

## **DIVISION 11 – EQUIPMENT**

### **SECTION 12240**

#### **MOTORIZED WINDOW SHADES**

##### **PART 1: GENERAL**

##### **1 SECTION INCLUDES**

- A. Motorized roller window shades for above suspended ceiling mounting with retractable cover plate..

##### **2 REFERENCES**

- A. American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc. (ASHRAE): ASHRAE 74 Method of Measuring Solar-Optical Properties of Materials.
- B. ASTM International
  - 1. ASTM D3273: Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
  - 2. ASTM D6329: Standard Guide for Developing Methodology for Evaluating the Ability of Indoor Materials to Support Microbial Growth Using Static Environmental Chambers.
  - 3. ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials.
  - 4. ASTM E2180: Standard Test Method for Determining the Activity of Incorporated Antimicrobial Agent(s) In Polymeric or Hydrophobic Materials.
  - 5. ASTM G21: Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
- C. National Fire Protection Association (NFPA)
  - 1. NFPA 101: Life Safety Code.
  - 2. NFPA 701: Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.

##### **3 ACTION SUBMITTALS**

- A. Refer to Section 01001 Basic Requirements
- B. Product Data: For each type of motorized roller window shade, including manufacturer recommended installation procedures.
- C. Shop Drawings: Include window opening dimensions, electrical and control wiring, method of attachment and structural support.
- D. Samples: Provide fabric and metal finish samples.

- E. Window Shade Schedule: List rooms, field verified window dimensions, quantities, type of shade, controls, fabric, and color.
- F. Certificate of Environmental Compliance: Documentation indicating fabrics meet or exceed the following field-validated standards set by GREENGUARD Environmental Institute (GEI) program for products and materials with low chemical and particle emissions for indoor usage.
  - 1. GREENGUARD Indoor Air Quality Certified®.
  - 2. GREENGUARD Children & Schools (SM).
- G. Environmental Certification: Oeko-Tex® Standard 100 Certificate.
- H. Chemical Certification: REACH registration or proof of acceptance.
- I. Recycling Certification: Texyloop® Certificate.
- J. Antimicrobial Protection Certification: Microban® Certificate.

#### 4 CLOSEOUT SUBMITTALS

- A. Refer to Section 01001 Basic Requirements
- B. Maintenance data.

#### 5 QUALITY ASSURANCE

- A. Source Limitation: Obtain motorized roller window shades from single manufacturer as a complete unit including necessary mounting hardware and accessories.
- B. Fire-Test-Response Characteristics: Provide shade fabric with the fire-test-response characteristics indicated, as determined by testing identical products per test method indicated by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.

#### 6 DELIVERY, STORAGE AND HANDLING

- A. Refer to Section 01001 Basic Requirements
- B. Deliver motorized roller window shade after building is enclosed and construction within spaces where shades will be installed is substantially complete.
- C. Deliver motorized roller window shades in manufacturer's original, unopened, undamaged containers with identification labels intact. Label containers according to Window Shade Schedule.
- D. Inspect motorized roller window shades for freight damage, concealed or otherwise, upon delivery to project site. Report damage to freight carrier immediately for replacement of motorized roller window shades.
- E. Store motorized roller window shades in resealed manufacturer's original containers.

7 WARRANTY

- A. Manufacturer's Hardware and Shade Fabric Warranty: Manufacturer agrees to repair or replace motorized roller window shades that fail in materials or workmanship within specified warranty period.
  - 1. Failures include but are not limited to mounting hardware, headbox, clutch, fascia and shade fabric.
  - 2. Warranty Period: 25 years from date of Substantial Completion.
- B. Manufacturer's Motor and Controls Warranty: Manufacturer agrees to repair or replace motorized roller window shades that fail in materials or workmanship within specified warranty period.
  - 1. Failures include but are not limited to controls, electronic accessories and motors.
  - 2. Warranty Period: 5 years from date of Substantial Completion.

PART 2 - PRODUCTS

1 MANUFACTURER

- A. Draper, Inc.; 411 South Pearl Street; Spiceland, IN 47385-0425; Phone 765.987.7999; website [www.draperinc.com](http://www.draperinc.com)
  - 1. Subject to compliance with requirements, manufacturers of products of equivalent design may be acceptable if approved in accordance with 01001 Basic Requirements.

2 MOTORIZED ROLLER WINDOW SHADES

- 1. Motorized Roller Window Shades: Electrically operated, motorized, vertical roll-up, fabric window shade. Assembly to include motor operator, controls, mounting hardware and other components necessary.
- 2. Basis-of-Design: FlexShade 2 as manufactured by Draper, Inc.
- B. Roller: 4 inch outside diameter extruded steel. Provide with roller idler assembly and sliding pin to allow easy installation and removal of roller.
  - 1. Roller Idler Assembly: Zinc-plated steel shaft supported by roller bearings in an aluminum housing.
  - 2. Fabric Connection to Roller Tube: LSE double sided tape specifically developed to attach coated textiles to metal.
  - 3. Slat: 13/16 inch aluminum dowel, encased in heat seamed hem.
  - 4. Orientation: Regular from back of roller
- C. Mounting :
  - 1. For concealed mounting above suspended acoustical ceiling grid: Window C/D.
  - 2. For Surface mounting at wall above top of Window A
- D. MOTOR:

1. Standard Motor: 110-120V AC, single-phase, 60 HZ, instantly reversible, lifetime lubricated, and equipped with internal thermal overload protector, electric brake, and pre-set accessible limit switches. (Compatible with Intelliflex Controls.)
2. Location: Right Hand

### 3 STANDARD MOTOR CONTROLS

#### A. Group Control: Standard or 120V, UL listed controls and input devices with automatic recalibration and simplified wiring, packaged together for seamless installation.

