

# Special Specification 6105

## LED Bridge Arch Lighting Assembly



### 1. DESCRIPTION

- 1.1. **Installation.** Furnish, fabricate and install linear color-changing light emitting diode (LED) bridge arch lighting assemblies. A linear color-changing LED bridge arch lighting assembly is the complete assembly of light fixture, LED light source, lens, mounting brackets, connectors, driver, power supplies, components and hardware constituting a complete operational lighting unit.
- 1.2. **Removal.** Remove existing arch fiber optic illumination assemblies.

### 2. MATERIALS

For the installation of all lighting assemblies, use new materials that meet the requirements of the NEC, UL, CSA, and NEMA. Provide all new materials that comply with the details shown on the plans, the requirements of this Item and to the pertinent requirements for the following items:

- Item 616, "Performance Testing of Lighting Systems"
- Item 618, "Conduit"
- Item 620, "Electrical Conductors"
- Special Specification 6099, "Bridge Lighting DMX Control System"

- 2.1. **Basis of Design.** Basis of Design specifications for the linear color-changing LED bridge arch lighting assemblies are as follows:

2.1.1. **Option 1:** Traxon TU.CR.0014001--Media Tube Direct View 495 RGB 20 PXL-AA5587 40055;

2.1.2. **Option 2:** Winona Parata PLS729W RGB Linear Cove-mod;

2.1.3. **Option 3:** Approved equivalent according to the following specifications:

- LED Assembly: IP66 rated and is rated Suitable for Coastal Environments.
- Linear Segment Dimensions: 19.5 in. long, 1.91 in. high and 1.30 in. wide not including mounting hardware and brackets.
- LEDs are shielded from direct view with a curved diffusing lens.
- Driver is remotely mounted.
- Light Source: 20 High Intensity SMT RGB LEDs.
- Color Range: 16.7 Million Additive RGB Colors.
- Resolution: 3x12-bit (Gamma Correction).
- Luminous Flux: 189.37 lm.
- Efficacy: 8.6 lm/W.
- Cover Lens: PC Diffuser, CAST-UV protected.
- LED Pitch: 25mm.
- Housing: Aluminum housing with clear silicone potting and PC cover.
- Weight: 1.4lbs per section.
- Regulatory Listing and Safety Approval: CE, cETLus.
- Operating Temperature: -22°F to +122°F.
- Storage Temperature: -40°F to +158°F.
- Operating Voltage: 48v DC.
- Power Consumption: 11 W per section Power/Data.
- Interface: TX Connect.
- Control: DMX.

- Power Supply: LED Engine 240W 48V.
- Outdoor Addressing Options: Auto Addressing.

- 2.1.4. **Submittals.** Provide 2 sets of submittals of fixtures, controls, and mounting provisions to the Lighting Designer at Gandy2 Lighting Design, 1824 Spring Street, Studio 201, Houston, Texas 77007. Provide an additional 2 sets of submittals to the TxDOT District Engineer at 7600 Washington Avenue, Houston, Texas 77007. Obtain all pertinent approvals on the submittals before purchasing materials and beginning work.
- 2.1.5. **Warranty.** Provide manufacturer's warranty for each bridge lighting assembly that will replace failed components or parts for a period of five years from the purchase date.

### 3. CONSTRUCTION

Perform work in accordance with the details shown on the plans and the requirements of this Item. Use established industry and utility safety practices when installing luminaires located near overhead or underground utilities. Consult with the proper utility company before beginning work. Prevent scarring or marring of fixtures. Replace damaged components. Repair damaged painted areas of lighting assemblies.

- 3.1. **Installation.** Furnish and install linear color-changing LED bridge arch lighting assemblies. Install each lighting assembly as shown on the plans. The Department may shift an assembly's location, if necessary to secure a more desirable location or to avoid conflict with utilities. Aim fixtures initially as shown on the plans for review. Make provisions for trial lighting of at least one side of the arch for the Lighting Designer to review and adjust fixture angle for final positioning as directed by the Lighting Designer.

Fabricate and install lighting assembly components in accordance with the details, dimensions, and requirements shown on the plans.

Follow NEC and local utility company requirements when installing the lighting assemblies. Coordinate the utility companies' work for providing service.

Complete performance test of all systems per Item 616, "Performance Testing of Lighting Systems."

- 3.2. **Removal.** Remove any existing light assemblies on the arches including luminaires, drivers, power supplies, and mounting hardware. DO NOT remove existing housing for fiber optic driver. This will be reused. Coordinate removal with the appropriate utility company before beginning work.

Before removal of the old lighting assemblies, disconnect and isolate any existing electrical service equipment in accordance with the utility company's requirements.

Disconnect conductors and remove them from the conduit. Cut off all protruding conduit 6 in. below finished surface. Abandoned conduit need not be removed unless shown on the plans.

Reconnect conductors and conduit to be reused where shown on plans. Make all splices in junction boxes unless otherwise shown on plans.

Accept ownership of unsalvageable materials, and dispose of them in accordance with federal, state and local regulations.

### 4. MEASUREMENT

This Item will be measured by each lighting assembly installed or each assembly removed.

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**5. PAYMENT**

- 5.1. **Installation.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Install Linear Color-Changing LED Bridge Arch Lighting Assembly." This price is full compensation for furnishing; installing; aiming and testing luminaries; LEDs, drivers; power supplies; controllers; mounting brackets; internal conductors and connections; wire and/or cable between fixtures and from j-box to fixtures; system performance testing and equipment; labor; tools and incidentals.
- 5.2. **Removal.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Remove Bridge Light Assembly." This price is full compensation for coordinating with the utility company to disconnect and isolate the electrical service, removing the existing arch lighting system, materials, equipment, labor, tools and incidentals.