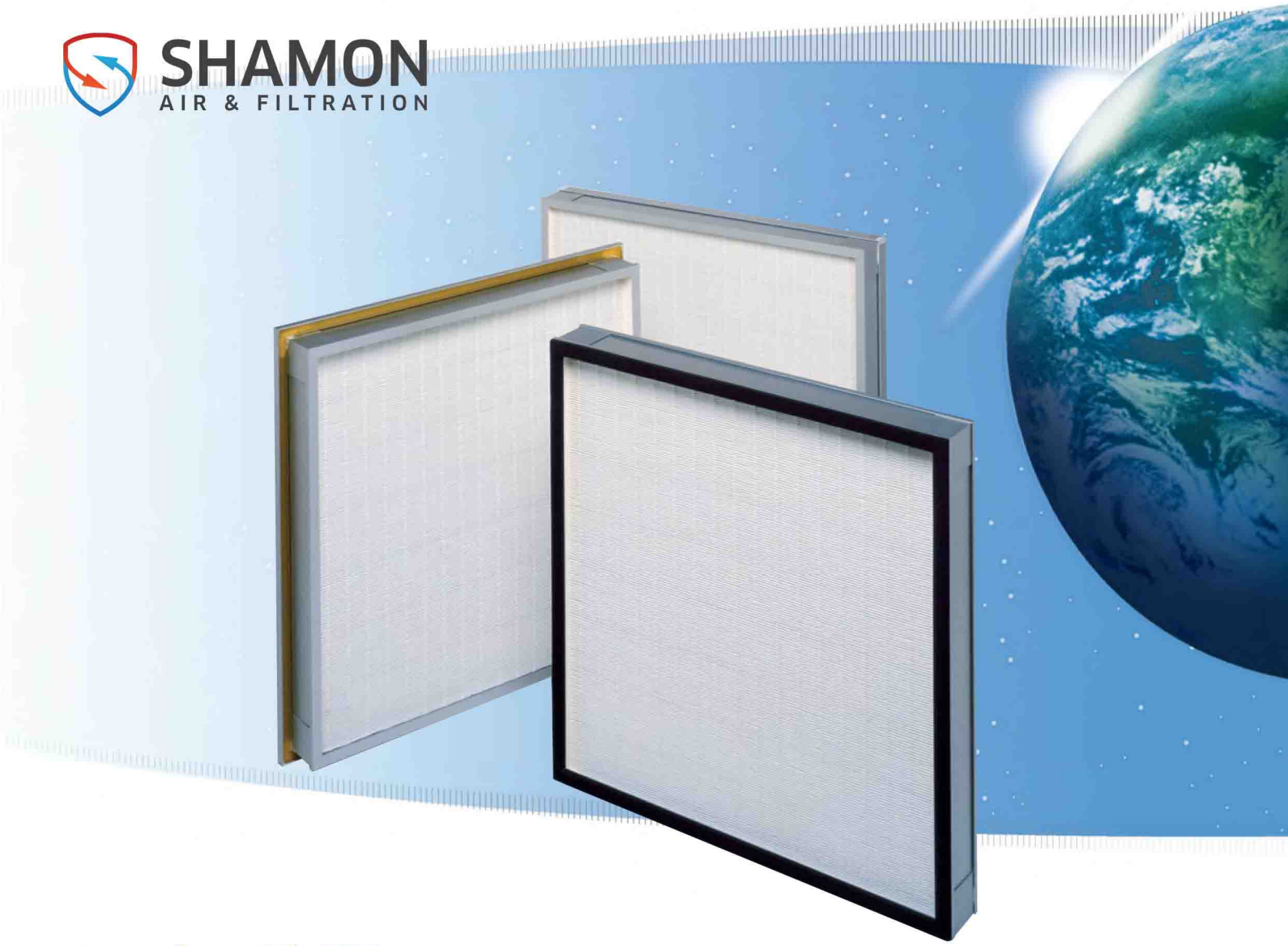
SHAMON
AIR & FILTRATION



AmericanAirFilter®

# AstroCel® II

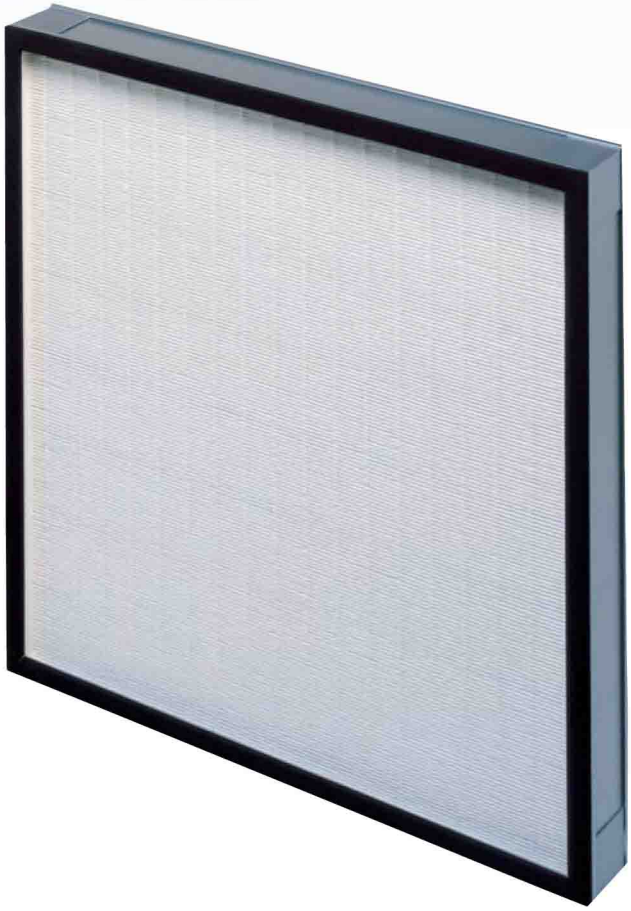
***LPD Series***
***HEPA and ULPA Filters***

AAF® INTERNATIONAL

AmericanAirFilter®

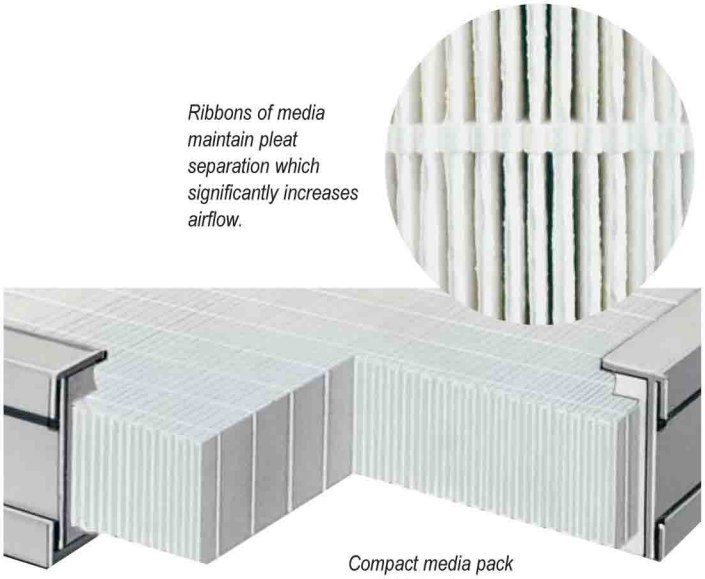
# AstroCel® II LPD Series

## *HEPA and ULPA Filters for State-of-the-Art Cleanroom Requirements*



- ***Lightweight and compact***
- ***Easy installation — no corrugated separators***
- ***Mini-pleat design features maximum media cleaning potential***
- ***Lowest possible pressure drop reduces operating costs***
- ***Available in a range of cleaning efficiencies***

The AAF AstroCel II LPD Series is a unique family of mini-pleat HEPA and ULPA filters designed to meet the demanding airflow and efficiency requirements of the semiconductor, pharmaceutical, biotech, food processing, and other industries in which airborne contaminants must be carefully controlled. AstroCel II filters combine the right features to give you optimum efficiency while keeping operating costs to a minimum.



*Ribbons of media maintain pleat separation which significantly increases airflow.*

*Compact media pack available in sizes from 2" to 4" deep.*

### *Mini-Pleat Media Pack*

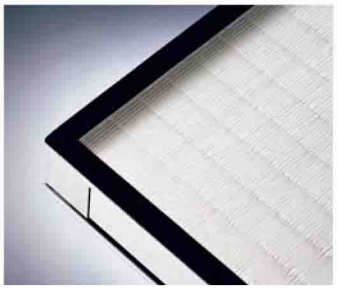
- Highest efficiency and lowest possible pressure drop
- Pack depths from 2" to 4"
- 7½ - 8 pleats per inch allows the greatest amount of media in the shallowest depth
- Pleat straightness to ± ¼" - unmatched by competitors
- Requires no foreign or organic separators such as adhesive or strings
- Classified under UL 900, UL 586, and Factory Mutual

