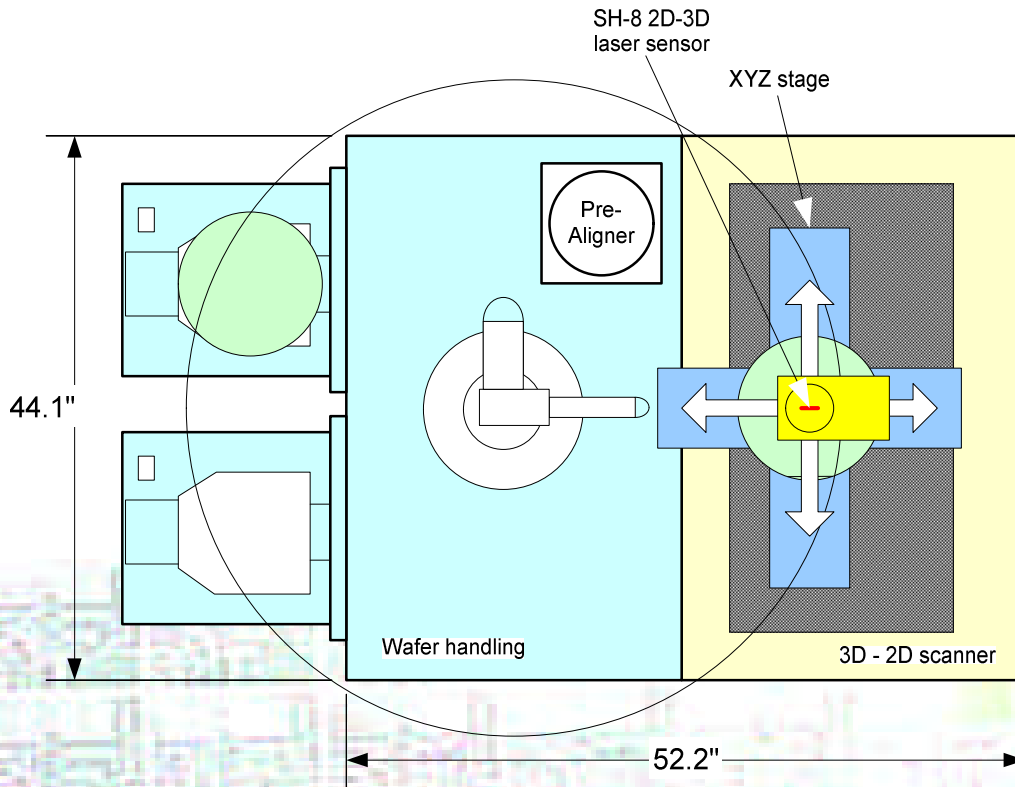


AI-808WB

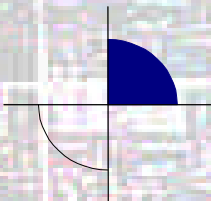
Wafer Bump Inspection System



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- **High speed – high accuracy 3D and 2D inspection**

- Fully static 3D laser technology with 2D color for highly reliable measurements and defect detection
- Up to 300mm (12") wafer capability
- Easy to use set-up screens and reliable operation
- Accurate bump height, position, area and volume measurements
- Solder and gold bumps



Aceris 3D
INSPECTION INC.



Sensor Specification SH-8

Features:

- Integrated high speed 2-D color and 3-D laser sensor
- Technology: 3-D Structured Light, Class 1 "eye-safe"
- Three independently controlled strobe LED lighting modes for the 2D
- No moving parts
- Stable calibration

Technical specifications:

Resolution Height (3-D):	0.08 μ m
Resolution Lateral (3-D):	3.5 μ m
Scan direction resolution (3D):	1 – 20 microns in 0.5 μ steps
Profiles per second:	>7,500
Points per profile:	2350
3-D Points/sec:	up to 60 million
Swath size:	8.2 mm
Dept of field (Z):	0.1 mm optimum, 0.2mm acceptable
2D camera resolutions:	4.3 μ m per pixel nominal (2M pixel camera)
Repeatability height:	<1 μ m at 3 σ
Repeatability volume:	<5% nominal at 3 σ (worst case for small bumps)
Repeatability position:	<1.0 μ m at 3 σ
Speed:	20-40 200mm wafers per hour

Computing Specifications

The menu-driven graphics software, navigated by a trackball is user-friendly and provides graphical depiction of data where appropriate.

