

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: LUMIERE

Report Number: P14011

Luminaire Tested: **650-1-10LED3012-12-NSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P14011
Test Lab: INNOVATION CENTER-P1
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMIERE
Catalog Number: 650-1-10LED3012-12-NSS
Description: LUMIERE BOCA 650 MARKER
Light Source: [3] TERRALUX 3000K SPOT LEDS
TLM-R16B-A353012B-B000
Ballast/Driver: [1] CHROMA PROGRAMMABLE AC POWER SOURCE MODEL 61604
IN0004

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15.0 lumens
Efficiency: N/A
Efficacy: 1.6 lumens/watt
Spacing Criteria (0/90/45): - / - / -
Luminous Opening: Rectangular w/ Sides (W: 0.08' x L: 0.17' x H: 0.03')
CIE Type: Semi-Indirect

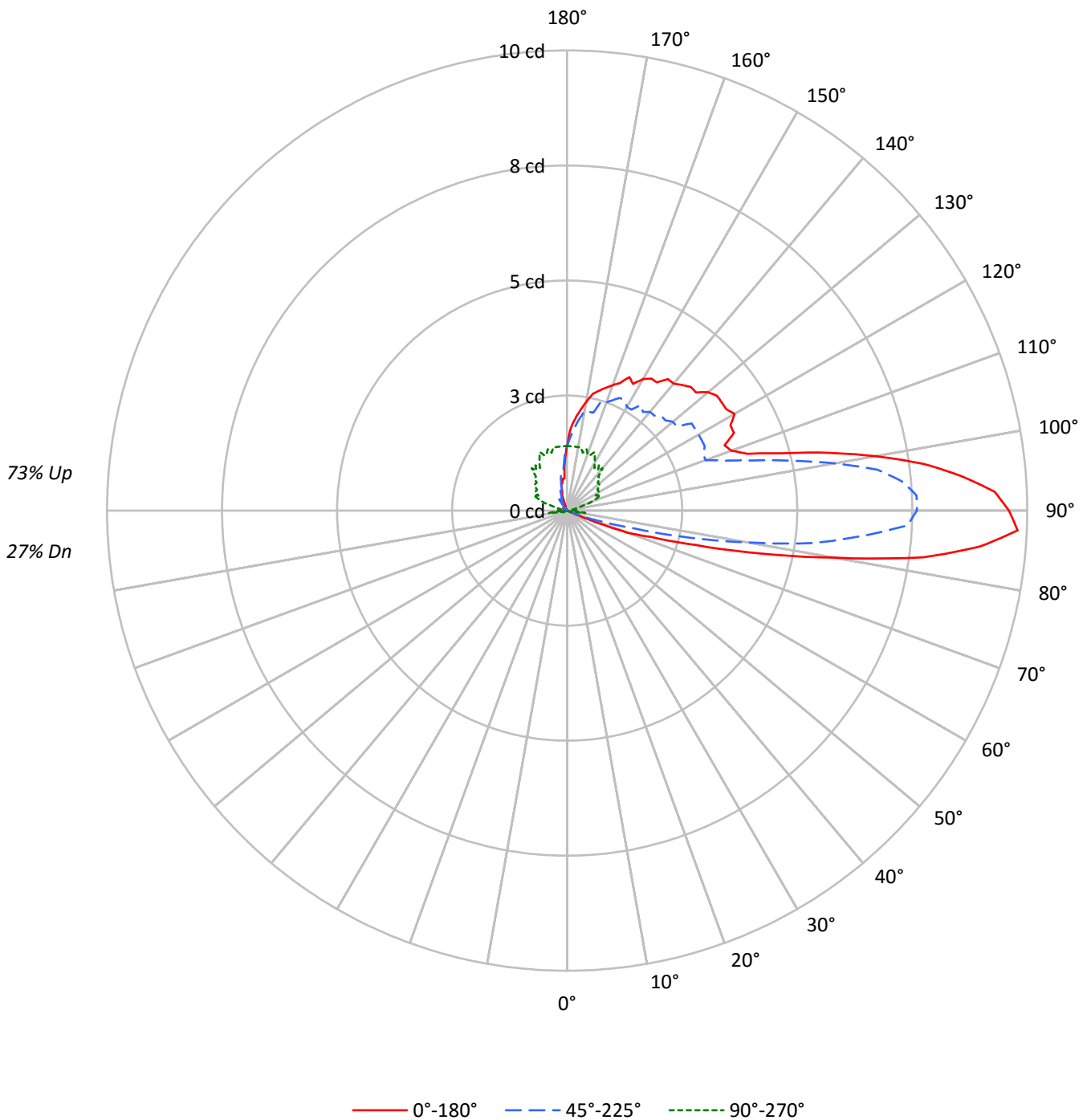
Input Watts (W): 9.3
Input Voltage (V): NR
Input Current (Ain): 0.82233
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: 13 HR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				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
RCR																		
0	102	102	102	102	91	91	91	91	70	70	70	52	52	52	35	35	35	27
1	85	77	70	64	74	67	62	56	50	45	41	33	30	27	18	16	13	6
2	75	65	56	49	66	57	49	43	41	36	31	27	23	19	14	11	8	2
3	68	56	47	40	59	49	41	35	36	30	25	23	19	15	12	9	6	1
4	62	50	40	33	54	43	35	29	32	25	21	21	16	13	10	7	5	0
5	57	44	35	28	50	38	30	24	28	22	18	18	14	11	9	6	4	0
6	52	39	30	24	46	34	27	21	25	19	15	17	12	9	9	6	4	0
7	48	35	27	21	42	31	23	18	23	17	13	15	11	8	8	5	3	0
8	45	32	24	18	39	28	21	16	21	15	11	14	10	7	7	5	3	0
9	42	29	21	16	36	25	19	14	19	14	10	13	9	6	7	4	2	0
10	39	26	19	14	34	23	17	12	17	12	9	12	8	5	6	4	2	0

