

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: P251570

Luminaire Tested: **LD4B50D010TE EU4B30508030 4LBSW1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251570  
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 EU4B30508030 4LBSW1LI  
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

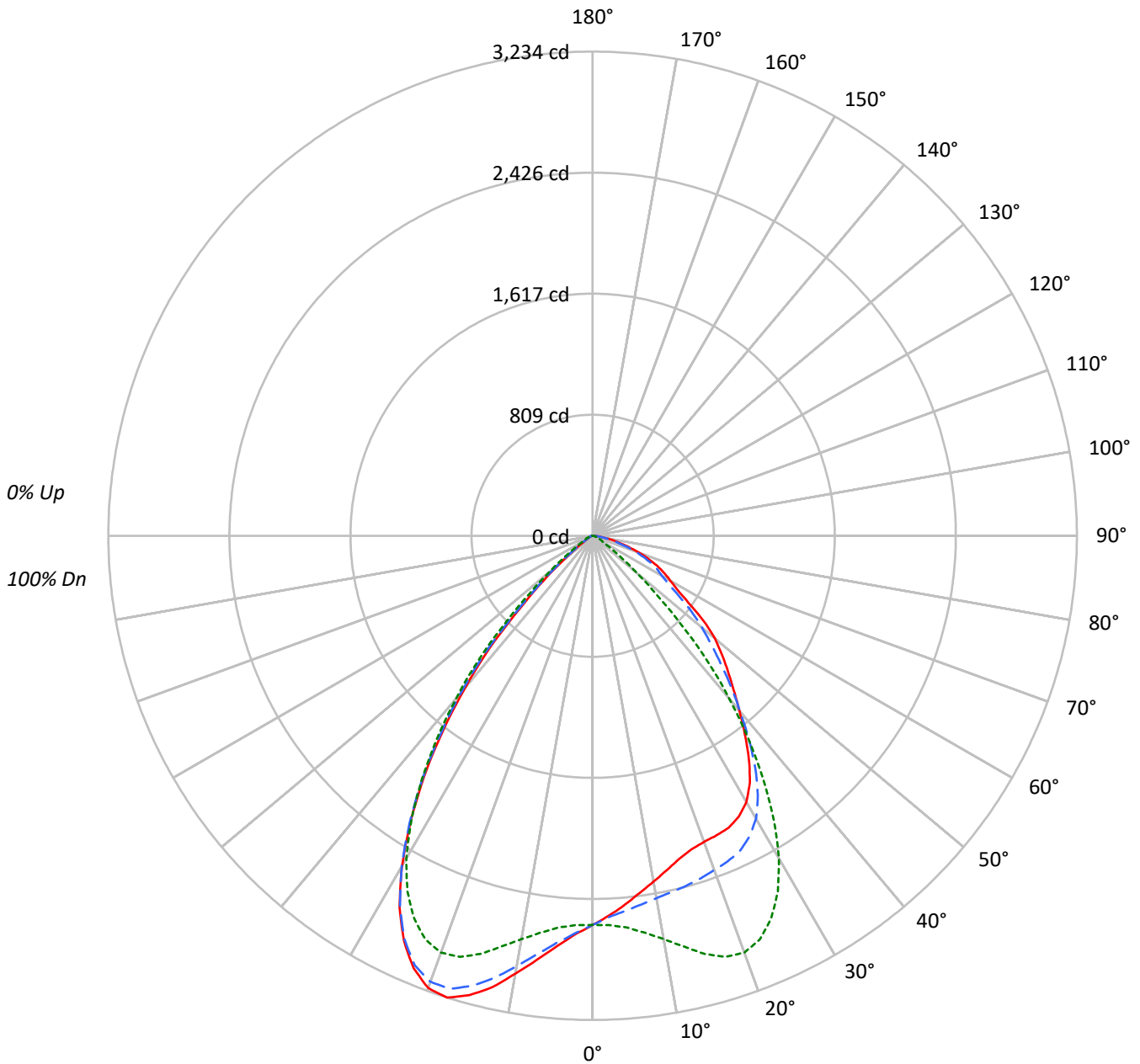
Lumens per Lamp: N/A  
Luminaire Lumens: 4797.0 lumens  
Efficiency: N/A  
Efficacy: 81.6 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.19  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 58.77  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P251570

