

SAAF™ AIR PURIFICATION SYSTEMS  
**RECIRCULATION UNIT (RU)**



Bringing clean air to life:™

# What's inside

Recirculation Unit.....	<b>1</b>
MEGApleat® M8.....	<b>3</b>
SAAF™ Cassette Heavy Duty.....	<b>7</b>
UV Light.....	<b>11</b>
AstroCel® VXL/AstroCel.....	<b>12</b>

# Recirculation Unit 500,1000 & 2000 CFM

These SAAF systems contain a variable speed fan (electronically commutated) to provide energy efficiency and adjustable air flow. The fan section uses a sliding fan tray design to allow easy access for required wiring and installation. The control panel uses a hinged panel design for easy access to the on/off disconnect, variable speed control, and pressure gauges.

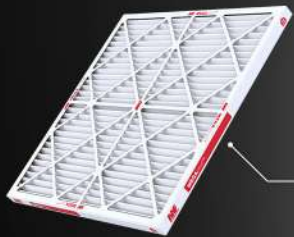
## Product Overview

- Pressurize, recirculate, and clean the air in a controlled environment
- Easy installation, operation, and maintenance in a self-contained system
- Combines gas-phase and high efficiency air filters to create total clean air solutions
- Patent-pending SAAF™ Seal provides superior filtration efficiency
- Designed with internal variable speed fan (electronically commutated)
- Customizable media combinations to meet your specific requirements
- Whisper-quiet operation

A stand-alone complete air purification system to recirculate and clean the air in a controlled environment. It combines particulate, gas-phase and high efficiency filters to remove airborne particles, gaseous contaminants, virus, bacteria, fungus and molds to provide total clean air solution. The insulated double-wall construction provides whisper-quiet operation.

- Pre-filter to prolong the life span of a higher efficiency filter.
- Gas-phase filter to effectively remove odor problems
- Final filter to remove fine particles, virus, bacteria, fungus, molds with the efficiency of 99.99% at 0.3µm
- EC centrifugal fan with 5-speed fan efficiency to quietly clean the environment air with high performance, low energy consumption.





MegaPleat® (2")  
(De-dusting)



MegaPleat® (4")



Outlet



AstroCel® VXL



UV Light



HD Cassette

# MEGApleat® M8 (MERV 8)

EXTENDED SURFACE PLEATED PANEL FILTERS

- Highest dust holding capacity (DHC) – longest life
- Highest breach strength – strongest construction
- Lowest lifecycle pressure drop means reduction in energy consumption and total operating costs
- Guaranteed consistent performance – independent, third-party testing
- Patent pending filter design
- Heavy-duty, galvanized expanded metal support grid
- Moisture-resistant adhesive
- Available in 1", 2", and 4" models
- MERV 8 high capacity

## The New Standard in Premium Pleated Filters

Introducing the longest-lasting MERV 8 pleated panel filter on the market—the MEGApleat M8. Manufactured with a heavy-duty, galvanized expanded metal support grid and moisture-resistant adhesive, the MEGApleat M8 filter is the strongest MERV 8 pleated filter available. The MEGApleat M8 filter's low initial resistance requires less energy consumption, resulting in lower operating costs and energy savings.

## Certified Performance—Insist on Independent Testing

With the MEGApleat M8 filter, MERV 8 classification is documented with test results from an independent, third-party test laboratory. The MEGApleat M8 filter gives you the performance our competitors promise but don't deliver.

## AAF Flanders Guarantee

Unlike other MERV 8 filters where there is significant performance variability from filter to filter, the MEGApleat M8 filter is designed for performance consistency. AAF Flanders is so confident about the performance, we guarantee the MEGApleat M8 filter to last longer, be stronger, be more cost efficient than any competitor's MERV 8 pleated filter, and perform to MERV 8 standards throughout the filter life. Contact your local sales representative for guarantee details.



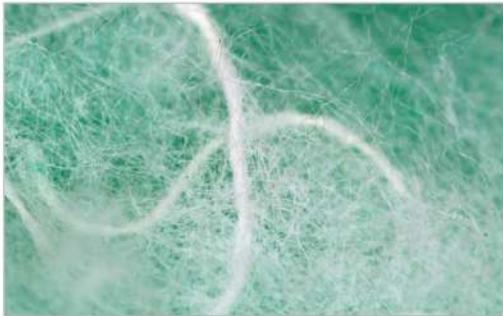


# MEGApleat® M8 Filter

## Media

Uniform size virgin fibers are assembled in closely controlled blends to create a media that is consistent in performance. MEGApleat M8 filters promote maximum airflow and dust holding capacity (DHC).

