Isolation/Filtration Systems

CleanAir Solutions, Inc. (707) 864-9499

Email: kkalafatis@cleanroomspecialists.com
URL: www.CleanRoomSpecialists.com

Call for a no-obligation quote on your next cleanroom project

Puzzled by your latest drop in yield? Let us help...

(707) 864-9499
EEF FILTERS MAKE AIRBORNE PATHOGEN CONTROL COST EFFECTIVE

• Bactericidal* filtration
• Enables negative/positive pressure without external fan
• Filter has enough power for double HEPA filtration air recirculation and exhaust
• This system exceeds CDC guidelines for AFB isolation
• Results in significant energy savings for isolation rooms

* Based on independent laboratory test with E. coli and Staph. epidermidis
Principle of Operation-EEF Technology

Flow enters first high intensity ionizing field.
EEF Technology continued......

Particles and bacteria are charged due to ion flux in this ionizing field - some of the bacteria are killed here.
The charged particles and bacteria are highly efficiently filtered - up to 1000 times lower penetration than conventional filters with the same pressure drop and flow rate.
Bacteria caught on the filter are subjected to a continuous dose of ionizing radiation and are thus killed*.

* Based on independent laboratory test w/ *E. coli* and *Staph. epidermidis*
Negative Isolation w/ VAV/ Central AC supply - Integrated
In duct fan units with primary HEPAs

Direct collar connects to filters. This is not a plenum

Optional Bank of Terminal HEPA filters
AFB ISOLATION THAT GREATLY REDUCES RISK AND PAYS FOR ITSELF

Filter system rated at 99.999999+% DoP-
Provides virtually particle free air - the room performs as a Cleanroom.

Bactericidal* – low bioburden in the room.

Maintains proper negative pressure - min -ve pressure of -0.02”WC.

Significantly reduces operating costs.

* Based on independent laboratory test w/ E. coli and Staph. epidermidis
How Much Filtration Efficiency is Needed?

<table>
<thead>
<tr>
<th># of particles/ft³ entering the filter</th>
<th># of particles penetrating single HEPA Filtration-99.99%</th>
<th># of particles penetrating double HEPA Filtration – 99.999999%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 million</td>
<td>100 per ft³</td>
<td>~0 per ft³</td>
</tr>
<tr>
<td>10 million</td>
<td>1,000 per ft³</td>
<td>~0 per ft³</td>
</tr>
</tbody>
</table>

Point of reference: Indoor air has 500,000-1MM 0.3 Um particles/ft³
Outdoor air in urban areas can be much higher.
Performance of EEF HEPA with Terminal HEPA filters

Due to low flow restriction, EEF filters can be used with terminal ceiling HEPA filters (Double HEPA filtration) to obtain virtually particle free air.
## Comparison to Ventilation

...a cleaner environment

<table>
<thead>
<tr>
<th>Feature</th>
<th>Ventilation</th>
<th>EEF BIO PLUS®</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACH*</td>
<td>12 (CDC)-24</td>
<td>64</td>
</tr>
<tr>
<td>0.3 Um Filtration Efficiency</td>
<td>50% w/ 95% ASHRAE DOP</td>
<td>99.9999999%+</td>
</tr>
<tr>
<td>Est. Particle Conc #/ft³</td>
<td>300,000-1 MM</td>
<td>10,000</td>
</tr>
</tbody>
</table>

*Based on 10x10x8 room size