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.
Flanders Presicionaire 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 HEPA Filter Dimensions and Capacities

<table>
<thead>
<tr>
<th>Frame Depth (Inches)</th>
<th>Filter Size &amp; Frame Depth Designator</th>
<th>Actual Face Size (inches)</th>
<th>Cfm Capacity at Clean Pressure Drop, inches w.g.</th>
<th>Weight (Lb.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-1/2</td>
<td>GG-F 24 x 24</td>
<td>24 x 24</td>
<td>650 1000 1300</td>
<td>38</td>
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<tr>
<td></td>
<td>GC-F 24 x 12</td>
<td>24 x 12</td>
<td>300 455 590</td>
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<tr>
<td></td>
<td>GN-F 24 x 30</td>
<td>24 x 30</td>
<td>830 1275 1655</td>
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<tr>
<td></td>
<td>CC-F 12 x 12</td>
<td>12 x 12</td>
<td>135 205 265</td>
<td>14</td>
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<td>5-7/8</td>
<td>GG-D 24 X 24</td>
<td>24 X 24</td>
<td>325 500 650</td>
<td>20</td>
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<tr>
<td></td>
<td>GC-D 24 X 12</td>
<td>24 X 12</td>
<td>145 225 295</td>
<td>12</td>
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<tr>
<td></td>
<td>BB-D 8 X8</td>
<td>8 X8</td>
<td>25 35 45</td>
<td>6</td>
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<tr>
<td></td>
<td>CC-D 12 X12</td>
<td>12 X12</td>
<td>70 105 135</td>
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<td>GN-D 24 X 30</td>
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- 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
**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.
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)

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.

Guide Specifications

(Silicone gel in a channel) shall be provided on one or more sides to seal the filter in the mounting device.