MEGApleat M8 filters load at a slower rate increasing the life of the filter. Lowest lifecycle pressure drop and higher DHC means reductions in energy consumption and operating costs.



Looking closely at a leading competitor's media, notice the inconsistent fiber sizes and binder that can lead to inconsistent performance and variability.

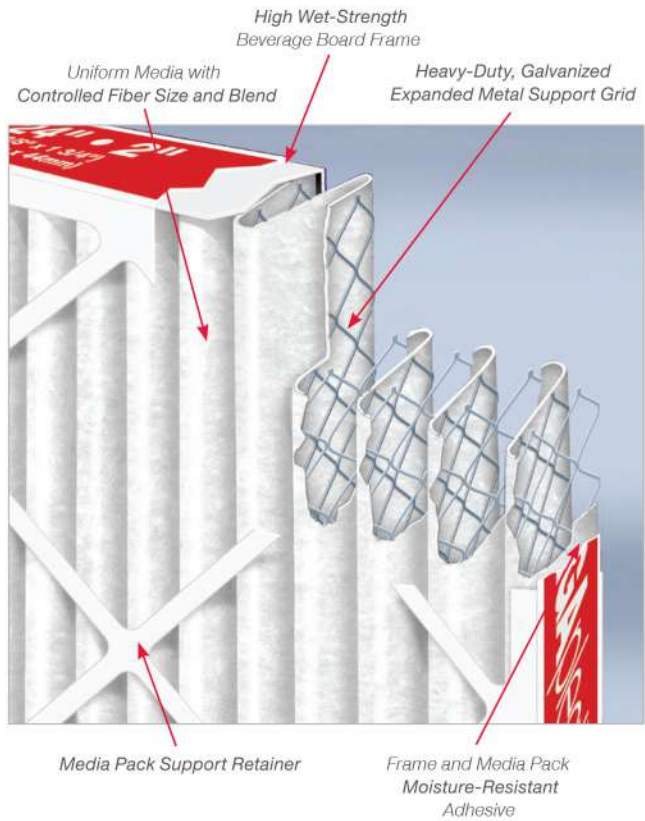


MEGApleat® M8 filter media is free of the variations seen in competitor filters, ensuring consistency over the life of the filter.

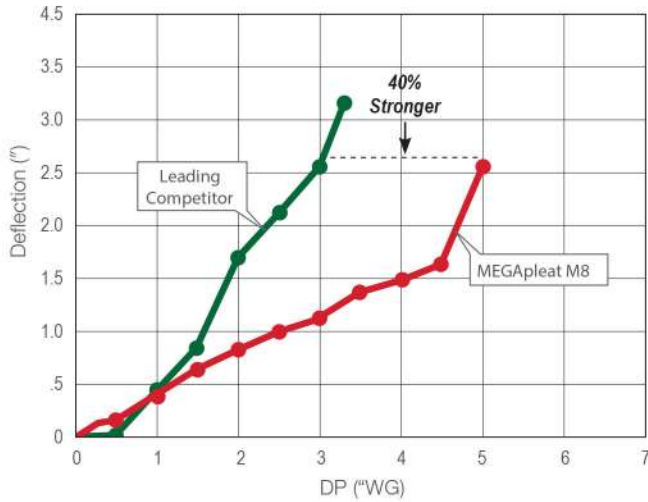
## Premium Construction and Performance

Designed to meet the demands of the toughest applications, the MEGApleat M8 filter offers a totally unitized, die-cut box, beverage board frame with double thickness in the perimeter wall. The MEGApleat M8 filter is extremely strong and durable under difficult operating conditions, including high-moisture applications. A heavy-duty, galvanized expanded metal pleat support grid laminated to the media pack increases rigidity and helps maintain proper spacing between pleats. Proper pleat spacing ensures maximum efficiency, low resistance, and maximizes DHC.