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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°	253342	253342	253342
5°	242023	256961	269249
10°	232065	270680	293856
15°	225301	291721	320486
20°	225606	307259	333302
25°	231357	303254	320771
30°	231045	279931	286424
35°	216414	236592	233368
40°	193849	180465	168379
45°	175867	114589	94011
50°	161564	58145	40133
55°	132617	25946	13270
60°	116423	14560	7270
65°	109561	10954	5488
70°	93805	8691	4844
75°	71544	6401	3841
80°	51409	3816	1908
85°	37907	0	0



TEST NUMBER: P251570

CATALOG NUMBER: LD4B50D010TE EU4B30508030 4LBSW1LI

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	252.5	5.3
10°-20°	786.9	16.4
20°-30°	1217.5	25.4
30°-40°	1199.6	25.0
40°-50°	736.6	15.4
50°-60°	327.5	6.8
60°-70°	182.9	3.8
70°-80°	79.2	1.7
80°-90°	14.2	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°	2257.0	47.0
0°-40°	3456.6	72.1
0°-60°	4520.7	94.2
0°-90°	4797.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4797.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2600	2600	2600	2600	2600	
5°	2474	2515	2627	2728	2752	232
15°	2233	2420	2891	3112	3176	634
25°	2152	2325	2820	2973	2983	987
35°	1819	1894	1989	1982	1962	1129
45°	1276	1212	831	726	682	988
55°	780	706	153	88	78	717
65°	475	428	48	27	24	465
75°	190	163	17	10	10	209
85°	34	27	0	0	0	42
90°	0	0	0	0	0	



TEST NUMBER: P251570

CATALOG NUMBER: LD4B50D010TE EU4B30508030 4LBSW1LI

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5
2.5°	2538.4	2538.4	2538.4	2538.4	2545.2	2535.0	2545.2	2545.2	2555.4	2558.8	2548.6
5°	2473.9	2470.5	2473.9	2473.9	2480.7	2477.3	2487.5	2494.3	2507.9	2514.6	2514.6
7.5°	2406.0	2406.0	2406.0	2412.8	2423.0	2419.6	2429.8	2440.0	2460.3	2473.9	2484.1
10°	2345.0	2341.6	2351.8	2355.1	2365.3	2365.3	2382.3	2392.5	2416.2	2443.4	2457.0
12.5°	2287.3	2283.9	2290.7	2300.8	2317.8	2317.8	2331.4	2348.4	2382.3	2412.8	2436.6
15°	2233.0	2236.4	2246.6	2253.3	2273.7	2273.7	2290.7	2311.0	2348.4	2385.7	2419.6
17.5°	2195.6	2199.0	2205.8	2216.0	2236.4	2236.4	2253.3	2277.1	2317.8	2358.5	2399.3
20°	2175.3	2178.7	2185.5	2195.6	2212.6	2216.0	2229.6	2256.7	2294.1	2338.2	2375.5
22.5°	2165.1	2171.9	2178.7	2185.5	2202.4	2202.4	2219.4	2239.8	2277.1	2321.2	2355.1
25°	2151.5	2158.3	2161.7	2171.9	2185.5	2185.5	2195.6	2219.4	2253.3	2290.7	2324.6
27.5°	2114.2	2121.0	2124.4	2134.6	2148.1	2144.7	2158.3	2175.3	2205.8	2239.8	2266.9
30°	2053.1	2056.5	2063.3	2066.7	2076.9	2076.9	2087.1	2104.0	2124.4	2154.9	2182.1
32.5°	1954.7	1961.5	1964.9	1968.3	1978.5	1975.1	1978.5	1988.6	2009.0	2036.1	2053.1
35°	1819.0	1832.5	1832.5	1839.3	1842.7	1839.3	1839.3	1852.9	1863.1	1883.4	1893.6
37.5°	1669.6	1679.8	1676.4	1683.2	1686.6	1676.4	1683.2	1686.6	1700.2	1710.4	1713.8
40°	1523.7	1527.1	1527.1	1527.1	1527.1	1523.7	1527.1	1530.5	1540.7	1540.7	1530.5
42.5°	1391.4	1394.8	1394.8	1388.0	1394.8	1391.4	1391.4	1391.4	1391.4	1377.8	1367.6
45°	1276.0	1279.4	1279.4	1276.0	1276.0	1269.2	1265.8	1262.4	1252.2	1235.3	1211.5
47.5°	1167.4	1174.2	1177.6	1170.8	1167.4	1160.6	1160.6	1140.2	1126.7	1106.3	1072.4
50°	1065.6	1072.4	1072.4	1065.6	1065.6	1055.4	1045.2	1038.4	1018.1	994.3	953.6
52.5°	936.6	946.8	946.8	943.4	943.4	929.8	926.4	912.9	895.9	868.8	834.8
55°	780.5	794.1	790.7	787.3	780.5	780.5	780.5	770.3	760.2	739.8	705.9
57.5°	668.5	671.9	671.9	668.5	668.5	661.7	661.7	651.6	648.2	627.8	600.7
60°	597.3	597.3	600.7	597.3	593.9	590.5	587.1	580.3	570.1	556.5	536.2
62.5°	539.6	543.0	543.0	539.6	536.2	532.8	529.4	522.6	515.8	505.6	485.3
65°	475.1	481.9	478.5	475.1	471.7	468.3	468.3	461.5	454.7	448.0	427.6
67.5°	403.8	407.2	410.6	403.8	403.8	400.4	400.4	393.7	390.3	376.7	363.1
70°	329.2	332.6	332.6	329.2	329.2	325.8	325.8	322.4	319.0	308.8	295.2
72.5°	257.9	261.3	257.9	254.5	254.5	254.5	251.1	247.7	244.3	237.6	227.4
75°	190.0	190.0	193.4	190.0	186.6	186.6	183.3	183.3	176.5	173.1	162.9
77.5°	135.7	139.1	135.7	135.7	132.3	129.0	129.0	125.6	125.6	122.2	115.4
80°	91.6	91.6	95.0	91.6	88.2	91.6	88.2	84.8	84.8	81.4	74.7
82.5°	57.7	61.1	57.7	57.7	57.7	57.7	57.7	54.3	54.3	50.9	47.5
85°	33.9	33.9	33.9	33.9	33.9	33.9	33.9	30.5	30.5	30.5	27.1
87.5°	17.0	17.0	13.6	13.6	17.0	17.0	17.0	13.6	13.6	13.6	13.6
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: P251570

