

GEMStar XT LL™ Benchtop Load Lock Option



Molecular Innovation™

The GEMStar XT LL *Benchtop Load Lock System* is designed to offer GEMStar XT Benchtop ALD Systems the ability to avoid atmospheric exposure of the process reactor during sample exchanges.

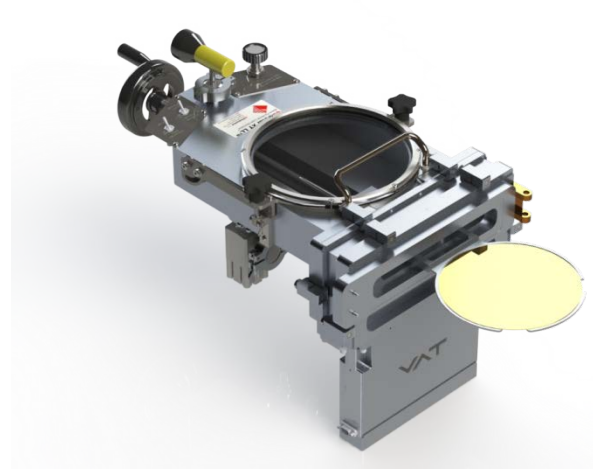
A small, rugged, lightweight option for heavyweight R&D efforts, GEMStar Systems makes optimal use of lab space and research budgets.

The GEMStar XT LL Option allows for a molecular clean vacuum transfer of a substrate sample from your lab atmospheric environment to the GEMStar XT ALD processing reactor without exposing the reactor to potentially harmful effects of airborne molecules such as H₂O.

In addition, as sample cooling occurs in the load lock, it's environment is the inert gas (N₂ or Ar) input to the Load Lock System, typically the same as GEMStar carrier gas input.

Some key features of the system include:

- ◆ The load lock chamber accommodates up to 200mm diameter wafers.
- ◆ Customizable end effector allows simple and repeatable loading/unloading of substrates.
- ◆ Digital (or Bourdon Needle Style) pressure display of load lock reactor
- ◆ KF25 type Vacuum Isolation allow connection to the same or separate vacuum pump as GEMStar XT
- ◆ VCR-4 inert gas input that has need flow control to minimize disturbances while injecting
- ◆ VAT MONOVAT Series 022 for load lock/process module isolation
- ◆ Sample end effector is presented in load lock allowing easy coating of non-200mm wafer samples and sizes
- ◆ Lightweight 9" diameter clear Poly Carbonate (LEXAN) Lid with dual vacuum seal clamping
- ◆ Full manual operation ensuring a reliable easy to use system.



Job /Script Control

As this system is manually operated, GEMStar XT scripts and system no longer needs to be cooled and vented to transfer a substrate

Easy Maintenance

Simplified tool maintenance results from the use of a modular system design with benchtop access to all critical components.

- ◆ The modular system design allows easy swapping out of parts for service and cleaning, with minimal down time.
- ◆ Convenient and ergonomic access from the top and bottom of the system for all critical components

GEMStar XT LL™ Benchtop Load Lock Option

GEMStar XT LL Specifications	
Load Lock Chamber	All Aluminum Construction
Load Lock Dimensions	17" H x 15" W x 25" D- fits in front of GEMStar XT System
Standard Sample End Effector	Easily removable 200 MM Dia (Custom end effector available on request)
Reactor Slot Opening	216 mm W x 26 mm H
Rotary Feed Feedthrough	Ferrofluidic sealed vacuum feedthrough
Sample Slide	Ceramic coated aluminum rail, anodized carriage with FrelonGOLD liner 36 mm Pitch greaseless lead screw
Vent/Seal Gas	VCR-4 connection of desired gas Manual needle valve flow control Manual bellows valve Open/Close Control
Vacuum	Isolation Valve with KF 25 Type Vacuum pump hookup
MESC Slot Valve	VAT MONOVAT series 022 Rectangular Gate Valve 236 mm x 46 mm
Vacuum Gauge	Digital Display Convection Vacuum Gauge Module (1 x 10 ⁻⁴ to 1000 Torr) Bourdon Needle Dial Vacuum Pressure Gauge available on request
Safety	Thermal Touch Safe Exterior 10 Second Watchdog protected (all off for computer connection/ping loss) All valves/MFC are normally closed
Facilities Requirements	
Vent Gas	5-10 psig regulated VCR-4 Type connection
CDA (Clean Dry Air)	80 psig ± 5 psi regulated
AC Power	None (If digital gauge is used, 100 - 240 VAC)
System Weight	65 lbs (Including GS MESC Interface and VAT Slit Valve)
Vacuum Pump (not included)	KF 25 Vacuum Connection Can be same pump as GS system connected with a Tee