

REPORT NUMBER: ITL87844-GONIOPHOTOMETRY

ISSUE DATE: 07/14/16

PAGE: 1 OF 9

PREPARED FOR: LED ROADWAY LIGHTING LTD.

CATALOG NUMBER: NXT 48M 0 X 2ES 7 XX 4 XX X XX X

LUMINAIRE: CAST METAL HOUSING WITH GRAY PAINTED INTERIOR FINISH, 2 WHITE CIRCUIT BOARDS EACH WITH 36 LEDS, 2 CLEAR PLASTIC LENSES WITH 1 OPTIC PER LED, CLEAR FLAT GLASS LENS IN CAST GRAY PAINTED METAL DOOR FRAME. ONLY 48 LEDS ON FOR THIS TEST.

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

INPUT ELECTRICAL: 120.0 VOLTS, 101.7 WATTS, 0.854 AMPS

LED DRIVER: LED ROADWAY LIGHTING J150UNV2, DRIVER HAS MULTIPLE LEADS, ONLY LINE INPUT AND LED OUTPUT LEADS CONNECTED FOR THIS TEST, OUTPUT CURRENT ROTARY SWITCH SET TO 700mA. 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. SURGE PROTECTOR INFORMATION PROVIDED BY CLIENT.

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 35.0 FEET

TOTAL LUMEN OUTPUT: 10858

COLOR TEMPERATURE AS MEASURED IN INTEGRATING SPHERE TEST # ITL87844-SPHERE: 3154K

COLOR RENDERING INDEX AS MEASURED IN INTEGRATING SPHERE TEST # ITL87844-SPHERE: 72

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

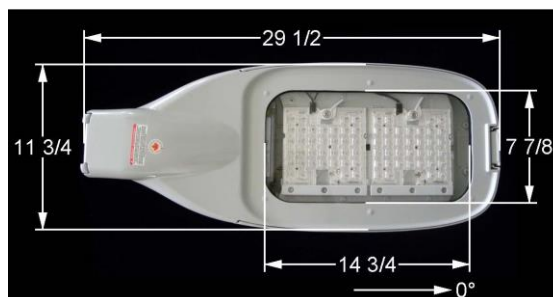
POWER FACTOR: 99.2 %

BUG RATING: B2 U0 G2

LUMINAIRE EFFICACY: 106.8 lm/W

IES CLASSIFICATION: Medium, Type II

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



FLUX DISTRIBUTION

LUMENS	DOWNWARD	UPWARD	TOTALS
HOUSE SIDE	3605	0	3605
STREET SIDE	7253	0	7253
TOTALS	10858	0	10858

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



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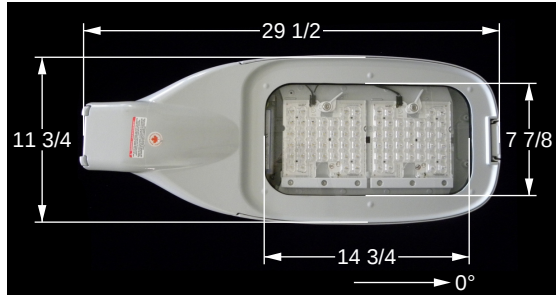
NVLAP
NVLAP LAB CODE: 200925-0

INDEPENDENT TESTING LABORATORIES, INC.

4066 CAMELOT CIRCLE, LONGMONT, CO 80504 USA

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 48M 0 X 2ES 7 XX 4 XX X XX X

LUMINAIRE: CAST METAL HOUSING WITH GRAY PAINTED INTERIOR FINISH, 2 WHITE CIRCUIT BOARDS EACH WITH 36 LEDS, 2 CLEAR PLASTIC LENSES WITH 1 OPTIC PER LED, CLEAR FLAT GLASS LENS IN CAST GRAY PAINTED METAL DOOR FRAME. ONLY 48 LEDS ON FOR THIS TEST.
LAMPS: FORTY-EIGHT WHITE LIGHT EMITTING DIODES (LEDS), VERTICAL BASE-UP POSITION.

INPUT ELECTRICAL: 120.0 VOLTS, 101.7 WATTS, 0.854 AMPS

LED DRIVER: LED ROADWAY LIGHTING J150UNV2, DRIVER HAS MULTIPLE LEADS, ONLY LINE INPUT AND LED OUTPUT LEADS CONNECTED FOR THIS TEST, OUTPUT CURRENT ROTARY SWITCH SET TO 700mA. 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. SURGE PROTECTOR INFORMATION PROVIDED BY CLIENT.

