



# HALCO PRODUCTS COMPANY

100 N. Gordon Street – Elk Grove Village, IL 60007-1193

Tel: 847-956-1600 Fax: 847-956-0595

E-Mail: [info@halco-products.com](mailto:info@halco-products.com) Website: [www.Halco-Products.com](http://www.Halco-Products.com)

## AIR SHOWER

9/9/20

## TUNNEL AIR SHOWER

## CART PASS-THRU AIR SHOWER

Section # [REDACTED] Lab “Specialties” Air Shower Module (Clarify)

### Part I General

#### 1.01 Description:

- A. **Air Shower, (Tunnel, or Cart Pass-Thru)** to be factory fabricated enclosure to be used to remove surface particles from personnel prior to entering Controlled Environmental Facility (CEF). Air Showers can also be utilized as pass thru air showers for handling samples from outside to inside of (CEF). Air showers can also be configured as Tunnels to handle high volume personnel loads or Cart Pass-thru modules.
- B. **Unit Size:** As shown on drawings and bill of material listings.
- C. **Operation:** In accordance with (CDC/NIH/US), (OBS/LCDC/Canada) And any applicable specification for this specific project as noted on drawings and here in the specifications.

#### 1.02 Submittals:

- A. Submit shop drawings showing plan and elevation views with overall and interconnecton point dimensions.
- B. **Product Data:** Submit data sheets; component cuts and specific detail drawings for subcomponent items unique and part of specified unit.
- C. **Installation Instructions:** Submit placement and configuration drawings; utility connection requirements; job specific instructions and descriptions.
- D. **Manufacturer’s Certificate:** Certify that product will meet or exceed specified requirements. Provide standard testing protocol list; to insure requirements are met and that unit is factory tested and certified prior to shipment.

#### 1.03 Close Out Submittals:

Execution requirements close out procedures.

- A. **Operation and Maintenance Data:** Submit start-up instructions maintenance data, parts lists, controls and accessories.

#### 1.04 Qualifications:

- A. **Manufacturer:** Unit shall be HALCO™ brand air shower as specified on drawings. Manufacturer of air shower module shall be engaged in manufacturing products specified in this section with minimum of 10 years experience. Alternate suppliers of equipment must be pre-qualified and "APPROVED", prior to submitting bid to client.
- B. **Installer:** Company specializing in performing work of this section with Minimum three (3) years documented experience approved by manufacturer.

#### 1.05 Delivery, Storage, Handling:

Product storage and handling requirements.

- A. Accept Air Shower Modules on site in factory packaging and inspect for damage.
- B. Protect Air Shower Modules from contamination by stroing in clean “Project Manager Approved” location.

#### 1.06 Field Measurements:

- A. Verify field measurements prior to fabrication

#### 1.07 Warranty:

- A. Provide Product warranties and product “As-Built” drawings and manuals.



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- B. Provide (1) one year warranty from date of acceptance of unit and all subcomponents against defects in material and workmanship. Warranty shall not be valid unless certified Start-up Validation is accomplished.

## Part 2 Products

### 2.01 Air Shower and Specialties:

- A. Manufacturers: Shall have minimum of (TEN) 10 years experience fabricating this type of product.
  1. Halco Products Company
  2. \_\_\_\_\_
  3. \_\_\_\_\_
  4. Substitutions: Section 1.04-Product Requirements.

### 2.02 Usage and Isolation Level:

- A. Air Shower shall be utilized in a \_\_\_\_\_ (laboratory/clean room/CEF) rated at \_\_\_\_\_ (insert rating) i.e. ISO 1 thru 8 or BSL \_\_\_\_\_ (insert ISO/BSL) and shall be designed for such use.

### 2.03 Purging, Isolation, Decontamination, Control Within the Air Shower:

- A. Air Shower shall include \_\_\_\_\_ (insert spec). QA/QC Protocols and applicable agency FDA/CSA/OBS/LCDC or \_\_\_\_\_ and shall include as options: \_\_\_\_\_
- B. Nozzles inside Air Shower shall provide nominal 6000FPM (Optional 10,000FPM)(Other Verify \_\_\_\_\_)

### 2.04 Doors:

- A. Air Shower shall have \_\_\_\_\_ (insert type) doors. **IE** roll-up, sliding, motorized sliding, automatic swing, bi-part motorized sliding, Etc., Etc., Etc. Glazing in the doors to be \_\_\_\_\_ (insert spec) of a \_\_\_\_\_ width by \_\_\_\_\_ height, color to be \_\_\_\_\_ (insert color), and rated at \_\_\_\_\_ (insert rating), and be \_\_\_\_\_ (Fixed, moveable, motorized Sliding, Adjustable).
- B. Doors to be \_\_\_\_\_ (interlocked, not interlocked) using \_\_\_\_\_ (mechanical, electrical, pneumatic) interlock, to avoid having both doors open at the same time, and to avoid contamination cross over.
- C. Air Shower to included "PLC" controller with Digital "HMI" located at entry door for operation.
- D. Door Seals to be \_\_\_\_\_
  1. Standard closed cell gasket
  2. **Additional material as required.**

