



scia Multi 680

MULTILAYER COATINGS FOR LARGE SUBSTRATES

Features & Benefits

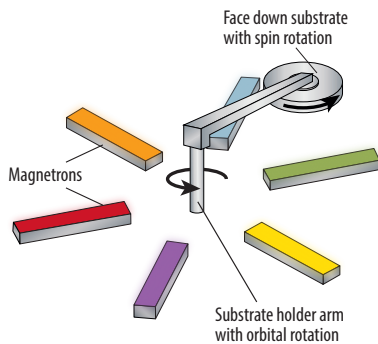
- Homogeneous or gradient films on curved substrates by synchronized orbital and spin rotation
- Up to 6 magnetrons, each with separate housing for individual gas supply and defined particle emission profile
- Optional pretreatment with additional ion beam source
- Carrier based handling system with load lock and two independent substrate positions
- Substrate face-down orientation for minimized particle load

Applications

- Gradient multilayer coatings of mirrors for soft X-ray and anti-reflective coatings
- Multilayer stacks for X-ray mirrors for beam line and analytic applications
- Multilayer coating for UV and VIS optics

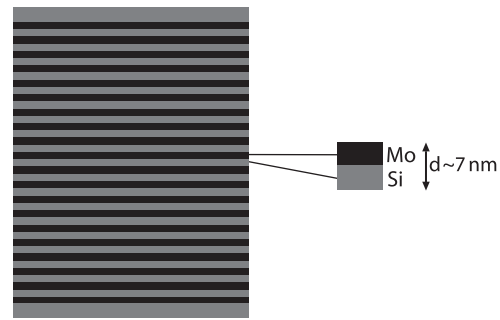
Principle

- Magnetron Sputtering
 - Circular substrate movement across magnetrons, each orbital rotation completes one period of the stack
 - Compensation of individual emission profiles of the magnetrons by precalculating the orbital rotation profiles



Application Example

- Typical multilayer stack for soft X-ray mirrors



Technical Data

Substrate size (up to)	680 mm dia., 130 kg
Sputter source	Up to 6 rectangular magnetrons (610 mm x 89 mm), ion beam source possible
Sputter modes	DC in cw or pulsed mode (2 kW) and/or RF (2 kW, 13.56 MHz)
Typical deposition rates	Cr: 45 nm/min, Si: 22 nm/min, Ti: 22 nm/min
Uniformity variation	< 0.1 % (σ /mean) over 300 mm dia., < 0.2 % (σ /mean) over 450 mm dia.
Base pressure	< 1×10^{-8} mbar
System dimension (W x D x H)	7.90 m x 4.40 m x 3.50 m (without electrical rack and pumps)
Configuration	Single chamber with double substrate load lock
Software interface	OPC

