



Advanced Energy Corporate Overview

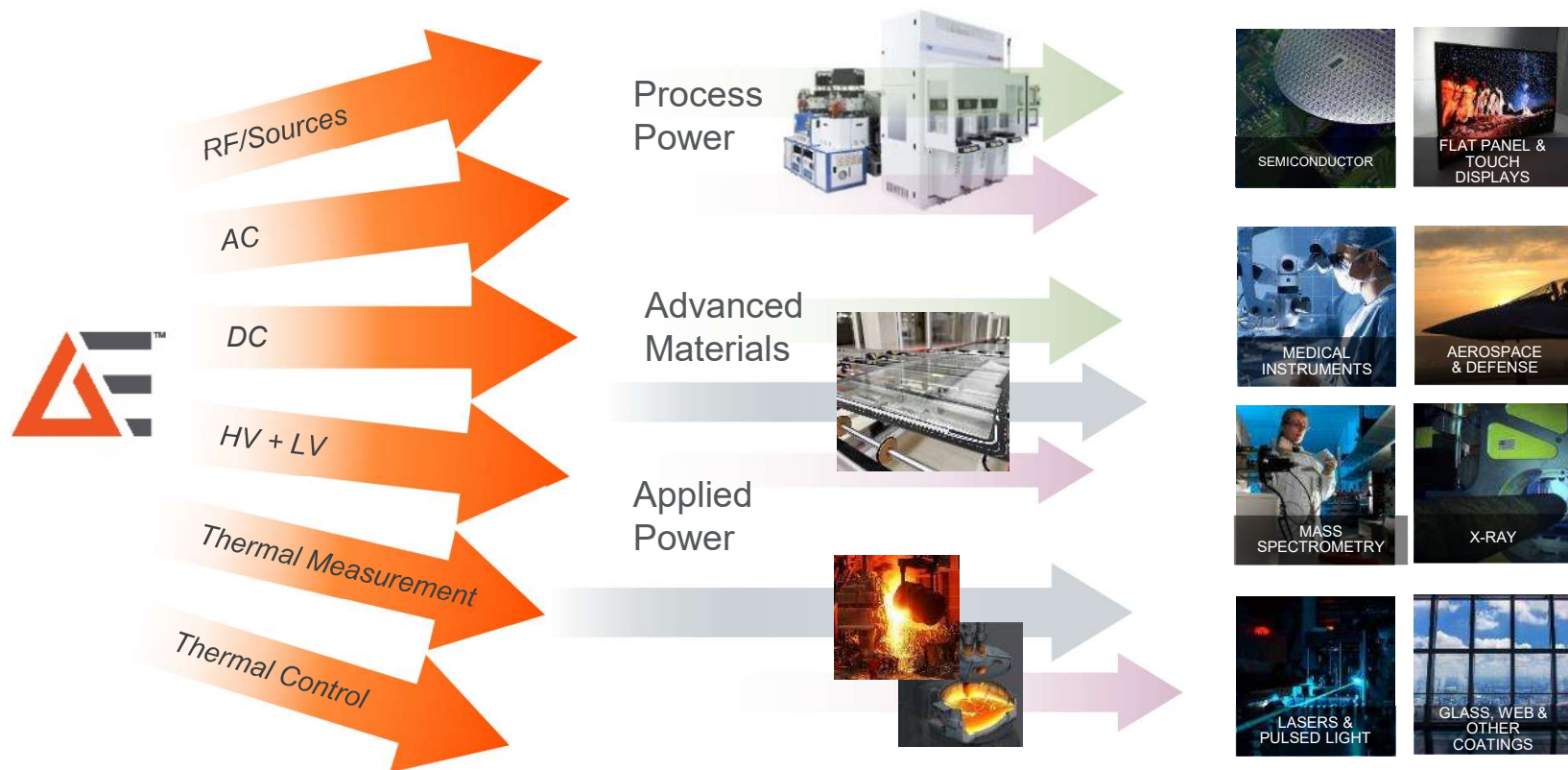
Applied Power

Q4 2019



Precision Power Conversion & Control

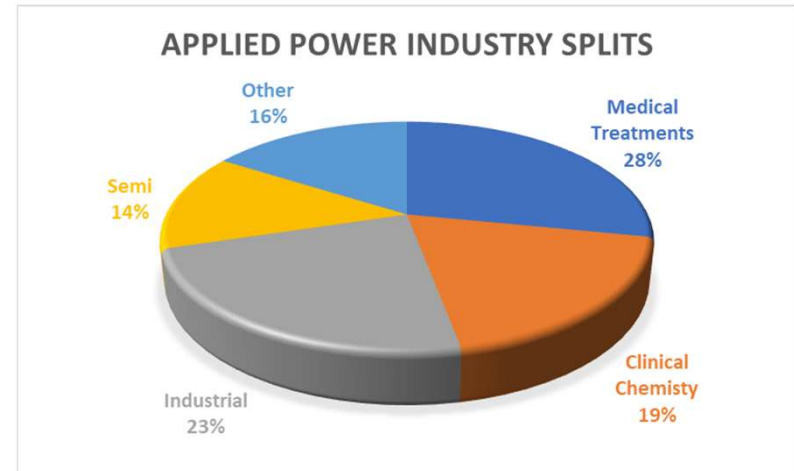
Precision power and **thermal measurement & control** technologies, along with our applications know-how, inspire close partnerships and perpetual innovation in thin-film and industrial manufacturing.



