

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: P135590

Luminaire Tested: **LD6A20D010TE ERM6A20935 6LM111LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P135590
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P23399)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD6A20D010TE ERM6A20935 6LM111LI
Description: PORTFOLIO 6 INCH 50 DEGREE CUTOFF RECESSED SINGLE WALL WASH LUMINAIRE
SPECULAR CLEAR TRIM AND SPECULAR CLEAR KICKER
Light Source: (1) HIGH LUMEN LED 3500K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2343.7 lumens
Efficiency: N/A
Efficacy: 71.5 lumens/watt
Spacing Criteria (0/90/45): 0.85 / 0.93 / 0.89
Luminous Opening: Circular (Dia: 0.46' x H: 0')
CIE Type: Direct

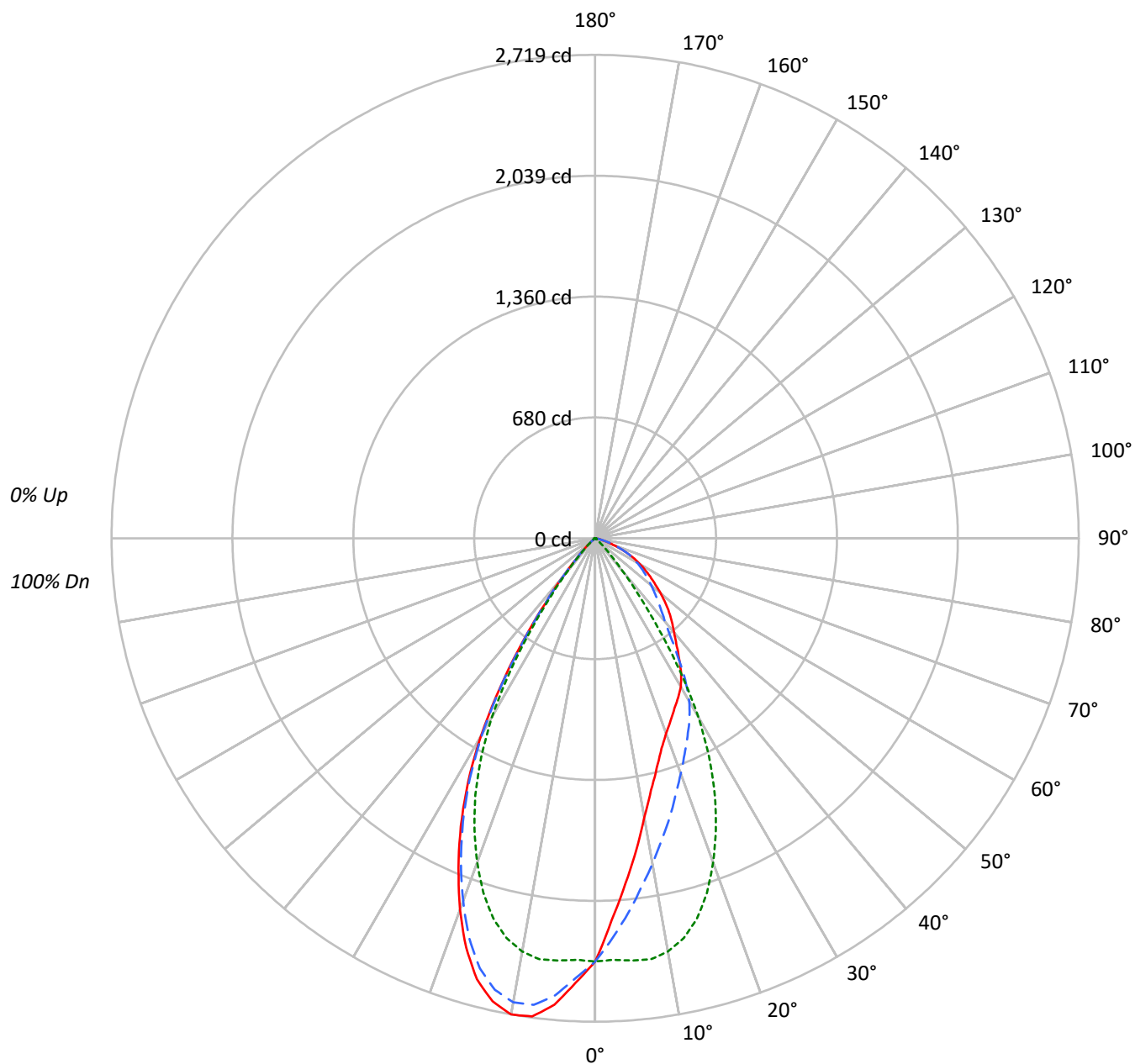
Input Watts (W): 32.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P135590