**Space Saving Media Pack**

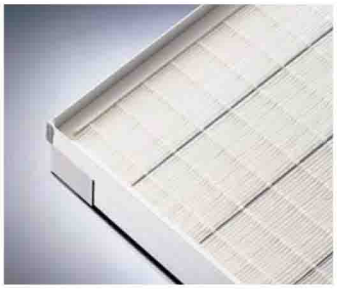
Designed to combine maximum efficiency with low pressure drop, our AstroCel II filter pleated media pack is available in sizes from 2" to 4" deep.

Our compact size results from a mini-pleat filter design which reduces resistance and provides the lowest possible pressure drop. Ribbons of media spaced every 1¼" maintain separation of pleats within the pack, while allowing a more compact filter depth than corrugated separators. The separation and precision straightness of the pleats allow air to move throughout the entire depth of the filter utilizing the full cleaning potential of the media.

*Gel Seal Frame*



*Neoprene Gasket Seal Frame*



*Knife Edge Frame*

## Sturdy Construction

Manufactured from borosilicate microfibers, AstroCel II filter glass media is water-resistant and fire-retardant.

The media pack is permanently attached to an anodized extruded aluminum frame with a UL classified, white urethane adhesive.

Frames are available with gasket seal, gel seal, or knife edge seal for fluid seal grid applications.

The AstroCel II LPD Series filters with knife edge cell sides was designed specifically for gel seal grid systems. The grid consists of a network of E-channel extrusions in which a gel sealant is poured to assure an airtight seal around the edges.

## Ongoing Quality Control

Process control starts with sample flats of each roll of media tested for efficiency, using either a Q-127 penetrometer (HEPA media) or a Condensation Nucleus Counter (ULPA and above.) The media is also tested for thickness, basis weight, tensile strength, binder content, water repellency, and pressure drop.

Once a roll meets our specification, it is carefully pleated and assembled in the cell side designed for the specific application. The filter is then tested and certified to meet the designated efficiency requirement. If required by the customer specification, the filter is tested for pinhole leaks. A final visual inspection ensures that dimensional tolerances have been met. Every filter is identified by serial and order number and is labeled with performance criteria, media lot number, operator number, and part number.

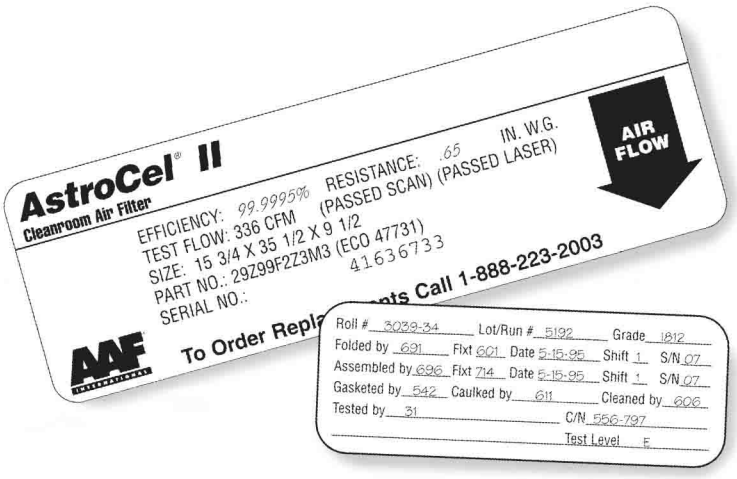
Meticulous scrutiny during every phase of the production process enables AAF to trace a filter back to the roll of media from which it was manufactured, should a defect be identified.

This elaborate testing ensures that you receive only the highest quality cleanroom filtration products; cost-effective products that meet your toughest requirements.

## State-of-the-Art Testing

AAF has established an air filtration testing methodology that is among the most comprehensive and accurate in the industry. Testing is essential in documenting filter efficiency and assisting in research and development of filtration products. AAF's testing facilities meet the highest standards for quality control.

