LUMINAIRES

MONTGOMERY COUNTY LED STREETLIGHTS SPECIFICATIONS

All streetlights installed within Montgomery County right-of-way must use County's standard LED luminaires, see Table A at the bottom of this document. The following general requirements apply to all LED luminaires used within MC right-of-way.

TECHNICAL REQUIREMENTS:

1. Nominal luminaire input voltage of	120 V
2. Minimum Luminaire warranty	10 years
3. Rated correlated color temperature	3000
4. Typical minimum ambient temperature during operation	-22° C
5. Typical maximum ambient temperature during operation	42° C
6. Driver rated at 550mA or less (90% power factor or better)	
7. Lumen maintenance @ 25° C & 80,000 hours	>L70
8. UL 8750 & UL 1598 compliant	

MANUFACTURER DELIVERABLES

1. LM-79 testing data for the complete LED luminaire
2. LM-80 testing data for LED light source
3. 10-year warranty period
4. 100% made in America
5. PDF copies of ISO plots
6. Tested input wattage of the LED luminaire

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS
JANUARY 2025
BETHESDA LED GLOBE LUMINAIRE

1) DESCRIPTION

This luminaire shall be an outdoor decorative post top fixture, cylindrical in shape with and overall height of 42 +/- 1 inches and a maximum width of 19 +/- ½ inches at top (see attached drawings). All exterior and structural parts shall be cast of aluminum alloy. Exterior castings shall be cast in two pieces, have a smooth surface finish, and be free of mold lines. All components shall fit together snugly so as to provide weather-proof joints in the luminaire top. All visible metal components shall have raised surface decorations or ribs, as shown on the attached drawings, which are molded integrally with the base piece. Likewise, the hinges between the top and main body as well as between the driver cover and the base shall be cast integrally with the piece or bolted through the base piece. All metal parts shall be corrosion-proof. The luminaire shall come ready for quick and easy field assembly or fully assembled and shall include the following components:

- Lamp;
- Twist-Lock type photoelectric cell installed on the ballast cover;
- All necessary hardware and fasteners to assemble and secure on a 2 7/8 inch nominal diameter cast iron or aluminum tenon.

2) LENS

The lens shall consist of a seamless flat glass, not subject to deterioration by natural light. The lens shall have a continuous neoprene waterproof gasket at top. The gaskets shall fit into grooves molded into the top or over retaining rings molded inside the top plate.

3) METAL CAGE

The metal cage shall be constructed of die-cast A360 aluminum alloy. The metal cage shall have 4 legs each with a square decorative block with solid rectangular band around the top of the cage between each decorative block. The support columns shall consist of four (4) dual columns connecting the top and bottom of the fixture.

4) HINGED LUMINAIRE TOP & OPTICAL SYSTEM

The hinged luminaire top shall consist of an LED optic assembly and all exterior components visible in plain view above the lens. The optical system shall be located in the top cover of the fixture. A gasket between the cover and the ring along with a flat glass plate and gasket beneath the LED panel and create a sealed optical compartment that will meet IP rating. The top must have an attached, removable brace to support the top when open. The optical system shall provide an IES asymmetric or symmetric full cut off distribution.

5) ELECTRICAL MODULE

The electrical components shall be mounted on a steel plate that is removable without use

of tools. All components shall be plug-in. The housing door shall be hinged and be latched to provide east access to the electrical module. The housing door shall be fastened by a captive fastener.

6) DRIVER and SURGE PROTECTOR

The driver shall be mounted to facilitate easy removal for maintenance operations. The driver shall reliably start and operate the lamp in ambient temperatures down to minus 30 degrees. The terminal block shall be capable of accepting up to a #6 AWG wire.

8) PHOTOCELL

The photocell shall be a twist-lock and shall be mounted inside the fixture.

9) UNDERWRITERS LABORATORY LISTING

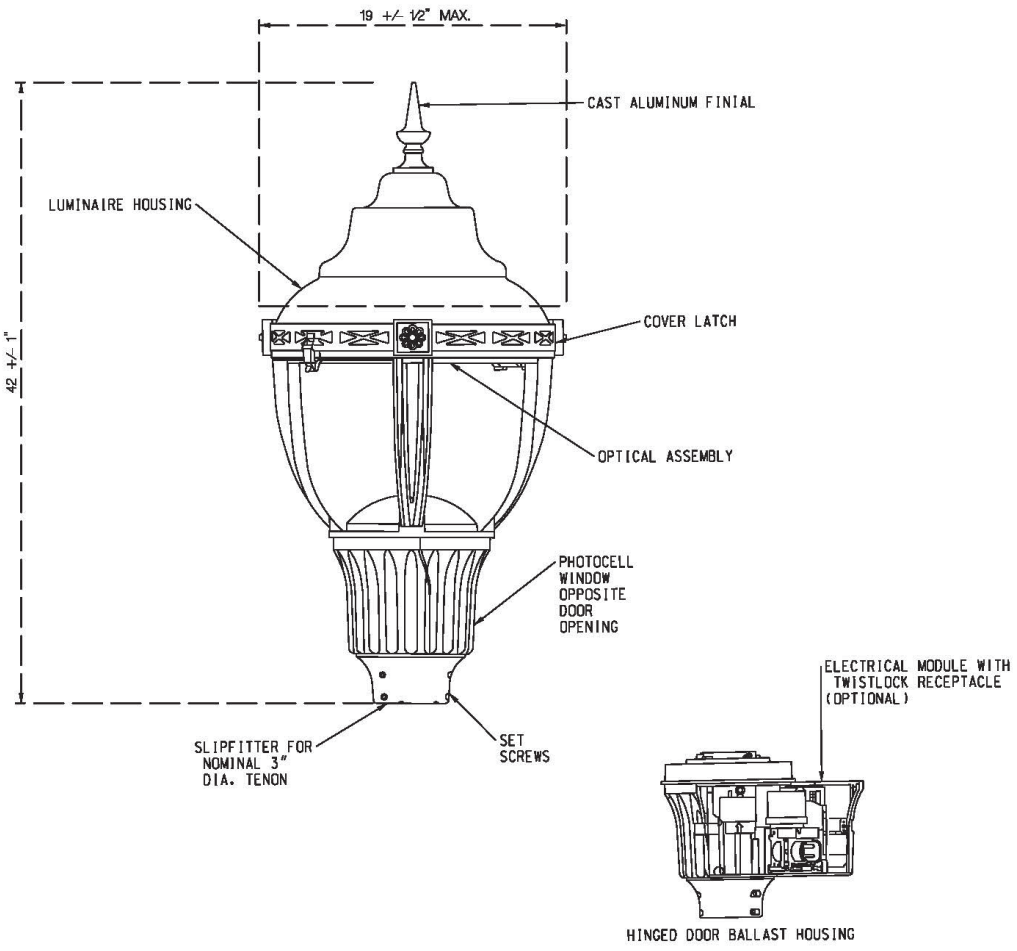
The entire luminaire assembly shall be U.L. listed and suitable for wet locations.

10) EXTERIOR FINISH

The exterior finish shall be "Federal Green" Federal Standard 595B Color # 14036 or Tiger Drylac #RAL6009 electrostatically-applied thermoset polyester powder coat.

BETHESDA LED GLOBE

SPECIFICATIONS FOR STREETLIGHT HARDWARE



MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS
JANUARY 2025
RESIDENTIAL, COLONIAL POST-TOP,
LED OPTICS, TYPE III DISTRIBUTION, STYLE LUMINAIRE

1) DESCRIPTION

The residential, colonial post-top, LED optics, type III distribution, style luminaire is made of a cast aluminum alloy housing.

Each streetlight luminaire shall include the following:

- Cast aluminum housing and hinged top canopy;
- NEMA standard photoelectric control receptacle and NEMA multi-volt standard photocell;
- Acrylic or Polycarbonate resin refractor side panels (lens);
- All necessary hardware required for mounting on fiberglass poles, as specified.

2) DESIGN CRITERIA

2.1) AASHTO Standards

The luminaire shall meet the requirements of American Association of State Highway and Transportation Officials (AASHTO) Standard, "Specification for Structural supports for Highway Signs, Luminaires and Traffic Signals," latest edition.

2.2) Shape and Minimum Size

The luminaire shall be of a trapezoidal shape. The minimum size for the luminaire shall 40.0 inches (sum of the length plus height), when viewed from the side.

2.3 Effective Projected Area (EPA)

The luminaire shall have a maximum estimated allowable EPA for the luminaire of 1.6 ± square feet.

2.4 Finish

The luminaire shall have a black polyester powder coat finish. During the finishing process, all critical openings shall be plugged to prevent contamination of the threads or reduction of other critical openings.

