

# M Series

## MBE Deposition Systems

Semiconductor Films

Oxides/Nitrides

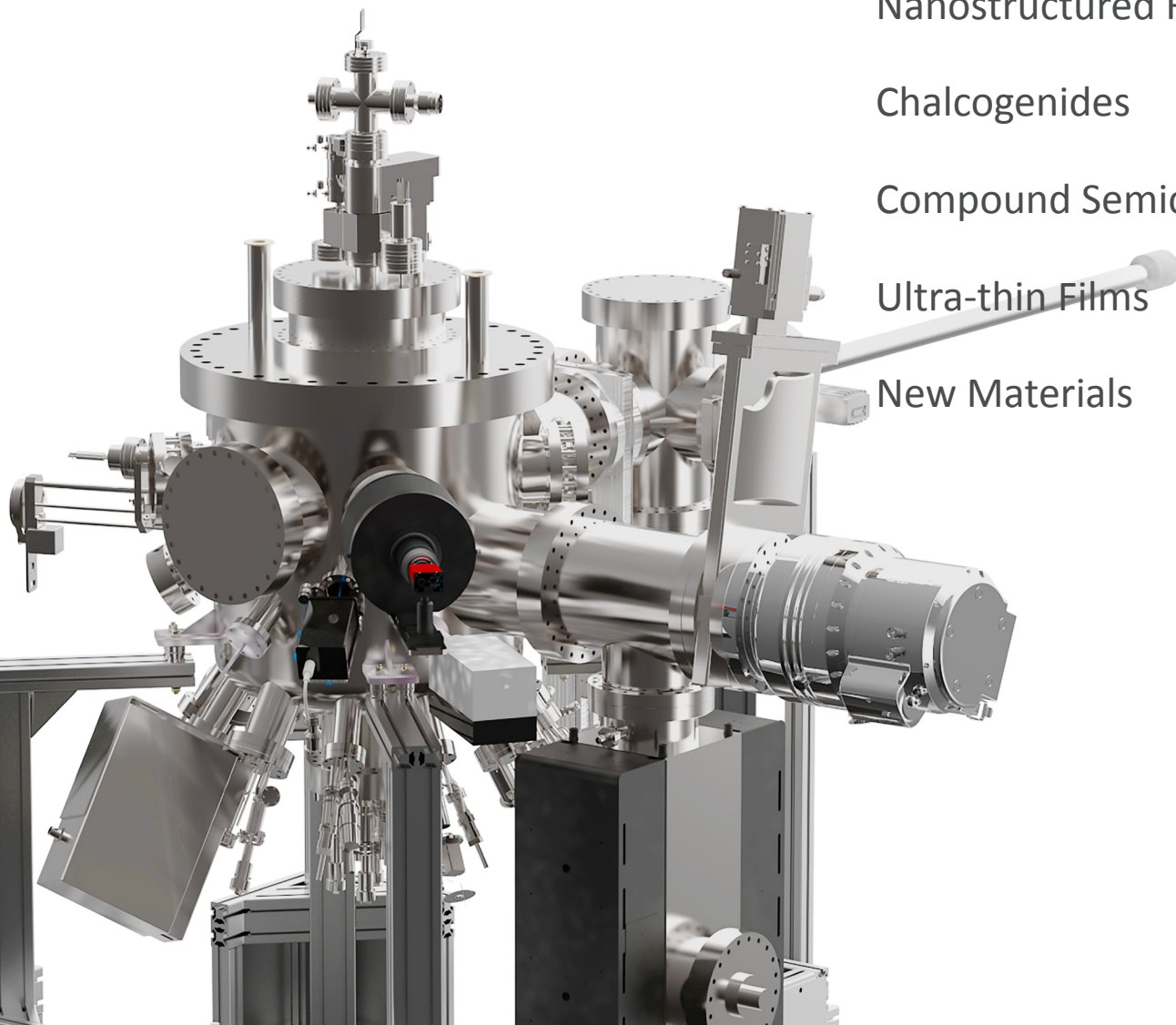
Nanostructured Films

Chalcogenides

Compound Semiconductors

Ultra-thin Films

New Materials



## Specifications

Model	M250-ORIGIN	M500-FLEX	M500-CREATOR
Chamber diameter	250mm (10")	500mm (~20")	
Cryoshroud (optional)	LN <sub>2</sub> cryo panel (single walled) with phase separator connections (*)	LN <sub>2</sub> cryo panel (double walled) with phase separator connections (*)	
Number and size of deposition ports	7 x DN40CF (2 3/4" O.D.) confocal or 3 x DN40CF (2 3/4" O.D.) confocal 3 x DN63CF (4.5" O.D.) confocal  1 x DN40CF (2 3/4" O.D.) central	4 x DN40CF (2 3/4" O.D.) confocal 3 x DN63CF (4.5" O.D.) confocal 1 x DN250CF (12" O.D.) horizontal (for single or multi-pocket E-Beam evaporator) 1 x DN150CF (8" O.D.) central	8 x DN40CF (2 3/4" O.D.) confocal 4 x DN63CF (4.5" O.D.) confocal  1 x DN150CF (8" O.D.) central
In-situ analysis ports	2 x DN100/63CF (6"/4.5" O.D.) e.g. RHEED 3 x DN40CF (2 3/4" O.D.) QCM, BFM (BEP), RGA 1 x DN63CF (4.5" O.D.) e.g. Atom Source	2 x DN100CF (6" O.D.) e.g. RHEED 4 x DN40CF (2 3/4" O.D.) in reflectance (e.g. Ellipsometry) 3 x DN40CF (2 3/4" O.D.) QCM, BFM (BEP), RGA 1 x DN63CF (4.5" O.D.) e.g. Atom Source	2 x DN100CF (6" O.D.) e.g. RHEED 4 x DN40CF (2 3/4" O.D.) in reflectance (e.g. Ellipsometry) 3 x DN40CF (2 3/4" O.D.) QCM, BFM (BEP), RGA 1 x DN63CF (4.5" O.D.) e.g. Atom Source
Chamber bakeout	Heater tapes	Full bakeout tent	Full bakeout tent
