

itl boulder
THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

NVLAP
NVLAP LAB CODE: 200925-0

INDEPENDENT TESTING LABORATORIES, INC.
4066 CAMELOT CIRCLE, LONGMONT, CO 80504 USA

PHONE: (303) 442-1255 • FAX: (970) 535-3114 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL85786

ISSUE DATE: 10/09/15

PAGE: 1 OF 9

PREPARED FOR: LED ROADWAY LIGHTING LTD.

CATALOG NUMBER: NXT 24S 0 X 2EM 7 XX 3 XX X XX X

LUMINAIRE: CAST METAL HOUSING WITH GRAY PAINTED INTERIOR FINISH, 1 WHITE CIRCUIT BOARD WITH 36 LEDS, 1 CLEAR PLASTIC LENS WITH 1 OPTIC PER LED, CLEAR FLAT GLASS LENS IN CAST GRAY PAINTED METAL DOOR FRAME. ONLY 24 LEDS ON FOR THIS TEST.

LAMPS: TWENTY-FOUR WHITE LIGHT EMITTING DIODES (LEDs), VERTICAL BASE-UP POSITION.

INPUT ELECTRICAL: 120.0 VOLTS, 53.9 WATTS, 0.453 AMPS

LED DRIVER: LED ROADWAY LIGHTING LRL65634-LF, DRIVER HAS MULTIPLE LEADS, ONLY LINE INPUT AND LED OUTPUT LEADS CONNECTED FOR THIS TEST, CLIENT STATES DRIVER PROGRAMMED FOR 700mA OUTPUT. LRL65633-LF SURGE PROTECTOR.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE DRIVER AND SURGE PROTECTOR. DRIVER AND SURGE PROTECTOR INFORMATION PROVIDED BY CLIENT.

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 20.0 FEET

TOTAL LUMEN OUTPUT: 6053

COLOR TEMPERATURE AS MEASURED IN INTEGRATING SPHERE TEST # ITL85789: 3766K

COLOR RENDERING INDEX AS MEASURED IN INTEGRATING SPHERE TEST # ITL85789: 73

LED DC DRIVE CURRENT (mA): 700 (PROVIDED BY CLIENT)

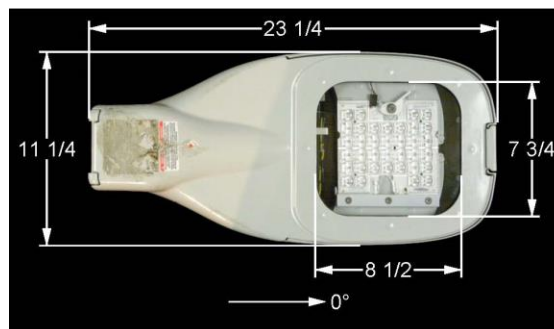
POWER FACTOR: 99.2 %

BUG RATING: B2 U0 G1

LUMINAIRE EFFICACY: 112.3 lm/W

IES CLASSIFICATION: Short, Type II

**CUTOFF DESIGNATION IS NOT INTENDED TO BE USED WITH ABSOLUTE PHOTOMETRIC TESTS.



FLUX DISTRIBUTION

LUMENS	DOWNWARD	UPWARD	TOTALS
HOUSE SIDE	1816	0	1816
STREET SIDE	4237	0	4237
TOTALS	6053	0	6053

TESTING WAS PERFORMED IN ACCORDANCE WITH IESNA LM-79-08
TEST ANGULAR INCREMENTS AND REPORT FORMATTING WAS BASED ON IESNA LM-31-95

THIS REPORT IS BASED ON PUBLISHED INDUSTRY PROCEDURES. FIELD PERFORMANCE MAY DIFFER FROM LABORATORY PERFORMANCE.



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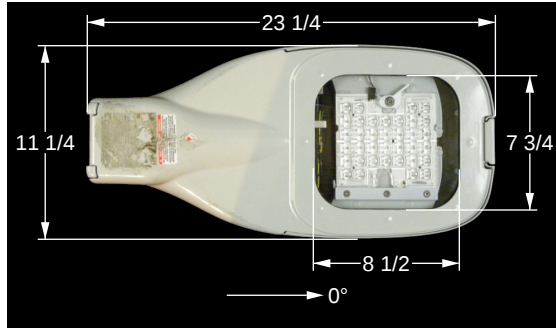
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ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

Values based on 30 foot mounting height.