1. Basis-of-Design: Intelliflex® Control System as manufactured by Draper, Inc.
2. Controller:
  - a. Group Control: Four 110-120V, single-motor electronic “isolating relays” packaged in an 8 by 8-inch enclosure with spring-loaded connection terminals.
    - 1) Basis-of-Design: IntelliFlex® GC4
  - b. Single Line Voltage Switch: 110-120v, 15 amp, toggle 3-position wall switch, UL and CSA recognized. Switch shall be single-pole, double-throw, maintained or momentary action.
  - c. Group Control: A low voltage controller which can control different groups of four motors, with six changeable sub-grouping functions. Fully programmable. No dipswitches required. Basis-of-Design: IntelliFlex SPGC4.
  - d. Individual and Group Control: Low voltage controllers which when connected together can control up to 60 motors individually on up to 7 different channels, with four mid-window alignment stops, six programmable sub-grouping functions, and a myriad of grouping possibilities.
    - 1) Basis-of-Design: IntelliFlex® SPGC4
3. Input Devices:
  - a. IntelliFlex® Switches: Appropriate low voltage switch to provide control via bus cable, dry contacts, and / or wireless remote control.
    - 1) Dry Contact Switch: Switch is clearly marked for intended function. Site-specific overlay may be provided. Only one button must be activated for each function.

#### B. Light-Filtering Fabric

1. Basis-of-Design: E-Screen 5%, as manufactured by Mermet.
  - a. Fabric Content and Structure: 36 percent PVC-coated fiberglass and 64 percent vinyl blend woven into high quality 2 x 2 basketweave.
  - b. Performance Characteristics:
    - 1) Flame retardant per NFPA 701 (TM#1) and California U.S. Title 19.
    - 2) Bacteria and Fungi Resistant per ASTM G21.

- 3) GREENGUARD Indoor Air Quality Certified®.
  - 4) GREENGUARD Children & Schools (SM) Certified.
  - 5) Oeko-Tex® Certified.
- c. Openness Factor: 5 percent in accordance with ASHRAE 74.
- d. Thickness: 0.020 inches.
- e. Weight: 12.10 oz./sq. yd.
- 2. Basis-of-Design: GreenScreen® Revive 5%, as manufactured by Draper.
  - a. Fabric Content and Structure: 100 percent Polyester, PVC Free. 89 percent Recycled Content.
  - b. Performance Characteristics:
    - 1) Flame retardant per NFPA 701 (TM#1) and California U.S. Title 19.
    - 2) GREENGUARD Indoor Air Quality Certified®.
    - 3) GREENGUARD Children & Schools (SM) Certified.
    - 4) Lead free certified per RoHS.
  - c. Openness Factor: 5 percent in accordance with ASHRAE 74.
  - d. Thickness: 0.017 inches.
  - e. Weight: 5.01 oz./sq. yd.
    - 1) Flame retardant per NFPA 101 (Class A), NFPA 701
    - 2) Bacteria and Fungi Resistant per ASTM E2180 and ASTM G21.
    - 3) GREENGUARD Indoor Air Quality Certified®.
    - 4) GREENGUARD Children & Schools (SM) Certified.
    - 5) Lead free certified per RoHS.
    - 6) Chemical compliant per REACH (EC 1907/2006).
  - f. Openness Factor: Varies from 5 to 10 percent by color in accordance with ASHRAE 74.
  - g. Thickness: 0.038 inches.
  - h. Weight: 14.50 oz./sq. yd.
- C. Color: As selected by Architect from manufacturer's full range.
- D. Seaming: None

- E. Battens: Provide 1/4-inch wide spring steel inserted into 1-1/8-inch pockets to improve flatness and operation per manufacture's recommendations.

## PART 3 - EXECUTION

### 1 PREPARATION

- A. Verify field dimensions of windows prior to fabrication of motorized roller window shades.
- B. Coordinate blocking, construction of shade pockets, and structural support requirements of motorized roller window shades to ensure proper attachment and support.
- C. Coordinate motorized roller window shade size, mounted depth, and required edge tolerances with construction of wall and ceiling.
- D. Coordinate requirements and location of power supply, conduit, and wiring required for motorized roller window shade motors and controls.

### 2 INSTALLATION

- A. Install motorized roller window shades at locations indicated on Drawings
- B. Provide fasteners appropriate for installation conditions.
- C. Comply with motorized roller window shade manufacturer's written instructions and shop drawings. Shim shades to correct tracking.

### 3 TESTING AND DEMONSTRATION

- A. Test motorized roller window shades to verify that controls, limit switches and other operating components are functional. Correct deficiencies.
- B. Demonstrate operation of motorized roller window shades to Owner's designated representatives.

### 4 PROTECTION

- 5 Clean and protect motorized roller window shades after installation from damage during construction operations. If damage occurs, remove and replace damaged components or entire unit as required.

### 6 WINDOW SHADE SCHEDULE

- 1. Two (2) shades each 8 ft. (96 inches) wide. Height as required to be determined by height of window D/C from suspended ceiling grid to floor.
- 2. Two (2) shades at 16 ft. (192 inches) wide. Height as required to be determined by height of windows A from Top of Window to floor..

END OF SECTION 12240