

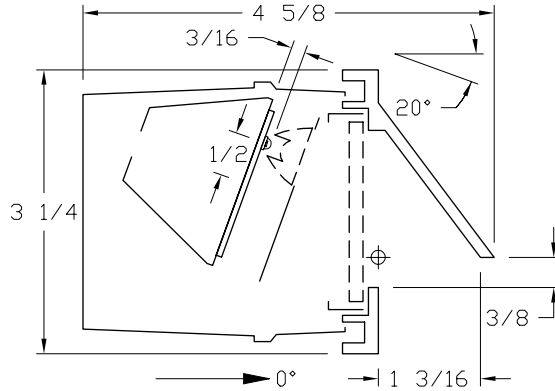
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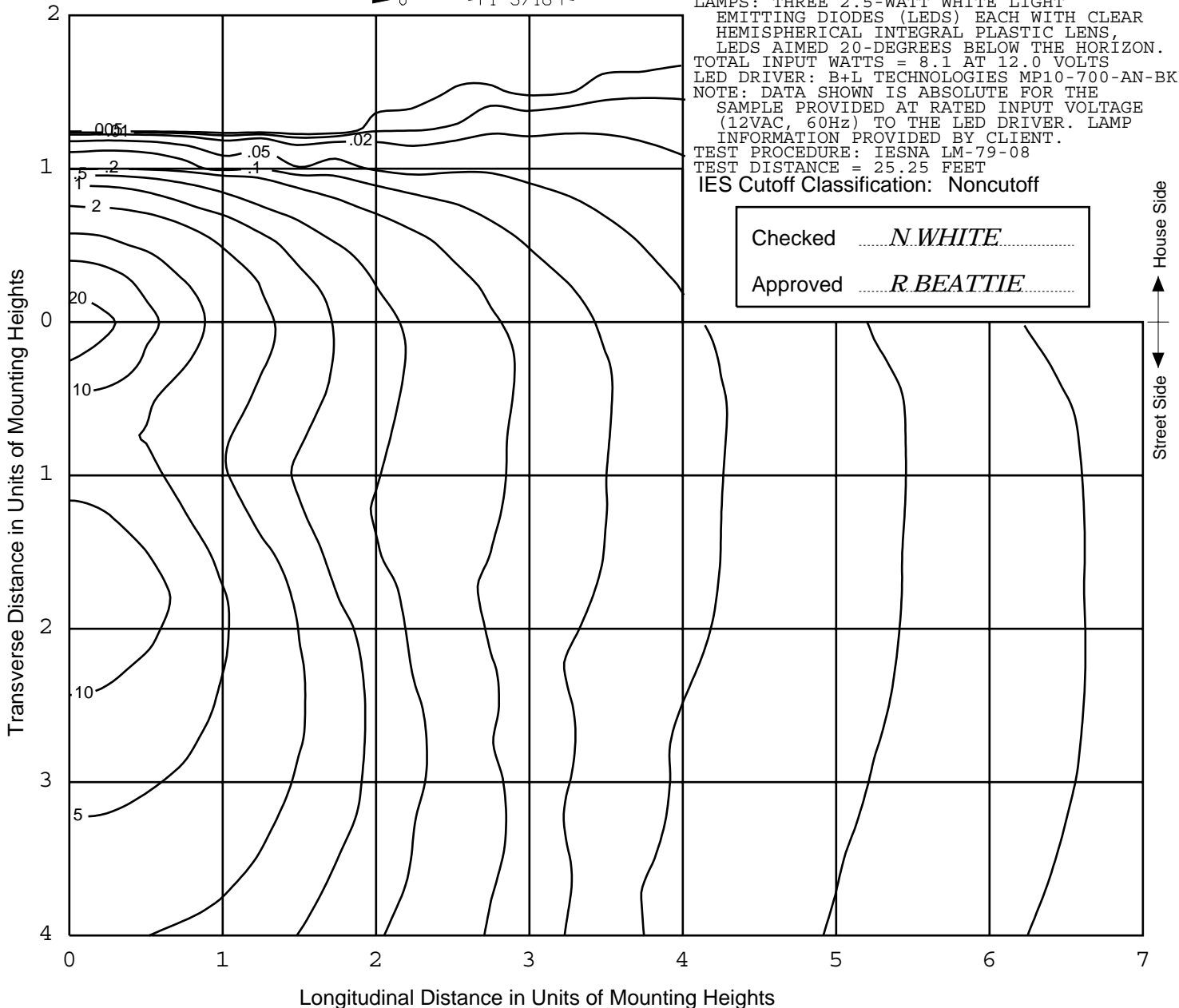
PHONE: (303)442-1255 • FAX: (303)449-5274 • E-MAIL: [itl@itlboulder.com](mailto:itl@itlboulder.com) • WEBSITE: [www.itlboulder.com](http://www.itlboulder.com)