The media pack is bonded to the frame at all points of contact, using moisture-resistant adhesive. This bonding prevents dirty air bypass and promotes even airflow through the media pack. The MEGApleat M8 filter construction process results in a filter which is very stable, with no racking or vibration of the pleats under normal airflow. Pleat stability minimizes the chances of captured particulate shaking loose and re-entering the airstream.



### Wet Breach Test Comparison



Results from a wet breach test performed at an independent test lab shows the MEGApLeat® M8 filter is over 40% stronger than the leading competitor.

### Applications

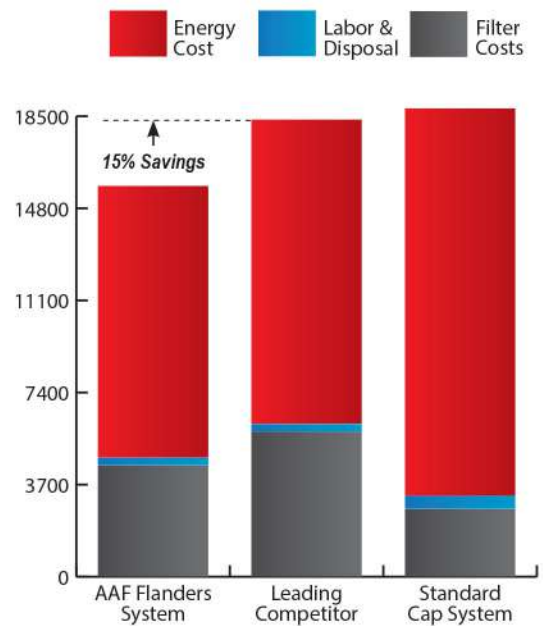
The MEGApLeat M8 filter is designed for use in commercial, industrial, and institutional applications. MEGApLeat M8 filters are ideal for turbulent airflow, heavy loading, and high moisture systems. MEGApLeat M8 filters are directly interchangeable with disposable panel filters, media pads in metal frames, permanent filters, or lower performing competitive filters used in built-up filter banks and side access systems.

No modifications are necessary to frames or latches. MEGApLeat M8 is also an excellent primary filter to prevent dust build-up on heating and cooling coils, fans, and ductwork, or as a prefilter for higher efficiency filters.

### Total System Savings

Looking at each stage of filtration is critical to optimizing the efficiency of a HVAC system. When employing a 3-stage system, a MEGApLeat M8 filter, combined with a VariCel® VXL filter and a MEGAcel® I HEPA filter, will minimize energy usage and cost. When combined with these filters, the MEGApLeat M8 filter offers an environmentally sustainable solution that can help you qualify for LEED® Energy and Atmosphere credits, by reducing the fan energy usage associated with HVAC systems.

When a MEGApLeat M8 filter is used in combination with other AAF Flanders filters, your total cost of ownership is less than competitive systems, as seen in the graph below.



Analysis based on a 3-stage filter system, running 20,000 CFM, over a 2 year time period. Energy costs based on the national average of 0.08 \$/kW-hr. Filter selection was based on the most energy efficient filters available.

# MEGApleat® M8 Filters

## Performance Data

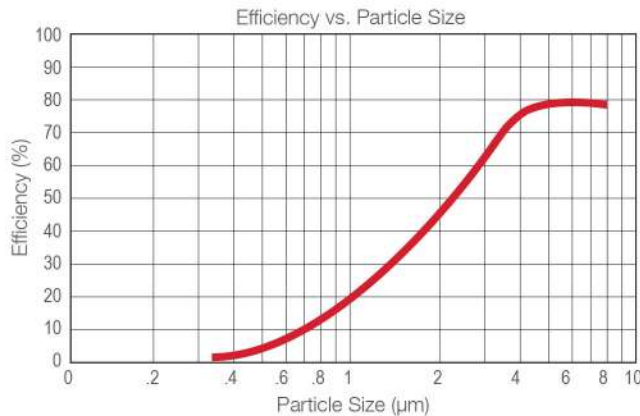
Filter	Pleats Per Linear Foot	Rated Initial Resistance (in. w.g.)			Recommended Final Resistance (in. w.g.)	ASHRAE 52.2 MERV	Continuous Operating Temperature Limits
		300 FPM	500 FPM	625 FPM			
1"	14	.24	.48	—	1.0	8	200°F (93°C)
2"	14	.13	.29	.41	1.0	8	200°F (93°C)
4"	11	.08	.20	.30	1.0	8	200°F (93°C)

All performance data is based on ASHRAE Standard 52.2. Performance tolerance conforms to Section 6.4 of ANSI/AHRI Standard 850-2013.

