



CLOSED LOOP EVAPORATIVE COOLERS

Air Solutions Group
Davidson, NC 28036

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FORCED DRAFT DESIGN

SUGGESTED EQUIPMENT SPECIFICATIONS

Provide an I-R Closed Evaporative Cooler Model _____. Each unit shall have the capacity to cool _____ GPM of _____ from _____°F to _____°F with a _____°F entering wet bulb temperature.

Pan and Casing

The pan and casing shall be constructed of G-235 hot-dip galvanized steel for long life and durability. The heat transfer section shall be removable from the pan to provide easy handling and rigging. The pan/fan section shall include fans and drives mounted and aligned at the factory. These items shall be located in the entering air stream to provide maximum service life and ease of maintenance. Standard features shall include circular access doors, stainless steel strainers, waste water bleed line with adjustable valve and brass make-up valve, with an unsinkable foam filled plastic float.

Fans

Fans shall be forward curved centrifugal type. The fans shall be factory installed into the pan/fan section, and statically and dynamically balanced for vibration free operation. Fans shall be mounted on either a solid steel shaft or a hollow steel shaft with forged bearing journals. The fan shaft shall be supported by heavy duty, self-aligning bearings with cast iron housings and lubrication fittings for maintenance. Fan drives shall be V-belt type with taper lock sheaves designed for 150% of the motor nameplate horsepower.

Fan Motor

_____ Horsepower drip-proof ball bearing fan motor(s) with 1.15 service factor shall be furnished suitable for outdoor service on _____ Volts, _____ Hertz and _____ phase. Motor(s) shall be mounted on an adjustable base.

Heat Transfer Coil

The coil(s) shall be all prime surface steel, encased in steel framework with the entire assembly, hot-dip galvanized after fabrication. Coil(s) shall be designed with sloping tubes for free drainage of liquid and tested to 400 PSIG air pressure under water.

Water Distribution System

The system shall provide a water flow rate of not less than six (6) GPM over each square foot of unit face area to insure proper flooding of coil. The spray heater shall be constructed of schedule 40 polyvinyl chloride pipe for corrosion resistance. All spray branches shall be removable and include a threaded plug for cleaning. The water shall be distributed over the entire coil surface by precision molded ABS spray nozzles (1" x 1/2" orifice) with internal sludge ring to eliminate clogging. Nozzles shall be threaded into spray header to provide easy removal for maintenance.

Water Recirculation Pump

The pump(s) shall be a close coupled centrifugal type with mechanical seal, installed vertically at the factory to allow free drainage on shut down. _____ Horsepower open drip-proof motor shall be furnished suitable for outdoor service on _____ Volts, _____ Hertz, and _____ phase.

Eliminators

The eliminators shall be constructed entirely of inert polyvinyl chloride (PVC) that has been specially treated to resist ultra violet light. Assembled in easily handled sections, the eliminator blades shall be spaced on one (1) inch centers and shall incorporate three changes in air direction to assure removal of entrained moisture from the discharge air stream. The eliminators shall have a hooked leaving edge to direct the

discharge air away from the fans to minimize recirculation.

Pump Module

The pump provided shall be a horizontal close coupled centrifugal pump complete with non-overloading TEFC motor.

As an option the pump can be mounted on a structural steel base primed and painted with weather resistant machinery enamel paint. A strainer at the pump inlet is provided along with an isolation valve and inlet pressure gauge. A throttle valve, pressure gauge, and temperature gauge will be provided at the discharge of the pump as indicators of the system performance.

For dual pump operation a pressure switch will be used to detect improper pump performance and initiate automatic switch over to the standby pump in the event of a pump failure. An alarm will be provided with this option to warn of primary pump failure.

Control Panel

The control panel will be NEMA 3R weather resistant and feature a disconnect switch, control transformer, fused branch circuits, motor starters for all fans and pumps plus door mounted indicating lights and selector switches. The panel will be shipped loose for field installation or if requested, mounted on the pump module if one is supplied.

Surge Tank

A surge tank will be supplied as standard equipment and will be of heavy gauge steel construction equipped with fill port and sight glass. The tank will be primed and painted and shipped loose for field installation