|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  |  | | --- | --- | | Project Information | | | Project Name: |  | | Submitting Contractor: |  | | Engineer: |  | | Manufacturer’s Rep: |  | |
|  | |

**Mechanical Specifications**

**GENERAL DESCRIPTION – MODULAR HI-RISE FAN COIL UNITS**

**MUY –** Concealed Universal Modular Hi-Rise

**PART 1 – GENERAL**

1.1 SUMMARY

A. This section includes fan coil units and accessories.

1.2 SYSTEM DESCRIPTION

A. [MUY Concealed Universal Modular Hi-Rise]

B. [2-pipe cooling only] [2-pipe heating only] [2-pipe heat/cool] [2-pipe heat/cool auxiliary electric heat] [2-pipe cool total electric heat] [4-pipe heat/cool]

1.3 QUALITY ASSURANCE

A. Fan coils shall be Certified and Listed in accordance with AHRI Standard 440-2019.

B. [Each hydronic coil shall be factory tested for leakage at [350] [400] [450] psig air pressure with coil submerged in water.]

C. Base or “standard” units shall be ETL listed.

D. IEC certified as an ISO 9001:2015 quality management system and ISO14001:2015 environmental management system organization.

1.4 DELIVERY, STORAGE AND HANDLING

A. 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 Environmental Corporation.

2.2 CONFIGURATION

A. General:

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

2. Cabinet shall be made of heavy 20 gauge galvanized steel.

3. The interior surfaces shall be lined with 1/2˝ thick standard fiberglass insulation. Insulation and adhesive shall meet NFPA-90A requirements for flame spread and smoke generation.

4. Adhesive shall be certified according to the GREENGUARD Indoor Air Quality (IAQ) Certification for Low Emitting Products. Reference Standard: GGPS.001 GREENGUARD IAQ Standard for Building Materials, Finishes, and Furnishings. Reference Standard: GGPS.002 GREENGUARD Children & SchoolsSM Standard.

5. Units shall have a stainless steel externally coated drain pan with 2-part closed cell foam insulation, extending the entire width of the cabinet. Drain pan shall be factory piped to the drain riser port with a removable/cleanable “p-trap.”

6. All valve package piping to coil(s) shall be factory installed.

7. Units shall have [non-woven synthetic throwaway] [pleated MERV 8] filter.

8. Cabinet Height shall be 88”.

B. MUY Concealed Universal Modular Hi-Rise Units:

1. Units shall be supplied with dry-wall stop collar(s) for return panel and supply grille installation in locations indicated on the plans.

2. Return air panel shall be stamped, painted with an [Arctic White] [color determined by Architect] powder-coat finish.

3. Units shall have [an aluminum [double deflection supply air grille(s)] [one double deflection and one double deflection grille with opposed blade damper], with an [Anodized Aluminum] [Arctic White] [color determined by Architect] powder-coat finish] [no supply air grille provided].

4. Conditioned air block off panel shall provide access to the valve package and blower.

5. Removable return air panel shall provide access to the coil and air filter.

6. Unit shall be supplied with stitched openings and knockouts for risers, drains, supply air, outside air and electrical entry.

7. Outside air shall be provided with 4” round knock-out opening (no collar).

2.3 CERTIFICATION

A. Safety Agency:

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

B. Capacities:

Fan coil capacities are certified and listed in accordance with AHRI Standard 440-2019.

2.4 MATERIALS

A. Coils:

1. All coils shall have 1/2˝ copper tubes, [manual] [automatic] air vent(s), and [aluminum fins, galvanized end sheet] [aluminum fins, stainless steel end sheets] [copper fins, stainless steel end sheets], 14 fins per inch spacing, galvanized end sheets. Coil fins shall be mechanically bonded to copper tubes.

2. Copper tubes must comply with ASTM B-75.

3. Fin thickness shall be 0.0045˝.

4. Tube thickness shall be 0.016˝.

5. Coil rows shall be as indicated on the drawings.

B. Valves:

1. For installation in a [2-pipe] [4-pipe] system, unit shall be equipped with:

A. Valve size shall be [1/2”] [3/4”], as shown on the drawings. [Heating valve size shall be ½”.]

B. [2] [4] manual ball valves for service

C. [1] [2] motorized control valve, 300 psig service:

a. Primary - 150 psid normally closed ball-type with quick-release actuator.

b. Secondary - 150 psid normally closed ball-type with quick-release actuator.

2. Valve package shall be equipped with specialty devices as indicated on the drawings.

A. Coil connections – standard factory arrangement

B. Flow Controls

a. Primary - [Circuit setter pressure ports] [Not supplied]

b. Secondary - [Circuit setter pressure ports] [Not supplied]

C. Hoses - [24” braided stainless hoses manufactured of EPDM with integral internal Kevlar fabric reinforcement. Hoses shall be rated to fire and smoke standard per ASTM E 84-00 and (NFPA 255, ANSI/UL 723 & UBC 8-1).] [Not supplied]

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 constant-torque ECM motors with means for [potentiometer field adjustment of each speed] [variable 0-10V input] [4 speed solid state potentiometer field adjustment], for [115] [208] [230] [277] volts, permanently lubricated ball bearings.]

2. Motors shall be connected with quick connect electrical plugs.

3. Motors shall have internal thermal overload protection with automatic reset.

E. Controls and Safeties:

1. Controls Voltage:

a. Unit shall be equipped with 24VAC control.

2. Control Package shall be equipped with specialty devices listed below:

a. [24V condensate overflow switch.]

b. Thermostat

i. [24VAC digital thermostat] [Thermostat control by others]

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. [Pipe temperature sensor shall control the sequence of the thermostat, as indicated on the drawings.]] [2-pipe with total electric heat shall be capable of providing heating and cooling on demand.] [A 4-pipe system shall be capable of providing heating and cooling on demand.]

G. Electrical Requirements

1. Standard unit shall operate on [115] [208] [230] [277] volts, single phase, 60 Hz electrical power, and all exposed wiring shall be in flexible conduit.

H. Options and Accessories:

1. [Service switch with lock-out & tag-out features shall be factory installed.] [No Service Switch furnished.]

2. Incoming power [fused] [non-fused].

3. Risers

a. [Risers shall be shipped loose, hose kit shipped inside unit and bundled by unit and crated by floor.]

a. [Risers shall not be supplied, piping terminates internally, hoses ship inside unit].

b. Riser diameter shall be specified on equipment drawings.

c. Riser insulation thickness shall be specified on equipment drawings

d. Drain riser shall be minimum 1in. diameter Type M copper.

e. Length of risers shall be as specified on equipment drawings.

|  |  |
| --- | --- |
| A picture containing drawing  Description automatically generated |  |
|  |
| 5000 West I-40 Service Road |
| Oklahoma City, OK 73128 |
| IEC Part Number: I100-90034474 | P: 405.605.5000 |
| MS-053 Rev 2 (03/2022) | F: 405.605.5001 |
| ©2022 International Environmental Corporation (IEC®) | [www.iec-okc.com](http://www.iec-okc.com) |