CATALOG NUMBER: LD6A20D010TE ERM6A20935 6LM111LI

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
RW	70	50	30	10	70	50	30	10		50	30	10		50	30	10		50	30	10
RCR																				
0	119	119	119	119	116	116	116	116		111	111	111		106	106	106		102	102	102
1	113	110	107	104	110	107	105	103		103	101	100		100	98	97		96	95	94
2	106	101	96	93	104	99	95	91		96	92	89		93	90	88		90	88	86
3	100	93	87	83	98	92	86	82		89	85	81		86	83	80		84	81	78
4	95	86	80	75	93	85	79	75		83	78	74		81	76	73		79	75	72
5	89	80	74	69	88	79	73	69		77	72	68		75	71	67		74	70	67
6	84	75	68	63	83	74	68	63		72	67	63		71	66	62		69	65	62
7	80	70	63	59	78	69	63	59		68	62	58		67	62	58		65	61	58
8	76	65	59	55	74	65	59	54		64	58	54		63	58	54		62	57	54
9	72	62	55	51	71	61	55	51		60	55	51		59	54	50		58	54	50
10	68	58	52	48	67	58	52	48		57	51	48		56	51	47		55	51	47

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	155325	155325	155325
5°	127627	156128	172494
10°	105505	156336	180146
15°	90365	149484	173435
20°	81022	134634	154213
25°	76002	114643	128565
30°	72621	87432	96781
35°	65475	49555	56101
40°	58756	20184	23753
45°	54279	6994	8027
50°	48759	2456	2619
55°	43086	1467	1274
60°	38061	1266	1044
65°	31353	1003	741
70°	20906	916	610
75°	11394	807	403
80°	6049	1803	0
85°	2395	2395	0



TEST NUMBER: P135590

CATALOG NUMBER: LD6A20D010TE ERM6A20935 6LM111LI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.6	9.5
10°-20°	576.6	24.6
20°-30°	681.2	29.1
30°-40°	454.0	19.4
40°-50°	196.9	8.4
50°-60°	118.1	5.0
60°-70°	70.9	3.0
70°-80°	21.7	0.9
80°-90°	2.7	0.1
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°	1479.4	63.1
0°-40°	1933.4	82.5
0°-60°	2248.4	95.9
0°-90°	2343.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2343.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2381	2381	2381	2381	2381	
5°	1949	2118	2384	2581	2634	176
15°	1338	1622	2213	2505	2568	377
25°	1056	1228	1593	1759	1786	488
35°	822	809	622	692	704	514
45°	588	498	76	87	87	452
55°	379	337	13	11	11	341
65°	203	202	6	5	5	199
75°	45	50	3	2	2	55
85°	3	5	3	0	0	5
90°	0	0	0	0	0	



