



Neon™

Inspection & Metrology Platform for WLCSP and HBM Devices

Next Generation QFN & WLCSP Inspection Platform

- Fully compatible between HBM₃E, HBM₄ and HBM₄E, with no system modification.
- Architected to integrate seamlessly with factory automation.
- Highly efficient vision technology delivers accurate and reliable metrology of micro-pillars across each high bandwidth device.
- Designed for advanced packages requiring high-end production process flow and unit traceability.
- Run WLCSP and QFN devices and processes on the same system.
- Unique force limitation control for thin and fragile handling at high speed.
- Wafer management and Mapfile processing for enhanced traceability.
- Wide Film Frame Carrier applicable device range 0.2 x 0.4 mm to 12 x 12 mm.
- Up to 23 available turret positions to accommodate required process.
- NV-Core™ Inspection System provides full 6-sided, 3D inspection & metrology with micro-scale defect detection.
- PAICe Digital Twin Platform™ provides real-time equipment monitoring and data analytics for increased productivity.

Neon WLCSP Inspection & Metrology



PAICe
INSPECTION™

Up to 5% Higher Inspection Yield

- Devices $\leq 1 \times 1$ mm up to 50,000 UPH, Devices $\leq 2 \times 2$ mm up to 45,000 UPH
 - HR Visible or Infrared Top, Bottom, and Sidewall inspection for improved inspection yield
- Offering flip and non-flip process, detaping to tape process, reel to reel for RMA process, and up to 6 taping output capability.
- Lowest overkill rate for microscale defect inspection.
- Down to 70 μ m with ultra-thin die picking technology.
- Cassette loading / unloading designed for Industry 4.0.
- 3D Flex® for True Ball / Bump co-planarity.
- Indexing time down to 28 ms, depending on device size and process.
- PAICe Inspection™ utilizes machine learning to distinguish micro-cracks from scratches with infrared inspection, improving defect discernment and reducing misclassification.

NV-Core™

Inspection System



- Full 6-sided single unit post testing inspection and metrology
- Visible and infrared inspection capability
- True 3D measurement at 6 µm repeatability
- Micro-scale defect detection down to 5 µm
- Full 1D or 2D ID unit-level traceability from tray input to tape & reel and tray output
- Vision assisted accurate device placement



PAICe™

Digital Twin Platform

- Real-time equipment monitoring and management
- Preventative maintenance
- Central recipe management
- Optimized yield and defect detection through real-time Artificial Intelligence inspection
- Knowledge database and unified reports



All specifications are subject to change without notification and are for reference only. For detailed performance specifications, please contact Cohu.

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