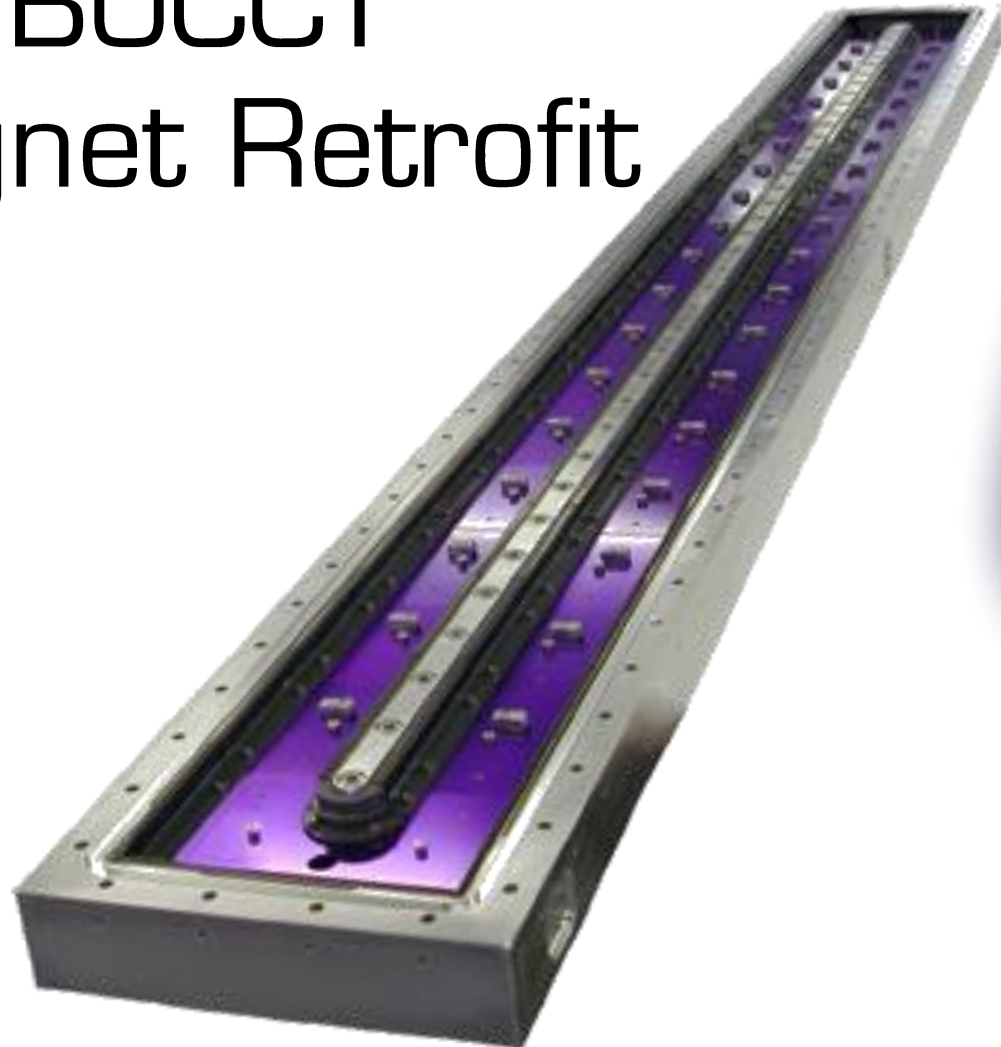


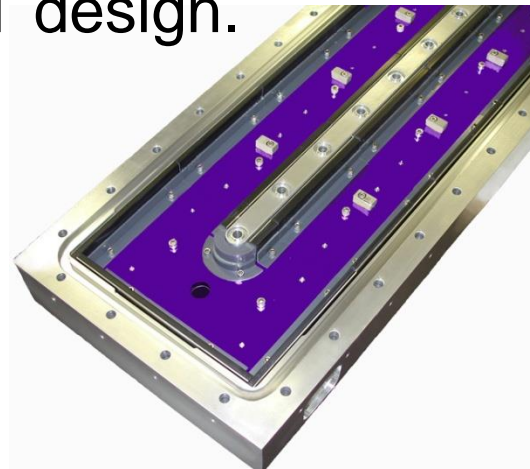
BOCCT Magnet Retrofit





Introduction

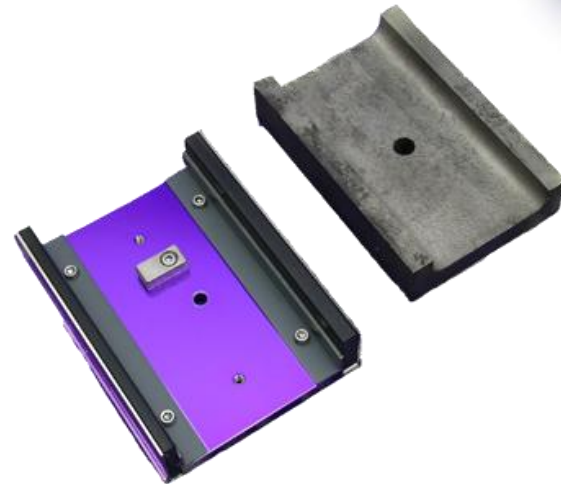
- High performance magnet retrofit assembly for the BOCCT- HRC magnetron assemblies.
- Optimized to dramatically improve target utilization over the existing BOCCT design.





Construction

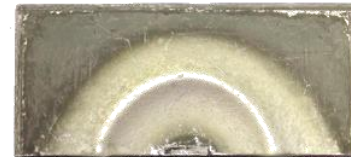
- Modular 6061 Aluminum magnet mounting plate.
- Profiled, high strength, rare earth, NdFeB magnet assembly.
- Water blocks create turbulent water flow in the cathode body.





