

**REPORT NUMBER:** ITL90439-GONIOPHOTOMETRY

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**ISSUE DATE:** 05/07/18

**REVISED:** 05/21/18

**PREPARED FOR:** BOCK LIGHTING

**ADDRESS:** 2476 EDISON BLVD

TWINSBURG, OH 44087

**CATALOG NUMBER:** BRL22-LBA01-4-3000LM-40K/4CD-PA22

**LUMINAIRE:** FABRICATED WHITE PAINTED METAL DRIVER HOUSING AND PERFORATED TOP PLATE, EXTRUDED BLACK FINISHED FINNED METAL HEAT SINK WITH TWO SUNON HA60151V4-000U-999 COOLING FANS ON TOP, BLACK FINISHED FLAT METAL CIRCUIT BOARD MOUNTING PLATE, FOUR CIRCUIT BOARDS EACH WITH ONE LED AND MOLDED WHITE PLASTIC LED SURROUND, INTERIOR FROSTED PLASTIC LENS SUSPENDED BELOW LEDS WITH 4 SEMI-SPECULAR METAL STANDOFFS, WHITE PAINTED FLAT METAL REFLECTOR MOUNTING COLLAR, CLEAR PLASTIC REFLECTOR WITH LINEAR EXTERIOR VERTICAL PRISMS AND CONCENTRIC CIRCULAR UPPER INTERIOR PRISMS, CLEAR RADIALY PRISMATIC PLASTIC BOTTOM LENS, FORMED SEMI-SPECULAR METAL LENS MOUNTING RING. LENS PRISMS IN.

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

**INPUT ELECTRICAL:** 120.1 VOLTS, 102.4 WATTS, 0.856 AMPS

**MOUNTING:** PENDANT

**LED DRIVERS:** FOUR ADVANCE XI036C100V054DSM5, DRIVERS HAVE MULTIPLE LEADS, ONLY LINE INPUT AND LED OUTPUT LEADS CONNECTED FOR THIS TEST. CLIENT STATES EACH DRIVER PROGRAMMED FOR 660mA OUTPUT. INVENTRONICS DHV-003S012SS DC/DC CONVERTER ATTACHED TO OUTPUT LEADS OF ONE DRIVER.

**NOTE:** DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE DRIVERS.

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 35.0 FEET



THIS 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.

Approved C STOUT

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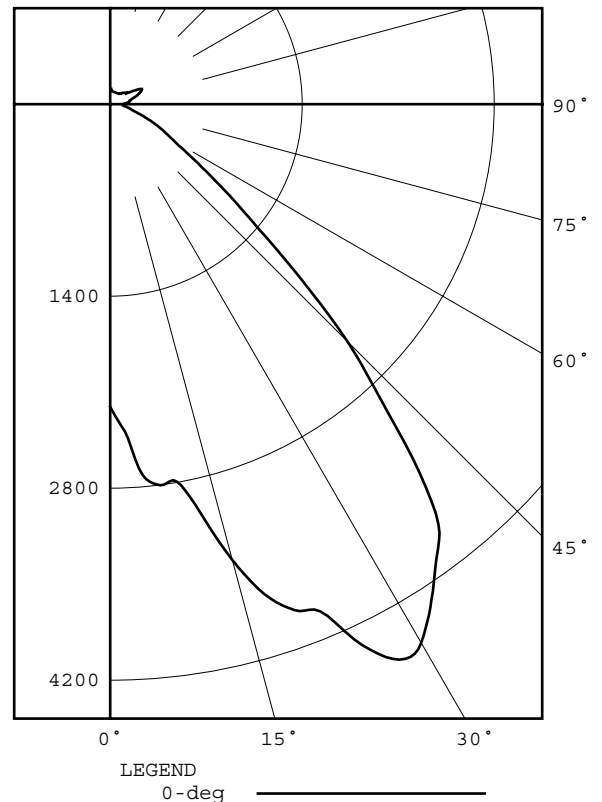
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DEG	CANDELA	LUMENS
0	2206	
5	2716	258
15	3440	982
25	4354	1996
35	4133	2572
45	2444	1859
55	854	800
65	390	388
75	166	186
85	96	110
90	94	
95	127	134
105	175	189
115	255	233
125	143	134
135	113	88
145	92	59
155	100	46
165	102	29
175	103	10
180	115	

ZONAL ZONE	LUMEN LUMENS	SUMMARY %FIXT
0- 30	3236	32.1
0- 40	5808	57.7
0- 60	8467	84.1
0- 90	9151	90.8
90-120	557	5.5
90-130	691	6.9
90-150	838	8.3
90-180	923	9.2
0-180	10073	100.0

EFFICACY = 98.4 lm/W  
 CIE TYPE - DIRECT  
 SPACING CRITERION: 1.56  
 BEAM ANGLE (50%) : 44.7 DEGREES  
 FIELD ANGLE (10%) : 125.2 DEGREES





# 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)

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LUMINOUS DIAMETER: 21.625  
HEIGHT OF SIDE : 15.000

LUMINANCE DATA IN CANDELA/SQ M  
ANGLE AVERAGE  
IN DEG

45	7746.
55	2779.
65	1346.
75	630.
85	419.



