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THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

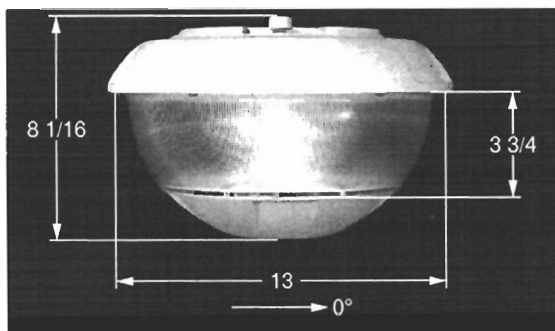
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INDEPENDENT TESTING LABORATORIES, INC.
4066 CAMELOT CIRCLE, LONGMONT, CO 80504 USA

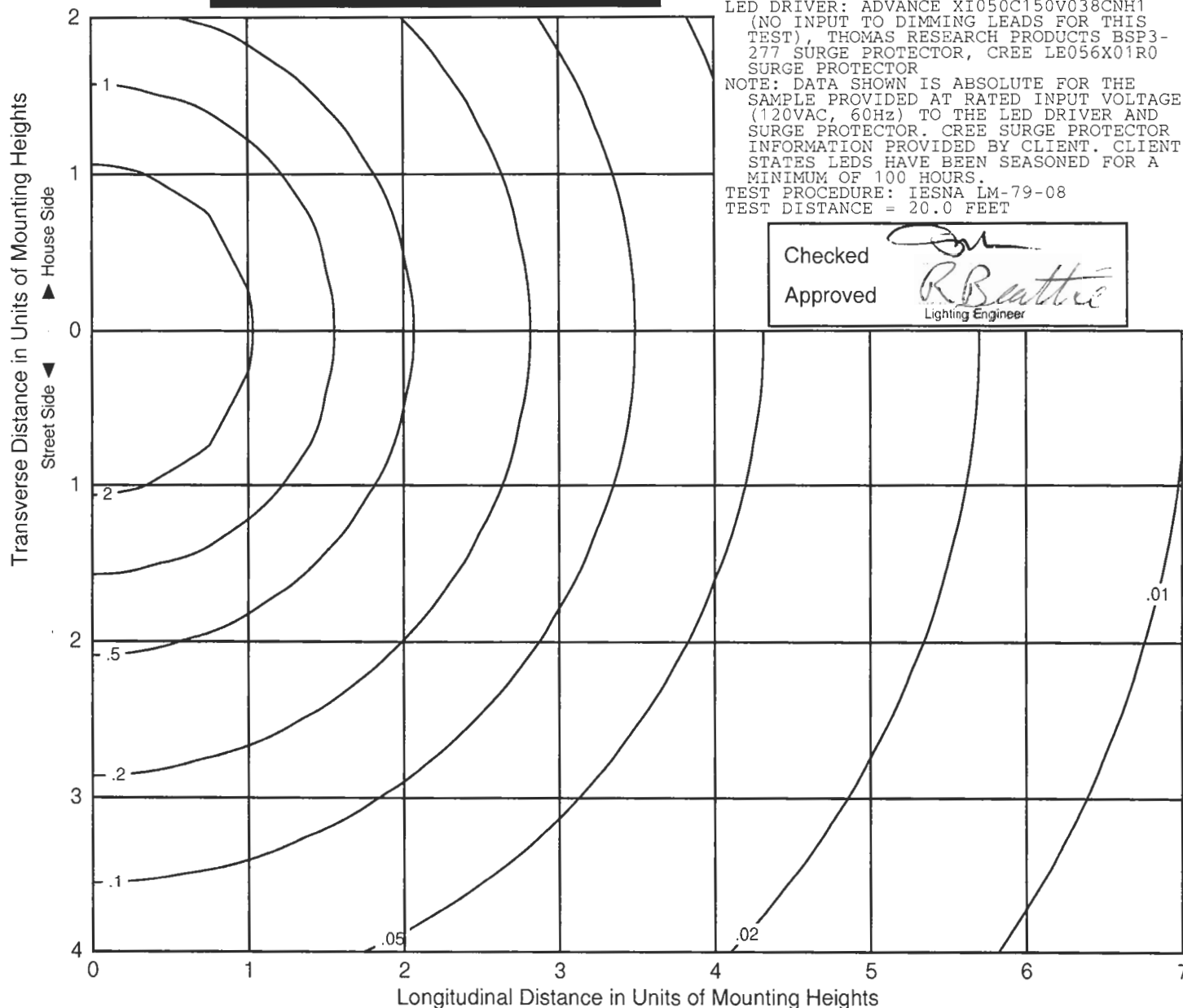
PHONE: (303) 442-1255 • FAX: (970) 535-3114 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

