

## Product Divisions



### Accelerating market penetration. Achieving market dominance. AE—moving beyond power

If you own a car, watch DVDs, use a computer, work in a building with reflective coated glass, use devices with LCD panels, watch a flat panel TV, or listen to CDs—you've only been in touch with some of the items AE's products help to manufacture. We're at the core of new technologies. We're at the heart of modern life.

#### Power Management

The first-born of AE's products were our power conversion and control systems. These units deliver and precisely control the power required in plasma processing applications, such as semiconductor and flat panel display manufacturing.



In a time before the term "disruptive technology" was coined, Doug Schatz invented AE's first MDX power supply using switchmode technology—and created a paradigm shift in the semiconductor equipment industry.

Today, the Power Management product division continues to focus on DC and RF power systems that outstrip the competition in performance, reliability, and invention—and create new models for the industry.

#### Source Technology

Source products combine power products with plasma and ion sources and are a good example of the integrated subsystems that drive our strategy today. Our customers can incorporate these subsystems in less time and for less cost than stand-alone power and source components. Used in markets ranging from semiconductor and opto-electronics to architectural glass and tool coating, these products offer opportunities for growth beyond the semiconductor equipment industry.

AE's Source line—and the engineers behind it—are leading in the race to develop new generation atmospheric, ion beam, and deposition source products that will win greater market share.



#### Thermal Management

AE's acquisitions in 2000 of Noah Precision and Sekidenko brought solid state temperature control systems and temperature sensing and measuring instruments into our family of products. Our Thermal Management products bring dynamic temperature control and precise temperature measurement capabilities to the semiconductor manufacturing process, helping our customers improve process control and quality, increase yields, and reduce costs.

Today, our Thermal Management products are key to driving our convergent technology strategy of surrounding front-end semiconductor processing tools.

### Flow Management

One of the newer branches of the AE product family is the Flow Management line of products. Our acquisition of EMCO in 2001 bought us the disruptive technology of the Mach One mass flow control system—a uniquely elegant and powerful solution to measuring and controlling the flow of liquids, and gases during the manufacture of semiconductors, flat panel displays, and the application of thin films. With the January 2002 acquisition of Aera, a world leader in the sale and support of mass flow controllers, we have increased our presence through Aera's extensive customer base, improved our customer response and support, and become a dominant force in developing flow management solutions.

What's more, these products also dovetail perfectly into our convergent technology strategy of surrounding front-end semiconductor processing tools with our components.



### Integrated Controls

Under this product division, we expect to realize the greatest potential of our convergent technologies strategy. Here, our talented engineers are focusing on packaging robust, multi-disciplinary tools—systems—subsystems—out of combinations of our core products. It's here we're adding even more advanced intelligence to our products—integrating hardware and software to create systems capable of achieving process results that end users can only imagine. Systems capable of performing consistently regardless of external conditions and situations. Systems proficient in managing complex processes. Systems designed for excellence.

Integrated Controls is AE's key to further market differentiation and to adding greater value to our relationships with our customers.

For a complete list of AE products, descriptions, and applications, visit the AE product line card on our web site at:  
[www.advanced-energy.com](http://www.advanced-energy.com)