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PREPARED FOR: LED ROADWAY LIGHTING LTD.

CATALOG NUMBER: NXT 24S 0 X 2EM 7 XX 3 XX X XX X

LUMINAIRE: CAST METAL HOUSING WITH GRAY PAINTED INTERIOR FINISH, 1 WHITE CIRCUIT BOARD WITH 36 LEDS, 1 CLEAR PLASTIC LENS WITH 1 OPTIC PER LED, CLEAR FLAT GLASS LENS IN CAST GRAY PAINTED METAL DOOR FRAME. ONLY 24 LEDS ON FOR THIS TEST. LAMPS: TWENTY-FOUR WHITE LIGHT EMITTING DIODES (LEDs), VERTICAL BASE-UP POSITION. INPUT ELECTRICAL: 120.0 VOLTS, 53.9 WATTS, 0.453 AMPS. LED DRIVER: LED ROADWAY LIGHTING LRL65634-LF, DRIVER HAS MULTIPLE LEADS, ONLY LINE INPUT AND LED OUTPUT LEADS CONNECTED FOR THIS TEST, CLIENT STATES DRIVER PROGRAMMED FOR 700mA OUTPUT. LRL65633-LF SURGE PROTECTOR.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE DRIVER AND SURGE PROTECTOR. DRIVER AND SURGE PROTECTOR INFORMATION PROVIDED BY CLIENT.