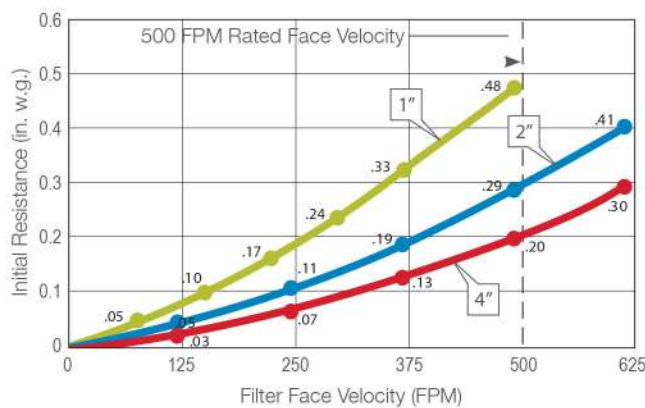
### Underwriters Laboratories Classification

MEGApleat M8 filters are UL Classified. Testing was performed according to UL Standard 900 and ULC-S111.

### Composite Minimum Efficiency Curve



### Initial Resistance vs. Filter Face Velocity



## Product Information – (1)Standard Sizes

Nominal Sizes (Inches) (W x H x D)	Actual Sizes (Inches) (W x H x D)	Rated Airflow Capacity (SCFM)			Pleats Per Filter	Gross Media Area (sq. ft.)
		300 FPM	500 FPM	625 FPM		
10 x 20 x 1	9½ x 19½ x ¾	400	700	—	12	2.7
12 x 24 x 1	11¾ x 23¾ x ¾	600	1000	—	15	4.0
16 x 20 x 1	15½ x 19½ x ¾	650	1100	—	21	4.6
16 x 25 x 1	15½ x 24½ x ¾	850	1400	—	21	5.8
20 x 20 x 1	19½ x 19½ x ¾	850	1400	—	26	5.7
20 x 25 x 1	19½ x 24½ x ¾	1050	1750	—	26	7.2
24 x 24 x 1	23¾ x 23¾ x ¾	1200	2000	—	31	8.2
12 x 24 x 2	11¾ x 23¾ x 1¾	600	1000	1250	15	9.0
16 x 20 x 2	15½ x 19½ x 1¾	650	1100	1400	19	9.5
16 x 25 x 2	15½ x 24½ x 1¾	850	1400	1750	19	11.9
18 x 24 x 2	17¾ x 23¾ x 1¾	900	1500	1875	21	12.6
20 x 20 x 2	19½ x 19½ x 1¾	850	1400	1750	24	12.0
20 x 24 x 2	19¾ x 23¾ x 1¾	1000	1650	2100	24	14.4
20 x 25 x 2	19½ x 24½ x 1¾	1050	1750	2175	24	15.1
24 x 24 x 2	23¾ x 23¾ x 1¾	1200	2000	2500	29	17.4
12 x 24 x 4	11¾ x 23¾ x 3¾	600	1000	1250	11	13.8
16 x 20 x 4	15½ x 19½ x 3¾	650	1100	1400	14	14.5
16 x 25 x 4	15½ x 24½ x 3¾	850	1400	1750	14	18.3
18 x 24 x 4	17¾ x 23¾ x 3¾	900	1500	1875	16	20.0
20 x 20 x 4	19¾ x 19½ x 3¾	850	1400	1750	18	18.7
20 x 25 x 4	19¾ x 24½ x 3¾	1050	1750	2150	18	23.5
24 x 20 x 4	19¾ x 23¾ x 3¾	1000	1650	2100	21	21.8
24 x 24 x 4	23¾ x 23¾ x 3¾	1200	2000	2500	21	26.3
25 x 29 x 4	24¾ x 28¾ x 3¾	1500	2500	3150	26	33.9

(1) Additional sizes available (MEGApleat M8):

12x12x1 14x25x1 16x16x1 18x25x1 12x20x2 15x20x2 16x24x2 25x25x2  
14x20x1 15x20x1 18x24x1 25x25x1 14x25x2 16x16x2 18x25x2

(2) Width and height dimensions are interchangeable. All MEGApleat M8 filters may be installed with the pleats either vertical or horizontal.

