

## General

Flanders offers a complete line of Alpha Cell HEPA Filters in various efficiencies to meet the needs of critical applications where HEPA filtration is required. Individual testing, rigid quality control and modern assembly methods are used to ensure conformance to specifications. Alpha Cell HEPA and ULPA Filters are either UL 900 Class 1 or Class 2 listed.

## Testing

Flanders individually tests and certifies each Alpha Cell HEPA Filter to meet the customer's requirements for resistance and efficiency (penetration) at the filters nominal rated capacity. This information appears on a test label affixed to the filter. When used with correctly selected and installed mounting frames or housings, Flanders Alpha Cell HEPA Filters will easily pass an in-place validation test to determine the overall system efficiency.

## HEPA FILTERS

Each Alpha Cell HEPA Filter has a minimum efficiency of 99.97% on 0.30 micrometer size particles when tested at rated capacity on a Q-107 Penetrometer. Filters rated for 1000 cfm or less are challenged with an approved nearly monodis-

persed oil aerosol of 0.30 micrometer size. Filters rated for flows greater than 1000 cfm are tested using a polydispersed oil aerosol. By measuring the upstream and downstream concentration of these particles with a light scattering photometer, the penetration can be determined and the efficiency can be calculated.

## Scan Tested HEPA Filters

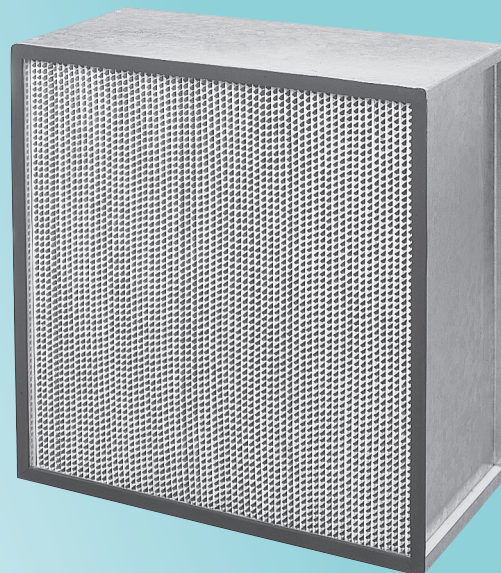
Each Scan Tested Alpha Cell HEPA filter has a minimum efficiency of 99.99% on 0.30 micrometer particles. Scan testing is in accordance with Section 6.2 of IEST-RP-CC034.1, HEPA and ULPA Filter Leak Tests. In the scan test, the filter is challenged with a high concentration of an approved oil aerosol or PSL (Polystyrene Latex Spheres). The media pack and pack-to-frame seal is scanned using a photometer or particle counter to ensure that there are no leaks greater than .01% of the upstream concentration at 100 fpm face velocity.

## Higher Efficiency ULPA Filters

Flanders can provide Pureform® and Separator Style ULPA Filters with efficiencies up to 99.9995% on 0.12 micrometer size particles. Please contact the factory for more information.

## Typical applications for Alpha Cell Filters include:

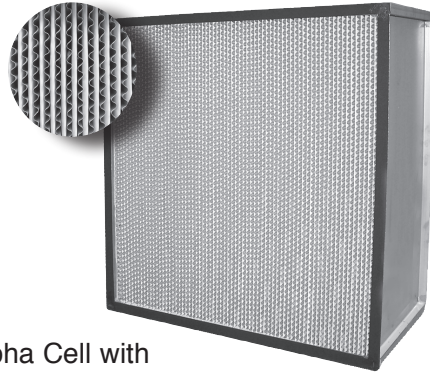
- Hospitals
- Biomedical
- Pharmaceutical
- Biotechnology
- Genetic Research
- Universities
- Laboratories
- Food Processing
- Photo Processing
- Semiconductor Fabrication
- Industrial Processing Systems



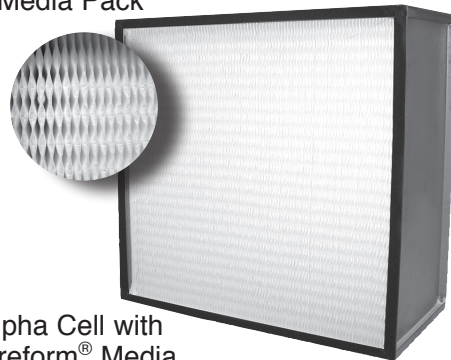
<b>Alpha Cell HEPA Filter Dimensions and Capacities</b>						
CFM Dimensions and Capacities						
Frame Depth (Inches)	Filter Size and Frame Depth Designator	Actual Face Size (inches)	CFM Capacity at Clean Pressure Drop, inches w.g.			Weight (LB.)
			.65	1.0	1.35	
11-1/2	GG-F	24x24	650	1000	1300	38
	GC-F	24x12	300	455	590	26
	YY-F	23-3/8 x 23-3/8	615	945	1235	37
	YU-F	23-3/8 x 11-3/8	275	425	550	25
	GN-F	24x30	830	1275	1655	45
5-7/8	CC-F	12x12	135	205	265	14
	GG-D	24x24	325	500	650	20
	GC-D	24x12	145	225	295	12
	BB-D	8x8	25	35	45	6
	CC-D	12x12	70	105	135	9
	YY-D	23-3/8 x 23-3/8	305	470	610	18
	YU-D	23-3/8x11-3/8	270	215	540	23
	GN-D	24x30	410	635	825	26
	GP-D	24x36	505	775	1010	33
	GQ-D	24x48	680	1045	1360	39
	GR-D	24x60	860	1320	1715	32
	GS-D	24x72	1035	1590	2065	46
	NN-D	30x30	525	810	1055	26
	NP-D	30x36	640	985	1280	30
	NQ-D	30x48	865	1330	1730	37
	NR-D	30x60	1090	1680	2185	44
	NS-D	30x72	1315	2025	2630	52
PP-D	36x36	790	1215	1580	33	
PQ-D	36x48	1050	1620	2105	41	
PR-D	36x60	1315	2025	2630	49	
PS-D	36x72	1580	2430	3160	59	