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 20.0 FEET

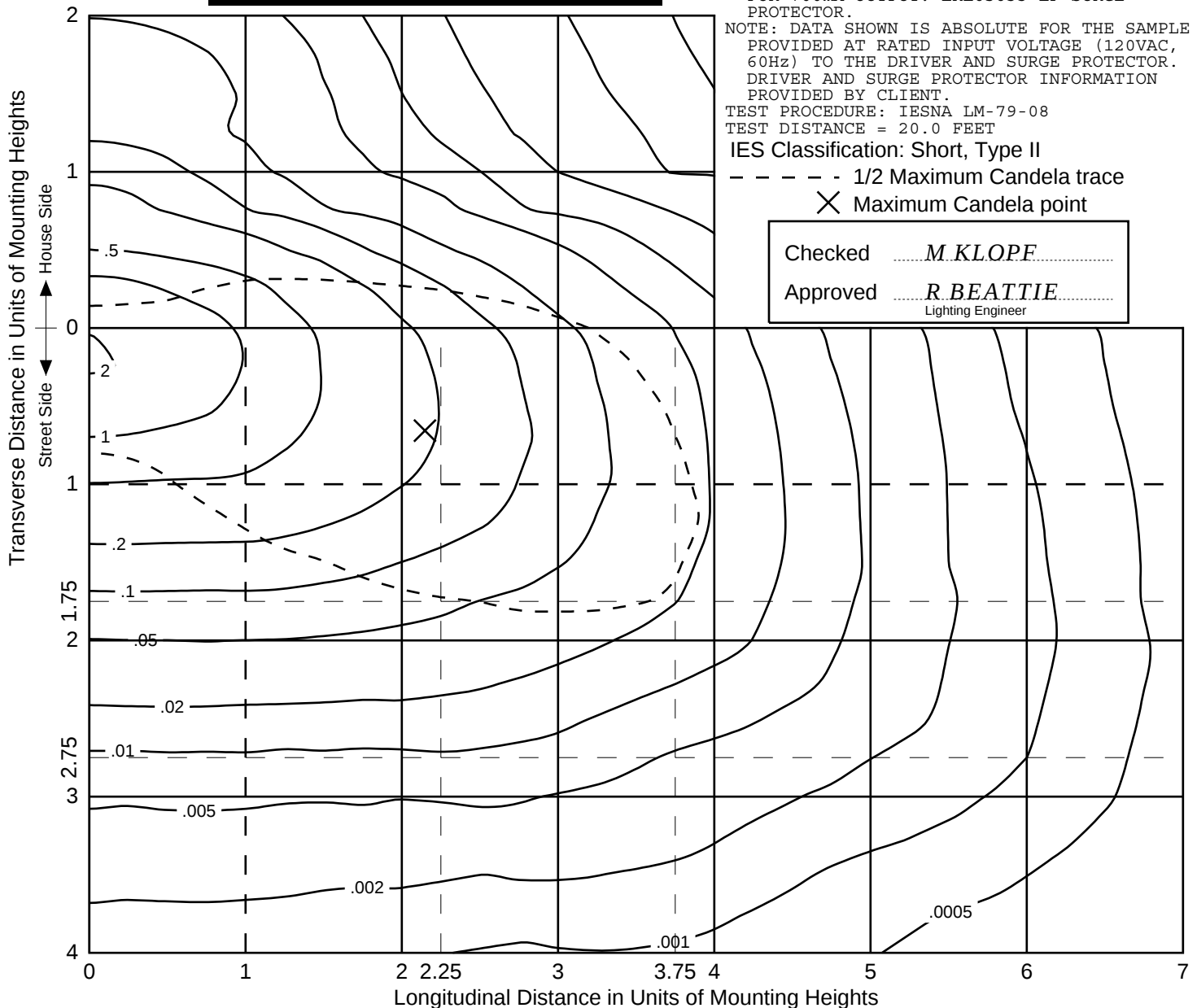
IES Classification: Short, Type II

--- 1/2 Maximum Candela trace

X Maximum Candela point

CheckedM.KLOPF.....

ApprovedR.BEATTIE.....
Lighting Engineer



REPORT NUMBER: ITL85786
ISSUE DATE: 10/09/15 PAGE: 3 OF 9
PREPARED FOR: LED ROADWAY LIGHTING LTD.
CATALOG NUMBER: NXT 24S 0 X 2EM 7 XX 3
XX X XX X

LUMINAIRE: CAST METAL HOUSING WITH GRAY
PAINTED INTERIOR FINISH, 1 WHITE
CIRCUIT BOARD WITH 36 LEDS, 1 CLEAR
PLASTIC LENS WITH 1 OPTIC PER LED,
CLEAR FLAT GLASS LENS IN CAST GRAY
PAINTED METAL DOOR FRAME. ONLY 24 LEDS
ON FOR THIS TEST.

LAMPS: TWENTY-FOUR WHITE LIGHT EMITTING
DIODES (LEDS), VERTICAL BASE-UP
POSITION.

