

News Release

FOR IMMEDIATE RELEASE

Announcement of New CS4800 Advanced High Resolution CD-SEM - For 4"~ 8" Semiconductor Wafers -

TOKYO, Japan, November 25, 2015 - Hitachi High-Technologies Corporation (TSE:8036, Hitachi High-Tech) announced today introduction of the latest model of its advanced high resolution FEB^{*1} CD-SEMs^{*2} (CD-SEM), the CS4800, which handles 4, 6, and 8 inch (100, 150, 200mm) wafers.

45% of worldwide semiconductor device shipments are produced by less than 8 inch wafer Fabs^{*3} and these devices are widely used for consumer electronics such as smart phones, tablets, appliances, automobiles, train systems and other social infrastructure systems. In addition, they are expected to grow in order to support the IoT (Internet of Things) related applications such as wireless communication devices or MEMS sensors.

Hitachi High-Tech launched its first CD-SEM as a metrology tool for process control of semiconductor device manufacturing in 1984, and had installed over 2,300 units of CD-SEMs which is for 6 and 8 inch wafers by the early 2000's when the industry began the transition to 12 inch (300mm) wafers. Extending the lifetime of these 6 and 8 inch tools in terms of providing spare parts and continued service support has proven to be a tremendous challenge. In order to offer a solution and help our customers replace aging tools with brand new tools, Hitachi High-Tech has developed and will release a new CD-SEM, the CS4800, utilizing proven technologies developed for 12 inch tools.

The CS4800 provides high-quality SEM imaging, improved measurement precision, and fast, automated operation, designed to improve productivity and operating efficiency of existing manufacturing lines and increase customer's process control capability. In addition, the CS4800 can be configured to handle two different wafer sizes that can be switched by the customer using to a new wafer-transfer system. Hitachi High-Tech plans to expand support for various wafer materials such as Silicon Carbide (SiC) and Gallium Nitride (GaN) to meet diversified customer's needs for new semiconductor or electronic devices.

With the development of the CS4800, Hitachi High-Tech will provide a sustainable CD measurement solution to a wide range of 4, 6, and 8 inch wafer Fabs and will support new emerging technology devices for the IoT applications, wearable devices, and next generation power devices.

Hitachi High-Tech will start accepting orders of CS4800 from December 2015. It will be introduced at SEMICON JAPAN 2015 at Tokyo Big Sight from December 16 to 18, 2015.

*1 FEB (Field Emission Beam) : An electron beam emitted by the electron field emission method.

*2 SEM (Scanning Electron Microscope) : A scanning electron microscope (SEM) for measuring the microscopic circuit pattern on semiconductor wafers.

*3 Research by Gartner, Inc. (convert to 8 inch wafer area)



Advanced High Resolution CD-SEM CS4800

Main Features

- Tool footprint and GUI*4 are designed for easy replacement of existing tools.
- Proven high-precision measurements, latest metrology applications are available.
- Automated optics axis alignment will reduce operator errors.
- High throughput, automated recipe measurement operation with robust pattern matching.
- Multiple wafer size option available.

*4 GUI (Graphic User Interface): A software operating system interfacing a computer's graphic display with the use of a mouse and other pointing devices.

Main Specification

Measurement Precision	1 nm (3 σ) (Using Hitachi Standard Wafer)
Wafer size	100, 150, and 200 millimeters in diameter
Auto-loader	2 ports
Equipment size (main body) in millimeters	1180(W) x 2500(D) x 1990(H)mm

Contact

Toru Ikegami, Takashi Hirata
Process Control Systems Dept. 2,
Semiconductor Process Control Systems Div.,
Electronic Device Science Systems Business Group
Tel: +81-90-2529-9181

For Media Inquiries

Shota Sano, Reiko Takeuchi
Corporate Communications Dept., CSR Div.,
Tel: +81-3-3504-3933