



**SPECIAL PROVISIONS
FOR
EXTERIOR LED LIGHTING**

**Woodbury County
IM-NHS-029-7(50)149--03-97**

**Effective Date
November 21, 2017**

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

150335.01 GENERAL.

A. Section Includes.

1. Exterior LED luminaires.
2. Luminaire accessories.

B. Reference Standards.

1. IEEE C62.41.2 - Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits.
2. IESNA LM-79-08, IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.
3. IESNA LM-80-08, IESNA Approved Method for Measuring Lumen Maintenance of LED Light Sources.
4. NECA 1 - Standard for Good Workmanship in Electrical Contracting; National Electrical Contractors Association.
5. NECA/IESNA 501 - Recommended Practice for Installing Exterior Lighting Systems.
6. ANSI/NEMA/ANSI C78.377-2008 - American National Standard for the Chromaticity of Solid State Lighting Products.
7. NFPA 70 - National Electrical Code; National Fire Protection Association.

8. UL 1598 - Luminaires.

C. Submittals.

1. Refer to Article 1105.03 of the Standard Specifications for submittal procedures.
2. **Additional Submittal Procedures.**
Each bound submittal must be reviewed, stamped, signed, and dated by the Contractor. Submittals must be sent via the Contractor. Submittals sent directly from suppliers or subcontractors will not be reviewed by the Engineer.
3. **Shop Drawings.**
Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.
4. **Product Data.**
Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, weight, effective projected area (EPA), and installed accessories; include model number nomenclature clearly marked with all proposed features.
5. **Performance Reports.**
Submit the following for approval:
 - a. Luminaire photometric reports per IESNA LM-79-08 including: Verifiable third-party test results, laboratory name, report number, date, luminaire catalog number, and luminaire/light source specifications. Report must contain light distribution classification if applicable, luminous Intensity, zonal lumen summary, and an iso-footcandle diagram per LM-31 as well as documentation that specified standards and test methods were followed.
 - b. Provide Department of Energy Lighting Facts Label or Design Lights Consortium documentation.
 - c. Provide IESNA LM-80-08 documentation of the expected useful life of LEDs from verifiable third-party test results.
6. **Manufacturer's Installation Instructions.**
Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of product.
7. **Operation and Maintenance Data.**
Instructions for each product including information on replacement parts.
8. **Project Record Documents.**
Record actual luminaire type installed at locations where different from the type originally scheduled in the contract documents. Provide record of any other deviations from the contract documents. Deviations from the contract documents shall not be allowed without approval from Engineer prior to installation.

D. Quality Assurance.

1. Conform to requirements of NFPA 70.
2. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

3. **Manufacturer Qualifications:** Company specializing in manufacturing the products specified in this section with minimum 10 years documented experience and has specified luminaire types installed and operating commercially in the field for 5 years.

E. Delivery, Storage, and Handling.

1. Receive, handle, and store products according to NECA/IESNA 501 and manufacturer's written instructions.
2. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

F. Warranty.

The manufacturer shall provide a written 5 year warranty on each luminaire type specified herein which includes:

1. Replacement due to material and fixture finish failures, and workmanship deficiency.
 - a. The material warranty includes but is not limited to failure of fixture housing components, defective or non-starting LED source assemblies, or failure of driver power supply units.
 - b. The finish warranty includes but is not limited to failure or substantial deterioration such as blistering, cracking or peeling.
2. Warranty period shall not begin until final acceptance of the lighting by the Engineer. The supplier will provide the Contracting Authority with appropriate signed warranty certificates. The Contracting Authority must receive certificates prior to final payment.
3. Other warranty stipulations specific to and stated in each luminaire section below.

150335.02 MATERIALS.

A. General Requirements.

1. All luminaires specified herein shall be solid state lighting (SSL) sources (a.k.a. LED).
2. Provide products that comply with requirements of NFPA 70.
3. Provide products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.
4. Unless specifically indicated to be excluded, provide all required wiring, connectors, hardware, supports, trims, accessories, etc. as necessary for a complete operating system.
5. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.
6. Provide luminaires listed and labeled as Wet Location/IP66 unless otherwise indicated.
7. All exposed hardware shall be either stainless steel or manufactured using corrosion resistant materials finished with the same finishing process as the luminaire.
8. All luminaires shall be capable of withstanding relative humidity from 0% to 95%, non-condensing.
9. Provide luminaire assemblies that are RoHS Compliant.

