www.hhvltd.com

A VACUUM SCIENCE AND TECHNOLOGY COMPANY

MAGNETRON SPUTTERING CATHODES

EXPERIENCE BASED COST EFFECTIVE SOLUTIONS FOR THIN FILM DEPOSITION

With FIVE decades of expertise in thin film technology, HHV has been demonstrating the performance of its magnetron sputtering cathodes incorporating them into the custom designed thin film deposition systems at its own multi-faceted R&D centre.

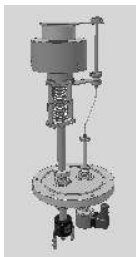
THIN FILM DEPOSITION TECHNOLOGY

HHV is an inimitable source for the semi-conductor, solar PV and opto-electronic industries to adaptthe latest technology for producing quality products to be in the global competitive market. Led by a team of scientists, design engineers and skilled optical specialists, HHV has focused on specific customer requirements/applications and has been delivering products in compliance with international standards.

MAGNETRON SPUTTERING CATHODES

HHV produces efficient & cost effective magnetron sputtering cathodes for:
- Circular magnetron
- Rectangular magnetron

These magnetron sputtering cathodes are designed to;
- Ensure longer target life
- Deliver substantially longer utilization and
- Are easy to integrate with the deposition tools



A TECHNOLOGY DEMONSTRATION CENTRE

HHV has a well established thin film deposition R&D centre to test and demonstrate the performance of developed gadgetries. It exhibits the best practices for integrating the gadgetries for more efficient sputtering processes. This helps the customer to develop quality products to be a leader in the modern technological competitive world.

PLANAR RECTANGULAR MAGNETRON SPUTTERING CATHODES

HHV manufactures a range of planar rectangular magnetron designed to be used in production and research environment to deposit on small / large area substrates to achieve high through put.
HHV offers water cooled magnetrons with a magnet isolated from water to ensure longer life.

General Features:
- Turbulent water flow in water cooled magnetron cathodes
- Fully-encased Nd-Fe-B rare earth magnets
- Power-supply compatibility
- External mounting
- Operating at very low pressure and exceptionally high power
- Perfect balance of uniformity, utilization, and rate for any application

Rectangular magnetron with target

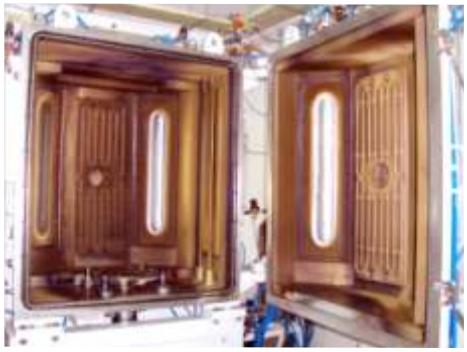
Specifications:

Target

- 90mm width, length from 300mm to 2000mm
- 120mm width, length from 400mm to 2000mm
- For more than 2.0 meter length a customized design will be offered
- Utilization 60- 70%

Applications:

- Automotive
- Aerospace
- Decorative coatings
- Optical coatings
- Semiconductor and Microelectronics
- Solar
- Bio-medical implants



Rectangular magnetron in PVD system

PLANAR CIRCULAR MAGNETRON SPUTTERING CATHODES

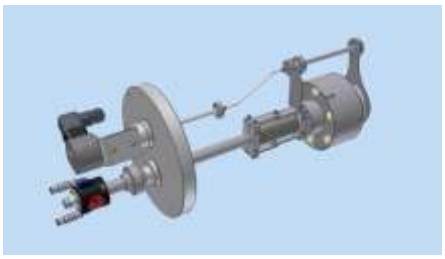
Circular sputter cathodes are available sizes form 2" to 8". These magnetrons can be configured any required configuration and is compatible with virtually any target materials. These cathodes sources are designed to operate with RF, Mid-frequency, DC and Pulsed-DC power sources.

HHV offers water cooled magnetrons with a magnet isolated from water to ensure longer life of the magnet.

General Features:

- High power Nd-Fe-B magnets
- Easy to change target
- Low out gassing rate for pressure range up to ~10^{-7} mbar
- Operates from 10^{-4} mbar to 10^{-1} mbar
- Efficient sputter target utilization: better than 35%
- Excellent thin film uniformity and deposition rates under appropriate conditions

Swivel magnetron



Optional:

- Unique adjustable shied design, with isolation chimneys available
- Motorized/Pneumatic shutter assembly
- User-adjustable (Motorized / Manual) tilt angle (±45°) / as well as distance with respect to the plane of the substrate as per requirement.

Specifiactions:

Target Size	Head Diameter	Thickness	Weight	Operating Pressure
2	86.5 mm	2-10 mm	Approx 3.0 kg	10^{-4} - 10^{-1} mbar
3	119 mm	2-10 mm	Approx 4.2 kg	10^{-4} - 10^{-1} mbar
4	150 mm	2-10 mm	Approx 5.5 kg	10^{-4} - 10^{-1} mbar

HHV Ltd
Unit 2, Stanley Business Centre, Kelvin Way, Crawley, West Sussex,
RH10 9SE, United Kingdom. Tel +44 (0) 1293 611898. Fax +44 (0) 1293 512277.
Email: info@hhvltd.com www.hhvltd.com