Mechanical Specifications (Guide Spec) – Temspec Leaf Vertical Stacked Fan Coil

Certifications

Performance: Unit performance is certified by AHRI in accordance with ANSI/AHRI 440-2008: Performance Rating of Room Fan-Coils

Safety: All standard units are agency listed in the United States and Canada and comply with the requirements of the current editions of UL 1995/C22.2 No. 236.

Construction

The cabinets shall be fabricated from 20 gauge steel lined with 1" inch fiberglass insulation bonded with a thermosetting resin or grip nails and coated on the airstream side with an acrylic facing. In addition, there is an option available for ½ - inch closed cell cabinet insulation.

The drain pan shall be galvanized acrylic coated steel, or 304 stainless steel, positively sloped in two directions towards the outlet. The stainless steel, and acrylic coated galvanized drain pan shall be insulated on the underside with ½-inch closed cell insulation. The drain hose from the outlet to the condensate riser shall form a running trap. An optional float switch will close CW control valve upon detection of high-water level in condensate drain pan.

Fan & Motor

Variable speed backward inclined impeller fan with integrated electronically commutated motor, (ECM). Fan must have an over-all minimum efficiency of 58%. Forward curved fans and/or PSC motors cannot be accepted

The fan motor shall be an electronically commutated, EC brushless, type with sealed bearings. All motors have a maximum ambient operating temperature of 140˚F and are permanently lubricated. The motor can accept a 0-10VDC signal configured to deliver the specified airflow with no special tools. PSC motors cannot be accepted. Fan wattage listed in schedule must not be exceeded.

Disconnect

An unfused service disconnect switch shall be included, mounted inside the unit behind the motor cover.

Coils

The coil shall have 0.0045" ± 0.0005" aluminum fins mechanically bonded to ½-inch diameter with minimum 0.015" tube wall copper tube. The coil shall be factory pressure tested at no less than 300 PSIg. A manual air vent shall be incorporated at the high point of the coil.

Piping Packages

The piping package shall include ball type shut-off valves at the coil supply and return (combined with manual or automatic balancing valves or strainers when used; and a two- or three-way control valve with 24V two-position, modulating 0-10 VDC, 3 wire floating point, or pressure independent actuator. 2-position or modulating 6-way valves are available for low grade heating water applications. Chilled water valves are normally closed and heating water valves normally open.

Electrical Heat

Units with electric heat shall have single power connection and be wired for single-stage operation with an open wire nickel-chrome element. An auto-reset high limit device shall be included.

Filters

A one inch MERV 10 disposable filter shall be shipped loose with return air access panel.

Units equipped with 1.0" inch MERV 10 filters have a rating based on ASHRAE Standard 52.2. The average dust spot efficiency is no less than 35 to 40 percent when tested in accordance with ASHRAE 52.1 atmospheric dust spot method.

Controls (Thermostat)

The fan coil manufacturer shall supply a low voltage (24V) digital programmable thermostat with remote sensor and energy savings contacts option for remote mounting, or unit mounted. The thermostat has a PI 0-10VDC fan output control and 2 binary outputs for 2 position NO or NC valve control. Remote mounted thermostats are connected to a terminal strip that is mounted inside the unit. The thermostat is shipped loose for installation after the unit is installed, dry wall is applied, and the walls are painted. An optional thermostat with analog valve control, 0-10VDC fan control, BACnet, or Wi-Fi compatible is available as an option.

Riser Package

Risers from 3/4" to 3.0" are available in both type "L" and type "M" copper for supply, return and condensate. Riser insulation is available in ½-inch to 1.5" wall thickness for closed cell foam (polyolefin), closed cell elastomeric (similar to Armaflex®) or fiberglass (wrapped with vapor barrier). Insulation thickness shall comply with ASHRAE 90.1.

Riser diameter and insulation thickness are subject to physical limitations. Contact Temspec on 4-pipe risers larger than 2.0 inches in diameter. The risers shall have an approximately 3.0 inch swaged expansion at the top end to allow a 3.0 inch insertion of the riser from above without the use of couplings. Risers may be provided plain ended in lieu of swaged for field supplied/installed fittings (similar to Pro-Press®).

The riser insulation shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less in compliance with ASTM E 84. The insulation shall be continuous over the riser length within the height of the cabinet. Provision for insulation beyond the ends of the cabinet shall be the responsibility of the installing contractor.

The specification of riser anchoring, expansion loops and fire stopping requirements are not detailed in this specification and are not part of the Temspec fan coils scope.

Perimeter Return Air Access Panel

The return air access panel shall be a full height hinged perimeter door type for concealed fan coil units. The return air panel installs flush on to the drywall which has been applied directly to the front of the unit. The panel is steel construction and shall be finished in standard white baked enamel. The panel secured to the unit by sheet metal fasteners to the cabinet. The panel is shipped loose for installation after the unit is installed, dry wall is applied, and the walls are painted.

Supply Air Grilles and Registers

Supply air grilles and registers shall be provided for unit mounting locations. The grilles shall be steel, have double deflection airfoil blades and shall be finished in standard white baked enamel.

The grilles shall attach to the collar of the fan coil unit by spring clips. When a unit has more than one supply air opening a balancing damper (horizontal in the front) is included with the grille (register) to balance the air flow (screw holes optional). Any supply air grilles which are part of supply air ductwork shall be provided by the sheet metal contractor. Grilles are shipped loose for installation after the unit is installed, dry wall applied, and the walls are painted.

A line-of-sight baffle with acoustical wrap shall be included in units which have front and back supply air openings.

There is also an option to upgrade the supply air grille material to aluminum as well as the option to provide custom colors for return air panels and supply air grilles/registers.

Front Supply grille register is factory mounted on finished cabinet models.

Integrated ERV/HRV

ERV shall be an AHRI certified counterflow design with a minimum 70% sensible recovery and 60% latent recovery at 60CFM using polymer membrane washable core that blocks VOC's, CO2, and other gases & contaminants.

HRV core shall be ab AHRI certified counterflow design under standard 1060 and provide minimum 80% sensible recovery using a polymer washable core.

Fresh air and space exhaust air shall be filtered using minimum MERV 8 washable filter. Energy recovery module shall incorporate two fans with independent variable speed control for system balancing. Fans to be backward inclined type with variable speed ECM capable of supplying 90CFM @ 0.5" W.C. ESP and 120CFM at 0.5"W.C.in boost mode activated by a pushbutton timer switch. Forward curved fans and PSC motors will not be accepted. E/HRV shall be equipped with freeze protection and operate down to -4F (-20C).

Raised Bases

Raised base shall be of 4 inches, 8 inches or 12 inches in height. Provide access panel in the 8 inch and 12 inch bases when a condensate pump is supplied.

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