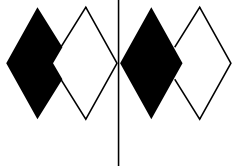
## ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

Values based on 1 foot mounting height.



REPORT NUMBER: ITL63776  
DATE: 01/07/10  
REVISED: 02/04/10  
PREPARED FOR: B-K LIGHTING, INC.  
CATALOG NUMBER: BQ-LED-e23-20-DEGREES;  
SQ-LED-e23-20-DEGREES; VB-LED-e23-20-DEGREES  
LUMINAIRE: CAST METAL WALL MOUNTING HOUSING, ONE ADJUSTABLE OPTICAL ASSEMBLY CONSISTING OF: MACHINED DIFFUSE METAL HEAT SINK, ONE CIRCUIT BOARD WITH 3 LEDS, ONE CLEAR CONICAL PLASTIC OPTIC PER LED WITH FROSTED SURFACE OPPOSITE LED, MOLDED BLACK PLASTIC OPTIC MOUNTING FRAME. FABRICATED DIFFUSE METAL LED MODULE MOUNTING BRACKETS, CAST BLACK PAINTED METAL OPTIC ASSEMBLY MOUNTING COLLAR, CLEAR FLAT LINEAR PRISMATIC GLASS LENS, CAST WHITE PAINTED METAL FACEPLATE, LENS PRISMS OUT AND VERTICAL.  
LAMPS: THREE 2.5-WATT WHITE LIGHT EMITTING DIODES (LEDs) EACH WITH CLEAR HEMISPHERICAL INTEGRAL PLASTIC LENS, LEDS AIMED 20-DEGREES BELOW THE HORIZON.  
TOTAL INPUT WATTS = 8.1 AT 12.0 VOLTS  
LED DRIVER: B+L TECHNOLOGIES MP10-700-AN-BK  
NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (12VAC, 60Hz) TO THE LED DRIVER. LAMP INFORMATION PROVIDED BY CLIENT.  
TEST PROCEDURE: IESNA LM-79-08  
TEST DISTANCE = 25.25 FEET  
IES Cutoff Classification: Noncutoff





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REPORT NUMBER: ITL63776

DATE: 01/07/10

REVISED: 02/04/10

PREPARED FOR: B-K LIGHTING, INC.

CATALOG NUMBER: BQ-LED-e23-20-DEGREES;

SQ-LED-e23-20-DEGREES; VB-LED-e23-20-DEGREES

LUMINAIRE: CAST METAL WALL MOUNTING

HOUSING, ONE ADJUSTABLE OPTICAL ASSEMBLY CONSISTING OF: MACHINED DIFFUSE METAL HEAT SINK, ONE CIRCUIT BOARD WITH 3 LEDS, ONE CLEAR CONICAL PLASTIC OPTIC PER LED WITH FROSTED SURFACE OPPOSITE LED, MOLDED BLACK PLASTIC OPTIC MOUNTING FRAME. FABRICATED DIFFUSE METAL LED MODULE MOUNTING BRACKETS, CAST BLACK PAINTED METAL OPTIC ASSEMBLY MOUNTING COLLAR, CLEAR FLAT LINEAR PRISMATIC GLASS LENS, CAST WHITE PAINTED METAL FACEPLATE, LENS PRISMS OUT AND VERTICAL.

LAMPS: THREE 2.5-WATT WHITE LIGHT EMITTING DIODES (LEDs) EACH WITH CLEAR HEMISPHERICAL INTEGRAL PLASTIC LENS, LEDS AIMED 20-DEGREES BELOW THE HORIZON.