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	0	0	0
5°	0	0	0
10°	0	0	0
15°	0	0	0
20°	0	0	0
25°	0	0	0
30°	0	0	0
35°	0	0	0
40°	0	0	0
45°	0	0	0
50°	0	0	0
55°	0	0	0
60°	0	0	0
65°	0	0	0
70°	2094	0	0
75°	5109	0	0
80°	12762	285	0
85°	25462	336	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	0.0	0.0
10°-20°	0.0	0.0
20°-30°	0.0	0.0
30°-40°	0.0	0.0
40°-50°	0.0	0.0
50°-60°	0.0	0.0
60°-70°	0.1	0.4
70°-80°	1.0	6.3
80°-90°	3.0	19.8
90°-100°	3.1	20.4
100°-110°	1.8	12.2
110°-120°	1.5	10.0
120°-130°	1.4	9.2
130°-140°	1.1	7.5
140°-150°	0.9	6.1
150°-160°	0.7	4.5
160°-170°	0.4	2.7
170°-180°	0.1	0.9
0°-30°	0.0	0.0
0°-40°	0.0	0.0
0°-60°	0.0	0.0
0°-90°	4.0	26.6
90°-120°	6.4	42.5
90°-150°	9.8	65.2
90°-180°	11.0	73.2
0°-180°	15.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	0	0	0	0	0	
5°	0	0	0	0	0	0
15°	0	0	0	0	0	0
25°	0	0	0	0	0	0
35°	0	0	0	0	0	0
45°	0	0	0	0	0	0
55°	0	0	0	0	0	0
65°	0	0	0	0	0	0
75°	3	2	0	0	0	3
85°	9	6	0	0	0	7
90°	10	8	0	0	0	5
95°	9	7	0	0	0	7
105°	5	4	0	0	0	5
115°	4	3	1	0	0	4
125°	4	3	1	0	0	4
135°	4	3	1	0	0	3
145°	3	3	1	0	0	2
155°	3	3	1	0	0	1
165°	3	2	1	0	0	1
175°	2	2	1	1	1	0
180°	1	1	1	1	1	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.5°	0.0	0.0	0.0	0.0	0.0	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
7.5°	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0
12.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
65°	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.5	0.5	0.4	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1
70°	1.4	1.3	1.3	1.1	1.0	0.8	0.7	0.6	0.5	0.4	0.3
72.5°	1.9	1.8	1.8	1.6	1.5	1.3	1.2	1.0	0.9	0.8	0.6
75°	2.9	3.0	2.9	2.8	2.6	2.4	2.2	2.1	1.9	1.5	1.4
77.5°	4.3	4.3	4.1	4.0	4.0	3.6	3.5	3.3	3.0	2.7	2.4
80°	5.9	5.9	5.8	5.7	5.4	5.1	4.9	4.6	4.3	4.0	3.6
82.5°	7.8	7.7	7.7	7.4	7.2	6.9	6.6	6.2	5.8	5.4	4.9
85°	9.0	9.0	8.9	8.7	8.5	8.2	8.0	7.6	7.0	6.4	5.7
87.5°	9.8	9.8	9.8	9.5	9.5	9.3	9.0	8.6	8.1	7.4	6.6
90°	9.6	9.7	9.7	9.7	9.6	9.4	9.2	8.8	8.3	7.6	6.7
92.5°	9.3	9.2	9.2	9.2	9.4	9.1	9.0	8.8	8.2	7.6	6.7
95°	8.6	8.6	8.6	8.7	8.7	8.7	8.6	8.4	7.9	7.3	6.5
97.5°	7.8	7.9	8.0	7.9	7.9	7.9	7.9	7.6	7.2	6.8	6.0
100°	6.8	6.9	6.9	6.8	6.8	6.7	6.7	6.6	6.4	5.9	5.2
102.5°	5.8	5.7	5.8	5.8	5.8	5.7	5.6	5.5	5.3	5.0	4.4
105°	4.8	4.8	4.8	4.8	4.9	4.7	4.6	4.5	4.3	4.2	3.8
107.5°	4.1	4.2	4.2	4.0	4.1	4.0	4.0	3.9	3.7	3.6	3.2
110°	3.8	3.7	3.8	3.8	3.9	3.9	3.7	3.6	3.5	3.2	3.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	3.7	3.8	3.9	3.9	3.9	3.7	3.8	3.6	3.5	3.2	3.0
115°	4.0	3.9	4.0	3.9	4.0	3.9	3.8	3.6	3.5	3.3	3.0
117.5°	4.0	4.0	4.1	4.0	4.0	3.9	3.8	3.7	3.6	3.3	3.1
