



Hi-Flo® ES

Energy Saving, Extended Surface Area, High Efficiency Air Filter

ENERGY COST INDEX



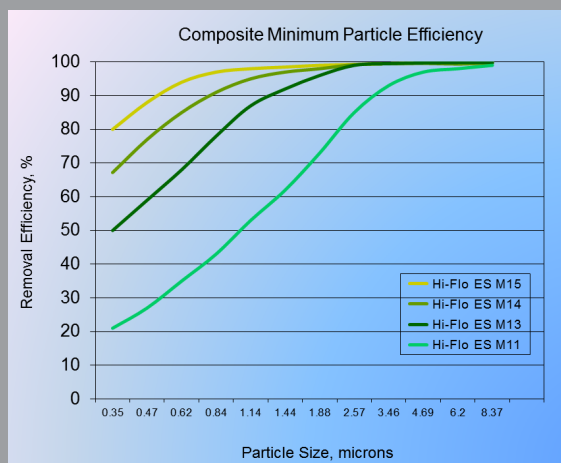
Air filters are the first line of defense to protect people and processes in buildings. The Camfil Hi-Flo ES can remove contaminants including fumes, smoke, bacteria, fungi, and virus-bearing droplet nuclei. The Hi-Flo ES is also the filter of choice for the removal of nuisance contaminants such as pollen, paper dust, and other atmospheric impurities.

Hi-Flo ES filters are available in four efficiencies: MERV 11, MERV 13, MERV 14 and MERV 15, when evaluated per ASHRAE Standard 52.2. The Hi-Flo ES also has a MERV-A value of 11A, 13A, 14A and 15A, respectively when tested per Appendix J of the same Standard, ensuring that the Hi-Flo ES will provide maintained particle capture efficiency throughout the life of the filter.

Air filters are the most significant component of an HVAC system that should be considered for total cost of ownership. The Hi-Flo ES:

- Has the lowest operating cost in terms of energy usage. Energy cost per filter can be as high as three times the cost of the filter itself. The Hi-Flo ES air filter's low maintained pressure drop can save over 30% of electric utility costs when compared to other filters.
- Requires less filter changes than other high efficiency filters. Savings include lower labor costs to change filters, decreased disposal costs, less space in landfills, and a lower carbon footprint.

Energy saving pocket filter with guaranteed lifetime efficiency.

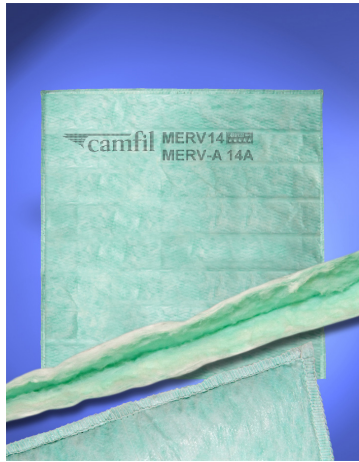


The above chart shows relative efficiency values at various particle sizes when tested in accordance with ASHRAE Standard 52.2-2007. When tested in accordance with Appendix J of that Standard, the Hi-Flo ES maintains these efficiency values throughout the life of the filter.

The Camfil Hi-Flo ES 5-Star ECI rating ensures maintained efficiency and a longer service life than same class high efficiency filters. Its sustainable features meet the green demands of building owners at the lowest cost of ownership. Performance is also guaranteed!



¹ A 5-Star rating indicates that this filter performs in the top 20% of all products of similar construction in the HVAC industry. Factors of consideration include maintained efficiency, energy usage and resistance to air flow. Detailed evaluation information is available from your Camfil sales outlet or on the web at www.camfil.com.

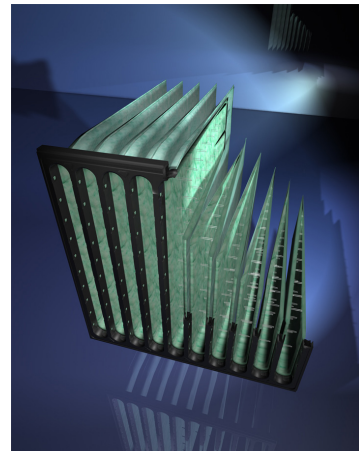


The Hi-Flo ES incorporates exclusive Camfil air laid microfiber glass media that ensures reliable efficiency throughout the life of the filter. Its fine fiber diameter and uniform loft results in a consistent sub-micron particle capture and a low resistance to airflow. This exclusive media is designed to maintain this low resistance to air flow, saving energy, while still holding efficiency throughout the filter life. The Hi-Flo ES will maintain its particle efficiency, regardless of dust loading and/or humidity.

