

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: P251575

Luminaire Tested: **LD4B50D010TE EU4B30509027 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251575
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 EU4B30509027 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3940.0 lumens
Efficiency: N/A
Efficacy: 67.0 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

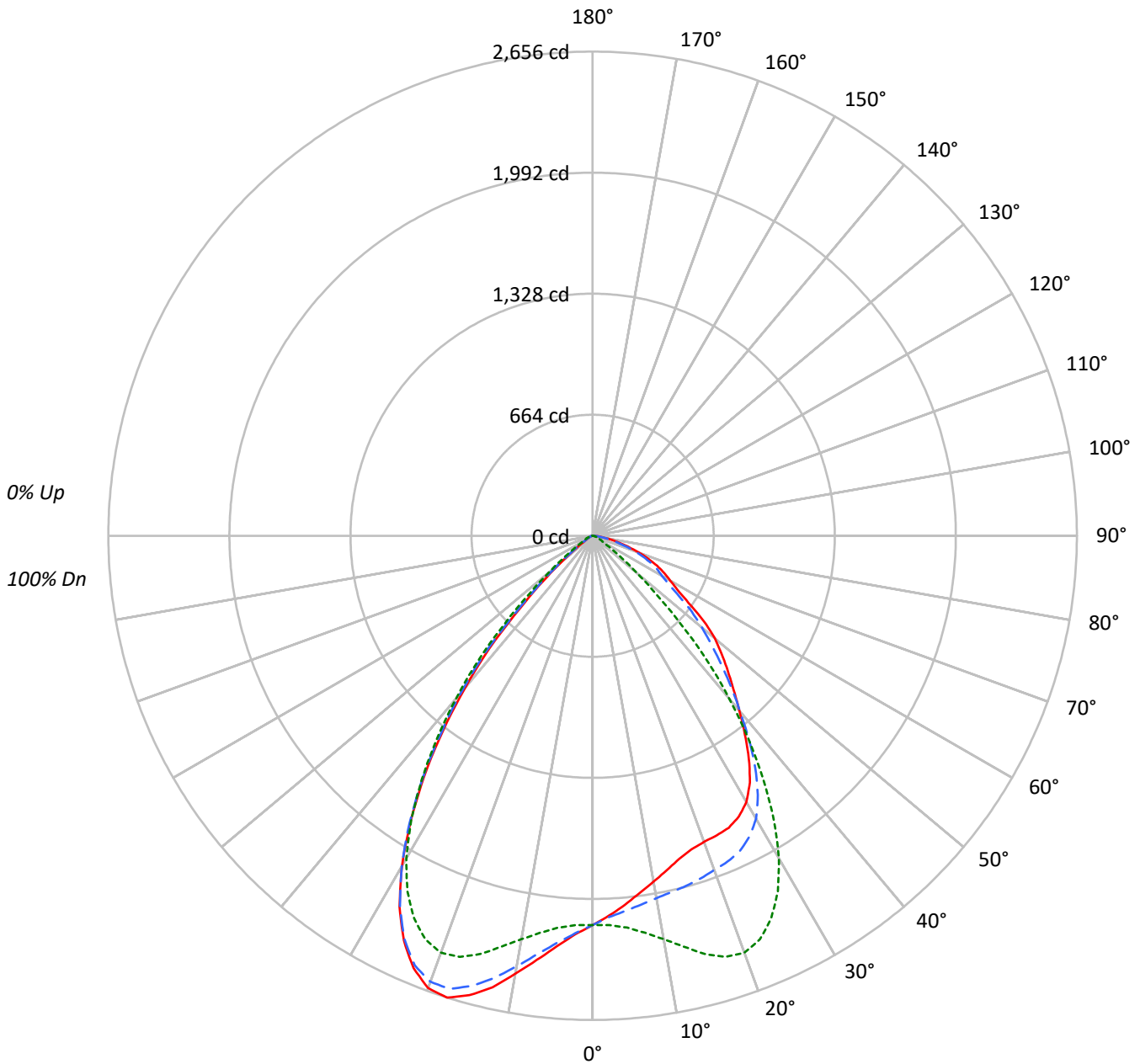
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251575

