DENTON VACUUM
Enabling Innovation

DENTON VERSA CLUSTER PLATFORM

Robust and efficient for high-volume manufacturing

DENTON VACUUM ENABLES INNOVATION

With thousands of thin film deposition tools installed globally — including a large, installed base of precision optical deposition systems — engineers and researchers rely on Denton's thin film innovations to drive higher throughputs, better yields, and low cost of ownership (COO) while benefiting from comprehensive service and support, and a dedicated R&D program that delivers enabling technologies.

DENTON'S VERSA CLUSTER PLATFORM

Versa cluster platform enables greater production efficiency and saves time with the automated loading process of the Versa cluster platform. It is compatible with both metal and oxide deposition. The multi-chamber configuration allows you to coat multiple layers at a time without breaking the vacuum. This ability prevents oxidation which is critical to producing quality thin films in certain applications such as multi-layer contact metallization. Modules prioritize overall process performance so you can scale your production depending on throughput needs, allowing for:

- Consistency
- Repeatability
- An optimized configuration even when production is ramped up

Versa Cluster Platform

1259 North Church Street, Bldg 3, Moorestown, NJ USA 08057
1-800-666-6004 | info@dentonvacuum.com | **www.dentonvacuum.com**

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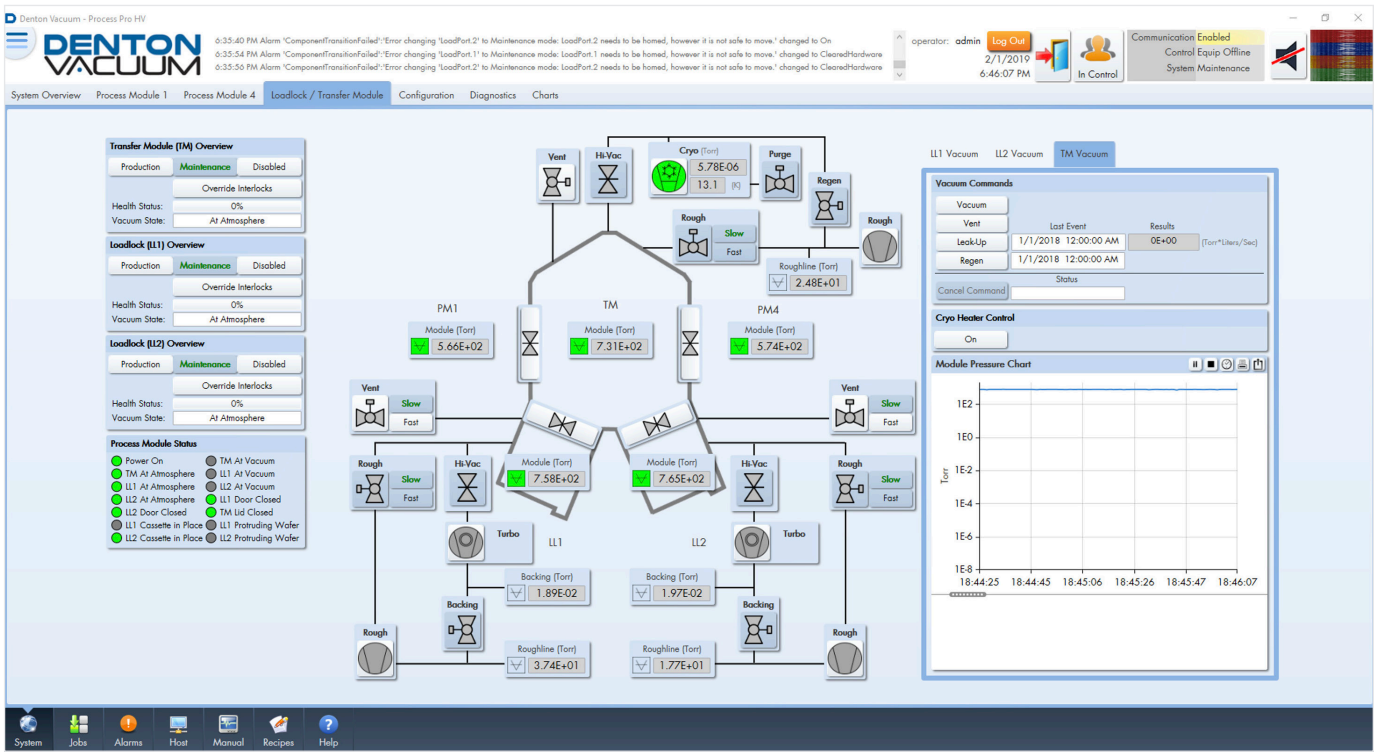
Versa cluster platform comes with Denton's Process Pro-HV software control system which is SEMI E95 compliant User Interface with multi-level (password protected) access controls. The software platform allows the versa platform to be fully automated with wafer handling, process module scheduler, and with Process Pro recipe manager. Process Pro-HV provides host connectivity library including SECS/GEM, 300mm, PV2 and EDA.



