ONTARIO
PROVINCIAL
STANDARD
SPECIFICATION

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MATERIAL SPECIFICATION FOR FLOODLIGHT LUMINAIRES USED IN HIGH MAST LIGHTING

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2479.01 SCOPE

This specification covers the requirements for high mast floodlight luminaires with integral ballast for use in high mast lighting.

2479.02 REFERENCES

This specification refers to the following standards, specifications, or publications:

CSA Standards

C22.2 No. 9.0-96 (R2011)	General Requirements for Luminaires
C863-11	Energy Efficiency of High-Intensity Discharge (HID) and Low-Pressure Sodium (LPS) Lamp Ballasts

2479.04 DESIGN AND SUBMISSION REQUIREMENTS

2479.04.01 Design Requirements

2479.04.01.01 Photometric Requirements

Photometric test results shall be provided for the floodlight type luminaire supplied and shall include the following data:

a) Isolux curves and mounting height correction factors.

b) Utilization charts or graphs indicating the total beam utilization.

c) Candlepower distribution curves indicating peak intensity.

d) Luminous intensity tables to Illuminating Engineering Society format (I-tables).

e) Luminaire efficiency values.

f) Lamp lumen outputs and wattages.

2479.04.01.02 Electrical Requirements

All electrical components and assembled luminaires shall be according to CSA C22.2 No. 9.0.

Ballasts, lamp sockets, ground connectors, internal wiring, and all other components shall be suitable for the supply voltage as specified in the Contract Documents and the maximum temperature encountered in totally enclosed, outdoor, weatherproof luminaires.

Ballasts shall be constant wattage auto-transformer or isolated secondary transformer type for grounded systems. Auto-transformer type ballasts shall have a maximum tolerance of 12% variation in lamp wattage for a 5% variation in line voltage. Isolated secondary transformer type ballasts shall have a maximum tolerance of 12% variation in lamp wattage for a 10% variation in line voltage.

Ballasts shall be of Class H, 180 °C insulation; 60 hertz; and low temperature, -35 °C with a power factor not less than 0.90.

The minimum nominal secondary open circuit voltage of the ballast for various lamps shall be sufficient to provide reliable starting at -35 °C.

Ballasts shall be suitable for the lamp's nominal operating voltage. Terminal blocks shall be held rigidly and shall provide a positive connection for terminating the field wiring.

Energy efficiency of lamp ballasts shall be according to CAN/CSA C863.

2479.04.01.03 Mechanical Requirements

The luminaire housing shall be cast aluminum or heavy-duty sheet aluminum. The ballast shall be integral. All external fasteners and associated hardware shall be stainless steel. The luminaire shall be provided with a built-in aiming device.

Mounting arrangements shall be trunnion type or slip fitter for a 50 mm diameter internal pipe size tenon with provisions for vertical and horizontal adjustment. The luminaire shall be complete with all external fasteners and associated hardware required for the aiming of the luminaire and attachment to the slip fitter or mounting pad.

The optical assembly shall consist of a specular high purity anodized aluminum reflector. The reflector shall be precision formed and assembled in a way that the formed contour is maintained when it is removed from the luminaire housing. The optical assembly shall be sealed with a high temperature neoprene or silicone rubber gasket located between the door frame and luminaire housing.

When required and as specified in the Contract Documents, a secondary reflector or louvre shall be provided inside the sealed optical assembly. The louvre shall effectively screen the lamp from direct view and provide a cut-off 10° above the peak intensity on the vertical plane.

The door assembly shall consist of a gasketed door frame and a clear tempered shock-resistant glass lens and shall be hinged to the luminaire housing. The luminaire shall be accessible with tool-less entry.

The lamp socket shall be a mogul type with a porcelain-enclosed, nickel-plated brass shell rated for 4,000 volts, and spring-loaded centre contact. The lamp holder shall have an electrically insulated lamp stabilizer and shall hold the lamp's outer envelope in precise alignment with suitable means for vibration damping.

The luminaire assembly when closed and in the operating position shall not be subject to damage by vibration.

2479.04.02 Submission Requirements

2479.04.02.01 Working Drawings

Three copies of Working Drawings shall be submitted to the Contract Administrator a minimum of 14 Days prior to the commencement of fabrication.

As a minimum, the Working Drawings shall include the following information:

a) Detailed dimensioned layout, including plans, elevations, and weight.

b) Photometric curve data.

c) Details of optical system.

Each Working Drawing shall be sealed and stamped by an Engineer certifying that the Working Drawings comply with the Contract Documents.

One copy of the final accepted Working Drawings shall be returned to the supplier, along with written notification to commence fabrication. Within 14 Days of receipt of notification to commence fabrication, the supplier shall submit 3 copies of all final accepted Working Drawings to the Contract Administrator.

Fabrication of the equipment shall not commence until the Working Drawings have been accepted by the Contract Administrator.

Once fabrication of the equipment has commenced, materials and dimensions shown on the final accepted Working Drawings shall not be changed.

2479.05 MATERIALS

2479.05.01 Marking

A permanent non-corrosive nameplate shall be attached to the exterior of the luminaire and located so that the marking is clearly visible during relamping. The nameplate shall indicate the manufacturer's

name or trademark, catalogue number, electrical rating, input amperes, luminaire voltage, date of manufacture, and the vertical and horizontal beam distribution.

A permanent label shall be attached to the interior of the luminaire indicating the manufacturer's name or trademark, catalogue number, date of manufacture, and the American National Standards Institute (ANSI) or Illuminating Engineering Society (IES) photometric classification and distribution type; the suitable supply voltage and frequency; the lamp type; the lamp wattage; and the nominal operating voltage of the lamp so that it is clearly visible during maintenance operations.

A label including a wiring diagram shall be attached to each ballast showing the ballast schematic wiring diagram and shall be visible during maintenance operations.

For asymmetrical luminaires with adjustable optical systems, a permanent embossed identification mark shall be located on the luminaire that is clearly visible and identifiable as an orientation mark.

2479.07 PRODUCTION

2479.07.01 Ballast Assemblies

Ballast assemblies shall be factory pre-wired with all connections clearly marked and identified.

2479.07.02 Lamp Socket Positions

The lamp socket position shall be pre-set at the factory for the specified distribution.

2479.08 QUALITY ASSURANCE

2479.08.01 Inspection

The supplier shall notify the Owner of the date that the fabrication of the luminaires is to commence.

The Owner’s representative shall have free access to the place of fabrication for the purpose of inspecting and examining plant records, certificates, materials used, fabrication process, and to make any tests as may be considered necessary, while the luminaires are being fabricated.

All luminaires are subject to an inspection by the Owner’s representative prior to shipment.