



Better Air is Our Business®

AmericanAirFilter®

Nuclear

AstroCel® III

- 2,000 CFM at 1.3 in. w.g.
- ASME AG-1 qualified
- UL 586 qualified
- Reduced footprint requirements
- 400 square feet of media
- No aluminum separators
- 99.97% efficiency on .3 micron particles

AstroCel® III Design

The AstroCel III HEPA filter operates on the impaction-diffusion principle to remove ultra-fine particles from ventilation and process air using a high ratio (100 to 1) of media area to face area. Air velocity through the filter face is 500 FPM (2.5 M/sec) while velocity through the media itself is 5 FPM (.025 M/sec). This high-density filtering media (ASME AG-1) of sub-micron glass fibers is folded into a closely pleated panel pack. The AstroCel III uses fiberglass string separators to hold open the pleats, which eliminates the need for aluminum corrugated separators, and provides unobstructed air flow through the filter. Panel packs of the pleated (25 mm deep) media are assembled and sealed in a multiple V-bank arrangement, as well as the cell sides and media retaining channels of the filter. This V-bank arrangement permits 400 sq. ft. (37 M²) of surface area to be used in each AstroCel III filter.

Quality Assurance

All AAF AstroCel III Nuclear Grade HEPA Filters are designed, manufactured, and tested under a Nuclear Quality Assurance Program meeting all requirements of ASME NQA-1. Filters meet requirements of ASME N509-1989 and are qualified to ASME AG-1.



Construction Features

The AstroCel III is available with 304 or 409 stainless steel cell sides (14 gauge). Media panels are sealed in place using a solid urethane sealant. The cell sides have rigid flanges at each face. Galvanized 4x4 wire fabric (hardware cloth) faceguards are installed on each face of the media. Dovetailed neoprene gaskets (1/4" x 3/4") are provided on one or both sides for leak-free sealing into housings or banks.

Advantages of AAF AstroCel® III HEPAs

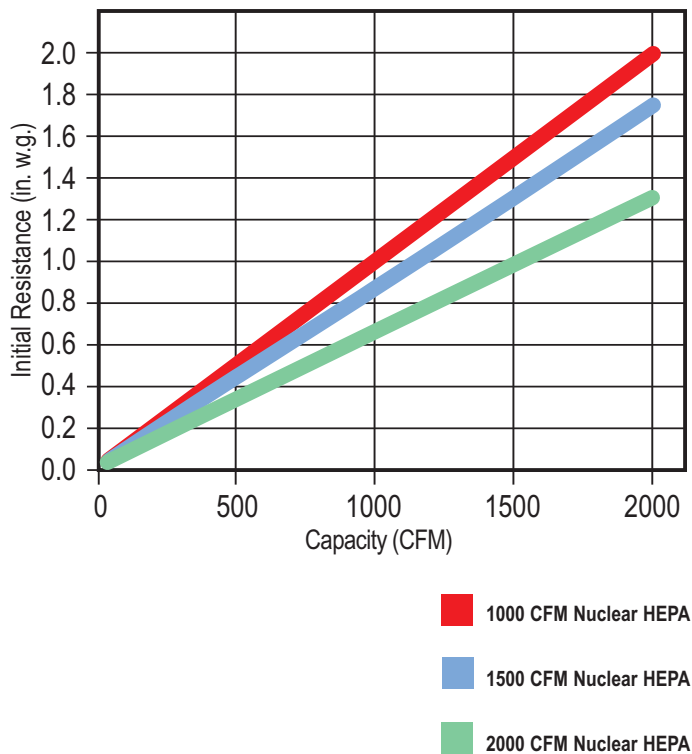
- Reduced space requirements and housing costs when used at 2000 CFM design capacity.
- Reduced changeout frequency and replacement costs in existing filter units when used at 1000 CFM HEPA design capacity.
- Longer life for heavy contamination applications. Reduced number of spent filters requiring rad-waste disposal.

Nuclear AstroCel® III

Performance Data

- Flow Capacity:** 2000 CFM at 1.3 in. w.g. initial pressure drop (3400 M3/hr at 0.30 kPa)
- Efficiency:** 99.97% by PAO Test Method on 0.3 micron particles
- Resistance at Rated Flow:** Average initial resistance of 1.3 in. w.g. (0.32 kPa)
Recommended final resistance of 2 to 3 in. w.g. (0.5 to 0.75 kPa)
Design maximum 10 in. w.g. (2.5 kPa)
- Max. Temperature Limit:** 250°F (121°C) continuous service
- Cell Size and Weight:** 24" W x 24" H x 11½" D, 75 lbs. (610 mm x 610 mm x 290 mm D: 34.02 ks)
- Media Surface Area:** 400 sq. ft. (37 M²)
- Production Tests:**
1. Pressure drop at rated flow.
 2. PAO penetration efficiency test at 100% and 20% rated flow. Each cell is tested and labeled with certified test results and cell serial number.
- Qualification Standards:** ASME AG-1
UL 586
ASME NQA-1
10CFR50, Appendix B

Comparative Airflow / Resistance



AAF Nuclear Environmental Systems (NES)

AAF NES offers complete air filtration systems and components to the U.S. and global markets. Clients include nuclear utilities, DOE/DOD, labs, and hospitals. All products meet the requirements of ASME NQA-1. Air filtration systems include HEPAs, carbon adsorbers, ASHRAE filters, moisture separators, heaters, coils, fans, and dampers.



Bag-In/Bag-Out (BIBO)



Carbon Filter



ASHRAE Filter