A synthetic micro mesh media backing ensures media protection and support in turbulent or varying airflows.

Camfil is the only manufacturer to use tapered pocket stitching — pockets are stitched to prevent pocket contact throughout the entire depth of the filter, ensuring uniform airflow and allowing full use of the media area. This results in a longer filter life, lower HVAC energy costs, less filter changes, lower labor costs, lower disposal costs and an overall greener, and environmentally-friendly product.

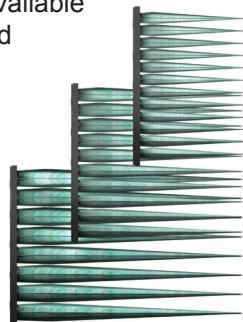
Pocket stitching is sealed to eliminate air bypass through stitching points. This unique sealant maintains a flexibility that is unaffected by turbulence or varying airflows.



The Hi-Flo ES pockets are also tapered from the air entering side of the filter to the air exiting side of the filter. This conical pocket configuration also prevents media contact against duct interiors.

Each filter is identified on the filter as to its MERV and MERV-A.

The Hi-Flo ES is available in 4 efficiencies and 3 pocket depths, 12", 22" and 30".



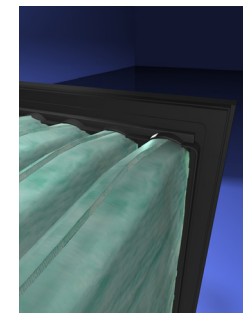
The Camfil Hi-Flo ES (Energy Saver) comes fully guaranteed ¹ to outperform all competitive products of its kind and to deliver the highest energy savings possible in the industry while maintaining its rated efficiency.

This guarantee eliminates associated risks with choosing or converting to the Hi-Flo ES and serves as proof that Camfil stands behind the product's design features and performance capabilities.



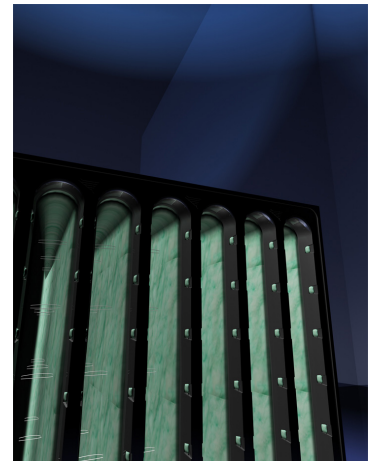
¹ Includes all models with 20" depth or longer.

Exclusive pocket guard protects pockets during installation — pockets are isolated and not subject to damage or tearing during installation.

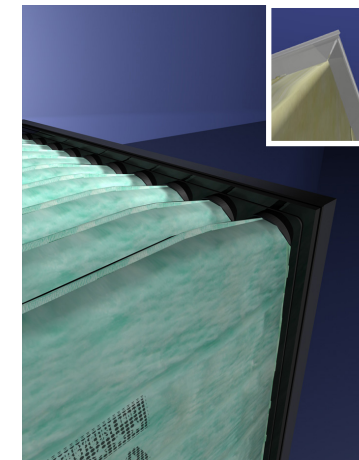


The reinforced ABS plastic header frame is assembled from matching halves to provide rigid and durable filter support. Frame racking is eliminated and the filter fits securely into the side-access housing or built-up bank holding frame. Its rigidity reduces the possibility of air bypass, even during turbulent airflow. One vertical header includes a gasket to prevent air bypass between filters when they are installed in a filter track.

Each air tunnel on the air entering side of each pocket is formed to promote uniform airflow through the entire length of the pocket.



Filter bypass between pockets is eliminated through a unique snap-to-seal pocket retainer feature that is an integral part of the 2-piece header design. The media pocket is securely attached to the header frame with anchor ports allowing for visual confirmation.

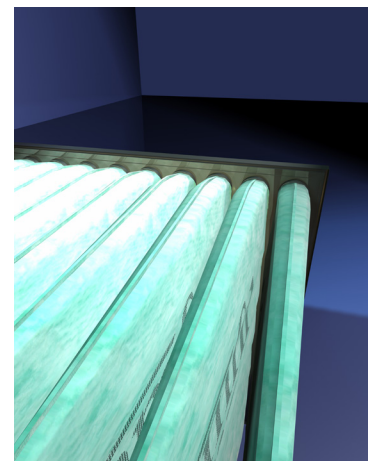


The snap-together design of the header results in frame junctions that are completely enclosed.

