

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: P14012

Luminaire Tested: **650-2-10LED3012-12-NSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P14012  
Test Lab: INNOVATION CENTER-P1  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMIERE  
Catalog Number: 650-2-10LED3012-12-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: 25.7 lumens  
Efficiency: N/A  
Efficacy: 2.8 lumens/watt  
Spacing Criteria (0/90/45): - / - / -  
Luminous Opening: Rectangular w/ Sides (W: 0.1' x L: 0.12' x H: 0.03')  
CIE Type: Semi-Indirect

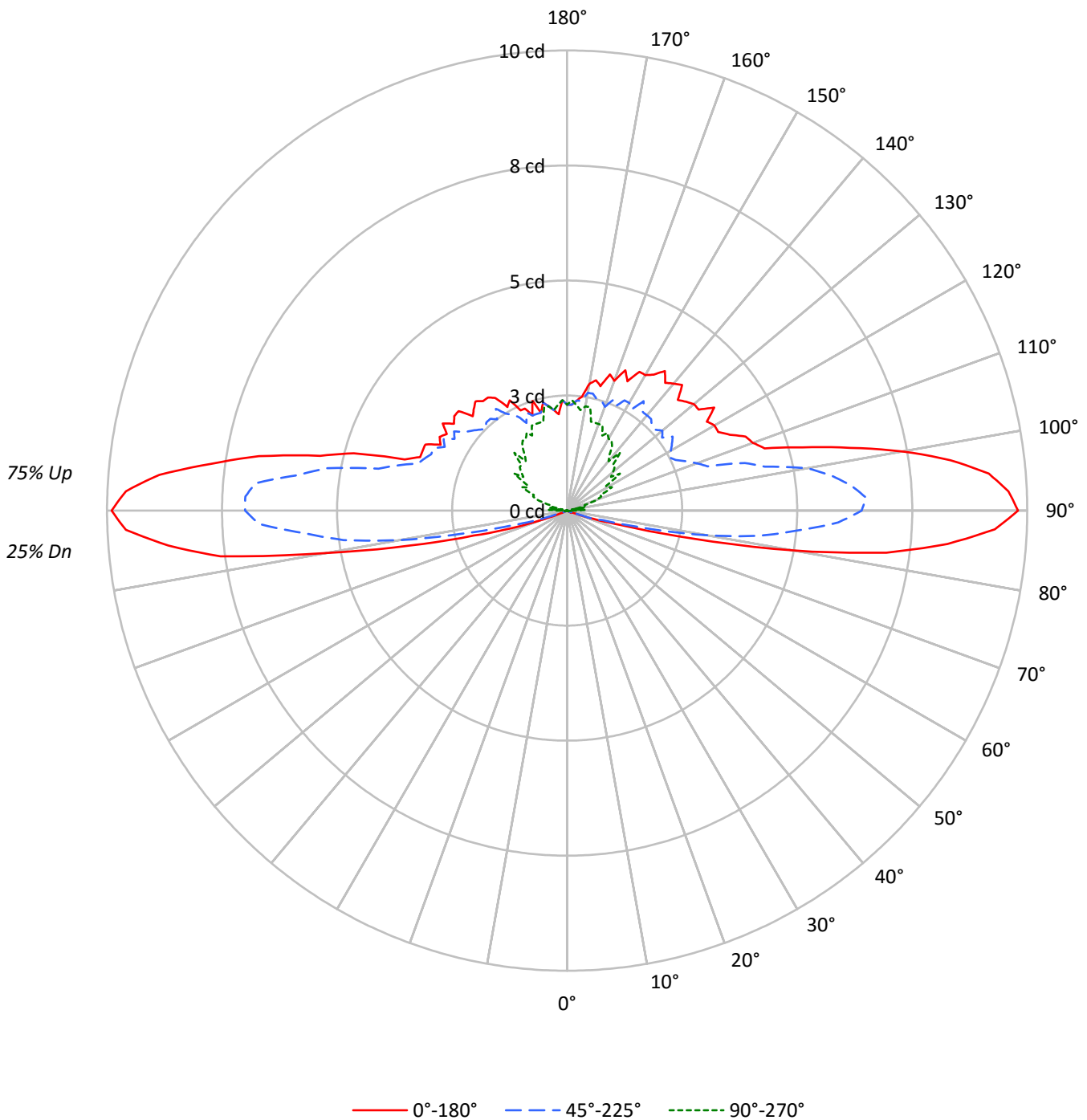
Input Watts (W): 9.3  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 0.82238  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: 14 HR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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CATALOG NUMBER: 650-2-10LED3012-12-NSS

