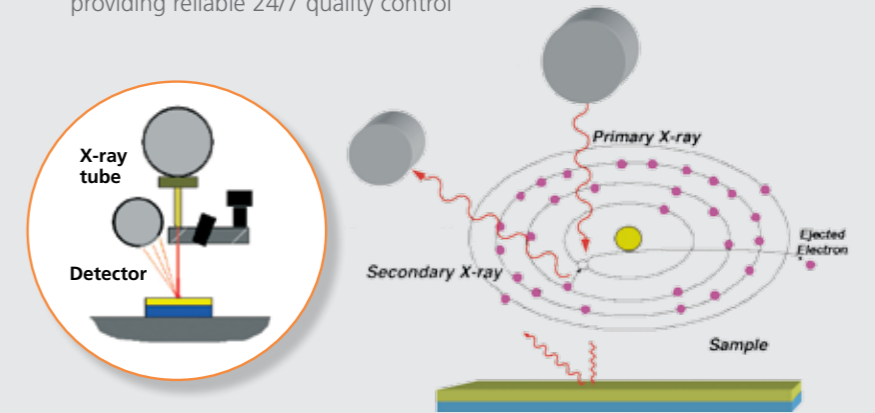


X-Strata920

Powerful, reliable and easy to use EDXRF spectrometer guaranteeing quality and reducing costs

Oxford Instruments – A brand you can trust

- Oxford Instruments has over 20 years experience in designing, manufacturing, selling and supporting reliable, cost-effective solutions for coatings thickness and composition analysis
- Thousands of XRF benchtop coatings analysers have been supplied globally providing reliable 24/7 quality control



X-ray fluorescence (XRF) method

X-ray Fluorescence (XRF) instruments work by exposing a sample to be measured to a beam of primary X-rays. The atoms of the sample absorb energy from the X-rays, become temporarily excited and then emit secondary X-rays. Each chemical element emits X-rays at a unique energy. By measuring the intensity and characteristic energy of the emitted X-rays, an XRF analyser can provide qualitative and quantitative analysis regarding the thickness and composition of the material being tested.

Benefits of analysis by X-ray fluorescence

- Minimal or no sample preparation
- Non-destructive analysis
- Wide range of element determination, Ti²² to U⁹²
- Analysis of solids and solutions
- Rapid analysis: results in seconds
- Qualitative, semi-quantitative and full quantitative analysis
- Easy to use with only minimal training
- Standard test methods, specifications and guides using XRF technique are used internationally to improve product quality, safety, facilitate market access and trade, and build consumer confidence. For example, **X-Strata920** complies with:
 - ASTM B568: Standard test method for measurement of coating thickness by X-ray spectrometry
 - ISO 3497: Metallic coatings – Measurement of coating thickness – X-ray spectrometric methods



Electronics

Au	SnPb	Sn	
Ni	Ni	Ni	Ag
Cu	Cu	Ag	Cu
Epoxy	Epoxy	Ceramic	Epoxy

Solderability

Au		
Pd	Au	
Ni	Ni	Ni
Cu	Cu-alloy	Cu

Electrical Contact

NiP	
Al	

Surface Finish

Electrical and electronic components

Increase productivity with better process control

- Component reliability assurance
 - Solder alloy composition and thickness measurement
- Lifetime product assurance through optimised quality control
 - For example:
 - Analysis of gold and palladium thickness of electrical contacts
 - Coating thickness of NiP layer on computer hard discs

Au
Pd
Ni
Cu

Top layer:
Au (gold) coating thickness

Second layer:
Pd (palladium) coating thickness

Third layer:
Ni (nickel) coating thickness

Fourth layer:
Substrate



Metal Finishing

	Cr		
ZnFe	Zn	NiP	Corrosion Resistance
Fe	Fe	Fe	

TiN	TiAlN	Cr	Wear/Heat Resistance
Tool-steel	W-carbide	Fe	

	Cr		
ZrCN	Ni	AuCuCd	Cosmetic Finish
Brass	Cu	Ni	
	Al or ABS	Cu	

Metal Finishing

Minimise production cost of the plating process and maximise production output

- Speed and simplicity of analysis
 - Single or multi elements coating thickness analysis and coating composition
 - Analysis of up to 4 layers
 - Plating bath analysis



