Specification

ST Mach 1 - TRAHP®
Thermosyphon Run Around Heat Pipe System

1.0 General

1.1 Furnish, install, test, and place into service a ST Mach 1 - TRAHP® passive dehumidifying Thermosyphon Run Around Heat Pipe system, air-to-air heat exchanger as shown in the design drawings and schedule to be manufactured by Carolina Heat Pipe. Controllable option available.

1.2 The ST Mach 1 - TRAHP® system will transfer heat from the air entering the cooling coil into the air leaving the cooling coil, using the thermosyphon heat pipe process of passive vapor mass transfer, without the use of any pumps, compressors, or other means of moving the working fluid.

1.3 The air handler manufacturer will provide either two dedicated drainable sections or a cooling coil cabinet of sufficient depth to accommodate the ST Mach 1 - TRAHP® system while providing, if possible, 12 inches or more of space between Thermosyphon Run Around Heat Pipe coils and the cooling coil.

1.4 The ST Mach 1 - TRAHP® system shall be capable of operating at temperatures ranging from –80F to 130F.

1.5 The ST Mach 1 - TRAHP® system shall be factory installed at Carolina Heat Pipe or field installed by factory certified technicians with CHP supervision.

1.6 Carolina Heat Pipe will provide a five-year limited warranty.

2.0 Construction

2.1 The heat pipe coil casings and supports shall be manufactured out of 16-gauge 304 stainless steel.

2.2 The final circuiting and working fluid charge of the ST Mach 1 - TRAHP® system will be determined by Carolina Heat Pipe Engineers to meet or exceed the specified performance.

2.2 The ST Mach 1 - TRAHP® system shall be constructed of seamless ½ inch 0D, rifled copper tubing which is permanently expanded into aluminum or copper fins to form a rigid and complete metal to metal contact between the copper tube and the fin collar at all operating conditions.

2.3 The ST Mach 1 - TRAHP® system's working fluid (R134a) shall conform to Group I of the American National Safety Code for Mechanical Refrigeration.

2.4 When controllability is required, Carolina Heat Pipe installs modulating Danfoss Stepper valves in the interconnecting line between the heat transfer sections. These stepper valves allow controllability in an infinitely variable manner in the range of "0-100%" using the HS-KVS-001V3 control system which requires a 120-volt power supply and a control input signal from the local BMS. The analog control input signal, provided by others from a local BMS, may be: 0-20 ma, 4-20 ma, 0-5 vdc, or 0-10 vdc.

3.0 **Delivery, Storage and Handling**

3.1 The equipment for installation of the ST Mach 1 - TRAHP® system (the complete air handler unit, or a shipping split containing the Cooling Coil Section attached to the two dedicated drainable coil sections for the Thermosyphon Run Around Heat Pipe coils) will be shipped from the Air Handler Manufacturer to the Carolina Heat Pipe production facility at least 4 weeks prior to the date on which the completed system is to be delivered to the job site.

3.2 CHP shall inspect the delivered air handler(s) or shipping split(s) thoroughly and report any damaged or missing components to the original manufacturer. CHP will then store these in a clean dry space until ready for delivery upon completion of work.

3.3 The Air Handler(s) or shipping split(s) will be delivered as requested by the customer.