

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: P251572

Luminaire Tested: **LD4B50D010TE EU4B30508040 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251572
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 EU4B30508040 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4969.0 lumens
Efficiency: N/A
Efficacy: 84.5 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

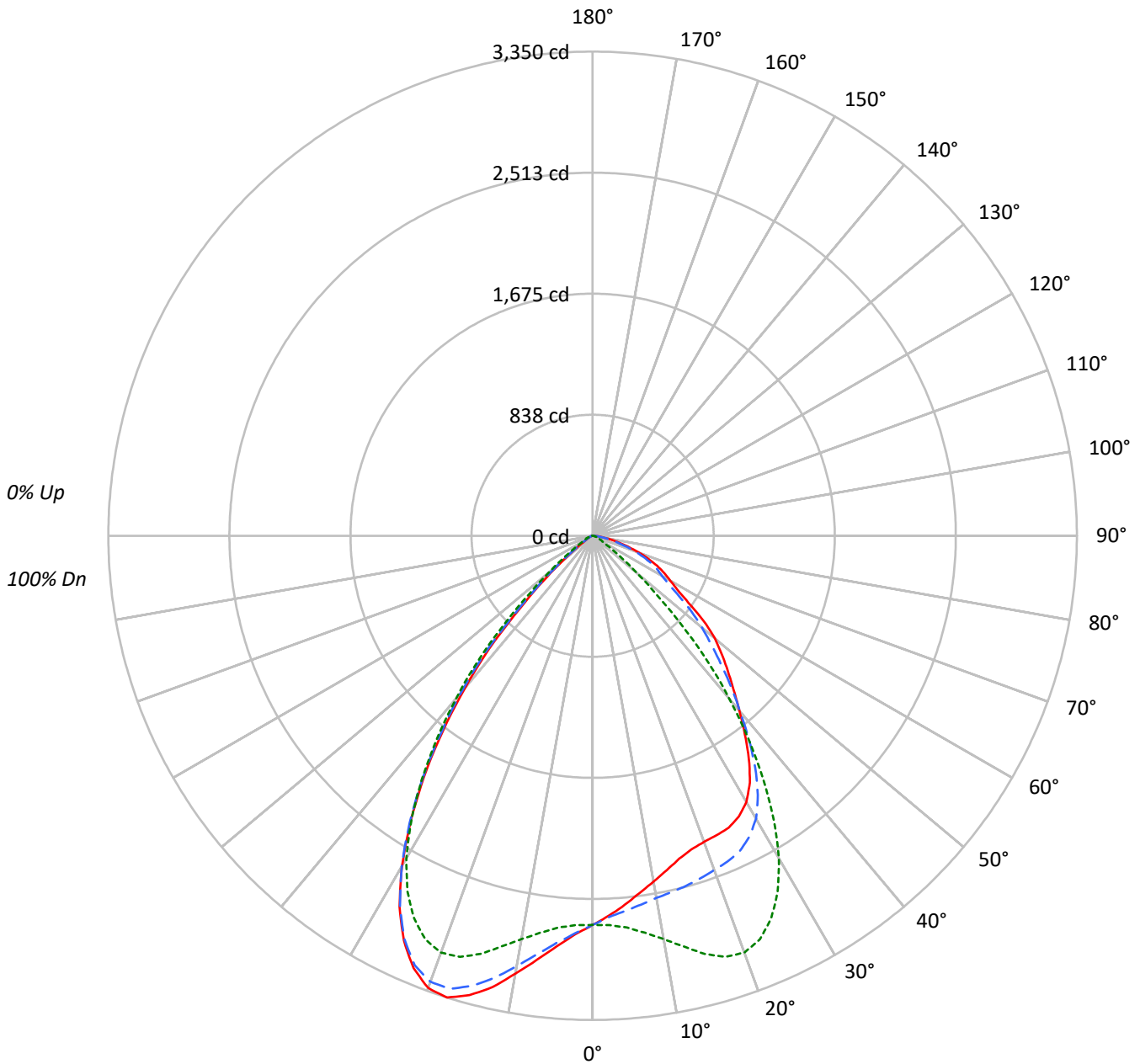
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251572