TEST NUMBER: P135590

CATALOG NUMBER: LD6A20D010TE ERM6A20935 6LM111LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	2380.8	2380.8	2380.8	2380.8	2380.8	2380.8	2380.8	2380.8	2380.8	2380.8	2380.8
2.5°	2148.6	2185.7	2201.8	2213.2	2171.2	2216.4	2201.8	2222.8	2229.3	2250.2	2269.6
5°	1948.8	1984.2	2001.9	2014.8	1982.7	2034.2	2032.6	2060.0	2082.6	2118.0	2142.2
7.5°	1769.9	1786.0	1803.7	1821.4	1806.9	1853.7	1861.7	1900.4	1934.3	1982.7	2027.8
10°	1592.6	1608.7	1626.4	1645.8	1639.3	1686.1	1703.8	1747.3	1792.5	1856.9	1905.3
12.5°	1450.7	1466.8	1482.9	1502.3	1499.1	1545.8	1568.4	1615.2	1669.9	1734.4	1789.2
15°	1337.9	1352.4	1368.5	1381.4	1384.7	1428.2	1452.3	1497.4	1555.5	1621.6	1677.9
17.5°	1239.5	1255.7	1270.1	1281.5	1284.7	1325.0	1349.2	1389.5	1445.9	1508.8	1563.5
20°	1167.0	1181.5	1194.5	1205.7	1205.7	1241.2	1262.1	1299.2	1349.2	1407.2	1453.9
22.5°	1109.0	1121.9	1133.1	1142.8	1142.8	1173.4	1191.2	1221.8	1265.4	1313.7	1352.4
25°	1055.8	1068.7	1078.4	1086.4	1084.8	1113.9	1128.3	1150.9	1188.0	1228.3	1257.2
27.5°	1010.7	1023.5	1031.6	1042.9	1036.4	1060.7	1071.9	1091.3	1120.2	1149.3	1165.4
30°	964.0	976.8	984.9	994.6	988.1	1009.0	1015.5	1025.2	1044.5	1059.0	1060.7
32.5°	899.4	910.8	918.8	923.7	915.5	931.7	931.7	933.2	939.7	941.4	928.5
35°	822.1	830.2	836.6	838.2	828.5	838.2	836.6	825.3	822.1	809.1	783.4
37.5°	749.5	759.2	762.4	762.4	749.5	754.4	747.9	730.2	717.3	694.7	659.2
40°	689.9	698.0	699.5	698.0	685.0	686.7	677.0	656.0	638.3	610.9	565.7
42.5°	640.0	646.4	648.0	646.4	633.5	633.5	623.8	601.2	580.3	549.7	503.0
45°	588.3	594.8	598.0	594.8	583.5	583.5	572.2	551.3	530.3	498.1	451.3
47.5°	535.1	540.0	543.2	541.6	530.3	530.3	520.7	499.7	481.9	453.0	407.8
50°	480.4	486.8	490.0	488.4	478.7	478.7	470.7	451.3	436.8	411.0	370.7
52.5°	427.2	435.2	436.8	433.6	427.2	425.5	420.7	403.0	391.7	374.0	335.2
55°	378.8	385.2	385.2	385.2	377.2	375.5	372.3	357.8	351.4	336.9	304.6
57.5°	335.2	340.1	338.5	336.9	333.7	330.4	327.2	316.0	312.7	303.1	275.7
60°	291.7	296.6	294.9	293.4	290.2	286.9	283.7	275.7	275.7	269.2	246.6
62.5°	249.9	253.1	251.4	249.9	249.9	246.6	245.0	238.5	240.2	237.0	217.6
65°	203.1	207.9	206.3	206.3	207.9	207.9	206.3	203.1	203.1	201.5	185.4
67.5°	154.7	159.6	157.9	159.6	164.4	166.1	166.1	164.4	164.4	161.2	146.7
70°	109.6	112.9	112.9	114.4	119.3	120.9	125.8	120.9	120.9	117.6	106.4
72.5°	72.6	74.1	75.8	79.0	80.6	82.2	85.5	85.5	83.8	79.0	70.9
75°	45.2	46.7	46.7	48.3	50.0	51.5	54.8	53.2	51.5	50.0	43.5
77.5°	27.4	27.4	29.0	29.0	30.6	32.3	32.3	32.3	30.6	29.0	25.8
80°	16.1	16.1	16.1	17.7	17.7	17.7	17.7	17.7	17.7	16.1	14.5
82.5°	8.0	8.0	8.0	9.7	9.7	9.7	9.7	9.7	9.7	8.0	8.0
85°	3.2	3.2	3.2	4.8	4.8	4.8	4.8	4.8	4.8	4.8	3.2
87.5°	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	1.6	1.6	1.6
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: P135590