AE Applied Power Industry Splits

- Higher design in activity in Medical Treatments segment.
- Clinical Chemistry as target segment
- Industrial segment was our main market and still an important and growing segment

We power mission critical applications in highly regulated markets



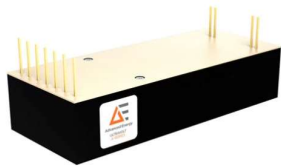
High Voltage Products

- Our industry-leading **high voltage power supply portfolio** of standard modules, custom products, and precision technology enable mission-critical semiconductor, analytical, and industrial processes.
- 1500+ models: 50 platforms, 11,000 variations
- Precision mass spectrometry products
- Precision scanning electron microscope products
- High-performance electrostatic chuck products
- Reliable x-ray power supplies for diffraction, fluorescence, reflectance, and imaging



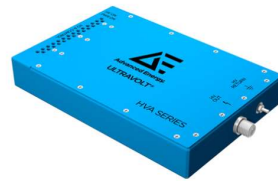
UltraVolt Platform Designs

- Precision, high reliability high voltage DC/DC converters from 0.5W to 250W



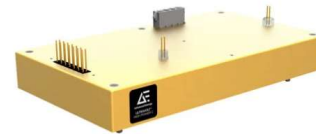
Single Output Unipolar

- Regulated Unipolar DC/DC converters provide up to 30kV.
- Available in 4W, 15W, 20W, and 30W
- UL/cUL, CE mark, and RoHS compliant



High Voltage Amplifiers

- High voltage amplifiers.
- Available in both unipolar and bipolar models.
- It can both source and sink current
- UL/cUL, CE mark, and RoHS compliant



High Power/Higher Voltage

- Regulated unipolar and bi-polar DC-to-DC converters designed up to 50kV
- Available in 60W, 125W or 250W
- Analog Control (I5/I10 interface available)
- UL/cUL, CE mark, and RoHS compliant



Micro-size and Compact

- Regulated DC-to-DC converters in ultracompact packages up to 8kV
- Available from 0.1W to 6W
- UL/cUL, CE mark, and RoHS compliant

Markets

- Medical Equipment Medical Equipment Imaging, Lasers, Surgical Robotics
- Clinical T&M + Laboratory : Clinical Chemistry, Analyzers, Mass Spec, SEM
- Semiconductor – Handlers, Testers, Microscopes (Inspection/Imaging)
- Industrial (T&M, Inspection)

Low Voltage Products

- Our low voltage power supply portfolio of modular configurable electronic power supplies is designed for mission-critical applications in the global medical, clinical diagnostics, industrial, hi-rel and communications markets
 - Our Excelsys products provide superior high efficiency, low profile power supply solutions to a wide variety of high-end engineering applications where there can be no compromise in reliability and performance.
- AC/DC Modular Power Supplies,
 - Single Output Power Supplies
 - Custom Power Supplies



Excelsys Intelligent low voltage – portfolio overview

- Recognized technology leaders in high efficiency, high reliability medium power (300W+) modular power solutions
- Scalable Solutions with > 2.5M easily serviceable combinations from 4 off-the-shelf platforms



CoolIX - 600/1000W Fanless Modular

- 1st convection cooled modular power supply on the market
- Digital Communications/Control and Analog Control
- 24W Bias/Aux supply
- Patented Technology



CoolIX - 1800W Modular

- Highest power density in the market
- Digital Communications/Control and Analog Control
- 24W Bias/Aux supply
- Patented Technology



UltiMod - 600W to 1340W Modular

- 1st user configurable power supply
- 1st 1U modular power supply
- Analog Control
- Field proven reliability



Xsolo - 500W to 1000W Single

- >92% Efficiency
- Compact 1U
- Redundant Operation
- Digital Communications and Analog Control

Markets

- Medical Treatments (Imaging, Lasers, Surgical Robotics)
- Clinical T&M + Laboratory (Clinical Chemistry, Analyzers, Mass Spec, SEM)
- Industrial (Lasers, T&M, Automation)
- Semiconductor – Handlers, Testers, Microscopes (Inspection/Imaging)



End