Operating System:

- Microsoft Windows® XP Workstation

Computer:

- Quad Opteron Processor PC
- 8 Gigabytes RAM,
- 120 Gigabyte or larger Hard Drive,
- DVD RW drive,
- Custom interface board for the 3D cameras,
- PCI frame grabber for the 2D camera,
- Motion control and I/O interface board,
- 100 Base T Ethernet

Software Features:

- Gerber file input (RS-274X) for bump / die position.
- On/off-line Set-up software facilitates quick inspection program creation utilizing wafer image.
- Utilities to see both 2D and 3D images; home and jog slides and perform calibration.
- Graphical and numerical feedback during inspection.
- Excel and data base compatible result files.
- Graphical result presentation capabilities.
- SPC capability
- Network interface: up to 8 remote result review station and one set-up client remote station

Defects and Metrology

The AI-808WB system inspects wet paste, reflowed bumps, coined solder bumps, and gold bumps. It includes inspection software to detect and classify bump defects such as bridges, missing and extra, as well as perform measurements on individual bumps and report defects when they are outside user-specified limits.

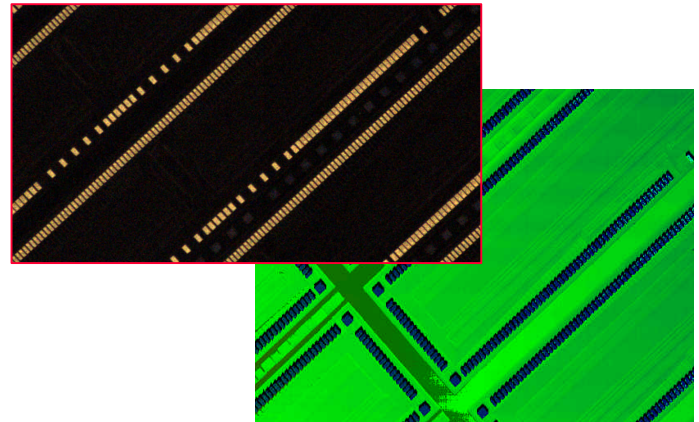
Defect detection:

- foreign material
- bridging
- missing

Metrology:

- area μ m², square mils and % of set value
- height μ m, mils and % of set value
- volume μ m³, cube mils, and % of set value
- displacement (in X and Y) μ m, mils and % of set value

All measurement values have user selectable limits. Any value out of the preset limit will be flagged as defect. Statistical process control is feasible using the data collected in the measurement data base.



Gold bumps 2D and 3D scans

Wafer Handling Specification

Dual standard cassettes, FOUP optional (Brooks FabExpress 2000 or equivalent)

XYZ Stage Specification

Positioning accuracy	\pm 1 μ m / 25mm
Straightness/flatness	\pm 1 μ m / 25mm
Straightness/flatness	\pm 8 μ m / 300mm
Yaw/Pitch	18 arcsec
Orthogonality	\pm 10 arcsec

Wafer handling – up to 300 mm (12")

System Specifications

Dimensions:	44.1" x 52.2" x 71" (WxDxH)
Electrical requirement:	100-120/220-240 V, 50/60 Hz, 25 A
Compressed air:	85 to 90 psi
Vacuum requirement:	610mm Hg
Operating temperature:	12° - 40°C , 18 - 28°C optimum
Humidity:	35 - 55%
Weight:	1300 kg approximately

Specifications subject to change without notice

March, 2005