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 35.0 FEET

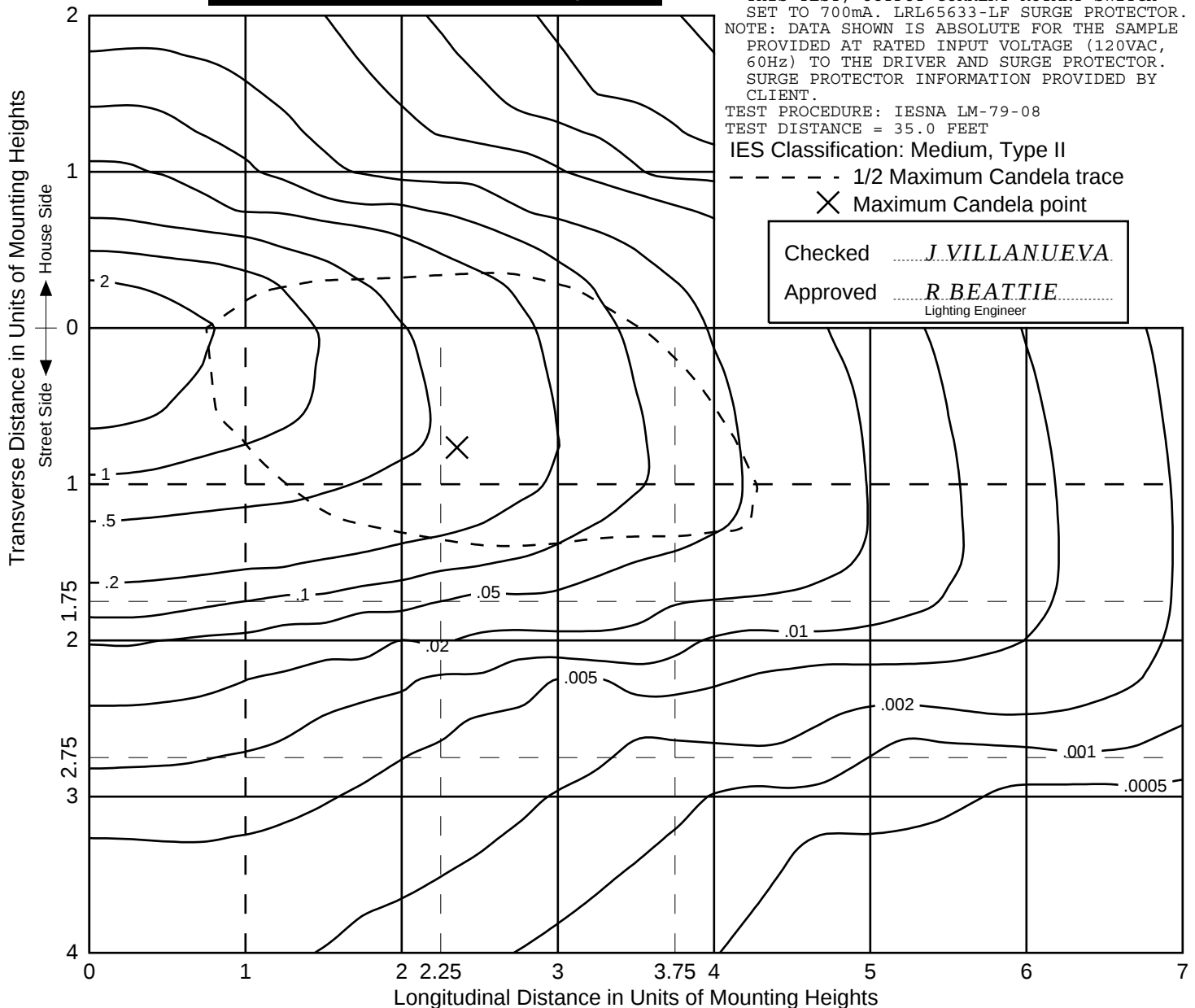
IES Classification: Medium, Type II

--- 1/2 Maximum Candela trace

X Maximum Candela point

CheckedJ.VILLANUEVA.....

