

**REPORT NUMBER:** ITL90474-GONIOPHOTOMETRY

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**ISSUE DATE:** 05/21/18

**PREPARED FOR:** BOCK LIGHTING

**ADDRESS:** 2476 EDISON BLVD  
TWINSBURG, OH 44087

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

**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. OPEN BOTTOM.

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

**INPUT ELECTRICAL:** 120.1 VOLTS, 104.1 WATTS, 0.871 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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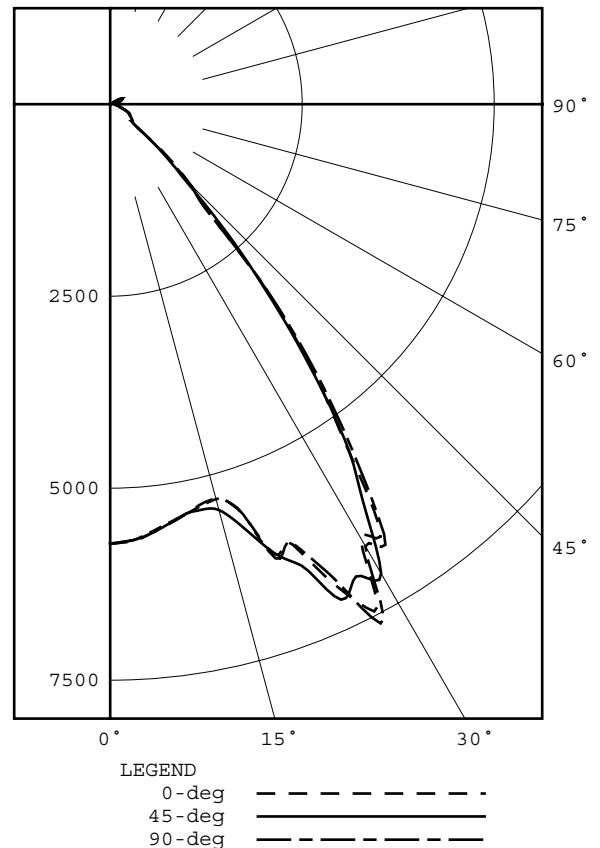
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CANDELA DISTRIBUTION						FLUX
	0.0	22.5	45.0	67.5	90.0	
0	5723	5723	5723	5723	5723	
5	5633	5631	5629	5619	5613	531
15	5313	5343	5470	5347	5322	1581
25	6887	7015	7118	6834	6751	3147
35	5254	5305	5314	5332	5489	3226
45	1468	1434	1307	1409	1463	1151
55	346	346	344	345	348	313
65	258	264	261	266	269	253
75	128	126	120	126	133	141
85	82	78	73	75	76	87
90	76	73	70	71	73	
95	93	94	94	90	94	99
105	113	120	122	117	119	131
115	180	176	167	175	179	154
125	41	40	40	41	41	45
135	35	36	36	36	36	28
145	34	34	34	34	35	22
155	37	37	37	37	37	17
165	40	40	40	40	40	11
175	45	45	45	45	45	4
180	52	52	52	52	52	

ZONAL ZONE	LUMEN LUMENS	SUMMARY %FIXT
0- 30	5259	48.1
0- 40	8486	77.6
0- 60	9949	90.9
0- 90	10430	95.3
90-120	383	3.5
90-130	429	3.9
90-150	478	4.4
90-180	511	4.7
0-180	10941	100.0

EFFICACY = 105.1 lm/W  
 CIE TYPE - DIRECT  
 PLANE : 0-DEG 90-DEG  
 SPACING CRITERIA : 1.40 1.43  
 BEAM ANGLE (50%) : 77.1 X 77.6 DEGREES  
 FIELD ANGLE (10%) : 97.1 X 96.3 DEGREES





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LUMINOUS DIAMETER: 22.563  
HEIGHT OF SIDE : 13.500

LUMINANCE DATA IN CANDELA/SQ M				
ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG	
45	4568.	4067.	4553.	
55	1120.	1114.	1126.	
65	899.	909.	937.	
75	499.	468.	518.	
85	376.	334.	348.	



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CANDELA DISTRIBUTION  
LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0
0.0	5723	5723	5723	5723	5723
5.0	5633	5631	5629	5619	5613
10.0	5446	5437	5436	5434	5440
15.0	5313	5343	5470	5347	5322
20.0	6234	6197	6210	6171	6293
25.0	6887	7015	7118	6834	6751
30.0	6524	6772	7053	6796	6648
35.0	5254	5305	5314	5332	5489
40.0	3197	3148	3130	3131	3248
45.0	1468	1434	1307	1409	1463
50.0	412	416	426	408	404
55.0	346	346	344	345	348
60.0	300	301	302	305	311
65.0	258	264	261	266	269
70.0	177	189	191	190	185
75.0	128	126	120	126	133
80.0	106	102	96	100	105
85.0	82	78	73	75	76
90.0	76	73	70	71	73
95.0	93	94	94	90	94
100.0	107	105	103	101	108
105.0	113	120	122	117	119
110.0	154	156	157	159	159
115.0	180	176	167	175	179
120.0	97	96	94	97	101
125.0	41	40	40	41	41
130.0	37	38	39	38	38
135.0	35	36	36	36	36
140.0	35	35	35	35	35
145.0	34	34	34	34	35
150.0	34	34	35	35	35
155.0	37	37	37	37	37
160.0	40	40	40	40	40
165.0	40	40	40	40	40
170.0	40	40	40	40	40
175.0	45	45	45	45	45
180.0	52	52	52	52	52



