

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P251571

Luminaire Tested: **LD4B50D010TE EU4B30508035 4LBSW1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251571  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-10)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B50D010TE EU4B30508035 4LBSW1LI  
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

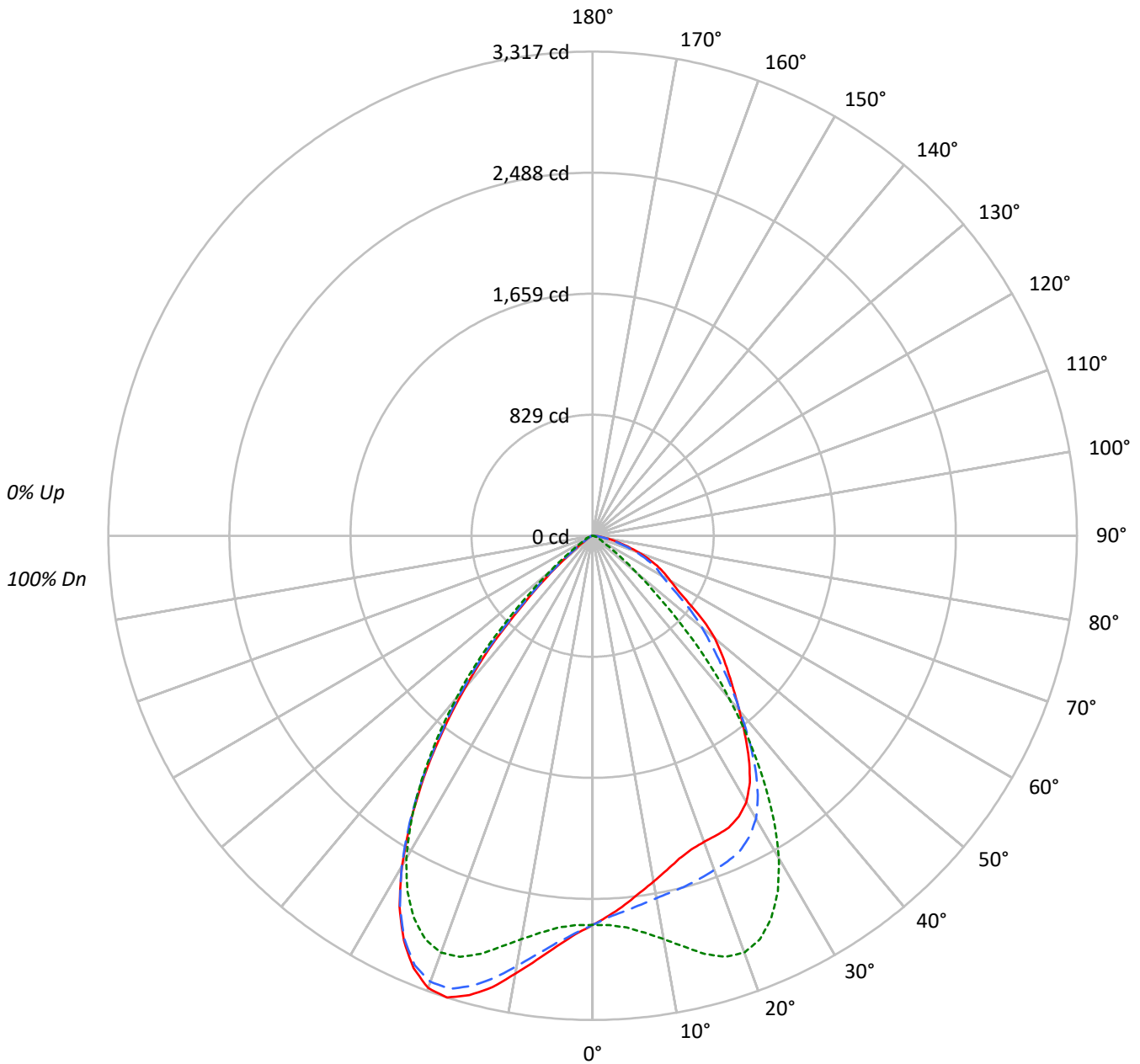
Lumens per Lamp: N/A  
Luminaire Lumens: 4920.0 lumens  
Efficiency: N/A  
Efficacy: 83.7 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.19  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 58.77  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
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									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90																			
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	85	82	80																			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72																			
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64																			
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58																			
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53																			
7	75	63	56	51	73	62	55	51	61	55	50	60	54	50	58	53	50	48																			
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44																			
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	46	42	40																			
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	259833	259833	259833
5°	248235	263555	276156
10°	238012	277627	301387
15°	231072	299207	328699
20°	231393	315141	341847
25°	237293	311029	328987
30°	236976	287110	293761
35°	221959	242660	239353
40°	198823	185096	172692
45°	180374	117525	96423
50°	165703	59631	41164
55°	136015	26608	13610
60°	119406	14931	7465
65°	112374	11230	5627
70°	96199	8919	4958
75°	73389	6552	3916
80°	52756	3929	1964
85°	38914	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	259.0	5.3
10°-20°	807.1	16.4
20°-30°	1248.7	25.4
30°-40°	1230.4	25.0
40°-50°	755.5	15.4
50°-60°	335.9	6.8
60°-70°	187.6	3.8
70°-80°	81.2	1.7
80°-90°	14.5	0.3
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	2314.8	47.0
0°-40°	3545.2	72.1
0°-60°	4636.6	94.2
0°-90°	4920.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4920.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2666	2666	2666	2666	2666	
5°	2537	2579	2694	2798	2823	238
15°	2290	2482	2966	3192	3258	650
25°	2207	2384	2892	3049	3059	1013
35°	1866	1942	2040	2033	2012	1158
45°	1309	1243	853	745	700	1014
55°	800	724	157	90	80	736
65°	487	439	49	28	24	477
75°	195	167	17	10	10	214
85°	35	28	0	0	0	43
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1