3) MATERIALS

3.1 Housing

The luminaire shall consist of a water tight housing fabricated from die-cast aluminum with a gasketed die-cast aluminum canopy. The canopy shall be hinged on one side and secured on the opposite side with a captive stainless steel screw. All castings used to fabricate the luminaire housing shall be clean and smooth with details defined and true to pattern.

3.2 Driver & Surge Protection

The driver shall be mounted to facilitate easy removal for maintenance operations. All electrical connections shall be polarized and of plug-in design. The driver shall reliably start and operate the lamp in ambient temperatures down to minus

30 degrees. The terminal block shall be capable of accepting up to a #6 AWG wire.

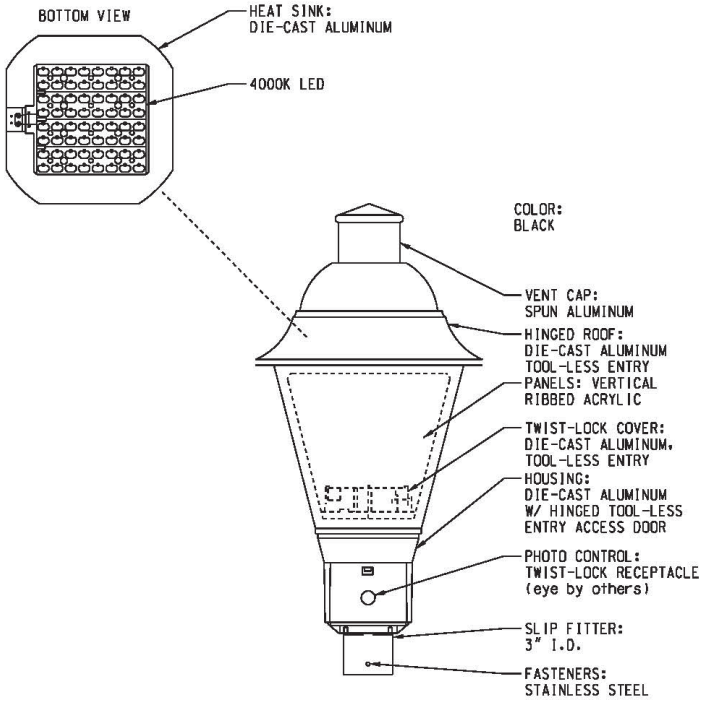
3.3 LED Color Temperature (CCT) and Rendering Index (CRI)
The Correlated Color Temperature (CCT) shall be a nominal Kelvin Temperature of 3000K.

3.4 Photoelectric Cell The photocell receptacle shall be mounted for easy access and maintenance. The photocell shall be of the NEMA twist-lock type.

3.5 Side refractor panels
The luminaire shall be equipped with acrylic or polycarbonate resin refractor panels, with spring loaded retainer clips to hold refractor panels.

3.6 Slip Fitter
The slip fitter shall have a nominal inside diameter of 3.375 inches +/- 0.25 and shall be secured to the lamp post tenon with three or four evenly spaced set screws. The slip fitter shall accommodate a tenon 3.0 inches long.

SPECIFICATIONS FOR STREETLIGHT HARDWARE



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRAFFIC ENGINEERING AND OPERATIONS

JANUARY 2025

WASHINGTON GLOBE DECORATIVE LED STYLE LUMINAIRE SEMI CUT-OFF HARD TOP

1) PURPOSE

The purpose of these specifications is to provide minimum requirements for the design, manufacture, finishing and delivery of the Washington Globe (hard top) LED luminaire. The Washington Globe is intended to be mounted on decorative pole as specified, along roadways throughout Montgomery County. Any manufacturer, distributor or vendor who submits bid shall agree with these specifications

2) DESCRIPTION

The luminaire shall be an outdoor decorative post top fixture, cylindrical in shape with an overall height between 42.5 +/- 2.0 inches and a overall width between 16.5 +/- 0.5 inches for the globe (see attached drawing). All exterior and structural parts shall consist of aluminum alloy or cast iron. Exterior castings shall be cast in one piece having a smooth surface finish and free of mold lines. A separate cover for a ballast drawer/tray is permitted if the ballast drawer cover is secured to the luminaire body with captive fasteners. All components shall fit together snugly and shall be fitted with continuous neoprene gaskets so as to weather proof joints between metal interfaces. Visible metal surfaces shall have raised decorations integrally molded in the base piece. All metal parts shall be corrosion resistant. The luminaire shall come ready for quick an easy field assembly or fully assembled:

Each luminaire shall include the following components:

1) LED Optical Assembly (Type III distribution)
2) 120 volt LED Driver
3) Twist lock type photocell installed on the metal body of the luminaire or ballast tray cover;
4) All necessary hardware and fasteners to assemble and secure on post tenon.

3) DESIGN CRITERIA

3.1) AASHTO Standards

The luminaire shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO), Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals" latest edition.

3.2) Wind Load

All components of the luminaire shall be designed to resist (at yield strength of the materials without permanent deflection or destruction), test loads equivalent to the calculated loads developed by the velocity pressure of at least an 80 MPH wind. A minimum safety factor of 1.82 on the yield strength shall be maintained.

4) GLOBE

The globe should be supplied as two pieces, chemically matching material as a unit and permanently sealed together with a chemical bonding process. The globe bottom shall be alabaster rippled and made of UV stabilized acrylic. The globe roof shall be of a spun aluminum design. The roof and bottom globe sections are secured in a slip-fit, 1/2" overlap design and providing a mechanical lock and enabling easy future replacement of either the roof or bottom globe section if required. The roof finish shall be polyester thermoset powdercoat. The globe shall be of a traditional "Washington Globe" (acorn) shape designed to achieve the photometric performance specified by Illumination Engineering Society (IES). The bottom surface of the globe shall interface closely with the metal body of the fixture so as to provide a weather, dust, and insect proof interface. The globe or its mounting ring shall be fastened with three or more recessed set screws to the body of the fixture.

5) DRIVER and SURGE PROTECTOR

The driver shall be mounted to facilitate easy removal for maintenance operations. The driver shall be equipped with a 10KV Surge Protection and suppression system. All electrical connections shall be polarized and of plug-in design. The driver shall be wired to receive 120 volt AC current. The driver shall reliably start and operate the lamp in ambient temperatures down to minus 30 degrees. The terminal block shall be capable of accepting up to a #6 AWG wire.

6) LED Color Temperature (CCT) and Rendering Index (CRI)

The Correlated Color Temperature (CCT) shall be a nominal Kelvin Temperature of 3000K ±200K with a minimum Color Rendering Index (CRI) of 70.

7) PHOTOCELL

The photocell shall be a twist-lock type or equal, mounted on the metal body of the luminaire or the cover of the ballast tray drawer.

8) METAL BODY

The body shall be cast in one piece and shall have raised surface decorations. The body shall taper smoothly between the slip fitter to the base of the globe. The body shall be

constructed with weep holes or channels to prevent rainwater from collecting at the top of the body.

9) SLIP FITTER

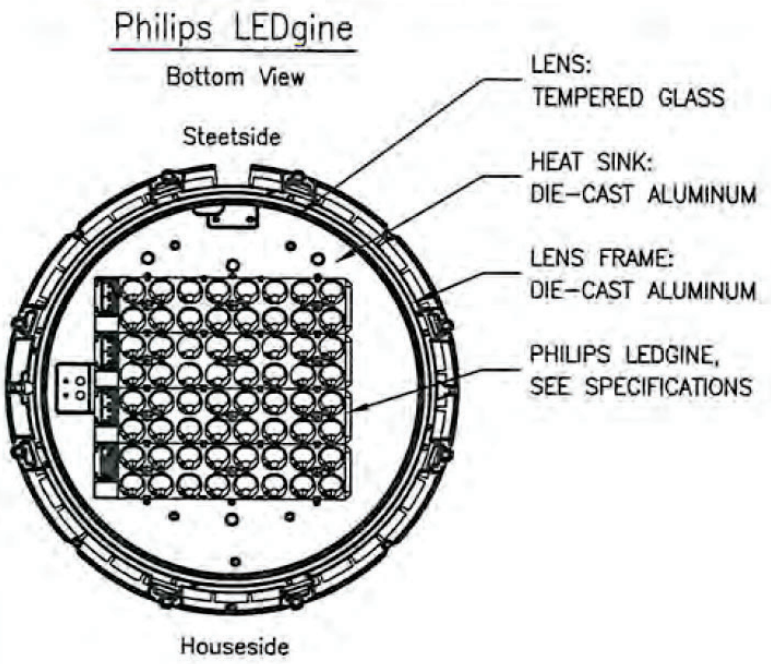
The slip fitter shall have a nominal inside diameter of 3.375 inches +/- 0.25 and shall be secured to the lamp post tenon with three of four evenly spaced set screws. The slip fitter shall accommodate a tenon 3.0 inches long.

