



**POWER FOR GLASS COATING**  
PREMIER TECHNOLOGIES  
PROVEN CAPABILITIES





**Maximize your  
process power  
return on  
investment** with  
innovative and  
industry-proven  
technologies.

**AE<sup>®</sup> provides complete, cost-effective solutions for glass coating.**

## **MAXIMIZE YOUR PROCESS POWER RETURN ON INVESTMENT**

Whether you prefer AC or bipolar pulsed DC technology, AE now offers a complete suite of power solutions for all MF cathodes. Take advantage of the wide coverage AE offers, from simple MF to advanced co-sputtering processes.

**Bipolar pulsed DC and AC power are now available for the same upfront investment.**





## POWER FOR GLASS COATING

### DC

#### Ascent® AMS

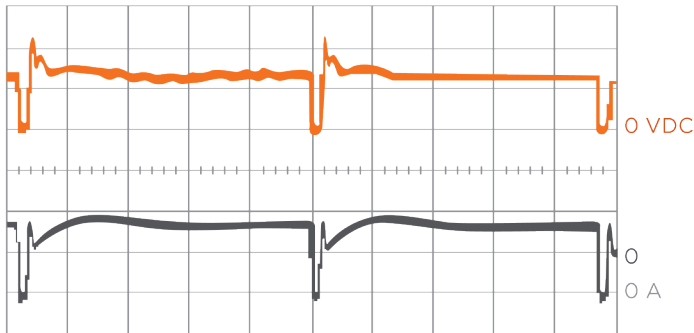
##### DC Power

- › For DC cathodes
- › 30 to 180 kW



#### DC Technology

- › Advanced Arc Management System™ (AMS) technology for process stability
- › Synchronized control for multi-cathode systems
- › Proven performance in critical applications



### AC

#### CRYSTAL®

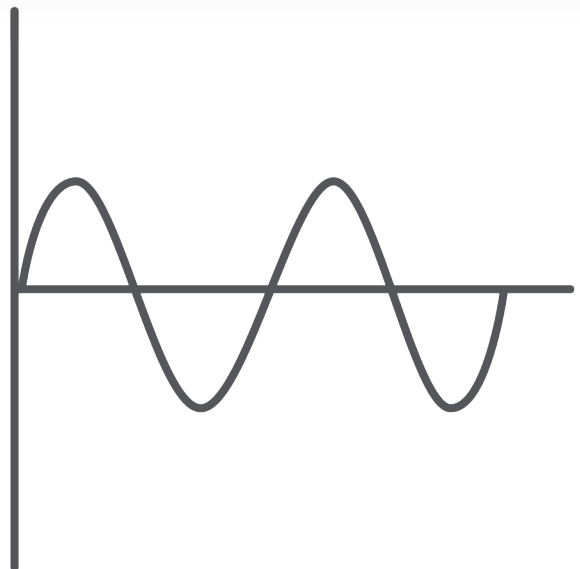
##### AC Power

- › For standard MF cathodes
- › 60 to 180 kW



#### AC Technology

- › Industry-standard Crystal® AC
- › Proven capabilities
- › Quick, stable delivery even at high power levels



