**Price Perforated Laboratory Diffusers**

**Division 23 – Heating, Ventilating, and Air Conditioning**

**Section 23 37 13 – Diffusers, Registers, and Grilles**

The following specification is for a defined application. Price would be pleased to assist in developing a specification for your specific need.

**PART 1 – GENERAL**

**1.01 Section includes**:

1. Perforated Laboratory Diffusers.

**1.02 Related Requirements**

1. Section 01 30 00 – Administrative Requirements
2. Section 01 40 00 – Quality Requirements
3. Section 01 60 00 – Product Requirements
4. Section 01 74 19 – Construction/Demolition Waste Management and Disposal
5. Section 01 78 00 – Closeout Submittals
6. Section 01 79 00 – Demonstration and Training
7. Section 23 31 00 – HVAC Ducts and Casings
8. Section 23 32 00 – Air Plenums and Chases

**1.03 Reference Standards**

A. ASHRAE Standard 55 – Thermal Environmental Conditions for Human Occupancy; 2013

B. ASHRAE Standard 70 – Method of Testing the Performance of Air Outlets and Air Inlets; 2006

C. ASTM Standard E84 – Standard Test Method for Surface Burning Characteristics of Building Materials; 2016

D. ASTM D1308 – Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes; 2013

E. ASTM D4752 – Standard Practice for Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc-Rich Primers by Solvent Rub; 2015

F. SMACNA (SRM) – Seismic Restraint Manual Guidelines for Mechanical Systems; Sheet Metal and Air Conditioning Contractors’ National Association; 2008

G. UL Standard 723 – Standard for Test for Surface Burning Characteristics of Building Materials; 2008

**1.04 Administrative Requirements**

A. Pre-installation Meeting: Conduct a pre-installation meeting one week prior to the start of the work of this section; require attendance by all affected installers.

B. Sequencing: Ensure that utility connections are achieved in an orderly and efficient manner.

**1.05 Submittals**

A. See Section 01 30 00 – Administrative Requirements for submittal procedures.

B. Product Data: Provide data indicating configuration, general assembly, and materials used in fabrication. Include catalog performance ratings that indicate air volume flow, initial pressure drop, sound performance, and throw, as tested in accordance with ASHRAE Standard 70-2006.

C. Shop Drawings: Indicate configuration, general assembly, and materials used in fabrication.

D. Certificates: Certify that air capacities, pressure drops, and selection procedures meet or exceed specified requirements.

E. Manufacturer's Installation Instructions: Indicate support and hanging details, installation instructions, recommendations, and service clearances required.

F. Project Record Documents: Record actual locations of units and control components.

G. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, maintenance and repair data, and parts lists.

H. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 01 60 00 - Product Requirements for additional provisions.

**1.06 Quality Assurance**

1. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum ten years of documented experience.
2. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

**1.07 Warranty**

1. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
2. Price Industries warrants that, at the time of shipment, the PDA will be free from defects arising from manufacturing, workmanship, or a failure to adhere to Price Industries’ published catalog specifications and specified material. If Price Industries is notified in writing of any such defect within (1) year from the date of shipment, Price Industries will, at its sole option, repair, replace, or refund the purchase price paid by the Representative for the Product. Such remedies are the exclusive remedies available under this warranty.

