

Mechanical Specifications

GENERAL DESCRIPTION –DIRECT DRIVE BLOWER COIL UNITS

HDY – Horizontal Direct Drive Blower Coil

VDY – Vertical Direct Drive Blower Coil

PART 1

1.1 SUMMARY

This section includes blower coil units and accessories.

1.2 SYSTEM DESCRIPTION

Direct Drive Blower Coil Units, 2-pipe, 4-pipe, or 2-pipe with electric heat. Horizontal and Vertical cabinets.

1.3 QUALITY ASSURANCE

Coils shall be tested in accordance with AHRI Standard 410. 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.

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

A. Basis of design shall be blower coil by International Environmental Corporation.

2.2 Configuration.

HDY–Horizontal Units: Complete with galvanized cabinet, coils, blower section, sloped stainless steel drain pan, insulation, with 2- or 4-pipe unit configuration. Heating to be hydronic or total electric.

VDY–Vertical Units: Complete with galvanized cabinet, coils, blower section, sloped stainless steel drain pan, insulation, with 2- or 4-pipe unit configuration. Heating to be hydronic or total electric.

2.3 Certification

Units are listed by Intertek Testing Services (ITS). Units comply with the minimum requirements of the U.S. and Canadian national product safety standard, UL 1995/CSA C22.2 No. 236.

2.4 Materials

A. General: Except as otherwise indicated shall be a standard by International Environmental Corporation. Selectable options are indicated by parenthesis ().

B. Coils:

1. Copper tube, aluminum fin (copper fin), 1/2" staggered tube design, rated at 250 psig working pressure at 200°F, and leak tested at 300 psig.
2. Provide manual (automatic) air vent.
3. Provide end sheets and bottom coil baffles fabricated with galvanized (stainless) steel.
4. Optional R-410A DX evaporator duty coil.

C. Blowers:

1. Statically and dynamically balanced, and of indicated capacity.
2. Provide centrifugal, forward curved wheel.
3. Bearings shall be ball bearing type, permanently lubricated and sealed for life, no sleeve bearings allowed.
4. Blower/motor assembly isolated from cabinet.

D. Motors:

1. Provide Electronically Commutated, [single-phase, 3-phase] open drip proof, permanently lubricated ball bearing motor. Motor size 1/2 HP and 1 HP shall have integrated control module with overload and short circuit protection. Motor size 1-1/2 HP and 3 HP shall have remote mounted control with overload and short circuit protection. Motor control module is mounted in cabinet interior.
2. Motors shall be RPM controlled, UL Recognized or equivalent, continuous duty rated.
3. Factory wired to unit control box.
4. Motor protected with thermal overload.
5. Motor bearings shall be permanently lubricated.
6. Motor installed on same side as coil connections for ease of service.

E. Electric Heaters:

1. When indicated in the schedule shall perform at indicated voltage, phase, and wattage in the specified number of stages.
2. Protect by automatic reset cutout and manual reset backup.
3. Single-point-power connection

F. Cabinets:

1. Fabricate from heavy gauge galvanized steel, single wall construction, Optional double wall construction with 1" fiberglass insulation with solid or perforated inner liners.
2. Insulation to be 1" fiberglass (1" premium IAQ fiberglass, 1" Foil Face, or 1" Closed Cell).
3. HDY - Furnish with access panels on both sides of unit, easily removable without tools.
VDY - Furnish with access panels on both sides of unit, removable with hex key tools.
4. HDY - Holes for through-hanger rods are located at top and bottom 4 corners of cabinet.

G. Drain Pans:

1. Standard with Type 304 stainless steel.
2. Externally insulated with 2-part closed cell foam.
3. Inside is smooth for easy cleaning.
4. Double-sloped toward outlets.
- 4.
5. Furnished with primary 3/4" male NPT and "tell-tale" 1/2" male NPT secondary drain connections on same end with coil connections. Secondary drain connection must be capped by installer if not used.
6. Drain pan is removable from cabinet from same end as coil connections for ease of cleaning.

H. Filters:

1. Standard 2" pleated filters (options: 1" pleated, set of 2 each 1" nonwoven synthetic throwaway, 2" pre-filter with 2" MERV 11 filter, 4" MERV 11, 4" MERV 13).
2. Removable from either side of filter rack and top (VDY) or bottom (HDY)

2.5 Control Schemes

- A. Unit mounted, factory installed and wired motor control board that adjust RPM/CFM for High, Medium and Low speed operation.
- B. 0-10 VDC option does not include control board.
- C. Single-phase or 3-phase motors.

- D. Option - door interlocking disconnect switch with lock-out tag-out feature.
- E. Electric heat controls include transformer, electric heat contactors, electric heat fuses and terminal strip.
- F. Electric heat available in single and 3-phase, and controlled in (1, 2, 3) stages of operation.
- G. Fuses shall comply with NFPA 70E/IP20.
- H. Thermostat and function shall be as detailed in control section [Reference Controls section].
- I. Options and Accessories:
 - 1. Unit shall be equipped with nichrome wire strip electric heaters as specified on the equipment schedule.
 - a. Heaters shall be protected by an automatic reset safety cutout switch and a manual reset backup.
 - b. Heater capacity and stages shall be as specified on the equipment schedule.
 - c. Heaters shall be single-phase [120] [208] [240] [277] or three-phase [208] [240] [480] volts as specified on the equipment schedule.
 - 2. Units shall be equipped with 24V controls.
 - 3. Units shall be equipped with 24V controls and optional high-level condensate switch.
 - 4. Optional Service Light (HDY only) shall provide a source of illumination in the main unit cabinet and the control box during routine maintenance and troubleshooting. Light turns "ON" when access panel or control box door is open, but unit is not powered. Service Light assembly shall include 2 LED lights, rechargeable battery and charger.
 - 5. Optional mixing box is available.