Sharp corners (see inset) are eliminated for the protection of service personnel. Pocket damage, or other damage related to sharp metal edges or projections is prevented.

The air exiting side of the air tunnels include a pocket flange to ensure pocket integrity throughout the life of the filter. Pockets are also protected during turbulent air flow.

A downstream pocket-to-pocket partition provides additional pocket separation to ensure full flow through the entire media area.



PERFORMANCE DATA

HI-FLO® ES

Efficiency	Part Number	Model	Nominal size H X W	Pocket Depth	Actual dimensions (inches) H X W X D	Airflow capacity (cfm)	Initial resistance (inches, w.g.)	Media area (sq. ft.)
MERV 15	405620A22	HFESMV15/24/24/22/10	24 X 24	22	23.31 x 23.31 x 22	2000	0.62"	71.45
	405620A30	HFESMV15/24/24/30/10	24 X 24	30	23.31 x 23.31 x 30	2000	0.53"	97.03
	405620B22	HFESMV15/24/20/22/8	24 X 20	22	23.31 x 19.31 x 22	1600	0.62"	57.16
	405620B30	HFESMV15/24/20/30/8	24 X 20	30	23.31 x 19.31 x 30	1600	0.53"	77.62
	405620D22	HFESMV15/20/20/22/8	20 X 20	22	19.31 x 19.31 x 22	1320	0.62"	47.16
	405620D30	HFESMV15/20/20/30/8	20 X 20	30	19.31 x 19.31 x 30	1320	0.53"	63.98
	405620C22	HFESMV15/24/12/22/5	24 X 12	22	23.31 x 11.31 x 22	1000	0.62"	35.73
	405620C30	HFESMV15/24/12/30/5	24 X 12	30	23.31 x 11.31 x 30	1000	0.53"	48.52
	405620E22	HFESMV15/20/24/22/10	20 X 24	22	19.31 x 23.31 x 22	1600	0.62"	57.16
	405620E30	HFESMV15/20/24/30/10	20 X 24	30	19.31 x 23.31 x 30	1600	0.53"	77.62
	405620F22	HFESMV15/12/24/22/10	12 X 24	22	11.31 x 23.31 x 22	1000	0.62"	35.73
	405620F30	HFESMV15/12/24/30/10	12 X 24	30	11.31 x 23.31 x 30	1000	0.53"	48.52
MERV 14	405619A12	HFESMV14/24/24/12/10	24 x 24	12	23.31 x 23.31 x 12	2000	0.67"	39.21
	405619A22	HFESMV14/24/24/22/10	24 X 24	22	23.31 x 23.31 x 22	2000	0.45"	71.45
	405619A30	HFESMV14/24/24/30/10	24 X 24	30	23.31 x 23.31 x 30	2000	0.41"	97.03
	405619B12	HFESMV14/24/20/12/8	24 X 20	12	23.31 x 19.31 x 12	1600	0.67"	31.37
	405619B22	HFESMV14/24/20/22/8	24 X 20	22	23.31 x 19.31 x 22	1600	0.45"	57.16
	405619B30	HFESMV14/24/20/30/8	24 X 20	30	23.31 x 19.31 x 30	1600	0.41"	77.62
	405619D12	HFESMV14/20/20/12/8	20 X 20	12	19.31 x 19.31 x 12	1320	0.67"	25.81
	405619D22	HFESMV14/20/20/22/8	20 X 20	22	19.31 x 19.31 x 22	1320	0.45"	47.16
