

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: P251649

Luminaire Tested: **LD4B50D010TE EU4B30508035 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251649
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B50D010TE EU4B30508035 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4732.0 lumens
Efficiency: N/A
Efficacy: 80.5 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

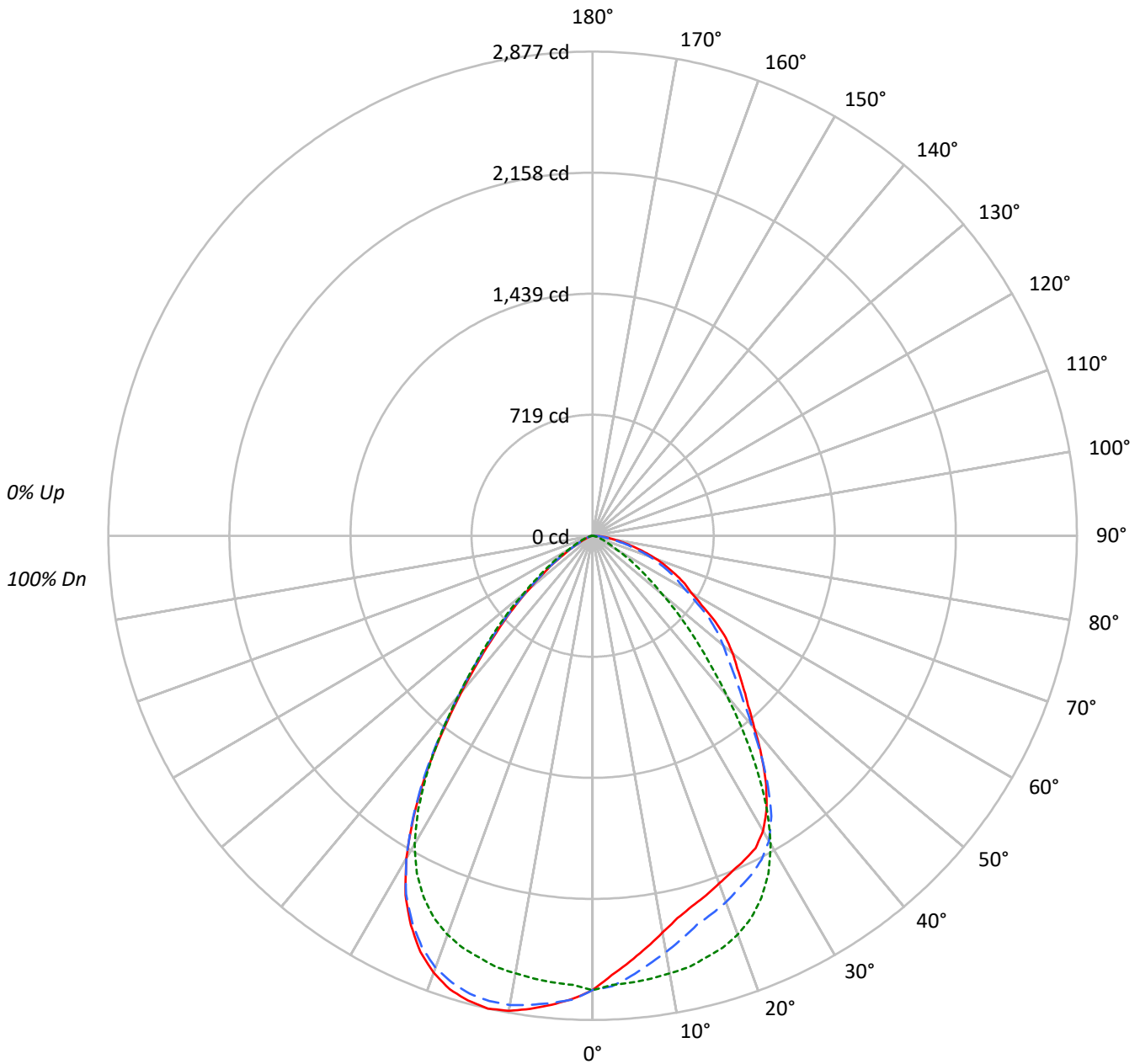
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				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	50	30	10	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89				89
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79				79
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70				70
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62				62
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56				56
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50				50
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46				46
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42				42
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38				38
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35				35

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	263088	263088	263088
5°	248440	260698	273631
10°	236855	261298	283673
15°	229902	261845	288522
20°	228023	261574	286475
25°	228938	255122	274575
30°	227849	238023	248983
35°	213571	203220	205290
40°	190312	157565	154016
45°	174047	117470	110275
50°	164566	82283	74369
55°	151324	55562	46692
60°	132231	32551	25768
65°	125150	20847	14436
70°	114008	14874	8919
75°	94326	10468	6552
80°	74196	5837	3929
85°	66086	3914	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	255.1	5.4
10°-20°	731.7	15.5
20°-30°	1084.7	22.9
30°-40°	1086.2	23.0
40°-50°	759.1	16.0
50°-60°	451.7	9.5
60°-70°	235.7	5.0
70°-80°	104.8	2.2
80°-90°	22.9	0.5
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°	2071.5	43.8
0°-40°	3157.7	66.7
0°-60°	4368.6	92.3
0°-90°	4732.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4732.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2700	2700	2700	2700	2700	
5°	2540	2626	2665	2786	2797	238
15°	2279	2393	2595	2818	2860	645
25°	2129	2226	2372	2536	2553	981
35°	1795	1816	1708	1739	1726	1113
45°	1263	1200	852	824	800	980
55°	891	835	327	285	275	790
65°	543	498	90	66	63	537
75°	250	219	28	17	17	271
85°	59	45	4	4	0	66
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°	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5
