This top performance system is designed for applications that require high-speed inspection and precision measurement of wafers and die. It is well suited for use as a dedicated production tool or versatile process development system. It features a powerful set of automated as well as semi-automated optical/video tools optimized for high accuracy, production throughput, and ease of use.

This versatile platform can be configured with a variety of specialized optical and illumination accessories for infrared, visible, and UV spectrums and precise part staging. Offering significant and unique advantages for dual production/engineering use, this system provides the perfect solution for advanced inspection and dimensional metrology.

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

**APPLICATIONS**
- Wafer/Die level CD (Critical Dimension) metrology
- Precision MEMS and 3D component inspection
- Advanced microelectronics package inspection
- Advanced Overlay Metrology
- VSCEL Aperture Metrology & Inspection
- High Speed Probe Card Inspection & Metrology

**POWERFUL**
- Designed for automatic/semi-automatic operation
- Extensive inspection features & capability
- Integrated dimensional metrology features

**PRECISE**
- Sub-micron precision optical measurements
- High accuracy staging with 5 nm linear encoder resolution

**FAST**
- Multiple measurements per second typical per field of view
- Up to 500mm x 600mm wafer/part size capacity
- 250mm/second maximum staging speed
AST-300 Advanced Inspection and Metrology System

SPECIFICATIONS

PLATFORM
• 325mm x 400mm sample size capacity
• 100mm Z axis travel
• Maximum stage Load capacity: 25 kg
• 250mm/second maximum staging speed
• Granite base and Z-column, stainless steel finish
• Class 100 clean room compatible
• Non-linear 2D accuracy error correction

STAGE ACCURACY (XY)
• 1µm limiting X-Y stage accuracy, [error<(1.0µm+(L/300))] where L is stage travel in mm
• 1 µm limiting Z-axis accuracy, [error<(1.0µm+(L/100))] where L is stage travel in mm

CAMERA
• Camera selected for your application:
  Ultraviolet, Visible, Near IR, Short Wave IR, or Mid Wave IR
• High speed digital interface

OPTICS
• Standard configurations for Bright Field, Dark Field, UV, NIR, SWIR
• Semi-Custom optics readily available for your requirement as needed (DIC, Polarized, etc.)
• Flat Field objectives, (many choices) with motorized 5 & 6 position turrets
• Integral Video Auto Focus or optional Laser Auto Focus

ILLUMINATION
• Software controlled Coaxial or Backlight or as required

SOFTWARE
• Flexible part scanning for operator convenience & throughput optimization
• High Precision vision-based part alignment
• AST ScopeViewer Software Application suite
• Windows 7 Pro / Windows 10 Pro

DIMENSIONAL MEASUREMENT TOOLS
• Video Tools: Point, Line, Circle, Arc edge detectors
• Constructions: Extensive geometric constructions, with distance and angle measurements (e.g. line to line, etc.)
• Origin & Skew: Unlimited reference frames
• Tolerancing: Dimensional & Angular
• Units: Metric
• 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
• Additional: Auto Focus, Auto Lighting & Outlier Removal

OTHER SPECIFICATIONS (Typical)
• Environmental: 17-23°C, 20-80% Humidity
• Electrical: 120/240 VAC, 15A single phase
• AST-300 Footprint: 815 x 1050 x 1700 mm (WxDxH)
• Wafer Handler: 610 x 1050 x 1200 mm (WxDxH)
• Weight: 1100 kg crated (including handler)

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