

# AST-300

## Advanced Inspection and Metrology System

- Advanced Inspection Tool
- Precision Dimensional Metrology
- Automated and Manual Operation
- Up to 300mm Wafer/Part Capacity

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, and wafer/part fixtures, as well as custom operator interface, data formats and reports.

### APPLICATIONS

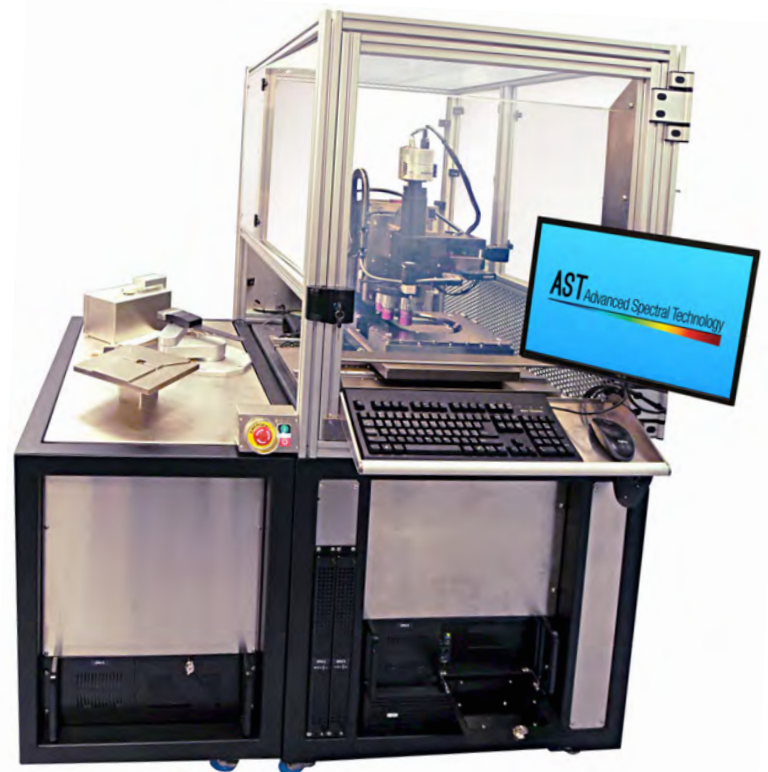
- Wafer level CD measurement
- Precision MEMS and HD component inspection
- Advanced microelectronics package inspection

### 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 20 nm linear encoder resolution



### FAST

- Multiple measurements per second typical per field of view
- Up to 300mm wafer/part size capacity
- 250mm/second maximum staging speed

### USER FRIENDLY

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

### FLEXIBLE

- Specialized options for optics, illumination, fixtures
- Optional wafer and other part types handling
- Customizable for application specific solutions

## SPECIFICATIONS

### PLATFORM

- 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 clean room compatible
- Closed loop linear stages, with position feedback from 20 nm resolution linear glass encoders
- Non-linear 2D accuracy error correction

### ACCURACY (XY)

- $1.5+0.6L/100 \mu\text{m}$ , U1 (z):  $1.5+3L/100 \mu\text{m}$ . Where L is length in mm

### CAMERA

- Camera selected for your application (UV, VIS, NIR, SWIR, or MWIR)
- High speed digital interface
- Integral Video Auto Focus (VAF) and or Laser Auto Focus (LAF)

### OPTICS

- Standard configurations for BF, DF, UV, NIR, SWIR
- Custom optics designed for your requirement as needed

### OPTICAL SYSTEM

- Flat Field objectives, with motorized 5 position turret

### ILLUMINATION

- Software controlled Coaxial & backlight

### SOFTWARE

- Flexible part scanning for operator convenience and throughput optimization
- High Precision vision based part alignment
- AST Scope Viewer 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: 32in x 41in x 56in (WxDxH)
- AST-200 Footprint: 32in x 36in x 52in (WxDxH)
- Wafer Handler: 26in x 36in x 42in (WxDxH)
- Weight: 1500 lb crated

