

## **P4 AIR FILTER SOLUTIONS FOR DATA CENTERS**

Dan Krupp, Universal Air Filter

All electronic devices and circuitry generate excess heat and thus require thermal management to improve reliability and prevent premature failure. Similarly, today's leading edge enterprise and communications service provider networks demand clean cooling air and environments for infrastructure to operate at peak performance. A broad range of equipment protection and preventative maintenance topics are covered:

- How OEM designers are specifying custom air filters and EMI shielding products to protect sophisticated electronics and other commercial equipment
- How network operators are avoiding downtime, reducing repair costs, and extending equipment life through preventative maintenance

The talk will include presentations of OEM electronics air filter design solutions as well as sourcing discussions on prevention of equipment failure / network downtime, energy efficiency improvements, and cost savings opportunities. Other technical information will be provided for equipment maintenance, UL flame safety, and NEBS (Network Equipment Building Systems) requirements for telco networks and data center facilities. Shelf-level applications for servers, switches, and storage as well as rack-level/room-level in-row and mobile cooling units. Computer room air conditioning (CRAC) unit and building HVAC applications will also be presented.

Design and application knowledge is necessary to satisfy electronics cooling requirements of increasingly powerful and complex equipment, Engineering design support and quick-turn, custom prototypes are necessary for design success as engineers operate under ambitious product development cycles. Filters need to be engineered to address the challenges of thermal management, dust contamination, airflow control, fire safety, EMI shielding, and size limitations in crowded electronic enclosures. Filtration products also must satisfy the most stringent end market certification standards and performance criteria.

OEM approved sources of supply are critical for replacement air filters in carrier grade telecommunications and networking applications, Cost, ease of ordering, and shorter fulfillment are primary drivers to purchase directly from air filter manufacturers that comply with the most demanding network industry standards and requirements.

The end result is world class networks that deliver reliable and robust data security, transmission, broadband, and wireless communications services.