120°	4.2	4.2	4.1	4.0	3.9	4.0	3.8	3.7	3.6	3.3	3.1
122.5°	4.1	4.1	4.1	4.0	4.0	3.9	3.7	3.7	3.5	3.3	3.1
125°	4.1	4.1	4.0	3.9	3.9	3.9	3.8	3.6	3.5	3.3	3.0
127.5°	4.1	4.0	4.0	3.9	3.9	3.7	3.6	3.6	3.3	3.0	2.9
130°	4.0	4.0	4.0	3.9	3.8	3.8	3.6	3.4	3.3	3.0	2.9
132.5°	3.8	3.7	3.7	3.8	3.6	3.6	3.4	3.3	3.2	2.9	2.7
135°	3.8	3.7	3.7	3.6	3.6	3.5	3.4	3.3	3.0	2.9	2.8
137.5°	3.7	3.6	3.6	3.6	3.4	3.4	3.3	3.2	3.0	2.8	2.5
140°	3.6	3.6	3.6	3.6	3.5	3.4	3.2	3.1	2.9	2.8	2.8
142.5°	3.6	3.5	3.6	3.5	3.5	3.3	3.2	3.0	2.9	2.7	2.6
145°	3.4	3.4	3.4	3.5	3.5	3.2	3.3	3.0	2.8	2.8	2.7
147.5°	3.4	3.4	3.3	3.3	3.2	3.2	3.0	2.9	2.8	2.6	2.5
150°	3.3	3.3	3.3	3.2	3.3	3.1	3.0	2.9	2.8	2.6	2.6
152.5°	3.1	3.2	3.2	3.1	3.1	3.1	3.0	2.9	2.8	2.7	2.5
155°	3.2	3.2	3.2	3.1	3.1	3.0	2.9	2.9	2.8	2.7	2.7
157.5°	3.0	3.0	3.0	2.9	2.9	2.9	2.8	2.8	2.6	2.6	2.4
160°	2.9	2.9	2.9	2.8	2.8	2.8	2.7	2.6	2.6	2.5	2.3
162.5°	2.8	2.9	2.8	2.8	2.8	2.8	2.6	2.7	2.6	2.5	2.4
165°	2.7	2.7	2.6	2.6	2.6	2.5	2.5	2.4	2.3	2.2	2.1
167.5°	2.6	2.6	2.6	2.6	2.5	2.5	2.3	2.3	2.3	2.2	2.2
170°	2.4	2.5	2.4	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2.1
172.5°	2.2	2.2	2.3	2.2	2.3	2.2	2.1	2.1	2.0	2.0	2.0
175°	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.8	1.8	1.9
177.5°	1.8	1.7	1.8	1.7	1.7	1.8	1.6	1.7	1.7	1.6	1.7
180°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.5°	0.0	0.0	0.0	0.0	0.0	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
7.5°	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0
12.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60°	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
65°	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
70°	0.3	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.5	0.4	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0
75°	1.2	1.0	0.7	0.6	0.5	0.3	0.1	0.0	0.0	0.1	0.1
77.5°	2.2	1.9	1.6	1.2	0.9	0.6	0.5	0.2	0.0	0.0	0.1
80°	3.2	2.7	2.5	1.9	1.5	1.1	0.6	0.2	0.0	0.0	0.0
82.5°	4.3	3.7	3.2	2.4	1.8	1.2	0.8	0.4	0.1	0.1	0.1
85°	5.0	4.2	3.5	2.7	1.8	1.1	0.7	0.2	0.1	0.1	0.0
87.5°	5.6	4.7	3.9	2.6	1.9	1.2	0.6	0.2	0.2	0.0	0.1
90°	5.7	4.7	3.7	2.4	1.5	0.8	0.4	0.1	0.0	0.0	0.0
92.5°	5.6	4.5	3.4	2.2	1.2	0.6	0.3	0.1	0.1	0.1	0.1
95°	5.4	4.2	3.0	1.8	1.1	0.5	0.3	0.1	0.1	0.1	0.0
97.5°	5.1	3.8	2.7	1.7	0.9	0.5	0.2	0.2	0.2	0.1	0.0
100°	4.4	3.3	2.3	1.2	0.7	0.5	0.3	0.1	0.2	0.1	0.0
102.5°	3.8	2.8	2.0	1.3	0.8	0.6	0.3	0.2	0.1	0.1	0.1
105°	3.1	2.3	1.8	1.1	0.9	0.7	0.5	0.2	0.2	0.2	0.2
107.5°	2.8	2.1	1.7	1.3	1.1	0.8	0.6	0.4	0.2	0.2	0.1
110°	2.6	2.2	1.8	1.5	1.2	0.9	0.8	0.6	0.4	0.3	0.2