### 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	101	101	101	101	90	90	90	90	69	69	69	50	50	50	33	33	33	25
1	85	77	70	64	74	67	62	56	49	45	41	33	29	26	17	15	13	5
2	76	65	57	50	66	57	50	43	41	36	31	27	23	19	13	11	8	2
3	68	57	48	40	60	49	42	35	36	30	25	23	19	15	11	8	6	1
4	62	50	41	34	54	44	36	29	32	26	21	20	16	13	10	7	5	0
5	57	44	35	28	50	39	31	25	28	22	18	18	14	11	9	6	4	0
6	53	39	31	24	46	35	27	21	25	20	15	17	12	9	8	6	4	0
7	49	35	27	21	42	31	24	18	23	17	13	15	11	8	8	5	3	0
8	45	32	24	18	39	28	21	16	21	15	12	14	10	7	7	5	3	0
9	42	29	21	16	36	26	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	6	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°	115	0	0
65°	0	0	0
70°	287	0	860
75°	1983	0	3470
80°	9845	176	10435
85°	20408	0	21392



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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	0.3
70°-80°	1.3	5.0
80°-90°	5.1	19.7
90°-100°	5.6	21.6
100°-110°	3.3	13.0
110°-120°	2.6	10.0
120°-130°	2.3	8.9
130°-140°	2.0	7.6
140°-150°	1.6	6.2
150°-160°	1.1	4.3
160°-170°	0.7	2.6
170°-180°	0.2	0.9
0°-30°	0.0	0.0
0°-40°	0.0	0.0
0°-60°	0.0	0.0
0°-90°	6.4	24.9
90°-120°	11.5	44.5
90°-150°	17.3	67.2
90°-180°	19.0	73.8
0°-180°	25.7	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°	1	1	0	1	2	2
85°	8	5	0	6	9	6
90°	10	6	0	7	10	5
95°	9	6	0	7	9	7
105°	5	4	0	4	5	6
115°	4	3	1	3	3	4
125°	4	3	1	3	3	3
135°	3	3	1	2	3	3
145°	4	3	2	3	3	2
155°	3	2	2	2	2	2
165°	3	2	2	2	2	1
175°	2	2	2	2	2	0
180°	2	2	2	2	2	



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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°	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.1	0.2	0.0	0.1
62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
65°	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
67.5°	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0
70°	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.0	0.1
72.5°	0.6	0.7	0.7	0.8	0.7	0.8	0.9	0.8	0.6	0.6	0.5
75°	1.2	1.3	1.3	1.3	1.2	1.3	1.2	1.2	1.0	0.8	0.7
77.5°	2.8	2.7	2.6	2.7	2.5	2.5	2.2	2.2	2.1	1.8	1.5
80°	5.0	5.0	5.0	4.7	4.6	4.4	4.1	3.8	3.4	3.1	2.6
82.5°	7.0	7.0	6.9	6.7	6.6	6.2	5.9	5.4	5.0	4.2	3.6
85°	8.3	8.4	8.2	8.1	7.8	7.6	7.0	6.4	6.0	5.0	4.2
87.5°	9.3	9.5	9.4	9.3	9.1	8.7	8.2	7.5	6.8	5.9	5.0
90°	9.8	9.8	9.9	9.7	9.5	9.2	8.9	8.1	7.4	6.4	5.1
92.5°	9.6	9.6	9.6	9.5	9.4	9.3	8.8	8.2	7.6	6.5	5.2
95°	9.2	9.3	9.0	9.1	8.9	8.9	8.5	8.0	7.4	6.2	4.9
97.5°	8.4	8.3	8.1	8.2	7.9	8.0	7.7	7.4	6.7	5.8	4.5
100°	7.4	7.4	7.3	7.4	7.2	7.1	7.1	6.8	6.2	5.3	4.1
102.5°	6.3	6.2	6.1	6.1	6.1	6.0	5.8	5.6	5.2	4.4	3.3
105°	5.3	5.4	5.4	5.4	5.2	5.2	5.0	5.0	4.6	4.0	3.0
107.5°	4.5	4.6	4.6	4.5	4.5	4.3	4.1	4.1	3.6	3.2	2.6
110°	4.3	4.3	4.2	4.2	4.0	3.9	3.7	3.5	3.3	3.0	2.4