CATALOG NUMBER: LD4B50D010TE EU4B30508040 4LBSW1LI

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°	262425	262425	262425
5°	250700	266177	278905
10°	240378	280388	304396
15°	233373	302184	331978
20°	233696	318274	345260
25°	239659	314126	332267
30°	239328	289969	296687
35°	224171	245075	241732
40°	200808	186941	174422
45°	182165	118696	97388
50°	167356	60223	41574
55°	137375	26880	13746
60°	120595	15067	7543
65°	113481	11346	5673
70°	97167	9004	5015
75°	74143	6627	3954
80°	53262	3929	1964
85°	39361	0	0



TEST NUMBER: P251572

CATALOG NUMBER: LD4B50D010TE EU4B30508040 4LBSW1LI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	261.6	5.3
10°-20°	815.2	16.4
20°-30°	1261.2	25.4
30°-40°	1242.6	25.0
40°-50°	763.0	15.4
50°-60°	339.3	6.8
60°-70°	189.5	3.8
70°-80°	82.0	1.7
80°-90°	14.7	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°	2337.9	47.0
0°-40°	3580.5	72.1
0°-60°	4682.8	94.2
0°-90°	4969.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4969.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2693	2693	2693	2693	2693	
5°	2563	2605	2721	2826	2851	241
15°	2313	2506	2995	3224	3290	656
25°	2229	2408	2921	3079	3090	1023
35°	1884	1962	2060	2053	2032	1170
45°	1322	1255	861	752	707	1024
55°	808	731	158	91	81	743
65°	492	443	49	28	25	482
75°	197	169	18	10	10	217
85°	35	28	0	0	0	44
90°	0	0	0	0	0	



TEST NUMBER: P251572

CATALOG NUMBER: LD4B50D010TE EU4B30508040 4LBSW1LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7
2.5°	2629.4	2629.4	2629.4	2629.4	2636.4	2625.9	2636.4	2636.4	2647.0	2650.5	2640.0
5°	2562.6	2559.1	2562.6	2562.6	2569.7	2566.1	2576.7	2583.7	2597.8	2604.8	2604.8
7.5°	2492.3	2492.3	2492.3	2499.4	2509.9	2506.4	2516.9	2527.5	2548.6	2562.6	2573.2
10°	2429.0	2425.5	2436.1	2439.6	2450.1	2450.1	2467.7	2478.3	2502.9	2531.0	2545.0
12.5°	2369.3	2365.8	2372.8	2383.3	2400.9	2400.9	2415.0	2432.6	2467.7	2499.4	2524.0
15°	2313.0	2316.6	2327.1	2334.1	2355.2	2355.2	2372.8	2393.9	2432.6	2471.2	2506.4
17.5°	2274.4	2277.9	2284.9	2295.5	2316.6	2316.6	2334.1	2358.7	2400.9	2443.1	2485.3
20°	2253.3	2256.8	2263.8	2274.4	2291.9	2295.5	2309.5	2337.6	2376.3	2422.0	2460.7
22.5°	2242.7	2249.8	2256.8	2263.8	2281.4	2281.4	2299.0	2320.1	2358.7	2404.4	2439.6
25°	2228.7	2235.7	2239.2	2249.8	2263.8	2263.8	2274.4	2299.0	2334.1	2372.8	2408.0
27.5°	2190.0	2197.0	2200.6	2211.1	2225.2	2221.6	2235.7	2253.3	2284.9	2320.1	2348.2
30°	2126.7	2130.2	2137.3	2140.8	2151.3	2151.3	2161.9	2179.5	2200.6	2232.2	2260.3
32.5°	2024.8	2031.8	2035.3	2038.9	2049.4	2045.9	2049.4	2059.9	2081.0	2109.2	2126.7
35°	1884.2	1898.2	1898.2	1905.3	1908.8	1905.3	1905.3	1919.3	1929.9	1951.0	1961.5
37.5°	1729.5	1740.1	1736.5	1743.6	1747.1	1736.5	1743.6	1747.1	1761.1	1771.7	1775.2
40°	1578.4	1581.9	1581.9	1581.9	1581.9	1578.4	1581.9	1585.4	1595.9	1595.9	1585.4
42.5°	1441.3	1444.8	1444.8	1437.7	1444.8	1441.3	1441.3	1441.3	1441.3	1427.2	1416.6
45°	1321.7	1325.3	1325.3	1321.7	1321.7	1314.7	1311.2	1307.7	1297.1	1279.6	1254.9
47.5°	1209.2	1216.3	1219.8	1212.8	1209.2	1202.2	1202.2	1181.1	1167.1	1146.0	1110.8
50°	1103.8	1110.8	1110.8	1103.8	1103.8	1093.2	1082.7	1075.7	1054.6	1030.0	987.8
52.5°	970.2	980.8	980.8	977.2	977.2	963.2	959.7	945.6	928.0	899.9	864.8
55°	808.5	822.6	819.1	815.5	808.5	808.5	808.5	798.0	787.4	766.3	731.2
57.5°	692.5	696.0	696.0	692.5	692.5	685.5	685.5	674.9	671.4	650.3	622.2
60°	618.7	618.7	622.2	618.7	615.2	611.7	608.1	601.1	590.6	576.5	555.4
62.5°	558.9	562.4	562.4	558.9	555.4	551.9	548.4	541.4	534.3	523.8	502.7
65°	492.1	499.2	495.7	492.1	488.6	485.1	485.1	478.1	471.0	464.0	442.9
67.5°	418.3	421.8	425.3	418.3	418.3	414.8	414.8	407.8	404.3	390.2	376.1
70°	341.0	344.5	344.5	341.0	341.0	337.5	337.5	333.9	330.4	319.9	305.8
72.5°	267.2	270.7	267.2	263.6	263.6	263.6	260.1	256.6	253.1	246.1	235.5
75°	196.9	196.9	200.4	196.9	193.3	193.3	189.8	189.8	182.8	179.3	168.7
77.5°	140.6	144.1	140.6	140.6	137.1	133.6	133.6	130.1	130.1	126.5	119.5
80°	94.9	94.9	98.4	94.9	91.4	94.9	91.4	87.9	87.9	84.4	77.3
82.5°	59.8	63.3	59.8	59.8	59.8	59.8	59.8	56.2	56.2	52.7	49.2
85°	35.2	35.2	35.2	35.2	35.2	35.2	35.2	31.6	31.6	31.6	28.1
87.5°	17.6	17.6	14.1	14.1	17.6	17.6	17.6	14.1	14.1	14.1	14.1
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: P251572