TEST NUMBER: P14011

CATALOG NUMBER: 650-1-10LED3012-12-NSS

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	2.8	2.5	2.2	1.7	1.5	1.2	1.0	0.7	0.6	0.4	0.3
115°	2.8	2.5	2.1	1.8	1.6	1.3	1.0	0.8	0.6	0.4	0.3
117.5°	2.8	2.6	2.2	1.8	1.6	1.3	1.1	0.7	0.6	0.5	0.3
120°	2.8	2.4	2.2	1.8	1.5	1.3	1.0	0.8	0.7	0.6	0.4
122.5°	2.7	2.5	2.1	1.7	1.5	1.3	1.0	0.8	0.7	0.5	0.3
125°	2.7	2.3	2.1	1.7	1.5	1.3	1.0	0.8	0.7	0.5	0.5
127.5°	2.6	2.3	2.1	1.8	1.5	1.3	1.2	0.9	0.7	0.6	0.5
130°	2.6	2.4	2.0	1.8	1.6	1.4	1.1	0.9	0.8	0.6	0.5
132.5°	2.5	2.2	1.9	1.8	1.5	1.4	1.0	0.9	0.6	0.5	0.5
135°	2.5	2.2	2.1	1.7	1.6	1.3	1.2	1.0	0.8	0.7	0.6
137.5°	2.3	2.1	2.0	1.7	1.6	1.3	1.1	1.0	0.9	0.7	0.4
140°	2.4	2.2	2.1	1.8	1.6	1.4	1.3	1.2	1.0	0.8	0.7
142.5°	2.4	2.2	2.1	1.8	1.7	1.5	1.3	1.1	1.0	0.8	0.6
145°	2.5	2.2	2.1	1.9	1.6	1.6	1.3	1.2	1.0	0.8	0.7
147.5°	2.4	2.2	2.0	1.8	1.6	1.5	1.3	1.1	1.0	0.8	0.7
150°	2.4	2.3	2.2	2.0	1.8	1.6	1.4	1.2	1.1	1.0	0.8
152.5°	2.4	2.3	2.1	1.9	1.8	1.6	1.4	1.3	1.1	1.0	0.8
155°	2.4	2.3	2.2	1.9	1.9	1.7	1.5	1.4	1.2	1.1	0.9
157.5°	2.3	2.2	2.1	1.8	1.8	1.6	1.4	1.3	1.1	1.1	0.8
160°	2.2	2.1	2.1	1.8	1.8	1.6	1.4	1.3	1.1	1.0	0.8
162.5°	2.3	2.2	2.2	1.9	1.8	1.8	1.6	1.4	1.3	1.1	1.1
165°	2.1	2.0	2.0	1.9	1.8	1.5	1.4	1.3	1.2	1.2	0.9
167.5°	2.1	2.0	2.0	1.8	1.8	1.6	1.5	1.4	1.3	1.2	1.1
170°	2.0	1.9	1.9	1.8	1.8	1.5	1.5	1.4	1.3	1.2	1.2
172.5°	2.0	1.8	1.9	1.8	1.6	1.6	1.4	1.4	1.4	1.2	1.3
175°	1.8	1.6	1.7	1.6	1.6	1.5	1.5	1.4	1.4	1.3	1.2
177.5°	1.6	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4
180°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4



TEST NUMBER: P14011

CATALOG NUMBER: 650-1-10LED3012-12-NSS

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.5°	0.0	0.0	0.0	0.0	0.0	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
7.5°	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0
12.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62.5°	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
65°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
70°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.1
77.5°	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0
97.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
100°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.1
105°	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.1
107.5°	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
110°	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0



TEST NUMBER: P14011

CATALOG NUMBER: 650-1-10LED3012-12-NSS

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
115°	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0
125°	0.4	0.2	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0
127.5°	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0
130°	0.5	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
132.5°	0.4	0.3	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0
135°	0.6	0.4	0.2	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.0
137.5°	0.4	0.2	0.2	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0
140°	0.5	0.5	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0
142.5°	0.6	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0
145°	0.6	0.5	0.3	0.3	0.4	0.3	0.2	0.0	0.1	0.2	0.0
147.5°	0.6	0.4	0.4	0.3	0.2	0.1	0.1	0.2	0.1	0.0	0.1
150°	0.7	0.7	0.4	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.2
152.5°	0.7	0.6	0.5	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1
155°	0.8	0.6	0.5	0.5	0.5	0.3	0.3	0.4	0.3	0.2	0.2
157.5°	0.8	0.7	0.6	0.4	0.4	0.3	0.2	0.3	0.2	0.2	0.2
160°	0.9	0.7	0.5	0.4	0.4	0.4	0.2	0.2	0.2	0.1	0.2
162.5°	0.9	0.8	0.7	0.8	0.5	0.5	0.5	0.5	0.4	0.4	0.5
165°	0.8	0.7	0.7	0.5	0.6	0.4	0.6	0.3	0.3	0.3	0.3
167.5°	1.1	0.9	0.8	0.8	0.7	0.6	0.7	0.5	0.5	0.5	0.5
170°	1.1	1.1	1.0	0.8	0.8	0.8	0.7	0.7	0.7	0.6	0.6
172.5°	1.3	1.2	1.0	1.0	0.9	0.9	0.8	0.8	0.8	0.8	0.8
175°	1.2	1.2	1.1	1.1	1.1	0.9	0.9	1.0	0.9	0.9	0.9
177.5°	1.3	1.3	1.2	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.1
180°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4