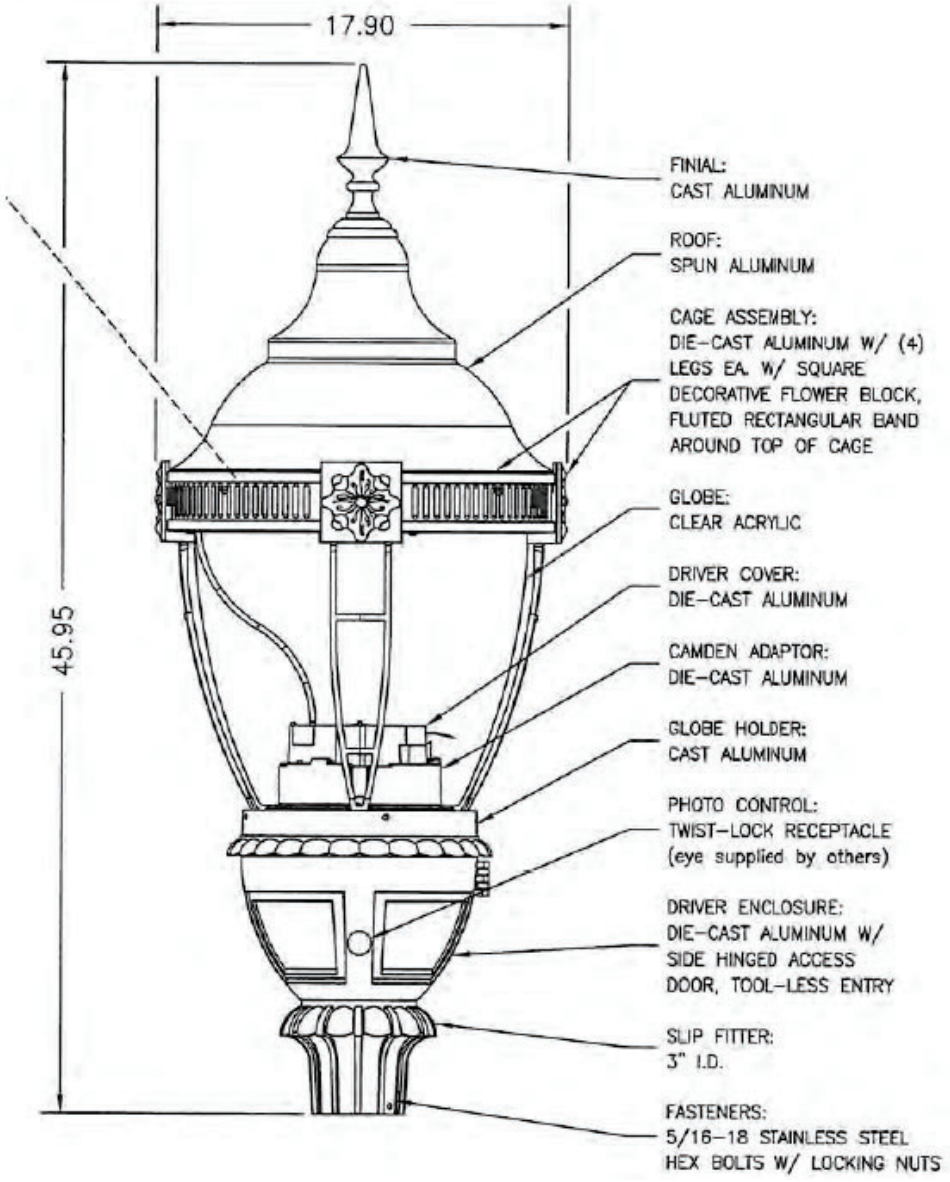
10) FINIAL

The finial shall be made of cast aluminum, and securely fastened to the top of the globe.

11) FINISH

The exterior surface of the finial and luminaire body shall be factory finished with a dark green electrostatically applied polyester powder coat. The color shall be “Federal Green”, federal color 595a, #14036.


Philips LEDgine
Bottom View
Steetside
Houseside
LENS:
TEMPERED GLASS
HEAT SINK:
DIE-CAST ALUMINUM
LENS FRAME:
DIE-CAST ALUMINUM
PHILIPS LEDGINE,
SEE SPECIFICATIONS


17.90
45.95
FINIAL:
CAST ALUMINUM
ROOF:
SPUN ALUMINUM
CAGE ASSEMBLY:
DIE-CAST ALUMINUM W/ (4)
LEGS EA. W/ SQUARE
DECORATIVE FLOWER BLOCK,
FLUTED RECTANGULAR BAND
AROUND TOP OF CAGE
GLOBE:
CLEAR ACRYLIC
DRIVER COVER:
DIE-CAST ALUMINUM
CAMDEN ADAPTOR:
DIE-CAST ALUMINUM
GLOBE HOLDER:
CAST ALUMINUM
PHOTO CONTROL:
TWIST-LOCK RECEPTACLE
(eye supplied by others)
DRIVER ENCLOSURE:
DIE-CAST ALUMINUM W/
SIDE HINGED ACCESS
DOOR, TOOL-LESS ENTRY
SLIP FITTER:
3" I.D.
FASTENERS:
5/16-18 STAINLESS STEEL
HEX BOLTS W/ LOCKING NUTS

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS
JANUARY 2025
DAMASCUS PEDESTRIAN LED LUMINAIRES
IN THE DAMASCUS COMMERCIAL AREA

1) PEDESTRIAN LUMINAIRE

1.1) Luminaire

The luminaire shall consist of a 413F, Low-Copper cast aluminum 0.090" thick spun aluminum. It shall be easy to access the lamp, and the hinged lens frame should be a cast aluminum with stainless steel spring latch for tool-less lamp access. This luminaire should also have a weatherproof ballast assembly that isolates the ballast from water and heat for longer life. All of the fasteners should be non-ferrous to prevent corrosion and ensure longer life. The entire fixture should be UL listed to U.S. Safety standards for wet location. This fixture should be manufactured to ISO 9001:2000 Standards. The entire assembly shall be U.L. or C.S.A. listed suitable for wet location.

1.2) LED Optical Assemble

The optical assembly shall consist of a injection molded acrylic optical plate with Type III distribution. The lens shall be clear tempered flat glass.

1.3) Driver & Surge Protection

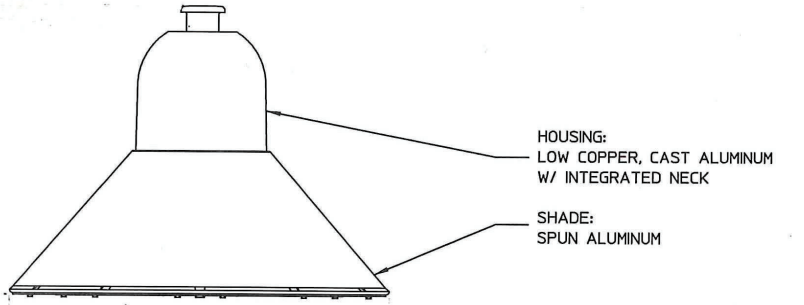
The driver shall be mounted to facilitate easy removal for maintenance operations. The driver shall reliably start and operate the lamp in ambient temperatures down to minus 30 degrees. The terminal block shall be capable of accepting up to a #6 AWG wire.

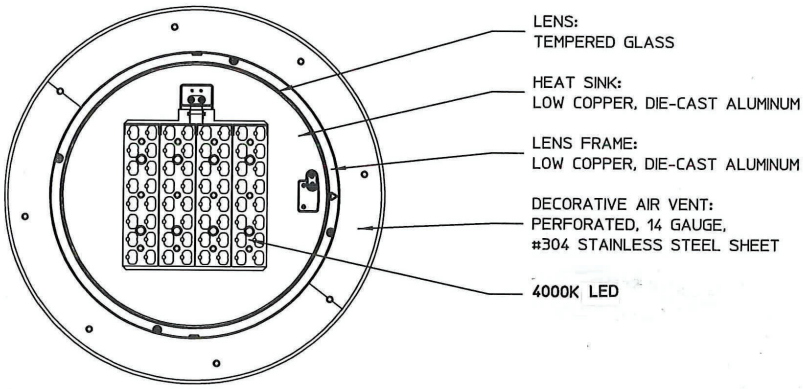
1.4) LED Color Temperature (CCT) and Rendering Index (CRI)

The Correlated Color Temperature (CCT) shall be a nominal Kelvin Temperature of 3000K.

