



## **VRE SHADE SYSTEM SPECIFICATIONS:**

**March 2014**

Supply of a VRE motorized Shade system in a **Suspended manner:**

### **End Frames**

- System Support End Framing to mount all wires and hardware, shall be 2"x2"x0.100 wall square (hot dipped galvanized) steel tube. This frame matches the contour of the curtain system.
- Required diagonal end bracing must be included to support the 2" square end frame members to reduce tension on gable ends on truss-to-truss installations.

### **Curtain Support**

- Curtains are to be suspended from stainless steel spring wires, which are supplied at a maximum of 48" centers or 24" to 32" for open roof structure applications.
- "S" hooks and cover clips are required to secure the curtain to a ¾" diameter pre-galvanized steel leading edge tube. Locking type hooks to be used for open roof systems.

### **Drive System**

- Drive system must normally be mounted below the curtain system aluminum profiles.
- ½" stainless steel, 7 x 19 cable is used to open/uncover and close/cover the system.
- Double return pulleys for the cable drive are mounted off the 2"x2" end frame members, these non-corrosive pulleys shall have a throat size greater than 2 ½" with an internal sealed bearing. Drive cables are to be spaced at approximately 8 foot centers to a maximum of 108".
- 35mm aluminum tube carriers are required to connect the ¾" pre-galvanized steel leading edge tube to each drive cable.
- The drive system shall include universal joints, 2" galvanized pipe drive shaft, and bearing plates with sealed ball bearings mounted at a maximum spacing of 12 ft.
- Drive motor is either a 110, 220 single phase or 208 volt three phase motor, pre-wired to a computer compatible reversing motor control box and the drive unit shall include 4 built-in travel and safety limit switches.



### **Curtain Fabric**

- Curtains must be custom sewn to the curtain system profile and must include allowance for shrinkage.
- Loop tapes must be sewn on curtains with “S” hooks installed for each suspension wire and at every curtain end, to ensure proper curtain alignment and a positive seal.
- Curtains are available in different shade factors (12% thru 99.9%); fabric materials are available in combinations of polyester, aluminum, polyethylene and polypropylene.
- XLS Firebreak (manufactured by LS) is the current standard series of fabric for indoor systems and commercial greenhouses.
- Fire retardant fabrics are available if required, typically a necessity for institutional applications.
- XLS Revolux (manufactured by LS) is the current standard fire retardant fabric series for indoor curtain systems and is a requirement for most institutional applications.
- COLS Abri and CPLS Abri (manufactured by LS) are the current standard series of fabric for open roof suspended curtain systems using the Abri wires for suspension in commercial greenhouses.

### **System Sealing**

- At each curtain joint the patented VRE Aluminum Seal Extrusion with flexible rubber sealing strip must be supplied for positive closure. The VRE Seal Extrusion shall have pre-punched holes for each stainless steel suspension wire location to eliminate the necessity of any PVC or wire clips.
- Connector splices are required to maintain continuity of the aluminum extrusions.
- The stationary edge of the adjoining curtain must be fastened to the back of the VRE Aluminum Seal Extrusion with fabric clips.
- ¾” (19 mm) pregalvanized 20 gauge leading/moving edge tube will match the system profile to seal into the flexible rubber strip on patented VRE aluminum extrusions.
- Stainless steel wires must be supplied for the stationary “boot fabric” seals on both the ends and the sides of the system to seal up against the exterior glazing.
- For heat retention and black out systems fabric seals must be included for the perimeter of the curtain system, both ends and sides.

### **Right of Way**

- Curtain systems must have the “right of Way”. Typically for a suspended type installation a 12 inch “travel envelope” is required.