

SAMPLE DRAFT SPECIFICATION – High Performance Air Vents,Inc

1. GENERAL

1.1 System Description: Air conditioning/heat pump fan coil with integrated HRV or ERV in one single enclosure with Variable speed fans and inverter compressor with R-410A refrigerant

1.2 Quality Assurance: Each unit shall be CSA approved or equivalent (in process not completed yet) Energy star certification (in process), ARI 210/420 certification in progress

1.3 Warranty: standard one year warranty for parts and labor; optional: up to 5 years parts and refrigerant OR extended up to 10 years on compressors parts only .

2. CABINET’S CONSTRUCTION

2.1 Casing: The fan coil shall be constructed of 16 ga. Galvanized sheet metal with powder epoxy coated standard color is light grey color (different color is optional) with 1” foam armaflex insulation where appropriate for thermal performance and noise reduction. The unit can be shipped in 2 pieces for easier rigging and handling purposes.

2.2 Service Access: Removable front and side service panel for easy access to all components

3. EVAPORATOR COMPONENTS

3.1 DX-Coils: The coils shall be constructed of (3/8 x 0.014) or (1/2 x 0.016) copper tube and return bend connectors. The tubing shall be mechanically joined to corrugated aluminum fins 0.006” thick with 12 or 14 fins per inch. Filter drier, hot gas bypass and EEV valves are standard (reversible valve for heat pump application ONLY).

3.2 Supply Blower motor: The plug fans’ motor shall be direct drive electronically commutating (ECM) and operate in variable CFM mode to meet the target set point.

3.3 Drain pan: double slope drain pans to help reduce the build-up of mold, bacteria and airborne pollutants. The drain pans are made of 304 or 316 stainless steel material for strength and durability rated.

4. AIR COOLED OR HEAT PUMP SECTION OUTDOOR

4.1: Variable speed compressor:

Variable speed scroll compressors are designed and engineered to deliver maximum cooling and heating efficiency when you need it most. With Inverter type compressors, homeowners are able to maximum the most heating efficiency required down to -20°C ambient for heating COP = 2.0 . Turn down to 20% of speed.

4.2: Condenser section:

Consists of axial fans ECM motors variable speed, aluminum fins/copper tube condenser coils coated to stand 500 hours of salt spray resistance (**Optional:** up to 1000 hours of salt spray resistance) , A louvered cabinet made of heavy-gauge galvanized steel that protects the coil, while its appliance-quality, post-paint finish resists the effects of weather and time

5. INTEGRAL HRV/ERV

5.1 Core Media: The HRV or ERV core shall be 100% UL rate polypropylene construction / enthalpy fixed plate with an apparent sensible effectiveness of ____% at ____ C. *our HRV exchangers offer great value that has proved itself as a long lasting and reliable solution. All cores are ARI 1060 certified*

Core Options:

- *MERV 8 built-in filter*
- *Custom dimensions*
- *Custom corner extrusions*

5.2 Defrost: Unit shall have Face and bypass damper to avoid freezing on the exhaust side during very low ambient temperature

5.3 Exhaust Fan: Backward curve blower with two speed motor

5.4 Exhaust Drain pan: double slope drain pans to help reduce the build-up of mold, bacteria and airborne pollutants. The drain pans are made of 304 or 316 stainless steel material for strength and durability rated.

6. DAMPERS:

6.1 usage: Face & bypass damper and return air damper

6.2 construction: Extruded aluminum (6063-T5) damper frame is not less than .080" (2.03 mm) in thickness. Damper frame is 4" (101.6 mm) deep x 1" (25.4 mm), with mounting flanges on both sides of frame.

- Blades are extruded aluminum (6063-T5) air-foil profiles.
- Blade seals are extruded EPDM. Frame seals are extruded silicone. Seals are secured in an integral slot within the aluminum extrusions. Blade and frame seals are mechanically fastened to prevent shrinkage and movement over the life of the damper.
- Linkage hardware shall be aluminum and corrosion-resistant zinc-plated steel, installed in the frame side, out of the airstream, and accessible after installation.

7. FILTERS

7.1 Filters: The unit shall be provided with MERV 7 for supply air and exhaust air stream (**Optional:** supply air filter of MERV 12 for superior filtration)

8. ELECTRICAL

8.1 Electrical Disconnect: A amp dedicated circuit with overload protection is required. Units with electric elements shall be provided with an overload fuse for the electric heater.

Electric heater can be added to the air handler for additional heat on-demand when you need it most.

9. DDC Controller:

9.1 Intelligent control features help adjust the output capacity allowing the unit to keep the temperature, Ventilation rate and humidity at your desired levels without fluctuation. Whether it be the summer or winter, the system keeps your home comfortable and the living conditions to your desired taste.

9.2 Benefits and Features:

- *100% stand-alone control mode*
- *Remote wall mounted thermostat controller*
- *Return air temperature, indoor humidity , CO2 and exhaust air temperature as well as unit alarms*
- *Intelligent space sensors provide precision measurement and communication capabilities in an attractive low profile enclosure*
- *WI-FI application to remotely control the air conditioning/heat pump from anywhere*
- *Removable wiring connectors for ease of field service*