

INSIGHT UNIVERSAL VERSION FOR SMALL PARTS



Provide Accurate Analysis for Miniaturized Products

The INSIGHT Universal Version For Small Parts is designed as a 'top-down' coating analyzer, featuring a compact appearance, space-saving design, user-friendly operation, rapid analysis, and precise detection.

The INSIGHT Universal Version For Small Parts utilizes a micro-focusing X-ray tube to capture the majority of rays emitted from the X-ray source and concentrate them into a tiny beam spot. This spot is then directed onto the sample, achieving excellent spatial resolution and generating a strong fluorescence signal. The device collects, processes, and analyzes the fluorescent signal produced by the sample when irradiated.

This data is obtained through an energy spectrum probe and subsequent data processing, providing composition information about the sample. This technology allows for rapid measurement and precise analysis, particularly beneficial for complex applications. It is well-suited for elemental analysis of heterogeneous or irregularly shaped unknown samples, as well as microscopic objects.

INSIGHT Universal Version For Small Parts finds extensive use in elemental analysis and thickness detection of samples with both conventional and intricate coating structures. Particularly effective for samples with uneven, irregular, or minute shapes, it ensures customers receive dependable, repeatable results across a wide range of applications. These applications include jewelry, small parts, connector plating, general circuit boards, and more.

APPLICATIONS

INSIGHT - PCB Surface Treatment

PCB Surface Treatment Processes

In PCB surface treatment processes, common methods include hot air leveling, organic coating OSP, electroless nickel plating/immersion gold, immersion silver, immersion tin, and electroplating nickel gold, among others. INSIGHT offers rapid, efficient, non-destructive, and precise analysis of PCB coating thickness and composition across various shapes.

INSIGHT – Electronic Component applications

Electronic Component

The advancement of coating technology and electronic components supports each other. As performance demands increase, coatings are vital for stability and reliability. Common finishes include tin-silver (Sn-Ag), tin-bismuth (Sn-Bi), tin-copper (Sn-Cu), and Ni-Pd-Au.

INSIGHT – Universal small parts coating analysis

Universal Small Parts and Small Structures

With rapid advances in science and technology, parts across industries are increasingly miniaturized. As key surface treatments for small parts, common coating processes include rack plating, barrel plating, continuous plating, and brush plating.

FEATURES

Multi-Collimator

You have the option of using multiple collimators, or the software can automatically switch between different combinations of collimators as needed. This flexibility allows the system to effectively handle parts of varying sizes.

One-Touch Measurement

The instrument comes with user-friendly and intelligent analysis software, making it easy to operate. Users can test samples without any specialized training. Simply click on "Start Test," and within seconds, you'll have the test results at your fingertips.

Auto Focus

Samples of different shapes can be swiftly and precisely focused, with the capability to zoom in on video images and include crosshairs. The autofocus feature ensures clarity and accuracy.

Programmable Automatic Displacement Sample Stage

The INSIGHT system offers both fixed and motorized automatic stages, which can be programmed to accommodate a wide range of part sizes and test volumes. A fixed sample stage suffices for spot inspections of one or several locations on the circuit board, where the inspection area is easily identifiable. Users can manually position the sample using a fixed stage.

However, boards with intricate designs and extremely small features benefit from a motorized stage, offering greater precision for adjustments. Moreover, INSIGHT enables the creation, saving, and recall of multipoint programs for automated testing of multiple components. Combining a programmable XY stage with built-in pattern recognition software ensures efficient and consistent high-volume sample testing.

High-Performance Detector

We opt for Si-PIN detectors tailored for multi-element coatings. In contrast to traditional gas proportional counters, Si-PIN offers superior resolution, lower background noise (resulting in the highest signal-to-noise ratio), long-term stability, and an extended service life.

Large Measurement Room

The instrument shell features a slotted design (C-slot), which widens the measurement space and facilitates easy placement of samples. This design allows for the measurement of large and flat items, such as printed circuit boards, as well as accommodating large samples with intricate shapes.

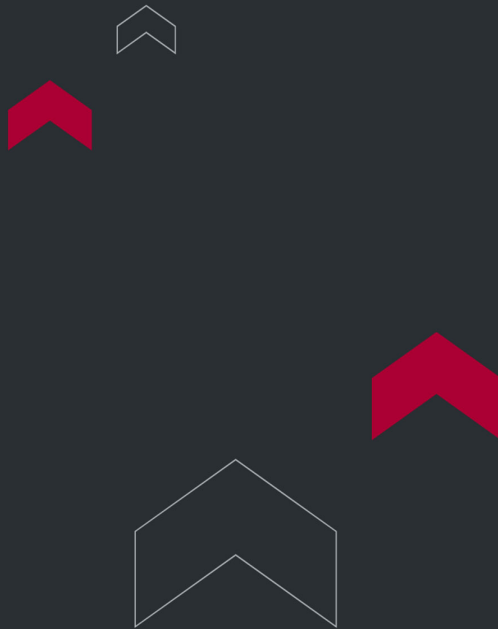
Nondestructive Testing

X-ray fluorescence is a non-destructive analytical process that leaves no traces, ensuring the safety of sensitive materials during measurement.

TECHNICAL SPECIFICATIONS

The characteristics of	Top-down measurement structure, XYZ measurement platform, MUTI-FP multilayer algorithm
Scope of element	Na(11)—Fm(100)
Analysis of the layer number of	5 layers (4 layers + substrate) each layer can analyze 10 elements, composition analysis can analyze up to 25 elements
X-ray tube	50 W (50 kV, 1mA) micro-focused tungsten palladium ray tube (target material is optional)
The detector	Si-PIN large area detector
Collimator	φ0.5-φ5 is optional. Multi-standard is optional
The camera	High resolution CMOS color camera, 5 megapixels
Manual sample XY platform	Moving range□ 100 x 150 mm

Programmable XY platform	(Optional)
Z-axis range of movement	150 mm
Sample bin size	564×540×150mm(L x W x H)
Overall dimensions	664×761×757mm(L x W x H)
Weight	120KG
The power supply	AC 220V±5V 50Hz (110V also available)
Rated power	150W



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