2.5°	2612.6	2643.9	2612.6	2623.0	2664.8	2626.5	2647.4	2647.4	2636.9	2661.3	2678.7
5°	2539.5	2570.8	2539.5	2553.4	2598.7	2560.4	2584.7	2577.8	2581.3	2602.1	2626.5
7.5°	2466.5	2490.8	2463.0	2480.4	2522.1	2490.8	2511.7	2511.7	2515.2	2546.5	2567.4
10°	2393.4	2414.3	2393.4	2407.3	2452.6	2424.7	2438.6	2442.1	2452.6	2480.4	2511.7
12.5°	2327.3	2344.7	2323.8	2344.7	2383.0	2355.1	2372.5	2376.0	2386.5	2417.8	2452.6
15°	2278.6	2296.0	2275.1	2292.5	2327.3	2306.4	2320.4	2327.3	2334.3	2362.1	2393.4
17.5°	2240.3	2254.3	2236.9	2257.7	2285.6	2261.2	2282.1	2282.1	2292.5	2320.4	2355.1
20°	2198.6	2212.5	2198.6	2216.0	2247.3	2226.4	2243.8	2243.8	2254.3	2285.6	2316.9
22.5°	2160.3	2167.3	2160.3	2174.2	2205.6	2188.2	2198.6	2202.1	2212.5	2240.3	2268.2
25°	2129.0	2142.9	2136.0	2149.9	2170.8	2153.4	2163.8	2167.3	2177.7	2202.1	2226.4
27.5°	2094.2	2101.2	2094.2	2111.6	2129.0	2115.1	2125.5	2122.1	2129.0	2149.9	2170.8
30°	2024.7	2031.6	2031.6	2042.1	2056.0	2049.0	2059.4	2049.0	2056.0	2073.4	2094.2
32.5°	1923.8	1927.3	1930.7	1941.2	1951.6	1941.2	1948.1	1948.1	1948.1	1962.0	1976.0
35°	1795.1	1802.0	1798.5	1805.5	1815.9	1812.5	1812.5	1809.0	1802.0	1809.0	1815.9
37.5°	1648.9	1638.5	1638.5	1648.9	1655.9	1642.0	1648.9	1642.0	1642.0	1645.5	1645.5
40°	1495.9	1485.4	1495.9	1499.4	1502.8	1495.9	1492.4	1485.4	1475.0	1478.5	1471.5
42.5°	1367.2	1360.2	1363.7	1363.7	1367.2	1360.2	1363.7	1349.8	1339.3	1332.4	1321.9
45°	1262.8	1252.4	1262.8	1255.8	1255.8	1252.4	1248.9	1241.9	1228.0	1217.6	1200.2
47.5°	1165.4	1165.4	1168.9	1168.9	1168.9	1161.9	1161.9	1148.0	1134.1	1120.2	1095.8
50°	1085.4	1078.4	1092.3	1092.3	1081.9	1078.4	1081.9	1064.5	1054.1	1036.7	1012.3
52.5°	998.4	998.4	1001.9	1001.9	998.4	991.5	994.9	981.0	970.6	953.2	928.8
55°	890.6	883.6	894.1	894.1	890.6	887.1	890.6	880.1	869.7	855.8	834.9
57.5°	768.8	765.3	772.3	775.8	768.8	768.8	772.3	761.9	758.4	744.5	723.6
60°	678.4	674.9	681.8	685.3	678.4	678.4	678.4	664.4	657.5	643.6	629.7
62.5°	615.7	612.3	619.2	615.7	612.3	608.8	612.3	598.4	591.4	577.5	563.6
65°	542.7	546.2	549.6	549.6	546.2	542.7	542.7	535.7	528.8	514.9	497.5
67.5°	473.1	473.1	476.6	480.1	476.6	476.6	476.6	466.2	459.2	448.8	427.9
70°	400.1	396.6	407.0	407.0	400.1	403.5	400.1	396.6	389.6	375.7	358.3
72.5°	323.5	323.5	327.0	327.0	323.5	323.5	323.5	320.0	309.6	302.7	285.3
75°	250.5	250.5	254.0	257.4	250.5	250.5	254.0	247.0	240.0	229.6	219.2
77.5°	187.9	184.4	187.9	187.9	184.4	184.4	184.4	180.9	177.4	167.0	156.5
80°	132.2	128.7	132.2	132.2	132.2	128.7	128.7	125.2	125.2	118.3	107.8
82.5°	90.4	87.0	90.4	90.4	90.4	87.0	87.0	87.0	83.5	80.0	73.1
