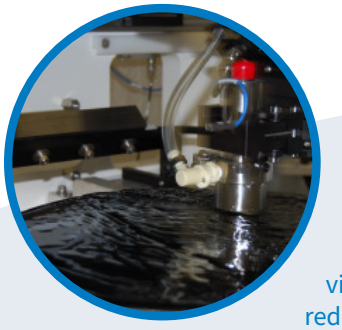
AW Series™

C-SAM® Inspection of Wafers

For Auto C-SAM® Inspection of Wafers

Operator-Free Inspection and Analysis.

The AW Series™ of automated inspection tools delivers better than 5 micron sensitivity for accurately locating defects in wafer based assemblies. Successful applications include bonded wafers, Chip-on-Wafer, stacked wafers, MEMS, over-molded wafers and more. Scanning 2 wafers simultaneously doubles throughput and with interchangeable matched transducers, wafers can be inspected over the widest frequency range ever achieved in a production environment.



Dual Non-Immersion Imaging

via Nordson TEST & INSPECTION'S Waterfall™ transducer reduces contamination and false bond indications

Features

- Nordson TEST & INSPECTION'S Waterfall™ transducer provides non-immersion scanning which minimizes risks of contamination and false bond indications.
- Dual stages maximize total throughput efficiency over the entire inspection process—including alignment, delivery and drying.
- Loadports for 300mm FOUP or FOSB carriers, 200mm SMIF pods and open cassettes are available from 100mm to 150mm.
- 500 MHz bandwidth pulser/receiver and ultra-high resolution transducers are designed and manufactured by Nordson TEST & INSPECTION for optimum performance to generate superior images.
- Nordson TEST & INSPECTION'S automated analysis software accurately determines percent bond/disbond, void size and count, and automatic accept/reject based on user-defined criteria.
- Single or optional dual loadports for larger batch capacity.

www.nordson.com/TestInspect

Nordson
TEST & INSPECTION

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Standard Features

- Fully automated wafer analysis functions with two scanning stages
- Time Domain Pulse-Echo Modes include: A-Scan, B-Scan, C-Scan, Surface Scan, Interface Scan, Bulk Scan and Loss of Back Echo (LOBE)
- Wafer Analysis Package: Automated wafer bond analysis software for percent bond/no-bond, quantifies voids and has selectable accept/reject levels
- Sonolytics™ with PolyGate™ technology for Windows® 7 64-bit

Mechanical Features

- EFEM contains a high precision wafer handling robot with two staging areas for maximum productivity during the movement of wafers throughout the inspection, drying and alignment processes
- Wafer alignment function for pre-scan and prior to placement into the carrier
- Wafer count, missing and cross-slotted recognition for each carrier
- Configurable for multiple wafer sizes 100mm up to 300mm (12 in.)
- Repeatability x-y axis + 0.5 microns
- Digital servo high speed scanner linear motors for the fastest image acquisition time
- Inertially balanced, vibration-free dual (2) scanning mechanisms
- Up to 268 megapixels (16K) data resolution in multiple enhanced acquisition formats and various customizable color mappings

Data Acquisition

- 500 MHz Bandwidth Pulser/Receiver for transducers from 100 to 400 MHz
- Transducers available from 5 to 400 MHz, typically >100 MHz used for wafer analysis
- Digital gating from 1 to 10,000nsec
- Acoustic Impedance Polarity Detector (AIPD)™ (Ref. U.S. Patent 4,866,986) simultaneously displays both polarity (i.e., phase) and amplitude information
- 95 dB Gain - selectable in 0.5 dB steps
- Dual display of digital waveform for A-Scan and capture criteria

Additional Features

- Waterfall™ transducer coupling for non-immersion scanning with or without water temperature controller option
- Single use (Std.) or re-circulating water system available
- Loadports are available for FOUP and FOSB carriers, SMIF pods and cassettes
- ISO6 (Class 1000) clean room ready
- Designed for production environment
- Integrated drying system for water removal
- Digital Image Analysis (DIA) includes area fraction analysis (including Mil-Std-883, Method 2030), image enhancement, histogram, and pixel amplitude analysis
- Integrated image archiving label function

Optional Features

- Heater for water temperature stability and consistency
- ISO5 (Class 100) clean room compatible
- Acoustic Surface Flatness (ASF)™
- MEMS - Wafer Cavity Seal Analysis (CSA)™
- Chip Analysis Module™
- KLARF and custom die mapping outputs
- Thickness Measurement Module
- Wafer OCR
- GEM Compliant SECS-II interface complies to SEMI E5, E30 and E37/E37.1 plus SEMI E39, E40, E87, E90 and E94
- OHT (Over Head Transport) with SEMI E84 Interface

Facility Requirements

- Power: 200V to 240V AC, 30A, single phase, 50/60 Hz
- Air: 1200 L/min (42.4 cfm) @ 0.62 MPa (90psi) of clean dry compressed air or nitrogen peak usage, 140 L/min (5 cfm) continuous
- DI Water[1]:
  Pressure regulated to 1.4 – 2.0 bar (20 - 30psi) @ 4 L/min (1 US gal/min)
- Dimensions:
  AIM[2]:
  L 0.91 x W 1.73 x H 1.73 m
  (L 36 x W 68 x H 68 in.)
  EFEM[3]:
  L 1.40 x W 1.73 x H 1.73 m
  (L 55 x W 68 x H 68 in.)

For more information, speak with your Nordson representative or contact your Nordson regional office

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1 DI Water – Recommended SEMI F63. 2 AIM – Acoustic Imaging Module. 3 EFEM – Equipment Front End Module

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