1.5) Finish (exterior)

The exterior of the luminaire shall be finished in a hunter green custom color. The finish of the luminaire shall be Thermoset polyester powdercoat that is electrostatically applied after a five-stage conversion cleaning process and bonded by heat fusion thermosetting. This finish should be laboratory tested for superior weatherability and fade resistance in accordance with ASTM B-117-64 and NSI/ASTM G53-77 specifications.


HOUSING:
LOW COPPER, CAST ALUMINUM
W/ INTEGRATED NECK
SHADE:
SPUN ALUMINUM


LENS:
TEMPERED GLASS
HEAT SINK:
LOW COPPER, DIE-CAST ALUMINUM
LENS FRAME:
LOW COPPER, DIE-CAST ALUMINUM
DECORATIVE AIR VENT:
PERFORATED, 14 GAUGE,
#304 STAINLESS STEEL SHEET
4000K LED

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS
JANUARY 2025
DAMASCUS LED VEHICULAR LUMINAIRE,
IN THE COMMERCIAL AREA

1) DESCRIPTION

Each streetlight luminaire include the following:

a) Die-cast aluminum housing and drop style door;
b) LED Optical Assembly (Type III distribution);
c) NEMA 7-prong twist-lock standard photoelectric control receptacle on the top of the luminaire;
d) NEMA 7-prong twist-lock multi-volt standard photocell;
e) All necessary hardware required for mounting on bracket arm, as specified.

2) DESIGN CRITERIA

2.1) AASHTO Standards

The luminaire shall meet the requirements of AASHTO Standard, "Specification for Structural supports for Highway Signs, Luminaires and Traffic Signals," latest edition.

2.2) Shape and Minimum Size

a) The luminaire shall be of a rounded rectangular shape. The actual size may vary depending on specified wattage.
b) The luminaire shall be suitable to accommodate several LED Optical Assembly (Type III distribution) and associated LED driver.

2.3) Effective Projected Area (EPA)

The luminaire shall have a maximum estimated allowable EPA for luminaire of 0.7 SF.

2.4) Finish

The luminaire have a federal Brown polyester powder coat finish. During the finishing process, all critical openings shall be plugged to prevent contamination of the threads or reduction of other critical openings.

3) MATERIALS

3.1 Housing

The luminaire shall consist of a water tight housing fabricated from low copper die-cast aluminum housing, with die-cast aluminum drop-style doors. The drop-style doors shall be hinged on one side and secured on the opposite side with a captive stainless steel latch or captive stainless steel screw. All castings used to fabricate the luminaire housing shall be clean and smooth, with details defined and true to pattern. The housing shall be suitable to accommodate the LED Optical Assembly and LED driver.

3.2) LED Color Temperature (CCT) and Rendering Index (CRI)

The Correlated Color Temperature (CCT) shall be a nominal Kelvin Temperature

of 3000 K with a minimum Color Rendering Index (CRI) of 70

3.3) Driver & Surge Protection

The driver shall be mounted to facilitate easy removal for maintenance operations. The driver shall reliably start and operate the lamp in ambient temperatures down to minus 30 degrees. The terminal block shall be capable of accepting up to a #6 AWG wire.

3.4) Cooling System

The luminaire shall consist of a heat sink with no fans, pumps, or liquids, and shall have wide angular fin in design to be resistant debris buildup that may degrade thermal dissipation performance.

3.5) Photoelectric Cell

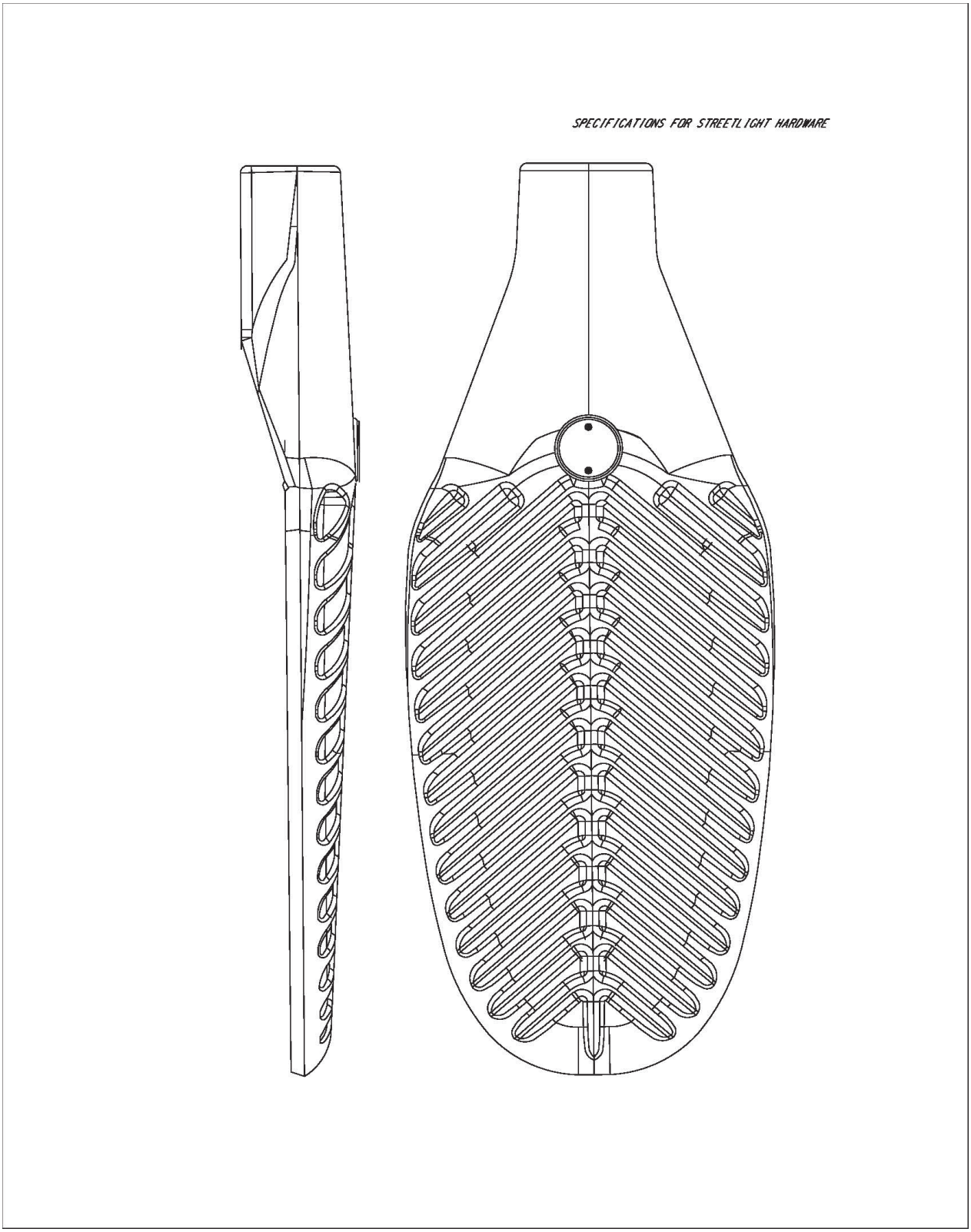
The luminaire photocell receptacle shall be mounted on the die-cast aluminum housing. The photocell shall be of the 7-prong NEMA twist-lock type.

3.6) Optical System

The luminaire shall contain a precision designed injection molded acrylic optic plate and LED chamber, with a type III distribution pattern. The LED optical system compartment shall be IP 66 rated.

3.7) Mounting Bracket Arm

The luminaire shall be able to be mounted on bracket arms with 1 ½ or 2 inch slipfitter tenons. This may include two (2) or four (4) bolt slipfitter bracket assemblies with vertical tilt adjustment range of ± 5%. The mounting bracket area shall be protected with a bird-guard type gasket.


SPECIFICATIONS FOR STREETLIGHT HARDWARE

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS
JANUARY 2025
ROADWAY (PENDANT), LED OPTICS,
STYLE LUMINAIRE WITH TYPE III DISTRIBUTION

1) DESCRIPTION

Each streetlight luminaire include the following:

a) Die-cast aluminum housing and drop style door;
b) LED Optical Assembly (Type III distribution);
c) NEMA 7-prong twist-lock standard photoelectric control receptacle on the top of the luminaire;
d) NEMA 7-prong twist-lock multi-volt standard photocell;
e) All necessary hardware required for mounting on bracket arm, as specified.