INPUT ELECTRICAL: 120.0 VOLTS, 53.9
WATTS, 0.453 AMPS

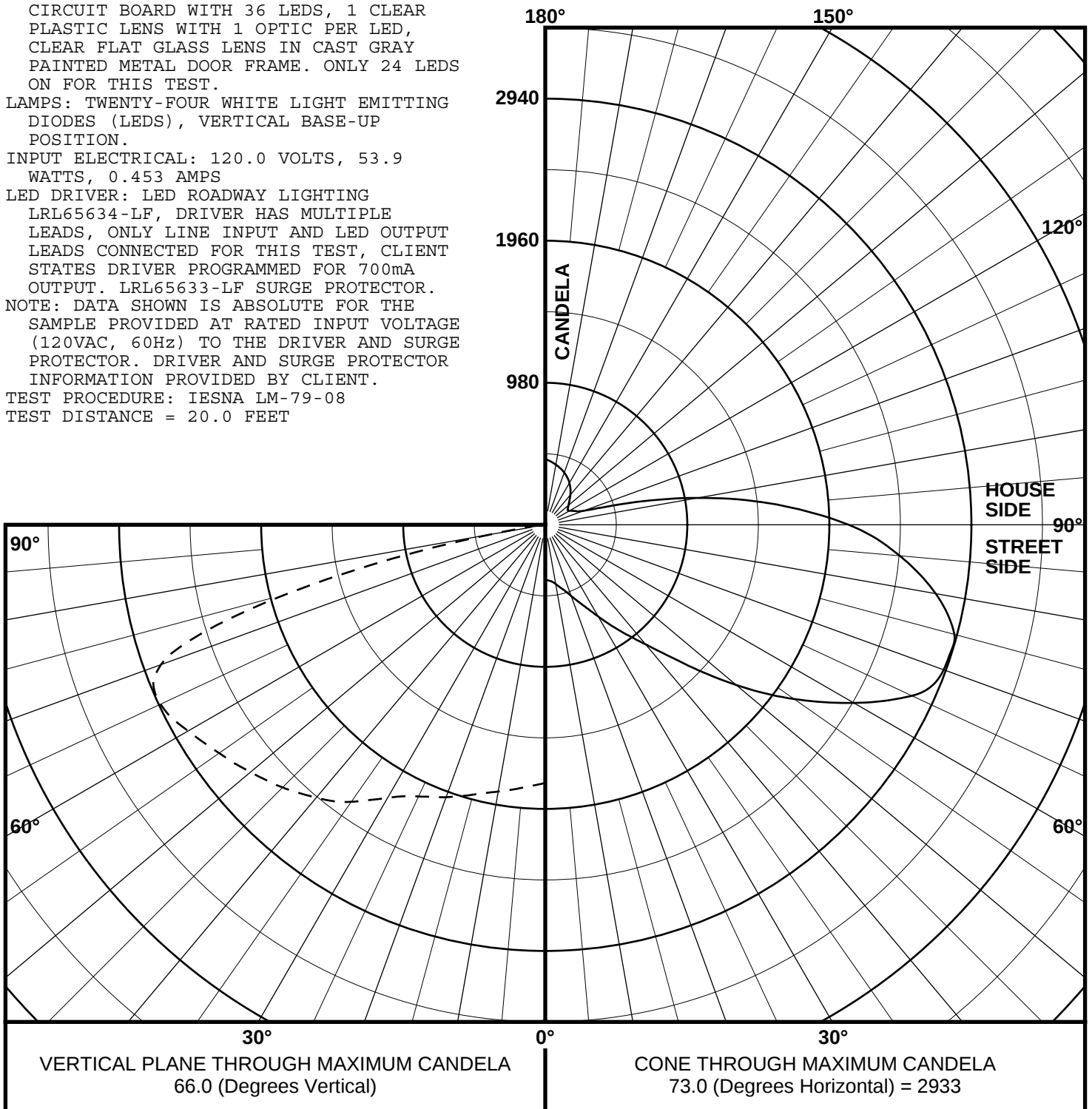
LED DRIVER: LED ROADWAY LIGHTING
LRL65634-LF, DRIVER HAS MULTIPLE
LEADS, ONLY LINE INPUT AND LED OUTPUT
LEADS CONNECTED FOR THIS TEST, CLIENT
STATES DRIVER PROGRAMMED FOR 700mA
OUTPUT. LRL65633-LF SURGE PROTECTOR.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE
SAMPLE PROVIDED AT RATED INPUT VOLTAGE
(120VAC, 60Hz) TO THE DRIVER AND SURGE
PROTECTOR. DRIVER AND SURGE PROTECTOR
INFORMATION PROVIDED BY CLIENT.