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5-DEGREE  
ZONAL LUMEN SUMMARY

0- 5	136
5- 10	395
10- 15	639
15- 20	942
20- 25	1360
25- 30	1787
30- 35	1819
35- 40	1408
40- 45	788
45- 50	362
50- 55	163
55- 60	150
60- 65	139
65- 70	114
70- 75	80
75- 80	61
80- 85	48
85- 90	40
90- 95	45
95-100	54
100-105	58
105-110	72
110-115	85
115-120	69
120-125	28
125-130	17
130-135	15
135-140	13
140-145	12
145-150	10
150-155	9
155-160	8
160-165	7
165-170	5
170-175	3
175-180	1

10-DEGREE  
ZONAL LUMEN SUMMARY

0- 10	531
0- 20	2112
0- 30	5259
0- 40	8486
0- 50	9636
0- 60	9949
0- 70	10202
0- 80	10343
0- 90	10430
0-100	10529
0-110	10660
0-120	10814
0-130	10859
0-140	10887
0-150	10909
0-160	10926
0-170	10937
0-180	10941



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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	118	118	118	118	118	115	115	115	115	109	109	109	103	103	103	98	98	98	95
1	111	107	104	102	102	108	105	102	100	100	98	96	95	94	92	91	90	88	86
2	104	98	93	89	89	101	96	91	87	92	88	85	88	85	82	84	82	80	78
3	97	89	83	79	79	95	88	82	78	84	80	76	81	77	74	78	75	72	70
4	91	82	75	70	70	89	80	74	69	78	72	68	75	70	67	72	69	65	64
5	85	75	68	63	63	83	74	67	63	72	66	62	69	64	61	67	63	60	58
6	80	69	62	57	57	78	68	62	57	66	60	56	64	59	55	62	58	54	53
7	75	64	57	52	52	73	63	56	52	61	55	51	60	54	50	58	53	50	48
8	70	59	52	47	47	69	58	52	47	57	51	47	55	50	46	54	49	46	44
9	66	55	48	43	43	65	54	48	43	53	47	43	52	46	42	50	46	42	40
10	62	51	44	40	40	61	51	44	40	49	43	39	48	43	39	47	42	39	37

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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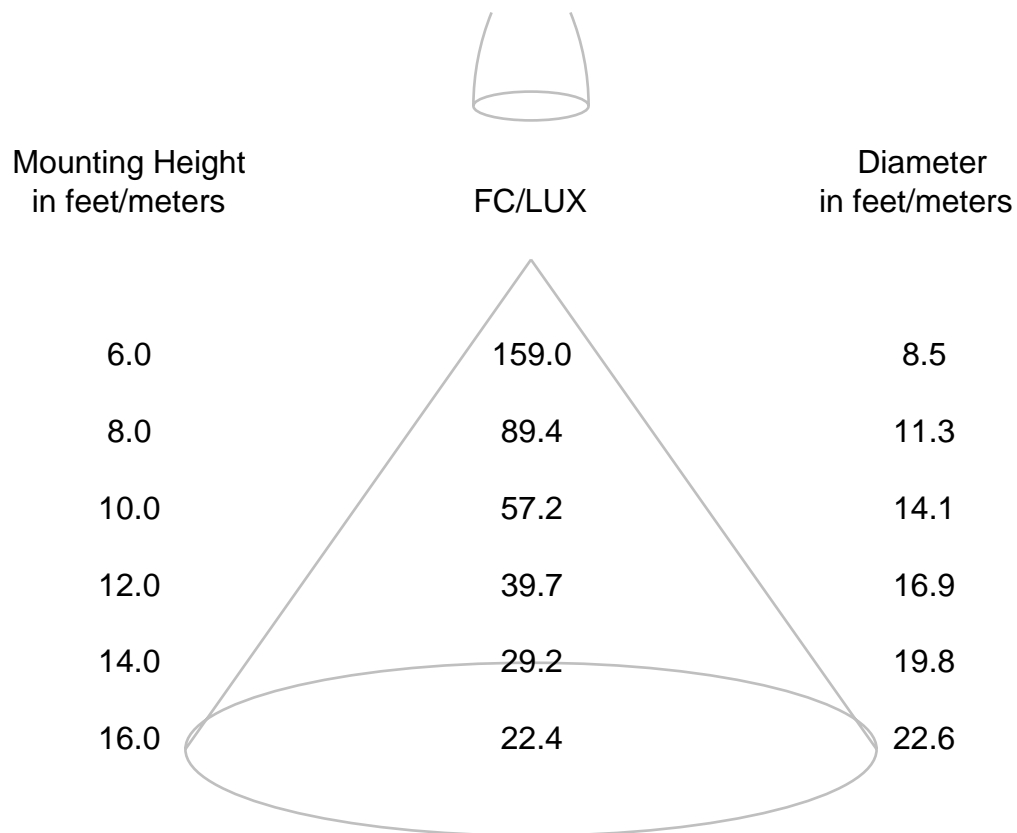
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## CONE OF LIGHT DIAGRAM

(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.

Note: The candela values used to generate this diagram were obtained by averaging the photometric data into a single plane.