Energy savings may be realized by operating the MEGApleat M8 filters to a lower final resistance. Contact your local AAF Flanders representative for a Total Cost of Ownership analysis for your specific application.

MEGApleat®, MEGAcel®, and VariCel® are registered trademarks of AAF International in the U.S. and other countries.



# SAAF™ Cassette Heavy Duty

3-INCH V-BANK, 12-INCH DEEP GAS FILTRATION CASSETTE



- Form and fit unlike any other 12"-deep, 3" gas filtration cassette
- Improved fit and sealing, even when deployed in older cassette holding systems
- Enhanced media utilization design
- No-glue design eliminates problems from spills, off-gassing, bypass, and leakages
- Patented cassette design and manufacturing process. Patents covered under US 7,588,629 B2.
- Filled cassettes are UL Classified

SAAF™ Cassette Heavy Duty is the best 3" V-bank, 12"-deep gas filtration cassette in the industry. AAF Flanders designs, manufactures, and performs QC compliance on these cassettes under ISO 9001:2000 and other applicable global quality certifications.

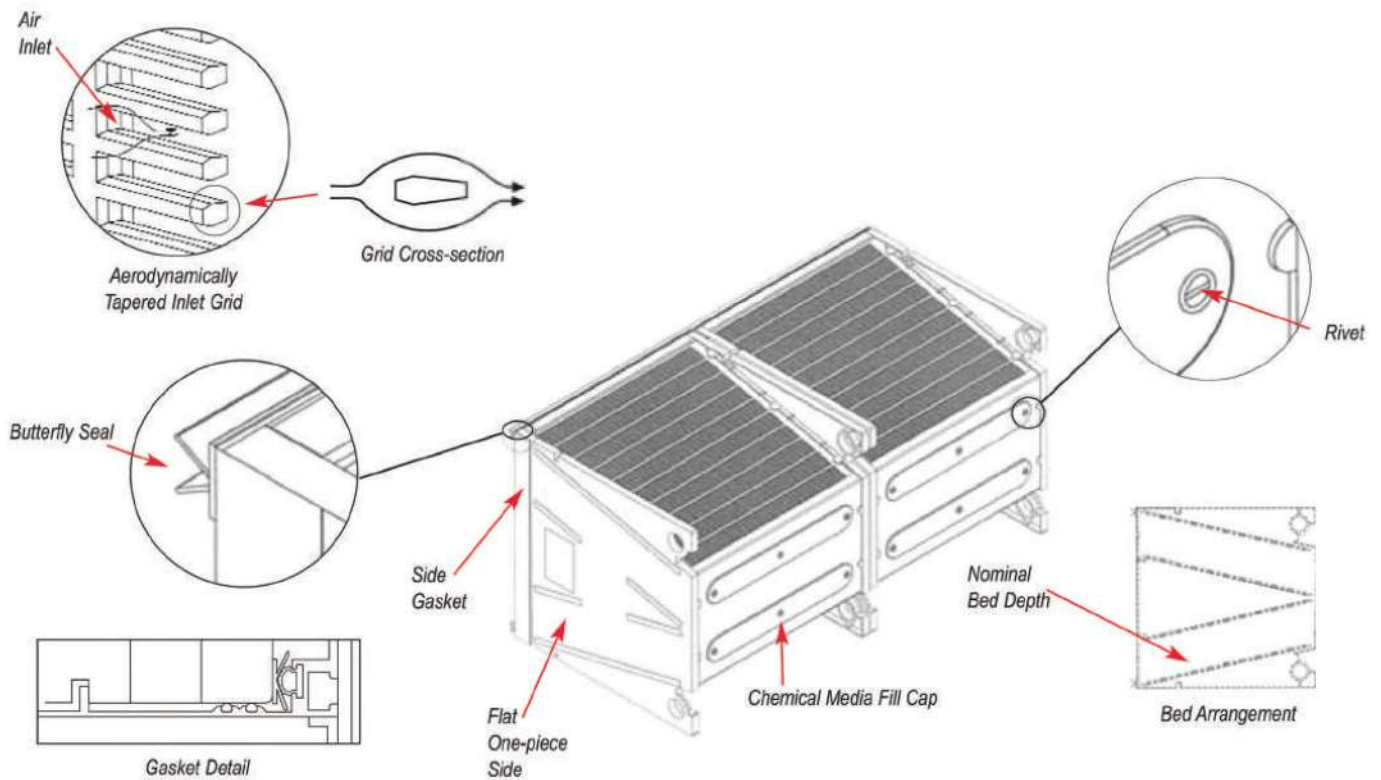
## High Tech Features

The SAAF Cassette Heavy Duty is constructed from High Impact Polystyrene (HIPS) and comes prefilled with SAAF chemical media. High technology design tools were employed to validate the design and confirm better performance. Computational Fluid Dynamics (CFD) modeling and performance tests confirm optimal design. The resulting design and construction surpasses any competitor's cassettes in the market, while allowing users a truly better design with value-enhancing features. The design retrofits easily and performs better than older legacy cassettes in existing installations.

## Efficiency and Performance

Most legacy cassette manufacturers state that their cassettes operate at >90% removal efficiencies. In reality, these efficiencies are not cassette efficiencies. In an installation, removal efficiency is dependent on the precise sealing of the chemical media delivery mechanism, i.e. the cassette with the cassette holding mechanism. Due to looser manufacturing tolerances, testing of most legacy cassettes shows removal efficiencies as low as 65%.

