



**itl boulder**  
THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

PHONE: (303) 442-1255

FAX: (970) 535-3114

E-MAIL: [itl@itlboulder.com](mailto:itl@itlboulder.com)

WEBSITE: [www.itlboulder.com](http://www.itlboulder.com)

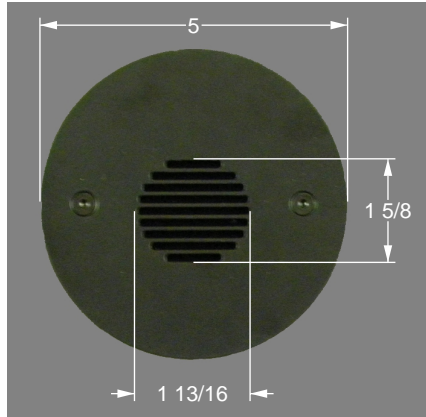
**NVLAP**  
NVLAP LAB CODE: 200925-0

INDEPENDENT TESTING LABORATORIES, INC.

4066 CAMELOT CIRCLE, LONGMONT, CO 80504 USA

## ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

Values based on 1 foot mounting height.



REPORT NUMBER: ITL86654

ISSUE DATE: 03/02/16

PAGE: 1 OF 8

PREPARED FOR: B-K LIGHTING, INC.

CATALOG NUMBER: SSL-LED-e102-C-20-DEGREES,  
BQL-LED-e102-C-20-DEGREES, SQL-LED-e102-C-  
20-DEGREES, VBL-LED-e102-C-20-DEGREES

LUMINAIRE: CAST METAL WALL MOUNTING HOUSING,  
ONE ADJUSTABLE LED MODULE CONSISTING OF:  
MACHINED BLACK FINISHED METAL HEAT SINK,  
ONE BLACK 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,  
MACHINED BLACK FINISHED METAL OPTIC  
ASSEMBLY MOUNTING COLLAR, CLEAR FLAT LINEAR  
PRISMATIC GLASS LENS, CAST BLACK PAINTED  
LOUVERED METAL FACEPLATE, LENS PRISMS OUT  
AND VERTICAL. LED MODULE TILTED 20-DEGREES  
BELOW THE HORIZON.

LAMPS: THREE WHITE LIGHT EMITTING DIODES  
(LEDS), TILTED 20-DEGREES BELOW THE HORIZON.  
INPUT ELECTRICAL: 12.0 VOLTS, 5.00 WATTS,  
0.466 AMPS

LED DRIVER: B-K LIGHTING 524439/400188-L-L,  
DRIVER HAS MULTIPLE LEADS, ONLY LINE INPUT  
AND LED OUTPUT LEADS CONNECTED FOR THIS TEST.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE  
PROVIDED AT RATED INPUT VOLTAGE (12VAC,  
60Hz) TO THE DRIVER. POTENTIOMETER ON THE  
LED CIRCUIT BOARD SET TO POSITION "9" FOR  
THIS TEST.

