



# BOWMAN

Coating Measurement Instruments

## M SERIES XRF

High Precision Coating Measurement System



The most advanced poly-capillary optics available

### What's Distinctive:

#### Who Benefits

The M Series desktop XRF is best suited to customers who have:

- › Small parts/features such as those found in semiconductors, connectors, or PCBs
- › Requirement to test many samples or locations per new lot of material
- › Very thin coatings (<100  $\mu\text{m}$ )
- › Very short measurement times (1-5 seconds)
- › The need to meet the requirements of IPC-4552A

#### Key Features

The M Series is the ultimate in high performance at the absolute smallest x-ray spot sizes. The poly-capillary optics can focus the x-ray beam down to 15 $\mu\text{m}$  FWHM. A dual-camera system allows operators to see an entire part and zoom in with the high-mag camera to pinpoint the feature to be measured. The programmable X-Y stage can precisely select and measure multiple points, or the pattern recognition software can do this automatically. A 2-D mapping system can be used to see the topography of a coating over the surface area of a part such as a silicon wafer.

#### Configuration

The standard configuration includes 15 $\mu\text{m}$  optics, a programmable X-Y sample stage, and a high resolution SDD detector to process the higher count rates. The micro/macro camera system has one camera with 150x magnification with a higher digital zoom. The optics system has a very close focal distance, so samples measured with the M Series must be flat.

#### BOWMAN

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# BOWMAN M SERIES XRF

Superior technically.  
Supported locally.

## Specifications

### X-ray Excitation

50 W Mo target Flex-Beam Capillary Optics @15 FWHM

### Detector

Silicon drifted detector with 135eV resolution

### Focal Depth

Fixed at 0.05"

### Video Magnification

250X with Dual Camera

45X with Single Camera on 15" screen

### Working Environment:

50°F (10°C) to 104°F (40°C) and up to 98% RH, non-condensing

### Weight

70kg

### Programmable XY:

Table size: 17" x 16"

Travel: 6.5" x 6.5" high precision

### 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

### Filters/Collimators

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: 140mm (5.5"), 310mm (12"), 340mm (13")

External: 500mm (20"), 450mm (18"), 600mm (24")

## 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.



Bowman global partners are certified annually, and maintain the highest standards of excellence and best practices.



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