2) DESIGN CRITERIA

2.1) AASHTO Standards

The luminaire shall meet the requirements of AASHTO Standard, "Specification for Structural supports for Highway Signs, Luminaires and Traffic Signals," latest edition.

2.2) Shape and Minimum Size

a) The luminaire shall be of a rounded rectangular shape. The actual size may vary depending on specified wattage.
b) The luminaire shall be suitable to accommodate several LED Optical Assembly (Type III distribution) and associated LED driver.

2.3) Effective Projected Area (EPA)

The luminaire shall have a maximum estimated allowable EPA for luminaire of 0.7 square feet.

2.4) Finish

The luminaire have a gray polyester powder coat finish. During the finishing process, all critical openings shall be plugged to prevent contamination of the threads or reduction of other critical openings.

3) MATERIALS

3.1 Housing

The luminaire shall consist of a water tight housing fabricated from low copper die-cast aluminum housing, with die-cast aluminum drop-style doors. The drop-style doors shall be hinged on one side and secured on the opposite side with a captive stainless steel latch or captive stainless steel screw. All castings used to fabricate the luminaire housing shall be clean and smooth, with details defined and true to pattern. The housing shall be suitable to accommodate the LED Optical Assembly and LED driver.

3.2) LED Color Temperature (CCT) and Rendering Index (CRI)

The Correlated Color Temperature (CCT) shall be a nominal Kelvin Temperature of 3000K with a minimum Color Rendering Index (CRI) of 70

3.3) Driver & Surge Protection

The driver shall be mounted to facilitate easy removal for maintenance operations and replacement. The driver shall reliably start and operate the lamp in ambient temperatures down to minus 30 degrees. The terminal block shall be capable of accepting up to a #6 AWG wire.

3.4) Cooling System

The luminaire shall consist of a heat sink with no fans, pumps, or liquids, and shall have wide angular fin in design to be resistant debris buildup that may degrade thermal dissipation performance.

3.5) Photoelectric Cell

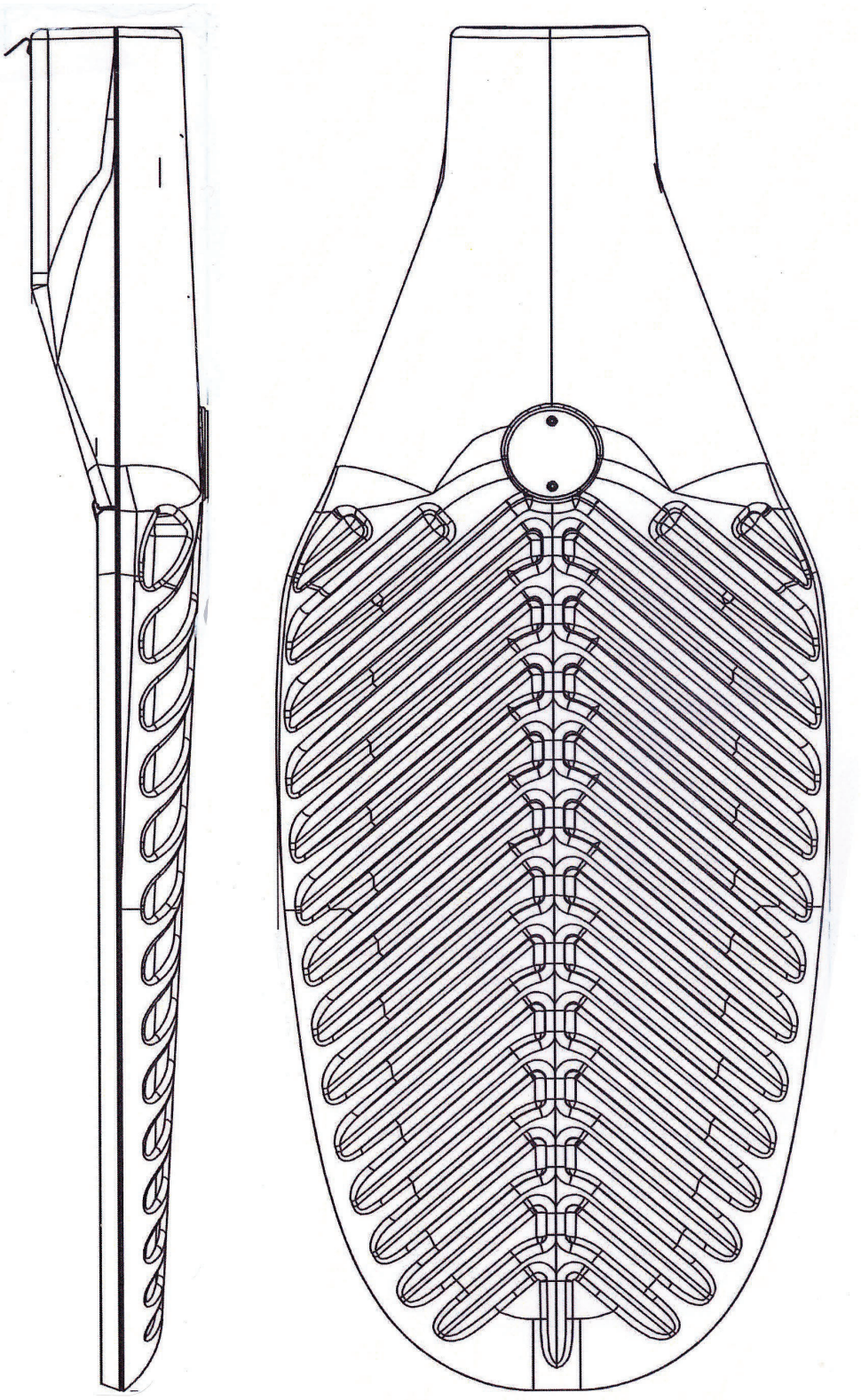
The luminaire photocell receptacle shall be mounted on the die-cast aluminum housing. The photocell shall be of the 7-prong NEMA twist-lock type.

3.6) Optical System

The luminaire shall contain a precision designed injection molded acrylic optic plate and LED chamber, with a type III distribution pattern. The LED optical system compartment shall be IP 66 rated.

3.7) Mounting Bracket Arm

The luminaire shall be able to be mounted on bracket arms with 1 ½ or 2 inch slipfitter tenons. This may include two (2) or four (4) bolt slipfitter bracket assemblies with vertical tilt adjustment range of +/- 5%. The mounting bracket area shall be protected with a bird-guard type gasket.



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS
JANUARY 2025
RECTILINEAR, BRONZE-COLORED, LED OPTICS
FLAT GLASS WITH TYPE III, LUMINAIRES

1) DESCRIPTION

Each street light luminaire include the following.

a) Die-cast aluminum housing and drop style door;
b) NEMA standard photoelectric control receptacle on the top cover of the luminaire with NEMA 7-prong twist-lock multi-volt photocell;
c) All necessary hardware for side mounting on specified pole;
d) Side-mounting bracket are eight (8) to twelve (12) inches long and rectangular in cross section as specified under quantities required;
e) Flat, hard tempered glass lens;
f) Finish color shall be "National Park Service Brown", as per attachment entitled "Finishing Galvanized Steel and Aluminum Metals."

2) DESIGN CRITERIA

2.1) AASHTO Standards

The luminaire shall meet the requirements of AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals," latest edition.

2.2 Shape and Minimum Size

The luminaire shall be rectangular in shape. The actual size may vary depending on specified wattage. The maximum allowable Effective Projected Area (EPA) for the luminaire and bracket arm shall be three 0.7 or less square feet.
The luminaire shall be of a suitable size to accommodate either a 150 watt or 250 watt high pressure sodium vapor (HPSV) equivalent LED optical assembly, type III distribution and associated driver.

2.3 Wind Load

All components of the luminaires shall be designed to resist (at yield strength of the materials without permanent deflection or destruction), test loads equivalent to the calculated loads developed by the velocity pressure of at least an 80 MPH wind. A minimum safety factor of 1.82 on the yield strength shall be maintained.

2.4 Finish

All Visible components shall be finished to produce the appearance of a decorative "National Park Service Brown" color, as described in the attachment entitled "Finishing Galvanized Steel and Aluminum Metals." During the finishing process, all critical openings shall be plugged to prevent contamination of the threads or reduction of critical openings.
Other finishing techniques may be considered by Montgomery County. Complete

documentation and specifications for any alternate finish must be submitted with the bid documents together with the results of an accelerated life-testing by an independent laboratory which certifies a minimum expected life of the alternate finish of twenty (20) years.

