LED REQUIREMENTS

A. CORRELATED COLOR TEMPERATURE (CCT) 3000K. ACCEPTABLE LM80 TEST RESULTS SHALL BE PROVIDED.

B. COLOR RENDERING INDEX (CRI) MINIMUM 70

C. OPERATING ENVIRONMENT, AMBIENT -40°C TO +40°C (-40°F TO 104°F)

D. VOLTAGE 480 VOLT

E. COOLING SYSTEM
   PASSIVE HEAT SINK WITH NO FANS, PUMPS, OR LIQUIDS, AND SHALL BE RESISTANT TO DEBRIS BUILD-UP THAT DOES NOT DEGRADE HEAT DISSIPATION PERFORMANCE.

APPLICATION

DESIGNER NOTE:

1) NEW INSTALLATION OF UNDERPASS STYLE LUMINAIRES ON NEWLY CONSTRUCTED SUPPORTS WHERE SPACING HAS BEEN DESIGNED SPECIFICALLY FOR THE LUMINAIRE. STREET LIGHT DESIGNS USING PHOTOMETRIC SOFTWARE ARE REQUIRED FOR EACH LUMINAIRE. THE DESIGNER SHALL COMPLY WITH IESNA RP-08 (latest version).

2) REPLACING EXISTING HID UNDERPASS LUMINAIRES ON EXISTING SUPPORTS WHERE SPACING REMAINS UNCHANGED.

HOUSING


LED POWER SUPPLY / DRIVER

A) POWER FACTOR, MINIMUM 0.90

B) DRIVER OUTPUT CURRENT, mA VARIABLE

C) DIMMING SIGNAL, CONTROL RANGE, VDC 0 TO 10

D) SURGE PROTECTION DEVICE SHALL COMPLY WITH ANSI C136.37, ANSI/IEEE C62.41.2. EACH SURGE PROTECTION DEVICE SHALL BE INTERNALLY MOUNTED INSIDE HOUSING AND SPECIFIED FOR 480V OPERATION WITH A MINIMUM 10KV/5KA SURGE PROTECTION. THE SURGE PROTECTION DEVICE SHALL BE UL 1449 3RD EDITION TYPE 4 RECOGNIZED COMPONENT FOR USE IN TYPE 2 LOCATIONS.

E) LED DRIVER SHALL BE MOUNTED INSIDE THE HOUSING, REPLACEABLE, AND SHALL BE PRE-WIRED TO 480V READY FOR INSTALLATION. DRIVER AND LED ARRAYS SHALL BE DESIGNED FOR MULTI-CURRENT INPUT OPERATIONS WITH 0-10V DRIVER ADJUSTABLE OUTPUT. THE LED DRIVER SHALL COMPLY WITH FCC RULES AND REGULATIONS, TITLE 47 CFR PART 15 NON-CONSUMER (CLASS A). LED DRIVER SHALL TOLERATE SUSTAINED OPEN CIRCUIT AND SHORT CIRCUIT OUTPUT CONDITIONS WITHOUT DAMAGE. LED DRIVER SHALL HAVE AN INDEPENDENTLY VERIFIED AND DOCUMENTED FAILURE RATE OF ≤ 0.01% PER 1000 HOURS. WIRING INSIDE THE HOUSING SHALL COMPLY WITH 600V/105°C RATING OR HIGHER. THE LED DRIVER SHALL HAVE A “CLASS A” SOUND RATING. POWER SUPPLY/DRIVER SHALL BE UL RECOGNIZED FOR DRY AND DAMP LOCATIONS. ALL OTHER ELECTRICAL COMPONENTS SHALL BE UL LISTED OR RECOGNIZED FOR WET LOCATIONS. OUTPUT OPERATING FREQUENCY MUST BE > 120HZ AND INPUT OPERATING FREQUENCY OF 60 HZ. THE LED DRIVER SHALL BE RoHS CONFORMANT.
LED MODULE / ARRAY REQUIREMENTS

