Inline High Resolution and High Speed
Automated Optical Inspection System
BF-Frontier II

High Resolution Imaging System

With a superior resolution of 18μm and scanning line color CCD camera, BF-Frontier II provide accurate and stable inspection results. Solder fillets on components as small as the high density mounted 0201(0603) chip, as well as IC's with 0.4mm pitch lead are easily inspected and analyzed.
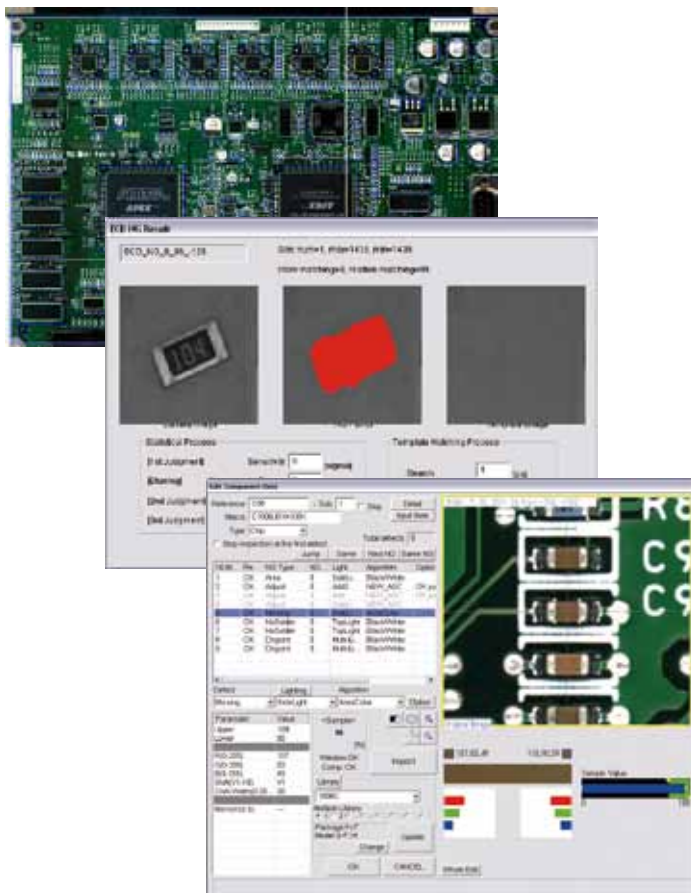
High Throughput

BF-Frontier II has Saki's original alternate scanning system that captures several lighting images in one scanning. Newly developed color capturing system enable to make scanning speed twice faster than previous model. It takes only 10 seconds to capture L-size board [460mm × 500mm]. Overall tact time including inspection also become shortened dramatically.

Advantage of Line Scan Visual Inspection

Extra components on the board can be detected only by setting up one inspection window on the whole board. It is realized by the advantage of line scan method.

Coaxial Overhead Light

Soldering condition is inspected by illuminant irradiation of coaxial overhead lighting. Inspection is not affected by shadowing by neighboring tall components, therefore same library is available at any location on the board.

New Interface

Renewed user interface makes it easier to set up inspection data by using pre-installed Saki standard library. And optional new function KPK, that finds out the difference between surface of the board and the surface of component automatically, simplifies to detect missing component. This realizes time reduction for inspection data making at launching production.

Flexibility

BF-Frontier II has 40mm clearance at the top side of the board and 40mm at the bottom side. It enables most of the PCBs with tall components. In addition, BF-Frontier II can be used in any stage of the PCB production process from post-print, post-mounter, and post-flow / re-flow, or manual mounting.
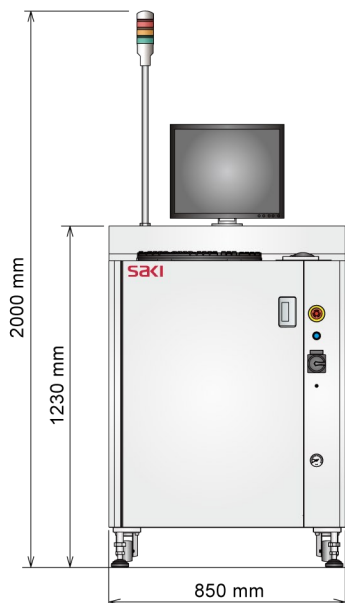
Traceability

Optional function of BF-Frontier II can read all types of Barcode and 2D code on the board. Inspection output is reported with code number. It enables easy SPC data handling and log data management on manufacturing lines.
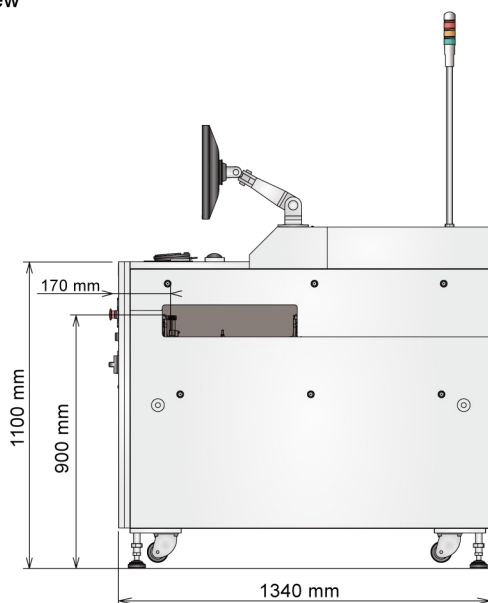
Dimensions

■ Front View

2000 mm
1230 mm
850 mm

■ Side View

170 mm
1100 mm
900 mm
1340 mm

System Specifications

Model	BF-Frontier II
Resolution	18µm
Board Size	50×60 - 460×500mm, 2×2.4 - 18×20in.
Board Thickness	0.6 - 3.2mm, 24 - 126mils
Board Warp	+/-2mm, 79mils
PCB Clearance	Top: 40mm, 1.57in. Bottom: 40mm, 1.57in.
Rotated Component Support	Available for 0 - 359°rotation (unit of 1°)
Inspection Categories	Presence/Absence, Misalignment, Tombstone, Reverse, Polarity, Bridge, Foreign material, Absence of solder, Insufficient solder, Lifted lead, Lifted Chip, and Fillet defect. Each defect name can be changed freely by system function.
Tact Time*[1] *[2]	Approx. 21sec. (460×500mm)
Image Scanning Time*[1]	Approx. 10sec. (460×500mm)
Camera (Image Processing)	Line color CCD camera
Lighting	LED lighting system
Transfer Conveyor Method	Flat belt transfer
Transfer Conveyor Height	900+/-20mm, 36+/-0.8in
Transfer Conveyor Width Adjustment	Manual
Operating System	Windows XP English Version
Optional System	BF-Editor / BF-RP1 / BF-Monitor / BF-View
Optional	2D Barcode Recognition, Journal Printer, Automatic Transfer Conveyor Width Adjustment

*1 If PCB size is smaller than 460x500mm, Image scannig time will be shorter than this values.
*2 Including Image Scanning Time.

Installation Specifications

Electric Power Requirement	Single Phase ～100 - 120V / 200 - 240V +/-10%, 50/60Hz, 750VA
Air Requirement	0.5MPa, 5L/min (ANR), 73PSI, 0.18CFM
Usage Environment	15℃(59F) - 30℃(86F) / 15 - 80% RH (Non-condensing)
Noise Level	58.3dB
Dimensions W x D x H	850 × 1340 × 1230mm, 34 × 53 × 49in.
Weight	Approx. 450kg, 992lbs

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