

BOWMAN

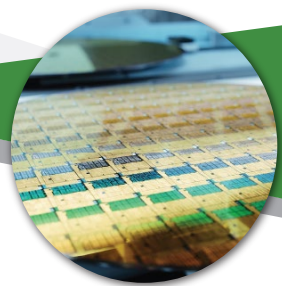
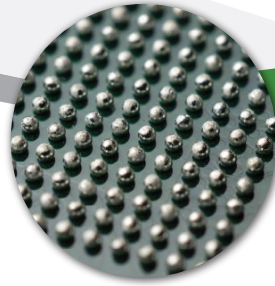
Coating Measurement Instruments

K SERIES XRF

High Precision Coating
Measurement System



What's Distinctive:
305mm x 305mm measurable parts area



Who Benefits

The K Series optics system is ideal for customers who needs precise measurements of a large sample area, with a class-leading 12" (305mm) x 12" (305mm) measurable area. It comes standard with a poly-capillary optics to focuses the X-ray beam down to 15µm FWHM spot to measure small critical features. The dual-camera system lets operators easily switch between a low magnification camera for a macro view and a high magnification 140x camera to pinpoint small features. Bowman's Tableview feature also images the entire measurable area and allows the operator to navigate to any location with a single click, automatically positioning the feature under the high-mag camera.

A servo motor-driven programmable stage allows for fast and precise programmable sample positioning down to less than 2µm precision. The cantilever door design gives operators easy access for sample placement. An available built-in joystick lets operators move the XY stage from the system's control panel without software intervention. Bowman pattern recognition software and autofocus features automatically ensure precise, repeatable, and accurate measurements. The system's 3D mapping capability can be used to view the topography of coatings. As with all other Bowman XRF Systems, the K Series is compliant with ASTM B568, ISO 3497 & IPC-4552.

Key Features (Optics)

- › XYZ Travel: X: 12" (305mm) Y: 12" (305mm) Z: 8.50" (216mm)
- › Servo motor-driven high precision programable table for more precise, faster and smoother travel
- › Internal chamber dimensions (WDH): 24" (610mm), 24" (610mm), 9" (229mm)
- › Integrated XYZ joystick with measure button
- › Closed chamber design
- › Table Size: 12" (305mm) x 12" (305mm)
- › High Resolution Large Window Silicon Drift Detector (LSDD)
- › Cantilever door for easy sample access
- › Built-in E-stop

BOWMAN

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Made
in the USA

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BOWMAN K SERIES XRF

Superior technically.
Supported locally.

Configuration

The standard K Series optics configuration includes a 15µm FWHM optics with a long-life micro focus X-Ray tube, and a high resolution LSDD detector to process the higher count rates. A servo motor-driven programmable stage allows parts measurement with selectable XYZ programs. The optics system has a very close focal distance, so samples measured with the optics K Series must be flat.

Like others in the Bowman portfolio, it simultaneously measures up to 5 coating layers and runs advanced Archer software to quantify coating thickness, elemental composition, and solution analysis. 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: Optics

X-ray Excitation

50 W target Capillary Optics @15µm FWHM at 17 KeV
Optional: Cr, W, Mo, or Rh

Detector

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

Output Focal Depth

Fixed at 0.15" (3.81mm)

Video Magnification

140x Micro
9x Macro & Tableview
7x Digital Zoom

Working Environment

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

Weight

270 Lbs/ 120 Kg

Programmable XY

Table size: 12" (305mm) x 12" (305mm)
XY Travel: 12" (305mm) x 12" (305mm)
Precision: <2µm (80u")

Analysis layers and elements

5 layers (4 layers + base) and 10 elements in each layer.
Composition analysis of up to 30 elements simultaneously

Filters

4 primary filters

Digital Pulse Processing

4096 CH digital multi-channel analyzer 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 Resolution

Power Supply

480W, 100~240 volts; frequency range 47Hz to 63Hz

Dimensions (HxWxD)

Internal: 9" (229mm), 24" (610mm), 24" (610mm)
External: 26.3" (668mm), 28.0" (711mm), 36.3" (922mm)

Element Range

Aluminum 13 to Uranium 92

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.



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