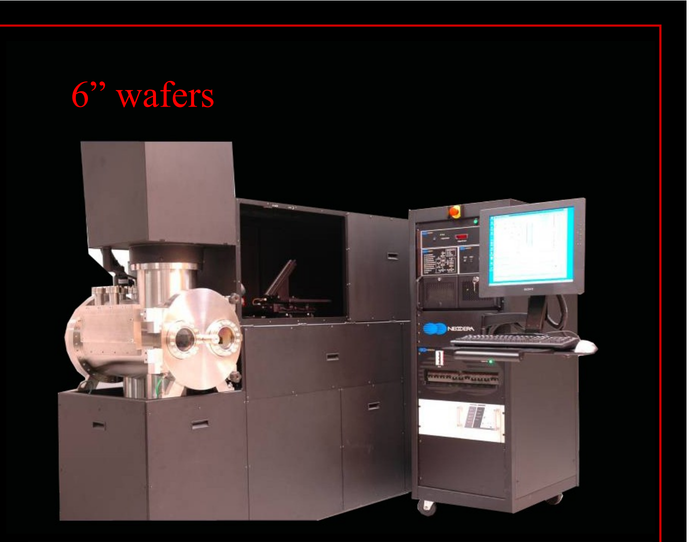
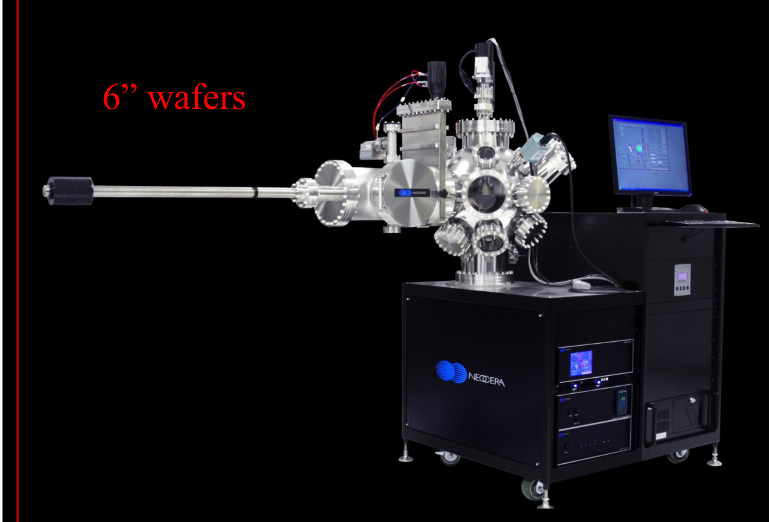
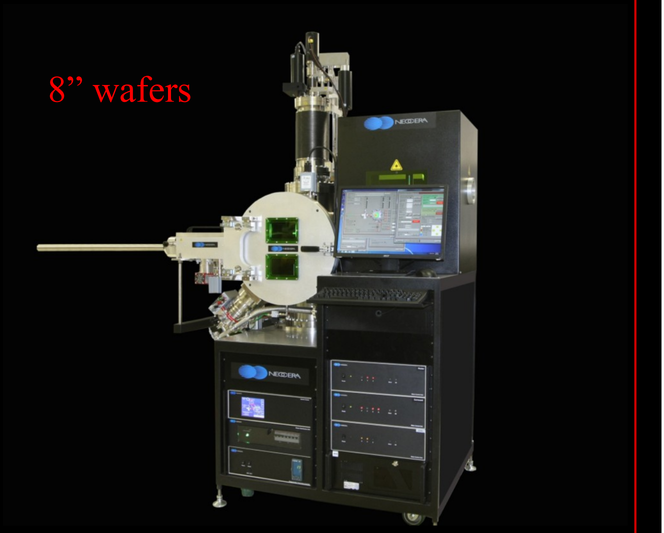
Large-area Pulsed Laser Deposition Systems


4"& 8" wafers


6" wafers


6" wafers


8" wafers

- Fully automated large area PLD Systems.
- Wafer sizes: 4"(100 mm), 6" (150mm) and 8" (200 mm) in diameter.
- Deposition of epitaxial films, multilayer heterostructures and Superlattices.
- Oxygen compatibility for oxide film depositions at high temperatures.
- Automated laser beam scanning for thickness uniformity.

