

SECTION 11611

SELF-CONTAINED FILTERED LABORATORY ENCLOSURES

PART GENERAL

SECTION INCLUDES

Bench-mounted self-contained carbon-filtered laboratory enclosures.

RELATED SECTIONS

Section 11600 - Laboratory Equipment.

Section 12351 - Laboratory Casework.

Section 15400 - Plumbing.

Section 16200 - Electrical.

REFERENCES

ANSI Z 9.5 - Laboratory Ventilation.

ASHRAE 110 - Method of Testing Performance of Laboratory Fume Hoods.

ASTM E 84 - Surface Burning Characteristics of Building Materials.

NFPA 45 - Fire Protection for Laboratories Using Chemicals.

SEFA 1 - Laboratory Fume Hoods.

UL 3101-1.

CAN/CSA - C22.2 No. 1010.1.

European Community - Electrical Safety Standard: 1010.1.

European Community - Electromagnetic Compatibility Directive: 89/336/EEC.

SUBMITTALS

Submit under provisions of Section 01300.

Product Data: Manufacturer's catalog data, specification sheets, and product manuals.

Shop Drawings: Prepared specifically for this project; show dimensions and interface with other products.

Selection Samples: Enclosure cabinet wall material, baffle, air foil, front panel color chips, and work surface material.

#### QUALITY ASSURANCE

Maintain testing facility at manufacturer's place of business for testing and evaluating self-contained carbon-filtered laboratory enclosures under both ideal and adverse conditions, in accordance with ASHRAE Standard 110.

Make manufacturing facility, testing facility, and quality control procedures available for owner inspection.

Provide computer-based carbon filter modeling program to determine appropriateness of using carbon-filtered enclosures for this project.

#### DELIVERY, STORAGE AND HANDLING

Deliver self-contained filtered laboratory enclosures and accessories fully assembled, free of damage.

Store and handle in a manner to prevent damage to self-contained filtered laboratory enclosures, accessories, or adjacent work.

#### WARRANTY

Warrant against defects in materials and workmanship on self-contained filtered laboratory enclosures and accessories; include labor and replacement parts (except filters and lamps).

Warranty Period: One year from date of installation or two years from date of purchase, whichever is sooner.

PART PRODUCTS

MANUFACTURERS

Acceptable Manufacturer: Provide products made by Labconco Corporation, 8811 Prospect, Kansas City, MO 64132. ASD. Tel: (816) 333-8811 or (800) 821-5525. Fax: (816) 363-0130.

Requests for substitutions will be considered in accordance with provisions of Section 01600.  
Substitutions: Not permitted.

Provide all self-contained filtered laboratory enclosures from a single manufacturer.

MANUFACTURED UNITS

Bench-mounted self-contained carbon-filtered laboratory enclosures:  
Size: 36 inches wide, 53-1/2 inches high, 29 inches deep (0.91 x 1.36 x 0.74 m).  
115 volts, 60 Hz models.  
230 volts, 50 Hz models.  
Organic vapor sensors.

MATERIALS

Aluminum:

Safety Glass: 1/4 inch (6 mm) tempered.

FINISHES

Exposed Aluminum: Epoxy-coated, glacier white.

COMPONENTS

Frame, Back, Upper Cabinet, Baffle, and Air Foil: Epoxy-coated aluminum.

Sash and Side Panels: Safety glass.

Roughing Pre-Filters: \_\_\_\_\_.

Light Fixtures: 20-watt fluorescent fixtures (tubes included); two per enclosure.

Motor/Blowers: Non-sparking, variable speed, with polypropylene impeller.

Accessory Carbon Filters: Minimum 52 pounds (23.6 kg) of activated or treated carbon.

Carbon Filter Clamping Mechanisms: Gas-assist type.

Event Timers: One-second increments, eight hour duration.

Audible/Visual Alarms: Programmable.

Organic Vapor Sensors: Electronic; able to detect organic vapor concentrations in filter bed exceeding 50 parts per million and, upon detection, to activate audible/visual alarm.

Locate second electronic sensor in exhaust airflow to, activate audible/visual alarm upon detection of organic vapor concentrations exceeding 50 parts per million.

Mobile Base Stands: Tubular steel frame, epoxy coated, with 5 inch (125 mm) diameter toe-locking casters and solid epoxy dished work surface.

Base Cabinets: Steel, epoxy coated, with epoxy dished work surface.

## FABRICATION

Fabricate self-contained filtered laboratory enclosures to include baffle, air foil, filter clamping mechanism, roughing pre-filters, and utility ports with plastic plugs.

Fully assemble and pre-wire enclosures before delivery.

Provide proper airflow into enclosures with air foils; provide proper airflow and air/containment mixing with slotted baffles.

Provide LCD on front panel for alternate display of filter saturation level and filter time elapsed.

Provide detector tube port accessible from front of enclosure for filter testing.

Provide two user-programmable event timers to alarm as follows:

At user-determined intervals that filter should be checked.

At user-determined time that filter should be changed.

Provide SET FILTER TIME, UP/DOWN, and ENTER programming switches to allow operator to reset elapsed time display and alarm time when a new filter is installed.

Security code shall be required to change filter alarm time.

Provide angled sash, adjustable to 10-3/4 inches (275 mm) and 12-3/4 inches (325 mm) opening positions, pivoting to a 22 inch (560 mm) opening for loading and cleaning.

Locate motor/blower behind front panel, serviceable from outside enclosure.

Face velocity with sash open 10-3/4 inches (275 mm): 100 feet per minute (0.51 m/sec); face velocity with sash open 12-3/4 inches (325 mm): 80 feet per minute (0.41 m/sec).

Provide light fixtures controlled by switch separate from motor/blower switch, tubes replaceable from front of enclosure.

## PART EXECUTION

### EXAMINATION

Verify equipment rough-in before proceeding with work, including rough opening dimensions required for self-contained filtered laboratory enclosures installation.

Coordinate with other trades for proper installation of plumbing and electrical services.

### INSTALLATION

Install in accordance with manufacturer's instructions; comply with standards required by authorities having jurisdiction.

Install equipment plumb, square, and straight, without distortion; securely anchor.

Schedule installation to ensure that utility connections are achieved in an orderly and expeditious manner.

Demonstrate self-contained filtered laboratory enclosure operations and functions to Owner at completion of installation.

#### ADJUSTING AND CLEANING

Adjust operating equipment to provide efficient operation for its intended use and as required by manufacturer.

Sashes: Operate smoothly without binding.

Clean equipment, casework, countertops, and other surfaces as recommended by manufacturer, rendering work in new and unused appearance.

Clean adjacent construction and surfaces soiled in the course of installation of this work.

Touch up minor damaged surfaces caused by installation. Replace damaged components as directed by Architect.

#### PROTECTION

Provide protective measures to prevent equipment and surfaces from exposure to other construction activity.

END OF SECTION