WaferMark® SigmaClean®

Laser Wafer Marking System

Enabling Technology™

The industry-leading solution for cost-efficient, highly-readable soft marking of 100 to 200 mm wafers for identification and traceability.

- Proprietary, patented SuperSoftMark® for debris-free marking
- Class 1 cleanroom compatibility
- Ultra-stable patented diode-pumped laser
- Automated system data logging functions
- Optional FECS II/GEM interface for factory communications/networking
- No external cooling required

GSI™ WaferMark®

WaferMark® products continue to lead the way with SigmaClean®

With the rapid advancement of technology in the semiconductor industry, you require a company with dedicated expertise and understanding of wafer processing. As pioneers and global leaders in the laser industry, you can depend on *GSI Group* to develop cutting-edge products like the *WaferMark SigmaClean*.

Proven Technology

The *GSI Group WaferMark SigmaClean* is the most advanced wafer marking system in the world. Based on our established, cleanroom proven wafer handling technologies, the *SigmaClean* system uses an innovative, diode-pumped laser design. The *SigmaClean* system will continue the tradition as the global standard for quickly and permanently identifying wafers throughout the semiconductor fabrication process. No other wafer identification system offers the process flexibility, mark brightness, quality performance and efficiency that can be achieved with the new *WaferMark SigmaClean*.

Maximum Efficiency

GSI Group understands what Cost of Operation means to you. The Sigma laser design requires only one scheduled maintenance per year. Thousands of dollars in maintenance labor savings, coupled with the more substantial savings from decreased downtime, result in a solid economic justification for the *WaferMark SigmaClean*. This self-contained system minimizes the footprint and optimizes floor space. Using the optional bulkhead wall mount adapter, the entire system can be located in the service chase where maintenance can be performed, when required, without ever entering the room. *WaferMark SigmaClean* is clearly the answer to profitable wafer traceability in your production process.

Worldwide Support

Throughout the semiconductor world, our applications engineers and materials scientists continue to develop new solutions in step with semiconductor process advancements. Our service technicians are trained in every aspect of maintenance and troubleshooting, and parts are stocked locally in North America, Japan, Taiwan, Korea, Europe, and China.

Specifications

Marking Performance:

- Marking Modes: Dot Matrix SuperSoftMark®
- Fonts: SEMI OCR, BC412, and other Dot Matrix formats available
- Position: Multiple mark groups at any orientation on the wafer front surface within a 25mm band around the wafer circumference

Wafer Handling:

- Wafer Size Range: 100, 125, 150 and 200mm
- Alignment: Optical alignment over the entire wafer size range with no hardware change-over for both flatted and notched wafers
- Repeatability: ± 125 µm in both X and Y axes relative to the primary fiducial
- Wafer Transport: Pick and place robotic arm with dual vacuum wand
- Throughput: Up to 240 wafers per hour (marking per SEMI specification M12-92 single pulse)
- Send and Receive Modules: Three load/unload cassette stations capable of performing no-work-over-work handling. Movable presenter for AGV access per SEMI specification E15-91 optional.

Workstation:

- Control System: Windows NT based control unit with 3.5" floppy drive and hard disk drive for storage of all system parameter
- Software: Operator prompt, pull-down menu format using a flat panel monitor and full size keyboard. Bar code wedge reader input device optional.
- Diagnostics: Complete system diagnostic indicators displayed on front panel, along with the EMO button and system keyswitch. Automatic laser data logging function.
- Communication: SECS II / GEM Interface optional

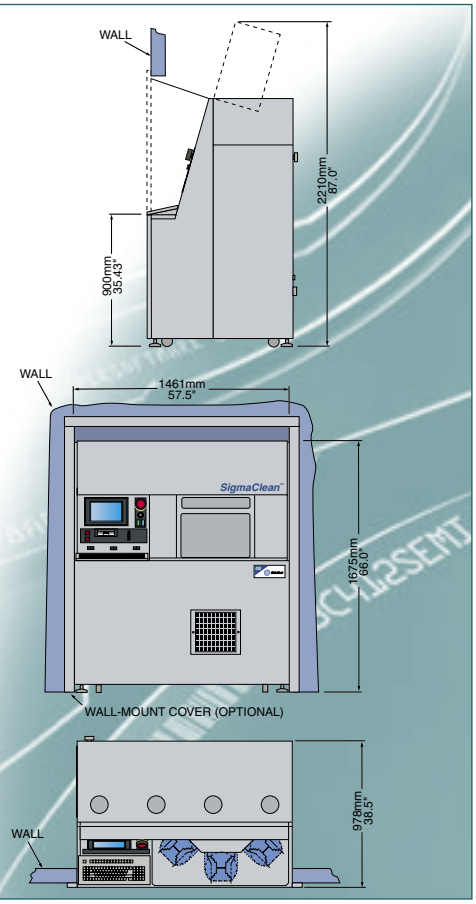
Laser/Optics:

- Laser Type: Acousto-optic Q-switched, TEMoo Nd:YLF Diode-pumped laser
- Optics: Flat field focusing lens

Utilities:

- Electrical:
  Standard connections
  - 220VAC, single phase, 50/60Hz, 22FLA
  - 208VAC, single phase, 50/60Hz, 23FLA
  - 200VAC, single phase, 50/60Hz, 24FLA

  Optional Connections
  - 400VAC, single phase, 50/60Hz, 12FLA
  - 416VAC, single phase, 50/60Hz, 12FLA
- Vacuum: 25-30 inches Hg at 2 SCFM (635-762 torr @ 56.6 l/min) 1/4 inch diameter press-lock connection
- Exhaust: 20 CFM (560 l/min) flow rate max 1.25 inch (32mm) diameter port
- Dimension: 66 inches H x 57.5 inches W x 38.5 inches D (1675mm H x 1461mm W x 978mm D)
- Weight: 1425 lbs (646 Kg)



Dimensions in mm (inches)

Specifications are subject to change. Please consult factory for complete details.
The classification of the WaferMark SigmaClean is Class 1/I.

www.gsig.com/systems

GSI WaferMark®

Product Center
60 Fordham Road
Wilmington, MA 01887
USA
TEL: +1 (978) 661-4300
FAX: +1 (978) 988-8798

For sales information, visit our web site or contact your local sales office.

Printed in Canada. Item # 126