

**SPECIAL SPECIFICATION**  
**SECTION 15869S**  
**TERMINAL HEPA FILTER DIFFUSERS**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES**

A. Section Includes:

1. Terminal HEPA Filter diffusers installed in cleanroom

**1.02 REFERENCES/PROJECT REQUIREMENTS**

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Requirements of the following publications apply to this section:

1. UL 900 - Test Performance of Air Filter Units.
2. IEST RP – Recommended Practices  
CC001.3 HEPA and ULPA Filters  
CC007.1 Testing ULPA Filters  
CC021.1 HEPA and ULPA Filter Leak Tests.

C. Additional project requirements:

1. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum ten years documented experience, who issues complete catalog data on total product.

**1.03 SUBMITTALS**

A. Submit the following in accordance with Conditions of Contract and Standard in Specification Division 1:

1. Dimensioned assembly and outline drawings with operating weights.

2. Data for each filter type: complete certified performance data at design conditions including airflow rate versus pressure drop performance curves.
3. Packaging and shipping procedures.
4. Manufacturer's recommended installation procedures.
5. Filter particle count test procedure.

#### 1.04 DELIVERY, STORAGE, AND HANDLING

- A. **Protect Terminal HEPA Filter Diffusers from damage due to normal handling during shipment and storage.**
- B. **Consignee must inspect shipment upon delivery and note any and all damages and discrepancies on bill of lading and notify manufacturer.**
- C. Accept products on site in factory-fabricated protective containers. Inspect for damage.
- D. **Terminal HEPA Filter Diffusers shall not be stored in an area where they will have a chance to be damaged from traffic or debris. Handle carefully to avoid damage to filter or housing components.**

#### 1.05 WARRANTY

- A. Copy of Warranty required with bid shall include:
  1. Manufacturer shall provide written guarantee and warranty covering defects in material and workmanship for the equipment. This guarantee and warranty shall be for one year from the date of final acceptance from the owner. Date of acceptance shall be defined as the date the owner assumes operation of the equipment.
  2. The warranty shall cover the construction, materials, parts, and labor.
  3. All equipment or material found to be defective in the warranty period shall be replaced to new condition at no material or labor cost to the owner.
  4. Manufacturer shall provide to owner, specifics for necessary maintenance to keep the warranty in effect.
  5. Manufacturer shall provide six copies of the warranty and guarantee to the Owner at the time of bid.

## 1.06 FACTORY INSPECTIONS

- A. Sandia National Laboratories or their representative shall maintain the right to tour the manufacturer's plants at any time that fabrication is being performed on components intended for this Project.
- B. The manufacturer shall notify the Sandia Designated Representative (SDR) seven days prior to when production is finished on the first component of each type. Any time after that date, the SDR may exercise the option, without advance notice to tour the plant and inspect for component assembly, painting, cleaning, or packaging to ensure that quality control is being maintained.

## 1.07 MAINTENANCE

- A. Manufacturer shall provide six full copies in loose-leaf binders of complete operating and maintenance manuals containing all documents of furnished equipment. These manuals are required before the start-up and acceptance testing.

## PART 2 - PRODUCTS

### 2.01 ACCEPTABLE MANUFACTURERS

- A. Flanders
- B. American Air Filter
- C. Filtra

### 2.02 GENERAL

- A. Modules shall be UL 900 Class 1 listed and Factory Mutual approved.

### 2.03 CONSTRUCTION

- A. Units to be dimensionally compatible with a cleanroom flush grid installed on nominal 48 inch by 24 inch centers.
- B. The module filter pack shall be nominal 4" deep design constructed of a water laid microfine glass media containing a water repellent binder. The filter pack shall have raised impressions on the media that shall align against each other when pleated to support adjacent folds without the use of dissimilar materials such as media strips, strings or glue filaments as separators.

- C. The filter pack shall be sealed to the module frame with a fire-retardant solid urethane.
- D. The anodized extruded aluminum module frame shall have a flat flange to fit in a gasketed flush grid system.
- E. The module top shall be one piece aluminum with an integral inlet collar (inlet sizes shall be as noted on the drawings). The top shall be 0.125" thick, designed to support the weight of installation and service personnel.
- F. The protective grille shall be circular perforated anodized aluminum.
- G. HEPA Filter
  - 1. Filters shall be Metal frame, UL Class 1, and UL 586. ULPA 99.9995% efficient at 0.12 microns. Separatorless. Solid Urethane bond.
  - 2. Factory leak tested - laser and static scan tested.
  - 3. All filters in cleanrooms shall meet the requirements of NFPA 90A, IRI IM.17.11.1, and the IFC. Sandia National Laboratories requires that all filters in cleanrooms meet the requirements of UL900.

### PART 3 - EXECUTION

#### 3.01 TESTING

- A. After all construction work is completed and the complete facility has been running within design conditions for a minimum of 24 hours, a particle count acceptance test shall be performed. Any terminals or filters failing this testing shall be replaced at no cost to the Owner.

#### 3.02 INSTALLATION

- A. Install in strict accordance with manufacturer's requirements, shop drawings, and contract documents.

END OF SECTION