



# BF - Planet Series

High-Resolution Image and High-Throughput System

## Inline High Resolution and High Speed Automated Optical Inspection Machine

### High-Resolution Imaging System

The superior resolution; 10  $\mu$  m, 20 $\mu$ m, 40 $\mu$ m with color line CCD provide more accurate and stable capability to inspect the solder fillet on the small components such as the highly density mounted 0201 (0603) chip and 0.4mm pitch lead.

### High Accuracy

**The Telecentric Lens(\*1)** and **the Automatic Digital Shading System(\*2)** increase the repeatability and the compatibility, and hence provide high accuracy of the inspection result. And **Ball Screw Table Scan(\*3)** also provide high repeatability and compatibility of machine accuracy.

(\*1) The unique lens developed is able to compensate the distortion (the field angle) of the image for a more accurate detection.

(\*2) The brightness of each pixel for a clearer image is calibrated automatically.

(\*3) The table with the PCB is moving while capturing. Table is moved by ball screw.

### Industry-Leading High Throughput

**The Alternate Color Digital Scanning System(\*4)** provide a single scan of capturing the entire PCB image with high throughput. Furthermore the machine is compactly designed as 600mm width with the structure. The Scanning speed is only 22sec for M size PCB (250mmx330mm).

(\*4) The liner scanning and alternate lightning system capture the multi images of the whole PCB at a single scan.

### Accurate Inspection Results

**The Multi Lightening Technology(\*5) (\*6)** is newly developed to improve the inspection capability of the solder fillet after reflow process, especially to detect the lifted chip and the lifted lead.

(\*5) New Lower lighting is add to conventional lightings; the side lighting and the co-axial overhead lighting.

(\*6) BF-Planet as recommend model for Pre-Reflow Process does not have this function.

### Real Time SPC Information

**The real time SPC information** is shown to support the management of production quality, and therefore the increase of production yield.

BF-Planet Series together with the analysis packages such as BF-Repair, BF-Editor, BF-Monitor, Net-View classify defects in real time during inspection, providing immediate feedback on defect types.





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## Model

BF-Planet-X  
BF-Planet (Before Reflow Recommend Model)

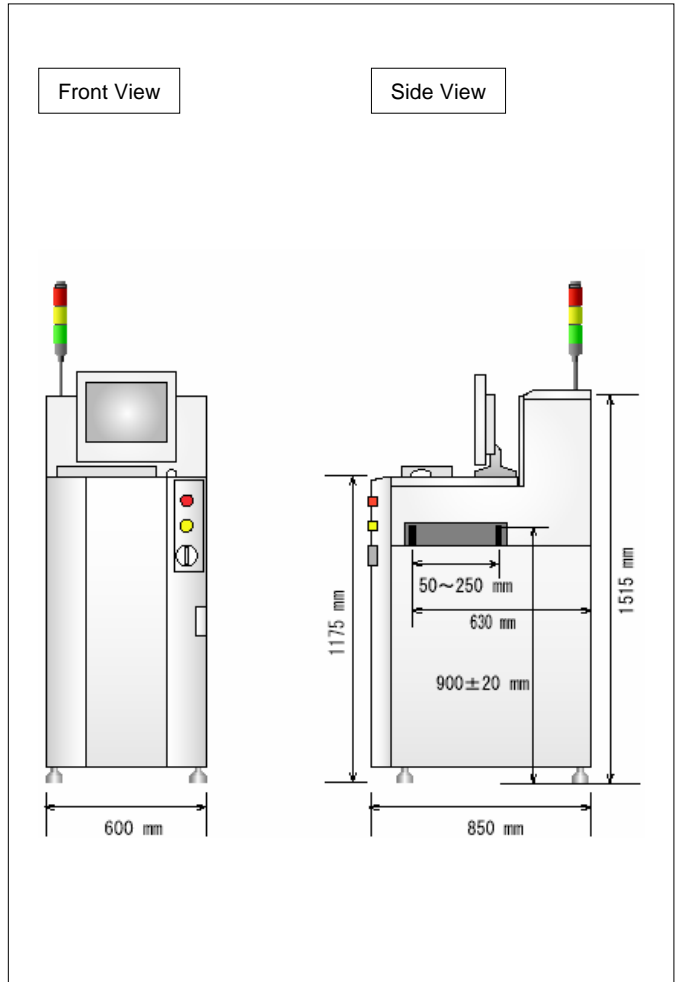
## System Specifications

|                           |  |
|---------------------------|--|
| Conveyable Board Size     | 50*50 – 250*330mm  |
| Board Thickness Range     | 0.3 – 2.5mm  |
| Board Plainness           | 2mm  |
| Clearance from PCB        | Top: 20mm<br>Bottom: 30mm  |
| Rotated Component Support | Available for 0 - 359 ° rotation (unit of 1 ° )  |
| Inspection Items          | Missing, Shift, Miss Alignment, Tomb Stone, Reverse, Polarity, Other Component, Bridge, Dirt, Dust, No Solder, Short Solder, Cold Solder, Lifted Chip, Lifted Lead, Un Insertion, OCR (Optical Character Recognition/Verification) |
| Scanning Speed            | (PCB Length[mm]+30)/14.6(mm/s)<br>250*330mm : 22s  |
| Typical Inspection Speed  | 0.1ms/Window   |
| Load/Unload Time          | 3sec   |
| Image Resolution          | 10 μ m, 20 μ m, 40 μ m (Changeable)  |
| Camera (Image Processing) | Color line CCD   |
| Lighting System           | White LED  |
| Conveyor Type             | 2mm belt   |
| Adjustment of Conveyor    | Manual   |
| Conveyor Pass Line        | 900+/- 20mm  |
| OS                        | Windows2000 (Choose from Japanese, English)  |
| Inspection Output         | OK/NG signal, Display on monitor, marking by an internal plotter, role paper printer*, Data file to BF-Repair*, Dada file, Data base to Net-View* (*: Option)  |

## System Requirements

|                               |   |
|-------------------------------|---|
| Electrical Requirement        | AC 100, 115, 200, 220, 240V, 800W, 50/60Hz        |
| Compressed Air Requirement    | 0.5Mpa, 5L/min                                    |
| Temperature/Humidity          | 15 to 30 degree C/ 5 to 80 % RH (No Condensation) |
| Foot Print Dimensions (w*d*h) | 600*850*1515mm                                    |
| Weight                        | 200 Kg  |

## Dimensions



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