

## **SECTION 23 76 13**

### **DIRECT EVAPORATIVE AIR COOLER**

#### **SPECIFICATIONS**

**TAG: Celdek Evap Cooler**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. The evaporative cooler module is designed to deliver cool and humidified air in regions with a hot dry climate. Units are designed for indoor or outdoor installation.

##### **1.2 SUBMITTALS**

- A. The manufacturer assumes no liability for the use or results of use of this document. This specification is to be reviewed by the engineer to confirm requirements of the project and building codes are met.
- B. As the manufacturer continues product development, it reserves the right to change design and specifications without notice.

##### **1.3 WARRANTY**

- A. All units are provided with the following 2-year standard warranty.
- B. This warranty shall not apply if:
  - 1. The equipment is not installed by a qualified installer per the manufacturer's installation instructions shipped with the product.
  - 2. The equipment is not installed in accordance with Federal, State, Local codes and regulations.
  - 3. The equipment is misused, neglected, or not maintained per the manufacturer's maintenance instructions.
  - 4. The equipment is not operated within its published capacity.
  - 5. The invoice is not paid within the terms of the sales agreement.
- C. The manufacturer shall not be liable for incidental and consequential losses and damages potentially attributable to malfunctioning equipment. Should any part of the equipment prove to be defective in material or workmanship within the 2-year warranty period, upon examination by the manufacturer, such part will be repaired or replaced by the manufacturer at no charge. The buyer shall pay all labor costs incurred in connection with such repair or replacement. Equipment shall not be returned without manufacturer's prior authorization, and all returned equipment shall be shipped by the buyer, freight prepaid to a destination determined by the manufacturer.

#### **PART 2 - PRODUCTS**

##### **2.1 GENERAL ASSEMBLY**

- A. Unit(s) shall be factory assembled, tested and shipped as a complete packaged assembly, for indoor or outdoor mounting, consisting of the following specifications, deliver all capacities scheduled, and conform to design indicated herein. Alternate layouts or dimensional changes will not be accepted.

## **2.2 CABINET**

- A. Unit(s) shall be constructed of minimum 20-gauge G-90 galvanized steel.
- B. Construction:
  - 1. The base shall be constructed of galvanized steel for improved rigidity.
  - 2. All modules bolt together to form a rigid common base structure that mount onto a single curb structure.
  - 3. A 1-1/2" water drain shall be installed at the center of the base.
  - 4. Equipment legs, for outdoor installations, and hanging cradle, for indoor installations, are available. Assembly required at the site.
  - 5. Rigging provisions shall have a structural base constructed of minimum 14-gauge G-90 galvanized steel, and include lifting points.
  - 6. The wall panels and roof panels shall be fabricated by forming double-standing, self-locking seams that require no additional support.
  - 7. The floor and wall panels shall be caulked air tight with a silicone caulk.
  - 8. All casing panels shall be attached with sheet metal screws or rivets.
  - 9. The access door shall provide easy access to electrical controls and to facilitate the removal of both the media and spray manifold.
- C. Celdek Media: 12" thick and contained within the frame for ease of access and replacement.

## **2.3 NOZZLES AND TUBING**

- A. Tubing consists of 1/2" PVC smooth pipe with drip-less nozzles.
- B. 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.
- C. Front face spray bar nozzles are drip-less and non-removable with a flow rate of 0.6 GPH.
- D. 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.

## **2.4 PLUMBING CONNECTIONS**

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

## **2.5 COMPONENTS**

- A. 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.
- B. Thermostat: Energizes cooling circuit when entering air temperature exceeds factory set point of 85 degrees F. Factory set point is adjustable.
- C. Solenoid Valve: Normally closed valve which is energized when liquid level controller senses dry condition.

- D. 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 1/2" in base of unit.
- E. 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.
- F. 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.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Examine all areas and conditions under which packaged units are to be installed. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

### **3.2 INSTALLATION**

- A. Install units in accordance with manufacturer's instructions, drawings, written specifications, manufacturer's installation manual and all applicable building codes.

### **3.3 CONNECTIONS**

- A. Piping installation requirements are specified in other Division 23 Sections. Drawings indicate the general arrangement of piping, fittings, and specialties. Install piping to allow service and maintenance.
- B. Duct installation requirements are specified in other Division 23 Sections. Drawings indicate the general arrangement of ducts.
- C. Electrical connections conform to applicable requirements in Division 26 Sections.

### **3.4 SYSTEM START-UP**

- A. System start-up is performed by a factory-trained Service Technician.