Process Pro-HV Software Control System

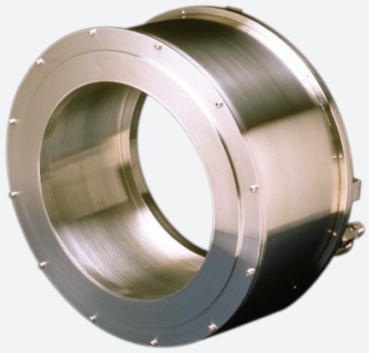
VERSA CLUSTER PLATFORM CONFIGURATIONS

The Versa is designed to work with 200 mm or 300 mm process modules and can be configured with Denton's process modules for application specific production solutions, such as power electronic contact metallization and IR microbolometer sensor deposition. Dedicated pre-clean and metrology modules are available.

Proprietary Process Modules incorporate Denton's patented and proprietary technologies.

Discovery Sputter Module

Denton's patented Isoflux inverted cylindrical cathode offers best-in-class thickness uniformity, for both flat and curved substrates.



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Discovery V Sputter Module

Discovery V provides tight uniformity, high deposition rate, and small footprint offering versatility and reliability to support high volume production needs.

Voyager PIB-CVD Module

The Phoenix PIB-CVD uses Denton's patented Endeavor ion source, which enables a new class of thin film deposition called Plasma Ion Beam CVD (PIB-CVD). This deposition method can produce coating compositions ranging from polymer-like to diamond-like coating (DLC), from a single pre-cursor.

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Infinity Bias-Target Ion Beam Sputter Module

The bias-target ion beam sputter module provides dense, defect-free films suitable for high damage threshold lasers and EUV mask blanks.

Infinity Ion Beam Etch Module

The infinity ion beam etch module for low damage etch.

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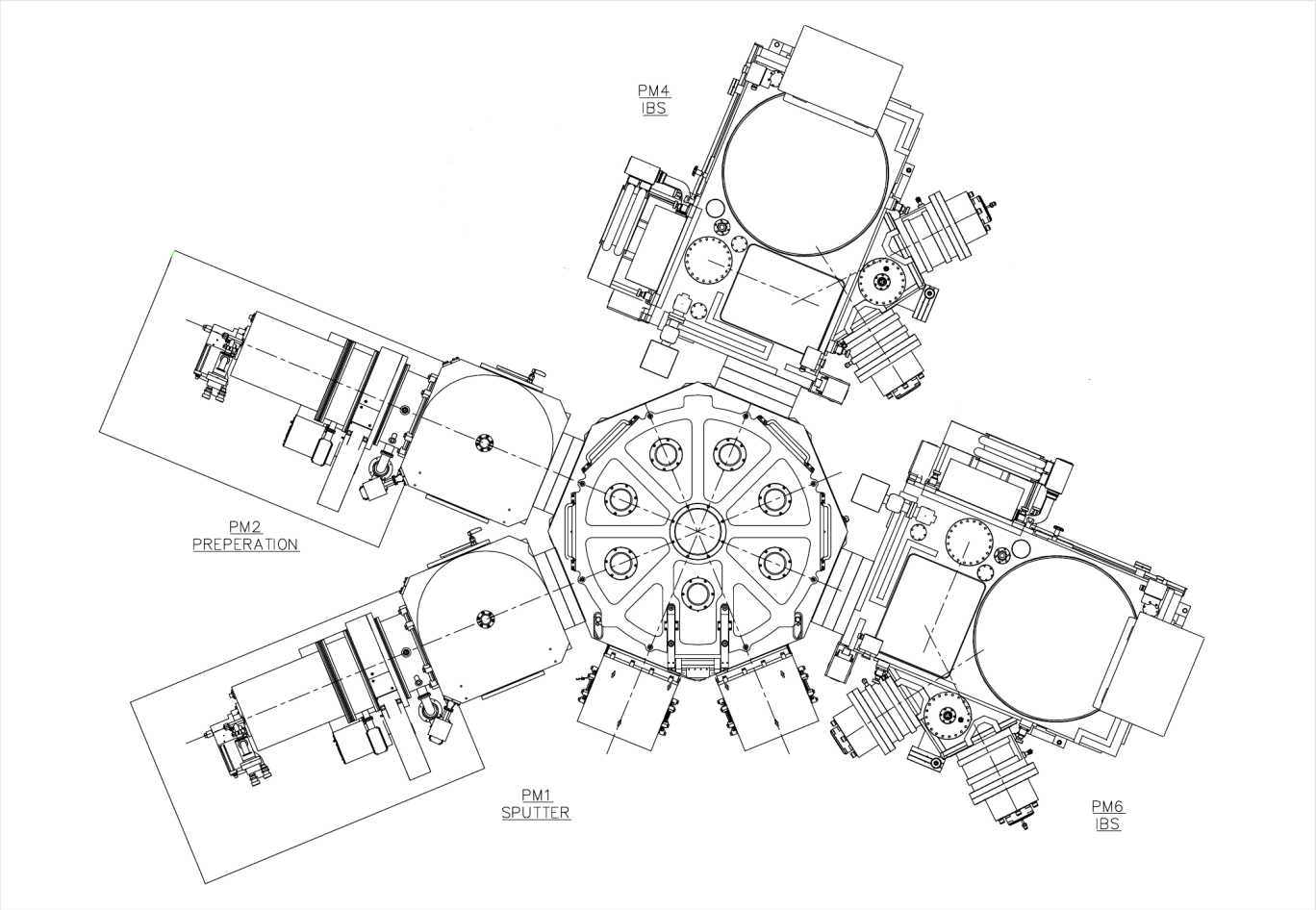
Denton's Versa cluster platform comes in a variety of facets with the following configurations:

Facets	Substrate size	Vacuum cassette Elevator load lock	Turbo Pump	Cryo Pump	Wafer Aligner
4	200 mm	1	X		
4	200 mm	1	X		X
6	200 mm	1 or 2	X	X	X
8	200 mm	1 or 2	X	X	X
6	300 mm	1 or 2	X	X	X

All the above cluster platforms come with automation features including wafer mapping, wafer cross-slot detection and are SEMI S2 compliant.

Typical Cluster Layouts



Microbolometer Configuration

8-sided transfer module two Infinity IBS VOx process modules, Discovery SiN/SiO2 capping layer module, pre-clean module, dual load locks

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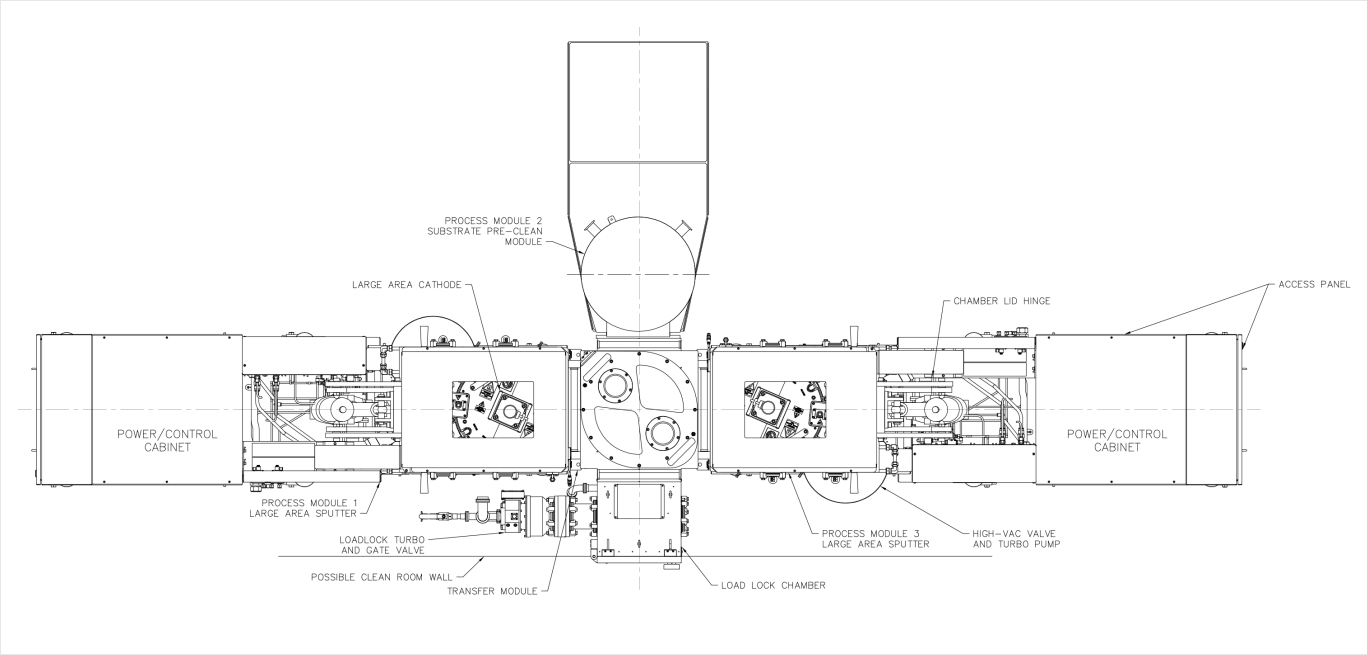

Power Electronics Contact Metallization Configuration

4-Sided Transfer Hub, Two Discovery V Process Modules, Pre-Clean Module, Single Load Lock

All Denton Vacuum solutions are backed by a 12-month warranty on parts and labor, over 50 years of process knowledge, an in-house process engineering group, worldwide representation and support, and a Global Factory Service Center.

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