Metal Alloy

% Au	% Cr	% Au
% Ni	% Fe	% Ag
% Cu	% Ni	% Cu
% Zn	% Mo	% Zn

Assay and ID

Metal alloy composition and identification

Rapid, non-destructive analysis of jewellery and other alloys

- Precious metal alloy assay
- Karat analysis
- Material identification

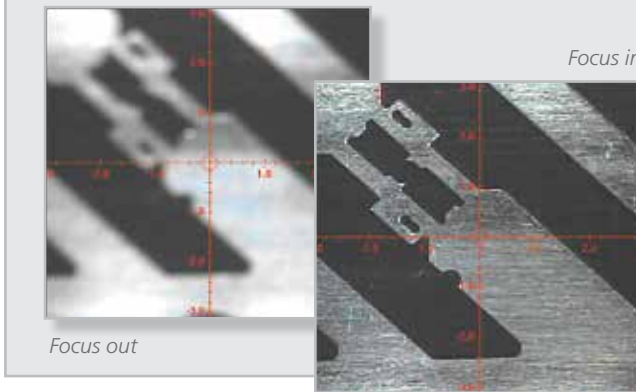
To suit your analysis needs

1 Place samples on analysis table



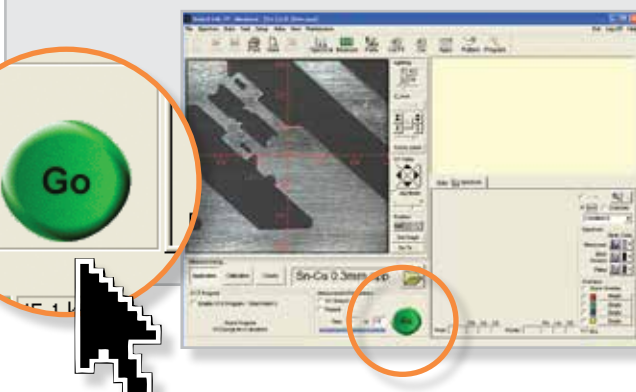
- Non-destructive analysis: no sample preparation
- Easy sample introduction/presentation: slotted chamber
- Large analysis table enables the measurement of large flat samples

2 Optimise camera focus at the click of a button

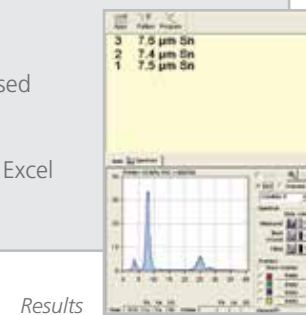


- No operator-to-operator results variability: point-and-click laser focus
- Clear, pin-point analysis: high-resolution colour video camera with high magnification
- Unattended operation: single or multiple analysis using the programmable XY stage (optional) and Z axis
- Simple and quick multi-point analysis: customer pre-defined analysis patterns

3 Press Go



- Results displayed within seconds
- Save, print or send results
- Create pre-defined or customised reports in very few steps
- Export results into Microsoft™ Excel at the push of a button



High performance XRF spectrometer

- **Fast and precise analysis:** the combination of a large-area proportional counter detector and Oxford Instruments' 50-watt micro-focus X-ray tube (providing a high-intensity, small-spot X-ray beam for superior sample excitation) delivers optimum sensitivity
- **Simple element differentiation:** secondary beam filters enable the spectral separation of overlapping elements
- **Optimised performance across a wide range of elements**

Rugged and robust design

- Operation in a laboratory or by the production line
- Sturdy, industrial design

Simple calibration setup

- Fundamental Parameters (FP) methods provide simplicity and reliable quantitative results when no calibration standards are available
- Empirical calibrations provide best accuracy and results traceability, and use only a few standards
- Methods are created in minutes
- Oxford Instruments supply certified standards for best accuracy (A2LA and ISO/IEC 17025 accredited)

- **X-Strata920** is supplied with over 800 pre-loaded, easy-to-select application parameters/methods
- **Excellent long-term stability:**
 - Automatic thermal compensation measures the instrument temperature and corrects for changes, giving stable results
 - Simple and rapid Spectrum Calibration routine checks the instrument performance (such as sensitivity) and applies necessary corrections

