

SECTION 12 26 00 (Interior Daylighting Devices)

PART 1 - GENERAL

1.1 SUMMARY

This section includes manual and motorized lightshelves, skylight shades and associated operating systems and controls. The basis of design is the Skyliter Shading System from Indoor Sky LLC.

1.2 SECTION INCLUDES:

1. Interior daylighting and shading systems for skylights and sloping facades.
2. Manually controlled and fixed interior sunscreen and room darkening lightshelves as applicable.
3. Electronically operated interior sunscreen and room darkening lightshelves as applicable.
4. Shade accessories.

Related Sections :

1. Section [092100 – Plaster and Gypsum Board Assemblies:] Gypsum board substrate for window shade systems.

1.3 REFERENCES

1. American National Standards Institute (www.ansi.org and www.ieee.org)
2. National Electrical Manufacturers Association (www.nema.org)
3. ASTM International (ASTM) (www.astm.org): D4674-89 - Standard Test Method for Accelerated Testing for Color Stability of Plastics Exposed to Indoor Fluorescent Lighting and Window-Filtered Daylight.
G21-96 (2002) - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
G22-76 (1996) - Standard Practice for Determining Resistance of Plastics to Bacteria.
4. National Fire Protection Association (NFPA) 701 (2004) – Standard Methods of Fire Tests for Flame Propagation.
Electrical components: NFPA Article 100 listed and labeled by UL or other testing agency acceptable to authority having jurisdiction.
Where applicable, system components shall be FCC compliant.
5. Shade Cloth Anti-microbial Characteristics: 'No Growth' per ASTM G 21 results for fungi.

1.4 SYSTEM DESCRIPTION

1. Interior daylighting and shading system including operable fabric lightshelves for skylights and sloping facades:
2. Controls: Wall mounted, handheld remote.

1.5 SUBMITTALS

1. Submittals for Review:
 - a. Shop Drawings; include:
 - i. Shade schedule indicating location, opening sizes, quantities and key to details.
 - ii. Head, jamb and sill details, and mounting dimension requirements for each product and mounting condition.
 - iii. Wiring diagrams (if applicable) based on switching and operational requirements.
 - b. Samples:
 - i. Fabric samples showing; each specified color/manufacturer's full range of available colors.
 - ii. Samples showing available color and finish selections for controls.
 - c. Product Data; include:
 - i. Descriptive literature and details for each product type including materials, finishes, construction, and dimensions of individual components, profiles, and mounting requirements.
 - ii. Maintenance data including cleaning precaution, materials and methods and instructions for operating hardware and controls.
 - d. Quality Control Submittals:
 - i. Test Reports: Indicating compliance with specified fabric properties. Include the following paragraph for certification of bacterial and mildew resistance.
Certification: Morton International Laboratory Report for PVC coated fabrics and bacterial and mildew resistance.

1.6 QUALITY ASSURANCE

1. Manufacturer Qualifications:
 - a. Qualified to supply specified products and to honor claims against product presented in accordance with warranty.
 - b. Assign responsibility for design, engineering, installation, and performance of shading system to single manufacturer and their qualified dealers and installers.

- c. Furnish shading system and electrical control equipment for complete installation.
2. Installer Qualifications:
 - a. Qualified to install and commission specified products by prior factory training, experience, demonstrated performance, and acceptance of any requirement of the manufacturer, subsidiary of the manufacturer, or licensed agent.
3. Mockups:
 - a. Provide mockup of shading system complete with selected shade fabric including sample of seam when applicable.

1.7 DELIVERY, STORAGE, AND HANDLING

1. Store products in manufacturer's unopened packaging until ready for installation.
2. Do not deliver shading system until concrete, masonry, plaster, painting, and other wet work is complete and dry.
3. Deliver shading system to project in protective packaging, labeled to identify location.
4. Include installation, programming, and maintenance instructions.

1.8 PROJECT CONDITIONS

1. Maintain environmental conditions in installation areas within manufacturer's recommended limits:
Ambient operating temperature: 32 to 104 degrees F.
Humidity: 0 to 90 percent, non-condensing
2. Do not install products under environmental conditions outside manufacturer's absolute limits.
3. Do not install shading system until building is operating at ambient temperature and humidity ranges that are consistent with those intended for buildings ultimate use.

1.9 COORDINATION

1. Fabricate shading system after obtaining field dimensions for each opening.
2. Coordinate construction of surrounding conditions to allow for timely field dimension verification.

1.10 WARRANTY

1. Provide manufacturer's 1 year parts and labor and 10 years limited parts warranty for shade cloth and lifetime warranty on components.
2. Provide manufacturer's 1 year warranty providing for repair or replacement of defective equipment.

