

## General

Flanders offers a complete line of Alpha Cell HEPA Filters in two 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<sup>®</sup> 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:

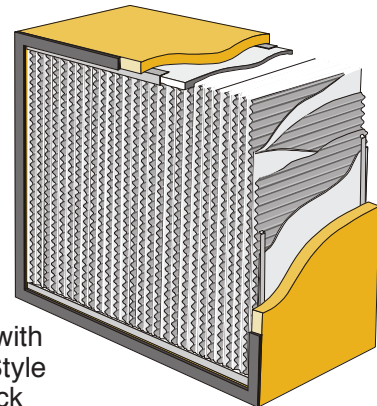
- Hospitals
- Biomedical
- Pharmaceutical
- Biotechnology
- Genetic Research
- Universities
- Laboratories
- Food Processing
- Photo Processing
- Semiconductor Fabrication
- Industrial Processing Systems



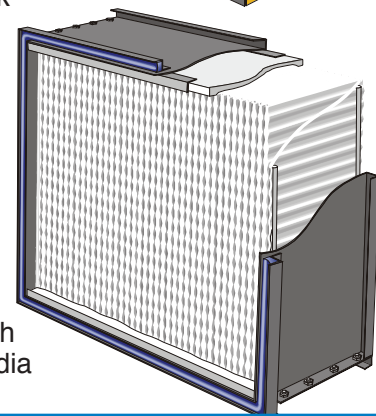
<b>Alpha Cell HEPA Filter Dimensions and Capacities</b>						
CFM Dimensions and Capacities						
Frame Depth (Inches)	Filter Size and Frame Depth Designator	Actual Face Size (inches)	CFM Capacity at Clean Pressure Drop, inches w.g.			Weight (LB.)
			.65	1.0	1.35	
11-1/2	GG-F	24x24	715	1100	1430	38
	GC-F	24x12	330	501	649	26
	YY-F	23-3/8 x 23-3/8	677	1040	1359	37
	YU-F	23-3/8 x 11-3/8	303	468	605	25
	GN-F	24x30	913	1403	1821	45
	CC-F	12x12	149	226	292	14
5-7/8	GG-D	24x24	358	550	715	20
	GC-D	24x12	160	248	325	12
	BB-D	8x8	28	39	50	6
	CC-D	12x12	77	116	149	9
	YY-D	23-3/8 x 23-3/8	336	517	671	18
	YU-D	23-3/8x11-3/8	297	457	594	23
	GN-D	24x30	451	699	908	26
	GP-D	24x36	556	853	1111	33
	GQ-D	24x48	748	1150	1496	39
	GR-D	24x60	946	1452	1887	32
	GS-D	24x72	1139	1749	2272	46
	NN-D	30x30	578	891	1161	26
	NP-D	30x36	704	1084	1408	30
	NQ-D	30x48	952	1463	1903	37
	NR-D	30x60	1199	1848	2404	44
NS-D	30x72	1447	2228	2893	52	
PP-D	36x36	869	1337	1738	33	
PQ-D	36x48	1155	1782	2316	41	
PR-D	36x60	1447	2228	2893	49	
PS-D	36x72	1738	2673	3476	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

**Flanders Precisionaire - Foremost in Air Filtration**

**Engineered Products: 1-800-637-2803**

**Replacement Products: 1-800-347-2220**

# ALPHA CELL COMPONENT CHART

0 - 007 - C - 07 - 00 - IU - 12 - 00 - GG - F

## Hardware

0 = None  
T = Extractor Clips

## Efficiency

007 = 99.97% DOP (Pureform)  
011 = 99.97% DOP (Separator)

## Capacity/Pack Style

C = Separator  
D = 4 inch Pureform  
F = 8 inch Pureform

## Frame Material

02 = 16 GA 409 Stainless  
03 = 16 GA 304 Stainless  
04 = 3/4 in. FIRE RETARDANT PLYWOOD  
05 = FABRICATED ALUMINUM  
07 = 3/4 in. FIRE RETARDANT PARTICLE BOARD  
08 = 16 GA. GALVANNEAL  
11 = 3/4 in. NON FIRE RETARDANT PARTICLE BOARD