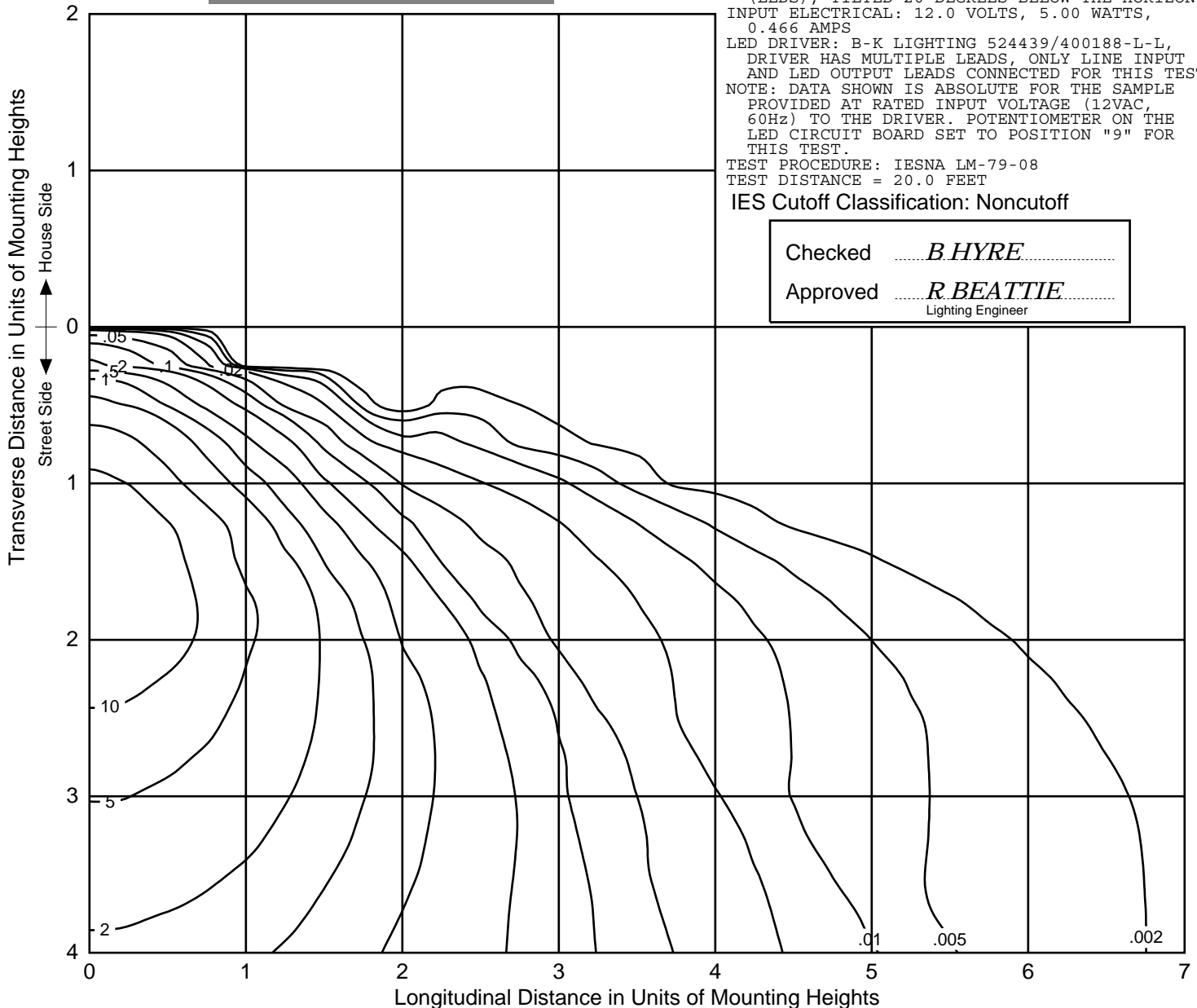
TEST PROCEDURE: IESNA LM-79-08

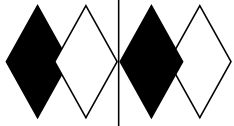
TEST DISTANCE = 20.0 FEET

IES Cutoff Classification: Noncutoff

Checked B. HYRE

Approved R. BEATTIE  
Lighting Engineer





**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: ITL86654

ISSUE DATE: 03/02/16 PAGE: 2 OF 8

PREPARED FOR: B-K LIGHTING, INC.

CATALOG NUMBER: SSL-LED-e102-C-20-DEGREES, BQL-LED-e102-C-20-DEGREES, SQL-LED-e102-C-20-DEGREES, VBL-LED-e102-C-20-DEGREES

LUMINAIRE: CAST METAL WALL MOUNTING HOUSING, ONE ADJUSTABLE LED MODULE CONSISTING OF: MACHINED BLACK FINISHED METAL HEAT SINK, ONE BLACK 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, MACHINED BLACK FINISHED METAL OPTIC ASSEMBLY MOUNTING COLLAR, CLEAR FLAT LINEAR PRISMATIC GLASS LENS, CAST BLACK PAINTED LOUVERED METAL FACEPLATE, LENS PRISMS OUT AND VERTICAL. LED MODULE TILTED 20-DEGREES BELOW THE HORIZON.

