

## **GENERAL DESCRIPTION—VERTICAL FAN COIL UNITS**

- FHY** – Vertical Hideaway
- FSY** – Vertical Sloped Top Cabinet
- FXY** – Vertical Cabinet
- LHA** – Vertical Lowboy Hideaway
- LHW** – Vertical Lowboy Tall Hideaway
- LXA** – Vertical Lowboy Cabinet
- LXW** – Vertical Lowboy Tall Cabinet
- STY** – Vertical Recessed Cabinet
- STW** – Vertical Recessed Wide Cabinet

### **PART 1**

#### 1.1 SUMMARY

This section includes fan coil units and accessories.

#### 1.2 SYSTEM DESCRIPTION

Vertical Fan Coil Units, 2-pipe, 4-pipe, or 2-pipe with electric heat, hideaway or cabinets that are floor mounted.

#### 1.3 QUALITY ASSURANCE

Coils shall be tested in accordance with AHRI Standard 440. Each coil shall be factory tested for leakage at 300 psig air pressure with coil submerged in water. Insulation and adhesive shall meet NFPA-90A requirements for flame spread and smoke generation.

Base or “standard” units shall be ETL listed.

#### 1.4 DELIVERY, STORAGE AND HANDLING

Unit shall be handled and stored in accordance with the manufacturer’s instructions.

### **PART 2—PRODUCTS**

#### 2.1 MANUFACTURER

Basis of design shall be fan coils by International Environment Corporation.

#### 2.2 CONFIGURATION

##### A. General:

Factory assembled Vertical fan coil units complete with water coil, fan, motor, drain pan, and all required wiring, piping and controls.

##### B. FHY, LHA, LHW Floor Hideaway Units:

1. Cabinet shall be made of heavy gauge galvanized steel.
2. Interior surfaces shall be lined with ½" thick standard fiberglass (½" premium IAQ fiberglass, ½" foil face, or ¼" closed cell) insulation.
3. Units shall be supplied with a 1" collar for duct connection.
4. Units shall have a combination condensate drain pan and fan deck constructed of 16-gauge galvanized (stainless) steel and extending the entire length of the unit.
5. Galvanized drain pans shall be coated with a 2-part closed cell foam insulation.
6. Units shall have 1" throwaway non-woven synthetic (permanent or MERV 8 pleated) filters.

C. FXY, FSY, LXA, LHW Floor Exposed Units:

1. Units shall be constructed of heavy gauge galvanized steel.
2. The interior surfaces shall be lined with ½" thick standard fiberglass (½" premium IAQ fiberglass, ½" foil face, or ¼" closed cell) insulation.
3. Cabinet shall have an Arctic White (or the color specified on the equipment schedule) powder-coat finish.
4. Cabinet shall be free standing with two access doors (or no access doors).
5. Top panel shall be supplied with a stamped (double deflection, steel or aluminum FXY, FSY only) supply grille.
6. Top panel on the FSY unit shall slope down from back to front at an angle of 25 degrees.
7. Standard stamped (or reverse-stamped grille) on the FSY unit shall provide discharge into the room at a nominal 60 (or 30) degrees from the vertical.
8. Galvanized drain pans shall be externally coated with 2-part closed cell foam insulation.
9. Units shall have 1" throwaway non-woven synthetic (permanent or MERV 8 pleated) filters.
10. Optional tamper proof fasteners shall be installed on cabinet control doors.

D. STY, STW Vertical Recessed Cabinet Units:

1. Units shall be constructed of heavy gauge galvanized steel.
2. The interior surfaces shall be lined with ½" thick standard fiberglass (½" premium IAQ fiberglass, ½" foil face, or ¼" closed cell) insulation.
3. Cabinet shall have an Arctic White (or the color specified on the equipment schedule) powder-coat finish.
4. Front panel removable for access.
5. Front panel shall be supplied with a stamped return and supply grille.
6. Galvanized drain pans shall be coated with 2-part closed cell foam insulation.
7. Units shall have 1" throwaway non-woven synthetic (permanent or MERV 8 pleated) filters.