## Frame Style

00 = BOX  
03 = DOUBLE TURNED FLANGE  
05 = 3/4 IN. DEEP CHANNEL  
08 = DOUBLE-TURNED FLANGE, ONE SIDE

## Sealant Material

IU = URETHANE

## Gasket material

0 = NONE  
1 = NEOPRENE  
5 = BLUE JEL

## Gasket location

0 = NONE  
1 = UPSTREAM  
2 = DOWNSTREAM  
3 = BOTH SIDES

## Filter Depth

D = 5-7/8"  
F = 11-1/2"

## Filter Face Size (HxW)

B = 8"	N = 30"	R = 6
C = 12"	P = 36"	S = 72"
E = 18"	H = 42"	U = 11-3/8"
G = 24"	Q = 48"	Y = 23-3/8"

## Odd Size Designator

Odd size designators are an Alpha Numeric description. The first two digits specify the height whole number with an alpha designator specifying the height fraction. The second two digits specify the width whole number with an alpha designator specifying the width fraction. And the last alpha designator specifies the depth. If the height or width is less than 10 inches, use a 0 in front of the dimension.

A = 0"	F = 5/16"	L = 5/8"
B = 1-1/16"	G = 3/8"	M = 11/16"
C = 1/8"	H = 7/16"	N = 3/4"
D = 3/16"	J = 1/2"	P = 13/16"
E = 1/4"	K = 9/16"	Q = 7/8"
		R = 15/16"

## Faceguard Material

0 = NONE  
1 = GALVANIZED 4X4 MESH  
G = ALUMINIZED EXPANDED METAL  
2 = 17GA. SS 4X4 MESH  
5 = 22 GA. SS 4X4 MESH

## Faceguard Location

0 = NONE  
1 = UPSTREAM  
2 = DOWNSTREAM  
3 = BOTH SIDES

## Frame Materials

AlphaCell Filters are available in a variety of wood and metal frame materials such as particle board, plywood, galvanized steel and stainless steel.

## Gasket and Fluid Seal

The standard gasket seal is 0.75" x 0.25" neoprene for installation on either the upstream, downstream or both sides of the filter. The standard Fluid Seal is Flanders Blu-Jel® Seal which is a two-part silicone material suitable for temperatures up to 390°F.

## Faceguards (Optional)

Faceguards are used to protect the filter media from mechanical damage. The typical faceguard material is expanded aluminized steel. Galvanized 4 x 4 mesh welded wire and Type 304 stainless steel faceguards are also available.

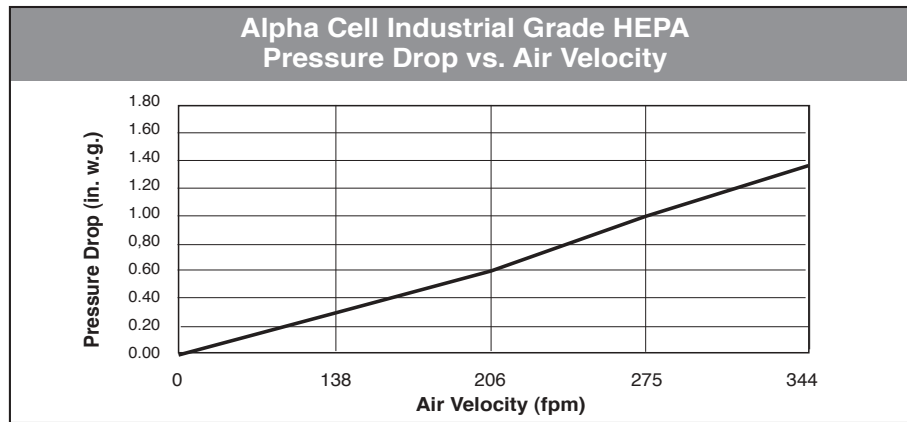
## UL Listings

Alpha Cell Filters are either UL900 Class 1 or Class 2 listed depending on materials of construction.

## Holding Frames and Housings

Alpha Frames are designed for Alpha 95 filters in built-up filter banks. Each filter is secured in the frame with four bolt-type fasteners that either compress the gasket or press the knife edge into the gel in the filter channel to maintain a leak-tight seal.

Surelock HEPA Filter Housings are recommended for side-access applications. The filters are sealed in place with either spring-loaded swing arm assemblies or a locking mechanism. The swing arm assemblies or locking mechanism either compress the gasket or press the knife edge into the gel in the filter channel to maintain a leak-tight seal.



## 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 jel 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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