2.5°	2603.5	2603.5	2603.5	2603.5	2610.4	2600.0	2610.4	2610.4	2620.9	2624.4	2613.9
5°	2537.4	2533.9	2537.4	2537.4	2544.3	2540.8	2551.3	2558.2	2572.2	2579.1	2579.1
7.5°	2467.7	2467.7	2467.7	2474.7	2485.1	2481.7	2492.1	2502.5	2523.4	2537.4	2547.8
10°	2405.1	2401.6	2412.1	2415.5	2426.0	2426.0	2443.4	2453.8	2478.2	2506.0	2520.0
12.5°	2345.9	2342.4	2349.4	2359.8	2377.2	2377.2	2391.2	2408.6	2443.4	2474.7	2499.1
15°	2290.2	2293.7	2304.2	2311.1	2332.0	2332.0	2349.4	2370.3	2408.6	2446.9	2481.7
17.5°	2251.9	2255.4	2262.4	2272.8	2293.7	2293.7	2311.1	2335.5	2377.2	2419.0	2460.8
20°	2231.1	2234.5	2241.5	2251.9	2269.3	2272.8	2286.8	2314.6	2352.9	2398.1	2436.4
22.5°	2220.6	2227.6	2234.5	2241.5	2258.9	2258.9	2276.3	2297.2	2335.5	2380.7	2415.5
25°	2206.7	2213.7	2217.1	2227.6	2241.5	2241.5	2251.9	2276.3	2311.1	2349.4	2384.2
27.5°	2168.4	2175.4	2178.9	2189.3	2203.2	2199.7	2213.7	2231.1	2262.4	2297.2	2325.0
30°	2105.8	2109.2	2116.2	2119.7	2130.1	2130.1	2140.6	2158.0	2178.9	2210.2	2238.0
32.5°	2004.8	2011.8	2015.3	2018.7	2029.2	2025.7	2029.2	2039.6	2060.5	2088.4	2105.8
35°	1865.6	1879.5	1879.5	1886.5	1890.0	1886.5	1886.5	1900.4	1910.8	1931.7	1942.2
37.5°	1712.5	1722.9	1719.4	1726.4	1729.9	1719.4	1726.4	1729.9	1743.8	1754.2	1757.7
40°	1562.8	1566.3	1566.3	1566.3	1566.3	1562.8	1566.3	1569.7	1580.2	1580.2	1569.7
42.5°	1427.0	1430.5	1430.5	1423.6	1430.5	1427.0	1427.0	1427.0	1427.0	1413.1	1402.7
45°	1308.7	1312.2	1312.2	1308.7	1308.7	1301.7	1298.3	1294.8	1284.3	1266.9	1242.6
47.5°	1197.3	1204.3	1207.8	1200.8	1197.3	1190.4	1190.4	1169.5	1155.6	1134.7	1099.9
50°	1092.9	1099.9	1099.9	1092.9	1092.9	1082.5	1072.0	1065.1	1044.2	1019.8	978.0
52.5°	960.6	971.1	971.1	967.6	967.6	953.7	950.2	936.3	918.9	891.0	856.2
55°	800.5	814.5	811.0	807.5	800.5	800.5	800.5	790.1	779.7	758.8	724.0
57.5°	685.7	689.2	689.2	685.7	685.7	678.7	678.7	668.3	664.8	643.9	616.1
60°	612.6	612.6	616.1	612.6	609.1	605.6	602.1	595.2	584.7	570.8	549.9
62.5°	553.4	556.9	556.9	553.4	549.9	546.5	543.0	536.0	529.1	518.6	497.7
65°	487.3	494.2	490.8	487.3	483.8	480.3	480.3	473.4	466.4	459.4	438.6
67.5°	414.2	417.7	421.2	414.2	414.2	410.7	410.7	403.7	400.3	386.3	372.4
70°	337.6	341.1	341.1	337.6	337.6	334.1	334.1	330.7	327.2	316.7	302.8
72.5°	264.5	268.0	264.5	261.0	261.0	261.0	257.6	254.1	250.6	243.6	233.2
75°	194.9	194.9	198.4	194.9	191.4	191.4	188.0	188.0	181.0	177.5	167.1
77.5°	139.2	142.7	139.2	139.2	135.7	132.3	132.3	128.8	128.8	125.3	118.3
80°	94.0	94.0	97.5	94.0	90.5	94.0	90.5	87.0	87.0	83.5	76.6
82.5°	59.2	62.7	59.2	59.2	59.2	59.2	59.2	55.7	55.7	52.2	48.7
85°	34.8	34.8	34.8	34.8	34.8	34.8	34.8	31.3	31.3	31.3	27.8
87.5°	17.4	17.4	13.9	13.9	17.4	17.4	17.4	13.9	13.9	13.9	13.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1
