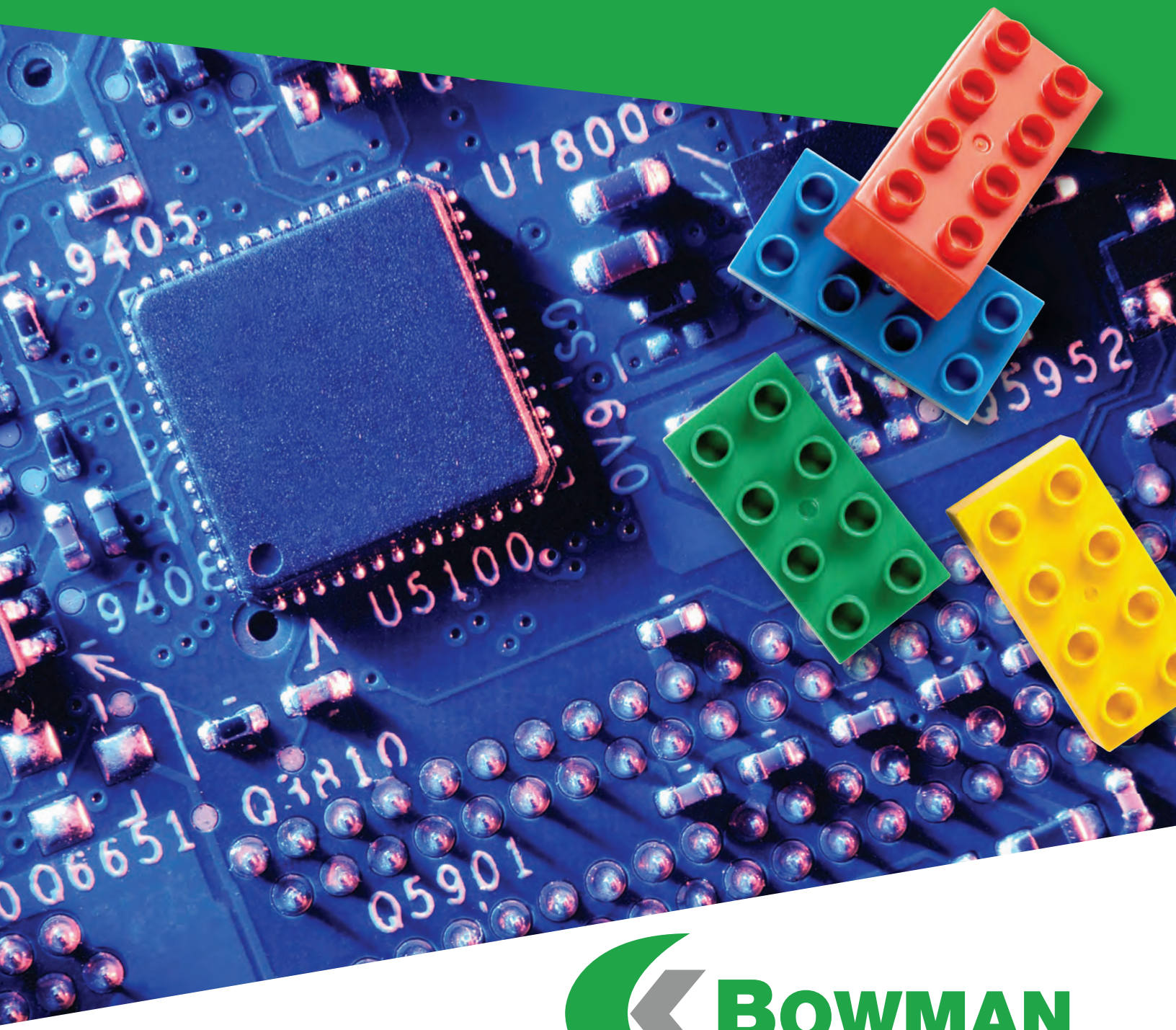
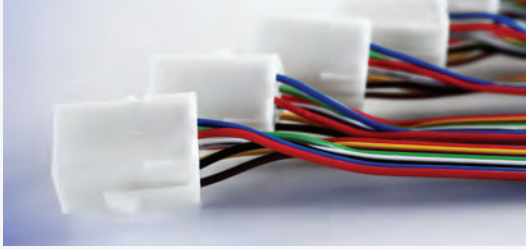
RoHS: A Complex Issue, a Simple Solution



BOWMAN
Coating Measurement Instruments

Bowman's **advanced EDXRF technology** provides precise plating thickness analysis and rapid screening for **RoHS** and other quality directives

The Evolution of RoHS



All products sold in the 27 countries comprising the EU after July 1, 2006 had to be RoHS-compliant. RoHS evolved into RoHS 2 in 2013, expanding coverage to electrical/electronic equipment, cables, and spare parts. Medical devices followed in 2016, and industrial monitoring & control instruments the following year. In 2019, all other electrical and electronic equipment was brought under RoHS 3.

As RoHS encompassed more products, the standards became increasingly universal: 9 US states, including California, now have a customized version of RoHS, as does China, Korea, Japan, Taiwan, Norway, India, Ukraine, Singapore, the UAE, Turkey, Russia and the 4 other members of the Eurasian Economic Union (EEU). Brazil and South Africa are the latest nations to adopt RoHS regulations.