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 20.0 FEET

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

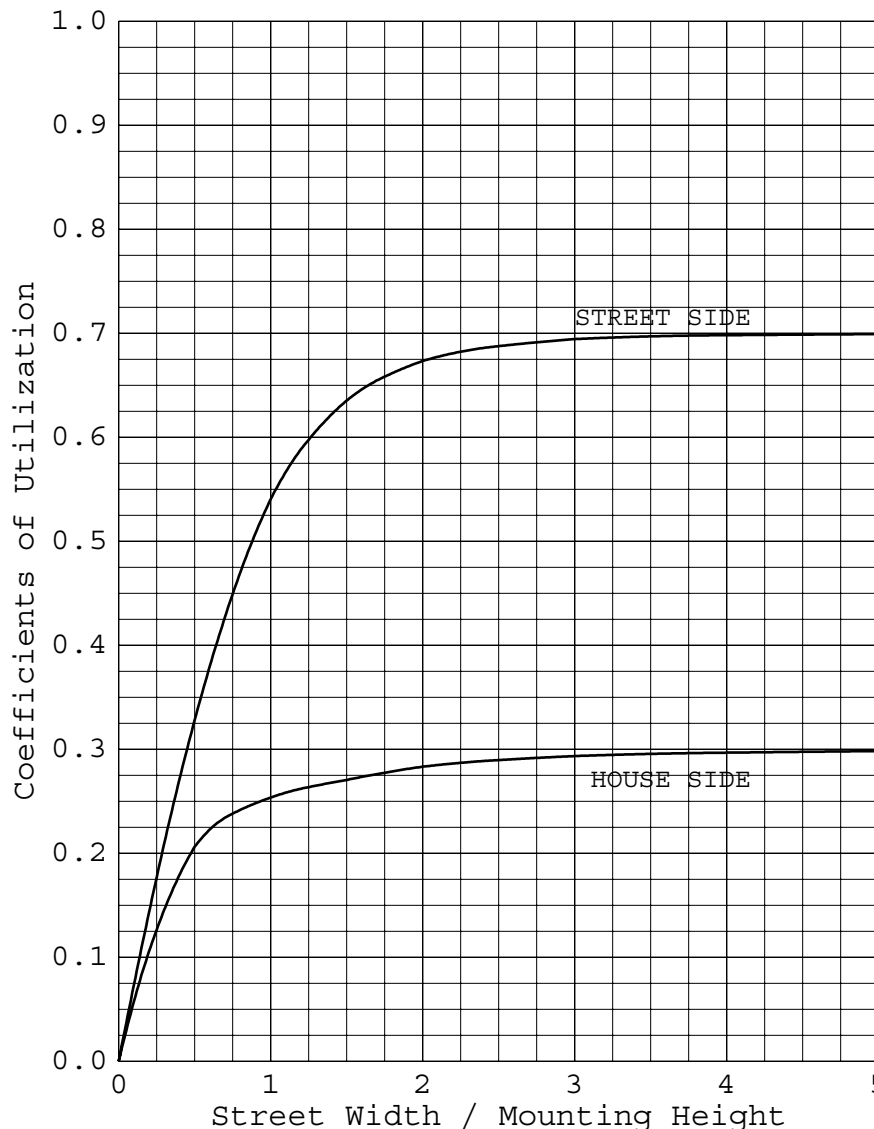




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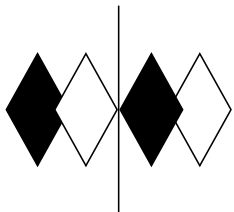
COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	4237	70.0
DOWNWARD HOUSE SIDE	1816	30.0
DOWNWARD TOTAL	6053	100.0
UPWARD STREET SIDE	0	0.0
UPWARD HOUSE SIDE	0	0.0
UPWARD TOTAL	0	0.0
TOTAL FLUX	6053	100.0

EFFICACY = 112.3 lm/W

ALL CANDELA AND LUMENS IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY.
THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE
LUMEN OUTPUT OF THIS LUMINAIRE SAMPLE.



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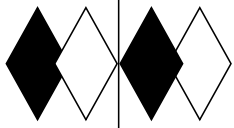
FLUX DISTRIBUTION BY SOLID ANGLE

(PER IESNA TM-15-11, LUMINAIRE CLASSIFICATION
SYSTEM FOR OUTDOOR LUMINAIRES)

	LUMENS	PERCENT OF FIXTURE	BUG ZONE RATINGS
FORWARD LIGHT	4237.	70.0	
FL (0- 30)	832.6	13.8	
FM (30- 60)	2212.6	36.6	
FH (60- 80)	1171.1	19.3	G1
FVH(80- 90)	21.0	0.3	G1
BACK LIGHT	1816.	30.0	
BL (0- 30)	537.7	8.9	B2
BM (30- 60)	903.4	14.9	B1
BH (60- 80)	364.3	6.0	B1 G1
BVH(80- 90)	10.3	0.2	G1
UPLIGHT	0.	0.0	
UL (90-100)	0.0	0.0	U0
UH (100-180)	0.0	0.0	U0
TRAPPED LIGHT	0.	0.0	
TOTAL FLUX	6053.	100.0	