# SAAF™ Cassette Heavy Duty



## Design, Construction, and Patents

SAAF Cassettes perform and operate at optimum gas filtration efficiency, due to various patent pending features.

**SAAF-V** – Patented enhanced media utilization design eliminates the “nose cavity” typically created by legacy cassettes. Nose cavities “cocoon” up to 30% of the chemical media, keeping it isolated from airflow contact at all times during the life of the cassette. SAAF Cassettes are the only cassettes that utilize 92% of all chemical media in the cassette—outperforming legacy cassettes by 25%.

**SAAF-T-Snap** – Patented design provides a high pressure, no-glue snap assembly. This rigid construction excludes harmful glues, solvents, or Methyl Ethyl Ketone (MEK) from the manufacturing process. The SAAF-T-Snap design, unlike legacy cassettes, has no see-through holes in the solid end plates. This allows for better structural integrity and eliminates gas by-pass problems. The entire SAAF chemical media in the cassette can be used specifically to overcome the external gaseous contaminants, not contaminants from the cassette itself. SAAF Cassettes are the ideal choice in cleanroom or high-precision applications where zero off-gassing products are mandatory.

**SAAF-T-Butterfly Seal and SAAF-T-Groove** – Designs provide near absolute sealing, even in existing retrofit applications.

**SAAF-T-Seal** – Patented plastic rivets secure the solid fill caps at multiple points and secure against bursts or leaks in normal usage. Older legacy cassettes use stickers, labels, or low friction end caps that have high instances of failure and chemical media spillage.

**SAAF-T-Track** – System utilizes the **SAAF-T-Groove** feature and provides a compression fit that eliminates bypass. The solid top and bottom rail system on SAAF Cassettes eliminates yet another bypass zone.

**Cassette-To-Cassette Mating Seals** – Smooth mating end panels with no penetrations or outward turned flanges allow excellent cassette-to-cassette sealing.

**SAAF-T-Screens** – Patented design and precision engineering allow optimized apertures for better media retention and better energy efficiency through improved aerodynamics and reduced pressure drop.