Default pumping arrangement	265 l/s. turbo pump 3.3 cbm/h roughing pump 240 l/s. ion getter pump Titanium sublimation pump	355 l/s. turbo pump 6.6 cbm/h roughing pump 400 l/s. ion getter pump Titanium sublimation pump	355 l/s. turbo pump 6.6 cbm/h roughing pump 400 l/s. ion getter pump Titanium sublimation pump
Ultimate base pressure	<5* x 10 <sup>-10</sup> mbar	<2* x 10 <sup>-10</sup> mbar	<2* x 10 <sup>-10</sup> mbar
Sample size and sample manipulation	FLAG-style +/-180° rotation, 900°C heating, LN <sub>2</sub> cooling (optional) 1" to 2" wafers, continuous rotation (20 RPM), 900°C (optional 1000°C) Oxygen resistant (optional)	FLAG-style +/-180° rotation, 900°C heating, LN <sub>2</sub> cooling (optional) 1" to 4" wafers, continuous rotation (20 RPM), 900°C (optional 1000°C) Oxygen resistant (optional)	FLAG-style +/-180° rotation, 900°C heating, LN <sub>2</sub> cooling (optional) 1" to 4" wafers, continuous rotation (20 RPM), 900°C (optional 1000°C) Oxygen resistant (optional)
Sample loading	From/to load-lock From/to cluster (transfer) systems From/to SIGMA Surface Science analysis systems (SPM/ESCA)		
Sample storage	Sample storage cassette in load-lock for up to 5 samples		
Software	TITANIUM automation software		

\* VBC® compatible.

	M250-ORIGIN	M500-FLEX	M500-CREATOR
ComCell Effusion Cell Sources or 3rd party Effusion Cells	Max. 7 sources (effusion cells, (valved) crackers, mini E-Beam evaporators)	Max. 7 sources (effusion cells, (valved) crackers, mini E-Beam evaporators)	Max. 12 sources (effusion cells, (valved) crackers, mini E-Beam evaporators)
Atom/Ion Source	Yes	Yes	Yes
UHV single or multi-pocket linear E-Beam Evaporator	No	Yes	No

For further information please contact:  
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[www.mantisdeposition.com](http://www.mantisdeposition.com)