3) MATERIALS

3.1) Design Uniformity

These specifications are intended to produce a uniform system of hardware that will minimize the number of stock items that the County or its contractor(s) must maintain.

3.2) Housing

The housing shall consist of a water tight shell fabricated with either welded, overlapped seams, or with extrusions sealed with silicon seals. Cast aluminum door frames, to hold the flat tempered prismatic glass lens or a cover concealing the driver, shall be affixed to the housing with full length aluminum piano hinges incorporating removable stainless steel hinge pins. All doors shall be fully gasketed with closed cell or solid neoprene gaskets. All doors shall be held closed with two quarter-turn captive fasteners and shall be restrained by captive stainless steel or brass chains.

3.3) Material

The luminaire housing shall be constructed of cast, extruded or 0.051 inch minimum sheet aluminum.

3.4) Castings

All castings used to complete the luminaire shall be clean and smooth with all details well defined and true to pattern.

3.5) Driver & Surge Protection

The driver shall be mounted to facilitate easy removal and maintenance operations and replacement. All electrical connections shall be polarized and of plug-in design. The driver shall reliably start and operate the lamp in ambient temperature down to minus 22 degrees Celsius. The terminal block shall be capable of accepting up to a #6 AWG wire. The assembly shall be completely accessible and removable without requiring access through the reflector assembly.

3.6) Cooling System

The luminaire shall include a heat sink with no fans, pumps, or liquids, and shall have wide angular fin to resist debris buildup that may degrade thermal dissipation performance.

3.7) Optical System

The luminaire shall contain a precision designed injection molded acrylic optic plate and LED chamber, with type III distribution pattern. The LED optical system compartment shall have minimum IP66 rating.

3.8) Photoelectric Cell

The photoelectric cell shall be of the 7-prong NEMA twist-lock type and shall be mounted in the top of the luminaire housing.

3.9) Mounting Bracket Arm

The bracket shall consist of an extruded rectangular aluminum section, 8.0 to 12.0 inches in length and long enough to permit mounting two luminaires at a 90° angle on any of the following types of poles:

a) The "Tall-Post Streetlight Pole" with an approximate diameter of 3.5 inches at a nominal 25 +/- feet mounting height (drawing attached)

b) A traffic signal pole with an approximate diameter of 9.5 inches at a 25 +/- feet mounting height.

c) A traffic signal pole with an approximate diameter of 5.25 inches at a 25 +/- feet mounting height.

d) A square tapered pole with an approximate dimension of 4.5 inches at a 25 +/- feet street light mounting height. Predrilled mounting bolt holes in poles are 9/16 inches large and 3.0 inches between centers. A 3/4 inch hole for wires is located between the bolt holes.

e) A rectangular tapered wood pole with approximate dimensions of 5 inches x 6 inches at a 25 +/- feet mounting height.

f) A square and dovetail pole at approximate height of 30 feet.

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS
JANUARY 2025
SILVER SPRING DECORATIVE PEDESTRIAN,
LED SHALLOW DROP STYLE LUMINAIRE

1) DESCRIPTION

The luminaire shall be an outdoor decorative fixture, cylindrical in shape with an overall height of 25 5/8 inches and an overall width of 14 ½ inches for the globe (see attached drawing). All exterior and structural parts shall consist of cast aluminum alloy. Exterior castings shall be cast in three pieces having a smooth surface finish and free of mold lines. A separate section for the driver is permitted if the driver casting is secured to the luminaire body with stainless steel captive fasteners. All components shall fit together snugly and shall be fitted with continuous neoprene gaskets so as to weatherproof the joints between metal interfaces. Visible metal surfaces shall be integrally molded as to appear to be a single unit. All metal parts shall be corrosion resistant. The luminaire shall come ready for quick and easy field assembly or be fully assembled and include the following components:

Each luminaire shall include the following:

1) LED Optical Assembly (Type III distribution);
2) NEMA twist-lock type photocell installed on the metal body of the decorative post;
3) Shallow Drop globe
4) All necessary hardware and fasteners to assemble and secure the luminaire onto the post arm.

2) DESIGN CRITERIA

2.1) AASHTO Standards

The luminaire shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO), "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals," latest edition.

2.2 Wind Load

All components of the luminaire shall be designed to resist (at yield strength of the materials without permanent deflection or destruction), test loads equivalent to the calculated loads developed by the velocity pressure of at least an 80 MPH wind. A minimum safety factor of 1.82 on the yield strength shall be maintained.

3) GLOBE

The globe shall be of a Shallow Drop (teardrop) shape, thermal resistant borosilicate glass or Acrylic that controls the light, and provide an IES Type III cutoff distribution. The combination of shallow lens and LED panel shall maximize efficiency and uniformity of illumination while controlling the luminaire brightness. The entire globe

shall be luminous with shielding of the top section. The top surface of the globe shall interface closely with the metal body of the fixture so as to provide a weather, dust, and insect proof protection.

4) DRIVER and SURGE PROTECTOR
The driver shall be mounted to facilitate easy removal for maintenance operations. The driver shall reliably start and operate the lamp in ambient temperatures down to minus 30 degrees. The terminal block shall be capable of accepting up to a #6 AWG wire.

5) LED Color Temperature (CCT) and Rendering Index (CRI)
The Correlated Color Temperature (CCT) shall be a nominal Kelvin Temperature of 3000K with a minimum Color Rendering Index (CRI) of 70

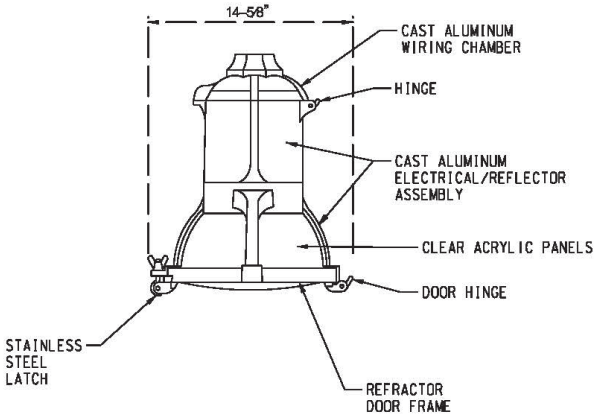
6) PHOTOCELL
The photocell shall be a NEMA twist-lock type or equal, mounted on the metal body of the decorative post.

7) METAL BODY
The body shall be cast in two pieces and shall have raised surface ridges. The body shall taper smoothly from the slip fitter to the top of the globe. The body shall be constructed to prevent rainwater collecting on the body.

8) TOP ENTRY THREADED SLIPFITTER
The top entry threaded slipfitter shall have a nominal inside diameter of 1 ½ inches and shall be secured to the pole slipfitter with three or four evenly spaced setscrews or approved top mounting equivalence.

9) FINISH
The exterior surface of the luminaire body shall be factory finished with a dark green electrostatically applied polyester powder coat. The color shall be “Federal Green”, federal color 595B, #14036

SPECIFICATIONS FOR STREETLIGHT HARDWARE



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS
JANUARY 2025
DECORATIVE, SILVER SPRING VEHICULAR
LED SHALLOW DROP STYLE LUMINAIRE

1) DESCRIPTION

The luminaire shall be an outdoor decorative fixture, cylindrical in shape with an overall height of 30 inches ± and an overall width of 16 5/8 inches for the globe (see attached drawing). All exterior and structural parts shall consist of cast aluminum alloy. Exterior castings shall be cast in three pieces having a smooth surface finish and free of mold lines. A separate section for the driver is permitted if the driver casting is secured to the luminaire body with captive fasteners. All components shall fit together snugly and shall be fitted with continuous neoprene gaskets so as to weatherproof the joints between metal interfaces. Visible metal surfaces shall be integrally molded as to appear to be a single unit. All metal parts shall be corrosion resistant. The luminaire shall come ready for quick and easy field assembly or be fully assembled and include the following components:

Each luminaire shall include the following:

1) LED Optical Assembly (Type III distribution);
2) 120 volt LED Driver;
3) NEMA twist-lock type photocell installed on the metal body of the decorative post;
4) Shallow Drop globe
5) All necessary hardware and fasteners to assemble and secure the luminaire onto the post arm.

2) DESIGN CRITERIA

2.1) AASHTO Standards

The luminaire shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO), "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals," latest edition.

2.2 Wind Load

All components of the luminaire shall be designed to resist (at yield strength of the materials without permanent deflection or destruction), test loads equivalent to the calculated loads developed by the velocity pressure of at least an 80 MPH wind. A minimum safety factor of 1.82 on the yield strength shall be maintained.