CATALOG NUMBER: LD4B50D010TE EU4B30509027 4LBSW1LI

Luminous Intensity Polar Plot





TEST NUMBER: P251575

CATALOG NUMBER: LD4B50D010TE EU4B30509027 4LBSW1LI

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°	208083	208083	208083
5°	198781	211059	221146
10°	190600	222327	241357
15°	185043	239608	263228
20°	185304	252364	273760
25°	190032	249079	263456
30°	189768	229920	235254
35°	177748	194333	191680
40°	159219	148227	138291
45°	144442	94122	77210
50°	132696	47760	32962
55°	108931	21307	10891
60°	95626	11948	5984
65°	89982	8994	4497
70°	77050	7152	3961
75°	58779	5234	3163
80°	42261	3143	1571
85°	31198	0	0



TEST NUMBER: P251575

CATALOG NUMBER: LD4B50D010TE EU4B30509027 4LBSW1LI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.4	5.3
10°-20°	646.4	16.4
20°-30°	1000.0	25.4
30°-40°	985.3	25.0
40°-50°	605.0	15.4
50°-60°	269.0	6.8
60°-70°	150.3	3.8
70°-80°	65.0	1.7
80°-90°	11.6	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°	1853.8	47.0
0°-40°	2839.1	72.1
0°-60°	3713.1	94.2
0°-90°	3940.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3940.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2135	2135	2135	2135	2135	
5°	2032	2065	2157	2241	2260	191
15°	1834	1987	2375	2556	2609	520
25°	1767	1909	2316	2442	2450	811
35°	1494	1555	1633	1628	1611	927
45°	1048	995	683	596	560	812
55°	641	580	125	72	64	589
65°	390	351	39	22	20	382
75°	156	134	14	8	8	172
85°	28	22	0	0	0	35
90°	0	0	0	0	0	



TEST NUMBER: P251575

CATALOG NUMBER: LD4B50D010TE EU4B30509027 4LBSW1LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1
2.5°	2084.9	2084.9	2084.9	2084.9	2090.5	2082.1	2090.5	2090.5	2098.8	2101.6	2093.3
5°	2031.9	2029.2	2031.9	2031.9	2037.5	2034.7	2043.1	2048.7	2059.8	2065.4	2065.4
7.5°	1976.2	1976.2	1976.2	1981.8	1990.1	1987.3	1995.7	2004.1	2020.8	2031.9	2040.3
10°	1926.0	1923.2	1931.6	1934.4	1942.8	1942.8	1956.7	1965.1	1984.6	2006.9	2018.0
12.5°	1878.6	1875.9	1881.4	1889.8	1903.7	1903.7	1914.9	1928.8	1956.7	1981.8	2001.3
15°	1834.0	1836.8	1845.2	1850.8	1867.5	1867.5	1881.4	1898.2	1928.8	1959.5	1987.3
17.5°	1803.4	1806.2	1811.7	1820.1	1836.8	1836.8	1850.8	1870.3	1903.7	1937.2	1970.6
20°	1786.7	1789.5	1795.0	1803.4	1817.3	1820.1	1831.3	1853.6	1884.2	1920.5	1951.1
22.5°	1778.3	1783.9	1789.5	1795.0	1809.0	1809.0	1822.9	1839.6	1870.3	1906.5	1934.4
25°	1767.2	1772.7	1775.5	1783.9	1795.0	1795.0	1803.4	1822.9	1850.8	1881.4	1909.3
27.5°	1736.5	1742.1	1744.9	1753.2	1764.4	1761.6	1772.7	1786.7	1811.7	1839.6	1861.9
30°	1686.3	1689.1	1694.7	1697.5	1705.8	1705.8	1714.2	1728.1	1744.9	1769.9	1792.2
32.5°	1605.5	1611.1	1613.9	1616.6	1625.0	1622.2	1625.0	1633.4	1650.1	1672.4	1686.3
35°	1494.0	1505.1	1505.1	1510.7	1513.5	1510.7	1510.7	1521.9	1530.2	1547.0	1555.3
37.5°	1371.4	1379.7	1376.9	1382.5	1385.3	1376.9	1382.5	1385.3	1396.4	1404.8	1407.6
40°	1251.5	1254.3	1254.3	1254.3	1254.3	1251.5	1254.3	1257.1	1265.4	1265.4	1257.1
42.5°	1142.8	1145.6	1145.6	1140.0	1145.6	1142.8	1142.8	1142.8	1142.8	1131.6	1123.3
45°	1048.0	1050.8	1050.8	1048.0	1048.0	1042.5	1039.7	1036.9	1028.5	1014.6	995.1
47.5°	958.8	964.4	967.2	961.6	958.8	953.3	953.3	936.5	925.4	908.7	880.8
50°	875.2	880.8	880.8	875.2	875.2	866.9	858.5	852.9	836.2	816.7	783.2
52.5°	769.3	777.7	777.7	774.9	774.9	763.7	760.9	749.8	735.8	713.6	685.7
55°	641.1	652.2	649.4	646.7	641.1	641.1	641.1	632.7	624.4	607.6	579.8
57.5°	549.1	551.9	551.9	549.1	549.1	543.5	543.5	535.2	532.4	515.7	493.4
60°	490.6	490.6	493.4	490.6	487.8	485.0	482.2	476.6	468.3	457.1	440.4
62.5°	443.2	446.0	446.0	443.2	440.4	437.6	434.8	429.2	423.7	415.3	398.6
65°	390.2	395.8	393.0	390.2	387.4	384.6	384.6	379.1	373.5	367.9	351.2
67.5°	331.7	334.5	337.3	331.7	331.7	328.9	328.9	323.3	320.5	309.4	298.2
70°	270.4	273.2	273.2	270.4	270.4	267.6	267.6	264.8	262.0	253.6	242.5
72.5°	211.8	214.6	211.8	209.0	209.0	209.0	206.3	203.5	200.7	195.1	186.7
75°	156.1	156.1	158.9	156.1	153.3	153.3	150.5	150.5	144.9	142.2	133.8
77.5°	111.5	114.3	111.5	111.5	108.7	105.9	105.9	103.1	103.1	100.3	94.8
80°	75.3	75.3	78.0	75.3	72.5	75.3	72.5	69.7	69.7	66.9	61.3
82.5°	47.4	50.2	47.4	47.4	47.4	47.4	47.4	44.6	44.6	41.8	39.0
85°	27.9	27.9	27.9	27.9	27.9	27.9	27.9	25.1	25.1	25.1	22.3
87.5°	13.9	13.9	11.1	11.1	13.9	13.9	13.9	11.1	11.1	11.1	11.1
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: P251575