CATALOG NUMBER: LD4B50D010TE EU4B30508040 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7
2.5°	2654.0	2657.5	2664.6	2675.1	2675.1	2668.1	2685.7	2685.7	2692.7	2696.2	2710.3
5°	2625.9	2632.9	2647.0	2664.6	2668.1	2664.6	2689.2	2699.7	2710.3	2720.8	2741.9
7.5°	2601.3	2615.4	2640.0	2664.6	2675.1	2675.1	2713.8	2727.8	2748.9	2770.0	2794.6
10°	2587.2	2608.3	2643.5	2682.1	2692.7	2703.2	2748.9	2777.1	2805.2	2833.3	2868.5
12.5°	2569.7	2608.3	2654.0	2703.2	2724.3	2738.4	2801.7	2836.8	2875.5	2910.6	2956.3
15°	2566.1	2611.8	2671.6	2734.9	2763.0	2784.1	2854.4	2903.6	2949.3	2995.0	3040.7
17.5°	2552.1	2608.3	2682.1	2752.4	2787.6	2815.7	2896.6	2956.3	3009.1	3054.8	3107.5
20°	2534.5	2597.8	2678.6	2756.0	2794.6	2822.8	2910.6	2966.9	3026.6	3068.8	3118.0
22.5°	2509.9	2573.2	2654.0	2731.4	2766.5	2791.1	2879.0	2928.2	2980.9	3023.1	3068.8
25°	2467.7	2527.5	2597.8	2661.1	2696.2	2717.3	2794.6	2840.3	2879.0	2921.2	2963.4
27.5°	2408.0	2453.7	2513.4	2559.1	2580.2	2601.3	2664.6	2703.2	2738.4	2773.5	2801.7
30°	2302.5	2337.6	2379.8	2418.5	2439.6	2443.1	2502.9	2524.0	2552.1	2576.7	2597.8
32.5°	2161.9	2190.0	2214.6	2235.7	2249.8	2253.3	2299.0	2306.0	2334.1	2334.1	2365.8
35°	1982.6	1996.7	2014.2	2014.2	2024.8	2014.2	2045.9	2052.9	2056.4	2059.9	2084.5
37.5°	1778.7	1785.8	1796.3	1775.2	1775.2	1764.7	1775.2	1782.2	1768.2	1768.2	1785.8
40°	1585.4	1571.3	1557.3	1536.2	1525.6	1504.5	1504.5	1487.0	1476.4	1469.4	1472.9
42.5°	1399.1	1367.4	1335.8	1290.1	1269.0	1247.9	1226.8	1202.2	1195.2	1177.6	1167.1
45°	1219.8	1174.1	1131.9	1058.1	1015.9	994.8	949.1	899.9	868.3	861.2	833.1
47.5°	1068.6	1001.8	931.5	843.7	801.5	762.8	696.0	653.8	611.7	590.6	573.0
50°	935.1	875.3	783.9	689.0	636.3	597.6	523.8	474.6	428.9	397.2	376.1
52.5°	819.1	752.3	667.9	558.9	506.2	464.0	383.2	326.9	288.3	256.6	232.0
55°	689.0	636.3	551.9	450.0	397.2	348.0	277.7	217.9	179.3	158.2	140.6
57.5°	594.1	548.4	467.5	369.1	319.9	274.2	203.9	154.7	123.0	101.9	91.4
60°	530.8	488.6	418.3	323.4	277.7	235.5	168.7	123.0	94.9	77.3	70.3
62.5°	478.1	435.9	372.6	284.7	246.1	203.9	144.1	101.9	77.3	63.3	52.7
65°	418.3	379.6	323.4	246.1	210.9	175.8	123.0	84.4	63.3	49.2	42.2
67.5°	355.0	319.9	270.7	203.9	175.8	147.6	98.4	70.3	52.7	42.2	35.2
70°	288.3	260.1	214.4	165.2	140.6	116.0	80.9	56.2	38.7	31.6	28.1
72.5°	221.5	196.9	165.2	126.5	105.5	87.9	59.8	42.2	31.6	24.6	21.1
75°	158.2	140.6	116.0	91.4	77.3	63.3	45.7	31.6	21.1	17.6	14.1
77.5°	109.0	98.4	80.9	63.3	52.7	45.7	31.6	21.1	17.6	14.1	10.5
80°	70.3	63.3	52.7	38.7	31.6	28.1	17.6	14.1	10.5	7.0	7.0
82.5°	42.2	38.7	31.6	21.1	17.6	14.1	10.5	7.0	7.0	3.5	3.5
85°	24.6	21.1	14.1	10.5	10.5	7.0	7.0	3.5	3.5	0.0	0.0
87.5°	10.5	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



