CELDEK Evap Cooler Specification

TYPICAL SPECIFICATIONS

Model: CELDEK Evap Cooler

Description

The evaporative cooler module is designed to deliver cool and humidified air in regions with a hot, dry climate. Packages are available in sizes that can handle up to 20,000 CFM. Units are designed for indoor or outdoor installation. To satisfy a variety of installation and climatic requirements units can be joined together in conjunction with other modules, which include direct fired or indirect fired module and/or blower section. All modules bolt together to form a rigid common base structure that mount onto a single curb structure.

Operating Principle

When the outside air reaches a level above the built-in thermostat set point, a call for cooling powers the internal solenoid; thus, allowing water to flow through the manifold and out through discharge nozzles. Water leaving the nozzles saturates the face and top of the CELDEK media and eventually soaks the thickness of the 12" media. A timing circuit controls the flow of water to the media, thus optimizing the amount of moisture in the media at all times. While this is occurring, there is continuous airflow through the CELDEK media; the air moving across the media absorbs the moisture and delivers the moist, cool air into the space.

Construction

Housing: Unit housing shall be constructed of 20 Gauge G-90 galvanized steel. The wall panels and roof panels shall be fabricated by forming double-standing, self-locking seams that require no additional support. The floor and wall panels shall be caulked air tight with a silicone caulk. All casing panels shall be attached with sheet metal screws or rivets. The access door shall provide easy access to electrical controls and to facilitate the removal of both the media and spray manifold.

Base: The base shall be constructed of galvanized steel for improved rigidity. A 1-1/2" water drain shall be installed at the center of the base. Equipment legs, for outdoor installations, and hanging cradle, for indoor installations, are available and will need to be assembled at the site.

Celdek Media: The media is 12" thick and contained within a frame for ease of access and replacement.

Nozzles and Tubing Assembly: Tubing consists of ½" PVC smooth pipe with drip-less nozzles. Spray manifold is designed to saturate cooling media from both the top and front face. Top spray bar nozzles are removable with a flow rate of 2 GPH. Front face spray bar nozzles are drip-less and non-removable with a flow rate of 0.6 GPH. If nozzles are replaced, nozzles of the same type as described should be used. Nozzle threads must be wrapped in Teflon tape to prevent leakage.

Component Description

Timer: Controls spray timing sequence. Cycle runs continuously between from spray time on and spray time off. Timer dial settings are based strictly off of CFM requirement and unit housing size.

Thermostat: Energizes cooling circuit when entering air temperature exceeds factory set point of 85 degrees F. Factory set point is adjustable.

Solenoid Valve: Normally closed valve which is energized when liquid level controller senses dry condition.

Overflow Switch: Normally closed float-switch. Detects clogged drain to prevent water overflow. The switch kills power to the water solenoid valve if the water level exceeds ½" in base of unit.

Pressure Switch: Normally closed switch installed upstream of the 2 way water solenoid valve. Prevents units installed with freeze protection from continually spraying in the event that the 3 way solenoid valve was never installed in the field.

3 Way Solenoid Valve (if applicable): Installed under the roofline and provided if the Freezestat option is ordered. Allows gravity-fed drainage in sub-freezing conditions.

Plumbing Connections

P-Trap Hardware and Drain: Drain is installed underneath the module. Hardware for the P-Trap is provided with the unit and should be attached to the drain. This is a field plumbing connection.