

# GEMStar XT LL™ Benchtop Load Lock Option



Molecular Innovation™

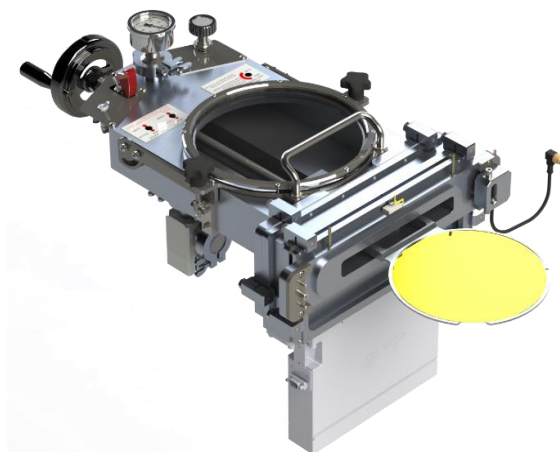
The GEMStar XT LL *Benchtop Load Lock System* is designed to offer GEMStar XT Benchtop ALD Systems the ability to control atmospheric exposure of the process reactor and sample during exchanges.

The GEMStar XT Load Lock 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 H<sub>2</sub>O.

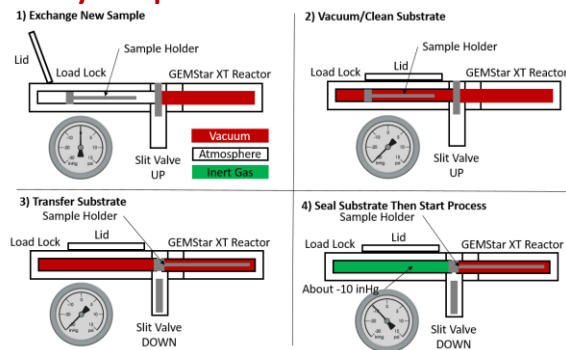
In addition, as sample cooling can occur in the load lock, it's environment is the inert gas (N<sub>2</sub> or Ar) input to the Load Lock System, typically the same as GEMStar carrier gas input.

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.
- ◆ Compound Dial Vacuum/Pressure Gauge
- ◆ KF25 type Vacuum Isolation allow connection to the same or separate (recommended) vacuum pump as GEMStar XT
- ◆ VCR-4 inert gas input that has needle flow control to minimize gas injection disturbances
- ◆ VAT MONOVAT Series 022 slit valve for load lock/process module isolation
- ◆ Designed so processing does not affect Slit valve
- ◆ 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.



## Theory of Operation



## Job /Script Control

Our Load Lock sample load/unload module is easily manually operated. GEMStar XT job scripts can optimize Reactor/Sample environment state before sample transfer occurs

## 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

<b>GEMStar XT LL Specifications</b>	
Load Lock Chamber	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	Compound Dial Vacuum/Pressure Gauge -30 inHg to 15 psi
<b>Facilities Requirements</b>	
Vent Gas	5-10 psig regulated VCR-4 Type connection Recommend N <sub>2</sub> or Ar as vent gas
CDA (Clean Dry Air)	80 psig ± 5 psi regulated
AC Power	None required for Load Lock Option
System Weight	65 lbs (Including GS MESC Interface and VAT Slit Valve)
Vacuum Pump (not included)	KF 25 Vacuum Connection (Dry pump recommended)