TOTAL INPUT WATTS = 8.1 AT 12.0 VOLTS

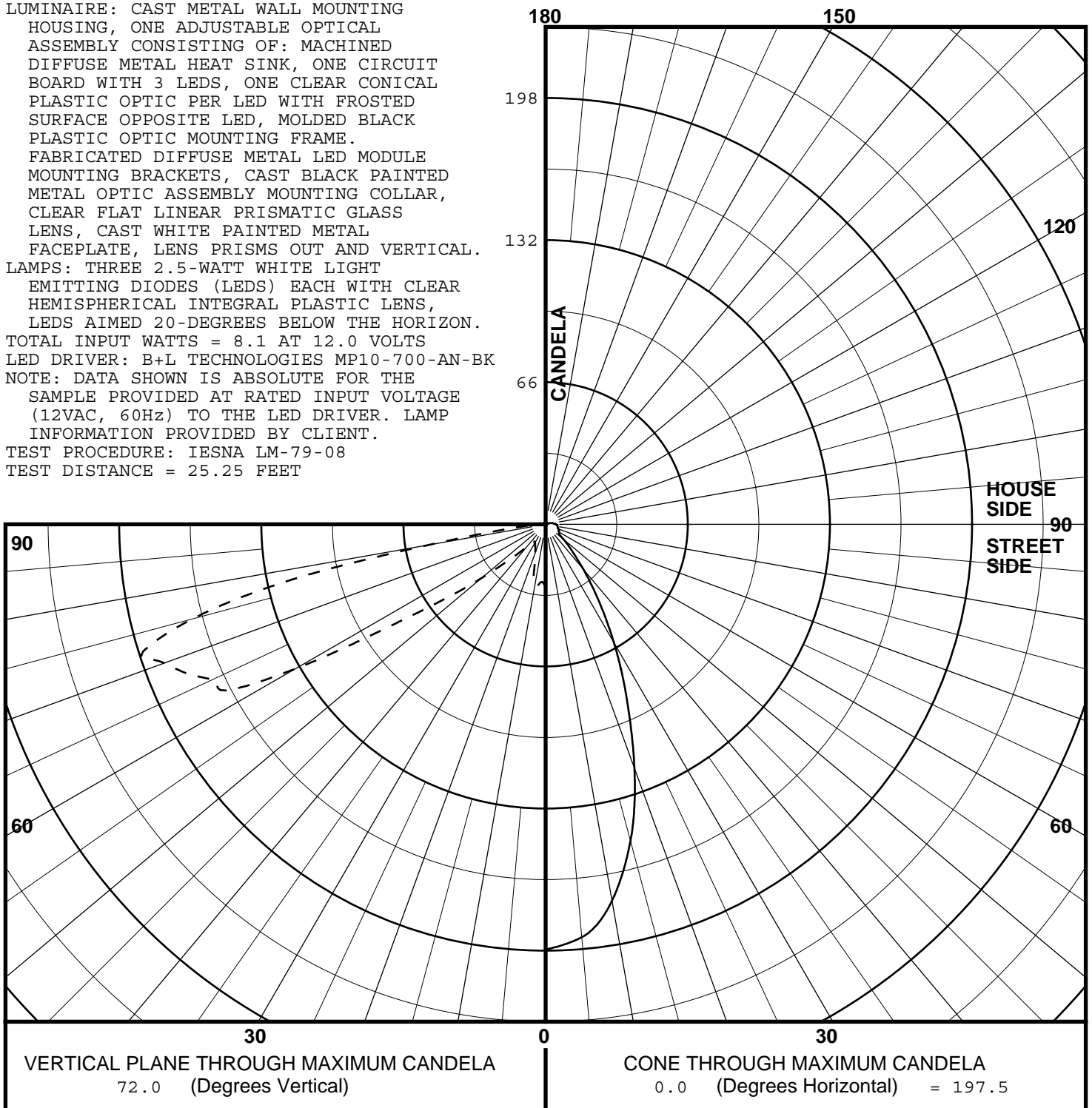
LED DRIVER: B+L TECHNOLOGIES MP10-700-AN-BK

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (12VAC, 60Hz) TO THE LED DRIVER. LAMP INFORMATION PROVIDED BY CLIENT.

