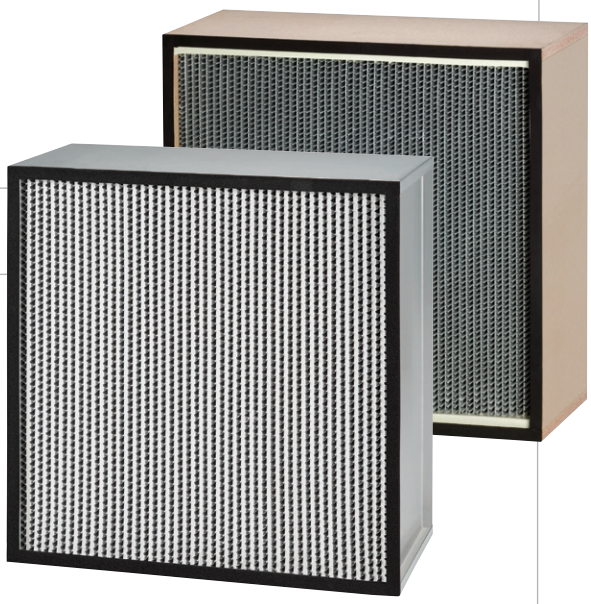
THE WORLD LEADER IN CLEAN AIR SOLUTIONS

AstroCel® I



HEPA FILTERS

AstroCel I High Efficiency Particulate Air (HEPA) filters are the most efficient air filters commercially available. They have broad application in cleanrooms and other areas requiring the very highest levels of contamination control, including:

- Semiconductor manufacturing
- Electronics
- Pharmaceutical processing
- Photo film manufacturing/ processing
- Hospitals
- Universities
- Laboratories
- Food processing
- Asbestos abatement

AstroCel I filters are available to meet all performance classes per the Institute of Environmental Sciences & Technology (IEST) Recommended Practice (RP) IEST-RP-CC001.

AstroCel I filters are available in a variety of construction materials and cell side configurations to fit AAF Flanders and competitive framing systems or sealing designs. Refer to the section on selection data for a complete list of options.

Manufactured to the Highest Quality Standards

Standard Capacity

5⅞″ deep – 125 FPM @ 1.0 in. w.g.
11½″ deep – 250 FPM @ 1.0 in. w.g.

Efficiencies: 99.97% and 99.99% minimum efficiency on 0.3 micrometer particles.

Additional efficiency levels including ULPA available. Higher efficiencies, up to 99.999995% on .10 to .20µm particles, available with our DimplePleat® and AstroCel® II mini-pleat filters.

High Capacity

24″ x 24″ x 11½″ deep – 2000 CFM @ 1.4 in. w.g.

Efficiencies: 99.97% and 99.99% minimum efficiency on 0.3 micrometer particles.

High Capacity AstroCel I HCX filters are designed to handle higher airflow than a standard HEPA filter. This offers greater operating flexibility and cost savings.

- Double the airflow of a standard capacity with only a 40% increase in resistance.
- Lower resistance, lower energy cost, and longer life at the same rate of flow.

AAF | Flanders®

AstroCel® I Filters

Design and Construction

Gasketed
Wood Construction
Particle Board



Gasketed
Metal Construction
Pan Style

Gel Seal
Wood Construction
Plywood



Gel Seal
Metal Construction
Galvanized Steel

AstroCel® I Selection

AstroCel I filters are available in a wide variety of standard sizes and construction materials. Special sizes can be fabricated or special materials used for unique requirements.

There are twelve criteria encompassing materials and performance that go into the makeup of an AstroCel I filter. Careful selection of the right combination will result in the filter that best meets the needs of your application.

Size
Sizes from 8″ x 8″ to 36″ x 72.″

AstroCel I filter sizes are listed with the height dimension first, followed by the width, then depth.

Minimum Efficiency
99.97% – 0.3µm
99.99% – 0.3µm
99.999% – 0.3µm

Scan Tested (Optional)
AstroCel I filters can be scan tested to eliminate pinhole leaks.

Media
Waterproof, fire-retardant microglass
Waterproof, fire-retardant, radiation resistant microglass

Cell Side Material
Plywood
Fire Retardant Plywood
Particle Board
Fire Retardant Particle Board
*Galvanized Steel
*Stainless Steel
*Aluminum

Separators
Aluminum
Vinyl Coated Aluminum

Bond
Polyurethane Elastomer
Silicone
Black Cement

Gasket
Neoprene Expanded Rubber
Silicone
Urethane

Gasket Location
None
One Side
Both Sides

Faceguards (Optional)
4 x 4 Mesh Hardware Cloth
Galvanized Steel
Stainless Steel

Faceguard Location
None
One Side
Both Sides

UL 586 Classified (Optional)
Numbered UL certification label to be applied.

**Available with antimicrobial treated media.*



High Temperature AstroCel® I Filters

AstroCel I filters are constructed with stainless steel or aluminum cell sides and are available for applications with continuous operating temperatures up to 750°F.

400°F (204°C) – Stainless Steel or Aluminum Cell Sides, White RVT Silicone Board

500°F (260°C) – Stainless Steel or Aluminum Cell Sides, Red RVT Silicone Board

750°F (399°C) – Stainless Steel or Aluminum Cell Sides, Black Cement Bond

Special Construction AstroCel® I Filters

AstroCel I Side Access Filters

AstroCel I filters are constructed with a flange at the top and bottom for installation into earlier models of AstroSeal® side access housings. The filters are available with wood or metal cell sides.

Military and Nuclear Designs

AstroCel I filters are available to comply with military and nuclear specifications (ASME AG-1) requiring special cell side material, radiation resistant media, rabbeted joints, special testing, and special packaging and marking.