TEST NUMBER: P251572

CATALOG NUMBER: LD4B50D010TE EU4B30508040 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7
2.5°	2703.2	2720.8	2717.3	2727.8	2724.3	2724.3	2741.9	2734.9	2752.4	2752.4	2756.0
5°	2741.9	2766.5	2766.5	2784.1	2780.6	2787.6	2805.2	2805.2	2826.3	2833.3	2833.3
7.5°	2798.1	2829.8	2836.8	2854.4	2857.9	2872.0	2886.0	2889.5	2917.7	2924.7	2928.2
10°	2875.5	2914.2	2924.7	2942.3	2949.3	2963.4	2980.9	2988.0	3023.1	3026.6	3040.7
12.5°	2970.4	3012.6	3023.1	3044.2	3047.7	3065.3	3089.9	3096.9	3132.1	3142.6	3153.2
15°	3061.8	3100.5	3118.0	3139.1	3142.6	3163.7	3184.8	3191.9	3223.5	3237.6	3248.1
17.5°	3125.1	3170.8	3181.3	3209.4	3209.4	3227.0	3248.1	3255.1	3286.8	3297.3	3304.3
20°	3139.1	3181.3	3195.4	3216.5	3220.0	3230.5	3248.1	3255.1	3283.3	3286.8	3297.3
22.5°	3086.4	3128.6	3135.6	3156.7	3160.2	3170.8	3184.8	3181.3	3216.5	3212.9	3216.5
25°	2973.9	3012.6	3012.6	3037.2	3033.7	3044.2	3051.2	3047.7	3079.4	3079.4	3079.4
27.5°	2812.2	2847.4	2850.9	2868.5	2857.9	2861.4	2868.5	2864.9	2886.0	2886.0	2886.0
30°	2611.8	2640.0	2629.4	2643.5	2636.4	2643.5	2636.4	2632.9	2640.0	2647.0	2643.5
32.5°	2362.3	2383.3	2383.3	2386.9	2386.9	2365.8	2358.7	2358.7	2355.2	2351.7	2351.7
35°	2074.0	2091.6	2084.5	2084.5	2081.0	2059.9	2049.4	2042.4	2052.9	2031.8	2045.9
37.5°	1778.7	1782.2	1771.7	1768.2	1750.6	1750.6	1733.0	1719.0	1726.0	1722.5	1708.4
40°	1455.3	1469.4	1448.3	1441.3	1451.8	1437.7	1420.2	1402.6	1416.6	1399.1	1406.1
42.5°	1138.9	1135.4	1128.4	1128.4	1128.4	1107.3	1103.8	1100.3	1103.8	1089.7	1079.2
45°	822.6	812.0	801.5	801.5	787.4	780.4	780.4	769.8	752.3	752.3	731.2
47.5°	555.4	530.8	523.8	520.3	513.2	513.2	506.2	499.2	495.7	478.1	478.1
50°	362.1	337.5	330.4	326.9	330.4	323.4	316.4	309.3	302.3	298.8	291.8
52.5°	217.9	207.4	200.4	196.9	189.8	186.3	182.8	175.8	172.2	172.2	168.7
55°	130.1	119.5	105.5	105.5	105.5	101.9	98.4	94.9	91.4	91.4	87.9
57.5°	80.9	73.8	66.8	63.3	63.3	63.3	59.8	59.8	59.8	59.8	56.2
60°	59.8	52.7	49.2	49.2	49.2	45.7	45.7	45.7	45.7	42.2	42.2
62.5°	45.7	42.2	38.7	38.7	35.2	35.2	35.2	35.2	35.2	35.2	31.6
65°	38.7	31.6	31.6	28.1	28.1	28.1	28.1	28.1	28.1	28.1	28.1
67.5°	28.1	24.6	24.6	24.6	24.6	21.1	21.1	21.1	21.1	21.1	21.1
70°	21.1	21.1	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6
72.5°	17.6	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1
75°	14.1	14.1	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
77.5°	10.5	10.5	10.5	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: P251572

