

## NSC-4000 and NSC-3000 SPUTTER COATERS



NSC-4000



NSC-2000 (with PLC) and  
NSC-3000 (with PC)

### Description:

The Sputter Coater NSC 4000 PC controlled stand alone system with a water cooled rotating 8" substrate platen, NSC 3000 is a PLC controlled table top sputtering system. The stainless steel and aluminum chambers are available. The system is pumped with a turbomolecular pump down to a low  $10^{-6}$  torr pressure within 15-20 minutes. It can have up to three 2" or 3" planar magnetrons. The RF or DC power is applied to the individual magnetron through an RF switch followed with a manual RF tuner. A manual or stepper motor driven shutter which protects the unused magnetron during sputtering is available as an option. The magnetron and substrate distance is adjustable for adjustment of uniformity or deposition rate. This process is controlled through a PC and optional thickness monitor, makes it possible to run totally automatically. Magnetron targets are easily replaceable.

### Features:

- 70 or 200 l/sec turbomolecular pump backed with a mechanical or a dry pump
- Commercial reliable 300-600 W RF and 1KW DC power supplies
- Water cooled high reliability, commercial magnetrons for multiple film sputtering
- Adjustable magnetron to platen distance to vary deposition rate versus uniformity
- Water cooled or heated, and electrically isolated platen
- Rotating platen with off axis magnetrons for better film uniformity
- Substrate RF or DC bias
- RF plasma cleaning
- Door with view port for easy wafer load and unload
- Thickness monitor
- Compact, PC controlled
- Optional load lock and surface preparation station
- Reactive Sputtering capabilities
- Other custom features such as surface temperature monitoring

### Applications:

- Metal and dielectric coating of wafers, ceramics, glass blanks, and disk heads
- Optical coatings, and ITO Coatings
- Hard coatings with high temperature platens and Pulse DC power supplies
- Reactive sputtering with RF plasma discharge

### Models:

NSC-2000	PLC controlled table top multi-gun sputtering system
NSC-3000	PC controlled table top multi-gun sputtering system
NSC-4000	PC controlled, stand alone multi-gun sputtering system



Combinatorial Side Sputtering  
System with Vertical Platen

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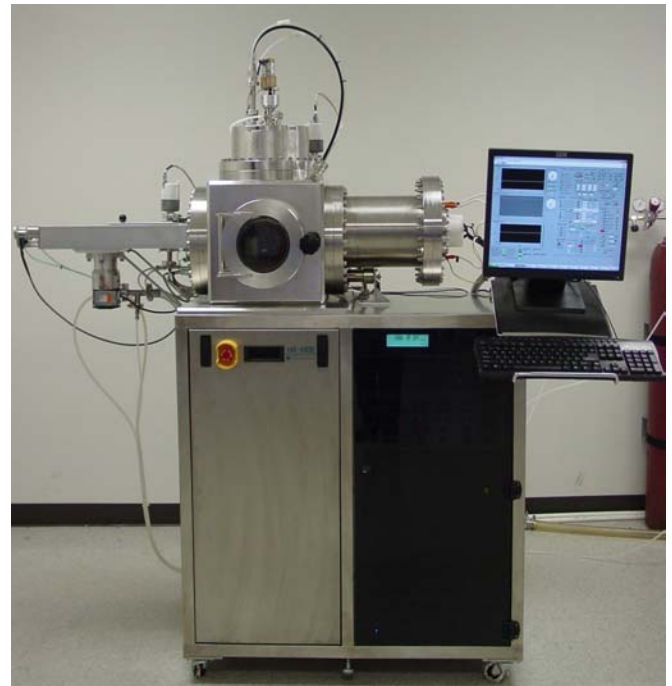
**NSC-3000 with Aluminum Chamber and Auto Load Lock**



