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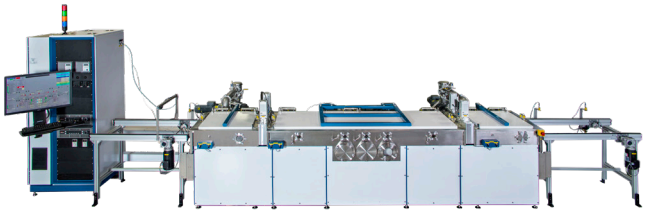
Phoenix Thin Film Deposition Solution

Technical Specification Sheet

The high-volume, large-area, state-of-the-art magnetron sputtering & PE-CVD sputtering platform.

Benefits Include:

- Uniform coating thickness and homogeneous coatings
- Up to Gen 3.5 glass
- Optimized cathode width to meet throughput requirements
- Rotary cathode option for highest target utilization
- Deposit multiple films over large areas or fully coat 3D components without breaking vacuum
- Integrated in-situ cleaning and substrate conditioning
- Proprietary plasma source
- Low vibration transport system



Phoenix Thin Film Deposition System

Features	Benefits	
Rotary cathode	Lower cost of ownership	
Low vibration	High yield	
In-situ metrology	High yield	
Large area	Increased capacity	
PE-CVD and sputtering	Better application flexibility	
RF bias and heat	Optimum process flexibility	
Optimized precision shielding (two sets)	Protects substrate transport mechanism from deposition zone - extra set of shields streamlines the maintenance process	

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System Overview

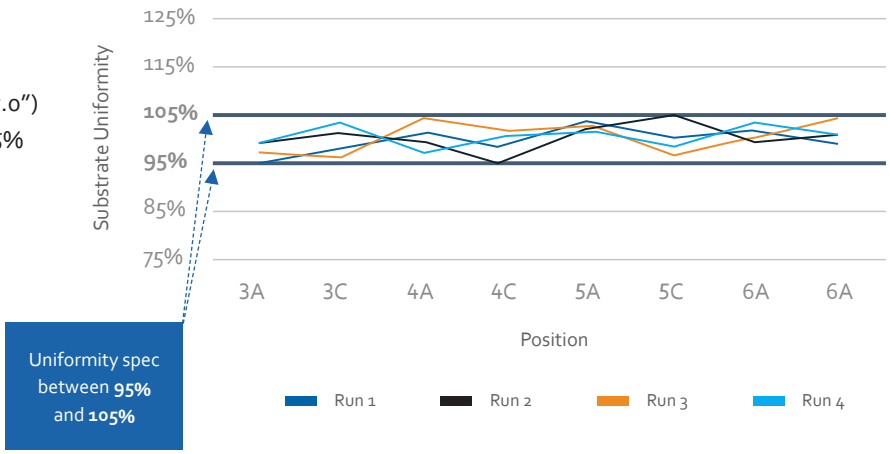
The Phoenix in-line system includes load, unload, buffer and process chambers configured to accommodate up to three rotary or planar sputter sources, with full automation.

As substrates are linearly transported through the system, the substrate or carrier is synchronized through the separate chambers. It enters through the interlocked buffer and passes under the sputtering cathodes for processing. The substrate emerges through an additional interlocked buffer, and moves out through the exit load lock for completion of the run. The system can be configured with Denton's proprietary optical monitoring system (OMS) or color control system.

The Phoenix **offers high throughput for large volume production and supports both planar and 3D component processing.** It can accommodate RF, AC, DC and pulsed DC sputtering as well as PE-CVD processes, and substrates or carriers up to GEN 3.5 glass size (600mm X 720mm).

Deposition Uniformity

- Typical source to substrate distance: 75 mm (3.0")
- Typical cathode widths: 90mm (3.5") or 125mm (5.0")
- Typical uniformity specifications: better than +/- 5%



Applications

- Wafer metallization
- 3D medical device coatings
- AR & conductive transparent coatings
- Front & back contacts for photovoltaics
- Composite dielectric coatings
- Discrete & hybrid circuit metallization

Configuration Options

	Phoenix 400	Phoenix 400X
Deposition Area	14" x 14" (355 mm x 355 mm) Up to four 150 mm wafers (or one 200 mm wafer)	20" x 20" (508 mm x 508 mm) Up to four 200 mm wafers (or one 300 mm wafer)
Sputtering Cathode and Process Options	One to four linear cathodes, 3.5" or 5.0" wide, DC/Pulsed DC/RF, magnetic materials, reactive sputtering, single switched power supply or multiple power supplies	
Cleaning Options	RF bias with/integrated lift stage, or integrated ion mills	

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