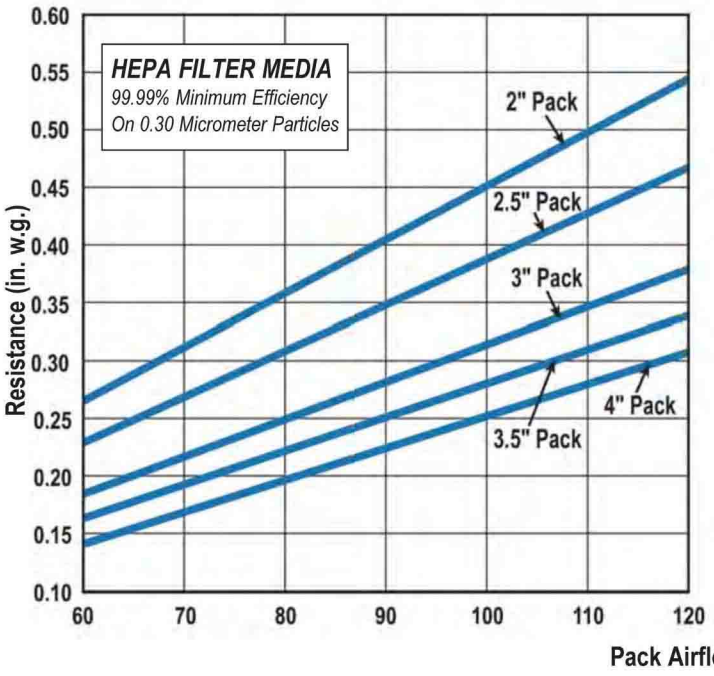
Every HEPA and ULPA filter is tested and certified, using procedures tailored to your specifications, to meet your performance requirements prior to shipping. AAF testing procedures for overall efficiency include laser particle counters with liquid or solid aerosol challenge. Pin hole leaks can be detected using either AAF's proprietary static scan test, hand or automatic scan testing.

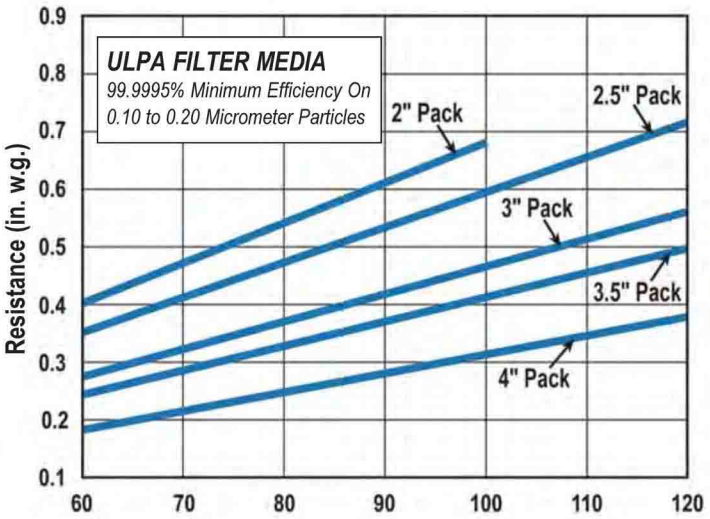


AmericanAirFilter®

# AstroCel® II

## Operating Data




Pack Airflow (FPM)

## Lowest Possible Pressure Drop

Because of the relatively large volumes of air handled in a typical cleanroom application, operating cost is a prime consideration in the design of the air filtration system. One of the most important areas to be evaluated is the resistance or pressure drop across the HEPA filters, because fan horsepower is the single biggest energy consumer in the cleanroom.

Pressure drop is measured by manometer as the test filter is subjected to a metered air volume. Testing on a volumetric basis is specified in the Institute of Environmental Sciences and Technology IEST-RP-CC007 standard on ULPA filters.

AAF calculates the total square footage of usable media pack area (outside dimensions of filter minus the frame thickness and adhesive) and multiplies this number by 100 FPM to determine an accurate volumetric test flow. This method simulates actual cleanroom airflow conditions ensuring a true measurement of pressure drop.

Some manufacturers determine the test flow by measuring the velocity (100 FPM) at 1 or 2 points on the downstream side of the filter using an anemo-meter. This procedure assumes the airflow is uniform 2" from the downstream side of the filter and in the majority of cases the assumed test flow will be less than 550 CFM for a nominal 24" x 48" filter.

Since reduced operating pressure drop is so important, volumetric testing as performed by AAF is essential to determining true pressure drop and its impact on your cleanroom costs.

SHAMON AIR & FILTRATION

SHAMON AIR & FILTRATION
EQUIPMENT NZ LTD
Ph +64 9 580 0075
Fax +64 9 580 0076
WWW.SAFE.CO.NZ

AAF INTERNATIONAL®