STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION 813
LUMINAIRE, SOLID-STATE (LED)

July 20, 2018

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813.01 Description. All Solid-State Luminaires shall use LED emitters (Light Emitting Diodes) as the light source. They shall be substantially identical in their light output characteristics to the traditional luminaire using HPS (High Pressure Sodium) HID (High Intensity Discharge) gas-state lamp as the light source. The Functional Type portion of the Item Description shall be one of the following, to match the intended application:

1. Conventional
2. High mast
3. Low Mast
4. Post-Top
5. Underpass
6. Tunnel

A supplemental description is required for each construction item, listing at a minimum the following parameters:

1. IES Type Distribution
2. Cutoff: non-cutoff, semi-cutoff, cutoff, or full cutoff (Medium vertical light distribution shall be used unless specified otherwise in the Plans)
3. Photocell/Dimming Receptacle. The phrase “with 7-pin Photocell/Dimming Receptacle” should appear in the item description if the luminaire is to include an individual photocell and/or photocell-based dimming control interface. Dimming controls wired through conduits to the luminaire do not require a photocell socket.
The default listing format shall be: “Luminaire, Conventional, Solid-State (LED), IES-(type)-(vert. dist.), _____ - _____ lumens, (with ANSI/NEMA 7-pin Photocell/Dimming Receptacle), As Per Plan.” For example, “Luminaire, Conventional, Solid-State (LED), IES-II-M, LED, 10500-12900 lumens, As Per Plan.” This listing represents a solid-state (LED) luminaire with an IES Type II horizontal distribution, Medium vertical distribution, with specifically-listed interchangeable models ranging from approximately 10500 to 12900 lumens.

813.02 Materials. Furnish new materials and equipment of first quality, of current design, and free from defects. Furnish Materials and Equipment conforming to Supplemental Specification 913. A list of approved devices will be maintained at the ODOT Division of Construction Management, Office of Materials Management Approved List web site.

813.03 Construction. Install the luminaire securely per manufacturers’ instructions at the location shown in the Plans, with the proper orientation. Apply metal-free molybdenum sulfide and graphite based anti-seize compound to all fasteners used to access the interior of the housing; ensure enough of this compound is used to be clearly discernable by ODOT inspection personnel. Ensure that the luminaire is the correct model as called for in the Plans.

Install a weatherproof photocell if the luminaire requires a simple on/off photocell (not a controls interface) or a shorting cap. The cost of the photocell or shorting cap is incidental to the item. Do not leave photocell receptacles uncovered or exposed to weather, dust, dirt, etc. during construction.

If flexible conduit is specified in the Plans for connection of the luminaire, provide Liquid-Tight Flexible Metallic Conduit (LFMC) meeting CMS 731.08.

Ensure that the warranty period begins on the date of shipment to the project. Ensure that each unit has a permanent label or stamp indicating the date of shipment. Label shall indicate the equipment vendor name or logo.

813.04 Method of Measurement. Luminaire, Solid State (LED) will be measured by the number of units, EACH, complete and installed.

813.05 Basis of Payment. The Department will pay for the accepted quantity at contract price as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>625</td>
<td>Each</td>
<td>Luminaire, Functional Type, Solid-State (LED) AS PER PLAN</td>
</tr>
</tbody>
</table>
**Designer Note:**

This construction item may be used for

1. new installations of Solid-State (LED) Luminaires on newly-placed supports whose spacing has been designed specifically for the luminaire(s) or
2. existing installations (typically HPS) on poles whose spacing remains unchanged.

Because of the many variations of solid-state (LED) luminaire models available, this construction item will always be described using an As Per Plan note. Competitive bidding requirements will generally necessitate three models be specified from among those on the ODOT Approved List for SS 813. Thus, in general, the designer will be required to find interchangeable luminaires to be listed in the As Per Plan note and assure that these models perform substantially the same for the proposed pole placements. The ODOT-specific part number and all required supplemental description information per 813.01 must be referenced in the plans for each luminaire, and shall include the rating in watts of each luminaire, the range of which forms part of the As Per Plan item description.

Specify photocell/dimming sockets only when necessary. The ODOT default control scheme does not use individual luminaire photocell sockets, but a single photocell located at the lighting control center (LCC). The default ODOT dimming scheme (if used) consists of control wires to each luminaire. However, in anticipation of possible future deployments of wireless network control systems using the standard ANSI/NEMA 7-pin photocell receptacle, the item description in the Plans may include the receptacle. Inclusion of the photocell socket in the item description requires District approval.