ApprovedR.BEATTIE.....
Lighting Engineer



REPORT NUMBER: ITL87844-GONIOPHOTOMETRY
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PREPARED FOR: LED ROADWAY LIGHTING LTD.
CATALOG NUMBER: NXT 48M 0 X 2ES 7 XX 4
XX X XX X

LUMINAIRE: CAST METAL HOUSING WITH GRAY
PAINTED INTERIOR FINISH, 2 WHITE
CIRCUIT BOARDS EACH WITH 36 LEDS, 2
CLEAR PLASTIC LENSES WITH 1 OPTIC PER
LED, CLEAR FLAT GLASS LENS IN CAST
GRAY PAINTED METAL DOOR FRAME. ONLY 48
LEDS ON FOR THIS TEST.

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

INPUT ELECTRICAL: 120.0 VOLTS, 101.7
WATTS, 0.854 AMPS

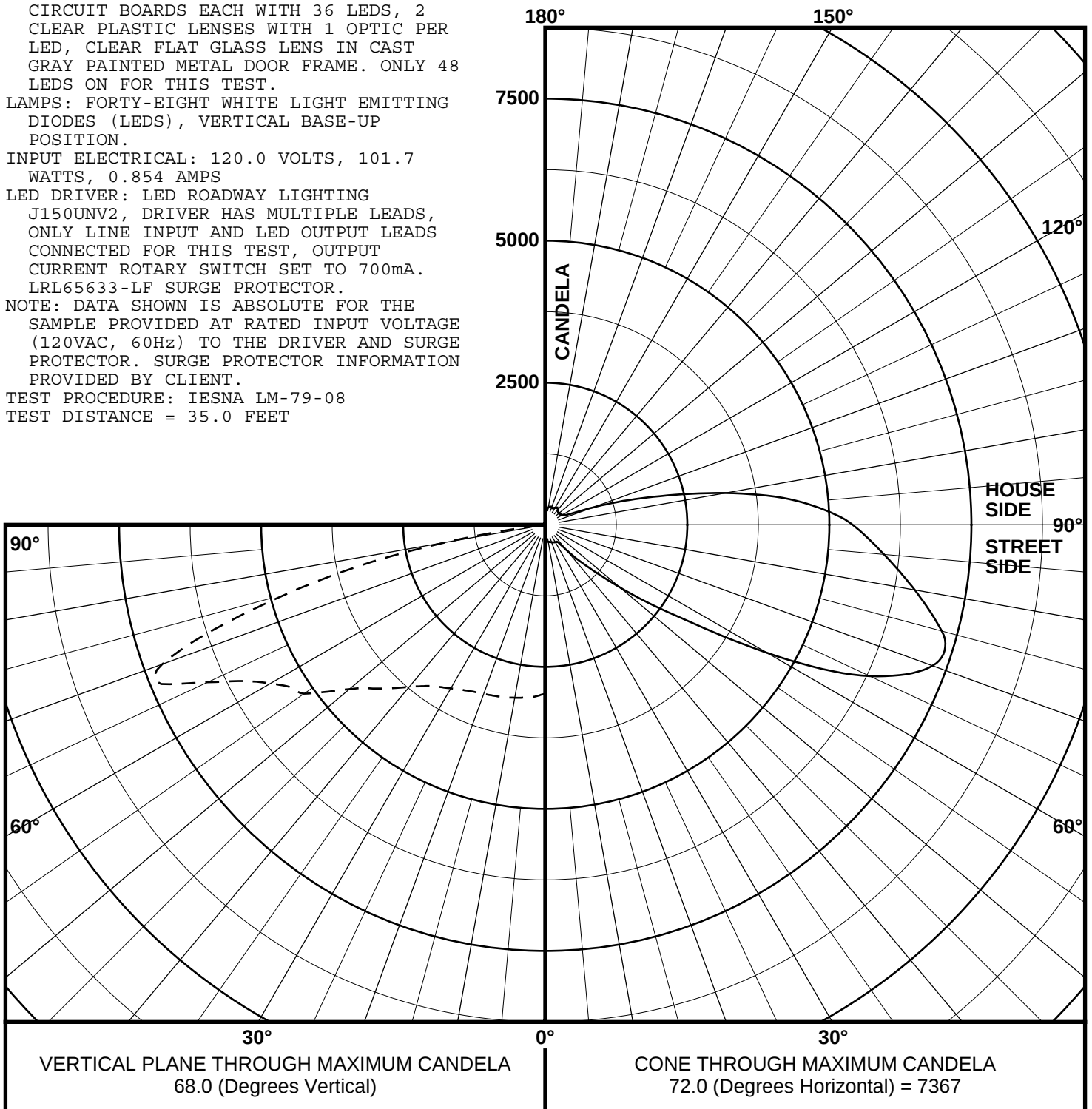
LED DRIVER: LED ROADWAY LIGHTING
J150UNV2, DRIVER HAS MULTIPLE LEADS,
ONLY LINE INPUT AND LED OUTPUT LEADS
CONNECTED FOR THIS TEST, OUTPUT
CURRENT ROTARY SWITCH SET TO 700mA.
LRL65633-LF SURGE PROTECTOR.