85°	59.1	55.7	55.7	59.1	55.7	55.7	55.7	55.7	52.2	48.7	45.2
87.5°	27.8	27.8	27.8	27.8	27.8	27.8	27.8	24.4	24.4	24.4	20.9
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°	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5
2.5°	2664.8	2657.8	2678.7	2671.7	2675.2	2657.8	2685.6	2671.7	2689.1	2671.7	2706.5
5°	2619.5	2612.6	2643.9	2640.4	2643.9	2630.0	2661.3	2657.8	2678.7	2664.8	2703.0
7.5°	2570.8	2563.9	2598.7	2602.1	2609.1	2595.2	2636.9	2636.9	2657.8	2654.3	2696.1
10°	2515.2	2518.6	2553.4	2560.4	2574.3	2567.4	2605.6	2616.1	2643.9	2640.4	2692.6
12.5°	2463.0	2463.0	2508.2	2522.1	2532.6	2529.1	2574.3	2588.2	2619.5	2626.5	2675.2
15°	2410.8	2414.3	2456.0	2476.9	2490.8	2487.3	2536.0	2553.4	2591.7	2595.2	2654.3
17.5°	2369.1	2365.6	2410.8	2428.2	2449.1	2445.6	2497.8	2518.6	2556.9	2567.4	2623.0
20°	2334.3	2330.8	2372.5	2393.4	2407.3	2403.8	2456.0	2480.4	2515.2	2522.1	2577.8
22.5°	2292.5	2285.6	2327.3	2344.7	2358.6	2355.1	2400.4	2417.8	2452.6	2459.5	2511.7
25°	2243.8	2236.9	2275.1	2285.6	2296.0	2289.0	2327.3	2337.8	2365.6	2372.5	2424.7
27.5°	2188.2	2170.8	2202.1	2202.1	2209.0	2198.6	2226.4	2236.9	2261.2	2261.2	2309.9
30°	2101.2	2076.8	2094.2	2090.8	2094.2	2080.3	2097.7	2101.2	2118.6	2115.1	2149.9
32.5°	1979.4	1944.6	1955.1	1944.6	1934.2	1913.3	1934.2	1927.3	1941.2	1927.3	1958.6
35°	1812.5	1777.7	1774.2	1760.3	1749.8	1732.4	1732.4	1715.0	1718.5	1708.1	1729.0
37.5°	1631.6	1586.3	1579.4	1551.5	1534.1	1513.3	1513.3	1499.4	1482.0	1475.0	1492.4
40°	1454.1	1405.4	1388.0	1342.8	1325.4	1304.5	1290.6	1273.2	1266.3	1238.5	1252.4
42.5°	1301.1	1248.9	1210.6	1161.9	1144.5	1113.2	1092.3	1071.5	1061.0	1029.7	1043.6
45°	1172.4	1109.7	1068.0	1005.4	981.0	946.2	914.9	890.6	866.2	852.3	845.3
47.5°	1064.5	998.4	942.8	873.2	834.9	803.6	761.9	737.5	706.2	688.8	678.4
50°	974.1	901.0	838.4	758.4	720.1	685.3	636.6	598.4	570.5	542.7	535.7
52.5°	894.1	817.5	747.9	657.5	612.3	570.5	518.3	476.6	452.2	420.9	417.5
55°	800.1	734.0	657.5	563.6	518.3	476.6	420.9	379.2	347.9	327.0	320.0
57.5°	699.2	636.6	563.6	469.6	424.4	379.2	327.0	288.7	260.9	243.5	240.0
60°	605.3	546.2	476.6	382.7	337.4	299.2	243.5	205.2	180.9	167.0	160.0
62.5°	535.7	480.1	414.0	327.0	285.3	247.0	194.8	160.0	139.2	125.2	118.3
65°	469.6	414.0	354.8	274.8	240.0	205.2	156.5	125.2	104.4	90.4	83.5
67.5°	400.1	351.4	295.7	229.6	194.8	167.0	125.2	97.4	80.0	69.6	62.6
70°	330.5	285.3	240.0	184.4	160.0	132.2	97.4	76.5	59.1	52.2	45.2
72.5°	260.9	226.1	187.9	142.6	121.8	104.4	76.5	55.7	45.2	38.3	31.3
75°	194.8	170.5	139.2	107.8	90.4	76.5	55.7	41.7	34.8	27.8	24.4
