

ADVANTEST

MVM-SEM®

E3630

New Multi Vision Metrology SEM tool supports next-generation photomasks with improved performance and accuracy



E3630 is a new SEM*-based Multi Vision Metrology (MVM) measurement system for next-generation photomasks and patterned media. This MVM-SEM measurement system was designed specifically for 32 nm technology node production and 22/16 nm technology node process development. Fully compatible with Advantest's existing software of E3610/3620 CDSEM measurement systems, E3630 boasts 30% improved measurement repeatability. The system's newly developed object lens and low-vibration platform enable significantly improved measurement performance compared with previous models, while a new, multi-channel detection system and unique measurement algorithm make stable and accurate measurement of thin-film processes, such as EUV and hard masks, possible. E3630 makes a significant contribution to reducing process development turnaround time (TAT) and improves productivity for next-generation masks.

*: Scanning Electron Microscope

The following can be measured:

- **Advanced photomask and EUV mask**
- **Templates for Nanoimprinting**
- **Patterned media**

Advanced electron-optical column design:

E3630 has inherited the proprietary column design and unique electron beam scanning technology from its predecessor, Advantest's E3620. Advantest's unique architecture for achieving high resolution by maintaining high voltage inside the column and newly developed object lens have significantly reduced the chromatic aberration and further improve the resolution in low acceleration range.

Accurate, fine precision positioning technology:

The new stage positioning system enables the stable positioning of the objects for measurement even in a high SEM magnification, allowing the measurement of high throughput and easy observation.

Technology supporting evolving mask processes:

To support new mask processes such as hard mask process, it is equipped with the multi-channel detection system to achieve stable and highly accurate measurement even for sub-10 nm thin-film processes.

Together with the new edge detection algorithm, it provides error-free recognition of lines and spaces even in complex patterns of intricate lines and spaces, resulting in improved productivity.

Rich applications:

- **Recognition of Pattern matching result by Overlaid view between CAD and SEM image.**
- **Contour detection/GDS output function of Large Field of View.**
- **SECS/GEM function for factory automation**

Compatibility of data and jobs:

E3630 software configuration is fully compatible with E3610/3620 making software assets extendable.



MVM-SEM is either a registered trademark or a trademark of ADVANTEST Corporation in Japan, the United States and other countries.

*Please refer to product manual for complete system specifications.
Specifications may change without notification.*

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