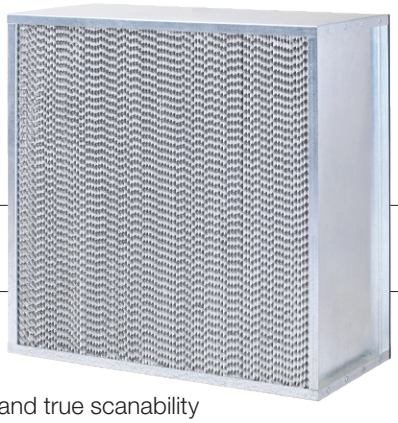
THE WORLD LEADER IN CLEAN AIR SOLUTIONS

MEGAcel® I HF (High Flow)



SCANNABLE HIGH FLOW HEPA PERFORMANCE

Benefits

- **Verified Integrity** – Scannable design supports verification of leak-free system performance
- **High Flow Performance** – Up to 2,400 CFM (600 FPM) in a standard box footprint
- **Energy Efficiency** – Low pressure drop reduces fan energy and total operating cost
- **System Optimization** – Higher airflow rates enable smaller AHU footprints
- **Durable & Low-Risk Handling** – Membrane media has up to 1000x greater abrasion resistance than traditional glass media, reducing handling damage, scrap, reorders, and unexpected replacements
- **Moisture Resistant** – Hydrophobic media for high-humidity environments
- **Sustainable Value** – Lower energy use and longer life support ESG goals

Designed For

- New Construction and Retrofit Applications
- Cleanroom Air Handling Units (AHUs)
- Biosafety and Containment Applications
- Pharmaceutical and Life Science Production
- Semiconductor and Microelectronics Manufacturing
- Most V-bank or Box-style HEPA Applications

A New Class of High-Flow HEPA Performance

For the first time, high-flow V-bank performance and true scanability come together in a single solution. The MEGAcel I High Flow (HF) redefines what a box HEPA can do delivering up to 2,400 CFM (600 FPM) in a fully scannable, durable design engineered for today's most demanding environments.

Built with AAF's patented MEGAcel membrane media, it combines exceptional airflow capacity, ultra-low pressure drop, and superior mechanical strength in one high-performance package. With a true H14 classification (99.995% efficiency @ MPPS), MEGAcel I High Flow provides the protection required in critical cleanroom and biosafety applications without sacrificing energy efficiency, reliability, or long-term performance in demanding environments.

Designed for New Construction Flexibility

For new construction projects, MEGAcel I High Flow enables smarter, more efficient system design. Its higher airflow rating allows engineers to reduce the number or size of containment units while still meeting required airflow targets. The result is a more compact AHU layout and lower upfront construction costs for owners, contractors, and designers.

For example, a system requiring 30,000 CFM of airflow would traditionally use 15 high-capacity box HEPAs rated at 2,000 CFM (500 FPM) each. With MEGAcel I HF filters rated at 2,400 CFM (600 FPM), the same airflow can be achieved with just 12 to 13 units, reducing filter replacements, fan energy demand, and long-term maintenance expense.

A Smarter Upgrade Path

MEGAcel I High Flow is equally well-suited for retrofit opportunities. It can replace existing glass V-bank HEPAs to enable scanning where it was previously impossible or replace traditional box HEPAs to reduce pressure drop and operating energy. Compatible with both containment and non-containment AHUs, it provides a durable, high-performance upgrade option across a wide range of facilities.

Sustainability & Total Cost of Ownership

By combining higher flow capacity with low pressure drop, MEGAcel I High Flow reduces energy consumption along with a reduction in ongoing operating and replacement costs over the life of the system. Higher airflow per filter can reduce the total number of HEPA filters required, while damage-resistant membrane media helps avoid the excess ordering often required with traditional glass filters due to possible handling damage. Reduced pressure drop cuts fan energy consumption year after year, lowering both cost and environmental impact.

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Submittal Options Configuration Nomenclature

E24A24A	A	1	T	22	T	2	F	0	AA
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

(1) SIZE	(2) DEPTH	(3) SEALANT	(4) MEDIA	(5) ACCEPTANCE LEVEL	(6) GASKET MATERIAL	(7) GASKET LOCATION	(8) SEPARATOR	(9) FACEGUARD	(10) FRAME & CONFIGURATION

(1) Size:

E 24 A 24 A

- Designates Imperial Measurement
- Filter Height in Whole Inches
- Filter Height in Additional Fractions of an Inch (see chart below)
- Filter Width in Additional Fractions of an Inch (see chart below)
- Filter Width in Whole Numbers

Fractional Notation for Imperial Sizes:

A = 0	B = 1/8	C = ¼	D = 3/8
E = ½	F = 5/8	G = ¾	H = 7/8

Example: **E23D11G**

23 3/8" High x 11 ¾" Wide

(2) Depth:
A – 11 ½"

(3) Bond:
1 – Polyurethane

(4) Media:
T – Membrane Media 99.995% on .1 - .2 micron (H14)

(5) Acceptance Level:
22 – 99.995% on MPPS (H14)

(6) Gasket/Gel Material:
P – None
T – Neoprene
U – Poron (Dovetailed)
V – Poron (Butt-Jointed)

*Gaskets are ¼" thick x ¾" wide

(7) Gasket/Gel Location:
0 – None
1 – Air Entering SIde
2 – Air Leaving Side
3 – Both Sides
5 – Install gaskets or gel on downstream face and install extractor clips on upstream face.
6 – Install gaskets or gel on upstream face and install extractor clips on downstream face.

