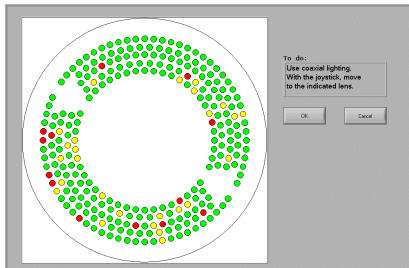


Dig-Buster[®] Thin-Film Inspection System

ASI's automated thin-film inspection system uses ASI's precision closed-loop DC servo motion control technology and video image analysis to optimize inspection. The goal is to optimize the productivity of human expert resources by offering relief from hours of tedious manual inspection. The system automatically flags potential defects like scratches and digs for expert re-inspection as needed.

The system interface permits simple production setup and scanning of thin-film specimens. Flagged objects of interest on color-coded maps are displayed for review and notation by an expert technician or engineer. Clicking on a colored area re-positions the video microscope over the object of interest for closer examination. A text entry window is available for logging additional comments.



Each inspection session produces a text log that details the location and description of each defect found. These logs are formatted for easy importation into a spreadsheet for further analysis.

The ASI inspection system applies client-defined rules to locate, identify, and log likely defects. These rules are maintained in the company's central data file – a plain-text network file available to all inspection workstations. The structure of this file's content is tailored to the client's operation, making maximum possible use of the client's in-house nomenclature to ease the transition to automated inspection.

Sample setup data is provided so that the engineer can copy, paste, and modify proven data. The inspection system software provides extensive error reporting to aid the engineer in constructing and debugging this data, with prompt technical support provided by ASI.

ASI expects each application to be unique—the hardware and software can be configured to meet your custom applications.



We Create Solutions

Applied Scientific Instrumentation, Inc. ♦ 29391 W Enid Rd ♦ Eugene, OR USA 97402-9533
(541) 461-8181 ♦ (800) 706-2284 ♦ info@ASImaging.com ♦ www.ASImaging.com

Hardware Options

ASI can configure the positioning elements of the inspection system to suit your particular specifications. X and Y travel ranges from 100 mm (4") to 380 mm (15") and larger, and Z travel ranges from 50 mm (2") to 200 mm (8"), are available.

The inspection system, pictured on the reverse side, is based on ASI's GTS-1500 gantry stage:

Specifications (GTS-1500, with standard 6.35 mm pitch lead screws)	
XY axis range of travel	380 mm x 380 mm (15" x 15")
XY axis resolution	< 3 µm
XY axis RMS repeatability (typical)	< 5 µm
XY axis maximum velocity	100 mm/sec
Z axis range of travel	100 mm (4")
Z axis resolution	< 0.1 µm
Z axis RMS repeatability (typical)	< 1 µm
Z axis maximum velocity	7 mm/sec

Video Options

ASI offers a choice of video microscopes available for the thin-film inspection station:

Video Microscope Specifications			
Zoom Ratios	7X	12.5X	16X
Minimum Magnification, with 0.25X Objective	0.071X	0.049X	0.047X
Maximum Magnification, with 2X Objective	21X	25.9X	32X
Maximum Magnification, with 50X Objective	252X	312X	378X

Analog camera choices include the B&W low-light LC-150 system with 811x508 pixels, or the Color JAI CV-S3200 with 752x582 pixels. Digital Color, B&W, and Intensified cameras are available from Cooke, DVC, and Scion, each with greater than 1300x1000 pixels.

Illumination choices include Ring Lights, Coaxial, and Polarized.

Software Specifications

Configurable Parameters		
Workstation	Workstation Name Defect Rule File Location Objective Magnification Depth of Field Video Image Size Serial Port (COM1...COM4)	Company Data File Location Log File Location Video Magnification Minimum and Maximum Zoom Pixels per Millimeter
Company-wide	Pixel Resolution Test Criteria	Defect Rules Fixture Descriptions
Test Criteria	Aperture Outside Radius (mm) Aperture Inside Radius (mm) Largest Defect Dimension Maximum # of Negligible Particles	Defect Rules for Outside Aperture Radius Defect Rules for Inside Aperture Radius Smallest Defect Dimension Max Mean Separation of Negligible Particles

We Create Solutions

*Applied Scientific Instrumentation, Inc. ♦ 29391 W Enid Rd ♦ Eugene, OR USA 97402-9533
(541) 461-8181 ♦ (800) 706-2284 ♦ info@ASImaging.com ♦ www.ASImaging.com*