CATALOG NUMBER: LD4B50D010TE EU4B30508030 4LBSW1LI

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5
2.5°	2562.2	2565.5	2572.3	2582.5	2582.5	2575.7	2592.7	2592.7	2599.5	2602.9	2616.5
5°	2535.0	2541.8	2555.4	2572.3	2575.7	2572.3	2596.1	2606.3	2616.5	2626.6	2647.0
7.5°	2511.3	2524.8	2548.6	2572.3	2582.5	2582.5	2619.8	2633.4	2653.8	2674.1	2697.9
10°	2497.7	2518.0	2552.0	2589.3	2599.5	2609.7	2653.8	2680.9	2708.1	2735.2	2769.2
12.5°	2480.7	2518.0	2562.2	2609.7	2630.0	2643.6	2704.7	2738.6	2775.9	2809.9	2854.0
15°	2477.3	2521.4	2579.1	2640.2	2667.4	2687.7	2755.6	2803.1	2847.2	2891.3	2935.4
17.5°	2463.7	2518.0	2589.3	2657.2	2691.1	2718.3	2796.3	2854.0	2904.9	2949.0	2999.9
20°	2446.8	2507.9	2585.9	2660.6	2697.9	2725.0	2809.9	2864.2	2921.9	2962.6	3010.1
22.5°	2423.0	2484.1	2562.2	2636.8	2670.7	2694.5	2779.3	2826.9	2877.8	2918.5	2962.6
25°	2382.3	2440.0	2507.9	2568.9	2602.9	2623.2	2697.9	2742.0	2779.3	2820.1	2860.8
27.5°	2324.6	2368.7	2426.4	2470.5	2490.9	2511.3	2572.3	2609.7	2643.6	2677.5	2704.7
30°	2222.8	2256.7	2297.5	2334.8	2355.1	2358.5	2416.2	2436.6	2463.7	2487.5	2507.9
32.5°	2087.1	2114.2	2138.0	2158.3	2171.9	2175.3	2219.4	2226.2	2253.3	2253.3	2283.9
35°	1914.0	1927.6	1944.5	1944.5	1954.7	1944.5	1975.1	1981.9	1985.2	1988.6	2012.4
37.5°	1717.2	1723.9	1734.1	1713.8	1713.8	1703.6	1713.8	1720.5	1707.0	1707.0	1723.9
40°	1530.5	1516.9	1503.4	1483.0	1472.8	1452.5	1452.5	1435.5	1425.3	1418.5	1421.9
42.5°	1350.6	1320.1	1289.6	1245.4	1225.1	1204.7	1184.4	1160.6	1153.8	1136.8	1126.7
45°	1177.6	1133.5	1092.7	1021.5	980.7	960.4	916.3	868.8	838.2	831.4	804.3
47.5°	1031.6	967.2	899.3	814.5	773.7	736.4	671.9	631.2	590.5	570.1	553.2
50°	902.7	845.0	756.8	665.1	614.2	576.9	505.6	458.1	414.0	383.5	363.1
52.5°	790.7	726.2	644.8	539.6	488.7	448.0	369.9	315.6	278.3	247.7	224.0
55°	665.1	614.2	532.8	434.4	383.5	336.0	268.1	210.4	173.1	152.7	135.7
57.5°	573.5	529.4	451.3	356.3	308.8	264.7	196.8	149.3	118.8	98.4	88.2
60°	512.4	471.7	403.8	312.2	268.1	227.4	162.9	118.8	91.6	74.7	67.9
62.5°	461.5	420.8	359.7	274.9	237.6	196.8	139.1	98.4	74.7	61.1	50.9
65°	403.8	366.5	312.2	237.6	203.6	169.7	118.8	81.4	61.1	47.5	40.7
67.5°	342.8	308.8	261.3	196.8	169.7	142.5	95.0	67.9	50.9	40.7	33.9
70°	278.3	251.1	207.0	159.5	135.7	112.0	78.1	54.3	37.3	30.5	27.1
72.5°	213.8	190.0	159.5	122.2	101.8	84.8	57.7	40.7	30.5	23.8	20.4
75°	152.7	135.7	112.0	88.2	74.7	61.1	44.1	30.5	20.4	17.0	13.6
77.5°	105.2	95.0	78.1	61.1	50.9	44.1	30.5	20.4	17.0	13.6	10.2
80°	67.9	61.1	50.9	37.3	30.5	27.1	17.0	13.6	10.2	6.8	6.8
82.5°	40.7	37.3	30.5	20.4	17.0	13.6	10.2	6.8	6.8	3.4	3.4
85°	23.8	20.4	13.6	10.2	10.2	6.8	6.8	3.4	3.4	0.0	0.0
87.5°	10.2	6.8	6.8	3.4	3.4	3.4	3.4	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: P251570

