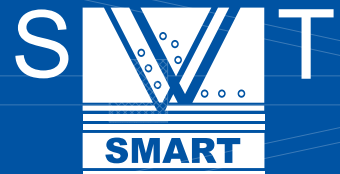




# SMART NanoTool PLD

## 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

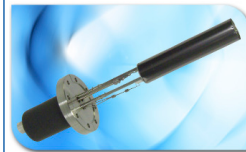
- Motorized Substrate Manipulator Rotation
- Power Supply Cabling
- Sample Heater Power Supply
- Sample Heater Eurotherm Controller

#### Sample Blocks with Blank Inserts

#### Micro-ion Plus Full Range Gauge Package

### SMART DEPOSITION SOURCES

Effusion Cell Package



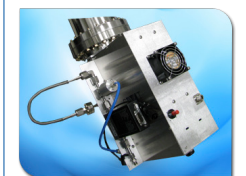
Water Cooled Source Nipple



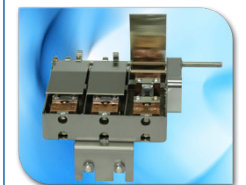
Valved Cracker Source Package



4.5" RF Plasma Source Package



Thermal Cell, Boat Style



Pneumatic Manifold

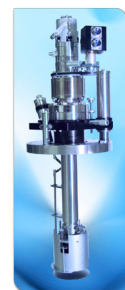
Sputter Source RF or DC

Flash E-Beam and Power Supply

### SMART DEPOSITION STAGES

2" Substrate Manipulator, Z-Motion, Rotation and 850 °C Heating

Optional: 1000 °C Heating



O<sub>2</sub> Resistant Filament Option

Stepper Motor Control Upgrade Package

Additional Sample Blocks with Blank Inserts

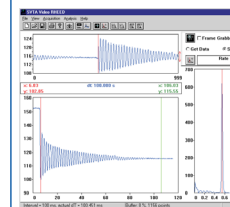
### METROLOGY TOOLS

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<sub>2</sub> 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

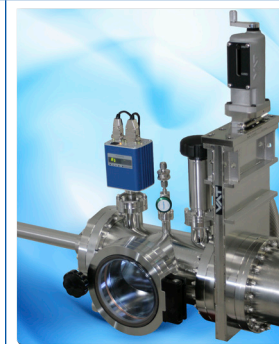
### GAS CONTROL

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

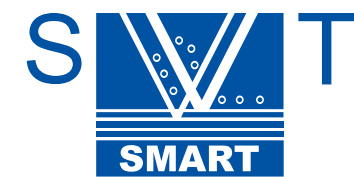
MPB ASX-750 248 nm Excimer Laser

Continuum Surelite 3-10 Nd: YAG

Coherent COMPexPro 102 Excimer Laser

Coherent COMPexPro 110 Excimer Laser

Coherent COMPexPro 205 Excimer Laser



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