LAMPS: THREE WHITE LIGHT EMITTING DIODES (LEDS), TILTED 20-DEGREES BELOW THE HORIZON.

INPUT ELECTRICAL: 12.0 VOLTS, 5.00 WATTS, 0.466 AMPS

LED DRIVER: B-K LIGHTING 524439/400188-L-L, DRIVER HAS MULTIPLE LEADS, ONLY LINE INPUT AND LED OUTPUT LEADS CONNECTED FOR THIS TEST.

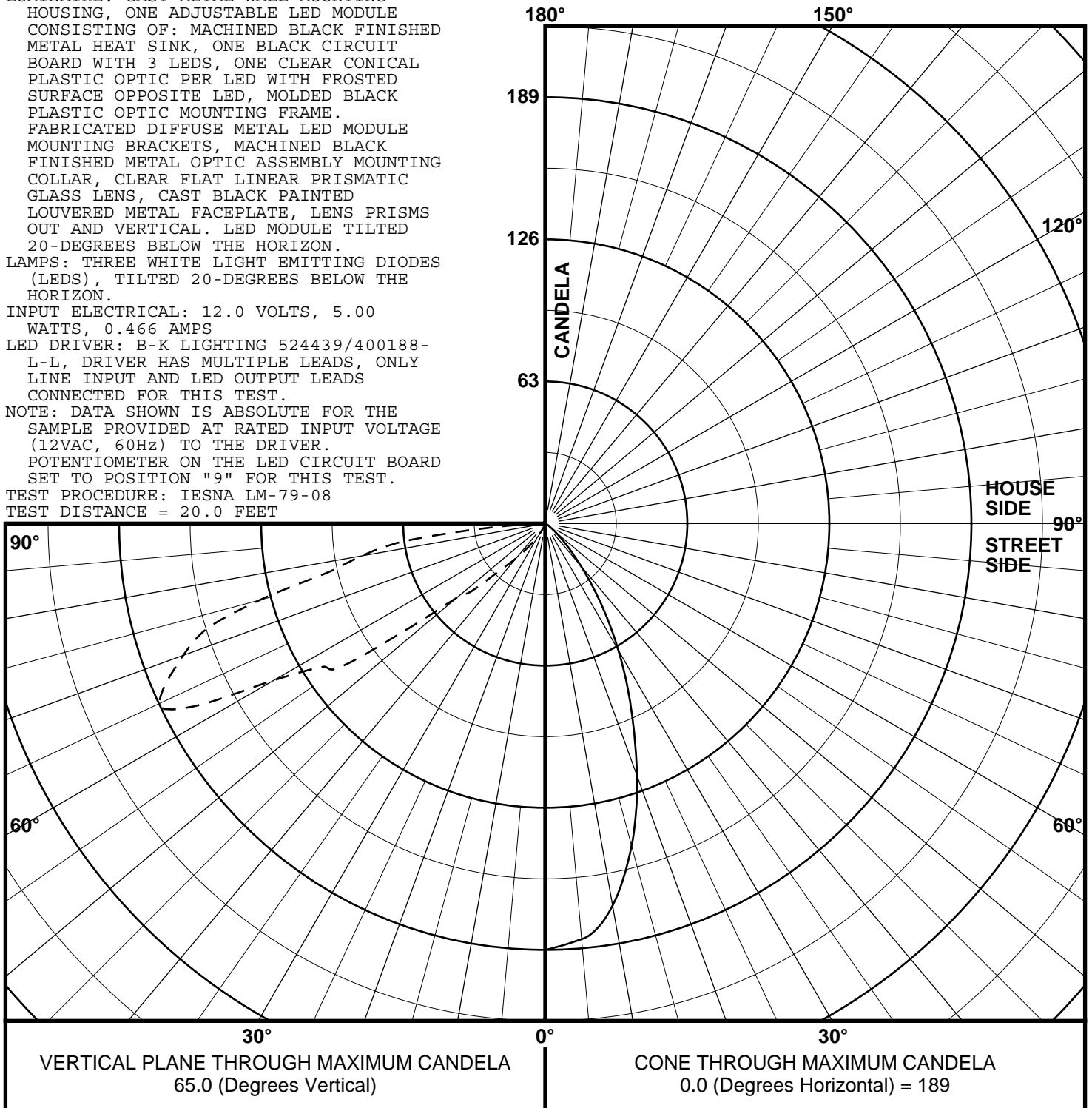
NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (12VAC, 60Hz) TO THE DRIVER.