CATALOG NUMBER: LD6A20D010TE ERM6A20935 6LM111LI

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	2380.8	2380.8	2380.8	2380.8	2380.8	2380.8	2380.8	2380.8	2380.8	2380.8	2380.8
2.5°	2288.9	2288.9	2284.1	2313.1	2350.2	2343.7	2345.3	2372.7	2384.0	2403.4	2421.1
5°	2184.1	2201.8	2214.7	2261.5	2314.7	2324.4	2342.1	2384.0	2409.8	2442.0	2472.6
7.5°	2079.4	2116.5	2147.1	2208.3	2277.6	2303.4	2335.6	2388.8	2422.6	2466.2	2508.1
10°	1971.3	2023.0	2068.0	2142.2	2222.8	2259.9	2300.2	2359.9	2404.9	2451.7	2498.4
12.5°	1863.4	1926.2	1982.7	2064.8	2150.3	2195.4	2240.6	2303.4	2351.7	2400.2	2448.5
15°	1757.0	1824.6	1884.3	1971.3	2058.4	2105.1	2150.3	2213.2	2264.7	2309.9	2358.2
17.5°	1639.3	1715.1	1769.9	1852.1	1935.9	1982.7	2032.6	2090.6	2135.8	2174.4	2221.2
20°	1524.9	1595.8	1645.8	1721.5	1797.3	1840.8	1887.5	1939.2	1979.4	2013.3	2056.8
22.5°	1413.6	1476.5	1523.2	1592.6	1650.6	1687.6	1727.9	1773.1	1808.6	1836.0	1874.6
25°	1305.6	1355.6	1391.1	1445.9	1492.6	1521.7	1555.5	1592.6	1623.2	1645.8	1681.2
27.5°	1197.7	1231.5	1244.4	1278.3	1307.2	1339.5	1357.2	1386.2	1413.6	1431.4	1462.0
30°	1073.5	1084.8	1073.5	1083.2	1091.3	1105.8	1126.7	1160.6	1173.4	1184.8	1215.4
32.5°	918.8	910.8	873.7	859.1	849.4	864.0	867.2	893.0	901.1	910.8	934.9
35°	755.9	727.0	667.3	630.3	607.7	609.3	594.8	622.2	627.1	636.7	654.4
37.5°	617.4	570.6	493.3	441.6	407.8	399.8	382.0	398.1	399.8	406.2	419.0
40°	515.8	449.8	362.7	301.4	264.3	248.2	230.5	237.0	237.0	241.7	249.9
42.5°	444.9	374.0	275.7	209.6	169.3	149.9	135.4	135.4	135.4	137.0	141.8
45°	391.7	312.7	214.4	146.7	109.6	90.3	75.8	75.8	74.1	74.1	77.4
47.5°	348.1	269.2	169.3	108.0	70.9	53.2	43.5	40.3	38.7	40.3	42.0
50°	312.7	235.3	140.2	82.2	50.0	35.5	27.4	24.2	22.6	22.6	22.6
52.5°	282.0	207.9	117.6	66.1	38.7	25.8	19.4	16.1	14.5	14.5	14.5
55°	256.3	183.8	101.5	54.8	32.3	22.6	16.1	12.9	11.2	11.2	11.2
57.5°	230.5	162.8	87.0	46.7	27.4	19.4	14.5	11.2	9.7	9.7	9.7
60°	204.7	141.8	75.8	38.7	22.6	16.1	12.9	9.7	8.0	8.0	8.0
62.5°	179.0	120.9	62.9	32.3	19.4	14.5	9.7	8.0	8.0	6.5	6.5
65°	148.3	98.3	51.5	27.4	16.1	11.2	9.7	6.5	6.5	6.5	6.5
67.5°	116.1	75.8	38.7	20.9	12.9	9.7	8.0	6.5	4.8	4.8	4.8
70°	82.2	53.2	29.0	16.1	11.2	8.0	6.5	4.8	4.8	4.8	3.2
72.5°	54.8	35.5	20.9	12.9	9.7	6.5	4.8	4.8	3.2	3.2	3.2
75°	35.5	22.6	14.5	9.7	6.5	6.5	4.8	3.2	3.2	3.2	1.6
77.5°	20.9	14.5	9.7	6.5	4.8	4.8	4.8	4.8	4.8	3.2	1.6
80°	11.2	8.0	6.5	4.8	3.2	4.8	4.8	4.8	4.8	3.2	1.6
82.5°	6.5	4.8	3.2	3.2	3.2	3.2	3.2	4.8	4.8	3.2	1.6
85°	3.2	3.2	1.6	1.6	1.6	3.2	3.2	3.2	3.2	1.6	1.6
87.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	3.2	3.2	1.6	1.6
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: P135590

