

## **GENERAL DESCRIPTION – HORIZONTAL FAN COIL UNITS**

- CHY** – Horizontal Hideaway
- CBY** – Horizontal Telescoping Hideaway
- CPY** – Horizontal Hideaway with Plenum
- CXB** – Horizontal Cabinet
- BHY** – Horizontal Hi-Static Hideaway
- BPY** – Horizontal Hi-Static Hideaway with Plenum

### **PART 1**

#### 1.1 SUMMARY

This section includes fan coil units and accessories.

#### 1.2 SYSTEM DESCRIPTION

Horizontal Fan Coil Units, 2-pipe, 4-pipe, or 2-pipe with electric heat, concealed or exposed cabinets that are horizontally mounted.

#### 1.3 QUALITY ASSURANCE

Coils shall be tested in accordance with AHRI Standard 440-2008. 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 certified.

#### 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

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

#### 2.2 CONFIGURATION

##### A. General:

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

##### B. CHY, BHY Horizontal Hideaway Units:

1. Cabinet shall be made of heavy gauge galvanized steel.
2. The interior surfaces shall be lined with 1/2" thick standard fiberglass (1/2" thick Premium IAQ fiberglass, 1/2" foil face, or 1/4" closed cell) insulation.
3. Units shall be supplied with a ducted collar for supply duct connection.
4. Units shall have a galvanized (or stainless steel) drain pan extending the entire width of the coil (with second drain connection).
5. Galvanized drain pans shall be internally coated with 2-part closed cell foam insulation.

##### C. CPY, BPY Horizontal Hideaway with Plenum Units:

1. Units shall be constructed of heavy gauge galvanized steel.

2. The interior surfaces shall be lined with 1/2" thick standard fiberglass (1/2" thick Premium IAQ fiberglass, 1/2" foil face, or 1/4" closed cell) insulation.
3. A heavy gauge plenum shall enclose the blower/motor assembly with bottom or rear return.
4. Units shall be supplied with a ducted collar for supply duct connection.
5. Units shall have a galvanized (or stainless steel) drain pan extending the entire width of the coil (with second drain connection).
6. Galvanized drain pans shall be internally coated with a 2-part closed cell foam insulation.
7. Units shall have non-woven synthetic throwaway (permanent or pleated) filters.

D. CXB Horizontal Cabinet Units:

1. Units shall be constructed of heavy gauge galvanized steel.
2. The interior surfaces shall be lined with 1/2" thick standard fiberglass (1/2" thick Premium IAQ fiberglass, 1/2" foil face, or 1/4" closed cell) insulation.
3. Cabinet shall be painted with an Arctic White powder-coat finish.
4. The unit shall have a stamped (double deflection, aluminum finish or steel construction factory installed and painted to match cabinet) discharge grille.
5. The unit shall have removable bottom access panel with stamped return air grille, filter rack, and non-woven synthetic throwaway (permanent or pleated) filter or optional ducted rear return cabinet with a solid bottom access panel.
6. Panel shall be fastened with tamper proof quarter-turn fasteners.
7. Units shall have a galvanized (or stainless steel) drain pan extending the entire width of the coil (with second drain connection).
8. Galvanized drain pans shall be internally coated with a 2-part closed cell foam insulation.

E. CBY Horizontal Telescoping Hideaway Units:

1. Units shall be constructed of heavy gauge galvanized steel.
2. The interior surfaces shall be lined with 1/2" thick standard fiberglass (1/2" thick Premium IAQ fiberglass, 1/2" foil face, or 1/4" closed cell) insulation.
3. Unit shall have an adjustable height, hinged return air ceiling panel with non-woven synthetic throwaway, (permanent, or pleated) filter.
4. Panel shall be painted with an Arctic White powder-coat finish.
5. Units shall have a galvanized (or stainless steel) drain pan extending the entire width of the coil (with second drain connection).
6. Galvanized drain pans shall be externally coated with a 2-part closed cell foam insulation.

## 2.3 CERTIFICATION

A. Safety:

Units shall be listed by Electronics Testing Laboratories, Inc. with the ETL listing indicating the units comply with the minimum requirements of the U.S. and Canadian national product safety standard, UL 1995/CSA C22.2 No. 236.

B. Capacities:

Coil capacities are tested in accordance with AHRI Standard 440-2008.

### 2.3.1 MATERIALS

#### A. Coils:

All coils shall have 1/2" copper tubes, manual (or automatic) air vents, and aluminum fins, 10 fins per inch spacing. Coil fins shall be mechanically bonded to copper tubes. 0.500" O.D. 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 300 psig under water.

1. For installation in a 2-pipe system, unit shall be equipped with:
  - a. 3-row (or 4-row) coil as shown on equipment drawings
  - b. 2 ball valves
  - c. 1 motorized control valve
2. For installation in a 4-pipe system, unit shall be equipped with:
  - a. 3/1, 3/2 or 4/1 row-split coil, as shown on equipment drawings
  - b. 4 ball valves
  - c. 2 motorized control valves

#### B. 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.

#### C. Fan Speed and Temperature Control:

3 (high, medium, low) speed control, (off, on, auto), (wall or unit) (auto or manual) thermostat.

#### 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 connected 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 a 3-speed, 4-position fan switch on a wall plate for field installation.
2. Safeties:

Unit fan motor shall be equipped with integral motor 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, 60 Hz electrical power, and all exposed wiring shall be in flexible conduit.

H. Option and Accessories:

1. Unit shall be equipped with nichrome wire strip 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) volts as specified on the equipment schedule.
  - d. For total electric heat, unit controls shall include a sequenced heating and cooling thermostat in lieu of the heating/cooling thermostat and automatic changeover device.
  - e. For auxiliary electric heat, unit controls shall include an aquastat to verify system mode.
  - f. A junction box and fuse shall be factory furnished and installed to protect the motor and control circuit when electric heaters are installed.
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. A hinged, bar type aluminum return air grille with filter holder shall be furnished for field installation.
6. Discharge air grille with double deflection, aluminum construction shall be furnished for field installation as shown on equipment schedule. Aluminum grilles shall have a natural anodized finish.