	405619D30	HFESMV14/20/20/30/8	20 X 20	30	19.31 x 19.31 x 30	1320	0.41"	63.98
	405619C12	HFESMV14/24/12/12/5	24 X 12	12	23.31 x 11.31 x 12	1000	0.67"	19.61
	405619C22	HFESMV14/24/12/22/5	24 X 12	22	23.31 x 11.31 x 22	1000	0.45"	35.73
	405619C30	HFESMV14/24/12/30/5	24 X 12	30	23.31 x 11.31 x 30	1000	0.41"	48.52
	405619E12	HFESMV14/20/24/12/10	20 X 24	12	19.31 x 23.31 x 12	1600	0.67"	31.37
	405619E22	HFESMV14/20/24/22/10	20 X 24	22	19.31 x 23.31 x 22	1600	0.45"	57.16
	405619E30	HFESMV14/20/24/30/10	20 X 24	30	19.31 x 23.31 x 30	1600	0.41"	77.62
MERV 14-A	405619F12	HFESMV14/12/24/12/10	12 X 24	12	11.31 x 23.31 x 12	1000	0.67"	19.61
	405619F22	HFESMV14/12/24/22/10	12 X 24	22	11.31 x 23.31 x 22	1000	0.45"	35.73
	405619F30	HFESMV14/12/24/30/10	12 X 24	30	11.31 x 23.31 x 30	1000	0.41"	48.52
MERV 13	405618A12	HFESMV13/24/24/12/10	24 x 24	12	23.31 x 23.31 x 12	2000	0.52"	39.21
	405618A22	HFESMV13/24/24/22/10	24 X 24	22	23.31 x 23.31 x 22	2000	0.40"	71.45
	405618A30	HFESMV13/24/24/30/10	24 X 24	30	23.31 x 23.31 x 30	2000	0.34"	97.03
	405618B12	HFESMV13/24/20/12/8	24 X 20	12	23.31 x 19.31 x 12	1600	0.52"	31.37
	405618B22	HFESMV13/24/20/22/8	24 X 20	22	23.31 x 19.31 x 22	1600	0.40"	57.16
	405618B30	HFESMV13/24/20/30/8	24 X 20	30	23.31 x 19.31 x 30	1600	0.34"	77.62
	405618D12	HFESMV13/20/20/12/8	20 X 20	12	19.31 x 19.31 x 12	1320	0.52"	25.81
	405618D22	HFESMV13/20/20/22/8	20 X 20	22	19.31 x 19.31 x 22	1320	0.40"	47.16
	405618D30	HFESMV13/20/20/30/8	20 X 20	30	19.31 x 19.31 x 30	1320	0.34"	63.98
	405618C12	HFESMV13/24/12/12/5	24 X 12	12	23.31 x 11.31 x 12	1000	0.52"	19.61
	405618C22	HFESMV13/24/12/22/5	24 X 12	22	23.31 x 11.31 x 22	1000	0.40"	35.73
	405618C30	HFESMV13/24/12/30/5	24 X 12	30	23.31 x 11.31 x 30	1000	0.34"	48.52
	405618E12	HFESMV13/20/24/12/10	20 X 24	12	19.31 x 23.31 x 12	1600	0.52"	31.37
	405618E22	HFESMV13/20/24/22/10	20 X 24	22	19.31 x 23.31 x 22	1600	0.40"	57.16
	405618E30	HFESMV13/20/24/30/10	20 X 24	30	19.31 x 23.31 x 30	1600	0.34"	77.62
MERV 13-A	405618F12	HFESMV13/12/24/12/10	12 X 24	12	11.31 x 23.31 x 12	1000	0.52"	19.61
	405618F22	HFESMV13/12/24/22/10	12 X 24	22	11.31 x 23.31 x 22	1000	0.40"	35.73
	405618F30	HFESMV13/12/24/30/10	12 X 24	30	11.31 x 23.31 x 30	1000	0.34"	48.52

