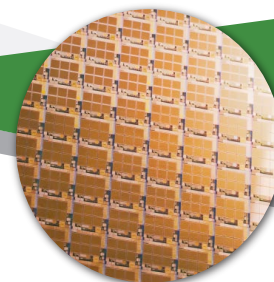
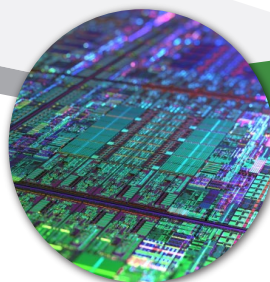




## A SERIES MICRO XRF

High Precision Coating  
Measurement System



### Who Benefits

The A Series Micro XRF was engineered for precise measurement of the smallest X-ray features found in semiconductors and microelectronics. It accommodates very large PCB panels, or wafers of any size for full sample coverage and multi-point programmable automation.

### Key Features

Bowman's A Series uses poly-capillary optics to focus the X-ray beam to 7.5  $\mu\text{m}$  FWHM, the world's smallest for coating thickness analysis using XRF instruments. A 140X 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 movement of 23.6 in (600 mm) in each direction can handle the largest samples in the industry. The stage has precision less than  $\pm 1 \mu\text{m}$  for each axis and is used to select and measure multiple points; Bowman pattern recognition software and auto-focus features also do this automatically. The system's built-in pattern recognition can be used to view the topography of a coating on a part such as a silicon wafer.

### Configuration

A Series instruments include 7.5  $\mu\text{m}$  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. The high count rate capability is key to achieving a low minimum detection limit (MDL) and highest spectral resolution.

### BOWMAN

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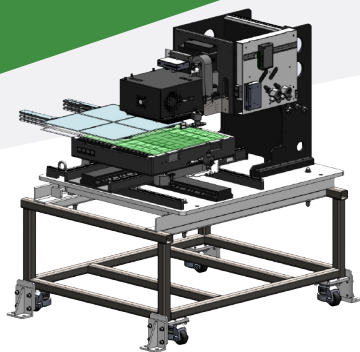
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Made  
in the USA

Rendering of A Series  
for Incorporation with  
Automated Wafer Handler



# BOWMAN

## A SERIES MICRO XRF

Superior technically.  
Supported locally.

The A Series is the 8th model in Bowman's XRF instrument suite. Like others in the portfolio, it simultaneously measures up to 5 coating layers and runs advanced Archer software to quantify coating thickness. Archer 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 Capillary Optics @7.5µm FWHM at 17 KeV  
Optional: Cr, Rh, or W

#### Detector

Large window Silicon solid state detector with 190eV resolution or better

#### Output Focal Depth

Fixed at 2.03mm (0.08")

#### Video Magnification

140X Micro  
7X digital Zoom  
9X Macro & Table View

#### Working Environment

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

#### Weight

1000kg (2200 lbs)

#### Programmable XYZ

XYZ travel: 600mm (23.6") x 600mm (23.6") x 89mm (3.5")  
XY tabletop: 559mm (22") x 584mm (23")  
XYZ-axis precision: 1µm (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 30 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

#### PC

Intel CORE i5 9th gen. desktop processor, SSD,  
16GB RAM, Microsoft Windows 11 Prof, 64bit equivalent

#### Camera Optics

1/4" CMOS-1280x720 VGA resolution

#### Power Supply

720W, 100~240 volts; frequency range 47Hz to 63Hz

#### Dimensions (WxDxH)

Internal: 1397mm (55") x 1473mm (58") x 102mm (4")  
External: 1473mm (58") x 1575mm (62") x 1778mm (70")

#### Other New Features

Z protection array, Auto focus,  
Focus laser, Pattern recognition,  
Semi S2 S8 compliant-ready

### 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.



Made  
in the USA

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