



TES-CLEAN AIR SYSTEMS

Air Distribution
Membranes: a
study

Various plenum
depths, with
both 2300 and
2500 screen
materials

A single fan 2'X4' HEPA FFU was installed on a 7.81 sq. ft area (10% larger than the 7.1 sq. ft active filter of the FFU) Data was taken at 9 spots using a TSI rotating vane anemometer, with different plenum depths and screen types. Data derived using the Relative Standard Deviation method.

No screen used: Relative Standard Deviation (RSD) across the 7.81 sq. ft area, 38-42%

2500 screen, 7/8" plenum depth, 32.2% RSD

2500 screen 1 1/2" plenum depth, 22.3% RSD

2300 screen 1 1/2" plenum depth 18.5% RSD

2500 screen 5 1/4" plenum depth, 16.0% RSD

2300 screen 5 1/4" plenum depth 9.7% RSD

Analysis/Thoughts

- The 2300 membrane performed better than the 2500 membrane, yielding very similar results with a 1 ½" plenum depth as the 2500 membrane with a 5 ¼" plenum depth. Plus under 10% RSD with the 5 ¼" plenum depth.

An important note: This data is provided to give us some idea of what can be expected in the way of improved uniformity when the filter face of the FFU is smaller than the clean zone. Your application will likely not be the same as our experiment, but this data will help us to apply the screen technology to your situation.

What is needed to provide a quote:

- OD of the screen required.
- Note: The screen ID should be no smaller than the active area of the filter, with the ID being $1\frac{5}{8}$ " smaller than the OD. E. G. If you want an open area of 25 " X 45 " the screen OD would be $26\frac{5}{8}$ " X $46\frac{5}{8}$ "
- If there are places the stiffening struts must miss, note them on the RFQ.
 - Size, count and location of the inserts
- Detailed drawing of the screen if odd shaped (triangular or etc)