

MATERIALS VACUUM DEPOSITION

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- Magnetrons M 02

Magnetrons

CIRCULAR MAGNETRONS

Our circular magnetrons have rapidly become recognized as the new standard of the sputtering industry. In addition to their advanced features such as profiled magnets, turbulent water flow, and solid stainless steel construction, they offer other performance efficiencies as well.

VERSATILE, COMPACT DESIGN

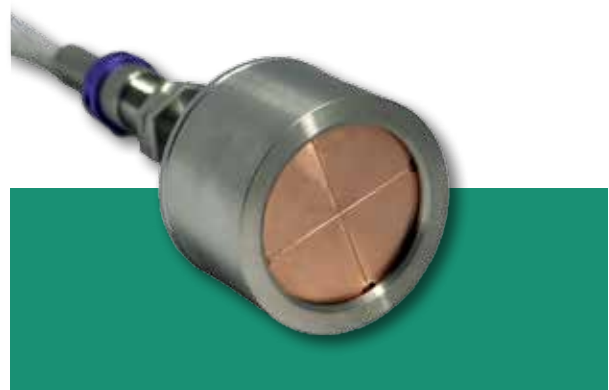
Their ultra-compact design makes them ideal for virtually any new or retrofit application – including the most complex multiple-cathode deposition clusters or the smallest vacuum chambers. And they can easily be configured for either internal or external mounts.

TOTAL POWER COMPATIBILITY

Their low-impedance heads provide RF, DC, mid-frequency DC, pulsed DC, and microwave power compatibility.

STANDARD FITTINGS

We use ISO NW standard fittings, as well as ConFlat® metal seal flanges. All utilities are maintained at atmosphere, and are accessed through standard O-ring compression fittings for ease of installation in any vacuum system.



FULL RANGE OF SIZES

Our circular magnetron sources are available in 1", 2", 3", 4", 5", 6", 8", 10", 12", and 16" target sizes.

QUICK, EASY TARGET CHANGE

The patented threaded clamp and anode shield allow you to change targets (sizes 1" to 6") quickly and easily without specialized tools, and their built-in adjustability lets you fit targets of varying thickness without resorting to spacing devices. Standard targets clamping also available.

LOWER PRESSURE, HIGHER POWER

Our Magnetrons can operate at extremely low pressure – down to the 10^{-4} Torr range – and our directly cooled designs can deliver power densities up to 39 W/cm².

HIGHER RATES AND PERFORMANCE

This means our magnetrons can coat a greater area for their cathode size than other magnetrons. So you can maximize both your coating zone and your target utilization without the kind of trade-off in rate that other magnetrons force you to make.

RECOMMENDED POWER PER TARGET SIZE

	DC	RF
1"	500 W	200 W
2"	1 kW	300 W
3"	1 kW	300 W
4"	2 kW	600 W



GREATER TARGET UTILIZATION

Yet these same advanced magnetrons can give you target utilization up to 50%.

GREATER UNIFORMITY

And, thanks to the patented profiled magnets, our magnetrons also deliver much greater uniformity of deposition – routinely in the ± 3 to 5% range.

OPTIONS

- Manual or pneumatic shutter
- Right angle
- $\pm 45^\circ$ tilt
- Balanced, unbalanced
- Gas injection
- Cheminey
- High strength magnet array
- In-situ variable magnetic field



CYLINDRICAL MAGNETRONS

We have developed a rotating cylindrical magnetron assembly that is compact, economical, and lightweight. By utilizing the patented technology we provide low flux deposition profile, +85% target utilization, and power savings up to 20% compared to conventional cylindrical magnetrons.

Customized for Flat Panel Display, Web Coating and Solar Cell applications.

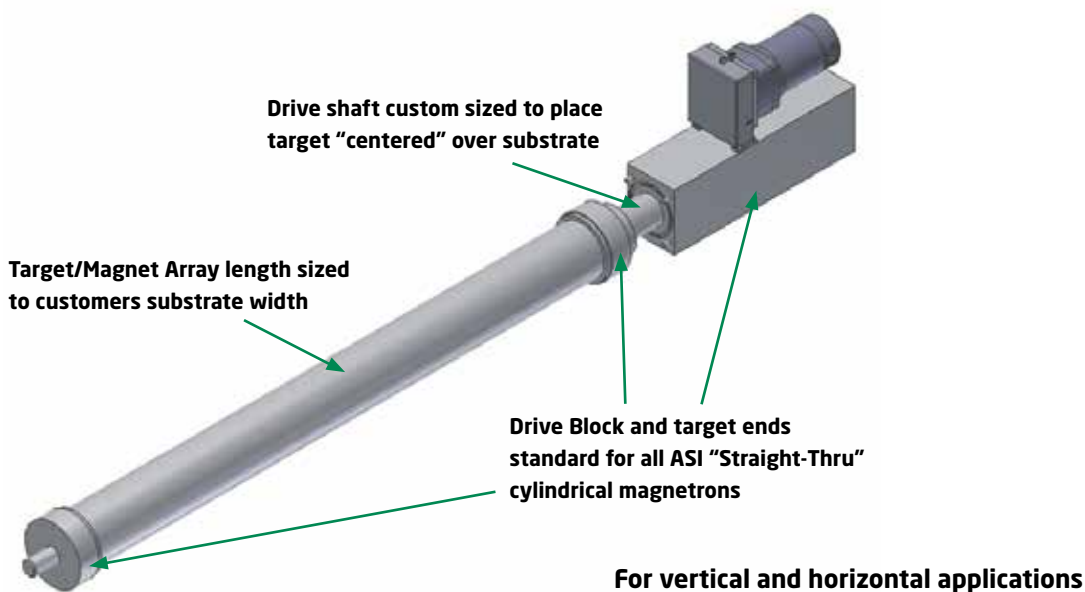
Complete assemblies are available from 3" - 6" (76.2 mm - 152.4 mm) in diameter and up to 4 m in length.

Other features include:

- High Magnetic Field provides a low operating voltage for reduced power requirements.
- An optimized electrical transfer design to deliver high power while avoiding arcing as well as reduced brush wear and debris.
- A KF quick connect water-to-vacuum seal for quick target changes, shorter down times and increased production.
- A universal and cost effective magnet design with customized turnarounds.

Lightweight, easily-serviced product with off-the-shelf components for low-cost, long-term investment and reliability.

"THROUGH THE WALL" STRAIGHT-THRU CYLINDRICAL MAGNETRON SOLUTIONS



RECTANGULAR MAGNETRONS

As more and more industries discover the speed, controllability, and bottom-line benefits of magnetron sputtering, production professionals are reaching out for ways to apply these advantages to larger, faster manufacturing processes.

BROADER SOLUTIONS

For many, particularly those who have to coat broad physical substrates or achieve extremely high throughput, rectangular magnetrons offer the perfect solution.

GROWING APPLICATIONS

That's why the use of rectangular magnetrons is growing so rapidly in industries such as:

- Aerospace
- Architectural glass
- Authentication
- Automotive
- Decorative coating
- Defense
- Flat panel displays
- Magnetic storage media
- Medical/Dental
- Optical
- Packaging
- Semiconductors/Microelectronics
- Solar
- Wear-resistant coating





neyco

30 avenue de la Paix
92170 Vanves - France
Tel: +33(0)1 41 90 50 50
Fax: +33(0)1 41 90 50 51

www.neyco.fr



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