Values based on 10 foot mounting height.



REPORT NUMBER: ITL78019
ISSUE DATE: 07/15/13
PREPARED FOR: CREE, INC.
CATALOG NUMBER: VGA-**-5MA40K-UL
LUMINAIRE: CAST GRAY PAINTED METAL UPPER AND LOWER HOUSING, ONE WHITE CIRCUIT BOARD WITH 30 LEDS, FROSTED PLASTIC INTERIOR LENS WITH ONE CLEAR CONICAL OPTIC PER LED, EACH OPTIC WITH RECESSED SEMI-HEMISPHERICAL BOTTOM CENTER AND CONCAVE TOP, WHITE PAINTED FLAT METAL LOWER REFLECTOR, MOLDED WHITE PLASTIC UPPER REFLECTOR AND CENTER COLUMN, CLEAR LINEAR PRISMATIC PLASTIC EXTERIOR LENS. INTERIOR LENS FROSTED SIDE IN. EXTERIOR LENS PRISMS IN AND VERTICAL.
LAMPS: THIRTY WHITE LIGHT EMITTING DIODES (LEDS) EACH WITH CLEAR HEMISPHERICAL INTEGRAL LENS, VERTICAL BASE-DOWN POSITION.
TOTAL INPUT WATTS = 48.5 AT 120.0 VOLTS
LED DRIVER: ADVANCE XI050C150V038CNH1 (NO INPUT TO DIMMING LEADS FOR THIS TEST), THOMAS RESEARCH PRODUCTS BSP3-277 SURGE PROTECTOR, CREE LE056X01R0 SURGE PROTECTOR
NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE LED DRIVER AND SURGE PROTECTOR. CREE SURGE PROTECTOR INFORMATION PROVIDED BY CLIENT. CLIENT STATES LEDS HAVE BEEN SEASONED FOR A MINIMUM OF 100 HOURS.
TEST PROCEDURE: IESNA LM-79-08
TEST DISTANCE = 20.0 FEET