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

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 35.0 FEET

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

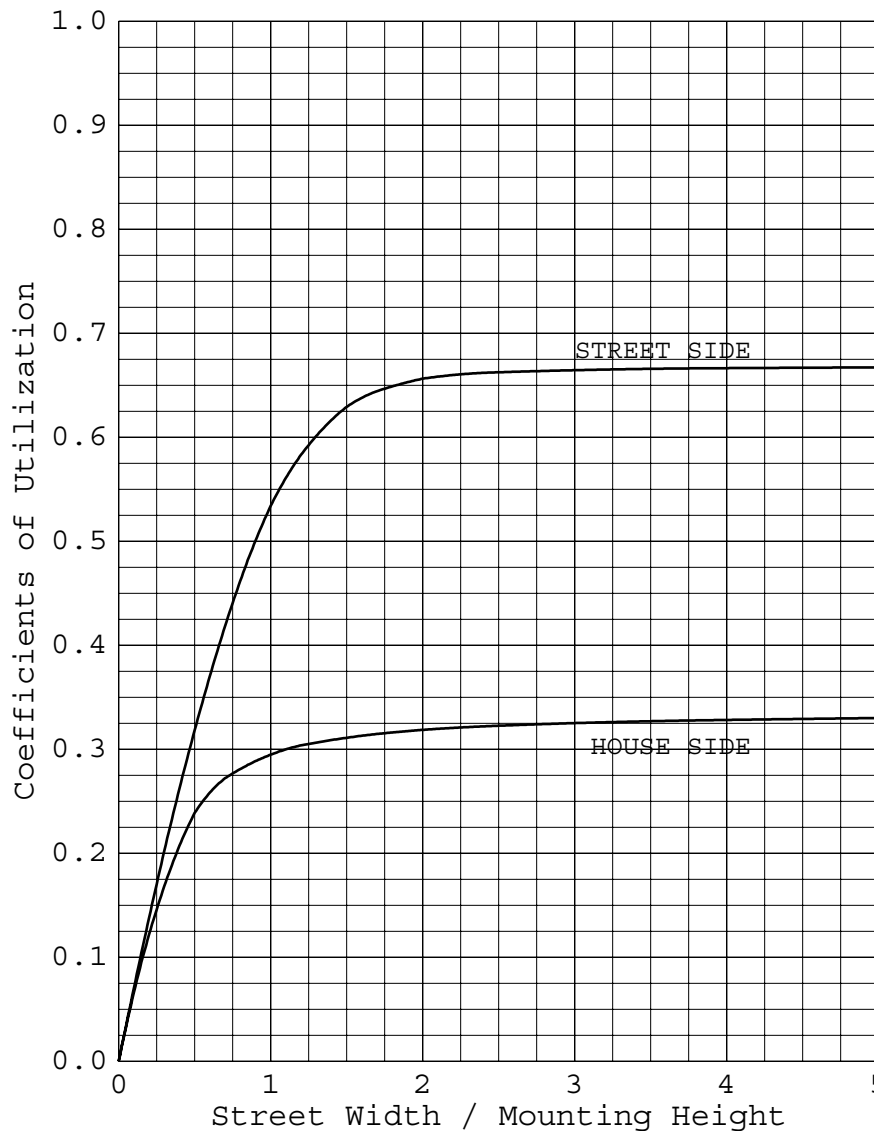




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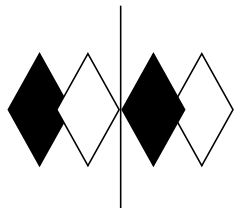
COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	7253	66.8
DOWNWARD HOUSE SIDE	3605	33.2
DOWNWARD TOTAL	10858	100.0
UPWARD STREET SIDE	0	0.0
UPWARD HOUSE SIDE	0	0.0
UPWARD TOTAL	0	0.0
TOTAL FLUX	10858	100.0

