

WaferMark[®] SigmaDSC[™]

Laser Wafer Marking System



- Ultra-stable patented diode-pumped laser
- Unsurpassed production marking flexibility
- Handles wafers from 100 mm through 200 mm diameter
- Available 300 mm kit handles 150 mm, 200 mm, and 300 mm wafers
- Marks SEMI OCR, BC412, 2D Matrix and other font formats
- Custom mark verification and reader options available
- Self-contained water chiller unit
- Stainless steel enclosure

GSI Lumonics

With the enormous variety of marking opportunities in today's market, you require a wafer marking system with unsurpassed production capabilities. The GSI Lumonics *WaferMark*® SigmaDSC™ allows you to easily meet the demanding specifications of the semiconductor industry.

Proven Technology

The *WaferMark SigmaDSC* relies on GSI Lumonics' vast laser marking experience coupled with industry-proven wafer handling equipment to provide maximum production flexibility with minimum downtime. The system design accommodates a number of standard and custom options to further enhance the system process capabilities

such as 300 mm wafer handling kit, custom readers and mark verification units.

Maximum Efficiency

Standard system features allow wafer cassettes to be queued for processing without having to stop production for hardware changeover. The optional robot flipper assembly (not available on 300 mm kit) allows marking on both sides of raw wafers in one operation setup. The system operating software uses a drop windows-style format with all functions grouped into pull-down menus allowing easy access by the process technician. Or, the system can be controlled remotely from the host computer

using the available SECS II/GEM communication interface.

Global Service and Support

GSI Lumonics' dedication to the semiconductor industry is backed by a network of service and spare parts facilities around the world. GSI Lumonics' field service engineers are fully trained in *WaferMark* system maintenance and troubleshooting. A full complement of spare parts is stocked in the United States, Japan, Germany, United Kingdom and Singapore to assure rapid response to service your needs. In addition to the standard warranty period, GSI Lumonics also offers a full line of custom comprehensive service contracts and maintenance agreements.

Specifications

Marking Performance

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

Wafer Handling

- Wafer Size Range:**
100, 125, 150, and 200 mm
- Alignment:**
Optical alignment over the entire wafer size range with no hardware change-over for both flat 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
Two stations for 300 mm kit

Laser/Optics

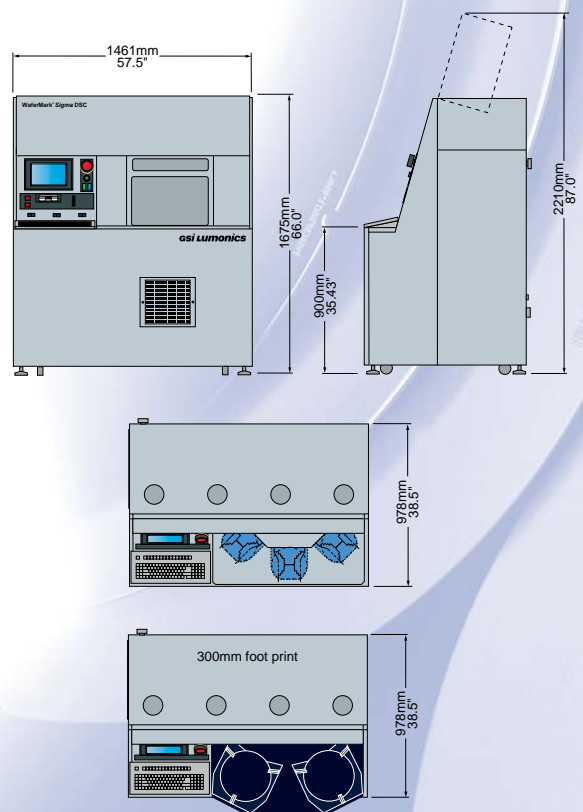
- Laser Type:**
Acousto-optic Q-switched, TEM00
Nd:YLF Diode-pumped laser
- Optics:**
Flat field focusing lens

Workstation

- Control System:**
MS-DOS based control unit with 3.5" floppy drive and hard disk drive for storage of all system parameters
- 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

Utilities

- Electrical:**
Standard connections
220 VAC, single phase, 50/60 Hz, 22 FLA
208 VAC, single phase, 50/60 Hz, 23 FLA
200 VAC, single phase, 50/60 Hz, 24 FLA
Optional Connections
400 VAC, single phase, 50/60 Hz, 12 FLA
416 VAC, single phase, 50/60 Hz, 12 FLA
- 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
1.25 inch (32 mm) diameter port
- Dimension:**
66 inches H x 57.5 inches W x 38.5 inches D
(1675 mm H x 1461 mm W x 978 mm D)
- Weight:**
1425 lbs (646 Kg)
- Operating Environment :**
Ambient temp 55.0-85.0 °F(12.8-29.5 °C)
Humidity (relative): Non-condensing



Specifications are subject to change. Please consult Product Center for complete details.
The classification of the *WaferMark*® SigmaDSC™ is Class 1/I.

GSI Lumonics

www.gsilumonics.com

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 distributor.