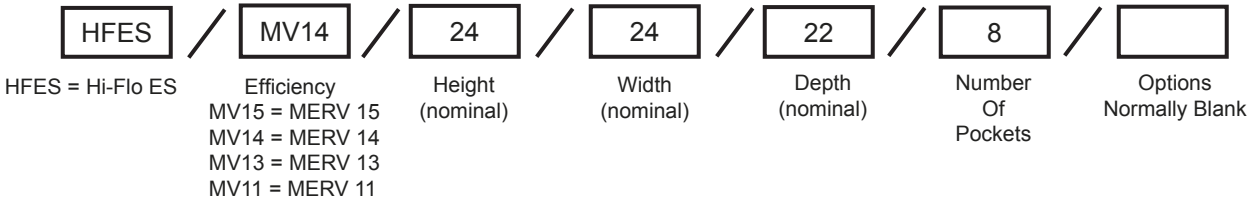
PERFORMANCE DATA (continued)

HI-FLO® ES

Efficiency	Part Number	Model	Nominal size H X W	Pocket Depth (inches)	Actual dimensions (inches) H X W X D	Airflow capacity (cfm)	Initial resistance (inches w.g.)	Media area (sq.ft.)
MERV 11	405617A12	HFESMV11/24/24/12/10	24 x 24	12	23.31 x 23.31 x 12	2000	0.30"	39.21
	405617A22	HFESMV11/24/24/22/10	24 X 24	22	23.31 x 23.31 x 22	2000	0.28"	71.45
	405617A30	HFESMV11/24/24/30/10	24 X 24	30	23.31 x 23.31 x 30	2000	0.26"	97.03
	405617B12	HFESMV11/24/20/12/8	24 X 20	12	23.31 x 19.31 x 12	1600	0.30"	31.37
	405617B22	HFESMV11/24/20/22/8	24 X 20	22	23.31 x 19.31 x 22	1600	0.28"	57.16
	405617B30	HFESMV11/24/20/30/8	24 X 20	30	23.31 x 19.31 x 30	1600	0.26"	77.62
	405617D12	HFESMV11/20/20/12/8	20 X 20	12	19.31 x 19.31 x 12	1320	0.30"	25.81
	405617D22	HFESMV11/20/20/22/8	20 X 20	22	19.31 x 19.31 x 22	1320	0.28"	47.16
	405617D30	HFESMV11/20/20/30/8	20 X 20	30	19.31 x 19.31 x 30	1320	0.26"	63.98
MERV 11A	405617C12	HFESMV11/24/12/12/5	24 X 12	12	23.31 x 11.31 x 12	1000	0.30"	19.61
	405617C22	HFESMV11/24/12/22/5	24 X 12	22	23.31 x 11.31 x 22	1000	0.28"	35.73
	405617C30	HFESMV11/24/12/30/5	24 X 12	30	23.31 x 11.31 x 30	1000	0.26"	48.52
	405617E12	HFESMV11/20/24/12/10	20 X 24	12	19.31 x 23.31 x 12	1600	0.30"	31.37
	405617E22	HFESMV11/20/24/22/10	20 X 24	22	19.31 x 23.31 x 22	1600	0.28"	57.16
	405617E30	HFESMV11/20/24/30/10	20 X 24	30	19.31 x 23.31 x 30	1600	0.26"	77.62
	405617F12	HFESMV11/12/24/12/10	12 X 24	12	11.31 x 23.31 x 12	1000	0.30"	19.61
	405617F22	HFESMV11/12/24/22/10	12 X 24	22	11.31 x 23.31 x 22	1000	0.28"	35.73
	405617F30	HFESMV11/12/24/30/10	12 X 24	30	11.31 x 23.31 x 30	1000	0.26"	48.52

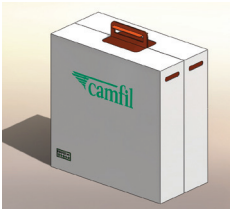
DATA NOTES:
Standard Hi-Flo ES includes 0.81" (1" nominal) header.
Contact factory for lead times.
CFM value is at a velocity of 500 feet per minute. Filter may be operated at velocities of 350 fpm to 600 fpm without contacting factory.
To establish a schedule for filter change, record initial pressure drop when installed, order filters for change when pressure drop has doubled and service the unit when replacements are available.
Maximum recommended pressure drop for this product is 1.5 inches w.g.
The Hi-Flo ES is classified by Underwriters Laboratories as UL Class 900. Maximum operating temperature is 158° F (70° C). Performance tolerances conform to *Section 7.4 of AHRI Standard 850-78*.

Camfil Hi-Flo® ES Selection Chart



Options:
Standard Hi-Flo ES includes filter-to-filter sealing gasket on one vertical header side. Gasket or additional gaskets are available on all header sides and on face of filter. Contact factory.

Filter-to-filter fastener for connecting multiple filters together facilitate ease of removal in multi-filter wide side-access filter banks. Fastener is shown below in the middle of the photo clasping two filters together.



All Hi-Flo ES filters are shipped in an easy-to-handle container that includes a transport handle. Filter service personnel can easily transport eight filters and discard the old filters in the same container. Filter change is easy and disposal costs are reduced, Hi-Flo ES filters can reduce dumpster volume by up to 60%.