3) GLOBE

The globe shall be of a Shallow Drop (teardrop) shape, thermal resistant borosilicate

glass or Acrylic that controls the light, and provide an IES Type III cutoff distribution. The combination of shallow lens and LED panel shall maximize efficiency and uniformity of illumination while controlling the luminaire brightness. The entire globe shall be luminous with shielding of the top section. The top surface of the globe shall interface closely with the metal body of the fixture so as to provide a weather, dust, and insect proof protection.

4) DRIVER and SURGE PROTECTOR
The driver shall be mounted to facilitate easy removal for maintenance operations. The driver shall reliably start and operate the lamp in ambient temperatures down to minus 30 degrees. The terminal block shall be capable of accepting up to a #6 AWG wire.

5) LED Color Temperature (CCT) and Rendering Index (CRI)
The Correlated Color Temperature (CCT) shall be a nominal Kelvin Temperature of 3000K with a minimum Color Rendering Index (CRI) of 70

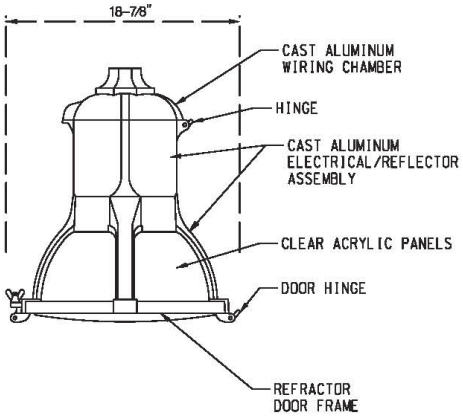
6) PHOTOCELL
The photocell shall be a NEMA twist-lock type or equal, mounted on the metal body of the decorative pendant post.

7) METAL BODY
The body shall be cast in two pieces and shall have raised surface ridges. The body shall taper smoothly from the slip fitter to the top of the globe. The body shall be constructed to prevent rainwater collecting on the luminaire.

8) TOP ENTRY THREADED SLIPFITTER
The top entry threaded slipfitter shall have a nominal inside diameter of 1 ½ inches +/- 0.05 inches and shall be secured to the pole slipfitter with three or four evenly spaced setscrews or approved top mounting equivalence.

9) FINISH
The exterior surface of the luminaire body shall be factory finished with a dark green electrostatically applied polyester powder coat. The color shall be “Federal Green”, federal color 595B, #14036

SPECIFICATIONS FOR STREETLIGHT HARDWARE



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS
JANUARY 2025
WHEATON DECORATIVE LED PEDESTRIAN LUMINAIRE

1) DESCRIPTION

The U.L. approved luminaire is round in shape, has four "PILLARS" to support the top of the fixture and 21 inches (+/- one inch) in diameter, designed to be used as an outdoor streetlight. The luminaire shall provide a Type III distribution.

Each luminaire shall include the following:

- **a)** LED Optical Assembly (Type III distribution);
- **b)** Finish color shall match semi-gloss black thermosetting, polyester powder coating.;
- **c)** Heavy duty cast aluminum fitter assembly which supports the optical assembly;
- **d)** Button type photoelectric cell to be installed in the base of the luminaire fixture (see attached detail).
- **e)** All necessary hardware required for mounting on Wheaton Pedestrian poles

The luminaire must be of suitable size to accommodate a LED equivalent) array and driver.

2) OPTICAL ASSEMBLY

The optical assembly shall consist of high precision refractive lenses mounted above the LED emitter arrays in such a way to achieve optimum uplight control. The lenses shall also control horizontal light distribution patterns are achieved. The optical assembly shall support finished with high temperature gloss black oven cured enamel. The assembly shall be secured to the luminaire with the four pillars.

3) HOUSING

The housing shall consist of heavy grade A319 cast aluminum. The main body, or capital, acts as an enclosure for the driver assembly and is of adequate thickness so as to give sufficient structural rigidity. The capital shall have an opening at the base of the tenon body to allow the luminaire to be mounted to a tenon of 3-1/2" maximum diameter.

4) DRIVER & SURGE PROTECTION

The driver shall be mounted to facilitate easy removal for maintenance operations. The driver shall reliably start and operate the lamp in ambient temperatures down to minus 30 degrees. The terminal block shall be capable of accepting up to a #6 AWG wire.

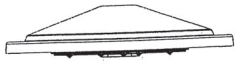
5) LED COLOR TEMPERATURE (CCT) & RENDERING INDEX (CRI)P

The Correlated Color Temperature (CCT) shall be a nominal Kelvin Temperature of

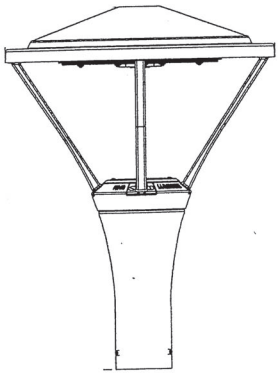
3000K with a minimum Color Rendering Index (CRI) of 70.

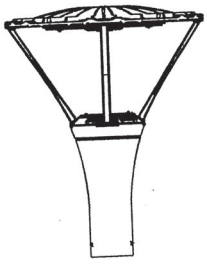
6) PHOTOELECTRIC CELL
The photocell shall be a "U.L. approved" twist-lock type or equal. The photoelectric cell shall be located in the base of the luminaire fixture. (See attached detail.)

7) CORROSION PROTECTION
The complete luminaire assembly must be U.L. listed as "Suitable for Wet Locations." The U.L. listing number shall be submitted with the bid. All exposed metal parts of the luminaire shall be protected against corrosive environments by alkaline cleaning, zinc phosphate pretreatment and Triglycidyl Isocyanurate polyester powder paint.



PYRAMID





4 STRUT

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS
JANUARY 2025
WHEATON DECORATIVE LED OPTICS VEHICULAR LUMINAIRE

1) DESCRIPTION

Each streetlight luminaire include the following:

a) Die-cast aluminum housing and drop style door;
b) LED Optical Assembly (Type III distribution);
c) NEMA 7-prong twist-lock standard photoelectric control receptacle on the top of the luminaire;
d) NEMA 7-prong twist-lock multi-volt standard photocell;
e) All necessary hardware required for mounting on bracket arm, as specified.

2) DESIGN CRITERIA

2.1) AASHTO Standards

The luminaire shall meet the requirements of AASHTO Standard, "Specification for Structural supports for Highway Signs, Luminaires and Traffic Signals," latest edition.

2.2) Shape and Minimum Size

- The luminaire shall be of a rounded rectangular shape. The actual luminaire size may vary depending on the specified wattage.
- The luminaire shall be suitable to accommodate several LED Optical Assembly (Type III distribution) and associated LED driver.

2.3) Effective Projected Area (EPA)

The luminaire shall have a maximum estimated allowable EPA for luminaire of 0.7 SF.

2.4) Finish

The luminaire have a Gloss Black polyester powder coat finish. During the finishing process, all critical openings shall be plugged to prevent contamination of the threads or reduction of other critical openings.

3) MATERIALS

3.1 Housing

The luminaire shall consist of a water tight housing fabricated from low copper die-cast aluminum housing, with die-cast aluminum drop-style doors. The drop-style doors shall be hinged on one side and secured on the opposite side with a captive stainless steel latch or captive stainless steel screw. All castings used to fabricate the luminaire housing shall be clean and smooth, with details defined and true to pattern. The housing shall be suitable to accommodate the LED Optical Assembly and LED driver.

3.2) LED Color Temperature (CCT) and Rendering Index (CRI)

The Correlated Color Temperature (CCT) shall be a nominal Kelvin Temperature of 3000K with a minimum Color Rendering Index (CRI) of 70.

3.3) Driver & Surge Protection

The driver shall be mounted to facilitate easy removal for maintenance operations. The driver shall be equipped with a 10KV Surge Protection and suppression system. All electrical connections shall be polarized and of plug-in design. The driver shall be wired to receive 120 volt AC current. The driver shall reliably start and operate the lamp in ambient temperatures down to minus 30 degrees. The terminal block shall be capable of accepting up to a #6 AWG wire.

3.4) Cooling System

The luminaire shall consist of a heat sink with no fans, pumps, or liquids, and shall have wide angular fin in design to be resistant debris buildup that may degrade thermal dissipation performance.

3.5) Photoelectric Cell

The luminaire photocell receptacle shall be mounted on the die-cast aluminum housing. The photocell shall be of the 7-prong NEMA twist-lock type.

3.6) Optical System

The luminaire shall contain a precision designed injection molded acrylic optic plate and LED chamber, with a type III distribution pattern. The LED optical system compartment shall be IP 66 rated.

