FUSION ST 90 LINE VOLTAGE
Roller Shades

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Roller window shades.
1. Electrically Encoded Motorized Roller Shades

1.02 RELATED REQUIREMENTS
A. Section 01270 - Unit Prices: Descriptions of unit price items, administrative requirements.
B. Section 01230 - Alternates: Descriptions of items, administrative requirements.
C. Section 01300 - Administrative Requirements: Submittal procedures, project meetings, progress schedules and documentation, reports, coordination.
D. Section 01355 - LEED Certification Procedures.
E. Section 01600 - Product Requirements: Fundamental product requirements, substitutions and product options, delivery, storage, and handling.
F. Section 01700 - Execution Requirements: Examination, preparation, and general installation procedures; pre-installation meetings; cutting and patching; cleaning and protection; starting of systems; demonstration and instruction.

1.03 UNIT PRICES
A. See Section 01270 - Unit Prices, for additional unit price requirements.
B. Provide the work under the unit price method.

1.05 REFERENCE STANDARDS
A. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2007.
B. ASTM G 21- Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
C. NFPA 70 - National Electrical Code; National Fire Protection Association; 2008.
D. NFPA 701-99 - Fire Tests for Flame-Resistant Textiles and Films.

1.06 ADMINISTRATIVE REQUIREMENTS
A. Coordination: Coordinate the installation of Roller Window Shades with size, location and installation of windows, curtain walls and shade pockets.
B. Pre-installation Meeting: Conduct a pre-installation meeting one week prior to the start of the work of this section; require attendance by all affected installers.
C. Sequencing: Ensure that utility connections are achieved in an orderly and expeditious manner.

1.07 SUBMITTALS
A. See Section 01300 - Administrative Requirements, for submittal procedures.
B. Product Data: Manufacturers data sheets on each product to be used, including:

C. Styles, material descriptions, dimensions of individual components, profiles, features, finishes and operating instructions.
D. Mounting details and installation methods.
E. Typical wiring diagrams including integration of motor controllers with building management system, audiovisual and lighting control systems as applicable.
F. Shop Drawings: Indicate plans, elevations, sections, product details, installation details, operational clearances, wiring diagrams and relationship to adjacent work.
G. Selection Samples: For each finish product specified, one set of shade cloth options and aluminum finish color samples representing manufacturers' full range of available colors and patterns.
H. Verification Samples: For each finish product specified, one complete set of shade components, unassembled, demonstrating compliance with specified requirements. Shade cloth sample and aluminum finish sample as selected. Mark face of material to indicate interior faces.
I. Manufacturers Qualification Statement.
J. Certificate: Certify that products of this section meet or exceed specified requirements.
K. Maintenance Data: Methods for maintaining roller shades, precautions regarding cleaning materials and methods, instructions for operating hardware and controls.

1.08 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years of documented experience.
B. Verify Field Measurements prior to shop fabrication.
C. Products Requiring Electrical Connection: Listed and classified by UL as suitable for the purpose specified and indicated.
D. Anti-Microbial Characteristics: No Growth per ASTM G 21 results for fungi ATCC9642, ATCC 9644 and ATCC9645.

1.09 MOCK-UP
A. Provide a mock-up of one roller shade assembly for evaluation of mounting, appearance, operation and accessories.
1. Locate mock-up in window designated by Architect.
2. Do not proceed with remaining work until, mock-up is accepted by Architect

1.10 DELIVERY, STORAGE, AND HANDLING
A. Deliver shades to project site in protective wrapping.
B. Label each shade with location, rotation number, size and shade cloth style.

1.11 FIELD CONDITIONS
A. Ambient Conditions: Do not install shades until windows are installed and glazed and wet work is completed.

1.12 WARRANTY
A. See Section 01780 - Closeout Submittals, for additional warranty requirements.

PART 2 PRODUCTS

2.0 PRODUCT
DFB Sales, Inc., 21-07 Borden Avenue, Long Island City, NY 11101, 718.729.8310, 800.433.4546, DFB Fusion ST90 roller shade: email: Sales@dfbsales.com, Web Site: www.dfbsales.com. Substitutions: Not permitted.

