THE eV300 IS AN ADVANCED, fully automated Scanning Electron Microscope (SEM) designed specifically for high-volume review and analysis in a manufacturing environment. Integrated automatic defect classification (ADC) capabilities, flexible tilt/rotation, voltage contrast review, high aspect ratio interconnect (HARI) imaging, and landing energy up to 19 keV (which enables unambiguous material identification) make it ideal for both in-line monitoring and engineering analysis applications for 0.13 micron and smaller design rules.

The eV300 reviews, classifies, and provides elemental data for defects captured by KLA-Tencor’s comprehensive suite of unpatterned and patterned wafer inspection systems. Integration with Klarity Defect, KLA-Tencor’s automated analysis and defect data management system, provides capabilities for further analysis, defect control, and excursion monitoring. The eV300 delivers a four-fold increase in productivity compared to manual SEM review systems, and can be configured to handle 150 mm, 200 mm, or 300 mm wafers.

**PRODUCT DESCRIPTION**

**IMPACT SEM ADC** Enables more rapid, consistent and accurate sourcing of yield-limiting defects that affect device performance and reliability.

**SmartGallery™ for Power Assisted Classification and ADC Recipe Setup** An intuitive graphical user interface that facilitates scheme creation, sorts defects by attributes, enables high-speed manual defect classification, allows real-time confidence-level adjustment and displays multiple defect images simultaneously for faster and more reliable classification.

**Voltage Contrast/HAR Defect Review** Imaging capability enables rapid review and classification of defects detected using voltage-contrast capabilities of the e-beam inspector. Extraction field capability enables collection of low-energy secondary electrons for superior imaging at the bottom of HAR contact holes.

**TruePerspective™** Features a flexible 0-45 degree tilt and 360-degree continuous rotation, enabling exceptional accuracy in analyzing and classifying defects by allowing selection of the optimum orientation for defect review.

**Automated Bare Wafer Review** Automatically reviews bare wafers by taking advantage of the coordinate-generation knowledge of KLA-Tencor’s unpatterned wafer inspector (SP1) and intelligently selecting defects for alignment. Additionally, the eV300 is able to map the defect-coordinate system of individual inspection tools, thus improving overall defect-coordinate accuracy.

**Elemental Analysis** Unique 19-keV landing energy enables unambiguous elemental analysis of copper-related defects. It also allows differentiation of the peak overlaps of tungsten silicide and titanium nitride layers quickly and accurately.

**INTEGRATED INSPECTION, REVIEW AND ANALYSIS**

Detecting defects is only the first part of managing defectivity. A critical requirement is the ability to identify the source of the defects quickly so the problem with the process or equipment can be resolved with minimum yield impact. This necessitates efficient and effective defect classification and data analysis—seamlessly integrated as part of an overall solution for defect reduction and control. KLA-Tencor provides the most comprehensive range of defect reduction and control technology available.

This includes brightfield and darkfield optical inspection systems for patterned and unpatterned wafers (2XXX, AIT III, SP1); an optical inspection system designed to detect macro defects for after-develop inspection (2401); the industry’s first e-beam wafer inspection system designed for full-scale production (eS20XP); a UV reticle inspection system that simultaneously uses transmitted and reflected light to ensure capture of all defect types (TeraStar); a comprehensive set of automated defect review and classification systems (including the eV300); and a data analysis system that manages and integrates the wealth of defect data and images from these and other tools, and provides powerful analysis for yield optimization and acceleration.
KLA-TENCOR: ACCELERATING YIELD

KLA-Tencor’s portfolio of solutions includes the industry’s broadest line of advanced inspection and metrology systems, which enables customers to gather all of the yield-critical defect and metrology data. It also includes the sophisticated software needed to turn that data into quick corrective action. Finally, it includes the expertise needed to help customers rapidly understand and resolve complex manufacturing problems so they can reap the financial and market rewards associated with faster time to market and increased product yields.

KLA-TENCOR SERVICE/SUPPORT

Customer service and support are an integral part of KLA-Tencor’s yield optimization solution. Our vast customer support organization services our worldwide installed base and is responsible for customer support following the shipment of equipment and software. Services include system installation, secure on-line monitoring, on-site repair, telephone support, relocation services, and selected post-sales applications.

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