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 25.25 FEET

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA





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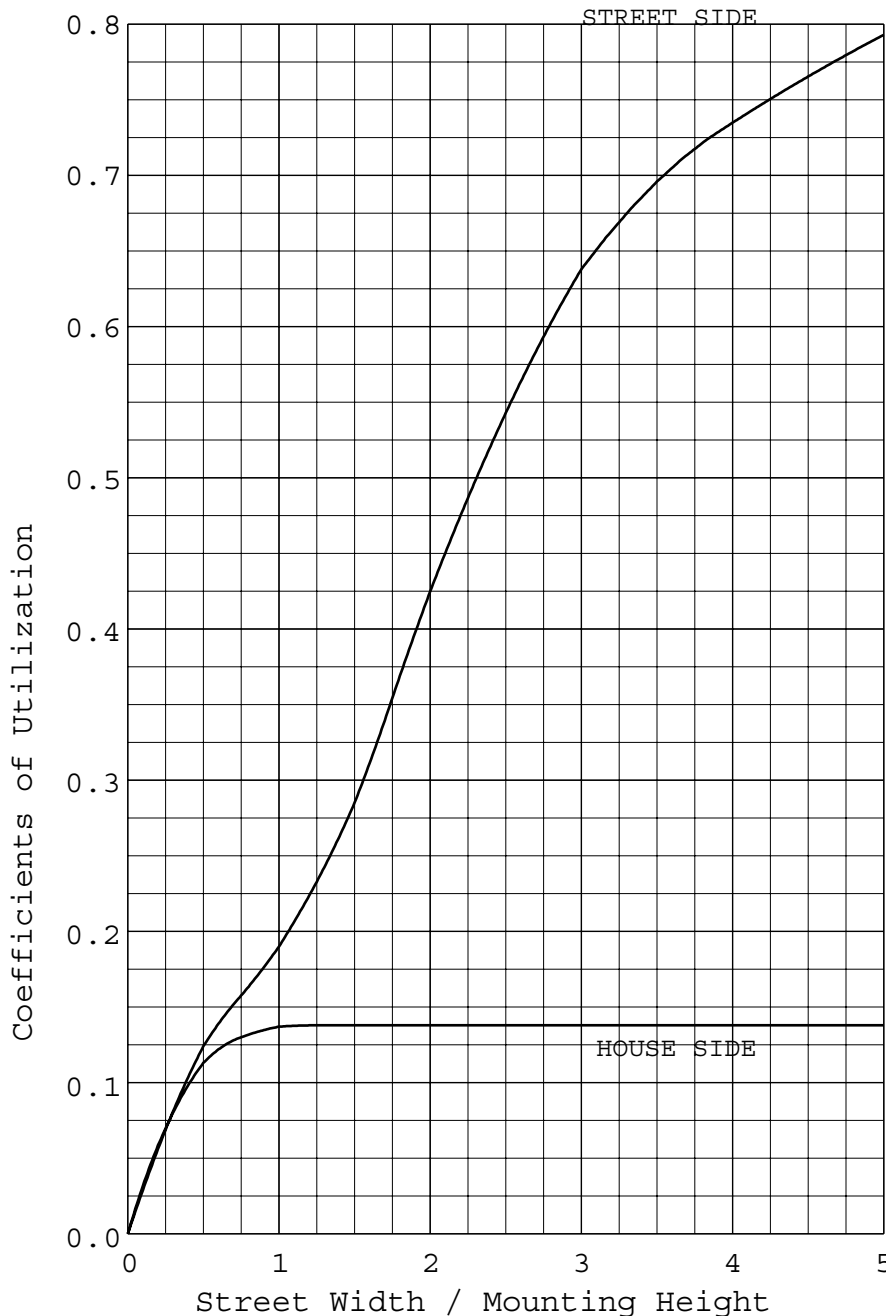
REPORT NUMBER: ITL63776

DATE: 01/07/10

PREPARED FOR: B-K LIGHTING, INC.

