



Durafil[®] ES²

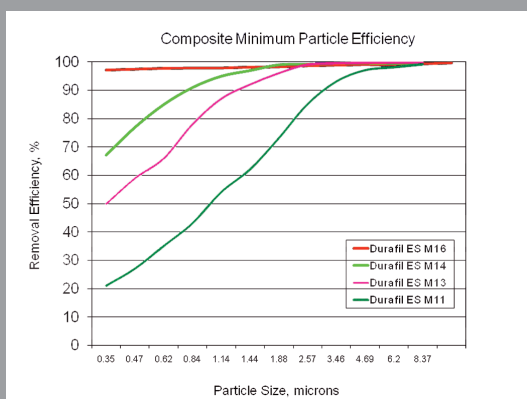
High Efficiency, High Capacity, Energy Saving,
Mini-Pleated V-Bank Air Filter



The Camfil Durafil ES² (Energy Saver) provides high efficiency ASHRAE air filter performance in a compact energy efficient design. The Durafil ES² includes:

- A computer-optimized pleat-to-height ratio creating a radial air exiting and air entering design that offers a 60% larger outlet and 30% larger inlet than any other V-bank style air filter resulting in lower pressure drop and significant energy savings.
- The highest volume of microfibre filter media area available for higher dust holding capacity, longer life and lower average pressure drop over the life of the filter to save energy.
- A special grade of energy saving media with engineered characteristics to reduce pressure drop.
- Is available in four standard efficiencies — MERV 11, MERV 13, MERV 14 and MERV 16 per ASHRAE Standard 52.2. The Durafil ES² has a MERV-A value of 11, 13, 14 and 16 respectively when tested using the conditioning step as specified in Appendix J of the same Standard.
- Includes an integral prefilter spacer section designed to minimize filtration system static pressure when a prefilter is positioned on the face of the Durafil ES². The lives of the final filter and prefilter are extended and pressure drop is minimized to save energy.
- Includes media separators creating uniform airflow throughout the media pack.
- Incorporates a unique sealant channel ensuring media pack-to-frame bonding to prevent air bypass.
- Includes an impact-resistant plastic enclosing frame with plastic media pack supports ensuring a rigid and durable filter. Bridging supports on each 'V' provide handles for installation and transport and maintains the rigidity of the filter. The frame also has built-in spring fastener locations, built in prefilter fastener insertion locations and recessed front and back inlet and outlet handles for changing and aligning the filter during installation.
- Includes a one-inch nominal size header as an integral component of the frame for added stability and a secure fit into filter holding mechanism or housing. The frame includes a cavity for attaching Camfil's C-81 fasteners for face mounting of 30/30[®] prefilters.
- Includes a sealing gasket on one vertical header to eliminate air bypass between headers in multiple filter systems.
- Can be installed in systems with airflow capacities to 3,000 cfm. Maximum pressure drop capability is guaranteed to 2.0" w.g. and filter integrity is guaranteed to 10.0" w.g.
- Is the lightest weight V-bank filter available.
- Has an ECI¹ value of five stars.

Saves 30-35% more energy than any other V-style filter



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 Durafil ES maintains these efficiency values throughout the life of the filter.

The Durafil's superior performance characteristics relating to human and environmental health, energy efficiency, materials selection and indoor environmental quality make it the final filter of choice for those facilities pursuing green building status.

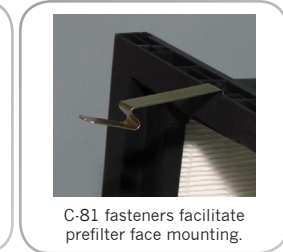
¹ A 5-Star rating indicates that this filter performs in the top 20% of all products of similar construction in the HVAC industry. Factors of consideration include maintained efficiency, energy usage and resistance to air flow. Detailed evaluation information is available from your Camfil sales outlet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