**PART 2 – PRODUCTS**

**2.01** **Perforated Laboratory Diffusers**

1. Basis of Design: Price Industries, Inc.
2. Perforated Laboratory Supply Diffusers: PDA
3. Perforated Laboratory Return Diffusers: PDA
4. General:
   1. The perforated laboratory diffusers shall provide a four-way horizontal air pattern.
5. Performance:
   1. The manufacturer of the perforated laboratory diffuser shall provide performance data for air volume, initial pressure drop, sound levels, and throw. All data must be tested in accordance with the most recent publication of ASHRAE Standard 70.
6. Perforated Laboratory Supply Diffusers [Price Model PDA]:
   1. Supply and install Price [PDA] perforated laboratory supply diffusers of the sizes, configurations, and capacities indicated on the drawings and/or diffuser schedule.
   2. Construction:
      1. The diffuser plenum shall be aluminum construction with continuously welded joints.
      2. The pattern controllers shall be aluminum construction.
         1. The pattern controller shall provide a four way airflow pattern with adjustable curved vanes.
         2. The integral pattern controller shall be secured with wing nuts and removable for cleaning.
      3. The face shall be 51 percent free area perforated aluminum.
         1. The snap-in face shall be removable, and shall be secured with stainless steel retainer cables for ease of installation and removal.
         2. Screw and/or clip-mounting of the diffuser face shall not be accepted.
      4. Mounting frame shall be provided for (**select one**):
         1. Surface mounting.
         2. T-bar mounting.
   3. Finish (**select one**):
      1. All aluminum components shall have a white B12 baked-on powder coat finish.
         1. The paint finish must demonstrate no degradation when tested in accordance with ASTM D1308 (covered and spot immersion) and ASTM D4752 (MEK double rub) paint durability tests.
         2. The paint film thickness shall be a minimum of 2.0 mils.
         3. The finish shall have a hardness of 2H.
         4. The finish shall withstand a minimum salt spray exposure of 1000 hours.
         5. The finish shall have an impact resistance of 80 in-lb.
   4. Inlet damper (**optional**):
      1. The opposed blade damper shall be aluminum construction.
7. Perforated Laboratory Return Diffusers [Price Models PDA]:
   1. Supply and install Price [PDA] perforated laboratory return diffusers of the sizes, configurations, and capacities indicated on the drawings and/or diffuser schedule.
   2. Construction:
      1. The diffuser plenum shall be aluminum construction with continuously welded joints.
      2. The face shall be 51 percent free area perforated aluminum.
         1. The snap-in face shall be removable, and shall be secured with stainless steel retainer cables for ease of installation and removal.
         2. Screw and/or clip-mounting of the diffuser face shall not be accepted.
      3. Mounting frame shall be provided for (**select one**):
         1. Surface mounting.
         2. T-bar mounting.
   3. Finish (**select one**):
      1. All aluminum components shall have a white B12 baked-on powder coat finish.
         1. The paint finish must demonstrate no degradation when tested in accordance with ASTM D1308 (covered and spot immersion) and ASTM D4752 (MEK double rub) paint durability tests.
         2. The paint film thickness shall be a minimum of 2.0 mils.
         3. The finish shall have a hardness of 2H.
         4. The finish shall withstand a minimum salt spray exposure of 1000 hours.
         5. The finish shall have an impact resistance of 80 in-lb.
   4. Inlet damper (**optional**):
      1. The opposed blade damper shall be aluminum construction.

**PART 3 – EXECUTION**

**3.01 Examination**

A. Verify that conditions are suitable for installation.

B. Verify that field measurements are as shown on the drawings.

**3.02 Installation**

1. Install in accordance with manufacturer’s instructions.
2. See drawings for the size(s) and locations of high capacity flush face diffuser inlets.
3. Support components individually from structure in accordance with SMACNA (SRM).
4. Do not support components from ductwork.
5. Connect to ductwork in accordance with Section 23 31 00.

**3.03 Adjusting**

1. Ensure supply air to the flush face diffusers by performing pitot traverse of the main supply duct.
2. Balance outlets according to manufacturer’s recommendations.
3. Verify that field measurements are as shown on the drawings.

**3.04 Field Quality Control**

1. See Section 01 40 00 – Quality Requirements for additional requirements.

**3.05 Cleaning**

1. See Section 01 74 19 – Construction Waste Management and Disposal for additional requirements.

**3.06 Closeout Activities**

1. See Section 01 78 00 – Closeout Submittals for closeout documentation requirements.
2. See Section 01 79 00 – Demonstration and Training for additional requirements.