**Sputtering/RIE Dual Chamber System**



**Eight Wafer Cassette Auto Load Un-Load Sputter Up System**



**Sputter Coater/Ion Beam Etch System w/Auto Load Unload**

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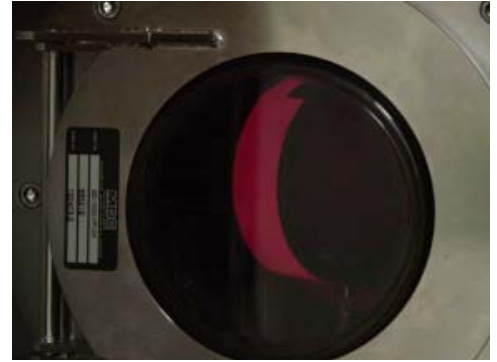
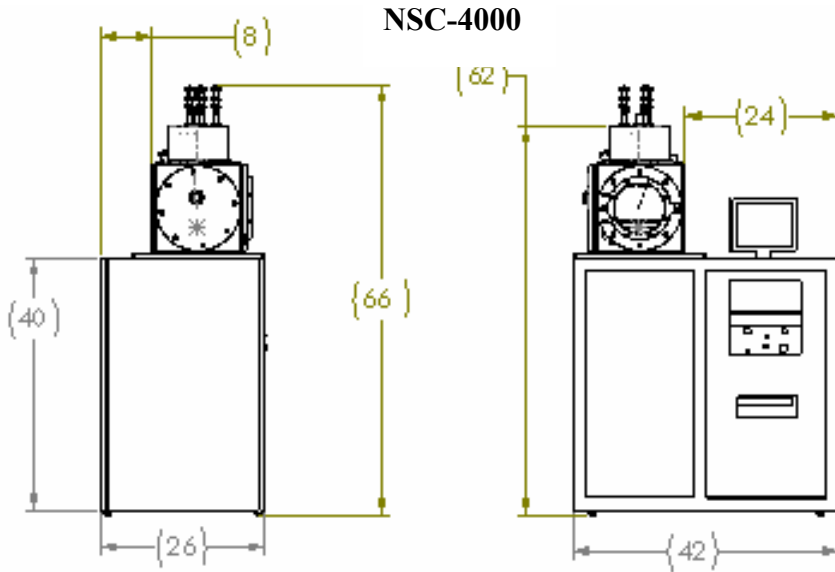
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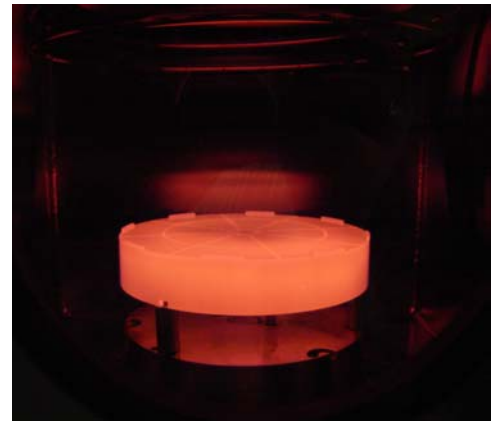
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# NSC-4000 and NSC-3000 SPUTTER COATERS



**Heated Vertical Platen**



**Heated Horizontal Platen (700C)**

**Options:**

- B Floating electrode for DC or RF biasing
- D Dielectric sputtering (RF)
- H Heated platen
- L Load lock (with Aluminum chamber)
- M Al chamber with wafer load unload door
- T Thickness monitor
- P Plasma cleaning
- R Reactive sputtering

**General Specifications**

	<b>NSC-3000</b>	<b>NSC-4000</b>
Equipment control	PC (Lab View)	PC (Lab View)
Chamber dimensions	12", 12" Bell Jar/Aluminum Chamber	14"x14"x14" Metal Chamber
Maximum platen size	8"	10"
Maximum number of magnetrons	3	3
Maximum magnetron diameter	3"	3"
Magnetron platen distance	8"	10"
Vacuum	5x10 <sup>-6</sup> torr w/70 l/sec , 5x10 <sup>-7</sup> torr w/200 l/sec turbo	Low 10 <sup>-7</sup> torr or 200 l/sec turbo/5 cfm mech.
Platen cooling	20 °C	20 °C
Maximum platen heating	300°C , 500°C, 700°C	300°C , 500°C, 700°C
DC power supply	1000V, 1 Amp max. with 1400V ignition	1000V, 1 Amp max. with 1400V ignition
RF power supply	300 to 600 W, 13.5 MHz	300 to 600 W, 13.5 MHz
DC bias	500 VDC or pulsed DC<100KHz	500 VDC or pulsed DC<100KHz
RF bias	300 W, 600W, 1KW,13.5 MHz	300 W, 600 W, 1KW, 13.5 MHz
Plasma clean	300W, 13.5 MHz	300W, 13.5MHz
Thickness monitor, multiple films	Up to 100 films, programmable	Up to 100 films, programmable

**Facilities Required:**

Power	110/220 V, 20 Amp/Phase, 50/60 Hz
Chilled water	15 °C, 7 liters/min
Process gasses	Ar, N <sub>2</sub> , pressure 15 psi
Exhaust	For mechanical pump

**Dimensions:**

	<b>NSC-4000</b>	<b>NSC-3000</b>
Height	66"	30"
Length	42"	26"
Width	26"	26"
Weight:	700lbs	250lbs

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