Checked

Approved

R. Beattie
Lighting Engineer

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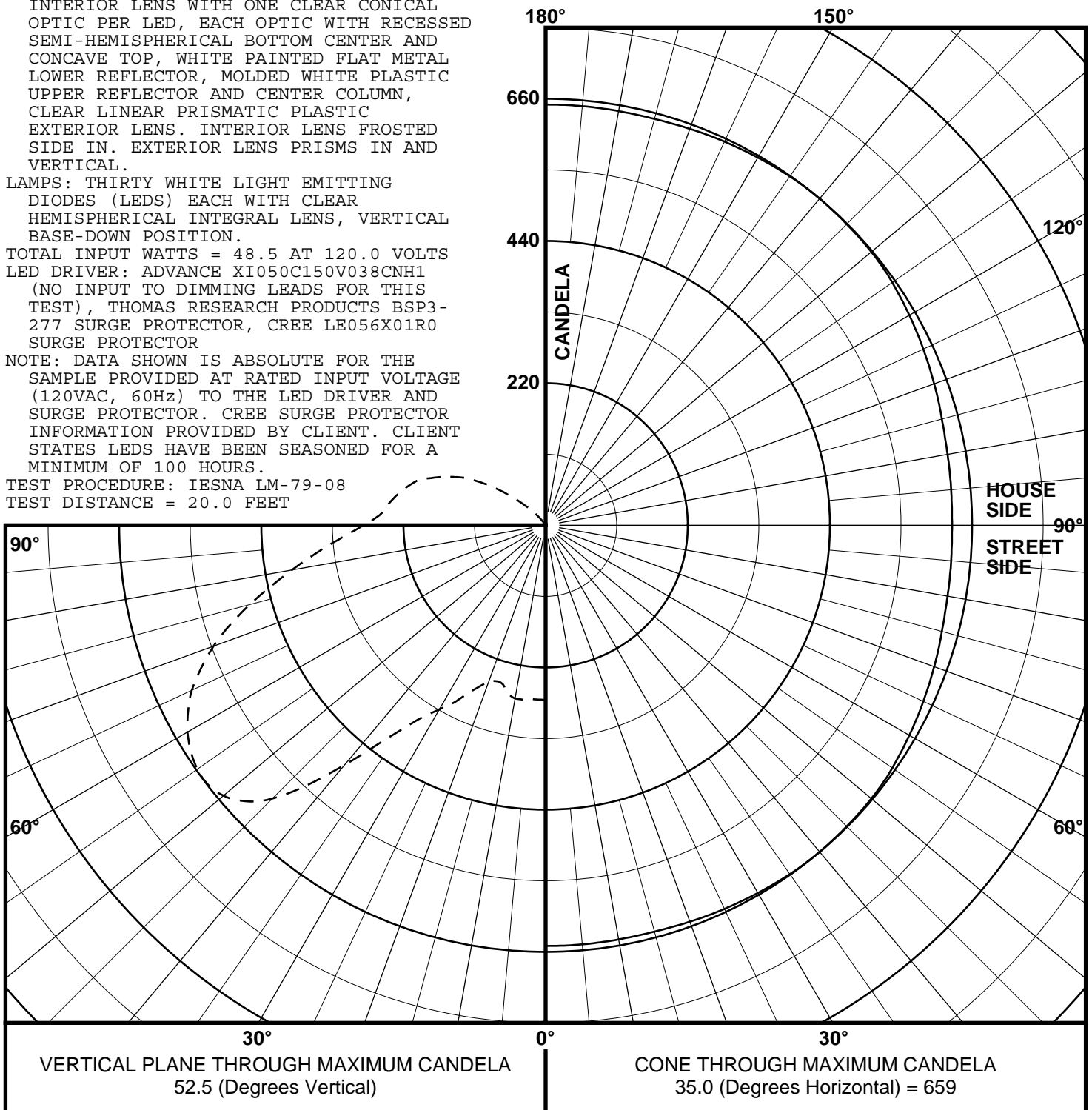
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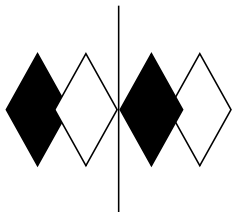
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MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA





