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KLA Introduces Breakthrough Electron-Beam Defect Inspection System

MILPITAS, Calif., July 20, 2020 /PRNewswire/ -- Today [KLA Corporation](#) (NASDAQ: KLAC) announced the revolutionary **eSL10™ e-beam patterned-wafer defect inspection system**. The new system is designed to accelerate time-to-market for high-performance logic and memory chips, including those that rely on extreme ultraviolet (EUV) lithography, by detecting and reporting defects that cannot be routinely captured by optical or other e-beam defect inspection platforms. Built from the ground up, with multiple breakthrough technologies reflecting years of research and development, the eSL10 delivers high resolution, high speed inspection capability, unmatched by any other e-beam system on the market.



"With a single, high current-density electron beam, the eSL10 system has raised e-beam inspection performance to a new level," said Amir Azordegan, general manager of the e-beam division at KLA. "Before now, e-beam inspection systems have offered either sensitivity or speed, severely limiting practical application. Our talented engineering team has taken an entirely new approach to e-beam architecture and algorithms, designing a system that can solve problems not addressed by existing tools. Today KLA is putting e-beam inspection on the list of equipment critical for leading-edge device manufacturing."

The **eSL10 e-beam inspection system** features several revolutionary technologies that power its ability to close critical defect detection gaps. A unique electron optics design produces the industry's widest operating range for defect capture across a variety of process layers and device types. Yellowstone™ scanning mode uses 10 billion pixels of information per scan to support high speed operation without compromising resolution, for efficient investigation of suspected hotspots or defect discovery within a broad area. Simul-6™ sensor technology collects surface, topographic, material contrast and deep trench information in one scan, reducing the time required to identify different defect types within

challenging device structures and materials. With its [advanced Artificial Intelligence \(AI\) system](#), the eSL10 employs deep learning algorithms that adapt to IC manufacturers' evolving inspection requirements, isolating the defects most critical to device performance.

Three-dimensional device architectures – such as 3D NAND and DRAM for memory, and finFET and gate all around (GAA) transistors for logic – are requiring fabs to rethink traditional defect control strategies. The combination of the eSL10 with KLA's flagship [39xx \("Gen5"\) and 29xx \("Gen4"\)](#) broadband optical wafer defect inspection systems creates a powerful defect discovery and monitoring solution for advanced IC technologies. Together these systems accelerate yield and reliability, finding critical defects faster and enabling quicker resolution of defect issues from R&D to production.

Extendibility is built in to the new eSL10 platform to allow for application expansion throughout the e-beam inspection and metrology space. Several eSL10 systems are in operation at leading logic, memory, and original equipment manufacturers worldwide, where they are helping to develop, ramp and monitor manufacturing of next-generation processes and devices. To maintain their high performance and productivity, eSL10 systems are backed by [KLA's global comprehensive service network](#). Additional information about the new e-beam defect inspection system can be found on the [eSL10 product page](#).

About KLA:

KLA develops industry-leading equipment and services that enable innovation throughout the electronics industry. We provide advanced process control and process-enabling solutions for manufacturing wafers and reticles, integrated circuits, packaging, printed circuit boards and flat panel displays. In close collaboration with leading customers across the globe, our expert teams of physicists, engineers, data scientists and problem-solvers design solutions that move the world forward. Additional information may be found at [kla.com](#) (KLAC-P).

Forward Looking Statements:

Statements in this press release other than historical facts, such as statements regarding the expected performance of the eSL10, 29xx, and 39xx systems and the economic effects of defect reduction for wafer, equipment, materials and chip manufacturing facilities, are forward-looking statements, and are subject to the Safe Harbor provisions created by the Private Securities Litigation Reform Act of 1995. These forward-looking statements are based on current information and expectations and involve risks and uncertainties. Actual results may differ materially from those projected in such statements due to various factors, including delays in the adoption of new technologies (whether due to cost or performance issues or otherwise), the introduction of competing products by other companies or unanticipated technology challenges or limitations that affect the implementation, performance or use of KLA's products.

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