REVISED: 02/04/10

# COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	82.	83.5
DOWNWARD HOUSE SIDE	14.	13.8
DOWNWARD TOTAL	96.	97.4
UPWARD STREET SIDE	3.	2.6
UPWARD HOUSE SIDE	0.	0.0
UPWARD TOTAL	3.	2.6
TOTAL FLUX	99.	100.0
EFFICACY = 12.2 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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REPORT NUMBER: ITL63776

DATE: 01/07/10

PREPARED FOR: B-K LIGHTING, INC.

REVISED: 02/04/10

### FLUX DISTRIBUTION BY SOLID ANGLE

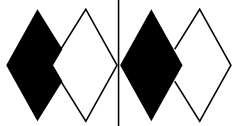
(PER IESNA TM-15-07, LUMINAIRE CLASSIFICATION  
SYSTEM FOR OUTDOOR LUMINAIRES)

	LUMENS	PERCENT OF FIXTURE
FORWARD LIGHT	82.	83.5
FL ( 0- 30)		7.8
FM ( 30- 60)		21.1
FH ( 60- 80)		50.7
FVH( 80- 90)		3.9
BACK LIGHT	14.	13.8
BL ( 0- 30)		7.1
BM ( 30- 60)		5.7
BH ( 60- 80)		0.9
BVH( 80- 90)		0.1
UPLIGHT	3.	2.6
UL ( 90-100)		1.2
UH (100-180)		1.5
TRAPPED LIGHT	0.	0.0
TOTAL FLUX	99.	100.0

### BACKLIGHT, UPLIGHT, AND GLARE (BUG) RATINGS (PER ADDENDUM A FOR IESNA TM-15-07)

BUG RATING: B0 U1 G0	FIRST DETERMINING SECONDARY SOLID ANGLE*	LUMENS
BACKLIGHT RATING: B0	BH	0.9
UPLIGHT RATING : U1	UH	0.7
GLARE RATING : G0	FVH	3.8

\* NOTE: OTHER DETERMINING SOLID ANGLES MAY FALL INTO THIS SAME CATEGORY. ONLY THE FIRST DETERMINING ANGLES FROM THE TABLES A1-A3 IN THE ADDENDUM ARE SHOWN.



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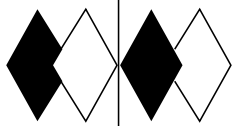
### CANDELA TABULATION

	STREET	SIDE	LATERAL ANGLE									
		0.0	1.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	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	1.	1.	1.	1.	1.	0.	1.	0.	0.	0.	0.
	115.0	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.
	105.0	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.	0.
	95.0	3.	3.	3.	3.	3.	3.	2.	2.	1.	1.	0.
	92.5	3.	3.	3.	3.	3.	3.	3.	2.	2.	1.	0.
	90.0	4.	4.	4.	4.	4.	3.	3.	2.	2.	1.	0.
	87.5	5.	5.	5.	5.	5.	4.	3.	3.	2.	2.	1.
	85.0	10.	10.	10.	10.	7.	5.	4.	4.	3.	2.	2.
V	82.5	22.	22.	21.	22.	12.	7.	5.	4.	4.	3.	3.
E	80.0	55.	56.	56.	48.	29.	14.	7.	5.	5.	4.	3.
R	77.5	126.	127.	127.	100.	55.	25.	10.	6.	5.	5.	4.
T	75.0	170.	170.	169.	137.	78.	37.	14.	7.	6.	5.	5.
I	72.5	196.	196.	192.	154.	91.	43.	18.	8.	7.	6.	6.
C	72.0<<	198.	197.	193.	152.	89.	43.	17.	8.	7.	6.	6.
A	70.0	188.	189.	184.	149.	92.	44.	19.	8.	7.	6.	6.
L	67.5	181.	181.	176.	143.	89.	42.	18.	8.	7.	7.	7.
	65.0	171.	171.	166.	134.	83.	38.	16.	8.	8.	7.	7.
A	62.5	167.	168.	163.	128.	76.	34.	14.	8.	7.	8.	8.
N	60.0	134.	135.	132.	103.	60.	29.	12.	8.	8.	8.	8.
G	57.5	95.	95.	93.	74.	45.	24.	11.	8.	8.	8.	9.
L	55.0	69.	69.	68.	55.	36.	21.	11.	8.	8.	8.	9.
E	52.5	52.	52.	51.	42.	30.	18.	11.	8.	8.	9.	9.
	50.0	39.	39.	38.	32.	24.	16.	11.	9.	9.	9.	10.
	47.5	29.	29.	29.	25.	20.	14.	10.	9.	9.	10.	10.
	45.0	22.	22.	22.	19.	16.	13.	10.	9.	9.	10.	11.
	42.5	17.	17.	17.	16.	14.	12.	10.	9.	10.	10.	11.
	40.0	14.	14.	14.	13.	12.	11.	10.	10.	10.	11.	12.
	37.5	12.	12.	12.	11.	11.	10.	10.	10.	11.	11.	12.
	35.0	10.	10.	10.	10.	11.	10.	10.	11.	11.	12.	13.
	30.0	10.	10.	10.	10.	11.	11.	11.	12.	13.	14.	14.
	25.0	11.	11.	11.	12.	12.	13.	14.	15.	17.	16.	17.
	20.0	14.	14.	14.	15.	15.	16.	18.	20.	20.	19.	20.
	15.0	20.	20.	20.	21.	22.	24.	25.	24.	23.	22.	23.
	10.0	28.	28.	28.	28.	28.	28.	27.	26.	25.	25.	26.
	5.0	27.	28.	28.	27.	27.	27.	27.	27.	27.	28.	28.
	0.0	29.	29.	29.	29.	29.	29.	29.	29.	29.	29.	29.

