MPI AS800 Series / Fully Auto Visual Inspection System

Highly Scalable System with Dual-Sided Inspection and AI/ML Learning for Precise Defect Recognition

System Capabilities and Applications

- \cdot High precision stage with accuracy of < ±3 μm
- · Supporting wafers up to 8"
- \cdot Docking loader supports up to 2 AVI systems for fully automated operation
- · Color defect detection using a high-magnification camera
- · Configurable resolutions and inspection algorithms for testing VCSELs, PDs, LEDs, and more photonic devices
- · Fast, independent, and stable distributed computing system for image processing (standard with 2 units, expandable to 6 units)
- Supports both standard AVI procedures and customized plugin applications, including .NET, C DLL, and Python plugin auto-run sequences

Dual-Sided Inspection and Data Merging

- \cdot Dual-sided visual inspection in a single scan
- · Back side DUT support module for enhanced inspection stability
- \cdot Auto-combine front and back side inspection data into production report

Auto-Focus

- Optimized for micro-defect detection and minimizing wafer warpage impacts
 Automatically adjusts focus for clear & sharp imaging, even at highmagnification scenarios
- \cdot Stable and repeatable inspection capability for high-volume production

Al Auto-Train Teaching

- · High-precision analysis minimizes missed or false detections
- · Continuous DUT sampling and Auto-train teaching to simplify process and improve inspection accuracy

Precision Defect Detection

- \cdot Non-destructive inspection to ensure DUT integrity
- High-intensity light sources enable accurate micro-defect detections on both wafer surfaces and internal structures
- Supports up to four light sources (Internal co-axial / RGB & Ring / White) to fit your application needs.





Dual-Sided Inspection



Precision Auto-Focus

High Speed Image Processing

Al Auto-Train Teaching

Quick Carrier Changeover

 Unique mechanical design enables fast carrier changeovers for wafers of various sizes and shapes, ensuring flexibility to accommodate different process requirements:

- Wafer: 2"~8"

- Mask: 3"~8"
- DISCO Ring: 2-6-1, 2-8-1
- Grip Ring: GR4, GR5, GR6, GR8
- Bin Frame: 50×50mm ~ 160×160mm
- Grip Ring Metal Frame: 195×195mm ~ 215×215mm

High-Efficiency Switching

• Equipped with a turret system for quick switching between 25MP and 31MP camera lens

- · Supports multiple lens magnification options (2.5x, 5x, 10x)
- \cdot Combines results from different magnifications for comprehensive analysis

Damping System

- The vibration-control damping module effectively addresses the shallow depth -of-field issues caused by high-power objective lenses.
- \cdot Complies with VC-D vibration standards, with a maximum vibration value of 12.5 μ m/s (rms), covering the relevant frequency range.

Options

· A wide range of upgrade options is available based on your application needs:

- Inspection modules (Pre-view / Review / Profiling)
- Back Side Inspection (BSI) module
- Anti-vibration damping module
- Handheld barcode reader
- Aligner + Preview module (for Loader)
- Docking AVI Loader (supports up to two AVI systems per loader)
- 25MP or 31MP camera (Mono / Color)
- 2.5x, 5x, 10x lenses
- Distributed computing system (supports up to 6 units)
- Class 1000 cleanroom compatibility