



CIRCULAR FFE MAGNETRON

Genco full face erosion (FFE) magnetics combine ultra-uniform films with clean target erosion by a rotational scanning of the plasma over the target surface.

KEY FEATURES

1. High target use, clean target, fewer layer defects
2. Single magnetic pack for sputtering of any material
3. Uniformity adjustments by array offset and varying rotational speed
4. Magnetic material and RF sputtering options
5. Pre-delivery tuning to achieve non-standard specifications

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CIRCULAR FFE

APPLICATIONS

- R&D (3"-6" target diameter)
- Small scale production
- Semiconductor (from 8")
- Large area coating (from 10")



Genco FFE75



Genco FFE100



Genco FFE150



Genco FFE300



Genco FFE430

Two families of the Genco circular FFE are available, covering target size ranges of 75-200mm (3-8") and 250-430mm (10-17"). The unique design for target diameters of 75-200mm includes options of internal and external mount, and is ideally suited to R&D and optics.

For larger substrates, Genco offer the circular FFE in target diameters of 250mm (10") and above, delivering superior uniformity control at low target-to-substrate (T-S) separations – typically 50-70mm. The low T-S separation ensures a high rate of material transfer from the target to the substrate for rapid wafer metallizing.

The range of FFE magnetrons overcome many of the traditional difficulties experienced when performing high-rate deposition in various power modes and ensure higher quality films as the clean target surface reduces defects caused by micro-arcing and dust from re-deposit areas on the target.

HIGH TARGET USAGE

Target use is high (>50% across the range, even in reactive mode), and is balanced with the need to create a specific erosion profile to achieve good uniformity. Target use of up to 70% can be achieved from a 6" circular FFE magnetron (FFE150).



UNIFORMITY

A high deposition rate is delivered through efficient water cooling and a very small T-S separation that reduces coating losses. High rates and target use are achieved in combination with high uniformity – typically $\pm 3\%$.

Working at low T-S requires a magnetic pack design that creates a target erosion to impose a uniformity coating material flux on the substrate. Adjustments for process conditions and material changes can be made by adjusting the magnetic array offset or rotational speed. There is low uniformity drift with target life which can be combated with speed adjustments.

The 12" circular FFE magnetron (FFE300) can deposit layers with 1-3% uniformity onto 200mm wafers, and from a 17" target diameter (FFE430), a similar uniformity is achievable when depositing onto 300mm wafers.

FURTHER INFORMATION

Contact: sales@genco.com or visit www.genco.com/circular-ffe

