

STANDARDS & CERTIFICATIONS

ARES Hydronic Make-up Air Units

Standard Specifications:

- A. Standard coil cabinets shall be die formed G90 20 gauge minimum Galvanized steel with tops cross-broken for added strength and to prevent water pooling on unit top. The bottom pans of DX and chilled water coil cabinets shall be constructed of 300 series stainless steel, and will have a factory provided drain hole.
- B. Standard coil cabinets shall have coils with a face area of 30" x 33", or 30" x 53". Custom sized coils to be duct mounted by the installing contractor, with field fabricated drain pans, shall be available in 40" x 60", 48" x 60", & 48" x 72" sizes.
- C. Supply blower motor shall be Open Drip Proof type with permanently lubricated ball bearings, Class B windings, adjustable sheaves, standard NEMA frame size and service factor. Two-speed motor option will be available. Motors shall be available at all voltages, and have horsepower ratings of up to 10 h.p.
- D. Motor shall be activated through a Magnetic Motor Starter. Motors not thermally protected internally shall be protected by IEC overload protection.
- E. All electrical components shall be U.L. listed or recognized. All wire shall be rated to meet or exceed electrical requirements for voltage, ampacity, and dielectric strength of sheathing and temperature rating per location. Minimum temperature rating shall be 105° C. All high voltage wiring shall be enclosed in flexible metallic sheathed BX and include the identifying marker corresponding to the wiring diagram. Unit Control Panel includes 24 volt transformer, line and low voltage terminal blocks, blower motor starter and overload (if motor not thermally protected), fuse block, and relays.
- F. Remote Control Panel (field installed) is to have push button control with status indicator lights, (off / cool / vent / heat). Optional R/A two position switch, and two speed motor switch shall be included on panel when applicable.
- G. An evaporative cooler with standard 2" rigid media sized not to exceed 350 FPM shall be provided as a standard option. The Evaporative Cooler shall be furnished with a 304 stainless steel reservoir pan, thermally protected fractional horsepower pump, regulated water flow, and bleed-off protection. The distribution manifold shall be of schedule 40 PVC construction. High Efficiency Evaporative module will also be available as an additional option.
- H. Blower cabinets shall be available with optional motorized damper actuator. The standard damper actuator shall be a 2-position actuator with spring return when powered "off", and blade seals. Available configurations will include the 100% outside air inlet damper, outside air / return air mixing box, and back draft damper. An optional modulating damper actuator will be available for the outside air / return air mixing box configuration. The back-draft damper shall also be available as an optional non-motorized, aluminum, blast open type.
- I. Cabinet shall not exceed 39" in height from top of roof curb or support base.
- J. Heating coils shall be hot water, or steam fueled. Cooling coils shall be chilled water, or direct expansion refrigerant gas.
- K. Water coils: Hot water, or chilled water coils will be constructed with copper tubing of 5/8" in diameter. The tubing wall thickness shall be a minimum of 0.020". The coil fins will be arranged in a Corrugated Rippled pattern and shall be constructed of aluminum materials a minimum of 0.007" in thickness. The aluminum fin pattern shall range from a minimum of 8 fins per inch to a maximum of 14 fins per inch. The ARES engineering department shall determine the number of rows of copper tubes and fins per inch by computer calculation, factoring in the heating or cooling requirements as specified. Tubing connection sizes will be determined by factory calculation and will be MPT unless otherwise specified. The minimum number of rows shall be one.
- L. Steam coils: Steam coils will be constructed with copper tubing of 5/8" in diameter. The tubing wall thickness will be a minimum of 0.025". The coil fins will be arranged in a Corrugated Rippled pattern and shall be constructed of aluminum material a minimum of 0.007" in thickness. The aluminum fin pattern shall range from a minimum of 8 fins per inch to a maximum of 14 fins per inch. The ARES engineering department shall determine the number of rows of copper tubes and fins per inch by computer calculation, factoring in the heating requirements as specified. Tubing connection sizes will be determined by factory calculation and will be MPT, unless otherwise specified. The minimum number of rows shall be one.
- M. Direct Expansion (DX) Coils: Direct Expansion coils shall be constructed with copper tubing 3/8", 1/2", or 5/8" in diameter. The tubing wall thickness shall be a minimum of 0.020". The coil fins will be arranged in a Corrugated Rippled pattern and shall be constructed of aluminum materials a minimum of 0.007" in thickness. The aluminum fin pattern shall range from a minimum of 10 fins per inch to a maximum of 14 fins per inch. The ARES engineering department shall determine the number of rows of copper tubes and fins per inch by computer calculation, factoring in the cooling requirements as specified. Tubing connection sizes will be determined by factory calculation and will be sweat type fittings unless otherwise specified. The minimum number of rows shall be one. Dual circuiting construction of DX coils when specified shall be in a fully intertwined pattern.
- N. All coil casings shall be constructed of 16 gauge Galvanized steel and will be "U" flanged on all four sides.
- O. All valves and pumps necessary to the operation of steam and hot water coils shall be field provided to match on sight boiler specifications. All TXV expansion valves, or other metering devices necessary for the correct operation of direct expansion coils shall be field provided to match on sight condensing unit specifications.