(8) Separator:
F = Aluminum High Flow
Y = Vinyl Coated Aluminum High Flow

(9) Faceguard:
0 – None
1 – Air Entering SIde
2 – Air Leaving Side
3 – Both Sides

(10) Frame and Configuration:
AA – Galvanized Steel - Gel Seal
AB – 304 Stainless Steel - Gel Seal
AD – Aluminum - Gel Seal
BA – Galvanized Steel - Gasket Seal
BB – 304 Stainless Steel - Gasket Seal
BD – Aluminum - Gasket Seal

MEGAcel® I HF Specifications

1.0 General

1.1 Air filters shall be HEPA grade air filters with eFRM (expanded FluoroResin Media), aluminum separator, of metal frame, urethane sealant, and either polydimethylsiloxane fluid seal or dry gasket seal.

1.2 Sizes shall be noted on drawings and/or other supporting materials.

2.0 Construction

2.1 Filter media shall be of continuously pleated eFRM (expanded FluoroResin Media), no glass allowed, and pleated using aluminum foil separators.

2.2 eFRM media shall be compatible with industry standard validation and testing methodologies using an acceptable oil aerosol agent (i.e. PAO).

2.2.1 The aluminum separator shall be tapered at a 3:1 ratio to aid in aerodynamic and compression properties and shall be minimum 13 mils thick.

2.3 The media pack shall be affixed permanently to the filter frame assembly by means of a polyurethane sealant.

2.4 The filter frame shall be of minimum of 18ga. galvanized steel, galvaneal, 304 SST or 0.063 in. mill finished aluminum. The filter frame shall be designed for use in either gasket seal or fluid seal systems.

2.5 Gasket system filters shall be factory installed 1/4" thick by 3/4" wide dovetailed, close-celled neoprene affixed to the sealing surface. Filter frame sealing surface to have a flatness tolerance of +/- 1/32".

2.6 Fluid Seal system filters shall have:

2.6.1 A continuous trough around the perimeter of the filter with continuous, integral indication of acceptable fluid seal fill level. The fluid seal trough shall be filled at the factory.

2.6.2 Fluid seal material shall be characterized for all salient mechanical, physical, and chemical properties such as Hardness/Penetration, Tack, and Migration of free silicone.

2.6.3 Fluid seal material shall be characterized for chemical resistance to known industry accepted decontamination agents, cleaning agents, and filter testing reagents.

2.6.4 Fluid seal material shall be tested for chemical compatibility to all materials in contact during manufacturing including gloves, tools, mixing equipment, dispensing equipment, and packaging materials, as well as potential airborne contaminants and poisons.

2.6.5 Fluid seal material shall demonstrate resistance to accelerated life cycle testing.

2.6.6 Fluid seal shall withstand knife-edge insertion to partial depth without complete depth cutting or full length splitting.

3.0 Performance

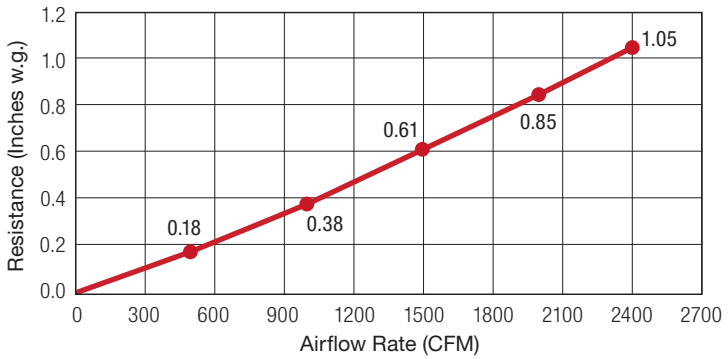
3.1 The filter shall have a tested efficiency of 99.995% @ MPPS when tested under the guidance of either IEST RP-CC-001 or EN1822.

3.2 Each Filter shall be tested for initial (clean) pressure drop at rated flow. Maximum initial pressure drop per overall efficiency rating for 24" x 24" x 11½" filter shall be as follows:

3.3 Each filter shall be factory scanned in accordance with IEST-RP-CC034 or EN1822.

3.4 Filter shall be listed by Underwriters Laboratories as UL 900.

MEGAcel I HF Initial Resistance vs. Airflow Capacity



Overall Efficiency	Airflow	Nom. Initial ΔP
99.995% @ MPPS	2400CFM/600FPM	1.05" w.g.

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