

The Smart Box™ System For Sputtering

The Super Series Smart Box.™

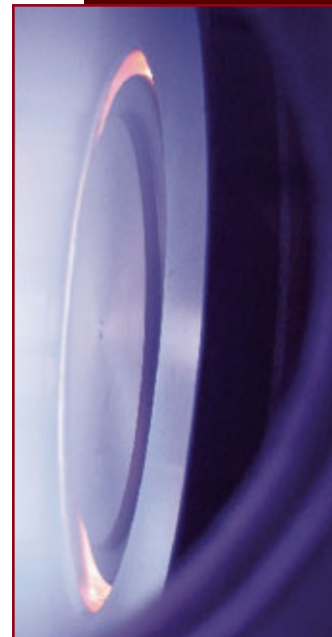
The Super series Smart Box™ is a production vacuum system platform that can be supplied configured for either sputtering or evaporation depending on the users specific requirements. With chamber diameters available from as small as 32" to as large as 80", a Smart Box™ can be designed to fit your production needs no matter how unique they are. Some of the benefits that are available with the sputter configuration for the Smart Box™ are:

- Production-proven cathodes with flexible orientation, up, down, side or angled to meet your needs
- Co-deposition available for compound material formation
- Multiple power supplies RF, DC, Pulsed DC tailored to your production requirements
- Concurrent dual-side deposition available for increased throughput
- Substrate etch to promote excellent film adhesion and better contact resistance
- Substrate heat to 400°C and bias for cleaner substrates and denser more homogenous films
- Electro-polished chamber, with in-situ heater and high speed pumping to rapidly attain lower cleaner partial pressure
- Up stream/down stream gas control for more repeatable reactive films
- Flexible fixturing or pallets to meet your substrate requirements
- Flexible user friendly software tailored to meet your needs



Smart Box™

Four target side sputtering system.
Currently in a leading biomedical manufacturing facility. Used for the fabrication of biometric detectors.



T H I N F I L M D E P O S I T I O N S Y S T E M S



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T-M Vacuum Products, Inc.

The Super Series Smart Box™ for Sputtering.

With over 40 years of experience TM Vacuum Products can fulfil almost any thin film deposition requirement. The Super Series Smart Box™ is designed to meet today's batch thin film production requirements. With chamber sizes from as small as 32" to as large as 80", a Smart Box™ can provide an economical solution to your specific production requirement. The Smart Box™ is delivered configured to meet the intended application, however modifications to the source to substrate distance and cathode orientation can be made in the field with minimal factory assistance. The Smart Box™ is designed to meet your sputtering needs both now and in the future.

Features and Options

Chamber size	Diameters from 32-80", electro-polished SS
Chamber cooling	Double-wall, full water jacket standard
Pumping	Cryopump standard Turbomolecular pump or diffusion pump and LN2 trap or cryogenic water pump available
Base vacuum	Below 3×10^{-7} Torr standard
Fixturing	Rotating table or drum standard, custom fixturing available
Deposition modes	Magnetron Sputtering, evaporation, ion beam sputtering or laser ablation alone or in combination available
Cathodes	Circular or rectangular, diode or magnetron – size, quantity, and orientation (up, down or side) are application and/or chamber size specific
Cathode power	RF, DC or Pulsed DC available
Substrates	Capacity system and substrate dependent consult factory
Chamber heat	Chamber bake-out option available
Substrate heat	Front side or back side to 400°C available
Etch and bias	RF etch/bias or DC bias available
Controls	Full computer control with graphic interface with data logging and redundant manual controls

Typical System Layout

