

Alpha Cell

HEPA Filters

PB-14011099

General

Flanders Precisionaire 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. Typical applications for Alpha Cell Filters include:

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

Testing

Flanders Precisionaire individually tests and certifies each HEPA Filter to meet the customer's requirements for resistance and efficiency (penetration) at the filter's 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 Precisionaire HEPA Filters will easily pass an in-place validation test to determine the overall system efficiency.

HEPA FILTERS

Each HEPA filter shall have 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 monodispersed 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 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 insure that there are no leaks greater than .01% of the upstream concentration at 100 fpm face velocity.

HIGHER EFFICIENCY ULPA FILTERS

Flanders Precisionaire 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.



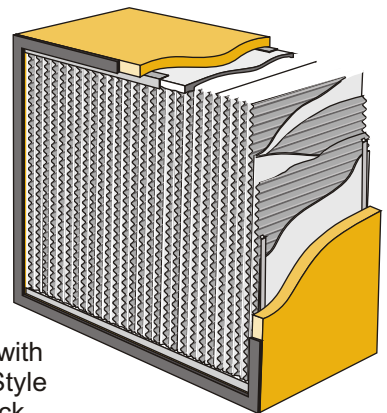
Alpha Cell HEPA Filter Dimensions and Capacities

CFM CAPACITIES AND DIMENSIONS						
Frame Depth (Inches)	Filter Size & 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	24 x 24	650	1000	1300	38
	GC-F	24 x 12	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	24 x 30	830	1275	1655	45
	CC-F	12 x 12	135	205	265	14
5-7/8	GG-D	24 X 24	325	500	650	20
	GC-D	24 X 12	145	225	295	12
	BB-D	8 X 8	25	35	45	6
	CC-D	12 X 12	70	105	135	9
	YY-D	23-3/8 X 23-3/8	305	470	610	18
	YU-D	23-3/8 X 11-3/8	270	415	540	23
	GN-D	24 X 30	410	635	825	26
	GP-D	24 X 36	505	775	1010	33
	GQ-D	24 X 48	680	1045	1360	39
	GR-D	24 X 60	860	1320	1715	32
	GS-D	24 X 72	1035	1590	2065	46
	NN-D	30 X 30	525	810	1055	26
	NP-D	30 X 36	640	985	1280	30
	NQ-D	30 X 48	865	1330	1730	37
	NR-D	30 X 60	1090	1680	2185	44
	NS-D	30 X 72	1315	2025	2630	52
	PP-D	36 X 36	790	1215	1580	33
	PQ-D	36 X 48	1050	1620	2105	41
PR-D	36 X 60	1315	2025	2630	49	
PS-D	36 X 72	1580	2430	3160	59	

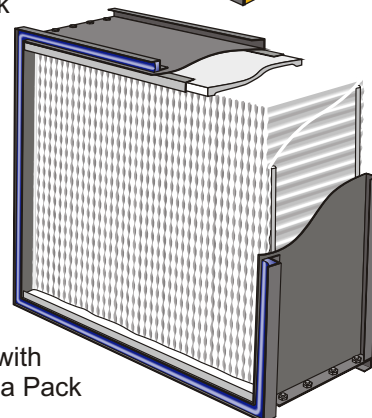
Flanders Precisionaire manufactures both conventional Separator Style and Pureform Separatorless HEPA Filters. To make a Separator Style filter, the media is folded over corrugated aluminum separators with hemmed edges to separate the pleats in the filter pack. Flanders Precisionaire manufactures its own filter media, enabling it to develop a unique manufacturing process for the production of Pureform Separatorless HEPA Filters. In one manufacturing operation, Flanders Precisionaire 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*
- *Media is 28 mils thick, which is significantly thicker than conventional 15 mil media used in Separator Style HEPA Filters*



Alpha Cell with Separator Style Media Pack



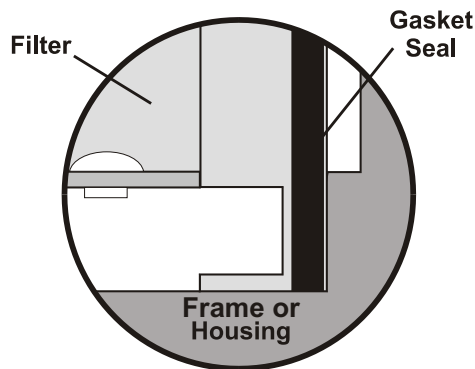
Alpha Cell with Pureform Media Pack

Frame Materials

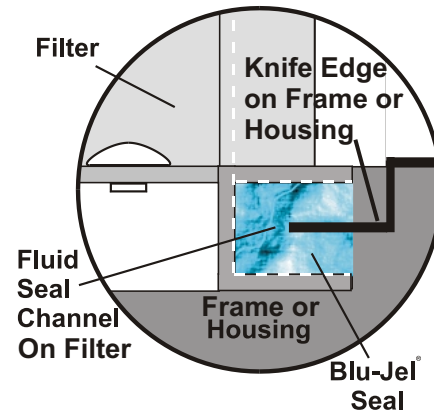
Alpha Cell Filters are available in a variety of wood and metal frame materials such as particle board, plywood, galvanized steel and stainless steel.

Gasket and Fluid Seal

The standard gasket seal is 0.75 in. x 0.25 in. neoprene for installation on either the upstream, downstream or both sides of the filter.



The standard Fluid Seal is Flanders Precisionaire Blu-Jel® Seal which is a two - part silicone material suitable for temperatures up to 390°F.



Faceguards

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

ALPHA CELL COMPONENT CHART

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

Hardware

0 = None
T = Extractor Clips

Efficiency

007 = 99.97% DOP
99.99% on 0.30 micrometers = SU Sealant

Capacity/Pack Style

C = SEPARATOR
D = 4 in. PUREFORM
F = 8 in. 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
19= Anodized Extruded Aluminum (6in. deep frame only)

Frame Style

00= BOX
03= DOUBLE-TURNED FLANGE
05= 3/4 in. DEEP CHANNEL
06= SINGLE HEADER WITH CHANNEL
08= DOUBLE-TURNED FLANGE, ONE SIDE

Sealant Material

IL=POLYURETHANE FOAM
IU=URETHANE
SU=URETHANE SCAN TESTED= (99.99% on 0.30 micrometers)

Filter Face Size & Depth

For Standard sizes use the 3-digit designator. For odd sizes see Odd Size Designator

FaceGuard Material

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

FaceGuard Location

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

Gasket Material

0=NONE
1=NEOPRENE
5= BLU-JEL

Gasket Location

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

Odd size designators is 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 in., use a 0 in front of the dimension.

Odd Size Designator

Height and Width Alpha Fraction

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

Depth Designator

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

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 Precisionaire.
- 1.2 Filter sizes, capacities and construction options shall be as scheduled on the drawings.
- 1.3 Filters shall be (UL 900 Class 1)(UL 900 Class 2) listed.

2.0 Filter Construction

- 2.1 The filter pack shall be constructed by pleating a continuous sheet of non-woven water-resistant fiberglass media around hemmed-edge corrugated aluminum separators.
The 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.
- 2.2 The filter pack shall be sealed into a (galvaneal) (409 stainless steel) (304 stainless steel) (particleboard) (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 in. 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. Each filter shall be challenged with an approved nearly monodispersed oil aerosol of 0.30 micrometer size. Measure the upstream and downstream 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. Scan Testing shall be in accordance with Section 6.2 of IEST-RP-CC034.1. 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.