2.5°	2627.8	2631.3	2638.3	2648.7	2648.7	2641.8	2659.2	2659.2	2666.1	2669.6	2683.5
5°	2600.0	2607.0	2620.9	2638.3	2641.8	2638.3	2662.7	2673.1	2683.5	2694.0	2714.9
7.5°	2575.6	2589.6	2613.9	2638.3	2648.7	2648.7	2687.0	2700.9	2721.8	2742.7	2767.1
10°	2561.7	2582.6	2617.4	2655.7	2666.1	2676.6	2721.8	2749.7	2777.5	2805.4	2840.2
12.5°	2544.3	2582.6	2627.8	2676.6	2697.5	2711.4	2774.0	2808.8	2847.1	2881.9	2927.2
15°	2540.8	2586.1	2645.3	2707.9	2735.7	2756.6	2826.2	2875.0	2920.2	2965.5	3010.7
17.5°	2526.9	2582.6	2655.7	2725.3	2760.1	2788.0	2868.0	2927.2	2979.4	3024.6	3076.8
20°	2509.5	2572.2	2652.2	2728.8	2767.1	2794.9	2881.9	2937.6	2996.8	3038.6	3087.3
22.5°	2485.1	2547.8	2627.8	2704.4	2739.2	2763.6	2850.6	2899.3	2951.5	2993.3	3038.6
25°	2443.4	2502.5	2572.2	2634.8	2669.6	2690.5	2767.1	2812.3	2850.6	2892.4	2934.1
27.5°	2384.2	2429.5	2488.6	2533.9	2554.8	2575.6	2638.3	2676.6	2711.4	2746.2	2774.0
30°	2279.8	2314.6	2356.4	2394.7	2415.5	2419.0	2478.2	2499.1	2526.9	2551.3	2572.2
32.5°	2140.6	2168.4	2192.8	2213.7	2227.6	2231.1	2276.3	2283.3	2311.1	2311.1	2342.4
35°	1963.1	1977.0	1994.4	1994.4	2004.8	1994.4	2025.7	2032.7	2036.1	2039.6	2064.0
37.5°	1761.2	1768.1	1778.6	1757.7	1757.7	1747.3	1757.7	1764.7	1750.7	1750.7	1768.1
40°	1569.7	1555.8	1541.9	1521.0	1510.6	1489.7	1489.7	1472.3	1461.9	1454.9	1458.4
42.5°	1385.3	1354.0	1322.6	1277.4	1256.5	1235.6	1214.7	1190.4	1183.4	1166.0	1155.6
45°	1207.8	1162.5	1120.8	1047.7	1005.9	985.0	939.8	891.0	859.7	852.7	824.9
47.5°	1058.1	992.0	922.4	835.3	793.6	755.3	689.2	647.4	605.6	584.7	567.3
50°	925.8	866.7	776.2	682.2	630.0	591.7	518.6	469.9	424.6	393.3	372.4
52.5°	811.0	744.8	661.3	553.4	501.2	459.4	379.4	323.7	285.4	254.1	229.7
55°	682.2	630.0	546.5	445.5	393.3	344.6	275.0	215.8	177.5	156.6	139.2
57.5°	588.2	543.0	462.9	365.5	316.7	271.5	201.9	153.1	121.8	100.9	90.5
60°	525.6	483.8	414.2	320.2	275.0	233.2	167.1	121.8	94.0	76.6	69.6
62.5°	473.4	431.6	368.9	281.9	243.6	201.9	142.7	100.9	76.6	62.7	52.2
65°	414.2	375.9	320.2	243.6	208.8	174.0	121.8	83.5	62.7	48.7	41.8
67.5°	351.5	316.7	268.0	201.9	174.0	146.2	97.5	69.6	52.2	41.8	34.8
70°	285.4	257.6	212.3	163.6	139.2	114.9	80.1	55.7	38.3	31.3	27.8
72.5°	219.3	194.9	163.6	125.3	104.4	87.0	59.2	41.8	31.3	24.4	20.9
75°	156.6	139.2	114.9	90.5	76.6	62.7	45.2	31.3	20.9	17.4	13.9
77.5°	107.9	97.5	80.1	62.7	52.2	45.2	31.3	20.9	17.4	13.9	10.4
80°	69.6	62.7	52.2	38.3	31.3	27.8	17.4	13.9	10.4	7.0	7.0
82.5°	41.8	38.3	31.3	20.9	17.4	13.9	10.4	7.0	7.0	3.5	3.5
85°	24.4	20.9	13.9	10.4	10.4	7.0	7.0	3.5	3.5	0.0	0.0
87.5°	10.4	7.0	7.0	3.5	3.5	3.5	3.5	0.0	0.0	0.0	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