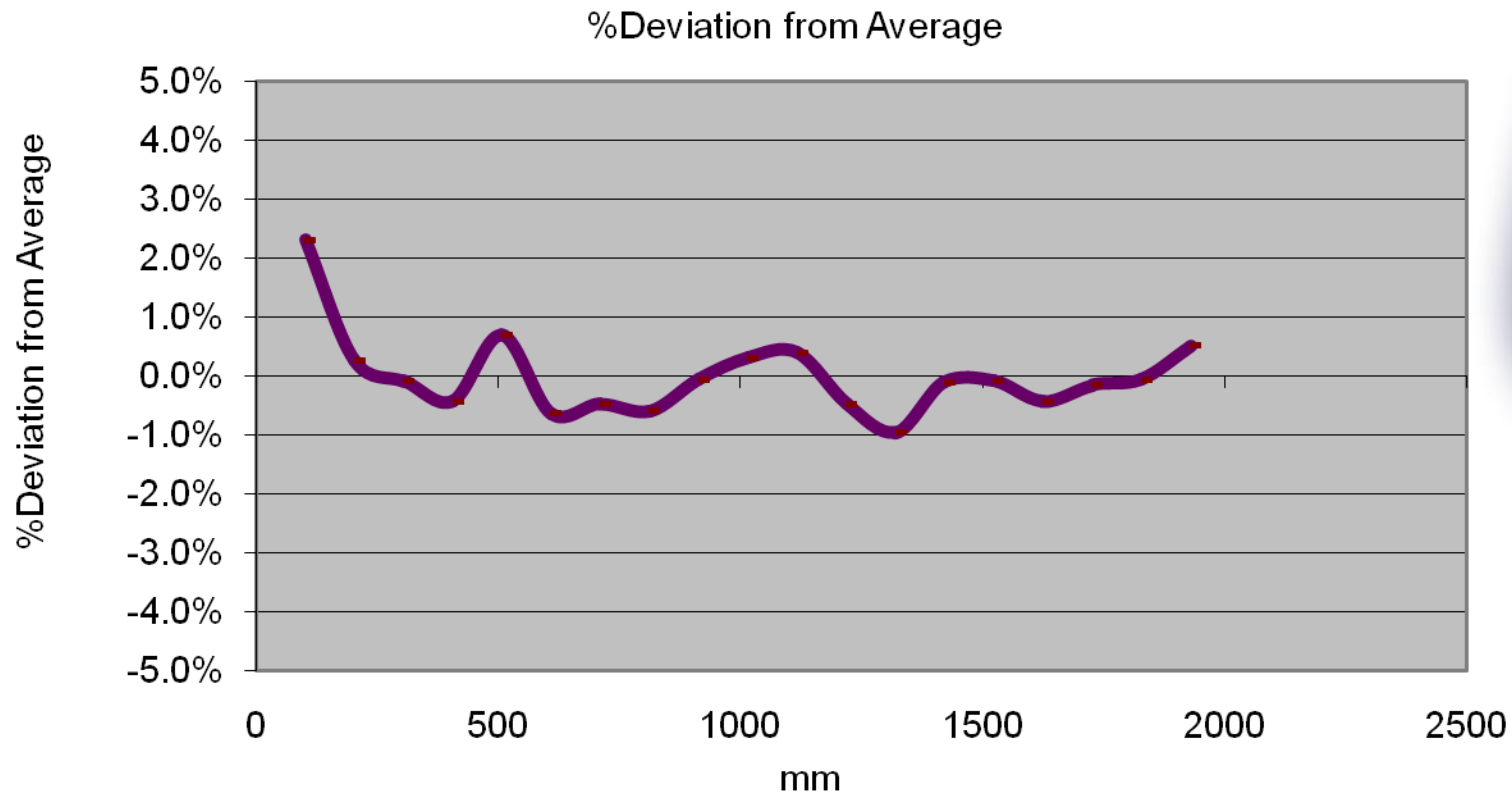
Advantages

- Modular design allows for fast and easy installation.
- Magnetically modeled to operate in existing process parameters.
- Magnetic field enhanced to allow sputtering of thicker targets.
- 43%+ target utilization yields lower material costs and downtime.





