APPLICATION

THE LED TRADITIONAL STYLE LUMINAIRE MAY BE USED FOR:

1) NEW INSTALLATION OF TRADITIONAL STYLE LUMINAIRES ON NEWLY PLACED
SUPPORTS WHOSE 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 LUMINAIRES ON EXISTING POLES WHERE SPACING
REMAINS UNCHANGED.

LED REQUIREMENTS

A. CORRELATED COLOR TEMPERATURE (CCT): 3000K.

B. COLOR RENDERING INDEX (CRI) MINIMUM 70

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

D. VOLTAGE: 480 V OR 120 V AS SPECIFIED BY THE CITY OF COLUMBUS.

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.

HOUSING

THE HOUSING SHALL BE CONSTRUCTED OF SAND-CAST OR DIE-CAST ALUMINUM AND
SHALL BE RUST RESISTANT. PAINT FINISH SHALL BE POWDER-COATED BLACK, OR AS
DIRECTED BY THE CITY OF COLUMBUS DIVISION OF POWER. THE PAINT FINISH SHALL
EXCEED A RATING OF SIX PER ASTM D 1654 AFTER 1000 HOURS OF TESTING PER B117.
PAINTED OR FINISHED LUMINAIRE COMPONENTS EXPOSED TO THE ENVIRONMENT SHALL
EXHIBIT NO GREATER THAN 30% REDUCTION OFGLOSS PER ASTM D523, AFTER 500
HOURS OF QUV TESTING AT ASTM G154 CYCLE 6. ALL EXTERNAL SCREWS SHALL BE
STAINLESS STEEL. NO PARTS SHALL BE CONSTRUCTED OF POLYCARBONATES.

THE HOUSING SHALL BE EQUIPPED WITH AN TOOL-LESS ENTRY DOOR TO ALLOW ACCESS
TO THE ELECTRICAL COMPONENTS.

OPTICAL SYSTEM

THE OPTICAL SYSTEM SHALL BE CONSIST OF A THERMAL RESISTANT BOROSICILATE
GLASS REFRACTOR.

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) 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 COMPLIANT.

LED SURGE PROTECTION DEVICE

THE SURGE PROTECTION DEVICE SHALl COMPLY WITH ANSI C136.37, AND ANSI/IEEE
C62.41.2. EACH SURGE PROTECTION DEVICE SHALl BE INTERNALLY MOUNTED INSIDE
HOUSING AND SPECIFIED FOR 480V OR 120V OPERATION WITH A MINIMUM 10 KV/5KA
SURGE PROTECTION. THE SURGE PROTECTION DEVICE SHALl BE A UL 1449 4TH EDITION
TYPE 4 RECOGNIZED COMPONENT FOR USE IN TYPE 2 LOCATIONS.
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(LD). 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 LUMINAIRE SHALL COMPLY WITH THE FOLLOWING STANDARDS:

A) ANSI C136.31 2010 (or latest) FOR 100,000 CYCLES AT 1.5G ACCELERATION FOR NORMAL ROAD APPLICATIONS.

B) UL/CUL LISTED, SUITABLE FOR WET LOCATIONS PER UL 1598 OR CSA C22.2 NUMBER 250.

C) THE LED OPTICAL ASSEMBLY AND DRIVER SHALL BE IP66 RATED PER IEC60529.

D) LUMINAIRE COMPONENTS AND APPLIED FINISHES SHALL COMPLY WITH THE 1000 HOUR SALT/FOG TEST PER ASTM B117 STANDARD.

E) LM-79 OPTICAL PERFORMANCE TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH IESNA STANDARD PRACTICES FOR SOLID STATE LIGHTING.

F) LUMINAIRE SHALL BE CERTIFIED WITH A BUG RATING (BACKLIGHT, UPLIGHT, GLARE)

G) IESNA LM-80-15 (or latest)  

H) ANSI C136.41-2013 (or latest)  

I) ANSI C136.37 2011 (or latest)  

J) ANSI C136.22 -2004 (or latest)  

K) IEC 60529 (or latest)  

L) IEEE C62.41.2-2002 (or latest)  

M) IESNA TM-15-11 (or latest)  

N) RoHS  

O) ANSI C136.10-2010 (or latest)
WARRANTY

THE WARRANTY SHALL PROVIDE FOR THE FULL REPLACEMENT OF THE ENTIRE LUMINAIRE ASSEMBLY, WHICH INCLUDES THE POWER SUPPLIES/DRIER, DEFECTIVE ELECTRICAL AND NON-ELECTRICAL PARTS, AND LIGHT SOURCE FOR A PERIOD OF TEN (10) YEARS FROM DATE OF ACCEPTANCE. NEGLIGIBLE LIGHT OUTPUT FROM MORE THAN 10 PERCENT OF THE LED PACKAGES CONSTITUTES LUMINAIRE FAILURE. LONG-LIFE PHOTOCONTROL 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.

