

6kW Microwave Plasma CVD System SDS6500X Flagship Diamond Deposition System for Large Scale R&D and Production

SDS6500X is an advanced deposition system mainly for R&D customers which can grow high-quality CVD diamond, such as single crystalline and polycrystalline diamond for several applications, and also can run long duration production process with high reliability and high-repeatability. The chamber features a clamshell lid for easy placement of substrates and easy cleaning.

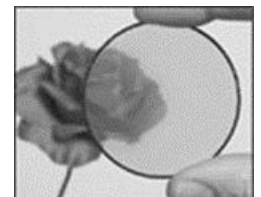
Features

- Water cooled metal chamber and stage with Z-axis (optional)
- Extremely stable process over low to high power density plasma
- Multi diagnostic ports for in-situ monitoring and diagnostics
- User-friendly GUI
- Computer controlled recipe-driven and manual mode operation



Applications

- Gem (Lab-grown diamond)
- Optical components
- Cutting tools
- Heat spreader
- Electrochemical electrodes
- Power devices and electronic components
- Electron emission devices
- Sensors, MEMS, etc.



4-inch substrate

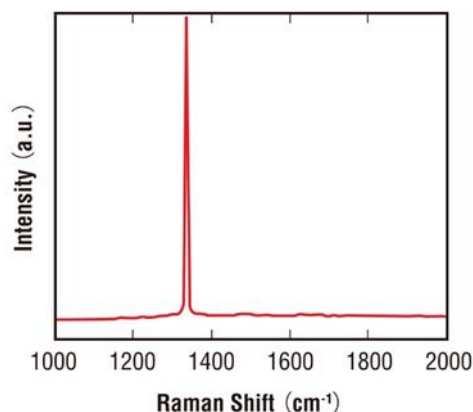
Main Specifications

● System

Microwave Power	6kW (2.45GHz)
Reactor Chamber Material	Aluminum
Stage Type	Water-cooled
Standard Substrate Holder	50mm (2inch) ϕ
Standard Gas Channel (up to 6 channels)	3 channels (H ₂ /CH ₄ /O ₂)
Operating Pressure Range	10-220Torr
Vacuum Leak Integrity (by He leak detector)	<1 x 10 ⁻⁹ Torr l/sec
Vacuum Pump Type (standard)	Rotary Vacuum Pump (27.5/33.0 m ³ /h (50/60Hz))
System Dimension (approx.)	Reactor Chamber: 900mm (W) x 860mm (D) x 1680mm(H) Control Rack: 570mm(W) x 850mm (D) x 1800mm (H)
System Weight (approx.)	Reactor Chamber: 300kg Control Rack: 400kg

Available Options

- MFC Kit (up to 6 channels)
- Optical Emission Spectrometer
- Dry Pump
- Dual wavelength IR pyrometer (475-1475°C)
- Disappearing Filament Optical Pyrometer (850-1750°C)
- Z-axis Moving Stage
- Auto Temperature Control Software
- TMP (Turbo Molecular Pump) Kit



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