

Measurement & Inspection Solutions
for High-Precision Applications

Precision
Accuracy

Nano-Scale Applications

Introducing
Nano-Zoom™ II
True Production AFM/Microscope

PPL's **Nano-Zoom II™** Atomic Force Microscope (AFM) system resolves, literally, sub-nanometer details.

The system incorporates advanced AFM capability into our Disk/ Wafer Inspection platform. This system is designed for disk and wafer failure analysis and other applications such as MEMS. The **Nano-Zoom II™** system facilitates both high resolution optical inspection and atomic force microscopy in one tool where the AFM head is par-centered to the microscope optics. This feature greatly reduces the time required to find a defect with the AFM.

This is the configuration of choice where both optical and AFM inspection is required. The system also incorporates the most advanced vibration isolation and provides substantial immunity against acoustic noise to make it practical in typical clean production environment.

PPL's **Nano-Zoom II™** can automatically position to fault sites from imported coordinates. The failure sites may be inspected visually and via atomic force microscopy. No feature is too small for detection by PPL's **Nano-Zoom II™**.

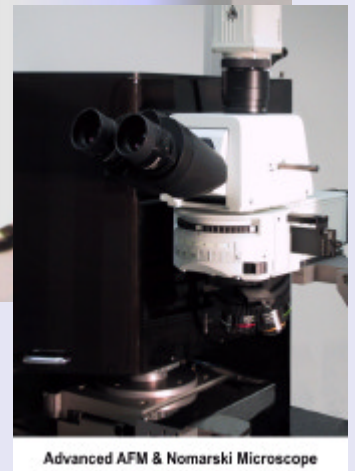
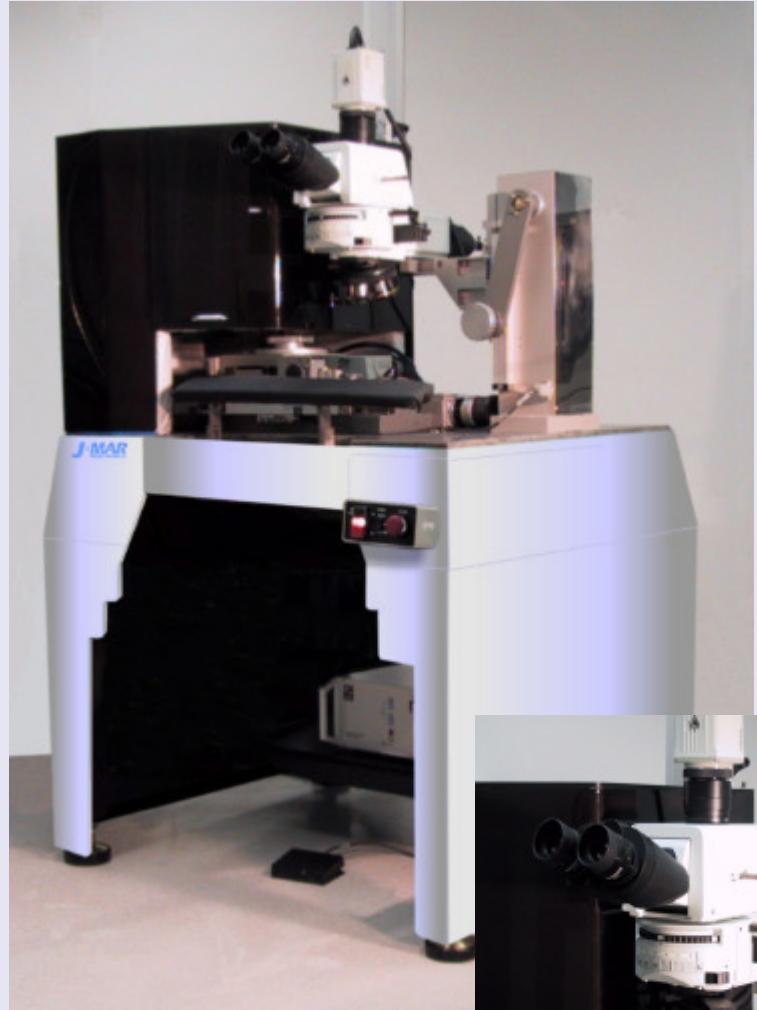