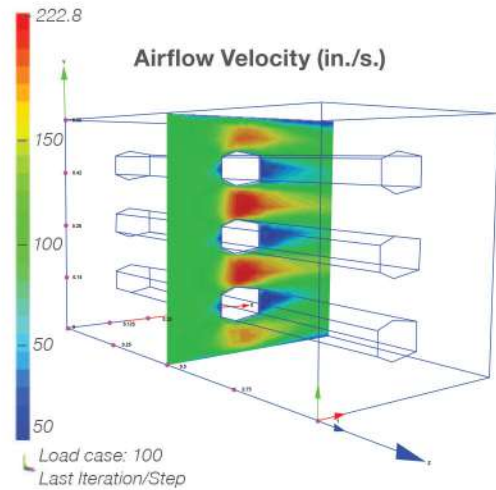


## Applications

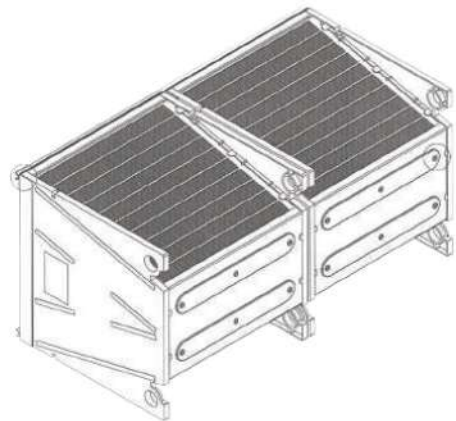
SAAF Cassette Heavy Duty is used for gas removal applications in:

- Odor control applications at wastewater treatment plants
- Odor control for exhaust airstreams
- Purification of pressurization air for corrosion control
- Outdoor air purification for cleanroom or pharmaceutical airflows
- Higher concentration airflows in institutional or commercial establishments
- Airflows in museums, archives, or historical facilities
- Energy savings related applications

(1) Velocity Magnitude -in./s.



AAF Flanders' patented cassette design offers improved airflow characteristics to ensure full media utilization.



## Disposal and Recycle Instructions

- 1 Remove the cassette after use.
- 2 Empty out the SAAF Chemical media by removing the SAAF-T-Seal rivets.
- 3 Depending on the SAAF Chemical media in use, the media may be sent to a regular landfill or disposed of according to applicable local, state, and federal regulations.
- 4 The empty cassette can then be sent for plastic recycling or for incineration.
- 5 The empty cassette is completely incinerable/recyclable.



# SAAF™ Cassette Heavy Duty

## General Specifications and Application Parameters

### Nominal Size

12 x 24 x 12 inches (One cassette is made up of two halves for easy lifting)

### Airflow

Designed for 250 FPM (1.25 m/s) face velocity or 500 CFM (850 m<sup>3</sup>/h) airflow per cassette

### Pressure Drop

0.73 in. w.g. @ 250 FPM (181 Pa @ 1.25 m/s) face velocity

### Construction

100% recyclable/incinerable HIPS plastic

### UL Rating

UL Classified (in accordance with UL Standard 900 and ULC-S111)\*

### Chemical Filter Bed Depth

3" (75 mm) nominal

### Chemical Media Capacity

1.0 cubic feet (0.028 m<sup>3</sup>)

### Contains Chemical Media

Various (as stated in submittal or as approved)

### Humidity Range

5% – 99% RH

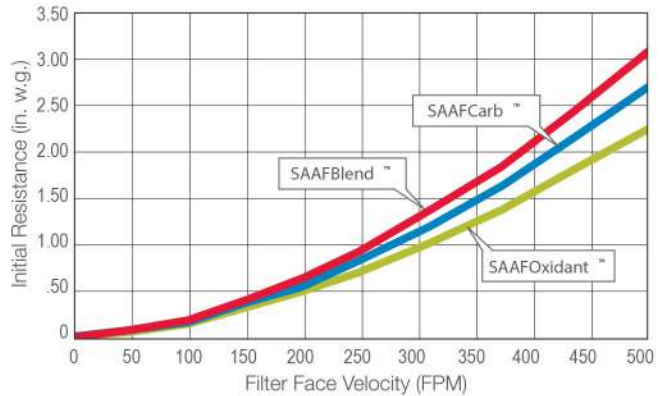
### Temperature

-5°F (-20°C) to 130°F (55°C)

\*Consult AAF Flanders sales representative for media/module combinations.

## Performance Data

### Initial Resistance vs. Filter Face Velocity

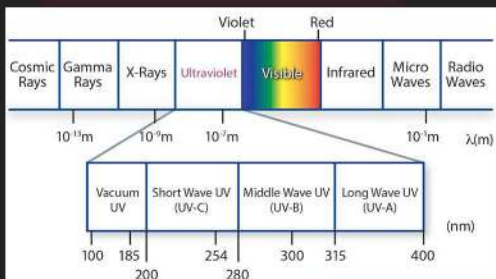




# UV Light

Broad-spectrum germicidal UV light which has wavelengths between 200 and 400 nanometers (nm), is highly effective at killing bacteria and viruses by destroying the molecular bonds that hold their DNA together.