77.5°	139.2	118.3	97.4	73.1	66.1	55.7	38.3	31.3	24.4	17.4	13.9
80°	93.9	83.5	66.1	52.2	41.7	38.3	27.8	20.9	13.9	10.4	10.4
82.5°	62.6	52.2	41.7	31.3	27.8	24.4	17.4	13.9	10.4	7.0	7.0
85°	38.3	31.3	24.4	17.4	17.4	13.9	10.4	7.0	3.5	3.5	3.5
87.5°	17.4	13.9	10.4	7.0	7.0	3.5	3.5	3.5	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°	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5
2.5°	2734.3	2713.5	2699.5	2716.9	2723.9	2713.5	2723.9	2741.3	2758.7	2762.2	2713.5
5°	2737.8	2716.9	2710.0	2730.9	2734.3	2730.9	2741.3	2765.6	2786.5	2793.5	2744.8
7.5°	2737.8	2723.9	2720.4	2744.8	2748.2	2744.8	2762.2	2790.0	2810.9	2824.8	2776.1
10°	2730.9	2723.9	2727.4	2748.2	2755.2	2755.2	2779.6	2810.9	2831.7	2845.7	2797.0
12.5°	2720.4	2720.4	2720.4	2744.8	2751.7	2755.2	2776.1	2817.8	2831.7	2852.6	2803.9
15°	2703.0	2703.0	2703.0	2727.4	2737.8	2737.8	2762.2	2800.4	2817.8	2838.7	2790.0
17.5°	2671.7	2671.7	2675.2	2696.1	2706.5	2706.5	2730.9	2772.6	2783.0	2807.4	2758.7
20°	2626.5	2626.5	2630.0	2650.8	2661.3	2654.3	2685.6	2720.4	2730.9	2751.7	2703.0
22.5°	2560.4	2560.4	2560.4	2581.3	2588.2	2584.7	2616.1	2647.4	2647.4	2675.2	2623.0
25°	2463.0	2469.9	2463.0	2483.9	2490.8	2487.3	2515.2	2543.0	2536.0	2567.4	2515.2
27.5°	2344.7	2341.2	2341.2	2358.6	2358.6	2355.1	2376.0	2407.3	2400.4	2421.2	2372.5
30°	2181.2	2191.6	2174.2	2198.6	2188.2	2181.2	2195.1	2223.0	2212.5	2229.9	2191.6
32.5°	1993.3	1979.4	1979.4	1979.4	1986.4	1969.0	1982.9	1996.8	1986.4	2003.8	1962.0
35°	1746.4	1749.8	1739.4	1742.9	1746.4	1725.5	1739.4	1753.3	1739.4	1749.8	1711.6
37.5°	1499.4	1502.8	1478.5	1492.4	1478.5	1471.5	1485.4	1492.4	1478.5	1488.9	1447.2
40°	1252.4	1245.4	1241.9	1241.9	1245.4	1228.0	1238.5	1248.9	1238.5	1245.4	1207.1
42.5°	1036.7	1033.2	1026.2	1029.7	1019.3	1015.8	1019.3	1029.7	1019.3	1026.2	998.4
45°	848.8	841.9	831.4	834.9	834.9	817.5	828.0	834.9	824.5	828.0	803.6
47.5°	674.9	664.4	664.4	661.0	661.0	654.0	664.4	661.0	650.5	657.5	633.1
50°	525.3	518.3	518.3	518.3	518.3	507.9	511.4	518.3	507.9	507.9	494.0
52.5°	410.5	400.1	393.1	393.1	393.1	389.6	389.6	393.1	382.7	382.7	379.2
55°	309.6	306.1	295.7	295.7	295.7	285.3	288.7	288.7	285.3	285.3	274.8
57.5°	229.6	219.2	212.2	212.2	205.2	205.2	201.8	205.2	198.3	198.3	191.3
60°	153.1	146.1	142.6	139.2	139.2	135.7	139.2	135.7	135.7	132.2	128.7
62.5°	111.3	104.4	97.4	97.4	97.4	93.9	93.9	93.9	93.9	93.9	90.4
65°	80.0	73.1	73.1	69.6	69.6	66.1	66.1	66.1	66.1	66.1	62.6
67.5°	55.7	52.2	48.7	48.7	48.7	48.7	48.7	48.7	45.2	45.2	45.2
70°	41.7	38.3	34.8	34.8	34.8	34.8	34.8	31.3	34.8	34.8	31.3