ISO 9001 Certified

800-793-0179

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Characteristics:

- Non-Destructive
- Sub-angstrom Resolution
- Easy to Use by operators
- Small equipment Foot Print
- Advanced vibration isolation
- Highly ergonomic design

Standard Features:

- Windows Software
- Off line Data Processing
- Real time Manipulation of Data
- Image Archival and Retrieval
- Acoustic and Vibration Isolation
- Optional Scriber

Applications:

- Wafer and disk Defect Review
- CMP Process Verification
- IC Failure Analysis
- Width and Depth Measurements
- RMS Roughness
- Fiber Optic Gratings
- Pole Tip Recession
- CD/DVD Inspection
- MEMS
- Advanced Materials

Nano-Zoom™ II

Specifications:

Stage:

- XY or R- θ stage with automatic control
- For 150 mm wafers/disks (extendable to 200 mm)

Optical Microscope:

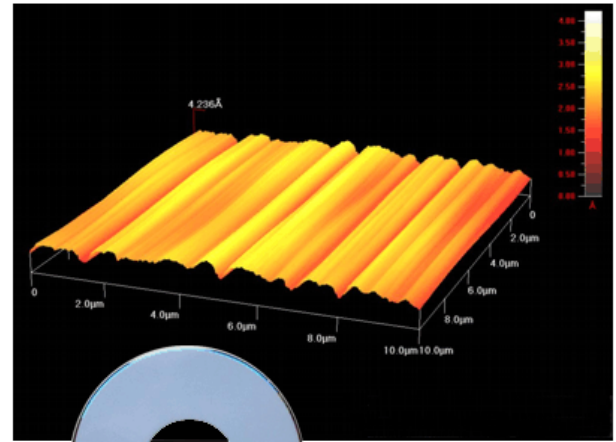
- 5 position turret for objective lenses
- Dark field and bright field imaging
- 5x, 10x, 20x, 50x, objective lenses (other lenses are available)
- Optional Differential Interference Contrast (DIC)

AFM:

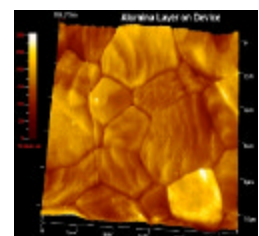
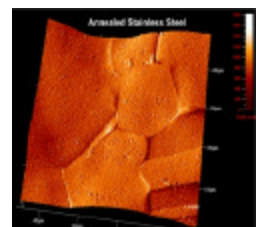
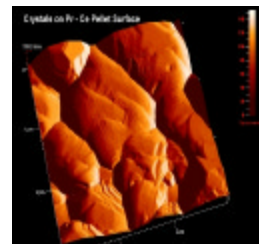
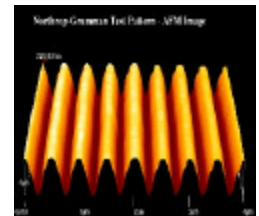
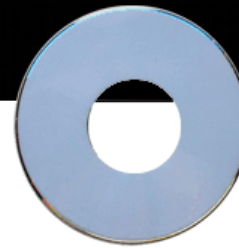
- X,Y Scan Size: 80 μm x 80 μm standard, extendable to 200 μm
- Z Range: 8 μm standard, extendable to 20 μm
- Lateral (X,Y) resolution: 10 nm
- Vertical (Z) resolution: as low as 0.01 nm
- Operational modes: Contact, Intermittent Contact, Broadband, etc.

Software Features:

- 3D Visualization of scanned image
- Image refinement with tilt removal, streak and spot removal, smoothing and user defined filter
- FFT analysis for analyzing and modifying the frequency spectrum of images
- Histogram analysis to measure roughness of surfaces and height (depth) of features
- Dimensional Analysis for point-to-point measurement



Subangstrom texture on hard disk



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