For companies throughout the electronics supply chain, from raw materials through final manufacturing, the main materials of concern, and their typical limits are:

Cadmium
<100 PPM

Lead
<1000 PPM

Mercury
<1000 PPM

Chrome
<1000 PPM

Bromine
<700 PPM

Also: arsenic, chlorine, antimony, other heavy metals

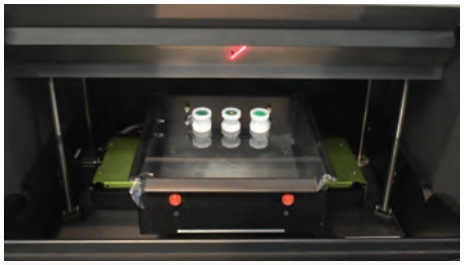
Bowman instruments also provide screening for REACH, Prop 65, Consumer Products Safety Commission standards, ELV Directives, IEC 61249-2-21, and more

RoHS • IEC 61249-2-21 • CPCA 16 CFR 1303 • WEEE • HR 4040

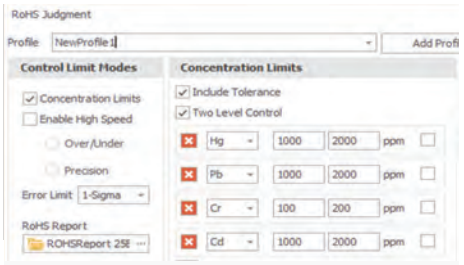
Bowman has a Simple Solution for Rapid RoHS Screening of Any Sample Type

Bowman did the "heavy lifting" in developing an advanced, pre-calibrated RoHS package. All you have to do is follow these easy steps:

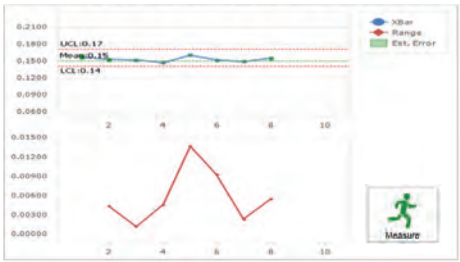
Step 1:
Insert samples into chamber. Plastic, composite and metal applications are pre-loaded.



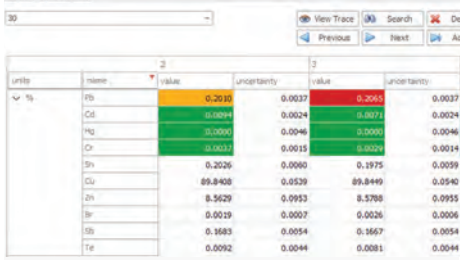
Step 2:
Place a sample on the programmable XY stage. The background is suppressed, optimally isolating the sample.



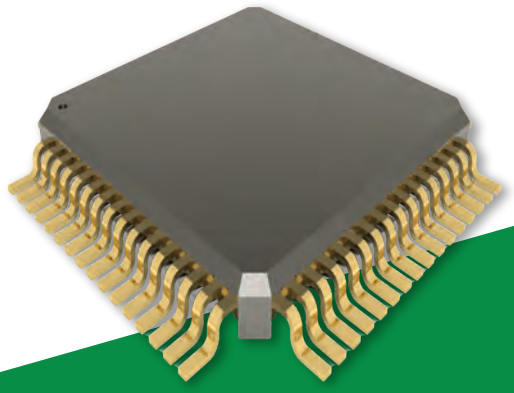
Step 3:
Define judgement



Step 4:
Take a measurement



Step 5:
Export data to database, RoHS or other report, Export Manager Setup, or Results Tab



Bowman XRF systems perform 4 critical measurements: plating thickness, alloy composition, plating bath and RoHS analysis - ***all in one unit!***

All sample states can be tested:
solid, liquid, powder and multi-layered.

Bowman's built-in database automatically stores all data in a secure and searchable way.

ASTM F2617-08 • GEC • ELV 2000/53/EC • REACH • Prop 65

G and L Instruments: Rapid, Accurate Small-spot Detection with Advanced RoHS Screening

G Series is best for:

- Small parts with simple geometries
- Low volume testing requirements
- No requirement for micro-spot sizes for plating thickness measurement

L Series is best for:

- Versatility for measurement of large parts with complex geometries
- Programming multiple samples for automated multi-point measurement
- Smaller x-ray beam sizes for plating thickness measurement

	G SERIES	L SERIES
Tube		
Micro-Focused X-ray Anode	Rh or W	Rh or W
X-ray Path	Bottom Up	Top Down
Detector		
Si Drift Detector	Standard	N/A
Large Si Drift Detector	Optional	Standard
Beam Size		
Dual Collimator	Standard	N/A
Multi-Collimator	N/A	Standard
For RoHS / Thickness analysis	1.5mm	1.5mm
For Thickness analysis	0.5mm	0.1, 0.2, 0.3mm
Focal Depth		
Focus Laser / Auto Focus	Standard	Standard
Single Fixed	Standard	N/A
Multi-Variable	N/A	Standard
Stage & Chamber Dimensions		
Z control	Automatic	Automatic
Z travel	25.4mm	254mm
XY travel	37x37mm (optional)	254x254mm
Chamber Dimensions HWD	100x330x305mm	267x 737x914mm

About Bowman

- Well-established, with more than 2000 systems installed worldwide since 2014.
- Worldwide service partnership: 200+ certified technicians who are qualified to service and repair all 7 Bowman models, as well as benchtop XRF systems manufactured by other suppliers.
- Impressive management credentials: Bowman ownership, managers and engineers are all alumni of CMI International, an early leader in XRF plating measurement technology, established in 1985.

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