



## Automatic Optical Inspection System PI-8700

**For the inspection of super-precision 12.5µm line width patterns**

The relentless miniaturization and sophistication of electronic devices such as palmtop computers and portable phones has accelerated the miniaturization of circuit board patterns. As a result, inspection systems with higher performance and reliability are now a necessity.

The PI-8700 can inspect a variety of boards, such as outer layer/inner layer/mixed circuit boards, as well as BGA and CSP package boards, at high speed and with high precision. It is a high-end optical inspection system that offers excellent operability.

The easy to operate PI-8700 can inspect 12.5µm line width super-precision patterns. It can handle a wide variety of pattern types, and setting up inspection conditions is a snap.

Furthermore, the PI-8700 can be combined with SCREEN's front-end system (UP-8000), which supports effective production system operations, to create a networkable inspection system.

### Features :

#### 1. Improved speed

##### (i) Faster inspection

In addition to the 1.25µm and 2.5µm inspection modes available in the past, the PI-8700 features new 1.875µm, 3.75µm, and 5µm inspection modes, for a total of five different inspection modes. This enables faster inspection of line widths ranging from 12.5µm to 50µm. And for a line width of 50µm, for example, the PI-8700 offers 50% higher throughput than the PI-8500.

L&S(µm)	12.5	18.75	25	37.5	50
Side / hour	50	66	82	106	128

Note: Board size = 510 x 406 mm

##### (ii) Faster setup

Transfer speed to the image processing board is 50% faster than with the PI-8500. As a result, total setup time has been significantly reduced, compared with the PI-8500.

#### 2. Higher inspection quality

##### (i) Multi-threshold DRC inspection

To improve the detection of dishdowns and microshorts, the PI-8700 features two DRC inspection circuits. The use of a higher binary threshold level for dishdowns and a lower binary threshold level for microshorts enables simultaneous high-sensitivity inspection for both types of defects.

**(ii) High-sensitivity DRC inspection (CAM data prechecking function)**

The PI-8700 features a DRC pre-inspection for CAM data that prevents false alarms by pre-checking the CAM data. Thanks to this function, the sensitivity of detection for even minute nicks and protrusions increases, while false alarms are dramatically reduced.

**(iii) Multiple line width DRC inspection function**

The PI-8700 can recognize and inspect individual chokes and spreads for lines of varying width within sets of multiple lines. As a result, even with boards that combine different line widths, the PI-8700 is sensitive enough to detect defects that would have been difficult to detect in the past, while still significantly reducing false alarms.

**(iv) Improved hole inspection**

Thanks to an improved method for inspecting holes, the PI-8700 can detect even minute defects in the vicinity of holes. The addition of a new annular width inspection function improves reliability not only during of hole breakout inspection, as in the past, but also by allowing the user to set the appropriate annular ring width for inspection.

**3. Improved operability**

**(i) Automatic inspection setup function**

After performing a single scan of a board that is about to be inspected, the PI-8700 can automatically make settings such as board thickness, binary level, and inspection type (DRC or PMI). This reduces setup time dramatically, as compared with the PI-8500.

**(ii) Package inspection**

This function enables more efficient inspection and verification of multiple-piece boards such as packages.

When the number of defects in any piece or sheet exceeds a set value, this function decreases the amount of work involved in checking for defects in that area. The result is a significant increase in defect verification efficiency.

**For more information, please contact :**

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