UVC light also emits very short ultraviolet UV vacuum with wavelengths which creates ozone. UV light should have a protective glass block refraction of harmful wavelengths.



# AstroCel<sup>®</sup> VXL

## HIGH EFFICIENCY PARTICULATE AIR FILTER



### Features and Benefits

- High filter efficiency >99,996% (H14)
- Long service life
- High media area; low pressure drop
- Lightweight and easy to install
- Full polymer construction
- Fully incinerable; free of halogens

### AstroCel VXL filters

are lightweight compact filters designed for use in industrial HVAC installations. Their rigid design and pleated media pack with hot melt separators that ensure they deliver the desired air quality when used as a last stage filter in the AHU.

### Media

AstroCel VXL media is water resistant and can withstand temporary exposure to free moisture in the airstream. When wet, there will be a temporary rise in resistance, which quickly returns to normal as soon as the moisture evaporates.

### Construction

The header and cell sides provide a sturdy construction that resists damage during shipping, handling and operation. The entire polystyrene construction is fully incinerable and free of halogens.

### Separators

The hot melt separators maintain uniform spacing between pleats to allow optimal flow of air into and through the filter. They also ensure a large effective media area for low resistance and long service life.

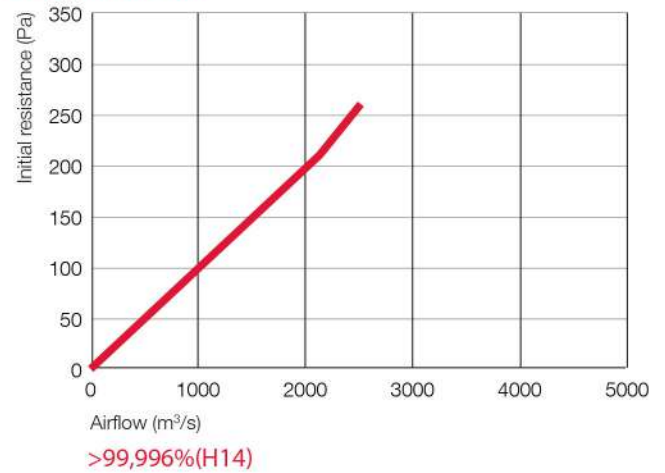
### Operating Temperature

AstroCel VXL filters can operate at temperatures up to 70 °C.

# AstroCel® VXL Filter

Maximum operating temperature	70 °C
Media	High efficiency, water resistant glass fibre
Cell sides and Header	Polystyrene and ABS
Separators	Hot melt
Options	Gasket on air entry or air leaving side
Burst pressure	1500 Pa

## Operating Data



## Technical Data

Type	AstroCel® VXL
Actual size (mm) <sup>1) 5)</sup>	592 x 592 x 292
<b>Initial Resistance</b>	
at high airflow (m³/h) / (Pa)	2500 / 260
at rated airflow (m³/h) / (Pa)	2000 / 200
Final Resistance (typical) (Pa) <sup>3)</sup>	600
Media area (m²)	22,0
Filter Class EN1822:2009 <sup>2)</sup>	>99,95% <sup>6)</sup>

- 1) Width and height are interchangeable, pleats can be either vertical or horizontal without affecting performance.  
 2) All performance data based on EN1822:2009 at rated airflow.  
 3) Recommended maximum value. Filters can be operated to a lower final resistance without affecting filter efficiency.  
 4) Filters are also available with H = 490 mm and H = 287 mm.  
 5) Header size 25 mm.  
 6) Not individually tested.

BioCel™ and AstroCel™ are registered trademarks of AAF International in the U.S. and other countries.

### **Proven Expertise of AAF**

AAF offers the most comprehensive air filtration portfolio in the industry, including particulate and gas-phase filters, to provide a customized clean air solution. Each product is carefully designed, manufactured, and tested in full compliance with all applicable standards to meet the most challenging demands with the lowest Total Cost of Ownership.

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

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