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CANDELA DISTRIBUTION

0.0	2206
5.0	2716
10.0	2793
15.0	3440
20.0	3926
25.0	4354
30.0	4536
35.0	4133
40.0	3513
45.0	2444
50.0	1415
55.0	854
60.0	540
65.0	390
70.0	258
75.0	166
80.0	124
85.0	96
90.0	94
95.0	127
100.0	148
105.0	175
110.0	223
115.0	255
120.0	194
125.0	143
130.0	129
135.0	113
140.0	100
145.0	92
150.0	92
155.0	100
160.0	109
165.0	102
170.0	94
175.0	103
180.0	115



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5-DEGREE  
ZONAL LUMEN SUMMARY

0- 5	59
5- 10	199
10- 15	368
15- 20	614
20- 25	855
25- 30	1141
30- 35	1277
35- 40	1294
40- 45	1089
45- 50	770
50- 55	485
55- 60	315
60- 65	224
65- 70	163
70- 75	108
75- 80	78
80- 85	59
85- 90	51
90- 95	59
95-100	75
100-105	85
105-110	105
110-115	122
115-120	112
120-125	75
125-130	59
130-135	49
135-140	39
140-145	32
145-150	27
150-155	24
155-160	22
160-165	18
165-170	12
170-175	7
175-180	3

10-DEGREE  
ZONAL LUMEN SUMMARY

0- 10	258
0- 20	1240
0- 30	3236
0- 40	5808
0- 50	7667
0- 60	8467
0- 70	8855
0- 80	9041
0- 90	9151
0-100	9285
0-110	9474
0-120	9708
0-130	9842
0-140	9930
0-150	9989
0-160	10035
0-170	10064
0-180	10073



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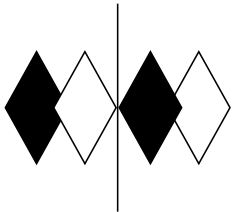
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

RC	80				70				50			30			10			0	
	RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	117	117	117	117	117	113	113	113	113	106	106	106	100	100	100	94	94	94	91
1	109	105	101	98	105	102	99	96	96	93	91	91	89	87	86	84	83	83	80
2	101	94	88	83	97	91	86	82	86	82	79	82	78	76	78	75	73	73	70
3	93	84	77	72	90	82	76	71	78	73	68	74	70	66	70	67	64	64	62
4	86	76	68	63	83	74	67	62	70	65	60	67	62	58	64	60	56	56	54
5	80	68	61	55	77	67	60	54	64	58	53	61	56	51	58	54	50	50	48
6	74	62	54	48	72	61	53	48	58	52	47	56	50	46	53	49	45	45	43
7	69	57	49	43	67	55	48	43	53	47	42	51	45	41	49	44	40	40	38
8	64	52	44	39	62	51	43	38	49	42	38	47	41	37	45	40	36	36	34
9	60	47	40	35	58	46	39	34	45	38	34	43	37	33	41	36	33	33	31
10	56	44	36	31	54	43	36	31	41	35	31	40	34	30	38	33	30	30	28

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

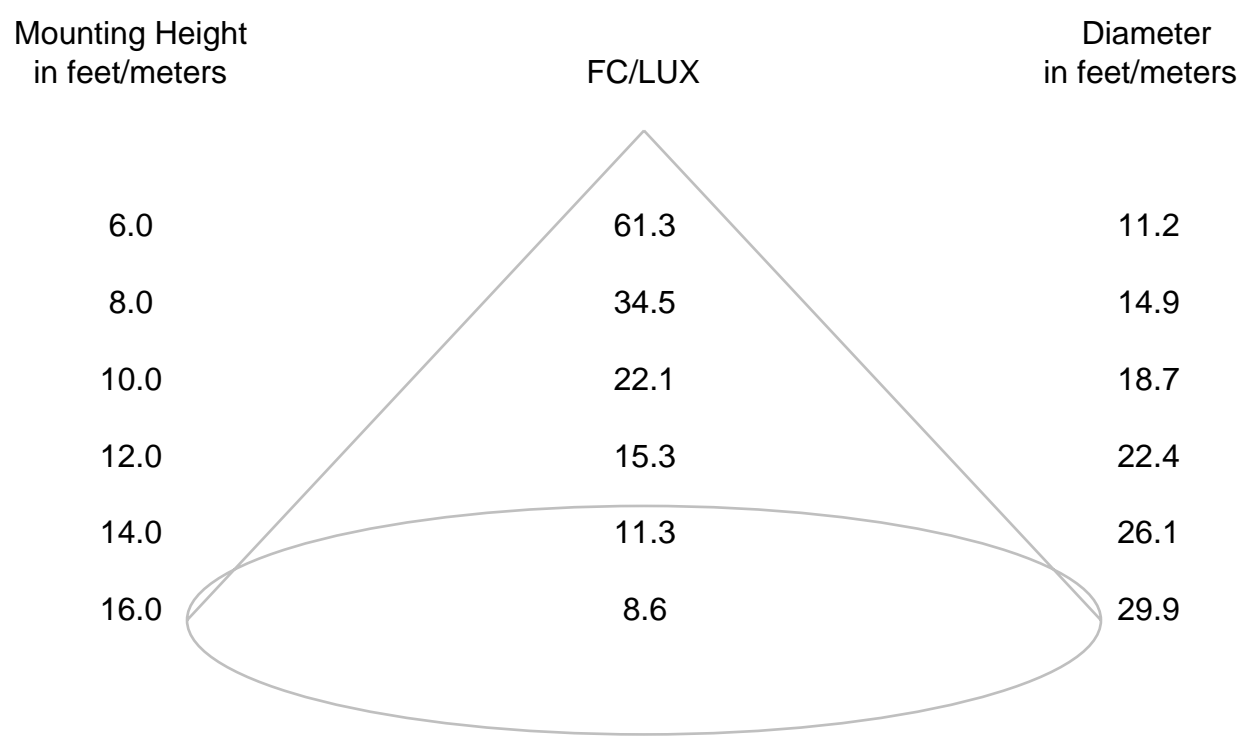


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## CONE OF LIGHT DIAGRAM

(diameter shown is where fc/lux value is half the fc/lux at nadir)



If distances are feet, results are footcandles.  
 If distances are meters, results are lux.