Performance

ASHRAE Efficiency	Part Number	Nominal Depth (inches)	Nominal Size (H x W) (inches)	Actual Depth (inches)	Actual Dimensions H x W (inches)	Initial Resistance (inches w.g.)	Airflow Capacity (cfm)	Media Area (ft ²)
MERV 16 ^a MERV 16-A ^b	855080-014	12	24 x 24	11.6	23.3 x 23.3	0.64	2000	200
	855080-030		20 x 24		19.3 x 23.3		1500	160
	855080-021		12 x 24		11.3 x 23.3		1000	100
	855080-188 ^d		20 x 20		19.3 x 19.3	0.80	1250	125
MERV 14 ^a MERV 14-A ^b	855080-009	12	24 x 24	11.6	23.3 x 23.3	0.29	2000	200
	855080-006		20 x 24		19.3 x 23.3		1500	160
	855080-003		12 x 24		11.3 x 23.3		1000	100
	855080-065 ^d		20 x 20		19.3 x 19.3	0.33	1250	125
MERV 13 ^c MERV 13-A ^b	855080-008	12	24 x 24	11.6	23.3 x 23.3	0.27	2000	200
	855080-005		20 x 24		19.3 x 23.3		1500	160
	855080-002		12 x 24		11.3 x 23.3		1000	100
	855080-066 ^d		20 x 20		19.3 x 19.3	0.32	1250	125
MERV 11 MERV 11-A ^b	855080-007	12	24 x 24	11.6	23.3 x 23.3	0.22	2000	200
	855080-004		20 x 24		19.3 x 23.3		1500	160
	855080-001		12 x 24		11.3 x 23.3		1000	100
	855080-063 ^d		20 x 20		19.3 x 19.3	0.27	1250	125

DATA NOTES:

^a May provide additional LEED credits.
^b Discharged efficiency per appendix J of ASHRAE Standard 52.2.
^c Minimum efficiency selection for LEED consideration.
^d 20" by 20" size does not have spacing plenum for prefilter application, contact factory for prefiltration guidance. 20" by 20" size does not have radial configuration.
 Airflow may be in either direction.
 Schedule air filters for change when initial pressure drop has doubled. Final pressure drop should not exceed 1.50" w.g.
 The Durafil ES² is listed UL 900 by Underwriters Laboratories.
 Maximum continuous operating temperature 175° F. (79° C.), relative humidity 99%.
 U.S. Patent No. 6,447,566. Performance tolerance in accordance with ARI Standard 850.
Options: Available with gaskets in any location. Available with dual headers as shown to the right. See Product Sheet 1515B.



1.0 General

1.1 - Air filters shall be V-Bank mini-pleat fiberglass disposable type with pleat separators, polyurethane pack-to frame sealant, polystyrene enclosing frame and have an ECI value of five stars.

1.2 - Sizes shall be as noted on drawings or other supporting materials.

2.0 Construction

2.1 - Filter media shall be of microfine glass fibers formed into uniform pleats with a spacing of 8.5 pleats per inch and a uniform pleat height of 22mm. Pleats shall be separated at 25mm intervals to ensure pleat separation and uniform airflow through the filter pack.

2.2 - Pleats media packs shall be assembled into a V-bank configuration with sufficient total media area to meet airflow requirements. The filter outlet shall be radial in shape with a maximum of 60% open area to maintain low-pressure drop and uniform airflow (20" by 20" shall be straight V-style design).

2.3 - The media packs shall be bonded to the inside periphery of an ABS enclosing frame with a polyurethane sealant. The enclosing frame shall include top and bottom molded tracks as in integral part of the frame to ensure a proper seal.

2.4 - Media packs shall be recessed at least 1" from the air entering side of the enclosing frame to allow uniform airflow when a prefilter is mounted directly to the enclosing frame.

2.5 - Rigid plastic end caps shall be mechanically fastened to the top and bottom of the media pack enclosing structure to ensure a rigid and durable filter.

2.6 - Carrying handles shall be an integral part of the filter frame and shall bridge from media pack to media pack providing additional filter support and filter rigidity. Handles shall include fastener connection locations for the application of spring mounting fasteners when the filter is applied in reverse flow applications.

3.0 Performance

3.1 - The filter shall have a Minimum Efficiency Reporting Value of MERV (11, 13, 14, 16) when evaluated under the guidelines of ASHRAE Standard 52.2. It shall also have a MERV-A rating of (11, 13, 14, 16) when evaluated under ASHRAE Standard 52.2, Appendix J.

3.2 - Initial resistance to airflow shall not exceed (0.24, 0.30, 0.32, 0.70) inches w.g. at an airflow of 500 fpm for 24 x 24, 24 x 12 and 24 x 20 sizes. On 20" by 20" respective pressure drops shall be (0.88, 0.36, 0.35, 0.30) inches w.g. at an airflow of 500 fpm.

3.3 - Filter shall be listed UL 900 by Underwriters Laboratories.

3.4 - The filter shall be capable of withstanding 10.00" w.g. without failure of the media pack.

3.5 - Manufacturer shall provide evidence of facility certification to ISO 9001:2008.

3.6 - Filter shall have a 5-Star rating when evaluated per Energy Cost Index (ECI).
Supporting Data - Provide product test reports for each listed efficiency including all details as prescribed in ASHRAE Standards 52.2 including Appendix J. Filters shall be Camfil Durafil ES or equal.
 (Items in parentheses () require selection.