TEST NUMBER: P14011

CATALOG NUMBER: 650-1-10LED3012-12-NSS

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	0.0	0.0	0.0	0.0
2.5°	0.0	0.0	0.0	0.0
5°	0.0	0.0	0.0	0.0
7.5°	0.0	0.0	0.0	0.0
10°	0.0	0.0	0.0	0.0
12.5°	0.0	0.0	0.0	0.0
15°	0.0	0.0	0.0	0.0
17.5°	0.0	0.0	0.0	0.0
20°	0.0	0.0	0.0	0.0
22.5°	0.0	0.0	0.0	0.0
25°	0.0	0.0	0.0	0.0
27.5°	0.0	0.0	0.0	0.0
30°	0.0	0.0	0.0	0.0
32.5°	0.0	0.0	0.0	0.0
35°	0.0	0.0	0.0	0.0
37.5°	0.0	0.0	0.0	0.0
40°	0.0	0.0	0.0	0.0
42.5°	0.0	0.0	0.0	0.0
45°	0.0	0.0	0.0	0.0
47.5°	0.0	0.0	0.0	0.0
50°	0.0	0.0	0.0	0.0
52.5°	0.0	0.0	0.0	0.0
55°	0.0	0.0	0.0	0.0
57.5°	0.0	0.0	0.0	0.0
60°	0.0	0.0	0.0	0.0
62.5°	0.0	0.0	0.0	0.0
65°	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0
70°	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0
75°	0.1	0.2	0.1	0.0
77.5°	0.0	0.0	0.0	0.1
80°	0.0	0.0	0.0	0.0
82.5°	0.0	0.1	0.0	0.0
85°	0.0	0.0	0.0	0.0
87.5°	0.1	0.0	0.1	0.1
90°	0.0	0.1	0.0	0.0
92.5°	0.0	0.1	0.0	0.0
95°	0.0	0.1	0.0	0.0
97.5°	0.0	0.1	0.0	0.0
100°	0.0	0.1	0.0	0.0
102.5°	0.1	0.0	0.0	0.0
105°	0.0	0.0	0.1	0.1
107.5°	0.0	0.1	0.0	0.0
110°	0.0	0.0	0.1	0.0



TEST NUMBER: P14011

CATALOG NUMBER: 650-1-10LED3012-12-NSS

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
112.5°	0.0	0.1	0.0	0.0
115°	0.0	0.1	0.0	0.0
117.5°	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0
122.5°	0.0	0.1	0.0	0.1
125°	0.0	0.1	0.1	0.0
127.5°	0.1	0.0	0.1	0.0
130°	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0
140°	0.0	0.1	0.0	0.0
142.5°	0.1	0.1	0.1	0.0
145°	0.1	0.1	0.0	0.2
147.5°	0.0	0.0	0.0	0.0
150°	0.1	0.2	0.1	0.0
152.5°	0.0	0.1	0.1	0.1
155°	0.2	0.2	0.2	0.3
157.5°	0.2	0.2	0.2	0.2
160°	0.1	0.1	0.1	0.1
162.5°	0.2	0.4	0.3	0.4
165°	0.3	0.4	0.2	0.4
167.5°	0.6	0.5	0.5	0.6
170°	0.6	0.6	0.6	0.6
172.5°	0.8	0.7	0.7	0.7
175°	0.8	0.9	0.8	0.7
177.5°	1.2	1.2	1.1	1.1
180°	1.4	1.4	1.4	1.4

(END OF REPORT)