EFFICACY = 106.8 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	7253.	66.8	
FL (0- 30)	1323.7	12.2	
FM (30- 60)	3691.7	34.0	
FH (60- 80)	2187.8	20.1	G2
FVH(80- 90)	49.8	0.5	G1
BACK LIGHT	3605.	33.2	
BL (0- 30)	959.7	8.8	B2
BM (30- 60)	1775.9	16.4	B2
BH (60- 80)	839.6	7.7	B2 G2
BVH(80- 90)	30.3	0.3	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	10858.	100.0	

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

BUG RATING: B2 U0 G2



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CANDELA TABULATION

	STREET SIDE										
	0.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	72.0	75.0	85.0
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	1.	1.	1.	1.	2.	2.	3.	4.	5.	5.	5.
85.0	13.	13.	20.	16.	12.	11.	11.	11.	13.	13.	13.
V 82.5	40.	40.	59.	53.	37.	40.	39.	59.	418.	397.	259.
E 80.0	82.	83.	117.	91.	74.	87.	80.	234.	1796.	1936.	1411.
R 77.5	124.	126.	161.	118.	125.	125.	151.	836.	3368.	3654.	2828.
T 75.0	148.	151.	180.	169.	171.	179.	275.	2238.	4730.	5018.	3964.
I 72.5	186.	190.	213.	224.	221.	281.	753.	4025.	6086.	6251.	4825.
C 70.0	249.	250.	266.	284.	278.	529.	1841.	5542.	7177.	7062.	5701.
A 68.0<<	300.	301.	314.	340.	366.	1022.	2763.	6301.	7367.	7225.	5985.
L 67.5	313.	316.	330.	357.	412.	1187.	2979.	6376.	7319.	7195.	6002.
65.0	390.	405.	428.	530.	897.	2105.	3846.	6049.	6555.	6517.	5809.
A 62.5	615.	642.	745.	990.	1583.	2764.	4141.	5594.	5959.	5907.	5402.
N 60.0	1018.	1040.	1172.	1454.	1971.	2940.	4080.	5301.	5581.	5540.	5193.
G 57.5	1350.	1359.	1453.	1702.	2141.	2980.	4024.	5125.	5316.	5273.	5047.
L 55.0	1551.	1556.	1641.	1847.	2266.	2991.	3962.	5020.	5180.	5099.	4922.
E 52.5	1726.	1712.	1788.	1984.	2394.	2988.	3854.	4661.	4823.	4810.	4759.
50.0	1840.	1842.	1926.	2131.	2509.	3027.	3769.	4354.	4500.	4519.	4558.
47.5	1974.	1974.	2073.	2267.	2621.	3081.	3696.	4150.	4257.	4285.	4362.
45.0	2111.	2116.	2216.	2399.	2722.	3124.	3594.	3945.	4077.	4109.	4199.
42.5	2250.	2257.	2360.	2546.	2843.	3186.	3531.	3776.	3893.	3935.	4048.
40.0	2398.	2424.	2537.	2732.	2967.	3242.	3481.	3612.	3724.	3773.	3889.
37.5	2636.	2668.	2777.	2912.	3089.	3288.	3426.	3478.	3581.	3628.	3740.
35.0	2886.	2924.	2982.	3082.	3187.	3306.	3324.	3366.	3464.	3510.	3605.
30.0	3233.	3275.	3276.	3280.	3271.	3195.	3135.	3223.	3325.	3351.	3390.
25.0	3310.	3363.	3326.	3251.	3118.	3024.	3062.	3156.	3223.	3229.	3222.
20.0	3077.	3124.	3071.	3027.	3006.	3024.	3090.	3150.	3166.	3157.	3098.
15.0	3005.	3062.	3044.	3047.	3072.	3109.	3149.	3151.	3130.	3109.	3037.
10.0	3098.	3161.	3152.	3153.	3169.	3174.	3160.	3126.	3091.	3073.	3013.
5.0	3104.	3163.	3145.	3129.	3121.	3108.	3089.	3068.	3046.	3035.	2998.
0.0	2969.	2969.	2969.	2969.	2969.	2969.	2969.	2969.	2969.	2969.	2969.