### 2.05 Materials of Construction:

- A. Air Shower to be constructed of \_\_\_\_\_ (insert material). **IE**, steel unpainted, or painted with \_\_\_\_\_ (insert paint spec) stainless steel \_\_\_\_\_ (insert S/S spec) other \_\_\_\_\_ (insert other spec).
- B. Unit to include, (Magnehelic Gauges(s),, Continuous Purge, Anti-Static Ionization Bars & Power Supply, "OTHER", Fabricated of \_\_\_\_\_ (Insert Spec).
- C. **Unit to include options as required by specifying agency.**

### 2.06 Air Shower/Cart Pass-Thru Designs:

- A. Air Shower shall be designed to allow passage of wheeled carts of \_\_\_\_\_ (insert size and type) and include internal bumper rails to prevent damage to items. Interior to be \_\_\_\_\_ (insert spec) **IE** ventilated with high pressure HEPA filtered air through nozzles to blow off any dust and exhaust to return air system, by using \_\_\_\_\_ (insert spec) fed from and supported by \_\_\_\_\_ (insert spec). CFMS, voltages and sizes as shown on drawings.

### 2.07 Specialties:

- A. Interior to be supplied with HEPA Filtered air to maintain Class/ISO \_\_\_\_\_ (insert value) conditions.
- B. Return air to be recirculated thru return air filter grille to HEPA blower above. CFM's and sizes as shown on drawings.



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- C. Discharge velocity of nozzles shall be no less than 6,000 to 8000FPM, (10,000FPM optional)
- D. Air Shower Shall include the following items as a Minimum requirement.
  - 1) Magnahelic Gauges for HEPA & Prefilter
  - 2) Laminated safety glass in doors
  - 3) L Shaped design (Optional)
  - 4) PLC control with HMI interface at entrance door.
  - 5) Rough-in for sprinkler head (Head provided & Installed by others)
  - 6) 6,000 to 8000FPM Velocity, discharge nozzles (Optional 10,000FPM)
  - 7) Compatible with Existing Fire Door. (Magnet shipped loose for Field installation)(Option)
  - 9) Raised floor with Open grating return for higher efficiency. (Raises unit height by 12")
  - 10) Automatic (Electric, Pneumatic) entry & Exit doors. (Bi-part, swing, Roll-up)
  - 11) All (304,316,321) stainless steel construction #4 satin finish.
  - 12) (Low Profile, Knocked down) Construction.
  - 13) *Additional options as required.*

## **OPTIONS:**

- 1. UV germicidal lamps
- 2. Anti-static systems and power supplies, voltage as shown on drawings.
- 3. Special purge options and designs, CFMS and sizes as shown on drawings.
- 4. Special supply air and exhaust air options as shall be required CFMS and sizes as shown on drawings.
- 5. Site specific items such as seismic tie down lugs, broken down designs to allow easy access in to the area, top, bottom, side rear, access of any items so specified, colors, paints, voltages, air pressures, handicap, illumination, support of and installation specific details. (As shown on drawings)
- 6. Misting Nozzles and floor drain for decontamination of personell.

## **Part 3 Execution**

### **3.01 Examination:**

- A. Verify that area and surfaces are ready to receive and accept unit installation and field dimensions are as shown on drawings prior to starting installation.
- B. Verify that proper required utilities are available and in proper location and ready for use.
- C. Beginning of installation means installer accepts existing conditions.
- D. Installers shall be Qualified and approved, for required installation of specialty Air Shower Modules, prior to beginning of all required work.
- E. If installers are "NOT" qualified, Air Shower Manufacturer shall have factory technician available to supervise all required work.

### **3.02 Installation:**

- A. Install in accordance with manufacturer's instructions.

### **3.03 Field Quality Control & Commissioning:**

- A. Field inspection and testing will be performed under provisions of general conditions.
- B. Unit to be cleaned and tested and Commissioned per Manufacturer's requirements & IQ/OQ/PQ documents.
- C. Certified validation report, shall be submitted to project manager, for files and future reference.
- D. Warranty of equipment, will not be valid, without certified Start-up validation documentation.

END OF SECTION # \_\_\_\_\_