

SC300™



Debris-Free Laser Wafer Marking

THE INDUSTRY-LEADING SOFTWARE MARK SOLUTION

The SC300's Class 1 cleanroom compatibility and ultra-stable patented diode-pumped laser has helped to make it the industry-leading solution for cost-efficient, highly-readable soft marking of 300 mm wafers for identification and traceability.

PATENTED SUPERSOFTMARK® TECHNOLOGY

The SC300's proprietary SuperSoftMark® technology, along with its patented diode-pumped laser, enables it to deliver debris-free soft marking, and allows the system to be installed in customer cleanrooms for high-volume production.

HIGH PERFORMANCE WITH GREATER CONTROL

The SC300 combines a high-performance laser system with best-in-class system-level closed-loop control and automated system data logging. All laser performance data is accurately logged to SPC levels of mark quality.

SEMI-COMPLIANT WAFER MARKING

TUI's WaferMark® systems are fully compliant with SEMI standards for wafer marking: T7, M12 and M13. The SC300 can place multiple mark groups at any orientation on the wafer surface, within a 25 mm band around the wafer's circumference.



SYSTEM SPECIFICATIONS

MARKING PERFORMANCE

Marking Modes
Dot Matrix, Softmark (straight line or arc marking)
SuperSoftMark® Process
0.02 particles/cm, 0.17 particle size measured over 5 mm area
Dot Diameter
50-70 µm +/- 10%
Dot Roundness
<1.1 major to minor axis ratio
Dot Depth
2.4 µm +/- 0.4 µm
Throughput
125-180 wph, single pulse, 5x9 dot matrix, 12 characters
Throughput Edge Handling (option)
70-110 wph, single pulse, 5x9 dot matrix, 12 characters
Material
Polished, non-coated, pure Si wafers

WORKSTATION

Enclosure
Stainless steel, ISO Class 5 clean room compatible with ISO Class 2 mini-environment

WAFER HANDLING

Wafer Size
300 mm
200 mm bridge capability (optional)
Alignment
Optical high-resolution wafer aligner
Wafer Transport
Pick & place robot arm with single end effector
Cassette Ports
Two 300 mm Ports

UTILITY REQUIREMENTS

Electrical
200-240 VAC, single phase, 50/60 Hz, 23 FLA
Process Vacuum
20 Hg to 25 Hg. 3/8 in diameter press-lock connection
Mark Point Exhaust
20 CFM (560 l/min) flow rate max 2 in (50.8 mm) diameter port
Ambient Conditions
Static Charge: 197 V/cm (550 V/in) max
Air-Cooled System
Temp: 12.8 - 27 °C (55-80 °F)
Dimensions
78 in x 64.6 in x 47.4 in [HxWxD] (1981.2 mm x 1641 mm x 1204 mm)
Weight
EFEM: 1480 lb (671 kg) Mark Enclosure: 1145 lbs (519 kg)

PC CONFIGURATION

- Intel-Core CPU
- Windows 10, 32/64 Bit
- DDR3 ECC Memory
- PCI; PCIe x1; PCIe x16 slots
- 10/100/1000 T LAN Ports
- USB 3.0; USB 2.0 Ports
- RS232 ports - Includes Adapter Plates
- Intel 2.5 in Solid State Drives
- 2-Drawer drive carrier for 2.5 in drives
- DVD/DL Drive

CONTROL SYSTEM

- Keyboard and flat panel display
- Menu-driven "fill in the blank" software
- Multiple job file storage capability
- Fault and error logging capabilities
- System diagnostic indicators displayed on front panel and electronic console
- SECS II/GEM interface
- Four color programmable signal tower

MARKING FONTS (STANDARD)

- 9x17 Single-Density Dot Matrix
- 10x18 Double Density Dot Matrix
- 5x9 SEMI Single Density Dot Matrix
- T1 SEMI Specs BC-412 Bar Code
- T7 2D Data Matrix
- Checksum Function (user selectable)
- Custom Fonts Available

Mark Char

80 char/group max

Mark Field

50x50 mm after wafer aligned

Mark Location

Within a 25 mm band around wafer circumference

Mark Repeatability

+/- 75 µm in X & Y relative to primary fiducial

Character Formation

SEMI M12/M13

LASER/OPTICS

Type
Acousto-optic Q-switched,
TEM₀₀Nd: YLF diode-pumped laser

Wavelength

1053 nm

Pulse Stability

<0.5% at 1 khz

Optics

Flat field focusing lens

Spot Size

50 µm, 60 µm or 70 µm

Depth

2.4 µm to 5.0 µm

CERTIFICATION

CE Mark
SEMI S2, S8, S14

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US/North America
+1.805.987.5453

China
+65.6569.4623

Korea
+82.31.723.0522

Taiwan, R.O.C.
+886.3.558.7120

Japan
+81.44.542.1707

Singapore
+65.6569.4623

UK / Europe
+39.02.761.10156

