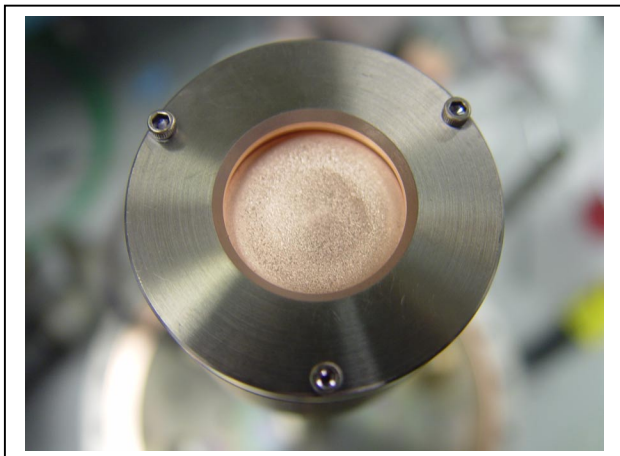


Titan Planar Magnetron 1-inch Sputter Source

PVD Products offers a full line of planar magnetron sputter sources for your specific sputter deposition requirements. These magnetron sources are based on a field proven design-providing ease of use in a small volume with excellent target utilization and deposited film uniformity. Our 1-inch HV magnetrons utilize assemblies that minimize the number of water-to-vacuum interfaces typically found in other sources. The Nd-Fe-B magnets are isolated from the water and are easily field replaceable. The sources operate with both RF and DC power supplies. Standard 1-inch magnetron designs come mounted on a 0.75" diameter shaft. Custom flanges with multiple sources are also available. Integral shutters, tilt mechanisms, and Z-stages are all available as options.



**Photograph of three PVD Products
1-inch Magnetron Sputter sources.**



**Photograph of a PVD Products 1-inch
Magnetron sputter source with a
copper target.**

Titan Magnetron Source Features

- Operates with RF, pulsed DC, and DC power supplies
- No target bonding required
- Nd-Fe-B magnets
- Magnets isolated from water
- Can operate as a diode sputter source
- Axial and right angle mounts available
- Operates from ~1 mTorr to 1 Torr
- Bakeable to 200°C
- Standard 3/4" OD Shaft
- Simple Target Changes
- 1/8" (3 mm) thick targets as standard
- N, HN, or UHF connectors available
- Small diameter head

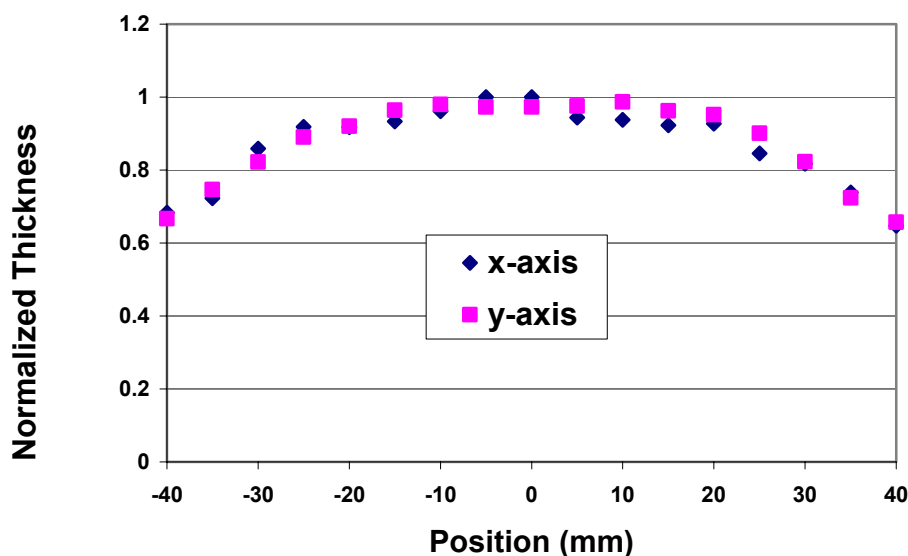
Standard Titan Magnetron Specifications: 1" HV Sputter Source

Target Size	1 ± 0.02" (25.4 mm)
Head Diameter	1.82" (46.3 mm)
Target Thickness	0.125" (3 mm) maximum thickness
Maximum DC Power	250 Watts
Maximum RF Power	100 Watts
Electrical Connection	HN Connector (others available)
Cathode Voltage	200 – 1,000 Volts
Cathode Current	3 amps maximum
Operating Pressure Range	1 mTorr to 1 Torr
Water Flow Requirements	½ GPM, Filtered
Water Hook Up	Supplied with ¼" quick disconnects
Weight	3 lbs. (1.5 kg)
Configurations	Axial or Right Angle

1-inch Magnetron Source Options:

Manual or in-situ tilt assemblies, Manual or motorized Z-stage, Localized Gas Injection
Custom flange mounts with manual or pneumatic shutter assemblies.

1-inch HV Magnetron Film Thickness Uniformity



Normalized Film Thickness obtained depositing a ~200-nm thick film with a PVD HV Magnetron with a 1-inch Cu target. The film was deposited onto an oxidized **non-rotating** Si wafer using 150 Watts DC in 10 mTorr (Ar), with a target-to-substrate distance of 3-inches (75-mm). Measurements were made via a 4-point probe in two mutually perpendicular directions (X, Y) across the wafer surface.