CATALOG NUMBER: LD4B50D010TE EU4B30508030 4LBSW1LI

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5
2.5°	2609.7	2626.6	2623.2	2633.4	2630.0	2630.0	2647.0	2640.2	2657.2	2657.2	2660.6
5°	2647.0	2670.7	2670.7	2687.7	2684.3	2691.1	2708.1	2708.1	2728.4	2735.2	2735.2
7.5°	2701.3	2731.8	2738.6	2755.6	2759.0	2772.6	2786.1	2789.5	2816.7	2823.5	2826.9
10°	2775.9	2813.3	2823.5	2840.4	2847.2	2860.8	2877.8	2884.5	2918.5	2921.9	2935.4
12.5°	2867.6	2908.3	2918.5	2938.8	2942.2	2959.2	2983.0	2989.7	3023.7	3033.9	3044.0
15°	2955.8	2993.1	3010.1	3030.5	3033.9	3054.2	3074.6	3081.4	3111.9	3125.5	3135.7
17.5°	3016.9	3061.0	3071.2	3098.3	3098.3	3115.3	3135.7	3142.5	3173.0	3183.2	3190.0
20°	3030.5	3071.2	3084.8	3105.1	3108.5	3118.7	3135.7	3142.5	3169.6	3173.0	3183.2
22.5°	2979.6	3020.3	3027.1	3047.4	3050.8	3061.0	3074.6	3071.2	3105.1	3101.7	3105.1
25°	2871.0	2908.3	2908.3	2932.1	2928.7	2938.8	2945.6	2942.2	2972.8	2972.8	2972.8
27.5°	2714.9	2748.8	2752.2	2769.2	2759.0	2762.4	2769.2	2765.8	2786.1	2786.1	2786.1
30°	2521.4	2548.6	2538.4	2552.0	2545.2	2552.0	2545.2	2541.8	2548.6	2555.4	2552.0
32.5°	2280.5	2300.8	2300.8	2304.2	2304.2	2283.9	2277.1	2277.1	2273.7	2270.3	2270.3
35°	2002.2	2019.2	2012.4	2012.4	2009.0	1988.6	1978.5	1971.7	1981.9	1961.5	1975.1
37.5°	1717.2	1720.5	1710.4	1707.0	1690.0	1690.0	1673.0	1659.5	1666.2	1662.9	1649.3
40°	1404.9	1418.5	1398.2	1391.4	1401.5	1388.0	1371.0	1354.0	1367.6	1350.6	1357.4
42.5°	1099.5	1096.1	1089.3	1089.3	1089.3	1069.0	1065.6	1062.2	1065.6	1052.0	1041.8
45°	794.1	783.9	773.7	773.7	760.2	753.4	753.4	743.2	726.2	726.2	705.9
47.5°	536.2	512.4	505.6	502.3	495.5	495.5	488.7	481.9	478.5	461.5	461.5
50°	349.5	325.8	319.0	315.6	319.0	312.2	305.4	298.6	291.8	288.5	281.7
52.5°	210.4	200.2	193.4	190.0	183.3	179.9	176.5	169.7	166.3	166.3	162.9
55°	125.6	115.4	101.8	101.8	101.8	98.4	95.0	91.6	88.2	88.2	84.8
57.5°	78.1	71.3	64.5	61.1	61.1	61.1	57.7	57.7	57.7	57.7	54.3
60°	57.7	50.9	47.5	47.5	47.5	44.1	44.1	44.1	44.1	40.7	40.7
62.5°	44.1	40.7	37.3	37.3	33.9	33.9	33.9	33.9	33.9	33.9	30.5
65°	37.3	30.5	30.5	27.1	27.1	27.1	27.1	27.1	27.1	27.1	27.1
67.5°	27.1	23.8	23.8	23.8	23.8	20.4	20.4	20.4	20.4	20.4	20.4
70°	20.4	20.4	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
72.5°	17.0	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6
75°	13.6	13.6	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
77.5°	10.2	10.2	10.2	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
80°	6.8	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
82.5°	3.4	3.4	3.4	3.4	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: P251570

