

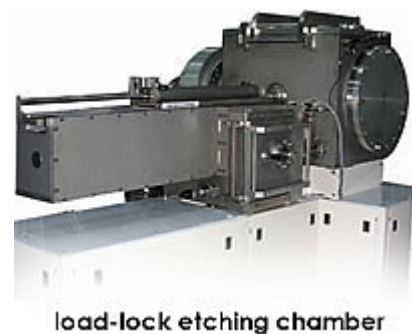
Multi-Chamber Coating System(CS-2103)

Our versatile Multi-Chamber Coating System combines the latest FCVA technology with Sputtering deposition and Ion Beam cleaning/etching, providing users with a cost-effective modular solution for various coating applications. The Multi-Chamber Coating System is equipped with Nanofilm's patented Filtered Cathodic Vacuum Arc (FCVA) thin film deposition source.

Optional modules include sputter deposition and Ion Beam cleaning/etching source, which allow for even greater freedom in process development using combined techniques. The functional flexibility provided by the modular design enables the user to optimize the coating process in combination with in-situ precleaning, sputtering and FCVA deposition to produce high quality coatings with excellent uniformity and repeatability.

Unique FCVA Features:

- Pure Plasma Beam Deposition
- Adjustable Energy Of Coating Species
- Off Plane Double Bend
 - Obtain particle free deposition
 - Improve plasma transport efficiency
- Innovative Anode/Cathode Design
 - Produce stable arc and plasma beam
- Computer Controlled Beam Scanning
 - Achieve large area uniformity
- Robust Target Grinding
 - Prolong production up-time
- Room Temperature Deposition
- Programmable Deposition Rate and Area
- Fully Automated Operation



System Features:

- Vacuum Load-Lock (Single Wafer or Multi- Wafer Capability)
- Substrate Rotation
- Large Coating Area up to Ø 200 mm
- Real Time Process Monitoring
- User-Friendly Interface
- User Defined Coating Recipe
- Data Log for Parameters and Events
- Multi-Source Process Chamber
 - FCVA Source
 - Ion Beam Source (optional)
 - Sputtering Source (optional)
- Dynamic Real Time Compensation (Optional)
 - Excellent process repeatability

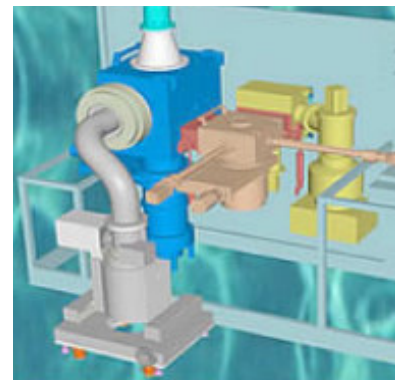


Multi-Chamber Coating System
Model CS-2103

Tri-Chamber Coating System:

Besides the system features above

- Shortened vacuum cycle time
- Shortened coating time
- Higher vacuum in process chamber (10-8torr)
- Dehydrating the Transition Chambers using Cryo Pump



Tri-Chamber Coating System

Performance

Parameter	FCVA	Sputtering	Ion Beam
Uniformity Coverage	< ±5% (over Ø200 mm)		
Repeatability	±10% (normal mode) ±5% (compensation mode)	±5%	±5%
Macro-Particle Level	< 1/cm ² (for particles > 0.3 µm)	NA	NA
Base Pressure	< 10 ⁻⁶ torr (process chamber)		
Load/Unload Transfer Time	< 5sec		
Vacuum Cycle Time	~ 3 min (< 10 ⁻⁴ torr)		
Substrate Rotation Speed	< 100 rpm		

Specification

Power Input	3 Phase, 30 kW
Cooling Water	30 l/min @ 0.3MPa (22 °C)
Compressed Gas	Dry N ₂ for venting, Ar for ion beam and sputtering
Pumping System	TP for load/unload chamber, TP or Cryo for Process Chamber

Ion Beam Source (optional)

Source Type	Kaufman w/ filament neutralizer
Process Gas	Ar, Ke or other inert gases
Ion Beam Energy	300 - 1000eV
Ion Beam Current	50 - 300 mA

Sputter Cathode (optional)

Maximum Sputtering Power	2kW - DC/RF
Cathode Voltage	100 - 1000 V
Discharge Current	1 - 10 A
Working Pressure	0.1 to 5.0x10 ⁻² torr

*Specifications and performance provided are subject to changes without prior notice.