CATALOG NUMBER: LD4B50D010TE EU4B30509027 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1
2.5°	2104.4	2107.2	2112.8	2121.1	2121.1	2115.6	2129.5	2129.5	2135.1	2137.9	2149.0
5°	2082.1	2087.7	2098.8	2112.8	2115.6	2112.8	2132.3	2140.7	2149.0	2157.4	2174.1
7.5°	2062.6	2073.8	2093.3	2112.8	2121.1	2121.1	2151.8	2162.9	2179.7	2196.4	2215.9
10°	2051.5	2068.2	2096.1	2126.7	2135.1	2143.4	2179.7	2202.0	2224.3	2246.6	2274.4
12.5°	2037.5	2068.2	2104.4	2143.4	2160.2	2171.3	2221.5	2249.4	2280.0	2307.9	2344.1
15°	2034.7	2071.0	2118.4	2168.5	2190.8	2207.5	2263.3	2302.3	2338.6	2374.8	2411.0
17.5°	2023.6	2068.2	2126.7	2182.5	2210.3	2232.6	2296.7	2344.1	2385.9	2422.2	2464.0
20°	2009.6	2059.8	2123.9	2185.2	2215.9	2238.2	2307.9	2352.5	2399.9	2433.3	2472.3
22.5°	1990.1	2040.3	2104.4	2165.7	2193.6	2213.1	2282.8	2321.8	2363.6	2397.1	2433.3
25°	1956.7	2004.1	2059.8	2110.0	2137.9	2154.6	2215.9	2252.1	2282.8	2316.3	2349.7
27.5°	1909.3	1945.5	1992.9	2029.2	2045.9	2062.6	2112.8	2143.4	2171.3	2199.2	2221.5
30°	1825.7	1853.6	1887.0	1917.7	1934.4	1937.2	1984.6	2001.3	2023.6	2043.1	2059.8
32.5°	1714.2	1736.5	1756.0	1772.7	1783.9	1786.7	1822.9	1828.5	1850.8	1850.8	1875.9
35°	1572.0	1583.2	1597.1	1597.1	1605.5	1597.1	1622.2	1627.8	1630.6	1633.4	1652.9
37.5°	1410.4	1416.0	1424.3	1407.6	1407.6	1399.2	1407.6	1413.2	1402.0	1402.0	1416.0
40°	1257.1	1245.9	1234.8	1218.1	1209.7	1193.0	1193.0	1179.0	1170.7	1165.1	1167.9
42.5°	1109.3	1084.3	1059.2	1022.9	1006.2	989.5	972.8	953.3	947.7	933.7	925.4
45°	967.2	931.0	897.5	839.0	805.5	788.8	752.6	713.6	688.5	682.9	660.6
47.5°	847.3	794.4	738.6	669.0	635.5	604.8	551.9	518.4	485.0	468.3	454.3
50°	741.4	694.0	621.6	546.3	504.5	473.8	415.3	376.3	340.1	315.0	298.2
52.5°	649.4	596.5	529.6	443.2	401.4	367.9	303.8	259.2	228.6	203.5	184.0
55°	546.3	504.5	437.6	356.8	315.0	275.9	220.2	172.8	142.2	125.4	111.5
57.5°	471.1	434.8	370.7	292.7	253.6	217.4	161.7	122.6	97.6	80.8	72.5
60°	420.9	387.4	331.7	256.4	220.2	186.7	133.8	97.6	75.3	61.3	55.7
62.5°	379.1	345.6	295.5	225.8	195.1	161.7	114.3	80.8	61.3	50.2	41.8
65°	331.7	301.0	256.4	195.1	167.2	139.4	97.6	66.9	50.2	39.0	33.4
67.5°	281.5	253.6	214.6	161.7	139.4	117.1	78.0	55.7	41.8	33.4	27.9
70°	228.6	206.3	170.0	131.0	111.5	92.0	64.1	44.6	30.7	25.1	22.3
72.5°	175.6	156.1	131.0	100.3	83.6	69.7	47.4	33.4	25.1	19.5	16.7
75°	125.4	111.5	92.0	72.5	61.3	50.2	36.2	25.1	16.7	13.9	11.1
77.5°	86.4	78.0	64.1	50.2	41.8	36.2	25.1	16.7	13.9	11.1	8.4
80°	55.7	50.2	41.8	30.7	25.1	22.3	13.9	11.1	8.4	5.6	5.6
82.5°	33.4	30.7	25.1	16.7	13.9	11.1	8.4	5.6	5.6	2.8	2.8
85°	19.5	16.7	11.1	8.4	8.4	5.6	5.6	2.8	2.8	0.0	0.0
87.5°	8.4	5.6	5.6	2.8	2.8	2.8	2.8	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: P251575

