The X-ray “measurement” exceeds “inspection”.

**BF-X2**

The three strengths useful in production site

1. **Automated high-resolution 3D measuring technology**
   
   Enables to detect the defects by using the high quality image.

2. **Reliable hardware design**
   
   Achieved both safety and easy maintenance.

3. **Worldwide service**
   
   We are offering satisfactory supports all over the world.

**Technology**

Automated high-resolution 3D measuring technology

By using high-resolution 3D data of Planar CT, BF-X2 is possible to capture various defects with 3D configuration.

**Measuring various defects by using high resolution CT data**

- Planar CT has high-resolution in both a horizontal and vertical directions. Therefore, we can measure various defects such as dryjoint and void.

- Achieves further efficiency by the peripheral systems

- The operator would be able to check the defects by the PC in 3D view at a place apart from the system.

- Also, it can capture the warpage of a PCB and joint images completely and correct those automatically by the optimal combination of both the imaging principle and CT reconstruction images, the achieved 3D data is seamless.

- The optional “Repair terminal” shows inspected points in 3D movies. Using the mouse, you will feel like having a good look of invisible parts as though they are in your hands. Also, the “Offline teacher system” provides inspection data automatically from CAD data. Based on our abundant AOI experience, we designed this system to accommodate to both high-mix and high-volume production.

**Hardware**

Reliable hardware design

- BF-X2 is possible to keep X-ray dosage stable and start inspection quickly by the combination of 3 shutters placed in PCB entrance, exit, and X-ray infestation site.

- It is designed to meet European standard which shows that the X-ray leakage dose must be less than 0.5 μSv/h considering operator’s safety. Converting this to working hours, each operator would be able to work about 20 hours per week - 1,000 hours per year. The operator would be able to work safely.

- BF-X2 is secured to be used even in prolonged periods of operation.

**Worldwide service**

We provide quick service and support all around the world using 15 of our worldwide network which currently supports 7,000 AOI machines.

- BF-X2 is possible to detect the defects which are located at bottom and even X-ray leakage from bottom component and metal part. In order to control the detector and object in submicron accuracy and millisecond speed, we developed a high rigidity gantry structure which combines granite plate and liner motor. Its mechanism provides high reliability, while its long-term stability enabled by the high resolution Planar CT calculation.
We now see the road to perfect quality. BF-X2 erases the concern that you cannot see from optical inspection. It provides security by high-resolution images and numerical judgment. We will visualize everything inside of the objects and contribute to “zero defects” production by the automatic measuring system.

BF-X2 is the 3D X-ray inspection system which can inspect any defect such as BGA, CSP and device embedded PCBs. Our system could be used both for final quality inspection or defect analysis.

The X-ray CT scanning enables the high-resolution inspection of all PCB such as solder inspection of BGA and device embedded PCB which is impossible to inspect from its surface. Also, we adopted 160 kV and 225 kV X-ray tubes. By adopting these solutions, BF-X2 can inspect object such as IGBT power module which is attached to thick copper heat radiation fin.

New Technology

Our unique technology “Planar CT” enables to make high-precision 3D data

Saki’s unique ‘Planar CT Technology’ analyzes the internal structures of planar objects. The detector moves parallel with the planar object capturing images from various directions. By using these diagonal images, it calculates the tomographic views of the planar object quickly and accurately. By the unique movement which both the detector and the objects moves parallel, it enables to correct the position reflecting to create high-resolution image to less images taken.

The X-ray inspection system will open the new world of SMT inspection

Visualize the inner structure to realize zero flow of defects

We now see the road to perfect quality. BF-X2 erases the concern that you cannot see from optical inspection. It provides security by high-resolution images and numerical judgment. We will visualize everything inside of the objects and contribute to “zero defects” production by the automatic measuring system.

Broaden the range of inspection objects

BF-X2 is the 3D X-ray inspection system which can inspect any defect such as BGA, CSP and device embedded PCBs. Our system could be used both for final quality inspection or defect analysis. The Planar CT enables the high-resolution inspection of all PCB such as solder inspection of BGA and device embedded PCB which is impossible to inspect from its surface. Also, we adopted 160 kV and 225 kV X-ray tubes. By adopting these solutions, BF-X2 can inspect object such as IGBT power module which is attached to thick copper heat radiation fin.

Optional Systems

Offline Teacher System

Air Requirement 0.5 MPa, 60 L/min (ANR)

Usage Environment 15 °C (59 °F) - 30 °C (86 °F) / 15 - 80 % RH (Non-condensing)

Dimensions

W x D x H 1,820 × 2,620 × 1,880 mm

Weight Approx. 5,500 kg (160kV model)

Approx. 6,500 kg (225kV model)

* It may change according to capturing settings.

Specifications contained in this flyer are subject to change without notice.

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