||
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	5.	5.	4.	4.	3.	2.	2.	1.	0.	0.	0.
	85.0	12.	13.	11.	12.	12.	14.	23.	35.	29.	11.	2.
V	82.5	232.	198.	35.	39.	41.	55.	78.	90.	106.	115.	105.
E	80.0	1176.	938.	93.	84.	82.	109.	153.	175.	207.	233.	223.
R	77.5	2268.	1730.	221.	137.	134.	160.	214.	258.	327.	348.	336.
T	75.0	3386.	2688.	488.	202.	193.	207.	255.	272.	386.	431.	425.
I	72.5	4279.	3534.	904.	278.	245.	249.	289.	270.	357.	386.	397.
C	70.0	5139.	4310.	1481.	359.	288.	289.	335.	288.	325.	311.	310.
A	68.0<<	5410.	4539.	1853.	414.	321.	319.	367.	320.	332.	287.	284.
L	67.5	5430.	4560.	1934.	426.	331.	326.	373.	328.	335.	290.	286.
	65.0	5309.	4542.	2333.	495.	371.	365.	404.	373.	359.	315.	309.
A	62.5	5117.	4538.	2672.	605.	408.	405.	431.	420.	396.	353.	344.
N	60.0	5025.	4571.	2960.	799.	446.	445.	433.	455.	438.	395.	384.
G	57.5	4973.	4640.	3203.	1095.	492.	483.	450.	467.	472.	433.	423.
L	55.0	4869.	4602.	3422.	1433.	551.	521.	477.	479.	498.	465.	453.
E	52.5	4715.	4463.	3377.	1753.	650.	556.	507.	510.	530.	493.	479.
	50.0	4541.	4332.	3394.	2034.	822.	589.	541.	543.	548.	520.	511.
	47.5	4363.	4205.	3399.	2236.	1037.	633.	574.	572.	565.	542.	540.
	45.0	4201.	4080.	3371.	2361.	1254.	727.	612.	598.	588.	573.	572.
	42.5	4041.	3930.	3323.	2441.	1447.	873.	666.	627.	615.	602.	602.
	40.0	3875.	3777.	3255.	2491.	1615.	1029.	763.	673.	643.	628.	628.
	37.5	3718.	3626.	3173.	2519.	1758.	1175.	887.	763.	702.	672.	673.
	35.0	3583.	3485.	3094.	2533.	1882.	1328.	1018.	876.	805.	768.	773.
	30.0	3344.	3241.	2945.	2539.	2090.	1658.	1329.	1148.	1043.	987.	988.
	25.0	3148.	3057.	2830.	2557.	2267.	1980.	1729.	1520.	1385.	1330.	1341.
	20.0	3026.	2953.	2783.	2598.	2419.	2240.	2079.	1928.	1823.	1780.	1797.
	15.0	2974.	2918.	2788.	2663.	2544.	2446.	2355.	2271.	2201.	2173.	2196.
	10.0	2965.	2927.	2841.	2749.	2676.	2615.	2561.	2520.	2483.	2464.	2500.
	5.0	2971.	2952.	2913.	2866.	2815.	2778.	2749.	2726.	2708.	2696.	2733.
	0.0	2969.	2969.	2969.	2969.	2969.	2969.	2969.	2969.	2969.	2969.	2969.

CONE OF MAXIMUM CANDELA



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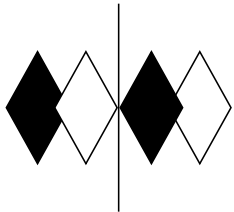
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5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	71
5- 10	209
10- 15	336
15- 20	450
20- 25	558
25- 30	659
30- 35	749
35- 40	821
40- 45	886
45- 50	950
50- 55	1012
55- 60	1050
60- 65	1028
65- 70	950
70- 75	692
75- 80	356
80- 85	77
85- 90	3
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	280
0- 20	1066
0- 30	2283
0- 40	3853
0- 50	5689
0- 60	7751
0- 70	9730
0- 80	10778
0- 90	10858
0-100	10858
0-110	10858
0-120	10858
0-130	10858
0-140	10858
0-150	10858
0-160	10858
0-170	10858
0-180	10858



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PAGE: 9 OF 9

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