

SECTION 11 53 00 – VERTICAL LAMINAR FLOW CABINETS

PART 1 - GENERAL

1.1 RELATED SECTIONS

- A. Section 11 53 13 – Laboratory Fume Hoods and related products
- B. Section 12 35 53 – Laboratory Casework and related products

1.2 LAMINAR FLOW CABINETS

- A. Basis of Design: Kewaunee Scientific Interceptor VLF (Vertical Laminar Flow Cabinet)
 - 1. Kewaunee Scientific Corporation PO Box 1842, Statesville NC 28687
 - Tel: 704-873-7202

1.3 DESIGN AND PERFORMANCE CRITERIA

- A. Vertical Laminar Flow Cabinets equipped for ISO 14644-1 Standard Class 5 conditions.
Maximum 3520 Particles/m³ (\geq 0.5 Microns)

1.4 SUBMITTALS

- A. Shop Drawings: submit complete shop fabrication and installation drawings, including plans, elevations, sections, details, and fittings (if applicable).
- B. Informational Submittals
 - 1. Provide piping, wiring, and control diagrams. Include all connection locations and sizes. Detail down flow velocity, voltage and amperage, etc. Indicate service requirements, loads, and rough-in locations of all piped services and electrical connections.
 - 2. Certificates:
 - a. Provide factory test results indicating cabinet meets or exceeds ISO 14644-1 Standard Class 5 conditions. Cabinet shall be field tested before being placed into service by qualified personnel and test report shall be made available. Field test is the responsibility of the owner.
 - b. Operation and Maintenance Data
 - 1. Description of equipment operation and control, motor control.
 - 2. Wiring diagrams showing separate circuits for outlets, lights and blowers.
 - 3. User's manual and factory test report for each VLF unit by serial number.
 - 4. Each cabinet shall carry a three year warranty from delivery date.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: Kewaunee Scientific Interceptor VLF (Vertical Laminar Flow Cabinet)
 - 1. Kewaunee Scientific Corporation PO Box 1842, Statesville NC 28687
 - a. INT-0600-VLF: Exterior dimensions – 24" w x 28.5" d x 36.875" h
 - b. INT-0900-VLF: Exterior dimensions – 36" w x 28.5" d x 36.875" h
 - c. INT-1200-VLF: Exterior dimensions – 48" w x 28.5" d x 36.875" h
 - d. INT-1500-VLF: Exterior dimensions – 60" w x 28.5" d x 36.875" h
 - e. INT-1800-VLF: Exterior dimensions – 72" w x 28.5" d x 36.875" h

2.2 MATERIALS

- A. Work Surface options:
(Choose One)
 - 1. 16 gauge, type 304 stainless steel with no. 4 finish (dished)
 - 2. Kewaunee Kemresin, 1" thick molded epoxy resin (dished)
- B. Cabinet Exterior/ Interior: 16 gauge and 12 gauge cold rolled steel minimum, exterior coating shall be VOC free, acid resistance powder coat finish.
- C. Sash Glass: ¼" framed laminated safety glass. No permanent etchings on glass.

2.3 CONSTRUCTION

- A. Side panels shall be framed ¼" laminated safety glass.
- B. Rear wall shall have slotted openings allowing even distribution of down flow air from the front to the rear.
- C. Work surface (if included) shall be single piece construction, dished with coved corners
- D. Control Panel –
 - 1. Cabinet shall include a Minihelic gauge capable of reading .5"w.g. to ensure operator safety.
 - 2. On –Off Switch for Blower
 - 3. On – Off Switch for T5 fluorescent light
- E. Lighting - Cabinet shall have externally mounted T5 fluorescent lamp with solid state ballasts.
- F. Filters - Front loading, HEPA 99.99% efficient on all particles 0.3 micron by DOP test. Filters shall be metal framed and removable without disassembly of control panel or view screen assembly.
- G. Blower shall utilize efficient motorized impeller distributing air evenly over the work surface
- H. Nominal Air Velocity- 50-65 fpm, measured using 11" Sash opening
- I. Electrical Requirements- (120 Volt or 230 Volt models)
(Choose One)
 - 1. A dedicated 120v, 60 Hz single phase circuit shall be required.
 - a. 120 Volt Cabinets are supplied with a 9' power cord with a NEMA 5-15 plug
 - 2. A dedicated 230 Volt, 50 Hz single phase circuit shall be required.
 - a. 230 Volt Cabinets are supplied with a 9' power cord but without a plug
 - 1. Have qualified electrician install an appropriate plug to match electrical outlet receptacle.
- J. Armrest: Aluminum extruded oval comfort shaped armrest included as standard with base stand
- K. Base stand - 16 gauge cold rolled steel minimum, fully welded assembly with leveling guides.
Coating shall be VOC free, acid resistant powder coat finish.

2.4 STANDARD ACCESSORIES

- (Choose One)
- A. Work surface:
 - 1. Kemresin
 - 2. 304 Stainless Steel
- B. Base stand:
 - 1. Telescoping fully welded steel assembly with leveling glides.
 - a. Adjustable 30"-36"
- C. T5 fluorescent lamp – located outside of cabinet under front panel. Easily removable from the front
- D. Armrest

2.5 OPTIONAL ACCESSORIES

- A. Casters (Duratex Phenolic wheel), with front locking wheels
- B. UV Germicidal lamp assembly Kit (must be factory ordered. Not field installable)
- C. Ergonomic footrest
- D. Ergonomic adjustable height stool
- E. Service fittings
- F. IV Pole

PART 3 - INSTALLATION

3.1 SET UP

- A. Supplier shall receive and assemble ready for final connections.
- B. Final connection to building is not part of this construction document
- C. Unit must be certified before use by an accredited field certifier. Certification is responsibility of owner. Field certification includes:
 - 1. down flow velocity profile test
 - 2. Particle Test
 - 3. HEPA filter leak test
 - 4. Site installation assessment tests
- D. User manual and Technical manual shall be provided with cabinet in both hard and soft copies.

END OF SECTION