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**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1
2.5°	2676.6	2694.0	2690.5	2700.9	2697.5	2697.5	2714.9	2707.9	2725.3	2725.3	2728.8
5°	2714.9	2739.2	2739.2	2756.6	2753.2	2760.1	2777.5	2777.5	2798.4	2805.4	2805.4
7.5°	2770.6	2801.9	2808.8	2826.2	2829.7	2843.6	2857.6	2861.0	2888.9	2895.9	2899.3
10°	2847.1	2885.4	2895.9	2913.3	2920.2	2934.1	2951.5	2958.5	2993.3	2996.8	3010.7
12.5°	2941.1	2982.9	2993.3	3014.2	3017.7	3035.1	3059.4	3066.4	3101.2	3111.7	3122.1
15°	3031.6	3069.9	3087.3	3108.2	3111.7	3132.5	3153.4	3160.4	3191.7	3205.6	3216.1
17.5°	3094.2	3139.5	3149.9	3177.8	3177.8	3195.2	3216.1	3223.0	3254.4	3264.8	3271.8
20°	3108.2	3149.9	3163.9	3184.7	3188.2	3198.7	3216.1	3223.0	3250.9	3254.4	3264.8
22.5°	3056.0	3097.7	3104.7	3125.6	3129.1	3139.5	3153.4	3149.9	3184.7	3181.3	3184.7
25°	2944.6	2982.9	2982.9	3007.2	3003.8	3014.2	3021.2	3017.7	3049.0	3049.0	3049.0
27.5°	2784.5	2819.3	2822.8	2840.2	2829.7	2833.2	2840.2	2836.7	2857.6	2857.6	2857.6
30°	2586.1	2613.9	2603.5	2617.4	2610.4	2617.4	2610.4	2607.0	2613.9	2620.9	2617.4
32.5°	2339.0	2359.8	2359.8	2363.3	2363.3	2342.4	2335.5	2335.5	2332.0	2328.5	2328.5
35°	2053.6	2071.0	2064.0	2064.0	2060.5	2039.6	2029.2	2022.2	2032.7	2011.8	2025.7
37.5°	1761.2	1764.7	1754.2	1750.7	1733.3	1733.3	1715.9	1702.0	1709.0	1705.5	1691.6
40°	1441.0	1454.9	1434.0	1427.0	1437.5	1423.6	1406.2	1388.8	1402.7	1385.3	1392.2
42.5°	1127.7	1124.2	1117.3	1117.3	1117.3	1096.4	1092.9	1089.4	1092.9	1079.0	1068.5
45°	814.5	804.0	793.6	793.6	779.7	772.7	772.7	762.3	744.8	744.8	724.0
47.5°	549.9	525.6	518.6	515.1	508.2	508.2	501.2	494.2	490.8	473.4	473.4
50°	358.5	334.1	327.2	323.7	327.2	320.2	313.3	306.3	299.3	295.9	288.9
52.5°	215.8	205.4	198.4	194.9	188.0	184.5	181.0	174.0	170.5	170.5	167.1
55°	128.8	118.3	104.4	104.4	104.4	100.9	97.5	94.0	90.5	90.5	87.0
57.5°	80.1	73.1	66.1	62.7	62.7	62.7	59.2	59.2	59.2	59.2	55.7
60°	59.2	52.2	48.7	48.7	48.7	45.2	45.2	45.2	45.2	41.8	41.8
62.5°	45.2	41.8	38.3	38.3	34.8	34.8	34.8	34.8	34.8	34.8	31.3
65°	38.3	31.3	31.3	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
67.5°	27.8	24.4	24.4	24.4	24.4	20.9	20.9	20.9	20.9	20.9	20.9
70°	20.9	20.9	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4
72.5°	17.4	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9
75°	13.9	13.9	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
77.5°	10.4	10.4	10.4	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
80°	7.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
82.5°	3.5	3.5	3.5	3.5	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	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