72.5°	27.8	27.8	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4
75°	20.9	20.9	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4
77.5°	13.9	13.9	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
80°	10.4	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
82.5°	7.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
85°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	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: P251649

CATALOG NUMBER: LD4B50D010TE EU4B30508035 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5	2699.5
2.5°	2765.6	2762.2	2755.2	2765.6	2737.8	2727.4	2723.9	2755.2
5°	2803.9	2797.0	2797.0	2807.4	2776.1	2769.1	2762.2	2797.0
7.5°	2838.7	2831.7	2831.7	2842.2	2814.3	2807.4	2800.4	2835.2
10°	2859.6	2859.6	2859.6	2866.5	2842.2	2835.2	2831.7	2866.5
12.5°	2870.0	2870.0	2866.5	2880.4	2849.1	2849.1	2842.2	2877.0
15°	2856.1	2856.1	2856.1	2866.5	2838.7	2831.7	2831.7	2859.6
17.5°	2821.3	2821.3	2817.8	2828.3	2797.0	2797.0	2793.5	2824.8
20°	2769.1	2769.1	2762.2	2776.1	2744.8	2734.3	2730.9	2762.2
22.5°	2685.6	2682.2	2678.7	2685.6	2657.8	2650.8	2647.4	2675.2
25°	2577.8	2574.3	2567.4	2574.3	2543.0	2532.6	2532.6	2553.4
27.5°	2424.7	2424.7	2414.3	2424.7	2389.9	2386.5	2383.0	2407.3
30°	2236.9	2223.0	2216.0	2229.9	2195.1	2195.1	2188.2	2212.5
32.5°	2003.8	1989.9	1986.4	1993.3	1962.0	1951.6	1965.5	1979.4
35°	1735.9	1739.4	1725.5	1725.5	1697.7	1701.1	1704.6	1725.5
37.5°	1478.5	1471.5	1468.1	1471.5	1450.7	1443.7	1436.7	1457.6
40°	1238.5	1221.1	1217.6	1217.6	1200.2	1196.7	1200.2	1210.6
42.5°	1012.3	1008.9	994.9	1001.9	984.5	991.5	988.0	988.0
45°	817.5	821.0	807.1	817.5	803.6	793.2	793.2	800.1
47.5°	647.1	647.1	643.6	643.6	633.1	636.6	629.7	640.1
50°	500.9	500.9	494.0	497.5	490.5	490.5	487.0	490.5
52.5°	382.7	379.2	379.2	375.7	368.8	372.2	375.7	368.8
55°	278.3	281.8	274.8	278.3	271.3	274.8	271.3	274.8
57.5°	191.3	194.8	187.9	194.8	187.9	191.3	187.9	187.9
60°	132.2	132.2	128.7	132.2	128.7	128.7	125.2	132.2
62.5°	90.4	90.4	90.4	90.4	90.4	87.0	90.4	90.4
65°	66.1	62.6	62.6	62.6	62.6	62.6	62.6	62.6
67.5°	45.2	45.2	45.2	45.2	45.2	45.2	45.2	45.2
70°	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3
72.5°	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4
75°	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4
77.5°	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
80°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
82.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
85°	3.5	3.5	3.5	0.0	3.5	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)