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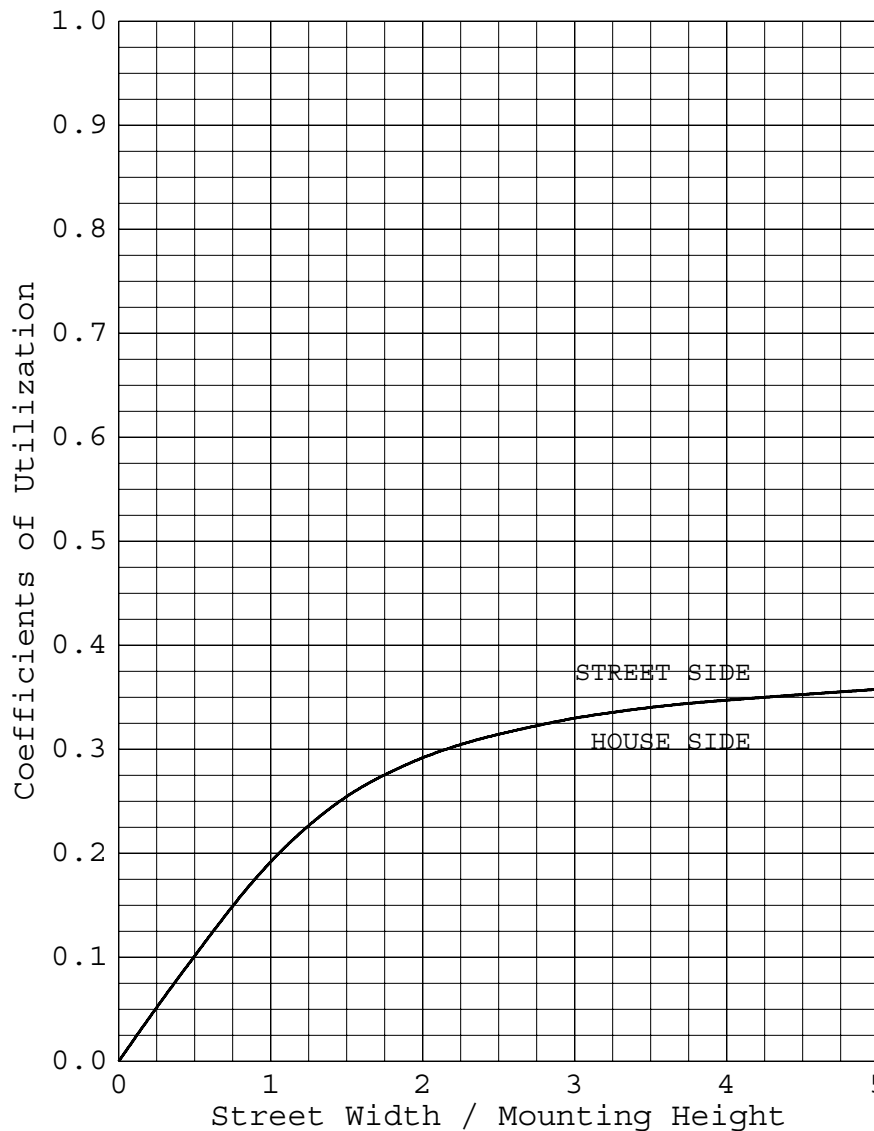
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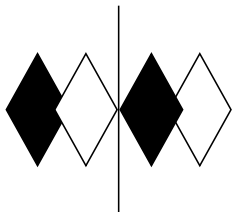
COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	1484	39.3
DOWNWARD HOUSE SIDE	1484	39.3
DOWNWARD TOTAL	2968	78.6
UPWARD STREET SIDE	404	10.7
UPWARD HOUSE SIDE	404	10.7
UPWARD TOTAL	808	21.4
TOTAL FLUX	3776	100.0

EFFICACY = 77.9 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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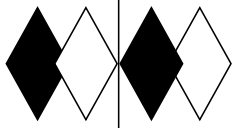
FLUX DISTRIBUTION BY SOLID ANGLE

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

	LUMENS	PERCENT OF FIXTURE	BUG ZONE RATINGS
FORWARD LIGHT	1484.	39.3	
FL (0- 30)	118.5	3.1	
FM (30- 60)	639.6	16.9	
FH (60- 80)	545.0	14.4	G0
FVH(80- 90)	180.8	4.8	G2
BACK LIGHT	1484.	39.3	
BL (0- 30)	118.5	3.1	B1
BM (30- 60)	639.6	16.9	B1
BH (60- 80)	545.0	14.4	B2 G0
BVH(80- 90)	180.8	4.8	G2
UPLIGHT	808.	21.4	
UL (90-100)	269.1	7.1	U3
UH (100-180)	538.6	14.3	U4
TRAPPED LIGHT	0.	0.0	
TOTAL FLUX	3776.	100.0	