BACKLIGHT, UPLIGHT, AND GLARE (BUG) RATINGS
(PER ADDENDUM A FOR IESNA TM-15-11)

BUG RATING: B2 U0 G1



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CANDELA TABULATION

	STREET SIDE										
	0.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	73.0	75.0	85.0
	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	175.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	165.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	155.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	145.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	135.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	125.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	115.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	105.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	95.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	92.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	90.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	87.5	2.	2.	2.	2.	3.	3.	3.	4.	4.	4.
	85.0	6.	6.	8.	8.	10.	11.	12.	17.	15.	12.
V	82.5	21.	20.	24.	25.	26.	44.	64.	108.	87.	57.
E	80.0	42.	40.	47.	51.	56.	138.	213.	397.	348.	224.
R	77.5	66.	65.	72.	82.	120.	278.	518.	1083.	996.	687.
T	75.0	95.	93.	109.	134.	226.	533.	982.	1782.	1753.	1321.
I	72.5	136.	133.	167.	210.	375.	790.	1398.	2352.	2478.	1863.
C	70.0	199.	201.	240.	338.	578.	1031.	1681.	2639.	2822.	2261.
A	67.5	309.	319.	376.	520.	791.	1241.	1958.	2761.	2925.	2415.
L	66.0<<	378.	389.	459.	610.	889.	1353.	2096.	2791.	2933.	2455.
	65.0	422.	434.	508.	662.	953.	1428.	2178.	2800.	2929.	2471.
A	62.5	531.	539.	619.	767.	1086.	1621.	2328.	2801.	2898.	2501.
N	60.0	628.	635.	708.	862.	1214.	1782.	2417.	2779.	2845.	2509.
G	57.5	718.	719.	799.	963.	1342.	1924.	2463.	2749.	2795.	2511.
L	55.0	814.	818.	899.	1074.	1449.	2031.	2488.	2720.	2746.	2513.
E	52.5	915.	924.	1007.	1192.	1546.	2103.	2490.	2693.	2703.	2511.
	50.0	1030.	1044.	1122.	1293.	1625.	2131.	2476.	2647.	2654.	2495.
	47.5	1139.	1149.	1221.	1379.	1684.	2127.	2436.	2594.	2609.	2479.
	45.0	1244.	1246.	1310.	1454.	1721.	2106.	2393.	2537.	2563.	2444.
	42.5	1340.	1336.	1395.	1526.	1754.	2096.	2348.	2474.	2510.	2396.
	40.0	1421.	1418.	1471.	1594.	1802.	2083.	2287.	2419.	2458.	2339.
	37.5	1505.	1497.	1546.	1666.	1863.	2063.	2215.	2356.	2404.	2272.
	35.0	1582.	1574.	1626.	1737.	1925.	2035.	2146.	2282.	2333.	2191.
	30.0	1756.	1759.	1811.	1912.	1962.	1980.	2077.	2167.	2175.	2017.
	25.0	1895.	1896.	1906.	1915.	1924.	2009.	2095.	2101.	2068.	1921.
	20.0	1878.	1880.	1893.	1959.	2041.	2089.	2088.	2056.	2000.	1870.
	15.0	2067.	2069.	2063.	2077.	2082.	2071.	2048.	2001.	1928.	1842.
	10.0	2051.	2050.	2037.	2034.	2032.	2013.	1969.	1911.	1869.	1816.
	5.0	1940.	1932.	1919.	1908.	1895.	1878.	1860.	1841.	1821.	1792.
	0.0	1781.	1781.	1781.	1781.	1781.	1781.	1781.	1781.	1781.	1781.
									PLANE OF MAXIMUM CANDELA		
									CONE OF MAXIMUM CANDELA		



