Planar vs. Rotary Cathode Selection

If you answer “Yes” to any of the following questions, you may want to consider rotary cathodes. Rotary cathodes can be more expensive up front than planar cathodes, but they payback several times over in overall target material cost savings as well as increased up-time and improved film quality.

Do you use expensive target materials?

Typical material utilization from planar cathodes is 35%-40%. Even when reclaim is possible, it is expensive and time consuming. Most rotary cathodes achieve material utilization of 80%-90% or more. Fully optimized systems can have 95% utilization.

Are your runs cut short due to particle defects?

Particulates in the coating are caused by many sources. Two of the most common are debris from the target and debris from the coating chamber. Rotary cathodes reduce particulates from both sources by eliminating coating buildup on the target due to redeposition. Additionally, the rotary cathodes’ narrow deposition profile deposits more coating on the substrate and less on the chamber walls, reducing flaking from these sources.

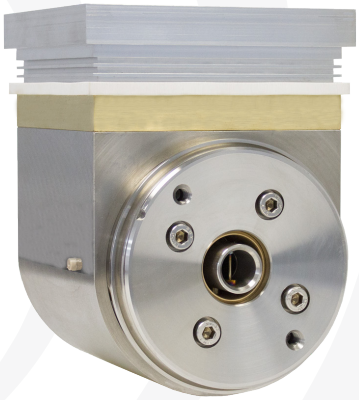
Are your runs cut short due to worn-out targets?

If your coating campaigns end because you have burned through your target, consider the additional material available on a rotary target. Not only does a 6” diameter target have 50% more material available versus a 12” wide planar, but with more than twice the utilization, your campaigns can be up to three times longer.

Do you need to run insulating materials?

Redeposition and nodule growth can cause significant process issues even for moderately conductive materials like Al:Si, Al:Zn, and ITO. The rotary target substantially reduces arcing from nodule growth versus a planar, providing a smoother running target and eliminating burn-in cycles.

Sputtering Components externally-mounted end block.



Sputtering Components internally-mounted end block.

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