

## Inline High Resolution, High Speed Automated Optical Inspection System BF-Frontier

### High Resolution Optical System

With a superior resolution of 18 $\mu$ m and scanning line color CCD camera, both AOI system 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 Accuracy

The BF-Frontier inspection system utilizes a *Telecentric Lens System* (1) and an *Automatic Digital Brightness Control System* (2) for improved repeatability and increased accuracy of the inspection result. For Character Recognition, Polarity, and Solder Fillet, both AOI systems employ *Brilliant MLT Lighting* (3) which helps capture a clearer PCB image.

### Industry-Leading High Throughput

To maximize throughput, the BF-Frontier uses Saki's unique *Alternating Lighting Digital Scanning System* (4) to scan and capture images of the entire PCB in a single pass. With the scanning sequence optimized to dramatically reduce inspection tact time, Saki AOI's offer industry-leading throughput.

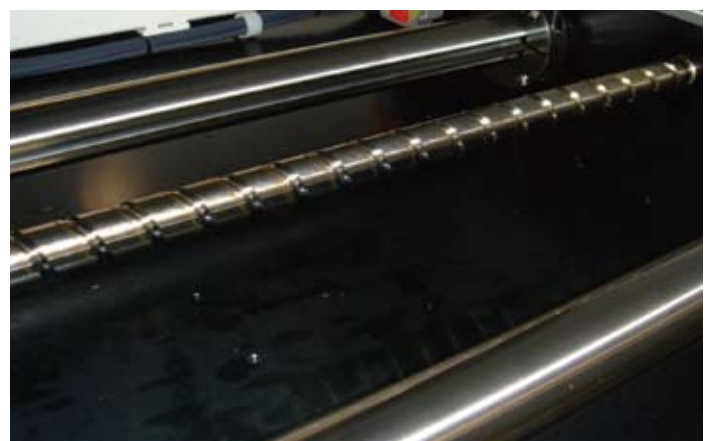
### Flexibility

The PCB clearance, 40mm at the top and 40mm at the bottom, is designed to allow inspection for PCBs with tall components. In addition, the BF-Frontier can be placed in any stage of the PCB production process from post print, post pick & place, and post-flow / reflow.

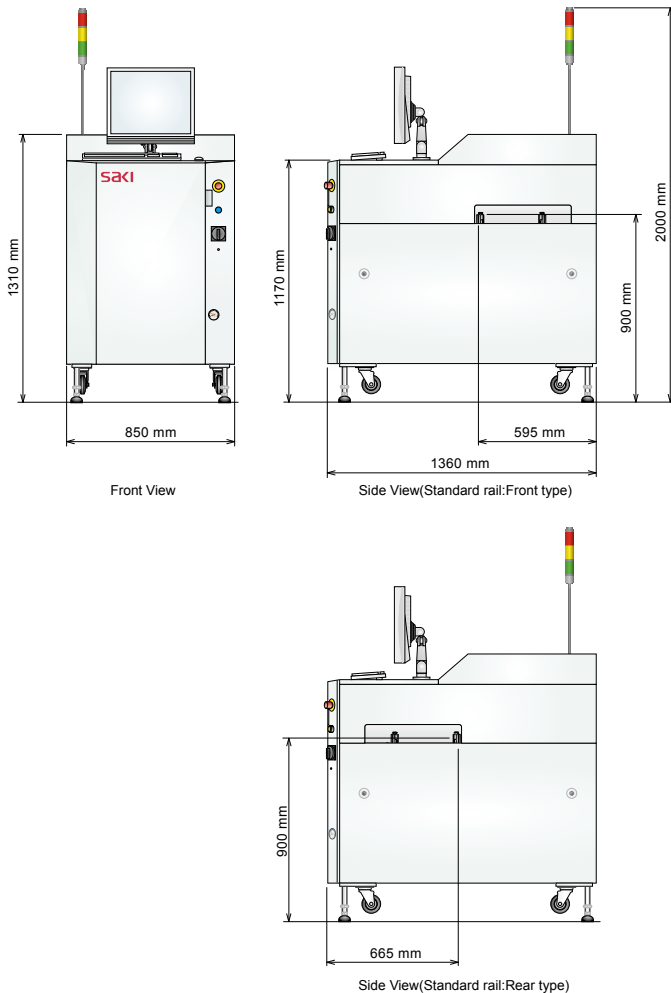
### Traceability

Barcode (2D optional) capability (QR, data matrix). The barcode option allows for easy PCB inspection data management.

1. The Telecentric lens system was designed to compensate for image distortion for more accurate detection.
2. Pixel brightness is automatically adjusted to produce a clearer image.
3. The system employs 3 types of high intensity LEDs: Top Light, Full-Color Side Light, and Low Light.
4. The alternating lighting system, in conjunction with the system's line scanning capability, enables the system to capture multiple images of the entire PCB in a single scan.



## Dimensions



## System Specifications

Model	BF-Frontier
Board Size	50×60 - 460×500mm, 2×2.4 - 18×20in
Board Thickness	0.6 - 2.5mm, 24 - 100mils
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, Tomb stone, 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.
Scanning Time	Approx. 24sec. (460×500mm)
Calculating Time	*Approx. 3 sec./10,000 inspection windows
PCB Loading / Unloading Time	Approx. 3 sec.
Resolution	18μm
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	Auto
Operating System	Windows XP English Version
System Option	BF-RP1 / BF-Editor / BF-Monitor / BF-View
Option	2D Barcode Recognition, Journal Printer

\*Calculating time depends on inspection algorithm.

## System Requirements

Electric Power Requirement	Single Phase ~100 - 120V / 200 - 240V +/-10%, 50/60Hz
Power Consumption	800VA
Air Requirement	0.5MPa, 5L/min (ANR) 73PSI, 0.18CFM
Usage Environment	15°C(59F) - 30°C(86F) / 15 - 80% RH (Non-condensing)
Dimensions W x D x H	850 × 1360 × 1310mm 34 × 55 × 52in
Weight	Approx. 450kg, 992lbs

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