NEOCERA

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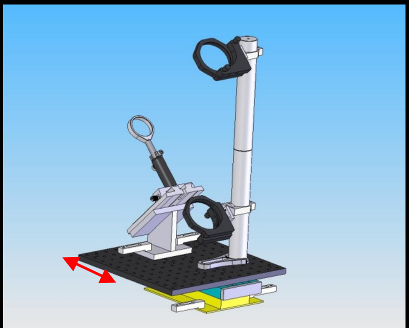
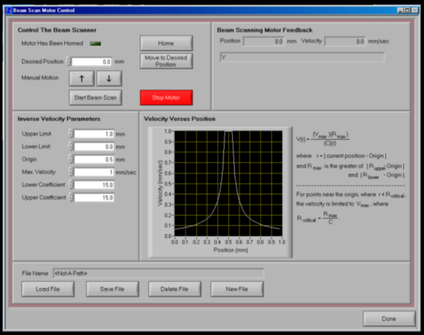
Large area PLD Systems (4”, 6” and 8” diameter wafers)

Neocera Large-area PLD Systems are used to deposit a variety of high quality films on a variety of substrates, up to wafer sizes of 8” (200mm) in diameter. Substrate rotation, in conjunction with laser beam scanning will provide thickness uniformity over the entire wafer area. The laser beam scanning accessory incorporates a unique Neocera-design that facilitates a fixed laser fluence (J/cm^2) on the target as the laser beam is scanned.





Control The Beam Scanner

Motor Has Been Homed

Desired Position 0.0 mm

Manual Motion

Beam Scanning Motor Feedback

Position 0.0 mm Velocity 0.0 mm/sec

Y

Inverse Velocity Parameters

Upper Limit 1.0 mm

Lower Limit 0.0 mm

Origin 0.5 mm

Max. Velocity 1 mm/sec

Lower Coefficient 15.0

Upper Coefficient 15.0

Velocity Versus Position

$V(r) = \frac{(V_{max})(R_{max})}{(C)(r)}$

where r = | current position - Origin |

and R_{max} is the greater of | R_{upper} - Origin | and | R_{lower} - Origin |.

For points near the origin, where $r < R_{critical}$, the velocity is limited to V_{max}, where

$R_{critical} = \frac{R_{max}}{C}$

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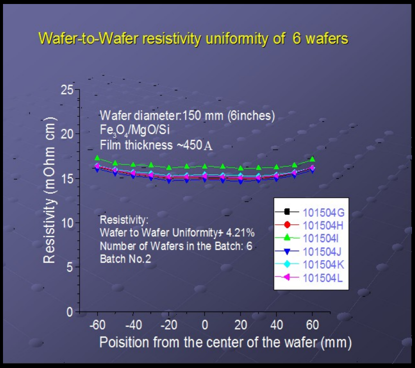

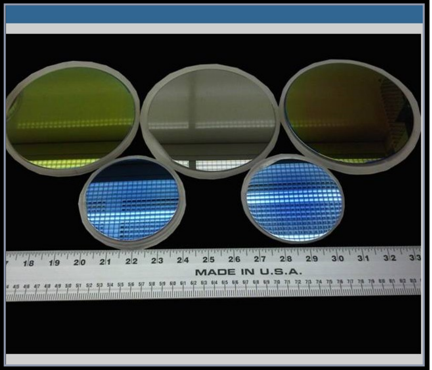

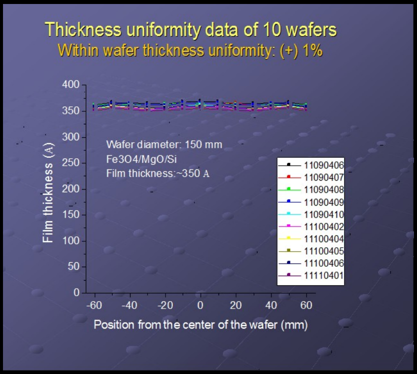

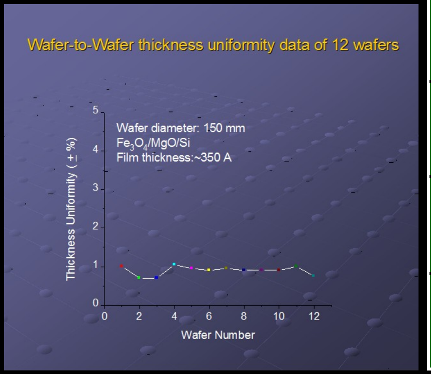

Large area PLD Systems- Specifications

	Feature	Details
1.	Substrate sizes (diameter)	4” (100mm) , 6” (150mm) and 8” (200mn)
2.	PLD Chamber size	18” diameter Sphere or Cylinder.
3.	Base vacuum	5 x 10^{-7} Torr Standard 5 x 10^{-9} Torr (upgrade)
4.	Substrate heating	850˚C (4” wafers) 750˚C (6” wafers) 700̊C (8” wafers)
5.	Target Carousel	4 x 2” diameter
6.	Thickness uniformity	+/- 5% or better.
7	Process gases	O_2, N_2, Ar, (MFC controlled)
8.	Load-locks	Included
9.	Automation	Windows 7, LabView 2013

For further information, please contact: sales@neocera.com or +1-301-210-1010, ext 104