CATALOG NUMBER: LD4B50D010TE EU4B30508030 4LBSW1LI

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5	2599.5
2.5°	2660.6	2677.5	2660.6	2660.6	2670.7	2667.4	2674.1	2664.0
5°	2738.6	2762.4	2745.4	2742.0	2759.0	2755.6	2759.0	2752.2
7.5°	2833.6	2857.4	2840.4	2840.4	2857.4	2854.0	2864.2	2857.4
10°	2942.2	2969.4	2945.6	2949.0	2972.8	2969.4	2969.4	2969.4
12.5°	3054.2	3081.4	3067.8	3067.8	3084.8	3088.2	3091.6	3088.2
15°	3145.8	3173.0	3156.0	3156.0	3179.8	3176.4	3179.8	3176.4
17.5°	3200.1	3227.3	3206.9	3206.9	3227.3	3227.3	3230.7	3234.1
20°	3186.6	3217.1	3200.1	3193.4	3217.1	3217.1	3213.7	3213.7
22.5°	3108.5	3135.7	3122.1	3115.3	3132.3	3125.5	3122.1	3125.5
25°	2972.8	2999.9	2972.8	2972.8	2986.4	2983.0	2986.4	2983.0
27.5°	2789.5	2809.9	2782.7	2779.3	2792.9	2786.1	2782.7	2792.9
30°	2545.2	2565.5	2552.0	2541.8	2558.8	2548.6	2541.8	2545.2
32.5°	2266.9	2280.5	2273.7	2256.7	2266.9	2260.1	2256.7	2260.1
35°	1961.5	1978.5	1951.3	1947.9	1964.9	1951.3	1944.5	1961.5
37.5°	1645.9	1666.2	1642.5	1645.9	1635.7	1639.1	1632.3	1642.5
40°	1347.3	1343.9	1337.1	1333.7	1337.1	1326.9	1333.7	1323.5
42.5°	1024.9	1031.6	1028.3	1024.9	1028.3	1014.7	1007.9	1021.5
45°	712.7	709.3	702.5	695.7	695.7	692.3	692.3	682.1
47.5°	458.1	454.7	441.2	444.6	451.3	444.6	434.4	448.0
50°	278.3	274.9	274.9	271.5	278.3	271.5	264.7	264.7
52.5°	156.1	156.1	152.7	152.7	152.7	152.7	149.3	145.9
55°	84.8	81.4	81.4	81.4	78.1	78.1	78.1	78.1
57.5°	54.3	54.3	54.3	54.3	54.3	54.3	50.9	50.9
60°	40.7	40.7	40.7	40.7	37.3	40.7	37.3	37.3
62.5°	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5
65°	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8
67.5°	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4
70°	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
72.5°	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6
75°	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
77.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
80°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
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)