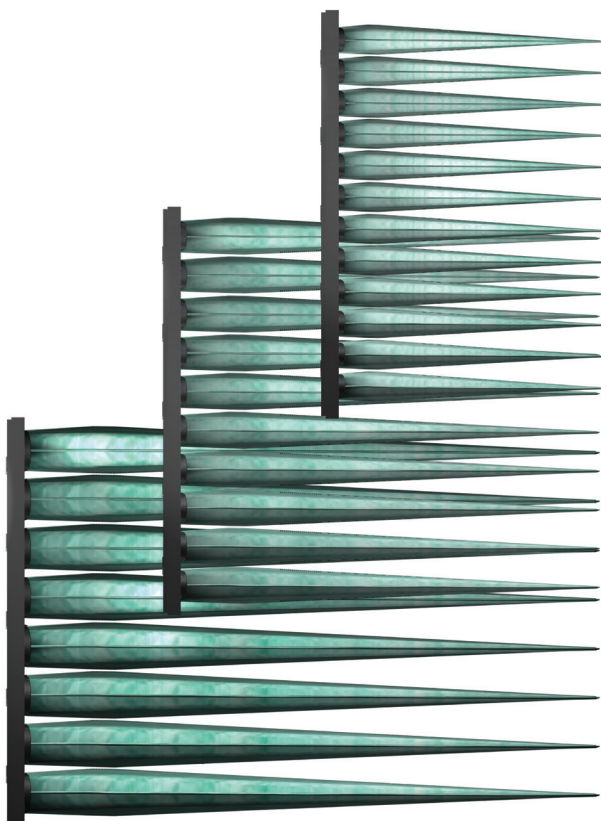


Hi-Flo® ES

Energy Saving, Extended Surface Area, High Efficiency Air Filter

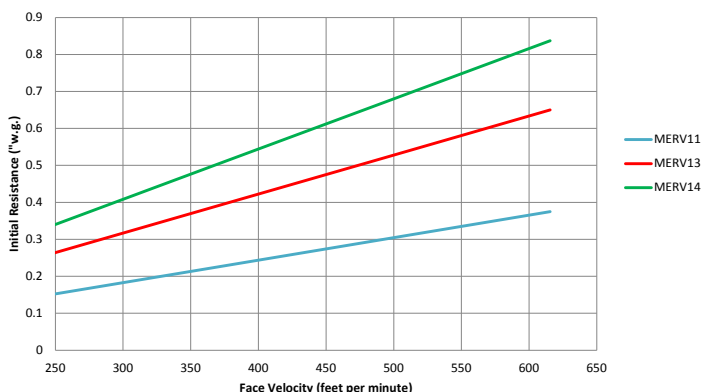
Initial Resistance Versus Airflow

Contact factory before operating outside of airflow region.

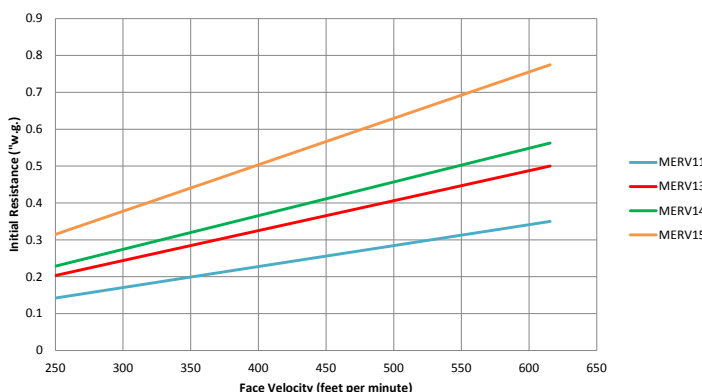


Hi-Flo ES air filters have a very long contaminant loading curve. Camfil Farr recommends ordering replacement filters when initial pressure drop doubles. This ensures that the required energy to move air through the filter is minimized.

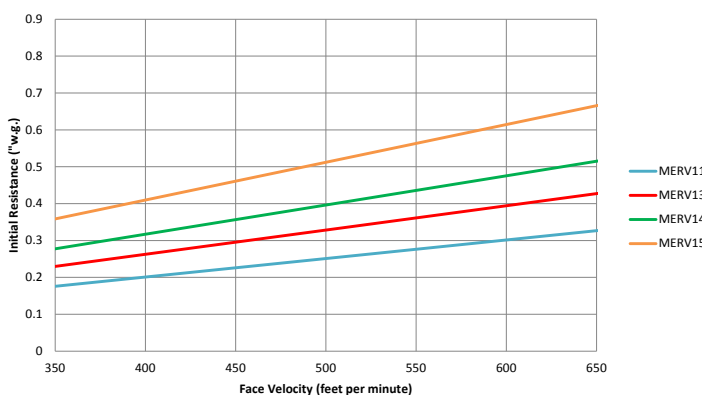
Initial Resistance vs. Air Flow on Hi-Flo ES 12" Pockets



Initial Resistance vs. Air Flow on Hi-Flo ES 22" Pockets



Initial Resistance vs. Air Flow on Hi-Flo ES 30" Pockets



Contact factory if application requires velocity of more than 600 fpm.



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