Flanders manufactures both conventional Separator Style and Pureform® Separatorless HEPA Filters. To make a Separator Style filter, the media is folded over corrugated aluminum separators with hemmed edges to separate the pleats in the filter pack. Flanders manufactures its own filter media, enabling it to develop a unique manufacturing process for the production of Pureform® Separatorless HEPA Filters. In one manufacturing operation, Flanders produces a self-supporting and self-separating Pureform® Media Pack. The Pureform® Filter offers many advantages over conventional Separator Style HEPA Filters:

- More usable media area for longer service life because of higher dust holding capacity
- Reduced cost of ownership because of longer service life
- Maximum utilization of the media
- Can handle some harsh environments which may attack aluminum separators
- Media pack can be incinerated
- Pureform® media is 28 mils thick, which is significantly thicker than conventional 15 mil media used in Separator Style HEPA Filter

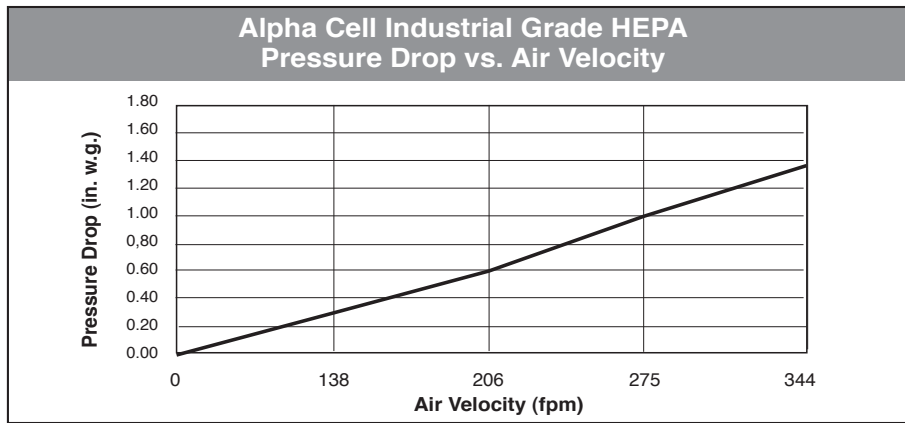


Alpha Cell with Separator Style Media Pack



Alpha Cell with Pureform® Media Pack





## Guide Specifications

### 1.0 General

- 1.1 Alpha Cell HEPA filters shall be extended media (separator type) (Pureform® separatorless type) filters as manufactured by Flanders.
- 1.2 Filter sizes, capacities and construction options shall be as scheduled on the drawings.
- 1.3 Filters shall be (UL 900 Class 1) (UL586)(UL 900 Class 1) or (UL 900 Class 2), depending on frame material.

### 2.0 Filter Construction

- 2.1a The Pureform® filter pack shall be constructed by pleating a continuous sheet of formed, corrugated medium so that the pack is self-supporting without the use of spacers of any kind, including separators, tape strings, adhesives or strips of media.
- 2.1b The separator style filter pack shall be constructed by pleating a continuous sheet of non-woven, water-resistant fiberglass media around hemmed-edge corrugated aluminum separators.
- 2.2 The filter pack shall be sealed into a (galvaneal) 409 stainless steel) (304 stainless steel) (particle board) (fire-retardant particleboard) (fire-retardant plywood) frame with a fire retardant (polyurethane foam) (solid urethane) sealant. (Steel frames shall be 16 ga. Wood frames shall be 3/4" thick.)

- 2.3 (A 40-durometer closed-cell neoprene gasket) (Silicone gel in a channel) shall be provided on one or more sides to seal the filter in the mounting device.

### 3.0 Performance

- 3.1 Initial and final resistances shall not exceed the scheduled values.
- 3.2 Alpha Cell HEPA Filters shall have a minimum efficiency of 99.97% on 0.30 micrometer particles when tested at rated capacity on a Q-107 Penetrometer in accordance with IEST-RP-CC-001.3, Type A. Each filter shall be challenged with an approved nearly monodispersed oil aerosol of 0.30 micrometer size. Measure the upstream and down stream concentration of these particles with a light scattering photometer, determine the penetration and calculate the efficiency.
- 3.3 Alpha Cell Scan Tested HEPA Filters shall have a minimum efficiency of 99.99% on 0.30 micrometer particles in accordance with IEST-RP-CC-001.3, Type C. Scan Testing shall be in accordance with Section 6.2 of IEST-RP-CC034.1 Type C. The scan test shall consist of challenging the filter with a high concentration of an approved oil aerosol or PSL Spheres. Utilizing a photometer or particle counter, the media pack and the pack-to-frame seal shall be scanned to insure that there are no leaks greater than .01% of the upstream concentration at 100 fpm face velocity



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