

Vectra™ LMC 9900

Laser Micro-Chemical System for Rapid Backside Circuit Access

FEI's Vectra LMC 9900 gives you high speed access to circuitry through the bulk silicon for faster and more efficient backside circuit editing. Used in conjunction with FEI's Vectra series of circuit edit products, it shortens the product introduction cycle for today's integrated circuits.

High Speed Access to Circuitry

Today's advanced chips have physical barriers that limit the access of focused ion beam (FIB) for circuit edit. The Vectra LMC 9900 gives you high speed access to the circuit by precisely micromachining the silicon substrate to within a few microns of the diffusion.

Established Laser Processes

Rapid silicon removal using a patented laser chemical process in use at leading integrated circuit manufacturers. The process is fast, clean and leaves a flat and smooth surface for FIB edits. Ultra-fast, high conductivity metal deposition allows edited parts to be tested at high speed.

- *Significantly reduces the time it takes for backside circuit editing*
- *Patented laser process provides clean, mirror-smooth trenches and a smooth, damage-free surface ideal for subsequent FIB repairs*
- *Fast, high conductivity metal deposition allows edited parts to be tested at high speed*
- *Deposit long metal lines across a chip in seconds with the Vectra LMC 9900*
- *Advanced GUI provides real-time video, high resolution imaging of etching and deposition*



Reduce Debug Lab Costs

The Vectra LMC 9900 uses the latest in high power diode pumped solid state (DPSS) laser technology to deliver high throughput with minimal facility requirements. Automation with endpointing, advanced fixturing and interface to CAD makes training on the Vectra LMC 9900 quick and effective. Shorten the time it takes for circuit editing and prototyping with FEI's Vectra LMC 9900.

Complete Life Cycle Support

The customer is our number one focus at FEI. Your investment in the Vectra LMC 9900 is fully supported by the industry leader in Structural Process Management™. Our global network of applications experts and service personnel is ready to assist, and we are continually working to add value to your purchase through an aggressive program of product enhancements, software upgrades, and training—all to assure that your Vectra LMC 9900 system will support your process management needs for years to come.

Specifications

User Interface

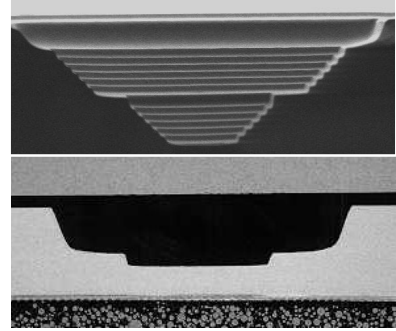
- Process Viewing** Real-time, high-magnification video image of the part during processing
- Part Alignment** Three-point alignment of part for navigation with optional, external CAD interface

Silicon Etching Process

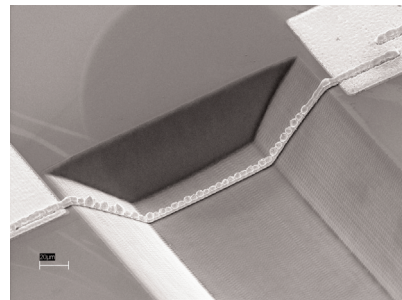
- Time to etch 500 x 500 μm trench to 200 μm depth** 10 minutes
- Etched surface smoothness** <40 nm RMS
- Etched surface flatness** +/- 1 μm
- Maximum etched feature size** 4 mm x 4 mm (standard)

Platinum Deposition Process

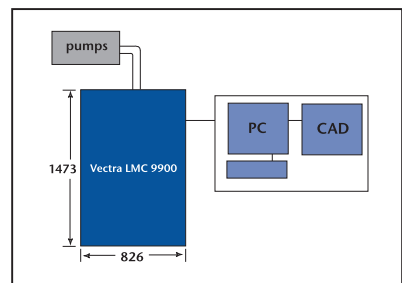
- Time to deposit 1 mm long** < 60 seconds
- Electrical Resistivity** < 30 micro-Ohm-cm
- Volume rate** > 150 μm³ per second
- Line width on silicon** 3 μm



Trenches etched in backside silicon using the Vectra LMC 9900. The resulting surface is smooth and damage-free, making it ideal for subsequent FIB repairs.



Deposit low resistance, inter-trench metal lines during backside repair in seconds with the Vectra LMC 9900 to save FIB time for high resolution work.



scale in mm
Vectra LMC 9900 footprint

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