X-Strata 980

Rapid, non-destructive coating thickness measurement and elemental analysis

Robust / Easy to Use / Total Reliability

Regional Distributor: Eastern Applied Research
716-201-1115 ~ www.easternapplied.com
**Electronics and electronic components**

Increase productivity with better process control

- Component reliability assurance
  - Simultaneous solder alloy composition and thickness measurement
- Lifetime product assurance through optimised quality control
  - Analysis of gold and palladium thickness of electrical contacts
  - Coating thickness of NiP layer on computer hard disc
- Analysis of very thin coatings
  (e.g. Au/Pd coatings of < 0.1μm)

**Top layer:** SAC (SnAgCu) alloy composition and coating thickness

**Second layer:** Ni coating thickness

**Third layer:** Ag coating thickness

**Fourth layer:** Substrate

**Surface Finish**

**Electrical Contact**

**Solderability**

**Metal Finishing**

Minimise production cost of the plating process and maximise production output

- Speed and simplicity of analysis
  - Simultaneous single or multi elements coating thickness analysis and coating composition
  - Analysis of up to 4 layers (plus substrate)
  - Plating bath analysis
Compliance Testing

RoHS/WEEE/ELV* compliance testing
Improve quality control to ensure products meet specifications
- Determination of hazardous substances from parts per million to high percent levels
- Quantification of toxic elements e.g. Cd, Hg, Pb etc. to verify compliance

Metal Alloy

Metal alloy composition and identification
Rapid, non-destructive analysis of jewellery and other alloys
- Precious metal alloy assay
- Karat analysis
- Material identification
- Quantification of impurities

Alternative Energy

Solar panels and fuel cells
Ensure product efficiency and uniformity
- Composition analysis of the thin-film absorber layer (e.g. CIS, CIGS, CdTe) in thin-film photovoltaic cells
- Optimise electrical conductivity through layer thickness analysis

* Restriction of Hazardous Substances/Waste Electrical and Electronics Equipment/End of Life vehicles (directives)
μ-XRF Analysis As easy as...

1 Place samples in large analysis chamber

- Non-destructive analysis: no sample preparation
- Easy sample introduction/presentation: large door
- Safe and secure operation: closed chamber
- Sample chamber size: 580mm x 510mm x 230mm wdh

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 and Z axis
- Simple and quick multi-point analysis: customer pre-defined analysis patterns

3 Press Go

- Results displayed within seconds
- Rapid compliance assessment: user-defined colour-coded Pass/Fail results
- Save, print or send results
- Pre-defined or customised reports for total flexibility

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Rugged and robust design:

- **Fast and precise analysis**: high sensitivity with Oxford Instruments’ 100 W X-ray tube
- **Simple identification and differentiation of elements**: high resolution, Peltier-cooled silicon PIN detector
- **Optimised performance across a wide range of elements**: multiple primary beam filters
- **Measure samples as small as 150μm in size**: multiple collimators
- **Low limits of detection, even in matrices such as plastics**: Oxford Instruments’ unique low-background measurement plate

Outstanding precision, accuracy, and long-term stability:

- **Stand-alone spectrometer**: only one mains plug needed
- **Compact workstation**: excellent ergonomics and small footprint
- **Operation in a lab or by the production line
- **Sturdy, industrial design**
Samples can be measured at variable focal distances (0.5 to 4 inches): methods set up for sample shape and size.

Distance independent measurement: with this option, one universal calibration is used to measure irregular-shape samples, regardless of focal distance (measurable range 0.5 to 4 inches).

Quick, precise sample alignment with Auto Range Finder (ARF).

**Advanced Data Export Option**

- Complete statistical data function including average, standard deviation, histograms and control charts
- Real-time data export or export to Microsoft Excel™ for rapid statistical report generation
- Shortcut keys allow user to choose correct calibration for a particular sample with one click
- User interface available in nine languages
Select the best analytical method for your application:

- When few or no standards are available, Fundamental Parameters (FP) methods provide reliable quantitative results. These use a comprehensive spectrum database, and cover a wide range of concentrations and thicknesses. It only takes a few minutes to setup a working method.

- When standards matching your samples (i.e. matrix, analytes, range of concentrations) are available, empirical calibrations provide the best accuracy. There again, the intuitive, step-by-step method browser enables users to develop their own calibration methods after minimum training.

Sample mapping for identification of “problem” areas on sample

- Analyse qualitatively the sample area of interest in one measurement cycle using the Mapping function.
- Generate an image of the sample with superimposed element maps.
- Using the colour-coded element maps, identify the problem area(s) on the sample.
- Carry out a full quantitative analysis of the area to confirm non-compliance.