THE WORLD LEADER IN CLEAN AIR SOLUTIONS

AstroCel® I

HEPA FILTERS

The 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.

- 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-1-CC001.

AstroCel I filters are available in a variety of construction materials and cell side configurations to fit AAF 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.

For ULPA and MEGA efficiencies up to 99.999995% on 0.10 to 0.20 micrometer particles, use AstroCel II LPD Series mini-pleat filters.

High Capacity

24″ x 24″ x 11″ 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® INTERNATIONAL
BETTER AIR IS OUR BUSINESS®

AstroCel® I

Design and Contruction

Gasketed
Wood Construction
Particle Board

Gasketed
Metal Construction
Double Box Flange
(Pan Style Available)

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.*

Special Construction AstroCel® I Filters

AstroCel I Side Access Filters

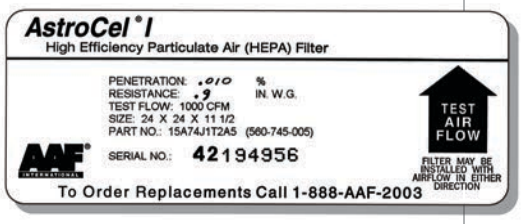
AstroCel I filters are constructed with a flange at the top and bottom for installation into earlier models of AstroSeal® side access housings. The filters are available with wood or metal cell sides.

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.

Guaranteed Performance

In a modern test rig, each air filter is individually tested by well-trained AAF 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.



Test results on each filter are indicated on the label.

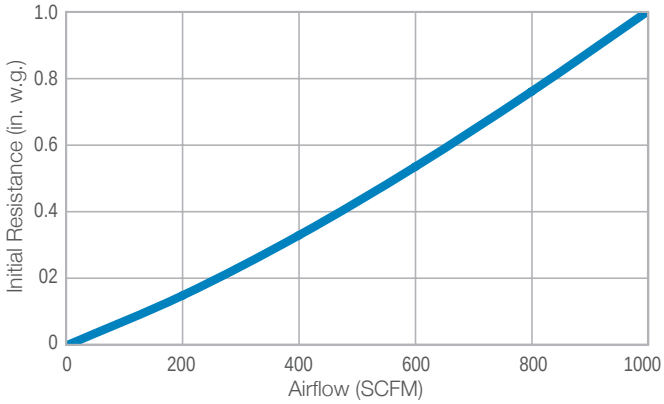
Product Information

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 m^3/hr.)
Rated Airflow Capacity @ 1.0 in. w.g. (250 Pa) initial resistance	1000 SCFM (1700 m^3/hr.)	1500 SCFM (2550 m^3/hr.)
Service Life Ratio @ 1000 SCFM (1700 m^3/hr.)	1.0	2.0

Performance Data

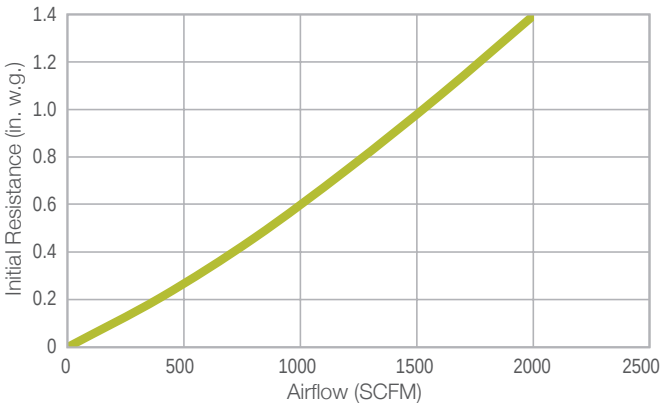
AstroCel I - 24 x 24 x 11½

Initial Resistance vs. Airflow Capacity



AstroCel I HCX - 24 x 24 x 11½

Initial Resistance vs. Airflow Capacity

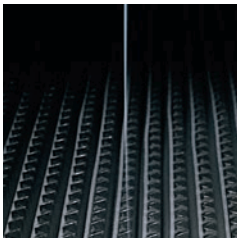


AstroCel® I

Scan Testing

Leak Testing

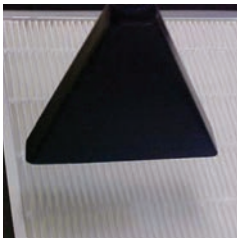
Filters that pass the overall efficiency test may still have minute pinhole leaks. AstroCel I filters can be factory scanned to assure there are no pinhole leaks. Scanning detects these leaks which are repaired before the filter is released for shipment.



Scan test showing leak indicated by a smoke trail.

AAF 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 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 poly-alpha-olefin (PAO). By measuring the upstream and downstream concentration, the 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 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 was 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 can be applied to the filter.

AAF INTERNATIONAL®

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