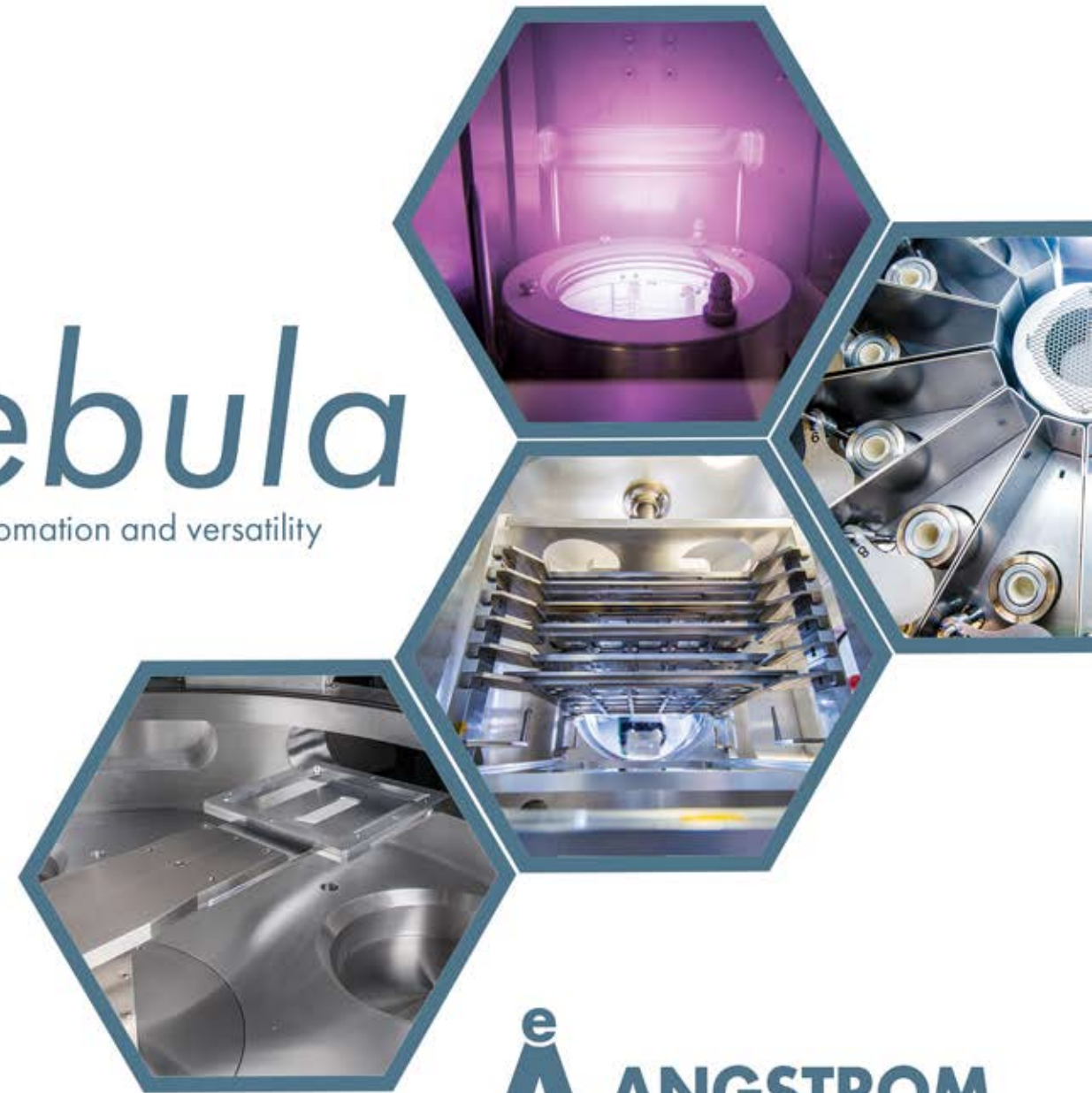
A connected cluster of every vacuum process...

Nebula

The ultimate in automation and versatility



ANGSTROM ENGINEERING

Your Thin Film Partner

Nebula

Overview

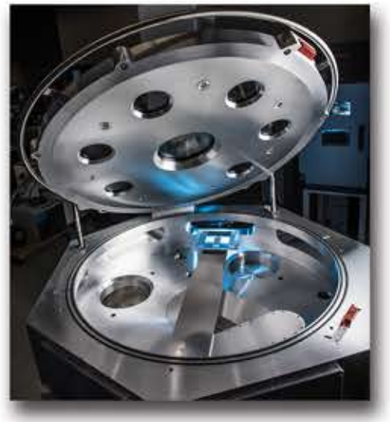
Nebula is Angstrom Engineering`s pinnacle of automation, engineering precision, and collaboration with you, our partner. These integrated vacuum systems are designed specifically to meet your process and research needs. The number and type of modules are chosen by you, and provide room for future expansion potential. Each module can be engineered to meet your technological and application requirements using proven components and sub-assemblies. Our goal is to deliver a robust engineered system backed by our world renowned client support.

From the time it was delivered, this laboratory system has performed nearly flawlessly, arguably extending our capabilities well beyond those currently attainable by any organic thin film laboratory in the world. I attribute the success of this entire system to the excellence of the engineering as well as the cooperative nature of the Angstrom team in taking our best designs and making them better during the system construction process.

Dr. Stephen Forrest
University of Michigan

Process Module Options

Substrate cleaning & preparation stations using plasma or ion beam sources
Vacuum deposition modules are available for PVD, CVD & ALD
Substrate & mask storage cassettes can accommodate 25 or more as needed
Distribution modules using SCARA robots are sized to meet your needs
Glovebox environments can be integrated as required



Substrate Size/Throughput

We have built modules that accommodate standard semiconductor wafer form factors, as well as typical display glass, including modules for Gen. 2 (360 mm x 465 mm) and larger. Throughput depends on process duration and complexity. However, the AERES software platform optimizes layer to layer transitions significantly reducing overall process time.

Our team of engineers, chemists, and nanotechnologists will help design the best tool for your process and material requirements. We offer support and will optimize your system for film thickness uniformity, film structure and material utilization. Please call us to discuss your application in detail.

AERES Advanced Process Control Software

Simple to use yet can manage the most complex process recipes
Each module can be pulled offline and run independent from the system
Automatic PID control loop tuning significantly reduces process development time
Unified data management system collects and logs all pertinent process information
High resolution control provides impressive low rate stability and consistent doping ratios
Central control station manages each module and schedules the processes in each chamber
Complete process automation: load recipe & materials, press start, walk away, & monitor remotely

Connectable vacuum modules:

Sample and mask handling chambers

Vacuum deposition modules

Integrated robotic sample and mask handling

Service and Support: Our Commitment

An Angstrom system in your lab makes us partners; we become part of your team. We guarantee **same day** response to any service inquiry regarding parts, technical support, and software support.

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