POTENTIOMETER ON THE LED CIRCUIT BOARD SET TO POSITION "9" FOR THIS TEST.

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 20.0 FEET

# MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

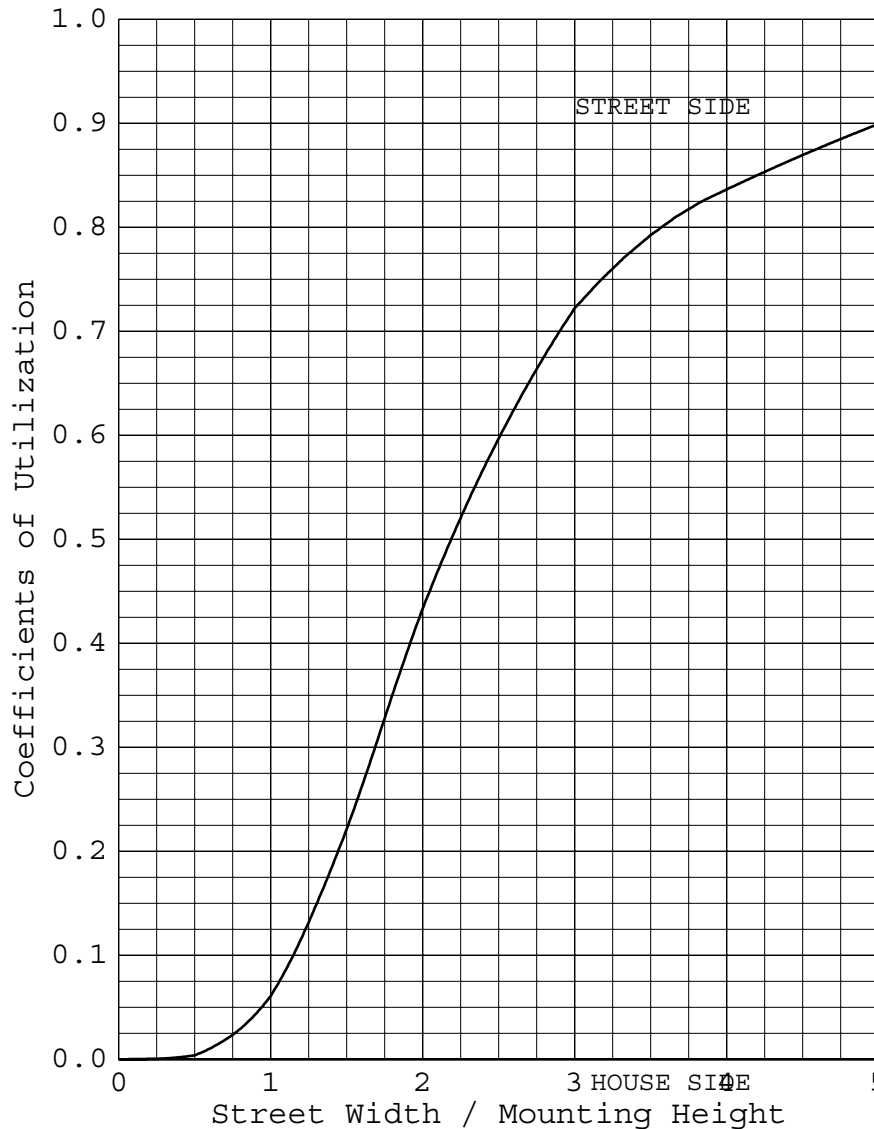




REPORT NUMBER: ITL86654  
ISSUE DATE: 03/02/16  
PREPARED FOR: B-K LIGHTING, INC.