LED MODULE(S)/ARRAY(S) SHALL DELIVER A MINIMUM OF 70% OF INITIAL LUMENS WHEN INSTALLED FOR 100,000 HOURS AND MEET L70 STANDARDS. LIGHTING DISTRIBUTION SHALL BE IN ACCORDANCE WITH "IESNA LIGHTING DISTRIBUTIONS". LAMP LUMEN DEPRECIATION FACTOR SHALL BE SUPPORTED BY TM-21 DATA @ 25°C FOR 50,000 HOURS. LUMINAIRE DIRT DEPRECIATION(LDD) SHALL BE 0.90 FOR GLASS OPTICS. IT IS THE RESPONSIBILITY OF EACH MANUFACTURER TO PROVIDE A CALCULATION OF LAMP LUMEN DEPRECIATION(LLD). LIGHT LOSS FACTOR USED IN PHOTOMETRIC LAYOUT CALCULATIONS SHALL BE THE PRODUCT OF LDD AND THE MANUFACTURER'S PROJECTED LAMP LUMEN DEPRECIATION AT 100,000 HOURS AT 25°C AMBIENT TEMPERATURE. LUMEN MAINTENANCE SHALL BE A MINIMUM OF 70% OVER 100,000 HOURS OF LIFE WHEN OPERATING AT TEMPERATURES OF 40°C (104°F) OR LESS. THE LUMINAIRE SHALL CONTINUE TO OPERATE AND MAINTAIN THE MINIMUM OPTICAL PERFORMANCE CRITERIA FOR THE PARTICULAR APPLICATION IN WHICH IT IS INSTALLED. OPTICAL SYSTEM COMPONENTS SHALL BE RATED AT IP66 TO PROTECT AGAINST WATER, DIRT, AND INSECT INFILTRATION, AND BE RoHS COMPLIANT. LUMINAIRE CIRCUITRY SHALL INCLUDE QUICK CONNECT/DISCONNECT FOR EASY SEPARATION. SEE FIGURE 1.

THE MINIMUM OPTICAL PERFORMANCE IS DEFINED BY THE APPLICATION INSTALLATION IN CONJUNCTION WITH THE "CITY OF COLUMBUS, DIVISION OF POWER GUIDELINES FOR STREET LIGHTING CIRCUIT LAYOUT".

LED DRIVER

SURGE PROTECTOR

TERMINAL BLOCK

SURFACE MOUNTING BRACKETS (IF REQUIRED)

RACEWAY COVER

HOUSING ASSEMBLY

FIGURE 1
FOR REFERENCE ONLY

MIS-202
STREET LIGHT LUMINAIRE
LED UNDERPASS STYLE

DEPARTMENT OF PUBLIC UTILITIES - DIVISION OF POWER
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WARRANTY

THE WARRANTY SHALL PROVIDE FOR THE FULL REPLACEMENT OF THE ENTIRE LUMINAIRE ASSEMBLY, WHICH INCLUDES THE POWER SUPPLIES/DRIVER, DEFECTIVE ELECTRICAL AND NON-ELECTRICAL PARTS, AND LIGHT SOURCE FOR A PERIOD OF TEN (10) YEARS FROM DATE OF ACCEPTANCE. THE LUMINAIRE SHALL BE COVERED FOR PART REPLACEMENT OF DEFECTIVE LUMINAIRES DURING THE WARRANTY PERIOD. NEGLIGIBLE LIGHT OUTPUT FROM MORE THAN 10 PERCENT OF THE LED PACKAGES CONSTITUTES LUMINAIRE FAILURE. LONG-LIFE PHOTOCO CONTROL SHALL BE COVERED FOR FULL REPLACEMENT FOR A PERIOD OF TEN (10) YEARS FROM THE DATE OF ACCEPTANCE FOR ANY FAILURE AND/OR DEFECT IN WORKMANSHIP.

WEIGHT
LUMINAIRE SHALL NOT WEIGH MORE THAN 60 POUNDS.

