# 9350

## Laser Semiconductor Processing System

electro

scientific

industries

**Increased throughput performance**

**1.3 micron wavelength combines smallest spot size with the widest process window in the industry**

**New embedded controller**

**Unsurpassed reliability**

The Model 9350 Laser Semiconductor Processing System from ESI offers superior results for throughput, yield and uptime performance. The patented application of the 1.3 µm wavelength laser provides critical process window capability for metal memory link materials, allowing higher levels of energy to be used to remove links without damaging the surrounding silicon. The result is cleaner link cuts with higher yields. In addition, the Model 9350 provides high accuracy positioning and continuous wafer processing.

New features of the Model 9350 include a 2.3 µm laser spot for smaller link pitches to accommodate the latest semiconductor device shrinks. A higher rep rate laser and faster embedded controller with new software also provide substantial throughput improvements. The result is a lower cost of ownership combined with the very latest technology for improving the yield on memory devices.

# 9350

## SPECIFICATIONS SUMMARY

### 1.3 µm Wavelength

Patented application of 1.3 µm wavelength laser

### Programmable Spot Size

Programmable Range: 2.3 µm to 6.0 µm (1/e2)

Programmable Resolution: 0.1 µm

### Laser and Energy Density Control

Type: Diode-pumped 1.3 µm wavelength laser with acousto-optic Q-switch and an air-cooled power supply

Pump Source Lifetime: Greater than 10,000 hours guaranteed

Energy Control: Continuously variable up to a maximum setting of 6.0 µJ per pulse

Laser Focus: High-speed, high-resolution focusing maintains greater than 95% of the maximum energy density at focus

Laser Pulsewidth Options: 6.5, 9.5, or 15 ns at 6000 Hz

### Laser Beam Positioning

Type: High-performance brushless DC linear motor with independent X and Y axes, new laser dual path interferometer closed-loop position control

Total Positioning Accuracy: Better than 0.35 µm, mean plus 3 $\sigma$, over any 35 mm x 35 mm field, 0.5 µm mean plus 3 $\sigma$ over 200 mm wafer field

Field of Travel: 204 mm (x) 240 mm (y)

### System Control Computer

Type: Hewlett Packard VME workstation with color monitor. UNIX operating system

User Interface: OSF/Motif environment

Networking: Ethernet (ThickLAN, ThinLAN, or Twisted-Pair) with FTP and NSF protocols

### Application Environment

Turnkey Software: Includes concurrent setup, runtime, calibration, and diagnostic programs for fast device setup and process optimization

Operator Local Language Support: Japanese, Korean and German

Engineering Tools: ESI's EasyAlg™ redundancy algorithm development tools eliminates C programming requirements for device setup. ESI's Variable Multiple Die Alignment optimizes die throughput by minimizing alignment overhead

### Automatic Wafer Handling

Continuous wafer processing

Improved thin wafer handling capability

Link Inspection Option: Provides the ability to inspect link blow quality using a color, high resolution (< 0.5 mm), (1000X to 4500X zoom), built-in microscope

### Wafer ID Reading and Illumination Option

SEMI character font with checksum and single character error correction routines

ScribeView2™ patented programmable OCR illumination subsystem

### System Enclosure – Self Contained Environment

Standards: CE Mark compliant SEMI S2-93

ESD Tolerance: System certified to withstand up to 8 KV discharge without any effect to production operation

Static Control: Particulate-free ionizer option for removing static charge on incoming wafers

Vibration: Internal air table used for active vibration isolation


**Crawley, United Kingdom: 44-1293-594000**

**Hsinchu, Taiwan, R.O.C.: 886-3-582-9672**

**Portland, Oregon U.S.A.: 800-547-5746 or 503-641-4141**

**Puchheim, Germany: 49-89-149-0070**

**Seoul, Republic of Korea: 822-3473-9900**

**Shanghai, China: 86-21-6279-8300**

**Singapore: 65-64555-158**

**Tokyo, Japan: 81-3-3440-5081**

**Electro Scientific Industries, Inc.,** 13900 NW Science Park Dr, Portland, OR 97229-5497, 503-641-4141, fax 503-643-4873, **www.esi.com**



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