TEST NUMBER: P14012

CATALOG NUMBER: 650-2-10LED3012-12-NSS

**CANDELA DISTRIBUTION (continued):**

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



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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	0.2	0.2	0.1	0.1	0.0	0.2	0.2	0.1
62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.1	0.0	0.1
70°	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.5	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.1	0.7	0.4	0.2	0.1	0.1	0.1	0.0	0.1	0.2	0.5
80°	2.0	1.5	1.1	0.6	0.3	0.4	0.1	0.1	0.2	0.5	1.0
82.5°	2.9	2.0	1.5	0.8	0.4	0.3	0.2	0.1	0.2	0.6	1.0
85°	3.2	2.1	1.3	0.7	0.3	0.1	0.1	0.0	0.0	0.2	0.6
87.5°	3.7	2.4	1.5	0.8	0.3	0.2	0.1	0.0	0.0	0.2	0.7
90°	3.6	2.4	1.4	0.7	0.4	0.2	0.2	0.2	0.2	0.2	0.6
92.5°	3.6	2.2	1.3	0.7	0.4	0.3	0.2	0.4	0.3	0.3	0.5
95°	3.4	2.0	1.2	0.6	0.4	0.5	0.4	0.2	0.3	0.3	0.4
97.5°	2.8	1.7	0.8	0.4	0.1	0.2	0.1	0.1	0.1	0.3	0.2
100°	2.6	1.4	0.8	0.5	0.3	0.3	0.3	0.4	0.2	0.3	0.4
102.5°	2.1	1.2	0.7	0.5	0.2	0.4	0.1	0.1	0.3	0.3	0.5
105°	2.0	1.3	0.8	0.7	0.6	0.6	0.3	0.4	0.6	0.6	0.8
107.5°	1.8	1.3	1.0	0.8	0.6	0.5	0.4	0.4	0.5	0.7	0.8
110°	1.9	1.5	1.2	1.0	0.8	0.8	0.7	0.7	0.8	0.9	1.2





TEST NUMBER: P14012

CATALOG NUMBER: 650-2-10LED3012-12-NSS

**CANDELA DISTRIBUTION (continued):**

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



TEST NUMBER: P14012

CATALOG NUMBER: 650-2-10LED3012-12-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	0.1	0.0	0.0	0.1	0.0	0.2	0.2	0.0	0.1	0.0
62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
65°	0.0	0.1	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.2	0.0	0.2	0.1	0.3	0.3	0.2	0.2	0.3
70°	0.0	0.0	0.1	0.0	0.1	0.1	0.3	0.2	0.5	0.5	0.4
72.5°	0.1	0.2	0.2	0.3	0.4	0.7	0.8	0.8	1.0	1.3	1.1
75°	0.1	0.3	0.5	0.8	0.8	1.2	1.5	1.5	1.6	1.8	1.9
77.5°	0.7	1.0	1.4	1.6	1.9	2.3	2.6	2.9	2.9	3.2	3.2
80°	1.4	1.9	2.4	2.9	3.2	3.7	4.1	4.3	4.7	4.9	5.2
82.5°	1.4	2.3	3.0	3.9	4.3	4.9	5.4	5.8	6.2	6.6	6.9
85°	1.3	2.1	3.3	4.3	5.1	5.7	6.6	7.0	7.4	7.9	8.4
87.5°	1.2	2.2	3.4	4.7	5.9	6.7	7.4	8.2	8.7	9.1	9.4
90°	1.1	2.0	3.2	4.7	6.0	7.0	7.8	8.5	9.0	9.4	9.7
92.5°	0.9	1.8	2.9	4.5	6.0	7.0	7.9	8.6	9.1	9.5	9.6
95°	0.8	1.5	2.6	4.1	5.6	6.8	7.5	8.1	8.7	9.0	9.1
97.5°	0.5	1.0	2.2	3.5	4.9	5.9	6.6	7.2	7.8	8.0	8.0
100°	0.7	1.0	1.9	3.1	4.2	5.3	5.9	6.4	6.7	6.8	6.8
102.5°	0.6	1.0	1.5	2.5	3.5	4.2	4.7	5.0	5.3	5.5	5.4
105°	1.0	1.2	1.8	2.4	3.1	3.8	4.2	4.6	4.6	4.9	4.8
107.5°	1.0	1.3	1.9	2.2	2.8	3.4	3.7	3.7	3.8	4.0	4.0
110°	1.3	1.7	2.1	2.5	2.9	3.3	3.3	3.5	3.6	3.6	3.6