1.11 MAINTENANCE

1. Make ordering of new equipment for expansions, replacements, and spare parts available to qualified dealer or installer.
2. Make replacement parts available for minimum of ten years after date of manufacture.
3. Provide on-site service support within 24 hours anywhere in continental United States and within 72 hours worldwide except where special visas are required.
4. Offer renewable service contract on yearly basis to include parts, factory labor, and annual training visits. Make service contracts available up to ten years after date of system startup completion.

PART 2 - PRODUCTS

2.1 MANUFACTURER

1. Contract Documents based on Skyliter Shading System by Indoor Sky LLC, 2401 Reach Road, Williamsport, Pa 17701
Telephone: 570-651-5105, <http://www.indoor-sky.com>
2. Substitutions: Under provisions of Section 013300 - Not permitted.
Any substitutions provided by the contractor shall be reviewed at the contractor's expense by the architect/interior designer at a rate of \$_____ per hour.
3. All proposed substitutions (clearly delineated as such) must be submitted in writing for approval by the design professional a minimum of 10 working days prior to the bid date and must be made available to all bidders. Proposed substitutes must be accompanied by a review of the specification noting compliance on a line-by-line basis.
4. By using pre-approved substitutions, the contractor accepts responsibility and associated costs for all required modifications. The contractor shall provide complete engineered shop drawings (including power wiring if appropriate) with deviations for the original design highlighted in an alternate color to the engineer for review and approval prior to rough-in.

2.2 SHADING SYSTEM

1. SL Series:
 - a. Single or multiple lightshelf elements, sunshade fabric on aluminum outriggers and external fabric tension bars mounted to universal one-piece mounting bracket. All visible components to be either powder coated or brushed finish.
 - b. Lightshelves to have open position (parallel to floor) and closed position (parallel to glass) for maximum daylight management with alternate angles available. (Intermediate positions may be selected by the specifier).

- c. Optional removable stops allow for lowering of lightshelf for deep cleaning purposes.
 - d. Lightshelf elements may be coupled with adjustable connectors to operate in harmony throughout movement cycle.
- 2. Drive Systems:
 - a. SL Series (base design): assembly operated by manual wand/pole system.
 - b. SLW Series: self-braking worm drive assembly attached to mounting bracket on designated drive locations with ½" square, 1 ½" long drive shaft. This system allows for lightshelf to be positioned at any angle between 0 and 90 degrees.
 - c. SLM Series: A/C or D/C solar/battery operated tube motor mounted either externally or within the lightshelf frame. May be integrated with BMS (by others)
- 3. Fabric:
 - a. Lightshelf fabric selected to match main roller shade or contrasting according to specification.
- 4. SP Series
 - a. Single or multiple fixed (non-operable) sunshade panels, sunshade fabric and aluminum framing system. Assemblies to be suspended from or mounted to glazing mullions to suit application and architect's design intent. All visible components to be either powder coated or brushed finish.

2.4 ACCESSORIES

- 1. Roller Shades
 - a. Where necessary for adjacent vertical surfaces all roller shades to match Skyliter Shading System fabric and operating method.
 - b. Optional continuous extruded aluminum fascia that attaches to shade mounting brackets without the use of adhesives, magnetic strip or exposed fasteners.
 - c. Fascia shall fully conceal shade roller and fabric on the tube.
- 2. Crank Operator
 - a. Removable crank operator with 7" operating radius and length to suit height of lightshelf assemblies.
- 3. Wall Mounted Controls:
 - a. Low voltage keypads with faceplates attached without visible means of attachments and with backlit buttons.
 - b. Product: Four button for dual motors in roller shade and lightshelf. Six button for dual mount or two group applications. Multi-group keypad for control of multiple groups of shades.
- 4. Handheld Remotes:
 - a. Hand-Held transmitter to suit operating system.

2.5 SOURCE QUALITY CONTROL

1. Perform full-function testing on completed assemblies prior to shipment.

PART 3 – EXECUTION

1. INSTALLATION

- a. Install in accordance with manufacturer's instructions and approved Shop Drawings.
- b. Install shading system to provide smooth operation if applicable.

2. ADJUSTING

- a. Adjust level, projection, and shade centering from mounting brackets.

3. DEMONSTRATION

- a. Demonstrate proper operation and maintenance of skylight shading system to Owner.

4. SCHEDULE

- a. Shade Type 1:
Description: Interior lightshelves operating separately or in unison.
Color: White or alternate color selected by the architect.
- b. Shade Type 2:
Description: Interior fixed shading panel system.
Color: White or alternate color selected by the architect.

END OF SECTION