AST-200

Advanced Detection and Metrology System

- Defect Detection & Classification
- Precision Dimensional Metrology
- Automatic and Manual Operation
- Up to 300mm Wafer/Part Capacity

This top performance system is designed for applications where high-speed defect detection and precision measurements on wafers and other parts are required. It is well suited for use as a dedicated production tool or as a versatile process development system. It features a powerful set of automated as well as semi-automatic optical/video tools optimized for high accuracy, production throughput, and ease of use.

This automated and versatile platform can be configured with specialized optical paths across the spectrum utilizing precise part staging. The system offers significant and unique advantages for dual production/engineering use, and provides the perfect solution when both defect detection and dimensional metrology are required.

The system can be configured or customized to meet your exact requirements with a variety of optical and illumination accessories, custom wafer/part fixtures, as well as custom operator interface, data formats and reports.

APPLICATIONS
- Wafer level defect detection & measurement
- Precision MEMS and HD component inspection
- Advanced microelectronics package inspection

POWERFUL
- Designed for automatic/semi-automatic operation
- Extensive defect detection features & capability
- Integrated dimensional metrology features

PRECISE
- Sub-micron precision optical measurements
- High accuracy staging with 0.02 μm linear encoder resolution

FAST
- 50-100 defects/measurements per second typical per field of view
- 200mm/second part staging speed

USER FRIENDLY
- Very easy to use, program and set up
- Highly visual data with rich color graphics & video

FLEXIBLE
- Specialized optics and other advanced options
- Optional wafer and other part types handling
- Customizable for application specific solutions

AST Advanced Spectral Technology

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SPECIFICATIONS

Platform:
- 200mm (optional 300mm) wafer/part size capacity
- Maximum stage Load capacity: 50 lb
- 250mm/second maximum staging speed
- Granite base and Z-column, stainless steel finish
- Class 100 (10 optional) clean room compatible
- Closed loop linear stages, with position feedback from 0.02 µm resolution linear glass encoders
- Non-linear 2D accuracy error correction

Accuracy (XY):
- 1.5+0.6L100 µm, U1 (z): 1.5+3L/100 µm. Where L is length in mm

Computer:
- Windows 7 Pro

Software:
- RMS Vision Systems' NGS 3500 Advanced Metrology Suite

Optical System:
- Flat Field objectives, with motorized 5 position turret

Camera:
- High resolution CCD array 60+db S/N ratio
- Image Processing 256 grayscale with 1:5-1:50 sub-pixel ratio
- Video and optional Laser Auto focus

Illumination:
- Software controlled Coaxial & backlight

Other:
- Environmental: 17-23 deg C, 20-80% Humidity
- Electrical: 120/240 VAC, 15A single phase
- Footprint: WxD: 32x36 inch. Height: 67 inches
- Weight: 1500 lb crated

Software Features:
- Automatic defect detection and classification
- Graphical Defects maps, Image Archival, offline review of defects, and reprocessing of archived images
- Flexible part scanning for operator convenience and throughput optimization
- High Precision vision based part alignment

Dimensional Metrology Tools:

- ***Video Tools:*** Point, Line, Circle, Arc edge detectors with built in best fit and defect removal
- ***Constructions:*** Extensive geometric constructions, with distance and angle measurements (e.g. line to line, etc.)
- ***Origin & Skew:*** Unlimited reference frames
- ***Tolerancing:*** Dimensional, Angular, Geometric True Position (MMC, LMC, RFS)
- ***Units:*** Metric & inches
- ***Coordinates:*** Cartesian & Polar
- ***Step & Repeat:*** Repeat Loops for repeating features and multiple parts
- ***Reports:*** Data on screen, text file, or exports to Excel
- ***SPC:*** Average, SD, Range, Min, Max, Cp, Cpk
- ***Graphics & CAD:*** Drawing import/Export
- ***Other:*** Auto Focus, Auto Lighting & Outlier Removal