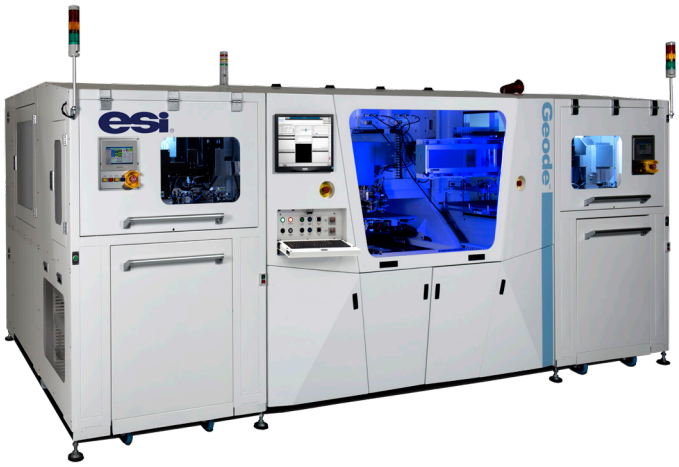
Geode™

CO_2 Via Drilling For HDI PCB Manufacturing & Integrated Circuit Packaging.

mks | ESI

Laser processing and engineering expertise that delivers breakthrough levels of productivity and yield.

ESI's most advanced HDI microvia drilling solution for precision processing of your HDI, SLP and ICP applications. The Geode™ laser drilling system combines a powerful CO2 laser with a set of control capabilities that leverage ESI's decades of laser-material interaction experience and application expertise to help you innovate and stay ahead.



Throughput

Hypersonix

Sound waves modify laser pulses to improve via quality and increase throughput.

AcceleDrill

Uses sound waves to distribute light to drill different via toolings without optics path adjustments (no downtime).

Accuracy

VDC

Via Density Compensation improves via diameter stability, accuracy and throughput.

AeroCore

Integrated structural air flow supports improved thermal equilibrium and simplified maintenance.

Footprint

LiteDesign

Compact and lightweight system architecture allows for more installation flexibility and reduces production footprint.

UpTime

Easy-access design improves serviceability and decreases maintenance and service downtime.

Geode™

mks | ESI

Dimensions (w Std. L/UL)	Measurement with doors closed (during system operation)
Width	400.0 cm (157.5 in)
Depth	185.6 cm (73.1 in)
Height (beacon light tower removed)	190.0 cm (74.9 in)
Height (beacon light tower installed)	223.0 cm (87.8 in)
Height (front door open)	250.4 cm (98.6 in)

Feature	Specification		
	Geode VS	Geode S	Geode L
Target Applications	SiP, FCCSP, FCGBA, mSAP	SLP, mSAP, HDI	HDI
Target Via Range*	28-75um	35-90um	60-200um
Total system Accuracy	+/- 8um |M| + 3σ	+/- 8um |M| + 3σ	+/- 10um |M| + 3σ
Scan Area**	18mm x 9mm	20mm x 20mm	32mm x 32mm
Scan Frequency (per head)	5200 points per second (500um pitch)		
Panel Size Range	16"x20" to 22.05"x24.5"		
Panel Thickness Range	0.5mm - 5mm		
Panel Processing	Dual-head two panel system		
Material Types	FR4, BT, ABF, PTFE, EMC, RCC, LCP, Ceramics, Glass		
Throughput	up to 9500 pps		
Peak Power	2.5kW		
Laser Pulse Frequency	Up to 6.5kHz		
Average Power	400W@6.5kHz		
Processing	CDD/Large Window/Conformal Mask/LTH		
Energy Monitoring	Real time pulse energy monitoring (programmable alarm settings)		
Panel Height Detection	Touchdown sensor (calibrated to align with camera focus)		
Available Load/Unload Automation	Standard, Panel Flipper with NG Function		
Automation Accuracy (panel to chuck)	500um		

*Target Via Ranges indicate range for best throughput performance. Actual range is larger.

**(ESI's Third Dynamics™ beam positioning technology)

Ask an Expert! For facilities guidelines, requirements or more information, please contact your local ESI representative or visit www.esi.com.

mks | ESI