PAGE: 3 OF 8

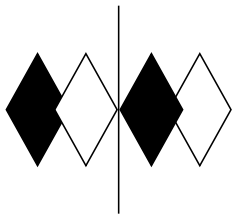
# COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	67.3	99.6
DOWNWARD HOUSE SIDE	0.0	0.0
DOWNWARD TOTAL	67.3	99.6
UPWARD STREET SIDE	0.3	0.4
UPWARD HOUSE SIDE	0.0	0.0
UPWARD TOTAL	0.3	0.4
TOTAL FLUX	67.6	100.0

EFFICACY = 13.5 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.



**itl boulder**  
THE LIGHT CENTER OF THE INDUSTRY SINCE 1955



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

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

REPORT NUMBER: ITL86654  
ISSUE DATE: 03/02/16  
PREPARED FOR: B-K LIGHTING, INC.

PAGE: 4 OF 8

### 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	67.3	99.6	
FL ( 0- 30)	0.3	0.4	
FM ( 30- 60)	17.9	26.5	
FH ( 60- 80)	43.5	64.3	G0
FVH( 80- 90)	5.7	8.4	G0
BACK LIGHT	0.0	0.0	
BL ( 0- 30)	0.0	0.0	B0
BM ( 30- 60)	0.0	0.0	B0
BH ( 60- 80)	0.0	0.0	B0 G0
BVH( 80- 90)	0.0	0.0	G0
UPLIGHT	0.3	0.4	
UL ( 90-100)	0.2	0.3	U1
UH (100-180)	0.1	0.1	U1
TRAPPED LIGHT	0.0	0.0	
TOTAL FLUX	67.6	100.0	

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

BUG RATING: B0 U1 G0



**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: ITL86654

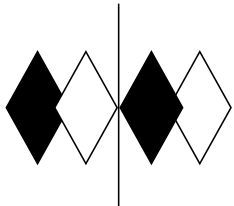
PAGE: 5 OF 8

ISSUE DATE: 03/02/16

PREPARED FOR: B-K LIGHTING, INC.

# CANDELA TABULATION

	STREET SIDE	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	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	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
	92.5	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
	90.0	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.
	87.5	8.	7.	7.	5.	2.	1.	0.	0.	0.	0.	0.
	85.0	33.	31.	24.	16.	8.	3.	1.	1.	0.	0.	0.
V	82.5	67.	63.	48.	30.	15.	5.	1.	1.	0.	0.	0.
E	80.0	83.	79.	62.	37.	18.	6.	2.	1.	0.	0.	0.
R	77.5	97.	94.	73.	44.	22.	8.	2.	1.	0.	0.	0.
T	75.0	131.	128.	99.	60.	30.	11.	2.	1.	0.	0.	0.
I	72.5	159.	157.	122.	73.	36.	12.	3.	1.	0.	0.	0.
C	70.0	171.	168.	132.	78.	39.	13.	3.	1.	0.	0.	0.
A	67.5	181.	177.	140.	85.	42.	13.	3.	1.	0.	0.	0.
L	65.0<<	189.	185.	148.	90.	43.	13.	2.	0.	0.	0.	0.
	62.5	176.	172.	137.	80.	36.	11.	2.	0.	0.	0.	0.
A	60.0	139.	135.	105.	62.	29.	10.	2.	0.	0.	0.	0.
N	57.5	119.	114.	91.	56.	29.	9.	2.	0.	0.	0.	0.
G	55.0	111.	106.	84.	51.	23.	7.	2.	0.	0.	0.	0.
L	52.5	76.	72.	56.	33.	16.	6.	2.	0.	0.	0.	0.
E	50.0	51.	50.	40.	26.	13.	5.	2.	0.	0.	0.	0.
	47.5	45.	43.	35.	22.	10.	5.	2.	0.	0.	0.	0.
	45.0	32.	32.	26.	16.	9.	4.	1.	0.	0.	0.	0.
	42.5	25.	25.	20.	14.	8.	3.	1.	0.	0.	0.	0.
	40.0	20.	20.	16.	11.	6.	3.	1.	0.	0.	0.	0.
	37.5	15.	15.	13.	9.	5.	2.	1.	0.	0.	0.	0.
	35.0	12.	12.	10.	7.	4.	2.	1.	0.	0.	0.	0.
	32.5	9.	8.	7.	5.	3.	1.	0.	0.	0.	0.	0.
	30.0	6.	6.	5.	4.	2.	1.	0.	0.	0.	0.	0.
	25.0	3.	3.	2.	2.	1.	1.	0.	0.	0.	0.	0.
	20.0	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
	15.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	10.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	5.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
		PLANE OF MAXIMUM CANDELA										
		CONE OF MAXIMUM CANDELA										