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CANDELA TABULATION

	HOUSE SIDE	LATERAL ANGLE										
		90.0	95.0	105.0	115.0	125.0	135.0	145.0	155.0	165.0	175.0	180.0
	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	175.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	165.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	155.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	145.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	135.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	125.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	115.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	105.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	95.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	92.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	90.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	87.5	3.	3.	3.	2.	2.	1.	1.	0.	0.	0.	0.
	85.0	11.	10.	9.	9.	8.	10.	11.	9.	6.	1.	1.
V	82.5	48.	29.	20.	20.	21.	31.	40.	45.	49.	11.	5.
E	80.0	193.	111.	39.	40.	41.	60.	77.	79.	94.	93.	108.
R	77.5	550.	308.	72.	65.	66.	86.	115.	130.	139.	153.	175.
T	75.0	1033.	569.	116.	92.	95.	116.	148.	175.	191.	219.	266.
I	72.5	1496.	894.	183.	120.	123.	145.	186.	214.	241.	259.	329.
C	70.0	1857.	1236.	301.	157.	150.	176.	227.	263.	294.	320.	362.
A	67.5	2029.	1493.	454.	199.	177.	218.	271.	326.	364.	389.	408.
L	66.0<<	2093.	1602.	556.	225.	189.	236.	303.	360.	403.	438.	454.
	65.0	2129.	1664.	631.	244.	193.	244.	329.	385.	422.	454.	467.
A	62.5	2204.	1797.	813.	290.	208.	253.	370.	457.	484.	494.	496.
N	60.0	2259.	1903.	985.	350.	242.	248.	338.	456.	525.	544.	551.
G	57.5	2293.	1979.	1148.	435.	291.	258.	280.	373.	456.	485.	498.
L	55.0	2318.	2041.	1294.	552.	335.	287.	263.	277.	332.	367.	382.
E	52.5	2332.	2080.	1408.	684.	369.	318.	298.	283.	282.	289.	292.
	50.0	2332.	2104.	1498.	811.	419.	356.	338.	327.	320.	320.	317.
	47.5	2318.	2110.	1561.	919.	490.	387.	370.	368.	375.	375.	374.
	45.0	2288.	2099.	1603.	1005.	568.	420.	396.	397.	409.	421.	423.
	42.5	2251.	2079.	1628.	1075.	646.	471.	420.	418.	424.	434.	437.
	40.0	2202.	2046.	1640.	1132.	721.	531.	456.	438.	439.	445.	449.
	37.5	2148.	1999.	1637.	1183.	801.	592.	506.	468.	458.	459.	462.
	35.0	2077.	1940.	1617.	1239.	881.	655.	558.	513.	490.	485.	489.
	30.0	1920.	1811.	1585.	1338.	1048.	819.	681.	606.	575.	562.	565.
	25.0	1838.	1754.	1595.	1428.	1223.	1015.	864.	761.	699.	674.	676.
	20.0	1814.	1749.	1631.	1514.	1380.	1232.	1094.	988.	921.	889.	881.
	15.0	1802.	1758.	1673.	1590.	1507.	1416.	1339.	1265.	1201.	1175.	1168.
	10.0	1793.	1766.	1712.	1663.	1610.	1561.	1518.	1478.	1452.	1435.	1431.
	5.0	1779.	1769.	1746.	1724.	1702.	1681.	1666.	1650.	1642.	1632.	1629.
	0.0	1781.	1781.	1781.	1781.	1781.	1781.	1781.	1781.	1781.	1781.	1781.

CONE OF MAXIMUM CANDELA



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5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	43
5- 10	127
10- 15	208
15- 20	276
20- 25	332
25- 30	384
30- 35	434
35- 40	482
40- 45	523
45- 50	552
50- 55	561
55- 60	564
60- 65	547
65- 70	481
70- 75	349
75- 80	158
80- 85	29
85- 90	2
90- 95	0
95-100	0
100-105	0
105-110	0
110-115	0
115-120	0
120-125	0
125-130	0
130-135	0
135-140	0
140-145	0
145-150	0
150-155	0
155-160	0
160-165	0
165-170	0
170-175	0
175-180	0

10-DEGREE
ZONAL LUMEN SUMMARY

0- 10	170
0- 20	654
0- 30	1370
0- 40	2286
0- 50	3362
0- 60	4486
0- 70	5515
0- 80	6022
0- 90	6053
0-100	6053
0-110	6053
0-120	6053
0-130	6053
0-140	6053
0-150	6053
0-160	6053
0-170	6053
0-180	6053



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PAGE: 9 OF 9

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