StratoSPHERE™ Plasma System

Features and Benefits

- Software controlled change-over minimizes transition from 200 mm to 300 mm wafers
- Production ready wafer handling supports backside or edge-grip transfer of wafer
- Modular design allows single or dual chamber system configuration
- Load ports support 200 mm open cassettes or 300 mm FOUP
- Unique end effector design can transfer a variety of wafer thicknesses and weights
- Chamber kits isolate plasma distribution directly above the wafer, maximizing uniformity and throughput

Superior Plasma Technology for High Throughput Wafer Processing

The StratoSPHERE™ system is designed for high-throughput processing of semiconductor wafers up to 300 mm (12 in.) in diameter. The patented plasma chamber design provides exceptional etch uniformity and process repeatability. Its three-axis symmetrical chamber ensures all areas of the wafer are treated uniformly, while tight control over all process parameters ensures highly repeatable results.

The universal architecture of the StratoSPHERE system accommodates a wide range of wafer sizes in the same systems, yielding unmatched production flexibility. Its small chamber volume and proprietary process control system provide short cycle times, with high machine autonomy.

High Throughput Processing

The StratoSPHERE system's integrated semiconductor wafer handling system provides rapid material transfer for a wide range of wafer sizes. Processing can be done from most types of wafer cassettes.

The patented chamber design and control architecture enables short plasma cycle times with very low overhead, ensuring that throughput for your application is maximized and cost of ownership is minimized.

Wafer Cleaning

- Remove contamination prior to wafer bumping
- Remove organic contamination
- Remove fluorine and other halogen contamination
- Remove metal and metal oxides
- Improve spun-on film adhesion
- Clean metallic bond pads

Wafer Etching

- Descum wafer of residual photoresist / BCB
- Pattern dielectric layers for redistribution
- Strip / etch photoresist
- Enhance adhesion of wafer applied materials
- Remove excess wafer applied mold / epoxy
- Enhance adhesion of gold solder bumps
- Destress wafer to reduce breakage
- Improve spun-on film adhesion
- Clean Aluminum bond pads

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Specifications: StratoSPHERE™ Plasma System

Enclosure Dimensions	**W x D x H – Footprint:**	1405W x 2615D x 1742H mm (55W x 103D x 69H in)
	Net Weight: **Process Module** **EFEM**	 480 kg (1058 lbs) 640 kg (1411 lbs)
	Effective Footprint – Clearances	Front – 153 mm (6 in), Back – 380mm (15 in), Left/Right – 775 mm (30.5 in)
Chamber	**Maximum Volume**	5.5 liters (338 in³)
	Chuck Configurations	200 mm and 300 mm substrate sizes
Electrodes	**Variable Electrode Configurations**	Power-Ground, Ground-Power, Power-Power
	Working Area	305W x 305D mm (12W x 12D in.)
RF Power	**Standard Wattage**	600 W
	Frequency	13.56 MHz
Gas Control	**Available Flow Volumes**	10, 25, 50, 100, 250 or 500 sccm
	Maximum Number of MFCs	4
Control & Interface	**Software Control**	EPC with PC-Based Touch Screen Interface
	Remote Interface	SMEMA, SECS/GEM
Vacuum Pump	**Standard Dry Pump**	16 cfm
	Optional Purged Dry Pump	16 cfm
	N2 Purged Pump Flow	2 slm
Facilities	**Power Supply**	220 VAC, 15A, 50/60 Hz, 1-Phase, 12 AWG, 3-Wire
	Process Gas Fitting Size & Type	6.35 mm (0.25 in.) OD Swagelok Tube
	Process Gas Purity	Lab or Electronic Grade
	Process Gas Pressure	0.69 bar (10 psig) min. to 1.03 bar (15 psig) max., regulated
	Purge Gas Fitting Size & Type	6.35 mm (0.25 in.) OD Swagelok Tube
	Purge Gas Purity	Lab or Electronic Grade N2/CDA
	Purge Gas Pressure	2 bar (30 psig) min. to 6.9 bar (100 psig) max., regulated
	Pneumatic Valves Fitting Size & Type	6.35 mm (0.25 in.) OD Swagelok Tube
	Pneumatic Gas Purity	CDA, Oil Free, Dewpoint ≤7°C (45°F), Particulate Size <5 µm
	Pneumatic Gas Pressure	3.45 bar (50 psig) min. to 6.89 bar (100 psig) max., regulated
	Exhaust	25.4 mm (1 in.) OD Pipe Flange
	Vacuum Source	-40 kPa (-5.8 psi)
Compliance	**SEMI**	S2/S8 (EH&S/Ergonomics)
	International	CE Marked
Ancillary Equipment	**Gas Generators**	Nitrogen, Hydrogen (Requires Additional Non-Optional Hardware)
	Facilities	Chiller, Scrubber

For more information, speak with your local representative or contact your regional office.

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