**itl boulder**  
 THE LIGHT CENTER OF THE INDUSTRY SINCE 1955



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: ITL86654  
 ISSUE DATE: 03/02/16  
 PREPARED FOR: B-K LIGHTING, INC.

PAGE: 6 OF 8

CANDELA TABULATION

	HOUSE SIDE	LATERAL ANGLE									
		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.
	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	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	85.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
V	82.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
E	80.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
R	77.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
T	75.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
I	72.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
C	70.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
A	67.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
L	65.0<<	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	62.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
A	60.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
N	57.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
G	55.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
L	52.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
E	50.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	47.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	45.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	42.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	40.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	37.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	35.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	32.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	30.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	25.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	20.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	15.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	10.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	5.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

CONE OF MAXIMUM CANDELA



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

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

REPORT NUMBER: ITL86654  
ISSUE DATE: 03/02/16  
PREPARED FOR: B-K LIGHTING, INC.

PAGE: 7 OF 8

5-DEGREE  
ZONAL LUMEN SUMMARY

0- 5	0.0
5- 10	0.0
10- 15	0.0
15- 20	0.0
20- 25	0.1
25- 30	0.2
30- 35	0.4
35- 40	0.8
40- 45	1.5
45- 50	2.6
50- 55	4.7
55- 60	7.9
60- 65	11.5
65- 70	12.9
70- 75	11.4
75- 80	7.6
80- 85	4.7
85- 90	1.0
90- 95	0.1
95-100	0.1
100-105	0.0
105-110	0.0
110-115	0.0
115-120	0.0
120-125	0.0
125-130	0.0
130-135	0.0
135-140	0.0
140-145	0.0
145-150	0.0
150-155	0.0
155-160	0.0
160-165	0.0
165-170	0.0
170-175	0.0
175-180	0.0

10-DEGREE  
ZONAL LUMEN SUMMARY

0- 10	0.0
0- 20	0.0
0- 30	0.3
0- 40	1.5
0- 50	5.6
0- 60	18.2
0- 70	42.6
0- 80	61.7
0- 90	67.3
0-100	67.6
0-110	67.6
0-120	67.6
0-130	67.6
0-140	67.6
0-150	67.6
0-160	67.6
0-170	67.6
0-180	67.6



**itl boulder**  
THE LIGHT CENTER OF THE INDUSTRY SINCE 1955



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

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

REPORT NUMBER: ITL86654  
ISSUE DATE: 03/02/16  
PREPARED FOR: B-K LIGHTING, INC.

PAGE: 8 OF 8

ADDRESS: 40429 BRICKYARD DRIVE  
MADERA, CA 93636-9515

THIS ITL REPORT WITH THE USE OF THE NVLAP LOGO SHALL NOT BE USED BY THE CLIENT TO CLAIM PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY NVLAP, NIST, OR ANY AGENCY OF THE FEDERAL GOVERNMENT.