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

BUG RATING: B2 U4 G2



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CANDELA TABULATION

		LATERAL ANGLE										
		0.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0	85.0	90.0
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		4.	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.
135.0		38.	39.	39.	39.	38.	38.	38.	37.	38.	37.	37.
125.0		110.	110.	110.	109.	108.	107.	106.	107.	107.	107.	107.
115.0		176.	175.	176.	177.	177.	177.	177.	177.	177.	176.	176.
105.0		224.	224.	224.	225.	224.	221.	217.	212.	207.	204.	204.
95.0		247.	247.	249.	252.	252.	250.	244.	236.	229.	225.	225.
92.5		261.	261.	263.	264.	263.	260.	255.	246.	240.	235.	235.
90.0		284.	285.	284.	284.	282.	278.	273.	265.	260.	257.	257.
87.5		312.	312.	310.	308.	305.	301.	296.	291.	286.	285.	285.
85.0		344.	343.	341.	338.	334.	329.	325.	321.	318.	317.	317.
V	82.5	378.	377.	374.	370.	365.	360.	355.	354.	352.	352.	352.
E	80.0	413.	412.	409.	404.	399.	394.	389.	388.	388.	388.	388.
R	77.5	450.	448.	446.	441.	435.	431.	427.	425.	424.	425.	424.
T	75.0	488.	487.	484.	478.	474.	470.	465.	463.	462.	463.	462.
I	72.5	526.	524.	521.	518.	512.	508.	503.	501.	500.	501.	500.
C	70.0	561.	560.	556.	553.	547.	542.	538.	537.	536.	536.	536.
A	67.5	591.	591.	587.	583.	577.	574.	570.	568.	567.	568.	568.
L	65.0	613.	612.	609.	607.	604.	601.	598.	595.	594.	594.	594.
	62.5	624.	624.	625.	626.	624.	623.	620.	617.	613.	610.	610.
A	60.0	631.	632.	635.	639.	640.	639.	637.	632.	625.	620.	619.
N	57.5	638.	639.	642.	647.	651.	652.	648.	641.	632.	626.	625.
G	55.0	646.	646.	648.	653.	658.	658.	654.	646.	636.	629.	629.
L	52.5<<	651.	651.	651.	655.	659.	659.	655.	645.	635.	630.	629.
E	50.0	647.	647.	646.	649.	651.	651.	646.	636.	629.	625.	625.
	47.5	632.	632.	631.	633.	632.	630.	624.	618.	614.	612.	612.
	45.0	607.	604.	603.	602.	598.	593.	589.	587.	585.	587.	585.
	42.5	554.	551.	552.	550.	545.	542.	538.	539.	538.	540.	537.
	40.0	489.	487.	489.	488.	484.	482.	480.	479.	475.	478.	475.
	37.5	434.	432.	434.	431.	428.	425.	424.	425.	425.	425.	422.
	35.0	393.	392.	393.	388.	384.	380.	381.	384.	384.	385.	384.
	32.5	366.	365.	364.	357.	351.	349.	349.	354.	356.	358.	357.
	30.0	348.	346.	342.	334.	329.	326.	327.	331.	336.	340.	339.
	25.0	305.	303.	301.	293.	288.	288.	288.	293.	297.	302.	301.
	20.0	260.	259.	258.	257.	258.	258.	260.	260.	261.	264.	263.
	15.0	248.	248.	250.	253.	255.	257.	257.	255.	253.	252.	252.
	10.0	276.	275.	275.	274.	272.	272.	273.	273.	275.	275.	275.
	5.0	271.	271.	271.	271.	270.	270.	270.	270.	270.	271.	271.
	0.0	270.	270.	270.	270.	270.	270.	270.	270.	270.	270.	270.
		PLANE OF MAXIMUM CANDELA										
		CONE OF MAXIMUM CANDELA										



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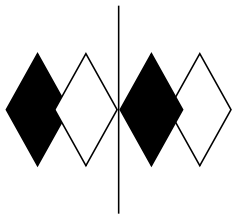
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5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	6
5- 10	19
10- 15	31
15- 20	42
20- 25	58
25- 30	80
30- 35	106
35- 40	144
40- 45	201
45- 50	251
50- 55	281
55- 60	296
60- 65	301
65- 70	291
70- 75	266
75- 80	232
80- 85	197
85- 90	165
90- 95	140
95-100	129
100-105	120
105-110	111
110-115	97
115-120	79
120-125	59
125-130	38
130-135	22
135-140	10
140-145	3
145-150	1
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	26
0- 20	99
0- 30	237
0- 40	487
0- 50	939
0- 60	1516
0- 70	2108
0- 80	2606
0- 90	2968
0-100	3237
0-110	3468
0-120	3643
0-130	3740
0-140	3772
0-150	3776
0-160	3776
0-170	3776
0-180	3776



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RACINE, WI 53406

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