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UPDATE

September 9, 2026 01:07 AM GMT

Semiconductor Production Equipment | Japan

HNA Volume Adoption and Large-mask Transition Gain Momentum

Suzune Tamura, CFA
Equity Analyst
Suzune.Tamura@morganstanleymufg.com +81 3 6836-8891

Kazuo Yoshikawa, CFA
Equity Analyst
Kazuo.Yoshikawa@morganstanleymufg.com +81 3 6836-8408

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Industry View **Attractive**

Progress on High-NA EUV adoption in mass production: Samsung announced an expansion of its partnership with ASML and explicitly stated that it plans to introduce High-NA EUV (HNA EUV) into DRAM mass production by 2028. According to Samsung, this is expected to mark the industry's first use of HNA EUV for volume DRAM production. At the same time, TSMC announced plans to adopt HNA EUV in mass production in 2030. TSMC had previously indicated that it would hold off on HNA adoption through the A13/A12 generations in 2029, but the latest announcement provides greater clarity on the timing of its HNA introduction.

Large-mask transition also gaining momentum: ASML and TSMC also announced the launch of a joint initiative to introduce 6x12-inch large masks, with Samsung also confirming its participation. The initiative targets the establishment of a pilot line in 2031 and mass-production readiness in 2033. While Intel had originally spearheaded the move toward large masks, the latest announcements suggest that the three major leading-edge logic/foundry players are beginning to align behind the transition.

Our take: We view HNA adoption as a tailwind for mask-related equipment. We expect a shift toward HNA-compatible tools such as Lasertec's A300 in inspection and MBMW-401 from IMS/JEOL in mask writing. The adoption of large masks would provide an additional tailwind across the broader mask-equipment space, as it would require new mask-manufacturing infrastructure. Given the relatively distant implementation timelines and our assumption that these developments have already been under discussion with equipment suppliers, we do not expect the announcements to have any impact on Lasertec's order guidance for the current fiscal year.

ASML is covered by Lee Simpson; Samsung Electronics by Shawn Kim; TSMC by Charlie Chan; and Intel by Joseph Moore.

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