HYBRID BENCHTOP PVD SYSTEM

nanoPVD-ST15A

Integrated magnetron sputtering and thermal evaporation within one compact research chamber.

4″	$<5\times10^{-7}$	3	500°C
MAX SUBSTRATE	BASE PRESSURE (MBAR)	SOURCES PER CHAMBER	SUBSTRATE HEATING

Sputtering and evaporation in one compact platform

The nanoPVD-ST15A combines magnetron sputtering and thermal evaporation within a single process chamber for benchtop deposition onto substrates up to 4″ (100 mm). Available sources are low-temperature evaporation (LTE), standard resistive (TE1) evaporation and 2″ magnetron sputtering — for organics, dielectrics and metals. Each chamber holds up to three sources of up to two types, and a full range of power supplies allows metals, insulators, dielectrics and organics to be deposited in the same system, even within the same run.

- Sputtering and thermal/LTE evaporation in one chamber
- Metals, insulators, dielectrics & organics — even in one run
- Recipe-driven operation via touchscreen HMI
- Up to 3 sources of up to 2 types
- RF/DC power supplies with SputterSwitch routing
- Compact benchtop footprint

Why choose the nanoPVD-ST15A

Faster multilayer development
Combine sputtering and evaporation locally to move quickly through hybrid stacks, interfaces and process changes.

Ease of use for mixed teams
Touchscreen control, saved recipes and a compact platform help different users work consistently.

Hybrid research flexibility
A combined sputtering and evaporation platform supports metals, insulators, electrodes, interfaces and device stacks.

Lower operational friction
Reduces the overhead of separate deposition tools while keeping capability close to the workflow.

Key features

Compact benchtop design
Hybrid PVD capability in a space-efficient format for labs, teaching spaces and cleanrooms.

Hybrid sputter + evaporation
Sputtering and evaporation sources combined in a single process chamber.

RF/DC magnetron sputtering
2″ water-cooled magnetrons with RF and/or DC supplies and SputterSwitch routing.

Thermal & LTE evaporation
TE1 resistive sources for metals and LTE sources for volatile organics.

High-vacuum performance
Turbomolecular pumping for low-contamination operation below 5×10^{-7} mbar.

Recipe-based touchscreen control
7″ HMI with fully automatic operation and multiple saved process recipes.

Typical configurations

Start with a proven configuration, then tailor source, gas, stage and monitoring options around your materials and target films.

Hybrid device stacks

Multilayer research combining sputtered and evaporated materials.

- Sputtering plus thermal/LTE
- Sequential layer development
- For exploratory device stacks

Sputter + metals evap.

Dielectric or metal sputtering with thermal metal evaporation.

- 1 RF magnetron + 2 TE sources
- Ar/O_2 pressure control, 500°C
- QCM rate/thickness sensor

Sputter + organics evap.

Metal sputtering combined with low-temperature organics.

- 2 DC magnetrons + SputterSwitch
- 1 LTE source, Ar process gas
- Z-shift, bi-shutter and QCM

Technical specifications

Parameter	Specification
System type	Hybrid benchtop PVD — sputtering + evaporation
Base pressure	<5×10^{-7} mbar (turbo-pumped)
Sputter sources	Configurable water-cooled magnetrons (2″)
Evaporation sources	TE1 + LTE sources
Hybrid capability	Sputter & evaporate in a single chamber
Sources per chamber	Up to 3 sources of up to 2 types
Reactive sputtering	Available via MFC gas control (by config)
Power supplies	RF and/or DC; SputterSwitch routing

Parameter	Specification
Max substrate size	4″ (100 mm)
Substrate heating	Up to 500°C optional
Substrate cooling	Not available
Substrate handling	Rotation, Z-shift & shutters (option)
Monitoring	QCM rate/thickness (option)
Process control	Industrial PLC + 7″ HMI touchscreen
Recipe control	Recipe save / load standard
Glovebox compatible	No
Warranty	2 years

Exact specifications depend on final configuration and are confirmed at quotation.

Selected publications citing the nanoPVD range

- Designing MoO_3 and hard-carbon architecture for stable Li-ion anodes — Northumbria University
- Enhanced photocurrent and quantum-dot emission from plasmonic nanoantennas — University of Cambridge
- Benign solution-processed Sb_2Se_3 nanowires for photovoltaics — Ben-Gurion University of the Negev
- Influence of DC sputtering power on the surface evolution of Ti thin films — University of Johannesburg
- Evolution of TiAlSi thin-film coatings under varying target power — Northumbria University
- Decoupled high-mobility graphene on Cu(111)/sapphire via CVD — Italian Institute of Technology