## 2.3 CERTIFICATION

A. Safety:

Units shall be listed by Electronics Testing Laboratories, Inc. with the listing indicating the units comply with the minimum requirements of the U.S. and Canadian national product safety standard, UL1995/CSA C22.2 No. 236.

B. Capacities:

Coil capacities are tested in accordance with AHRI Standard 410.

### 2.3.1 MATERIALS

A. Coils:

All coils shall have ½" copper tubes, manual (or automatic) air vents, and aluminum fins, 10 fins per inch spacing. Coil fins shall be mechanically bonded to copper tubes. Copper tubes must comply with ASTM B-75. Fin thickness shall be 0.0045" and tube thickness shall be 0.016". All coils shall be leak tested with air at 300psig under water.

1. For installation in a 2-pipe system, unit shall be equipped with:

- a. 3-row coil (or 4-row on FHY, FXY, FSY) as shown on equipment drawings
    - b. 2 ball valves
    - c. 1 control valve
  2. For installation in a 4-pipe system, unit shall be equipped with:
    - a. 2/1 (LHA, LXA), 3/1, 3/2 or 4/1 (FHY, FSY, FXY) row-split coil, as shown on equipment drawings
    - b. 4 ball valves
    - c. 2 control valves
- B. Motorized control valves:
1. Shall be rated at 300 psig.
  2. Shall be rated to operate with fluid temperatures between 40°F and 190°F.
- C. Fans:
1. Fans shall be direct-drive, double-width fan wheels with forward-curved blades.
  2. Blower wheels shall be statically and dynamically balanced.
  3. Scrolls and fan wheels shall be constructed of galvanized steel.
  4. Shall be easily removable.
- D. Motors:
1. Motors shall be 3 speed, single phase, 60 Hz permanent split capacitor type for 115 V (208 V, 230 V, or 277 V), permanently lubricated, with sleeve bearings.
  2. Motors shall be equipped with quick connect electrical plugs.
  3. Motors shall have thermal overload protection with automatic reset.
- E. Controls and Safeties:
1. Controls:

Unit shall be furnished with auto changeover thermostat with integral fan speed control.
  2. Safeties:

Unit fan motor shall be equipped with integral thermal protection.
- F. Operating Characteristics:
1. A 2-pipe system shall be capable of providing heating or cooling as determined by the operating mode of the central water supply system.
  2. A 4-pipe system shall be capable of providing heating and cooling on demand.
- G. Electrical Requirements:
1. Standard unit shall operate on 115 V (208 V, 230 V, or 277 V), single phase, 60Hz electrical power, and all exposed wiring shall be in flexible conduit.
- H. Option and Accessories:
1. Unit shall be equipped with sheath electric heaters for total or auxiliary electric heat as specified on the equipment schedule.
    - a. Heaters shall be protected by an automatic reset safety cutout switch and a fusible link.
    - b. Heater capacity shall be as specified on the equipment schedule.
    - c. Heaters shall be single phase, 120 V, 208 V, 240 V or 277 V as specified on the equipment schedule.

- d. For total electric heat, unit controls shall include a sequenced heating/cooling thermostat in lieu of the heating/cooling thermostat and automatic changeover device.
  - e. A junction box and fuse shall be factory furnished and installed to protect the motor and control circuit when electric heaters are installed in a unit with a single power source.
2. Service switch shall be factory installed.
  3. Units shall be equipped with 24 V controls.
  4. Units shall be equipped with high level condensate switch.
  5. Factory installed outside air damper shall be motorized (FHY, FXY, FSY only) or controlled manually.
  6. Wall panels, painted with specified color, shall be furnished for top discharge or front discharge recessed unit (FHY).
  7. Outside air wall boxes shall be furnished for field installation.