

**NanoStructured Coatings Co.**



**Nanostructured Coatings Co.**  
The Products & Specification

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

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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.



The DST3 is equipped with a large chamber (300 mm diameter) and three 2" diameter water cooled cathodes which make it suitable for long time deposition.

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 auto adjustable matching box, minimizing the reflected power in the RF sputtering.

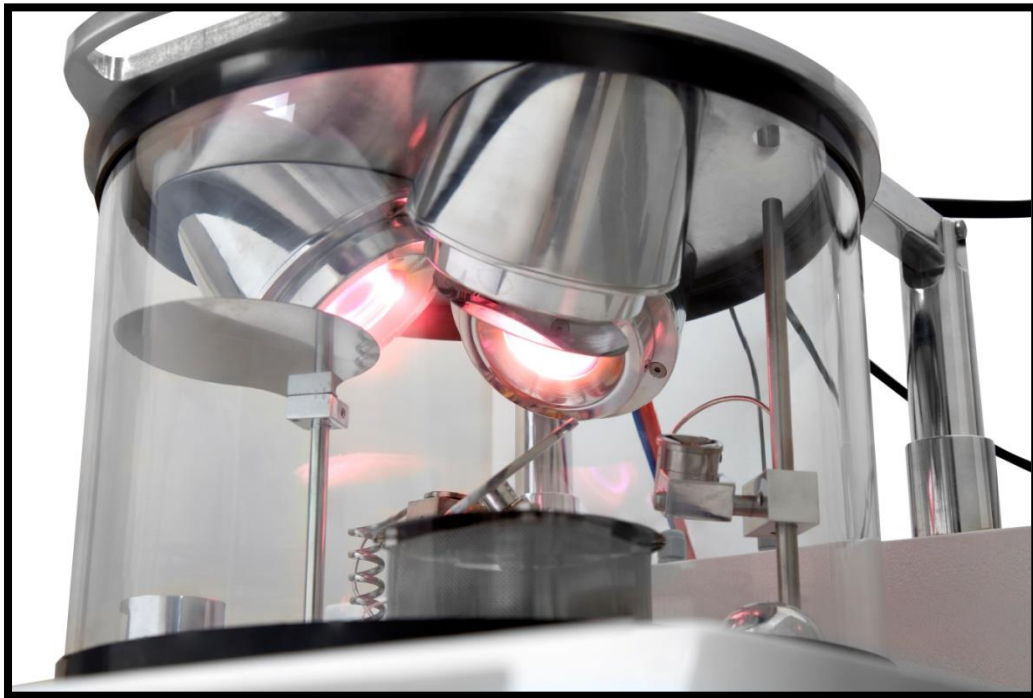
For increasing film adhesion to the substrate and to improve the film structures, a 300 V, DC bias voltage can be applied to the substrate (optional).

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 (optional) targets simultaneously or independently to form alloys or multilayer deposition respectively.

The maximum size of substrates in this model could be 3”.



- **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.



## Features

- **High vacuum turbo pump**

<b>Pumping Speed:</b>	<b>90 l/s</b>	<b>350 l/s</b>
<b>Ultimate Pressure:</b>	<b><math>7 \times 10^{-6}</math> Torr</b>	<b><math>7 \times 10^{-7}</math> Torr</b>

- **Two stage rotary vane backing pump**
- **Full range vacuum gauge**
- **Three 2" water - cooled sputtering cathodes**
- **Large chamber (300 mm diameter) 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
- Cathode selection motor
- Sample rotation, height and tilt adjustable
- Intuitive touch screen to control the coating process and rapid data input
- User friendly software that can be updated via network
- Equipped with three manual shutter
- Equipped with rotary sample holder with the ability of tilting in direction of cathodes
- Unlimited sputtering time without breaking vacuum
- 500 °C substrate heater (optional)
- 300 V DC substrate bias voltages (optional)
- 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 90 l/s turbo molecular pump, backed by 4 m<sup>3</sup>/h two stage rotary vane pump.

## Touch Screen Control

DST3, is equipped with a 7" colored touch screen and semi-automatic control and data input that can be operated by even inexperienced users. The vacuum 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
- Fine grain structural deposition for SEM & FE-SEM sample preparation

## Specification

- Independent sputtering control rate for each cathode to produce fine grain structures
- Automatic safe 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
- Two 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- 1200 V, 0-500 mA DC power supply
- Utilities: 220V-240V, 50/60HZ- 16A.
- Box Dimensions: 50 Cm H x 60 Cm W x 47 Cm D
- Shipping Weight:120kg (pump, rack and box)

## Options and Accessories

- Quartz crystal sensor.
- Spare glass chamber.
- Sputtering targets.
- Biasing voltage.
- Sealing gaskets.