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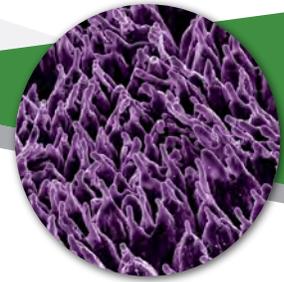
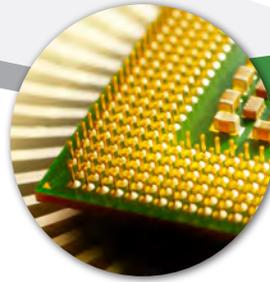
Coating Measurement Instruments

W SERIES XRF

High Precision Coating Measurement System



What's Distinctive:
Measures the smallest features in microelectronics



Who Benefits

The W Series desktop XRF was engineered for the precise measurement of the smallest X-ray features found in semiconductors and microelectronics.

Key Features

Bowman's W Series uses poly-capillary optics to focus the X-ray beam to 7.5 μm FWHM, the world's smallest for coating thickness analysis using XRF instruments. A 150X magnification camera is used to measure features on that scale; it is accompanied by a secondary, low-magnification camera for live-viewing samples and birds-eye macro-view imaging. Bowman's dual-camera system lets operators see the entire part, click the image to zoom with the high-mag camera, and pinpoint the feature to be programmed and measured.

A programmable X-Y stage with precision less than $\pm 1 \mu\text{m}$ for each axis is used to select and measure multiple points; Bowman pattern recognition software and auto-focus features also do this automatically. The system's 3D mapping capability can be used to view the topography of a coating on a part such as a silicon wafer.

Configuration

W Series instruments include 7.5 μm optics with molybdenum anode tube (chromium and tungsten are optional) and a high-resolution, large-window Silicon Drift Detector (SDD) which processes more than 2 million counts per second. SDDs are the standard, industry-wide, for complex films. Their high count rate capability is key to achieving a low minimum detection limit (MDL) and highest spectral resolution.

BOWMAN

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Made
in the USA

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BOWMAN W SERIES XRF

Superior technically.
Supported locally.

The W Series is the 7th model in Bowman's XRF instrument suite. Like others in the portfolio, it simultaneously measures up to 5 coating layers and runs advanced Xralizer software to quantify coating thickness from the detected photons. Xralizer software combines intuitive visual controls with time-saving shortcuts, extensive search capability, and "one-click" reporting. The software also simplifies user creation of new applications.

Specifications

X-ray Excitation

50 W Mo target Flex-Beam Capillary Optics @7.5 FWHM
Optional: Cr or W

Detector

Large window Silicon drifted detector with 135eV resolution or better

Focal Depth

Fixed at 0.02"

Video Magnification

150X with micro-view camera on 20" screen (up to 600x digital zoom)
10~20X with macro-view camera

Working Environment

68°F (20°C) to 77°F (25°C) and up to 98% RH, non-condensing

Weight:

190kg (420lbs)

Programmable XYZ

XYZ travel: 300mm (11.8") x 400mm (15.7") x 100mm (3.9")

XY tabletop: 305mm (12") x 406mm (16")

X-axis accuracy: 2.5um (100u"); X-axis precision: 1um (40u")

Y-axis accuracy: 3um (120u"); Y-axis precision: 1um (40u")

Z-axis accuracy: 1.25um (50u"); Z-axis precision: 1um (40u")

Element Range

Aluminum 13 to Uranium 92

Analysis Layers and Elements

5 layers (4 layers + base) and 10 elements in each layer.
Composition analysis of up to 25 elements simultaneously

Primary Filters

4 primary filters

Digital Pulse Processing

4096 CH digital multi-channel analyser with flexible shaping time. Automatic signal processing including dead time correction and escape peak correction

Processor:

Intel, CORE i5 3470 (3.2GHz), 8GB DDR3 Memory,
Microsoft Windows 10 Prof, 64bit equivalent

Camera Optics:

1/4" CMOS-1280x720 VGA resolution

Power Supply:

150W, 100~240 volts; frequency range 47Hz to 63Hz

Dimensions (HxWxD)

Internal: 735mm (29") x 914mm (36") x 100mm (4")

External: 940mm (37") x 990mm (39") x 787mm (31")

Other New Features

Z protection array

Auto focus

Focus laser

Pattern recognition

The Bowman Partner Network

Bowman's Partner Service Network was established to facilitate large multi-national projects in the PCB industry. Today, it has become the model for XRF technical service worldwide, serving board shops, electronics manufacturers, automotive and aerospace OEMs, jewelry manufacturers, and contract metal finishers in all sectors.

The Bowman Partner Network enables XRF technical service experts worldwide to provide same-day response to every service, repair and upgrade requirement.



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