EFFECTIVE PROJECTED AREA (EPA)

LUMINAIRE SHALL NOT HAVE AN EPA MORE THAN 1.30 SQ. FT.

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.

INTERNAL LABELING

A VISIBLE LABEL SHALL BE ATTACHED TO THE INSIDE SURFACE OF THE LUMINAIRE. THE INTERNAL LABEL SHALL MEET THE REQUIREMENTS OF ANSI C136.22 (LATEST VERSION). THE LABEL SHALL INCLUDE THE FOLLOWING:

- MANUFACTURER’S NAME - LUMINAIRE TYPE, AND CATALOG NUMBER
- MONTH AND YEAR OF MANUFACTURE
- LINE INPUT VOLTAGE AND WATTAGE
- FREQUENCY IF OVER 60 HERTZ
- DESCRIPTIVE WIRING DIAGRAM SHOWING INPUT TERMINALS, DRIVER, PHOTO-CONTROL RECEPTACLE AND LED ARRAY

INSTALLATION

THE LUMINAIRE SHALL BE INSTALLED ON A POLE TOP TENON AS SHOWN ON THE CONTRACT DRAWINGS AND MIS SPECIFICATIONS... THE LUMINAIRE SHALL SLIP FIT OVER A 2-7/8” TO 3-1/8” POST TOP TENON AND BE SECURED TO THE POLE TENON BY A MINIMUM OF FOUR HEX HEAD STAINLESS STEEL SET SCREWS. THE POLE TENON SHALL BE TOTALLY ENCLOSED IN THE LUMINAIRE HOUSING. ORIENTATION AND LEVELING OF THE UNITS SHALL BE SO AS TO PROVIDE FOR UNIFORM APPEARANCE, MAXIMUM LIGHTING EFFICIENCY AND EASE OF MAINTENANCE

SUBMITTALS

A) THE FOLLOWING SUBMITTALS SHALL BE SUPPLIED WITH THE BID:

1) LUMINAIRE SUBMITTAL FORM (SEE SHEET 4)
2) LUMINAIRE CUT SHEET
3) LED DRIVER CUT SHEET
4) LM-79 TEST REPORT
5) TM-21 TEST REPORT
6) LUMINAIRE THERMAL TEST REPORT

LM-79 DATA AND TM-21 TEST REPORTS MUST REFLECT THE EXACT CCT & WATTAGE OF THE LUMINAIRE TO BE SUPPLIED. NO PRO-RATED TEST REPORTS WILL BE ACCEPTED.

THE LUMINAIRE THERMAL TEST REPORT MUST REFLECT THE EXACT WATTAGE AND VOLTAGE TO BE SUPPLIED. NO PRO-RATED TEST REPORTS WILL BE ACCEPTED.

B) THE CONTRACTOR SHALL PROVIDE THE MANUFACTURER’S TEN (10) YEAR WARRANTY DOCUMENTATION WITH THE SUBMITTAL PACKAGE.
RECOMMENDED MANUFACTURERS

THE FOLLOWING MANUFACTURERS ARE RECOMMENDED TO PROVIDE LED TRADITIONAL STYLE LUMINAIRES OR APPROVED EQUAL.

1. HOLOPHANE LIGHTING (RSL 350 SERIES)

A RECOMMENDED MANUFACTURER SHALL BE USED AS THE BASIS OF DESIGN FOR THE PROJECT IN WHICH THIS SPECIFICATION IS APPLICABLE. SHOULD THE CONTRACTOR CHOOSE TO SUBSTITUTE THE BASIS OF DESIGN, THE CHOSEN LUMINAIRE MUST MEET ALL TARGET ILLUMINATION CRITERIA AS SPECIFIED BY THE PROJECT. NO MORE THAN A 10% INCREASE IN THE ACTUAL WATTAGE OF THE LUMINAIRE USED AS THE BASIS OF DESIGN WILL BE ALLOWED. THE SUBSTITUTED LUMINAIRE MUST ADHERE TO ALL ITEMS IN THIS SPECIFICATION.

BASIS OF PAYMENT

ITEM | UNIT | DESCRIPTION
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MIS-803 | EACH | LUMINAIRE, LED, TRADITIONAL