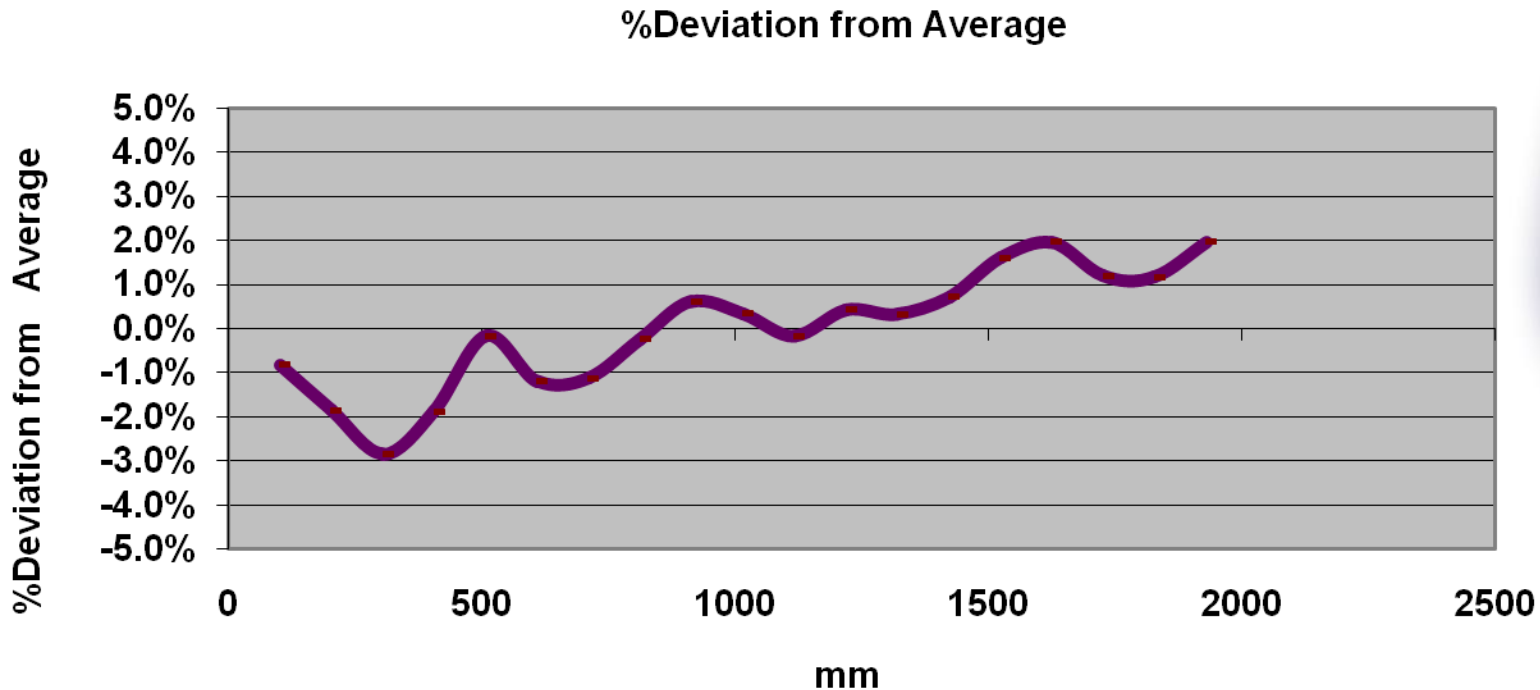
Uniformity Data



Better than +/-5%. Typically in the +/-3% range



Uniformity Data



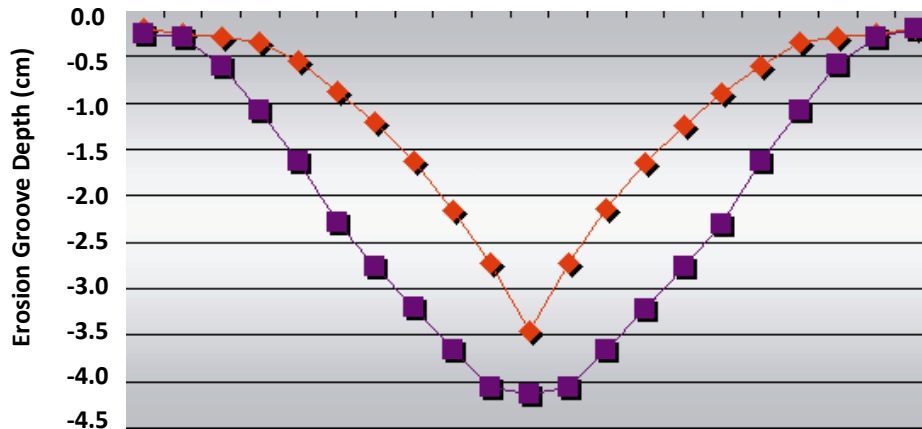
Actual uniformity shown above is +/-2.4%



Target Erosion Profile

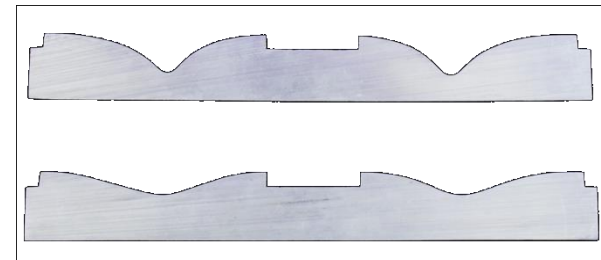
Silver Target Erosion Groove Profiles

Distance From Center of Erosion Groove (cm)



Original Magnetron using 3.50cm thick Ag (~22% Target Utilization)

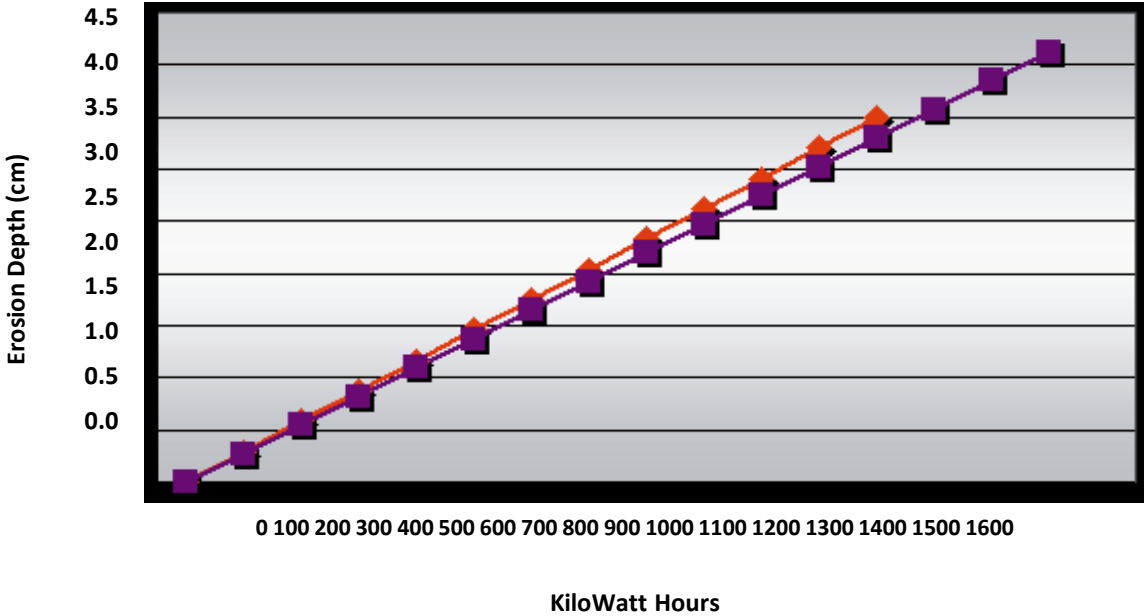
Angstrom Sciences using 4.13cm thick Ag (~43% Target Utilization)





Target Life Comparison

Silver Target Life



Original Magnetron using 3.5cm thick Ag target (~1200kW Hours)
Angstrom Sciences using 4.1cm thick Ag target (~1500kW Hours)



Conclusion

- BOCCT- HRC magnet retrofits provide a fast, easy, and cost effective improvement to the original BOCCT design.
- The retrofit has been proven in the field to improve target utilization up to 43%+ and operate at existing process parameters.
- Angstrom Sciences fully guarantees performance and offers a 2 year warranty.