

# Custom Deposition Systems



**Shown above is a UHV dual source, four-pocket deposition system with IBAD and a 3"  $\phi$  magnetron sputter source. Also included are a load-load lock and a 900°C substrate heater.**

PVD Products can provide custom deposition systems to meet the customer's specific thin film requirements. These systems can contain multiple deposition sources including ion beam and magnetron sputter guns, electron beam evaporation units, effusion cells, as well as laser deposition capabilities. Ion sources for IBAD and substrate pre-cleaning can also be integrated into our systems. Substrate planetary or rotation stages can include heating to temperatures in excess of 750°C depending on substrate size and materials.

All of our high quality systems come with pumping stations, electro-pneumatic valves, all necessary vacuum gauges, complete power distribution, electronic racks, water and air manifolds, safety interlocks, etc. Systems can be operated manually or via computer control. Substrate heaters and manipulators can be designed for non-standard substrate shapes and sizes. Load-locks are available for substrates up to 8-inches (200 mm) in diameter.



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**Shown above is a multi-deposition system that includes multi source PLD and magnetron sputtering capabilities along with an oxygen resistant 900°C substrate heater.**

To request a quote for a custom deposition system please provide us with as much of the following information as possible:

- 1) Substrate Size, shape and material
- 2) Desired film thickness uniformity
- 3) Substrate heater requirement (maximum temperature desired)
- 4) Type and number of deposition sources
- 5) Materials to be deposited and desired deposition rates by each source
- 6) Desired power supplies for deposition sources
- 7) Type of Pumping (cryo, turbo, diffusion)
- 8) Desired base vacuum level
- 9) Ion Beam Assisted Deposition and energy as well as gas type
- 10) Load-lock requirements
- 11) Sputter source requirement
- 12) Substrate bias requirement
- 13) Type of deposition rate monitoring (QCM, Optical, etc.)
- 14) Other monitoring ports such as RHEED, ellipsometry, etc.