TEST NUMBER: P14012

CATALOG NUMBER: 650-2-10LED3012-12-NSS

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	1.6	1.9	2.3	2.8	3.0	3.2	3.4	3.4	3.6	3.6	3.4
115°	1.6	2.0	2.4	2.9	3.0	3.2	3.3	3.4	3.3	3.4	3.4
117.5°	1.6	2.0	2.3	2.5	2.9	3.0	3.2	3.2	3.3	3.4	3.4
120°	1.8	2.0	2.4	2.6	2.8	3.1	3.2	3.2	3.2	3.2	3.3
122.5°	1.5	1.9	2.3	2.6	2.7	2.9	3.0	3.1	3.1	3.2	3.1
125°	1.9	2.1	2.4	2.7	2.9	3.0	3.2	3.2	3.3	3.4	3.3
127.5°	1.7	1.9	2.2	2.5	2.6	2.8	2.9	2.9	3.0	3.2	3.1
130°	1.8	2.0	2.2	2.4	2.5	2.7	2.9	2.9	3.0	3.0	3.1
132.5°	1.8	2.0	2.2	2.4	2.5	2.6	2.9	2.9	2.8	3.1	3.1
135°	1.6	1.9	2.0	2.3	2.5	2.5	2.7	2.8	2.9	2.9	2.9
137.5°	1.8	2.0	2.2	2.3	2.5	2.6	2.8	2.8	2.9	3.0	3.0
140°	1.8	2.1	2.2	2.4	2.3	2.6	2.7	2.8	2.8	3.0	3.0
142.5°	1.8	2.0	2.2	2.3	2.4	2.5	2.7	2.8	2.7	2.9	2.8
145°	2.0	2.1	2.2	2.5	2.6	2.7	2.8	2.8	2.8	3.0	3.0
147.5°	1.9	2.0	2.2	2.3	2.3	2.5	2.5	2.5	2.6	2.7	2.7
150°	1.9	2.0	2.2	2.1	2.3	2.4	2.4	2.6	2.7	2.7	2.6
152.5°	2.0	2.1	2.2	2.1	2.2	2.3	2.4	2.4	2.5	2.6	2.5
155°	1.8	2.0	2.0	2.0	2.1	2.1	2.3	2.2	2.3	2.4	2.4
157.5°	2.1	2.2	2.2	2.2	2.2	2.3	2.4	2.4	2.4	2.5	2.5
160°	2.0	2.0	2.0	2.2	2.1	2.2	2.3	2.4	2.2	2.3	2.3
162.5°	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.4
165°	2.2	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.2	2.3	2.4
167.5°	2.3	2.4	2.4	2.3	2.3	2.4	2.5	2.3	2.3	2.4	2.4
170°	2.2	2.2	2.4	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.3
172.5°	2.2	2.1	2.2	2.2	2.1	2.2	2.2	2.1	2.2	2.1	2.2
175°	2.3	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.3	2.2	2.2
177.5°	2.3	2.3	2.3	2.4	2.3	2.4	2.4	2.3	2.4	2.4	2.2
180°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3



TEST NUMBER: P14012

CATALOG NUMBER: 650-2-10LED3012-12-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°	0.2	0.2	0.2	0.2
70°	0.6	0.6	0.7	0.6
72.5°	1.3	1.2	1.3	1.3
75°	2.0	2.1	2.1	2.1
77.5°	3.4	3.5	3.5	3.5
80°	5.2	5.3	5.5	5.3
82.5°	7.2	7.3	7.4	7.6
85°	8.5	8.6	8.8	8.7
87.5°	9.6	9.6	9.7	9.6
90°	9.8	9.9	10.0	9.9
92.5°	9.7	9.7	9.6	9.6
95°	9.1	9.0	9.0	8.9
97.5°	8.0	8.0	8.0	7.8
100°	6.8	6.8	6.8	6.8
102.5°	5.5	5.5	5.6	5.5
105°	4.7	4.7	4.7	4.8
107.5°	3.8	3.8	3.9	3.7
110°	3.5	3.6	3.5	3.4



TEST NUMBER: P14012

CATALOG NUMBER: 650-2-10LED3012-12-NSS

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
112.5°	3.5	3.4	3.5	3.4
115°	3.3	3.4	3.3	3.4
117.5°	3.2	3.2	3.3	3.1
120°	3.2	3.2	3.3	3.2
122.5°	3.1	3.3	3.0	3.1
125°	3.3	3.4	3.4	3.3
127.5°	3.2	3.1	3.2	3.1
130°	3.1	3.1	3.1	3.2
132.5°	3.1	3.2	3.2	3.2
135°	3.0	3.0	3.0	2.9
137.5°	3.0	3.1	3.0	3.0
140°	2.9	3.0	3.1	3.1
142.5°	2.9	3.0	3.0	3.0
145°	3.0	2.9	3.0	3.0
147.5°	2.7	2.7	2.8	2.9
150°	2.6	2.7	2.8	2.6
152.5°	2.7	2.6	2.7	2.7
155°	2.4	2.4	2.4	2.4
157.5°	2.5	2.5	2.5	2.4
160°	2.3	2.2	2.3	2.2
162.5°	2.4	2.4	2.4	2.5
165°	2.3	2.4	2.2	2.2
167.5°	2.3	2.4	2.5	2.4
170°	2.2	2.3	2.3	2.3
172.5°	2.2	2.2	2.1	2.2
175°	2.2	2.1	2.2	2.1
177.5°	2.3	2.2	2.3	2.4
180°	2.3	2.3	2.3	2.3

(END OF REPORT)