CATALOG NUMBER: LD4B50D010TE EU4B30509027 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1
2.5°	2143.4	2157.4	2154.6	2162.9	2160.2	2160.2	2174.1	2168.5	2182.5	2182.5	2185.2
5°	2174.1	2193.6	2193.6	2207.5	2204.8	2210.3	2224.3	2224.3	2241.0	2246.6	2246.6
7.5°	2218.7	2243.8	2249.4	2263.3	2266.1	2277.2	2288.4	2291.2	2313.5	2319.0	2321.8
10°	2280.0	2310.7	2319.0	2333.0	2338.6	2349.7	2363.6	2369.2	2397.1	2399.9	2411.0
12.5°	2355.3	2388.7	2397.1	2413.8	2416.6	2430.5	2450.0	2455.6	2483.5	2491.9	2500.2
15°	2427.7	2458.4	2472.3	2489.1	2491.9	2508.6	2525.3	2530.9	2556.0	2567.1	2575.5
17.5°	2477.9	2514.2	2522.5	2544.8	2544.8	2558.7	2575.5	2581.0	2606.1	2614.5	2620.1
20°	2489.1	2522.5	2533.7	2550.4	2553.2	2561.5	2575.5	2581.0	2603.3	2606.1	2614.5
22.5°	2447.3	2480.7	2486.3	2503.0	2505.8	2514.2	2525.3	2522.5	2550.4	2547.6	2550.4
25°	2358.1	2388.7	2388.7	2408.2	2405.4	2413.8	2419.4	2416.6	2441.7	2441.7	2441.7
27.5°	2229.8	2257.7	2260.5	2274.4	2266.1	2268.9	2274.4	2271.7	2288.4	2288.4	2288.4
30°	2071.0	2093.3	2084.9	2096.1	2090.5	2096.1	2090.5	2087.7	2093.3	2098.8	2096.1
32.5°	1873.1	1889.8	1889.8	1892.6	1892.6	1875.9	1870.3	1870.3	1867.5	1864.7	1864.7
35°	1644.5	1658.4	1652.9	1652.9	1650.1	1633.4	1625.0	1619.4	1627.8	1611.1	1622.2
37.5°	1410.4	1413.2	1404.8	1402.0	1388.1	1388.1	1374.1	1363.0	1368.6	1365.8	1354.6
40°	1153.9	1165.1	1148.4	1142.8	1151.2	1140.0	1126.1	1112.1	1123.3	1109.3	1114.9
42.5°	903.1	900.3	894.7	894.7	894.7	878.0	875.2	872.4	875.2	864.1	855.7
45°	652.2	643.9	635.5	635.5	624.4	618.8	618.8	610.4	596.5	596.5	579.8
47.5°	440.4	420.9	415.3	412.5	406.9	406.9	401.4	395.8	393.0	379.1	379.1
50°	287.1	267.6	262.0	259.2	262.0	256.4	250.9	245.3	239.7	236.9	231.3
52.5°	172.8	164.5	158.9	156.1	150.5	147.7	144.9	139.4	136.6	136.6	133.8
55°	103.1	94.8	83.6	83.6	83.6	80.8	78.0	75.3	72.5	72.5	69.7
57.5°	64.1	58.5	53.0	50.2	50.2	50.2	47.4	47.4	47.4	47.4	44.6
60°	47.4	41.8	39.0	39.0	39.0	36.2	36.2	36.2	36.2	33.4	33.4
62.5°	36.2	33.4	30.7	30.7	27.9	27.9	27.9	27.9	27.9	27.9	25.1
65°	30.7	25.1	25.1	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3
67.5°	22.3	19.5	19.5	19.5	19.5	16.7	16.7	16.7	16.7	16.7	16.7
70°	16.7	16.7	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9
72.5°	13.9	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
75°	11.1	11.1	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
77.5°	8.4	8.4	8.4	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
80°	5.6	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
82.5°	2.8	2.8	2.8	2.8	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: P251575

