

SMART NanoTool PLD

Versatile Research Pulsed Laser Deposition



SMART NanoTool – PLD BASE SYSTEM

SMART PLD – Vacuum Hardware

- SMART Chamber – Laser
- 14" Quick Entry Door
- Chamber Mounting Hardware

SMART Console/Electronics Racks

- Dual Electronics Rack as console
- Table Top (Stainless)

SMART Pumping Hardware

- 300 l/s Turbo Pump
 - Controller and Cables
- D4B Dual Stage Rotary Vane

SMART Electronics

- NI Controller
- RoboMBE Software
- Computer

SMART PLD Installation Kit

Laser Optics – 248 nm

- Breadboard
- Laser aligners
- Fused Quartz Viewport
- Protective Cover
- Focusing Lens
- Mirrors

Target Stage Assembly

- Indexed 6x1" with Rotation, Indexing & Z-Motion

Z-Motion

1" Substrate Manipulator, Z-Motion, Rotation and 850 °C Heating Master Shutter

Stage Control Package

- Motorized Substrate Manipulator Rotation
- Power Supply Cabling
- Sample Heater Power Supply
- Sample Heater Eurotherm Controller

Sample Blocks with Blank Inserts

Micro-ion Plus Full Range Gauge Package

SMART DEPOSITION SOURCES

Effusion Cell Package	
Water Cooled Source Nipple	
Valved Cracker Source Package	
4.5" RF Plasma Source Package	
Thermal Cell, Boat Style	
Pneumatic Manifold	
Sputter Source RF or DC	
Flash E-Beam and Power Supply	

SMART DEPOSITION STAGES

2" Substrate Manipulator, Z-Motion, Rotation and 850 °C Heating	
Optional: 1000 °C Heating	
O ₂ Resistant Filament Option	
Stepper Motor Control Upgrade Package	
Additional Sample Blocks with Blank Inserts	

METROLOGY TOOLS

Quartz Crystal Flux Monitor	
10 – 30 kV RHEED Packages	
RHEED Image Analysis	
Differential Pumping Option with Gauge	
Laser Plume Analysis	

VACUUM HARDWARE

AVAILABLE VACUUM PUMPS

1500l/s Cryo Pump	
150l/s Ion Pump	
240l/s Ion Pump	
300l/s Turbo Pump	
700l/s Turbo Pump	
Dry Scroll Backing Pumps	
Note: Multiple Pumps Require Pumping Tee	

LN ₂ CryoPanel Package	
System Bakeout Package	

GATE VALVES

6" Man G V For 300l/s Turbo (with bypass port)	
8" Man Gate Valve (w/bypass port) for 700l Turbo & 120 & 220l Ion Pump	
2.75" Manual Throttling Bypass Kit	
2.75" Automated Throttling Bypass Kit	
Gate Valve Pneumatic Valve Upgrade	

GAUGE OPTIONS

Cold Cathode Gauge Package	
Baratron Package	

GAS CONTROL

Gas Injector Package	
Leak Valve Package	

ADDITIONAL OPTIONS

Loadlock/Transfer Module	
Load Lock Chamber with Cross Transfer	
Load Lock Chamber w/o Cross Transfer	
Docking Stage for Substrates and Targets	
Magnetic Transfer Rod	
LASER OPTIONS	
Scanning Laser Optics	
Laser Train with Protective Cover	
Extended Life Viewport	
Laser Mounting Table	
LASERS	
MPB ASX-750 248 nm Excimer Laser	
Continuum Surelite 3-10 Nd: YAG	
Coherent COMPexPro 102 Excimer Laser	
Coherent COMPexPro 110 Excimer Laser	
Coherent COMPexPro 205 Excimer Laser	