3.7) Mounting Bracket Arm

The luminaire shall be able to be mounted on bracket arms with 1 ½ or 2 inch slipfitter tenons. This may include two (2) or four (4) bolt slipfitter bracket assemblies with vertical tilt adjustment range of +/- 5%. The mounting bracket area shall be protected with a bird-guard type gasket.

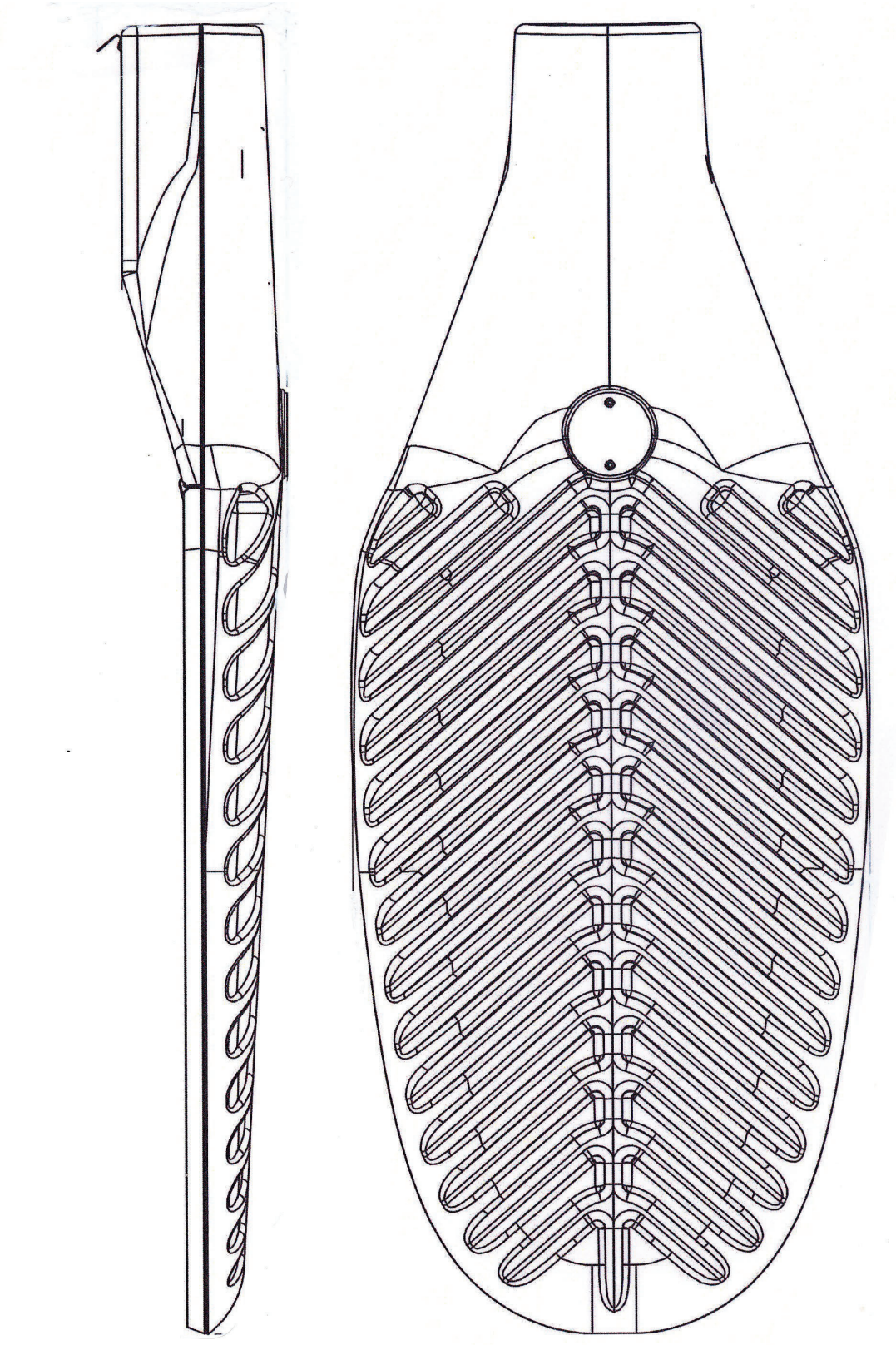


Table A

LED Luminaire Type & Ordering Information	HPS Wattage	LED Equivalent Wattage	Lumens per Watt	Initial Lumen Output	% Lumen Output at 100,000 Hours	IP	No. of Pin	BUG	CRI	EPA SF	Approx. Size Inches	Approx Weight Lbs
Cobrahead												
General Electric ERL1004C530AGRAYAIRX	70 W	31	126	3,900	91.00%	66	7	B1-U0-G1	70	0.5	14" x 22"	12.5
Cobrahead												
General Electric ERL1005C530AGRAYAIRX	100 W	39	126	4,900	91.00%	66	7	B1-U0-G2	70	0.5	14" x 22"	12.5
Cobrahead,												
General Electric ERL1008C530AGRAYAIRX	150 W	71	110	7,800	84.00%	66	7	B1-U0-G2	70	0.5	14" x 22"	12.5
Cobrahead												
General Electric ERL1014C530AGRAYAIRX	250 W	122	110	13,400	88.00%	66	7	B2-U0-G3	70	0.5	14" x 22"	12.5
Colonial												
American Electric Lighting 247LP102MVOLT30KR3AYBKPR7SCCPCL	70 W	30	107	3,209	70.00%	66	7	B1-U3-G1	70	1.6	17" x 24"	36
Colonial												
American Electric Lighting 247LP151MVOLT30KR3AYBKPR7SCCPCL L	100 W	50	121	3,616	70.00%	66	7	B1-U3-G1	70	1.6	17" x 24"	36
Colonial												
American Electric Lighting 247LP155MVOLT30KR3AYBKPR7SCCPCL	150 W	70	99	6,954	70.00%	66	7	B1-U3-G1	70	1.6	17" x 24"	36
Rectilinear												
General Electric EALS040C3AW730NDD1DKBZR	100 W	46	163	7,480	90.56%	70	7	B2-U0-G2	70	0.54	15" x 26"	27
Rectilinear												
General Electric EALS040D3AW730NDD1DKBZR	150 W	63	158	9,980	90.56%	70	7	B2-U0-G2	70	0.54	15" x 26"	27
Rectilinear												
General Electric EALS040F3AW730NDD1DKBZR	250 W	93	161	14,960	90.56%	70	7	B2-U0-G2	70	0.54	15" x 26"	27
Washington Globe												
Hadco C14119N-FED GREEN, C14119M-BLACK	70 W	35	101	3,540	88.00%	66	7	B1--U3-G1	75	1.7	46" x 18"	37
Washington Globe												
Hadco C14119U-FED GREEN, C14119R-BLACK	100 W	69	102	7,040	88.00%	66	7	B1-U3-G2	75	1.7	46" x18"	37
Washington Globe												
Hadco C14119V-FED GREEN, C14119S-BLACK	150 W	106	97	10,280	88.00%	66	7	B2-U3-G2	75	1.7	46" x 18"	37
Washington Globe												
Hadco C14119W-FED GREEN, C14119T-BLACK	250 W	137	92	12,600	88.00%	66	7	B2-U4-G2	75	1.7	46" x 18"	37
Teardrop-Pedestrian												
HOLOPHANE ESPL2P4030KMVOLTSG3QSMRAL6009SD	175 W	77	102	7,871	74.00%	66	7	B2-U3-G3	70	1.43	14" x 19"	39
Teardrop-Vehicular												
HOLOPHANE ESL2P30S30KMVOLTSG3QSMRAL6009SD	250 W	118	107	12,681	75.00%	66	7	B2-U3-G3	70	2.37	19" x 24"	60
Damascus Ped Lights												
C10078-DWG01		70	103	7,240	70.00%	66	7	B1-U0-G2	75	0.93	16" x 21"	21
Damascus Highlights												
ERL1008C530AXXXL-FEDERAL BROWN 595B-20040	150 W	59	129	7,600	70.00%	66	7	B1-U0-G2	70	0.5	22" x 14"	12
Bethesda Globe												
HOLOPHANE WFCL3P3030KMVOLTFC3RAL600SDCRSKPR7L03		59	115	6,759	79.00%	65	7	B1-U0-G2	70	1.72	19" x 42"	53
Contemporary Post Top												
King Luminaire K582-P4FL-III-40(SSL)-8060-120V-4-PS-NRPR7-3K-TXBLACK	100W	40	117	4,680	87.58%	66	7	B1-U0-G1	70	0.52	20" x 27"	37