CATALOG NUMBER: LD4B50D010TE EU4B30509027 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1	2135.1
2.5°	2185.2	2199.2	2185.2	2185.2	2193.6	2190.8	2196.4	2188.0
5°	2249.4	2268.9	2254.9	2252.1	2266.1	2263.3	2266.1	2260.5
7.5°	2327.4	2346.9	2333.0	2333.0	2346.9	2344.1	2352.5	2346.9
10°	2416.6	2438.9	2419.4	2422.2	2441.7	2438.9	2438.9	2438.9
12.5°	2508.6	2530.9	2519.7	2519.7	2533.7	2536.4	2539.2	2536.4
15°	2583.8	2606.1	2592.2	2592.2	2611.7	2608.9	2611.7	2608.9
17.5°	2628.4	2650.7	2634.0	2634.0	2650.7	2650.7	2653.5	2656.3
20°	2617.3	2642.4	2628.4	2622.9	2642.4	2642.4	2639.6	2639.6
22.5°	2553.2	2575.5	2564.3	2558.7	2572.7	2567.1	2564.3	2567.1
25°	2441.7	2464.0	2441.7	2441.7	2452.8	2450.0	2452.8	2450.0
27.5°	2291.2	2307.9	2285.6	2282.8	2294.0	2288.4	2285.6	2294.0
30°	2090.5	2107.2	2096.1	2087.7	2101.6	2093.3	2087.7	2090.5
32.5°	1861.9	1873.1	1867.5	1853.6	1861.9	1856.3	1853.6	1856.3
35°	1611.1	1625.0	1602.7	1599.9	1613.9	1602.7	1597.1	1611.1
37.5°	1351.8	1368.6	1349.1	1351.8	1343.5	1346.3	1340.7	1349.1
40°	1106.6	1103.8	1098.2	1095.4	1098.2	1089.8	1095.4	1087.0
42.5°	841.8	847.3	844.6	841.8	844.6	833.4	827.8	839.0
45°	585.3	582.5	577.0	571.4	571.4	568.6	568.6	560.2
47.5°	376.3	373.5	362.3	365.1	370.7	365.1	356.8	367.9
50°	228.6	225.8	225.8	223.0	228.6	223.0	217.4	217.4
52.5°	128.2	128.2	125.4	125.4	125.4	125.4	122.6	119.9
55°	69.7	66.9	66.9	66.9	64.1	64.1	64.1	64.1
57.5°	44.6	44.6	44.6	44.6	44.6	44.6	41.8	41.8
60°	33.4	33.4	33.4	33.4	30.7	33.4	30.7	30.7
62.5°	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1
65°	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
67.5°	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7
70°	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9
72.5°	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
75°	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
77.5°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
80°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
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)