2.01 SYSTEM REQUIREMENTS

AC Line Voltage Motors: AC Line Voltage FUSION ST90 Intelligent Motor by DFB Sales. Provide tubular, asynchronous motor, built in reversible capacitor, brushless 110V AC (60 Hz) single-phase motor, thermally protected, permanently lubricated gearbox, maintenance free, providing a range of torque lifting capacity from a minimum of 4Nm to a maximum of 35Nm. Motors must have embedded microprocessor-based controller and onboard serial communications port

A. Fusion Silent Technology ST90 digital system shall be able to operate with or without a system-wide master controller.
B. Systems with or without a system-wide master controller must utilize a communication infrastructure comprised of:
C. Network of intelligent devices (including but limited to motors, keypads, sensors) with individual unique addresses.
D. Digital messages on a twisted-pair bus line, utilizing unshielded Category 5 wire or higher.
E. Differential signaling method defined by the RS485 standard.
F. Network reliability is enhanced by low baud rate and high impedance devices allowing free wiring topology without the need for termination resistors.
G. Utilization of unshielded wire allowing flexibility in wire choices and reduced cost.
H. Bus connected control devices such as keypads, sensors, adaptors, repeaters and receivers powered directly from the bus line utilizing a 24V DC Class 2 power supply.
I. Wireless Technology: Multiple addresses, no interference.
J. Adapt wired to wireless devices and wireless to wired devices on the same network, allowing flexibility during design and installation.

2.02 Network Characteristics:

A) Manage the intelligent motors and controls on a RS485 network.
B) Manage unique addresses for each intelligent motor.
C) Allow the operation of both AC line voltage motors and DC low voltage intelligent motors on a single common intelligent network without requiring gateway devices.

D) Allow for upper and lower limits to be pre-set by shade manufacturer and adjustable on site via handheld device or PC, without the need to access the roller assembly or external mechanical limit wheels or buttons.

E) Allow for intelligent keypads, schedules, motor grouping and virtual switches to be configurable and managed from its own internal IP network, from the building's internal network, or remotely over the internet.
F) Include integrated IP networking infrastructure hardware to allow for stand-alone operation, separated from building IP network.

a) Enact an event within the automation system.

b) Have the automation system directly control a single motor.

c) Have the automation system simultaneously control a pre-programmed group of motors.

3.0 MOTORIZED ROLLER COMPONENTS

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A. Mounting Brackets: .125 inch thick galvanized steel. The motor-end bracket shall have a nylon swivel ball to ensure non-binding rotation.
B. The tube shall be 2-1/4 inch in O. D. extruded aluminum with .080 inch wall thickness, having no more than .010 inch deflection over 12 feet for a 10 feet high shade. Optional 3-1/2 inch diameter tube with maximum length of 21 feet.
C.Center Support: Extruded aluminum main housing with two (2) height-adjustment screws to prevent vibration and a 3/8 inch U.H.M.W. support bushing. Connector between shades 1/2“ threaded steel drive shaft. Maximum space between shades shall be 3/4”.
D.Hem/Hem bar: The hem bar shall be extruded aluminum weighing 1/4 lb per linear foot and sit behind two thicknesses of shade cloth. The hem shall be triple thick with an electronically welded seam.
E.Side/Sill Channels (optional): A component feature produced in .050 inch thick extruded aluminum. The two-piece channel design shall eliminate visible fasteners.
F.Finishes: Aluminum components, fascias, side channels and sill channels are available in standard colors: White Enamel, Bronze or anodized clear aluminum. Bracket finishes are available in White, Brown or Grey enamel. Painted finishes on aluminum components are baked enamel. Custom colors can be submitted.
G.Ceiling Pockets (optional): They shall be made of .070” thick extruded aluminum in a style chosen for the job. Outside dimensions are 4-1/2 inches square.

3.01 BLACKOUT SHADE SYSTEM

A. Add to motorized roller window shades to provide 100% outside light omission:
B. Light-blocking inserts on side and sill channels.
C.End caps and bottom closures with light block inserts on head box. Inside surfaces shall be painted flat black.

SHADECLOTH

A.Performance: The shade cloth shall hang flat without defection or distortion. The edges of the shade band shall be cut square to insure true tracking of the shade cloth and cut clean so that the core yarn is not exposed.

B.Flame Retardance: The shade cloth shall pass the California Flame Text Title 19, Section 1273.3, medium scale test for interior fabric and shall pass NFPA 701-99 Flame Test.

C. Sol-R-Control Shade cloth:

1. Series: _____
2. Color: _____
3. Openness: _____

4.0 EXECUTION

4.01 EXAMINATION

A.Verification of Conditions: Verify that windows are installed and glazed, and that support blocking and substrates are level and ready to receive roller window shade installation.

B.Installation shall not commence until all job conditions are suitable.

4.01 INSTALLATION

A.Install in accordance with manufacturer's instructions.

B.Fastening: Install shade assemblies according to manufacturer's instructions. Each bracket shall receive two screw fasteners. Shades shall be set in place, and leveled by a leveling screw.

4.02 FIELD QUALITY CONTROL

A.Perform field inspection and testing in accordance with Section 01400.

B.Inspect for smooth, quiet operation.

4.03 ADJUSTING

A.Adjust roller operation for smooth operation.

4.04CLEANING

A.Clean shade cloth if required for acceptance.