||

PLANE OF MAXIMUM CANDELA

CONE OF MAXIMUM CANDELA



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DATE: 01/07/10  
REVISED: 02/04/10

### 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
VERTICAL ANGLE	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.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	85.0	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	82.5	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.
	80.0	3.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.
	77.5	4.	3.	1.	0.	0.	0.	0.	0.	0.	0.	0.
	75.0	4.	3.	2.	0.	0.	0.	0.	0.	0.	0.	0.
	72.5	5.	4.	2.	0.	0.	0.	0.	0.	0.	0.	0.
	72.0<<	5.	4.	2.	1.	0.	0.	0.	0.	0.	0.	0.
	70.0	5.	5.	3.	0.	0.	0.	0.	0.	0.	0.	0.
	67.5	6.	5.	3.	0.	0.	0.	0.	0.	0.	0.	0.
	65.0	7.	6.	4.	1.	0.	0.	0.	0.	0.	0.	0.
	62.5	7.	6.	4.	2.	0.	0.	0.	0.	0.	0.	0.
	60.0	8.	7.	5.	3.	0.	0.	0.	0.	0.	0.	0.
	57.5	8.	8.	6.	4.	1.	0.	0.	0.	0.	0.	0.
	55.0	9.	8.	7.	4.	2.	0.	0.	0.	0.	0.	0.
	52.5	9.	9.	8.	5.	3.	1.	0.	0.	0.	0.	0.
	50.0	10.	9.	8.	6.	4.	2.	1.	0.	0.	0.	0.
	47.5	10.	10.	9.	7.	5.	3.	2.	1.	0.	0.	0.
	45.0	11.	10.	9.	8.	6.	4.	3.	2.	1.	1.	1.
	42.5	11.	11.	10.	9.	7.	5.	4.	3.	2.	2.	2.
40.0	12.	12.	11.	9.	8.	6.	5.	4.	3.	3.	3.	
37.5	12.	12.	11.	10.	9.	7.	6.	5.	4.	4.	4.	
35.0	13.	13.	12.	11.	10.	8.	7.	6.	5.	5.	5.	
30.0	15.	15.	14.	13.	11.	10.	9.	8.	8.	7.	7.	
25.0	18.	18.	17.	15.	14.	12.	11.	11.	10.	10.	10.	
20.0	20.	21.	20.	18.	16.	15.	14.	13.	12.	12.	12.	
15.0	24.	24.	24.	22.	20.	19.	18.	17.	17.	16.	16.	
10.0	27.	27.	27.	27.	26.	24.	22.	21.	21.	20.	20.	
5.0	28.	29.	29.	29.	29.	29.	29.	29.	29.	29.	29.	
0.0	29.	29.	29.	29.	29.	29.	29.	29.	29.	29.	29.	

CONE OF MAXIMUM CANDELA