XLNCE SMX-BEN Benchtop Analyzer

- Composition and thickness analysis by EDXRF technique
- Complete process control tool from R&D to manufacturing
- Large analysis chamber with programmable X-Y-Z stage positioning
- Versatile software for measuring film thickness and composition, solid compositional analysis, and primary metal concentrations in solution

XLNCE XRF analyzers for coating thickness and composition analysis

The **SMX-BEN** is an XRF metrology tool that provides non-destructive analysis for composition and coating thickness measurement of single and multi-layered materials up to 30 elements, ranging from less than a nanometer to microns, quickly and accurately on virtually any substrate.

The SMX-BEN platform is an excellent choice for R&D, process development, process control, and failure analysis. It facilitates and accelerates material selection and recipe formulation in a pre- or early production ramp phase and supports in-process tool platforms well into capacity production.

SMX-BEN analyzers offer:
- An array of choices for X-ray optics and primary filters
- The latest generation of Silicon Drift Detectors (SDD)
- Optimized configuration for the fastest and most accurate results for a wide variety of applications and markets

Application areas:
- Manufacturing process control: photovoltaic, water level metallization, metal finishing, micro-electronics, paper, plastics
- Protective coatings: corrosion, wear, thermal barrier, medical implants
- Energy: batteries, CIGS, CIS, CdTe
- Yield management
- Failure analysis

The analysis software platform offers both empirical and fundamental parameters (FP) options in a simple to set up calibration process. The software provides an easy-to-use interface for mastering applications from bulk sample and trace analyses to the most sophisticated multi-layer coating applications, and offers accessibility from supervisory to operator levels.
SMX-BEN Enhanced Features

Primary Filters
- Allow the primary X-ray beam output to be modified for increased precision measuring specific elements.

Laser Focusing
- Maintains precise sample-to-detector working distance for optimal measurement reproducibility.

X-Y Sample Stage
- Programmable stage positioning increases tool throughput.
- Stored X-Y stage recipes automate repetitive testing of multiple samples.

Quantitative Software
- Multi-layer analysis of 8 layers and up to 30 elements.
- Bulk quantitative analysis.
- Trace analysis for RoHS.

Virtual Analysis
- Three dimensional surface mapping for visual inspection of fine sample structures.

Statistical Tool
- Histogram, Trendline, X-Bar, and R-Chart display along with Mean, Std. Deviation, %Dev, Pp/Ppk, and Min/Max data charts.

Specifications

X-ray tube
- 50 W, 1mA/50 kV μfocus tube
- Targets: W, Cr (other target options available)

Detector
- Silicon Drift Detector (SDD)

Collimation
- 6 motorized & programmable
- Capillary option

Primary filters
- 5 selectable & programmable

Camera
- Constant-view variable magnification

Optics
- 20x/40x Mag.
- 4 x 3 Field of View

Sample stage
- Motorized X-Y-Z programmable

Focusing Laser
- Optimal Measurement Reproducibility

Software
Qualitative and Quantitative Analysis, including empirical and FP Quantification options

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