## Bipolar MF

### ASCENT® DMS MF120

#### MF Bipolar Power

- › For standard MF cathodes
- › 120 kW

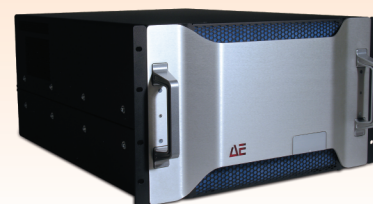


## Bipolar

### ASCENT® DMS

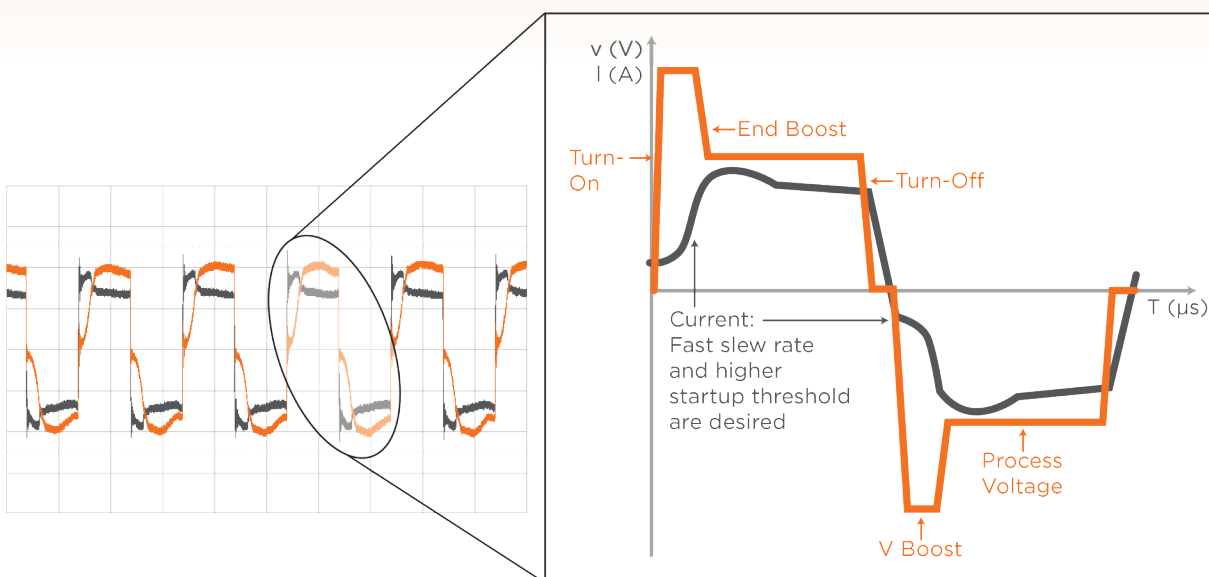
#### Advanced Bipolar Power

- › For advanced processes, such as co-sputtering
- › 30 to 240 kW



## BIPOLAR TECHNOLOGY

- › Industry-proven technology
- › Bipolar arc management for higher process stability
- › Synchronization across cathodes for multi-zone arc management
- › Frequency optimization for higher deposition rates and film quality
- › Modularity and scalability for easy integration, configuration, and maintenance
- › Power balancing for longer campaign runs and optimized target utilization





**Contact AE® to determine the best solution for your process.**

#### DUAL-MAGNETRON PRODUCT CAPABILITIES

	CRYSTAL® AC Power Supply	Ascent® DMS MF120 Mid-Frequency Dual-Magnetron Sputtering System	Ascent® DMS Advanced Dual-Magnetron Sputtering System
<b>Waveform</b>	AC MF	Bipolar MF	Programmable bipolar
<b>Process Frequency</b>	MF (~40 kHz)	25, 30, or 35 kHz (selectable)	500 Hz to 50 KHz (fully programmable)
<b>Cathode Power Delivery</b>	AC MF	50% duty cycle or power balanced	Programmable per cathode
<b>Arc Management</b>	AC arc management	DC-style arc management (lower arc energy)	DC-style arc management (lower arc energy)
<b>Synchronization Between Cathodes</b>		Yes	Yes

**With both bipolar and AC options, Advanced Energy® offers the most comprehensive portfolio for dual-magnetron sputtering.**

## PROCESS CONSISTENCY, PRODUCT QUALITY, AND PRODUCTIVITY



### **Proven Technology, Proven Performance**

AE technologies, expertise, and support are proven in coating processes ranging from the straightforward to the complex. Our glass coating portfolio offers diverse options that are scalable to your needs.



### **Precise Processes, Precise Products**

Precision is inherent to our philosophy, technologies, and processes. With an infrastructure and controls developed for the tightest application tolerances, we deliver exacting performance where it is most critical to your process recipes and quality products.



### **One Supplier, Critical Process Expertise**

With comprehensive insight into your entire process, AE provides the ideal solution for your unique requirements. This expertise also enables us to ease integration and support optimal results from your process.



### **Best-in-Class Support**

Our industry-leading support network accelerates your productivity with fast turnaround, as well as readily available product and process expertise.



For international contact information, visit  
[advanced-energy.com](http://advanced-energy.com).