CATALOG NUMBER: LD4B50D010TE EU4B30508040 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7	2692.7
2.5°	2756.0	2773.5	2756.0	2756.0	2766.5	2763.0	2770.0	2759.5
5°	2836.8	2861.4	2843.8	2840.3	2857.9	2854.4	2857.9	2850.9
7.5°	2935.2	2959.8	2942.3	2942.3	2959.8	2956.3	2966.9	2959.8
10°	3047.7	3075.9	3051.2	3054.8	3079.4	3075.9	3075.9	3075.9
12.5°	3163.7	3191.9	3177.8	3177.8	3195.4	3198.9	3202.4	3198.9
15°	3258.6	3286.8	3269.2	3269.2	3293.8	3290.3	3293.8	3290.3
17.5°	3314.9	3343.0	3321.9	3321.9	3343.0	3343.0	3346.5	3350.0
20°	3300.8	3332.5	3314.9	3307.9	3332.5	3332.5	3329.0	3329.0
22.5°	3220.0	3248.1	3234.0	3227.0	3244.6	3237.6	3234.0	3237.6
25°	3079.4	3107.5	3079.4	3079.4	3093.4	3089.9	3093.4	3089.9
27.5°	2889.5	2910.6	2882.5	2879.0	2893.1	2886.0	2882.5	2893.1
30°	2636.4	2657.5	2643.5	2632.9	2650.5	2640.0	2632.9	2636.4
32.5°	2348.2	2362.3	2355.2	2337.6	2348.2	2341.2	2337.6	2341.2
35°	2031.8	2049.4	2021.3	2017.8	2035.3	2021.3	2014.2	2031.8
37.5°	1704.9	1726.0	1701.4	1704.9	1694.4	1697.9	1690.8	1701.4
40°	1395.6	1392.0	1385.0	1381.5	1385.0	1374.5	1381.5	1371.0
42.5°	1061.6	1068.6	1065.1	1061.6	1065.1	1051.1	1044.0	1058.1
45°	738.2	734.7	727.7	720.6	720.6	717.1	717.1	706.6
47.5°	474.6	471.0	457.0	460.5	467.5	460.5	450.0	464.0
50°	288.3	284.7	284.7	281.2	288.3	281.2	274.2	274.2
52.5°	161.7	161.7	158.2	158.2	158.2	158.2	154.7	151.2
55°	87.9	84.4	84.4	84.4	80.9	80.9	80.9	80.9
57.5°	56.2	56.2	56.2	56.2	56.2	56.2	52.7	52.7
60°	42.2	42.2	42.2	42.2	38.7	42.2	38.7	38.7
62.5°	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6
65°	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.6
67.5°	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1
70°	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6
72.5°	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1
75°	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
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)