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KLA-Tencor Boosts 45nm Defect Capture, Doubles Throughput with New Memory- and Logic-Specific Brightfield Inspection Systems

SAN JOSE, Calif.--(BUSINESS WIRE)--

KLA-Tencor (NASDAQ: KLAC) today introduced its latest addition to the 28xx brightfield inspection platform, featuring specialized optical configurations that solve the unique defect detection challenges of sub-55nm memory and sub-45nm logic chip manufacturers. Both the 2810 system for memory, and the 2815 system for logic, rely on KLA-Tencor's industry-leading full-spectrum illumination technology to capture the broadest possible range of defect types, including yield-critical immersion lithography defects. The systems' production throughput at sensitivity has more than doubled for many applications, compared to the previous 2800 system.

"The inspection requirements of memory and logic chips have become quite distinct at 55nm/45nm. In both cases chipmakers need greater inspection sensitivity to capture all defects of interest, as well as higher speed to quickly ramp new processes," noted Mike Kirk, group vice president for wafer inspection at KLA-Tencor. "Our new, specialized 2810 and 2815 brightfield inspection tools enable memory and logic chipmakers to focus their inspection strategies on yield-limiting defect types found in their particular leading-edge devices. With the sensitivity and flexibility to find all defects of interest on all critical layers, and two times the computing speed, the 2810 and 2815 contribute to faster ramps and accelerated time to market."

The 2815 system introduces an extensive toolset of hardware and algorithms that address defects specific to logic designs. The system's specialized optical modes, featuring the industry's smallest pixel, are designed to enable the broadest defect type capture on the complex geometries and new materials found in sub-45nm logic devices. For sub-55nm memory applications, the new 2810 inspection system features memory-specific optical modes and algorithms that enable the detection of bridges, voids, and other critical defects on both array (repeating) and periphery (non-repeating) structures.

Since the optimal inspection wavelength needed to capture all critical defects varies with material, pattern geometry and design rule, the 281x-series tools utilize a tunable full-spectrum illumination source covering DUV, UV and visible wavelengths. This technology provides optimal defect contrast, nuisance suppression and the high resolution required to detect critical defects on an extended range of layers, devices and design rules. New ease of use features, common to both 2810 and 2815, reduce the inspector's recipe optimization time by up to approximately 50%. The 281x systems' advancements in automated defect binning further improve the quality of the defect Pareto, enabling faster identification and

resolution of the root cause.

Building on the market leadership of KLA-Tencor' 2800 platform, which was introduced in 2005, the new 2810/2815 systems have been shipped to customers in all chipmaking regions, where they are being installed for both memory and logic applications. Multiple customers already depend on the systems' advanced full spectrum illumination technology to manage defectivity in their immersion lithography clusters.

About KLA-Tencor: KLA-Tencor is the world leader in yield management and process control solutions for semiconductor manufacturing and related industries. Headquartered in San Jose, California, the Company has sales and service offices around the world. An S&P 500 company, KLA-Tencor is traded on the NASDAQ Global Select Market under the symbol KLAC. Additional information about the Company is available at http://www.kla-tencor.com.

Source: KLA-Tencor