Wafer
Particle Defect Inspection System

FM-W-PDS | Manual and Automated for 4-6-8- and 12-inch wafers

Fastmicro helps customers to overcome today's cleanliness challenges in microtechnology. At Fastmicro, we believe you can accomplish breakthroughs in cleanliness control with fast, accurate and quantitative surface particle measurements.

Fastmicro enables process quality engineers to make reliable decisions on where and how to improve their cleanliness processes and deliver consistent quality products. And ultimately, achieve high equipment performance for their end users. To do this, we collaborate with the best to accomplish breakthroughs in cleanliness control.

FM-PDS: multi-application modular platform

The modular Fastmicro Particle Defect Inspection System metrology platform can be customized to suit each production qualification process or to fit into a production line. This can include manual and automated wafer handling: package openers for inspection and cleaning, filling stations, robot arms, an inspection spot and a port for cleaning.

The Fastmicro system allows for a scaled inspection surface to suit customer needs, without introducing extra imaging time and using limited floor space.

CONSISTENT MEASUREMENTS IN PROCESS

1. **Fast:** imaging in seconds on large surfaces
2. **Quantified:** fit for qualification and monitoring in production, as well as in an R&D environment
3. **Easy to operate:** operator independent, even automated and clean handling. Your product stays clean: no contact, no contamination
4. **Accurate:** high-resolution measurement (quantity, position, size)
5. **Consistent:** objective measurements, time after time
6. **High throughput:** processing within a minute

Direct measurements on product surface

The Fastmicro Particle Defect Inspection System has been developed to measure surface particle contamination levels directly on a product surface in any industry. The primary applications are wafer, pellicles and reticles inspection in Semicon, but also substrates, like in the display market.
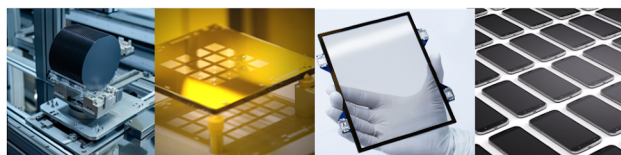
Wafers   Reticles   Pellicles   Displays

The Particle Defect Inspection System has a 4 to 12-inch FOV scanning area without moving the product due to its distinct optics design and can be expanded due to its modular design.

The system can be customized, depending on the the surface that needs to be tested. The metrology module is also available as a white label solution for system integrators and OEM's.

INNOVATED WITH
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fastmicro
cleanliness control

Wafer
Particle Defect Inspection System

FM-W-PDS | Specifications

Fast and high production throughput	• High Throughput: capable of 400 Wafer-Per-Hour (WPH) • Imaging in seconds on wafer substrates of 4-6-8-inch and 12-inch
Data output and control	• Qualification GO/NOGO: Cumulative count, Position and Size particle data • Annotated UI with particle detection overlay, plus '3D' signal representation of any operator-selected particle • Analysis: export function including KLARF, Excel and Text Files (including standard bin sizes) and optional upgrade for XML data output • Monitoring report SCP-class in UI and PDF, according to ISO standard 14644-9 • Fully digital controlled, devicenet-ethernet • SECS/GEM factory automation and optional GEM300/EDA integration
Easy to operate	• Operator independent • Integrated UI • Manual Wafer loader: 2 to 4 cassette stations or 2 integrated SMIFs • Automated Wafer loader: 2 FOUP loaders • 5 axis dual arm robot handling with specific substrate grippers • In-Line possible to use multi-purpose recipes
Detection range	• Detection limit capable from 100 nm (0.1 µm) PSL particles und up
Top/Bottom inspection	• Optional upgrade top-bottom inspection in single measurement (no flipping)
Repeatability	• Over 99% cumulative particle count with standard particles capable from 0.1 µm
Sizing and location accuracy	• Within 20% with PSL equivalent particles • Location accuracy 40 µm, location repeatability 15 µm
Lifetime & clean manufacturing practice	• No contact & moving parts, minimal particle generation, maximum cleanliness • No movement and friction in metrology, low maintenance interval • Low cost-of-ownership
Requirements on product	• Roughness Ra < 50 nm
Models and footprint	• FM-W8M-PDS-V01 : 4-6-8-inch Manual | 660x1335x2047mm [LxWxH] • FM-W8A-PDS-V01 : 4-6-8-inch Automated | 1320x1335x2047mm [LxWxH] • FM-W12M-PDS-V01: 12-inch Manual | 1602x755x2099mm [LxWxH] • FM-W12A-PDS-V01: 12-inch Automated | 1602x1510x2099mm [LxWxH] • FM-OEM-PDS-V01 | Multi-purpose OEM module

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