

**NanoStructured Coatings Co.**



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The Products & Specification

Nanostructured Coatings Co. is the owner and manufacturer of the Sputter & Vacuum Coaters.

## **NANOSTRUCTURED COATING CO.**

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## High Vacuum, Triple Magnetron Target Desk Sputter Coater

The DST3 is a desk top, triple target, turbo molecular vacuum pumped sputter coater, suitable for sputtering semiconductors, dielectrics, metals and metal oxides. An evaporation source for thermal evaporation source can also be mounted on device for thermal evaporation process.



The DST3 is equipped with a large chamber and a water circulation cooling system for each cathodes which make it suitable for sputtering; a single large diameter specimen; and co-sputtering; a small diameter specimen.

According to state of the cathodes, DST3 is available in two models:

- DST3 – A (Angled Cathodes):

The DST3-A is equipped with three angled cathodes with a common focal point. It can sputter from two or three targets simultaneously or independently to form alloys or multilayer deposition respectively.

- DST3 – S (Straight Cathodes):

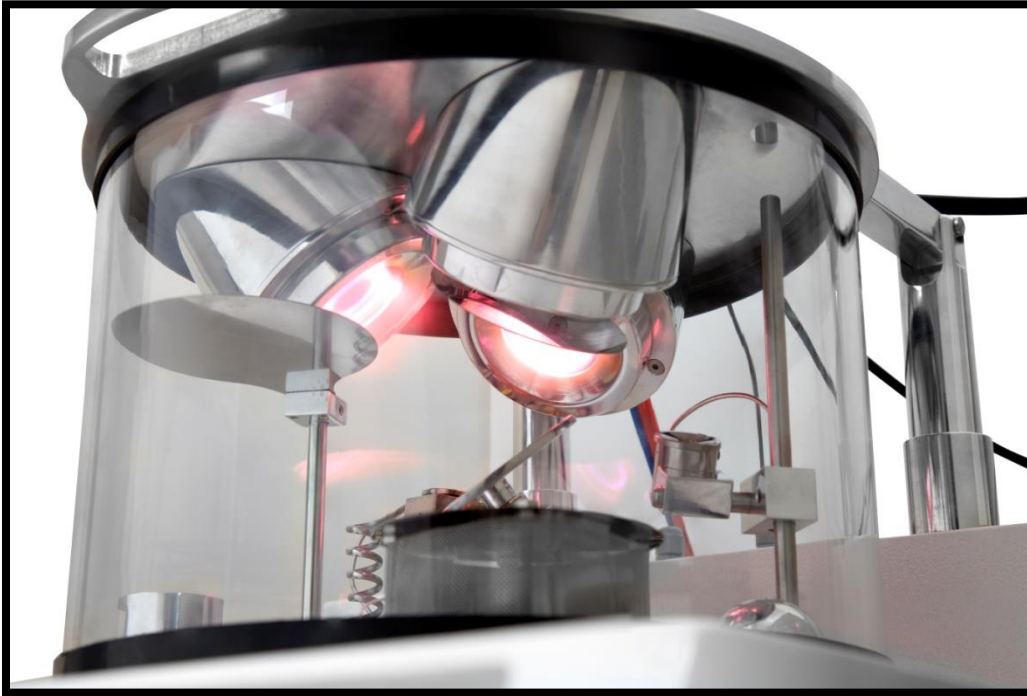
DST3-S with three straight cathodes is suitable for sputtering a single large specimen with diameter up to 20 Cm or several small specimens.

The magnetron desk sputter coater is equipped with RF and DC power supplies It can sputter semiconductors, dielectrics and metal (oxidizing & noble) targets.

The system is equipped with an easy-adjustable matching box, minimizing the reflected power in the RF sputtering.

For increasing film adhesion to the substrate and to improve the film structures, a 300 V, DC bias voltage can be applied to the substrate.

## Features



- High vacuum turbo pump 90l/s
- Diaphragm backing pump
- Full range vacuum gauge
- Three 2" water - cooled sputtering cathodes
- Large chamber suitable for large specimen depositions
- Target selection for multilayer thin films
- Co – sputtering to form alloy films
- Two Quartz crystal monitoring system for real time thickness measurement (1 nm precision)
- Manual or automatic Timed and Thickness deposition
- Intuitive touch screen to control the coating process and rapid data input
- User friendly software that can be updated via network
- Equipped with electronic shutter

- Equipped with rotary sample holder with the ability of tilting in direction of cathodes
- 500 °C substrate heater
- 300 V DC substrate bias voltages
- Unlimited sputtering time without breaking vacuum
- two-year warranty

## Clean Vacuum

The vacuum chamber is Cylindrical Pyrex with 300 mm OD and 200 mm H. The DST3 is fitted with an internally mounted 90L/s turbo molecular pump, backed by a diaphragm pump. It introduces clean vacuum without oil contamination which normally exists with ordinary diffusion pump.

## Touch Screen Control

DST3, is equipped with a 7" colored touch screen and full automatic control and data input that can be operated by even inexperienced users. The vacuum, current and deposition information can be observed as digital data or curves on the touch screen. Information of the last 300 coating can also be saved in the history page.

## Applications

- Metal, Semiconductor and Dielectric Films
- Nano & Microelectronic
- Solar cell applications
- Co-Sputtering processes
- Glad sputtering
- Optical components coating
- Thin film sensors
- Magnetic thin film devices
- Computer memory applications
- Fine grain structural deposition for SEM & FE-SEM sample preparation

## Specification

- Ultimate Vacuum: Less than  $2 \times 10^{-5}$  Torr

- Independent sputtering control rate for each cathode to produce fine grain structures
- Automatic control of sputtering power independent of pressure
- Automatic control of the cathode's temperatures to protect the life time of the magnets
- Data is rapidly registered by using fully automatic touch screen control
- Precision Mass Flow meter (MFC) for fine control of vacuum and pressure
- Records and plots coating parameters graphs.
- Transfers curves and deposition process data by a USB port to PC
- 0-1000 mA DC power supply
- Utilities: 220V- 50HZ- 16A
- Box Dimensions: 50 Cm H x 60 Cm W x 47 Cm D
- Shipping Weight:100kg (pump, rack and box)

## Options and Accessories

- Thermal evaporation insert
- High current power supply
- Quartz crystal
- Spare glass
- Sputtering targets
- Thermal source materials