

AST-300

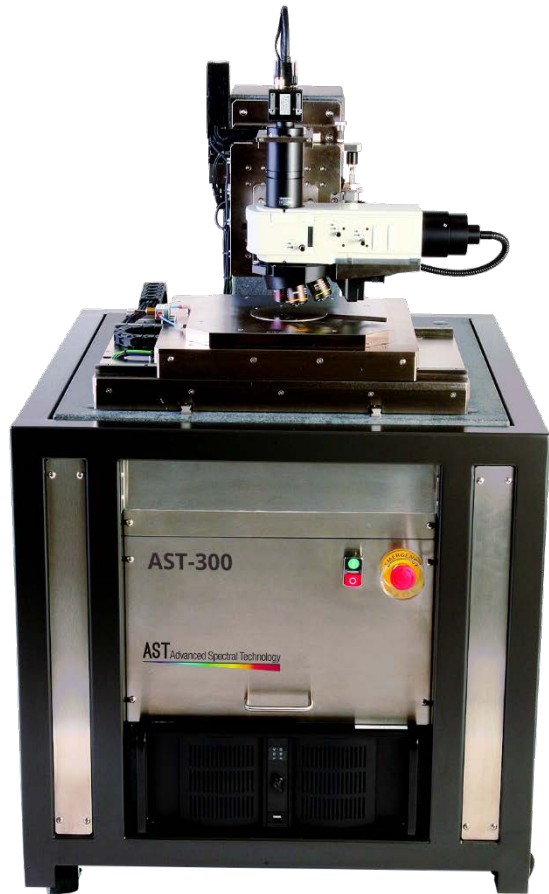
Advanced Inspection and Metrology System

- 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, & 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
- VSCSEL Aperture Metrology & Inspection
- High Speed Probe Card Inspection & Metrology

USER FRIENDLY

- Very easy to use, program, & 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

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



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)

- 1 μ m limiting X-Y stage accuracy,
[error <math><(1.0\mu\text{m}+(L/300))</math> where L is stage travel in mm]
- 1 μ m limiting Z-axis accuracy,
[error <math><(1.0\mu\text{m}+(L/100))</math> 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

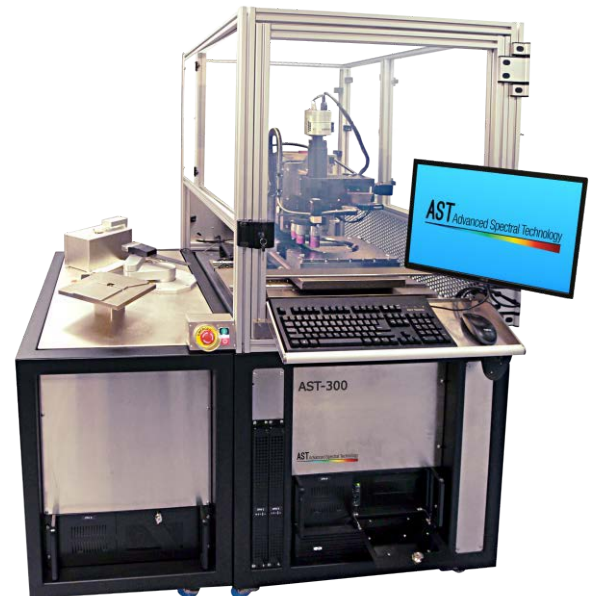
- Standard configurations for Bright Field, Dark Field, UV, NIR, SWIR
- Semi-Custom optics readily available for your requirement as needed (DIC, Polarized, etc.)
- Flat Field objectives, (many choices) with motorized 5 & 6 position turrets
- Integral Video Auto Focus or optional Laser Auto Focus

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)