KLA-Tencor Ships Industry's First Reticle Inspection System for Sub-90-nm IC Production

SAN JOSE, Calif., June 30, 2003—KLA-Tencor (NASDAQ: KLAC) today introduced its next-generation TeraScan™ deep ultraviolet (DUV) reticle inspection system. The first DUV reticle inspection tool developed for sub-90-nm IC production, TeraScan offers industry-leading sensitivity to detect classical defects (intrusions, extrusions and point defects) as small as 80 nm, and critical dimension (CD) defects as small as 50 nm. This, coupled with TeraScan's ability to inspect nearly any type of photomask used in IC production, regardless of reticle wavelength and resolution enhancement technology, enables the industry's most comprehensive and lowest cost-of-ownership reticle inspection solution for sub-90-nm design rules. TeraScan leverages the considerable expertise and success gained from KLA-Tencor's benchmark TeraStar™ platform, which has been widely adopted by all major photomask and IC manufacturers. KLA-Tencor has shipped the first TeraScan beta systems, including one to a leading microprocessor manufacturer and one to a leading mask development center. In addition, KLA-Tencor has received multiple orders for TeraScan systems from photomask and IC customers worldwide.

The Advanced Mask Technology Center (AMTC), a Dresden, Germany-based joint-venture company owned by Infineon Technologies, AMD and DuPont Photomasks, Inc., is one of the first recipients of the new TeraScan tool. According to Dr. Markus Dilger, general manager and managing director of AMTC, "As one of the world's most advanced mask development centers, our mission is to provide our customers with the highest quality, defect-free reticles, which are essential to eliminating yield loss in semiconductor device production. To support that goal for the sub-90-nm technology nodes, AMTC needs the most advanced mask inspection solutions available. Being the first mask manufacturer to perform factory acceptance tests and take delivery of KLA-Tencor's TeraScan reticle inspection system, AMTC has verified TeraScan's superior performance in providing industry-leading sensitivity to classical and CD defects on advanced reticles with optical proximity correction (OPC) and phase shift designs. TeraScan's pattern inspection capability helps us to stay on the industry roadmap."

Incorporating the same data preparation system and software algorithms as the TeraStar platform, TeraScan has a new DUV image acquisition system to extend the benchmark performance of the Tera™ family below the 90 nm node. TeraScan has demonstrated the capability to inspect numerous reticle types, including chrome-on-glass, embedded phase shift, and alternating phase shift, at both 248-nm and 193-nm wavelengths. This flexibility is essential to preserving capital costs in advanced mask production, since any mask set may contain several different types of reticles. At the 65-nm node, for example, a mask set may have 28 layers, with fewer than 10 of these being 193-nm wavelength reticles. Most of the remaining layers may be 248-nm wavelength. TeraScan currently supports die-to-die reticle inspection, and has a roadmap to introduce a die-to-database upgrade by the end of the calendar year. It is also the first reticle inspection system incorporating phase contrast to detect quartz defects for a thorough production inspection of advanced alternating phase shift reticles.

According to Lance Glasser, vice president and general manager of KLA-Tencor's Reticle and Photomask Inspection Division, finding all of the reticle defects that could put IC yields at risk is essential to successfully transitioning to the 65-nm technology node. "As reticles becomes more complex and design rules go below 90 nm, TeraScan enables our mask manufacturing and wafer fab customers to improve yields and lower costs with its unique ability to find both traditional defects that will print at the wafer fab upon first use, and progressive defects that can worsen over time and jeopardize device yield at any point throughout the mask lifecycle. With TeraScan, our customers have a comprehensive reticle inspection solution that offers superior inspectability and cost of ownership with an extendable technology roadmap to enable the 65-nm device generation. It is a flexible one-tool solution configurable for every reticle inspection application, both in mask production and in wafer fabs."

Note to Editors: A technical fact sheet on TeraScan is available upon request.

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, Calif., with operations around the world, KLA-Tencor ranked #6 on S&P's 2002 index of the top 500 companies in the U.S. KLA-Tencor is traded on the Nasdaq National Market under the symbol KLAC. Additional information about the company is available on the Internet at http://www.kla-tencor.com

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