CATALOG NUMBER: LD6A20D010TE ERM6A20935 6LM111LI

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	2380.8	2380.8	2380.8	2380.8	2380.8	2380.8	2380.8	2380.8	2380.8	2380.8	2380.8
2.5°	2435.6	2445.2	2448.5	2453.3	2480.7	2474.3	2498.4	2498.4	2517.8	2506.5	2517.8
5°	2498.4	2519.4	2529.0	2542.0	2580.7	2580.7	2609.6	2614.5	2640.3	2632.2	2643.6
7.5°	2538.7	2564.5	2577.5	2598.4	2640.3	2646.8	2674.2	2682.2	2712.8	2708.0	2714.5
10°	2530.7	2558.1	2574.2	2596.8	2640.3	2649.9	2674.2	2688.6	2717.7	2711.2	2714.5
12.5°	2480.7	2506.5	2524.3	2545.2	2590.4	2601.6	2622.5	2638.7	2666.1	2661.3	2661.3
15°	2387.2	2416.3	2430.8	2448.5	2492.0	2504.9	2521.0	2533.9	2564.5	2561.3	2556.5
17.5°	2247.0	2274.4	2285.6	2300.2	2342.1	2356.6	2369.5	2379.1	2408.2	2406.6	2398.5
20°	2076.2	2100.3	2110.0	2119.7	2156.7	2171.2	2180.9	2190.6	2214.7	2214.7	2203.5
22.5°	1889.2	1910.1	1916.6	1924.6	1956.9	1971.3	1976.2	1984.2	2006.8	2006.8	1992.3
25°	1690.9	1708.7	1711.9	1718.3	1745.7	1758.6	1760.2	1765.1	1787.6	1787.6	1773.1
27.5°	1468.5	1482.9	1486.2	1489.4	1513.6	1526.5	1524.9	1542.6	1549.1	1552.3	1534.5
30°	1218.6	1242.8	1229.9	1244.4	1252.4	1265.4	1260.5	1278.3	1283.1	1287.9	1265.4
32.5°	938.1	960.7	946.2	960.7	964.0	976.8	970.4	986.4	989.7	994.6	973.6
35°	657.7	675.4	662.5	667.3	678.6	691.5	683.5	698.0	701.2	702.7	686.7
37.5°	422.3	435.2	438.4	443.3	443.3	453.0	456.2	456.2	457.8	459.4	446.5
40°	253.1	262.8	264.3	262.8	267.6	275.7	277.2	275.7	277.2	278.9	270.8
42.5°	143.5	149.9	151.5	151.5	154.7	159.6	159.6	157.9	159.6	159.6	154.7
45°	79.0	82.2	83.8	82.2	83.8	87.0	87.0	87.0	87.0	87.0	85.5
47.5°	42.0	43.5	43.5	45.2	43.5	45.2	45.2	45.2	46.7	46.7	45.2
50°	22.6	24.2	24.2	24.2	24.2	25.8	25.8	25.8	25.8	25.8	24.2
52.5°	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
55°	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
57.5°	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7
60°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
62.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
65°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
67.5°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
70°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
72.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
75°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
77.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
80°	1.6	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	1.6	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: P135590

CATALOG NUMBER: LD6A20D010TE ERM6A20935 6LM111LI

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	2380.8	2380.8	2380.8	2380.8
2.5°	2522.6	2530.7	2519.4	2501.7
5°	2651.6	2661.3	2649.9	2633.9
7.5°	2722.5	2737.0	2724.1	2712.8
10°	2725.7	2740.3	2725.7	2719.3
12.5°	2672.5	2687.1	2670.9	2667.7
15°	2571.0	2582.2	2566.1	2567.8
17.5°	2414.6	2424.3	2408.2	2413.1
20°	2218.0	2227.6	2211.5	2221.2
22.5°	2006.8	2013.3	2010.1	2008.4
25°	1786.0	1790.8	1776.3	1786.0
27.5°	1544.2	1547.4	1549.1	1547.4
30°	1276.6	1278.3	1268.6	1284.7
32.5°	983.2	981.7	978.4	992.9
35°	691.5	691.5	691.5	704.4
37.5°	449.8	448.1	449.8	459.4
40°	272.5	270.8	272.5	278.9
42.5°	154.7	154.7	156.4	159.6
45°	87.0	85.5	85.5	87.0
47.5°	46.7	46.7	45.2	46.7
50°	25.8	25.8	24.2	25.8
52.5°	14.5	14.5	14.5	14.5
55°	11.2	11.2	11.2	11.2
57.5°	9.7	9.7	9.7	9.7
60°	8.0	8.0	8.0	8.0
62.5°	6.5	6.5	6.5	6.5
65°	4.8	6.5	4.8	4.8
67.5°	4.8	4.8	4.8	4.8
70°	3.2	3.2	3.2	3.2
72.5°	3.2	3.2	3.2	3.2
75°	1.6	1.6	1.6	1.6
77.5°	1.6	1.6	1.6	1.6
80°	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





— 0°-180° - - 45°-225° - - - 90°-270°













(END OF REPORT)