DELIVERY, STORAGE AND HANDLING

A) DELIVERY
1. LED LUMINAIRES SHALL BE DELIVERED TO THE JOB SITE AS TO NOT CAUSE DAMAGE OR REQUIRED REPAIRS. LUMINAIRE SHALL BE 100% FACTORY TESTED PRIOR TO SHIPMENT.

2. DELIVERY OF MATERIAL SHALL BE COORDINATED WITH OTHER TRADES TO AVOID DELAYS.

B) STORAGE OF MATERIALS
1. MATERIAL SHALL BE STORED IN STRICT COMPLIANCE WITH MANUFACTURE’S RECOMMENDATIONS.

C) HANDLING
1. HANDLE ALL PRODUCTS WITH CARE. ONLY SOUND, UNDAMAGED PRODUCTS SHALL BE ACCEPTED.

INSTALLATION

THE LUMINAIRE SHALL BE INSTALLED ON AN UNDERPASS WALL OR SUPPORT STRUCTURE AS SHOWN ON THE CONTRACT DRAWINGS AND MIS SPECIFICATIONS. ORIENTATION AND LEVELING OF THE UNITS SHALL BE SO AS TO PROVIDE FOR UNIFORM APPEARANCE, MAXIMUM LIGHTING EFFICIENCY AND EASE OF MAINTENANCE.

INTERNAL LABELING

A VISIBLE LABEL SHALL BE PERMANENTLY ATTACHED TO THE INSIDE SURFACE OF EACH LUMINAIRE HOUSING. THE INTERNAL LABEL SHALL MEET THE REQUIREMENTS OF ANSI C 136.22 - 2011 (OR LATEST). THE LABEL SHALL INCLUDE THE FOLLOWING.

- MANUFACTURER’S NAME AND CATALOG NUMBER
- MONTH AND YEAR OF MANUFACTURE
- LINE INPUT VOLTAGE
- FREQUENCY IF OVER 60 Hertz
- DRIVER TYPE (MAY BE ON DRIVER)
- LUMINAIRE TYPE, WATTAGE AND VOLTAGE (MAY BE ON DRIVER)
- DESCRIPTIVE WIRING DIAGRAM SHOWING INPUT TERMINALS, DRIVER, CAPACITORS, STARTING AID, PHOTO-CONTROL RECEPTACLE AND LED ARRAY

SUBMITTALS

A) THE FOLLOWING SUBMITTALS SHALL BE MADE WITH THE BID:
1) LUMINAIRE SUBMITTAL FORM
2) UTILIZATION CURVES
3) ISOLUM LINES OF HORIZONTAL FOOT-CANDLES
4) ISO CANDLE CURVES FROM PHOTOMETRIC TEST
5) LUMINAIRE SPECIFICATION SHEET
6) LED LIGHT SOURCE SPECIFICATION SHEET
7) LED DRIVER SPECIFICATION SHEET
8) SURGE PROTECTION DEVICE SPECIFICATION SHEET
9) LM-79 TEST REPORT
10) LM-80 TEST REPORT
11) TM-21 TEST REPORT

SPARE PARTS

The Contractor shall provide 3% of the construction quantities of the complete luminaire, rounded up to the nearest whole number and shall be a minimum of 2 luminaires - each.

All spare parts shall be warranted by the product manufacturer for form, fit, and function and shall be fully compatible with the product supplied. In addition, all spare parts shall be warranted against failure for a period not less than 10 years.

Spare parts shall be packaged to prevent corrosion or deterioration during long-term storage and delivered undamaged to the Division of Power, 3500 Indianola Avenue, Columbus, Ohio 43214. The receipt of delivery shall be considered part of the substantial completion requirement.

All packaging shall be clearly labeled with the product manufacturer's name and part number. Electronic parts shall be packed in sealed plastic wrappers or hermetically-sealed containers. Desiccant-cartridges shall be included in the packaging.

RECOMMENDED MANUFACTURERS

The following manufacturers are recommended to provide LED underpass style luminaires or approved equal.

1. HOLOPHANE LIGHTING (TUNNELPASS SERIES)

BASIS OF PAYMENT

The street light luminaire, LED underpass style shall be paid as a unit price each as specified in the contract documents.