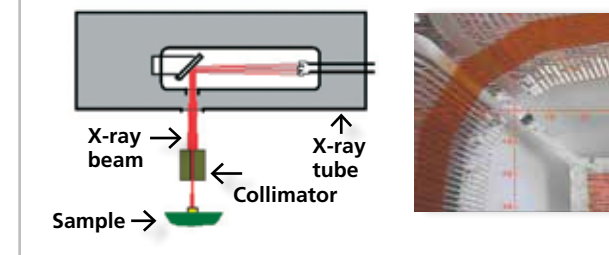


Remove results variability between operations

Integrated laser

- Simple 'point and click' operation to bring sample into focus
- Fixed focal distance: 0.5" (12.7 mm)

Analysis of variety of sample shapes and sizes



Multi primary beam collimators

- Optimal performance results through flexible collimator selection
- Best sensitivity and speed of analysis
- Up to 6 collimators for additional application capability

Advanced system security

- Simple user interface with limited features for the routine operator
- Manager level access for system maintenance
- System usage logged by operator
- Autolock function prevents unauthorised use of the instrument

Standard base

- A 'Slotted chamber' allows the measurement of a wide range of samples from small components to very large flat samples e.g. printed circuit board. The size of the sample can exceed the width of the instrument.
- Motorised and software controlled analysis head for speed and ease of use.
- Economical and practical.
- For the analysis of samples up to 33mm (1.3") in height.



Mini-well base

- The 'Mini-well' chamber design allows the measurement of a wide range of parts/components from small to large, i.e. up to 160mm (6.3") in height.
- Sample tray which can be positioned in one of four positions in the 'Mini-well' to hold samples of differing height, ensuring a range of parts/components can be measured with ease.
- 'Slotted chamber' allows the measurement of large flat samples, e.g. printed circuit boards whose size can exceed the width of the instrument.



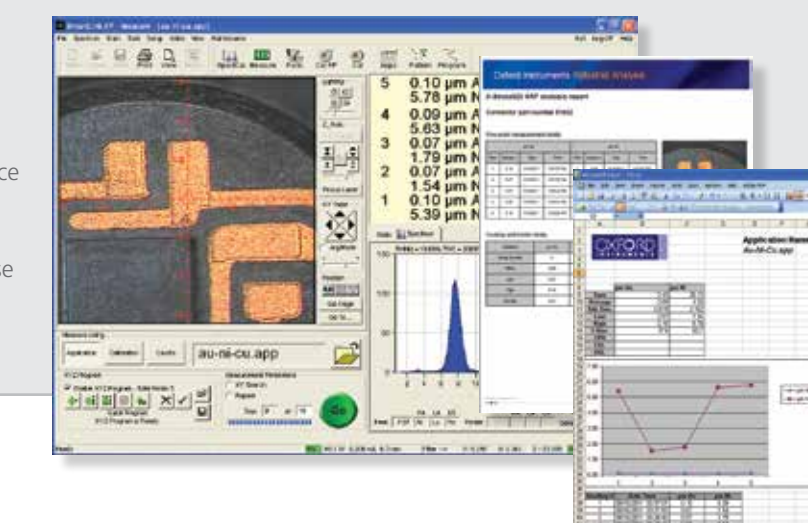
Programmable base

- A motorised and programmable table allows automatic measurements for highest sample throughput and unattended operation.
- Mouse control enables easy positioning of the parts/components being analyzed to the precise points for analysis.
- The 'Slotted chamber' allows large flat samples to be measured, e.g. printed circuit boards.
- Table size: 56mm (2.2") D x 61mm (2.4") W



Results export

- Export results into Microsoft™ Excel or create custom reports
- Apply custom statistical analysis formats
- Include statistical data analysis
- Capture the sample image in reports



SUPPORT

○iService Worldwide Service and Support

Support delivering confidence and protecting your investment

Oxford Instruments Customer Service recognises there are many decisions to take when choosing the right product and company with which to partner. It is not just about superb instrument functionality or the rugged design of the analyser. The **OiService** teams are aware of the necessity to demonstrate our depth of knowledge, skills, experience and expertise with regard to supporting our customers.

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- Technical help desk support
- Genuine approved Oxford Instruments spare parts
- Consumable products
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