TEST NUMBER: P251571

CATALOG NUMBER: LD4B50D010TE EU4B30508035 4LBSW1LI

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1	2666.1
2.5°	2728.8	2746.2	2728.8	2728.8	2739.2	2735.7	2742.7	2732.3
5°	2808.8	2833.2	2815.8	2812.3	2829.7	2826.2	2829.7	2822.8
7.5°	2906.3	2930.7	2913.3	2913.3	2930.7	2927.2	2937.6	2930.7
10°	3017.7	3045.5	3021.2	3024.6	3049.0	3045.5	3045.5	3045.5
12.5°	3132.5	3160.4	3146.5	3146.5	3163.9	3167.3	3170.8	3167.3
15°	3226.5	3254.4	3237.0	3237.0	3261.3	3257.8	3261.3	3257.8
17.5°	3282.2	3310.0	3289.2	3289.2	3310.0	3310.0	3313.5	3317.0
20°	3268.3	3299.6	3282.2	3275.2	3299.6	3299.6	3296.1	3296.1
22.5°	3188.2	3216.1	3202.1	3195.2	3212.6	3205.6	3202.1	3205.6
25°	3049.0	3076.8	3049.0	3049.0	3062.9	3059.4	3062.9	3059.4
27.5°	2861.0	2881.9	2854.1	2850.6	2864.5	2857.6	2854.1	2864.5
30°	2610.4	2631.3	2617.4	2607.0	2624.4	2613.9	2607.0	2610.4
32.5°	2325.0	2339.0	2332.0	2314.6	2325.0	2318.1	2314.6	2318.1
35°	2011.8	2029.2	2001.3	1997.9	2015.3	2001.3	1994.4	2011.8
37.5°	1688.1	1709.0	1684.6	1688.1	1677.6	1681.1	1674.2	1684.6
40°	1381.8	1378.3	1371.4	1367.9	1371.4	1360.9	1367.9	1357.4
42.5°	1051.1	1058.1	1054.6	1051.1	1054.6	1040.7	1033.7	1047.7
45°	730.9	727.4	720.5	713.5	713.5	710.0	710.0	699.6
47.5°	469.9	466.4	452.5	456.0	462.9	456.0	445.5	459.4
50°	285.4	281.9	281.9	278.4	285.4	278.4	271.5	271.5
52.5°	160.1	160.1	156.6	156.6	156.6	156.6	153.1	149.7
55°	87.0	83.5	83.5	83.5	80.1	80.1	80.1	80.1
57.5°	55.7	55.7	55.7	55.7	55.7	55.7	52.2	52.2
60°	41.8	41.8	41.8	41.8	38.3	41.8	38.3	38.3
62.5°	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3
65°	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4
67.5°	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9
70°	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4
72.5°	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9
75°	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
77.5°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
80°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
82.5°	0.0	0.0	0.0	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
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





— 0°-180°    - - 45°-225°    - - - - 90°-270°















(END OF REPORT)