

ALD¹⁵⁰ LX

Atomic Layer Deposition System



Kurt J. Lesker[®]
Company

PROCESS EQUIPMENT[™]
DIVISION

Applications

- University, industrial and government lab R&D
- Electronics
- MEMS
- Energy Storage
- Solar encapsulation
- Nanophotonics
- Biomedical
- And More

Features

- Unique Perpendicular Flow Reactor
- Patented precursor focusing technology (PFT)[™]
- Thermal or plasma-enhanced ALD configuration
- Analytical ports (70° angle of incidence) for in-situ ellipsometry
- Multiple inlets for precursor delivery
- Independent substrate heater stage
- Unique heater design on source modules
- Accessible, low maintenance design
- Global service and process support
- eKlipse[™] control software

Options

- High Performance, Remote Inductively Coupled Plasma (ICP) Source design
- Four (4) additional plasma lines for a total of 6 plasma lines
- Pump-Purge manifold for gas line preparation
- Gas compatibility programmable logic controller
- Multiple precursor delivery options
- Ozone
- Multi-technique tool integration (Glovebox/ Cluster Tool)
- Substrate load-lock and cassette loader

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Specifications

Process Chamber Precursor Focusing Technology™ (PFT)™™		Unique perpendicular flow designed reactor** Analytical ports for in-situ ellipsometry** Thermal or PEALD configuration** Four separate chamber inlets for precursor delivery (Five when plasma option selected)** Horizontal substrate loading Independent substrate heater stage
Process Chamber Construction		304L Stainless Steel
Exposure Modes		Dynamic Static Variable Residence Mode™ (VRM™)
Precursors		Fifteen precursor sources with four separate inlets (Not including plasma input) Plasma with up to six gas lines
Precursor Delivery Module Options	Vapor Draw	For liquid and solid phase precursor with sufficient vapor pressure
	Flow-through Vapor	For liquid and solid phase precursor with insufficient/low vapor pressure
	Pulse Gas Delivery	For precise, accurate, high-speed dosing of toxic gases (e.g., WF ₆ , HCl, NH ₃ , H ₂ S, etc.)
System Heating **LeskerClad™		500°C Substrate heating 250°C Process chamber** 250°C Delivery lines** 200°C Valve heating** 200°C Precursor heating**
Typical Processes		Al ₂ O ₃ , TiO ₂ , SiO ₂ , Ta ₂ O ₅ , HfO ₂ , ZrO ₂ , HZO, ZnO, AZO, AlN, TiN, GaN, Pt, Ru
Deposition Uniformity		1σ Uniformities Plasma Al ₂ O ₃ – 1% Thermal Al ₂ O ₃ – 1%
System Control		KJLC® eKLipse™ control software (LabView based) Independent real time controller True precision ALD valve timing providing high resolution Windows 10
Substrate Size and Type		Up to 150mm single wafer 100mm X 100mm solar Si wafers Powders and particles Porous and high aspect ratio (up to 1:2500)
Substrate Transfer		Manual loading Multiple load lock options (Single wafer or multi-cassette) Cluster Tool (in-situ surface analysis capable, multi deposition despotion modules (EB/ Sputter/ sample preparation) Glovebox (Single or multi-tool configuration)
Process Module Dimensions (approx)		36.6" (929.9mm) wide X 55.9" (1420.2mm) deep X 79.6" (2020.9mm) high
Required Power (based on options)		208VAC, 60Hz, three phase, 5-wire or 380-415VAC, 50Hz, three phase, 5-wire
Process Pump		>50CFM chemical series recommended
Compliance Optional**		CE, FCC, CSA**, NRTL**
Warranty		12 months upon shipment
Cleanroom Compatibility		Class 100

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