

Geode™ G2



Next Generation CO₂ Via Drilling For HDI PCB
Manufacturing & Integrated Circuit Packaging.

mks | ESI

Step up to new levels of productivity and precision for processing a broad range of PCB and ICP materials.

The Geode™ G2 Laser Drilling System is the next generation of ESIs most advanced CO₂ solution for drilling HDI microvias. Offering higher productivity and greater flexibility in processing both PCB and ICP materials. Combining a powerful CO₂ laser with innovative HyperSonix™ technology for advanced energy control capabilities delivering breakthrough productivity, precision, and yield.



Throughput



Hypersonix

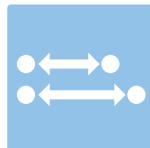
MKS expertise with acousto-optic device (AOD) enables sound waves to modify laser energy for optimum throughput.



AcceleDrill

Geode uses AODs for spatial energy distribution and beam steering to maximize applications flexibility.

Accuracy



VDC

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



BCT

The MKS beam characterization tool offers precision in-line laser/optical evaluation and control for improved calibration and via consistency.

Factory Flexibility



LiteDesign

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



Factory Automation

New factory automation capabilities enabled via SECS/GEM (GEM 200). Now available with customizable on-system data display features.

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, FCBGA, mSAP	SLP, mSAP, HDI	HDI, LEO
Target Via Range (range for best throughput performance)	25-75um	35-90um	60-200um
Max Via Size (conformal mask)	200um	300um	500um
Max Feature Size	9mm	20mm	32mm
Total system Accuracy	8um M + 4σ	8um M + 4σ	10um M + 4σ
Scan Area*	11mm x 5mm	19mm x 19mm	31mm x 31mm
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, PET		
Throughput	up to 11,400 pps		
Peak Power	2.5kW		
Laser Pulse Frequency	Up to 6.5kHz		
Average Power	400W@6.5kHz		
Processing	LDD/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) VS config includes Laser Height Sensor		
Available Load/Unload Automation	Standard, Standard with NG offset function, Panel Flipper with NG function		
Automation Accuracy (panel to chuck)	500um		

*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.