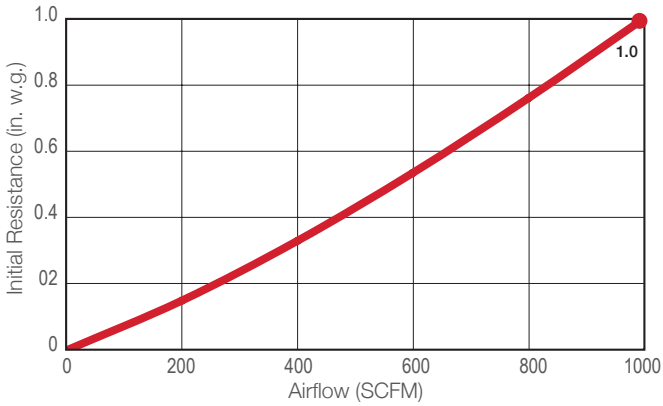
Product Information

Operating Comparison	Standard AstroCel I 24″ x 24″ x 11½″	High Capacity AstroCel I HCX 24″ x 24″ x 11½″
Rated Airflow Capacity @ 1.4 in. w.g. (350 Pa) initial resistance		2000 SCFM (3400 m³/hr.)
Rated Airflow Capacity @ 1.0 in. w.g. (250 Pa) initial resistance	1000 SCFM (1700 m³/hr.)	1500 SCFM (2550 m³/hr.)
Service Life Ratio @ 1000 SCFM (1700 m³/hr.)	1.0	2.0

Performance Data

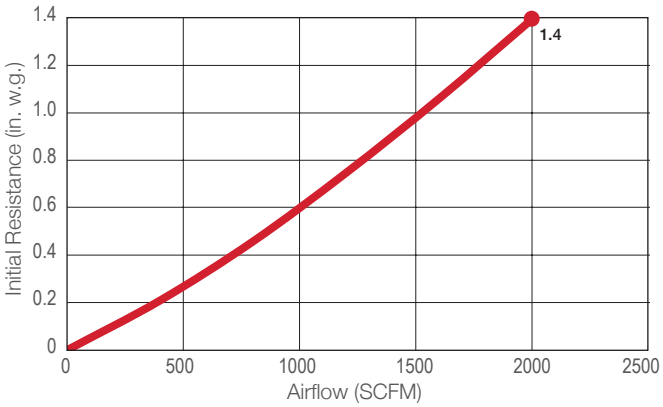
AstroCel I – 24 x 24 x 11½

Initial Resistance vs. Airflow Capacity



AstroCel I HCX – 24 x 24 x 11½

Initial Resistance vs. Airflow Capacity

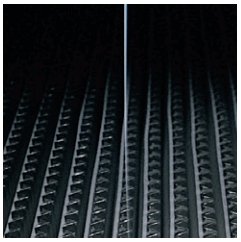


AstroCel® I Filters

Scan Testing

Leak Testing

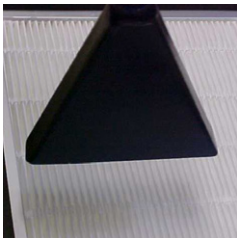
Filters that pass the overall efficiency test may still have minute pinhole leaks. AstroCel I filters can be factory scanned to ensure there are no pinhole leaks. Scanning detects these leaks, which are repaired before the filter is released for shipment.



Scan test showing leak indicated by a smoke trail.

AAF Flanders uses a proprietary static scan test with a challenge aerosol of non-toxic, polyfunctional alcohol that leaves no residue on the media.

For pharmaceutical and those applications requiring PAO, AAF Flanders offers scanning with this material using a light scattering photometer.



Scanning with light scattering photometer.

Overall Efficiency Testing

Two methods of overall efficiency testing used:

PAO Test – This has been the industry standard for many years. It is conducted using a light scattering photometer. The filter is challenged with Polyalphaolefin (PAO). By measuring the upstream and downstream concentration, filter efficiency can be calculated.

Laser Test – The filter is tested with a laser spectrometer using polystyrene latex (PSL) spheres. Filter efficiency is determined by comparing the upstream and downstream concentrations. Efficiencies down to 0.10 micrometers can be determined.



AAF Flanders laser spectrometer.

Media Testing to Meet Exacting Quality Standards

Every roll of media is carefully checked for a specific set of physical and performance characteristics, including:

- Efficiency
- Thickness
- Tensile Strength
- Water Repellency
- Resistance
- Weight
- Binder Content

Underwriters Laboratories Classification

UL Classified

AstroCel I and AstroCel I HCX filters are UL Classified. Testing is performed according to UL Standard 900 and ULC S111 (except those made with non-fire-retardant wood cell sides).

UL 586

This standard ensures that each filter is individually tested at the factory. Additionally, representative filters are tested by UL to ensure that they provide HEPA level filtration, after being subjected to the following conditions:

- **High moisture (90% R.H.)**
- **High temperature (700°F / 371°C) (short duration)**
- **Low temperature (27°F / -3°C)**

UL also subjects the filter to a spot flame test (1750°F / 954°C). A numbered UL label certifying that the filter meets Standard 586 is then applied to the filter.

Guaranteed Performance

In a modern test rig, each air filter is individually tested by well-trained AAF Flanders personnel before shipment to the customer. The actual test data is indicated on the label. Each filter is also assigned a serial number, and a permanent record is kept of the materials of construction and performance.

AstroCel® is a registered trademark of AAF International in the U.S. and other countries. DimplePleat® is a registered trademark of Flanders Corporation in the U.S.

AAF Flanders®

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AAF Flanders has a policy of continuous product research and improvement and reserves the right to change design and specifications without notice.

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