B. LED Underdeck Light (Type 1 Luminaire).

1. High intensity white light LED wall-mount flood lighting luminaire used for illuminating horizontal surfaces/areas.
2. **Luminaire Manufacture/Model.**
Eaton McGraw-Edison Galleon
Catalog No: GWC-AF-01-LED-240-T4W-AP-FF / 240-HA / MA1059AP
No Substitutions.

C. LED Trail Light.

1. High intensity white light LED, strip style lighting luminaire used for grazing/wall-washing architectural/structural faces/surfaces.
2. **Luminaire Manufacture/Model.**
 - a. Lighting USA Ligman Tango (Sales Order SO5251)
 - 1) For Floyd and Virginia Bridges
Catalog No: UTA-31831-30W-30W-W30-W30-Type IV-Type V-W-240-01-C-HGT18"
 - 2) For SBFR1-Pierce Bridge
Catalog No: UTA-31831-30W-30W-W30-W30-Type IV-Type V-W-208-01-C-HGT18"
 - b. No Substitutions.

D. Strip LED Down Light.

1. High intensity white light LED strip style lighting luminaire used for grazing/wall-washing architectural/structural faces/surfaces.
2. **Luminaire Manufacture/Model.**
Philips Color Kinetics eW Graze Powercore
Catalog No: 523-000081-09, Finish Color RAL8028
No Substitutions.
3. **Luminaire Accessories.**
 - a. Leader Cable with Terminator
Catalog No: 108-000056-03
No Substitutions.
 - b. Jumper Cable
Catalog No: 108-000057-06
No Substitutions.
 - c. Glare Shield
Catalog No: 120-000081-00, Finish Color RAL8028
No Substitutions.

E. LED Flood Light.

1. High intensity white light LED flood lighting luminaire used for illuminating/highlighting architectural/structural features.
2. **Luminaire Manufacture/Model.**
Philips Color Kinetics eW Blast Powercore gen4
Catalog No: 523-000100-00, Finish Color RAL8028
No Substitutions.
3. **Luminaire Accessories.**
 - a. 20 deg. Spread Lens
Catalog No: 120-000185-08
No Substitutions.

- b. Diffuser Trim Ring
Catalog No: 120-000185-00, Finish Color RAL8028
No Substitutions.

150335.03 CONSTRUCTION.

A. Examination.

1. Verify that field measurements are as shown on the drawings.
2. Verify that conditions are satisfactory for installation prior to starting work.

B. Installation.

1. Install products according to manufacturer's instructions.
2. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 1 (general workmanship) and NECA/IESNA 501 (exterior lighting).
3. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
4. Install accessories furnished with each luminaire.
5. Bond products and metal accessories to branch circuit equipment grounding conductor.

C. Field Quality Control.

1. Inspect each product for damage and defects.
2. Operate each luminaire after installation and connection to verify proper operation.
3. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy power supplies as determined by Engineer.

D. Adjusting.

1. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Engineer. Secure locking fittings in place.
2. Luminaires with Field-Rotatable Optics: Position optics according to manufacturer's instructions to achieve lighting distribution as indicated or as directed by Engineer.

E. Cleaning.

Clean surfaces according to NECA/IESNA 501 and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.

F. Protection.

Protect installed luminaires from previous/other construction operations.

150335.04 METHOD OF MEASUREMENT.

A. Underdeck Light Assembly.

Method of measurement shall be by count of each LED Underdeck Light Assembly installed.

B. Trail Light.

Method of measurement shall be by count of each LED Trail Light installed.

C. Strip LED Down Light.

Method of measurement shall be by count of each Strip LED Down Light installed.

D. LED Flood Light.

Method of measurement shall be by count of each LED Flood Light installed.

150335.05 BASIS OF PAYMENT.

A. Underdeck Light Assembly.

Payment is full compensation for furnishing all labor, equipment, and materials required to provide and install each LED Underdeck Light Assembly including luminaire, specified accessories, fabrication and installation of mounting assembly per LI-120, Case A, energization, and adjustments.

B. Trail Light.

Payment is full compensation for furnishing all labor, equipment, and materials required to provide and install each LED Trail Light including luminaire, specified accessories, energization, and adjustments.

C. Strip LED Down Light.

Payment is full compensation for furnishing all labor, equipment, and materials required to provide and install each Strip LED Down Light including luminaire, specified accessories, energization, and aiming.

D. LED Flood Light.

Payment is full compensation for furnishing all labor, equipment, and materials required to provide and install each LED Flood Light including luminaire, specified accessories, energization, and aiming.