

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: P251655

Luminaire Tested: **LD4B50D010TE EU4B30509035 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251655
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 EU4B30509035 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3997.0 lumens
Efficiency: N/A
Efficacy: 68.0 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

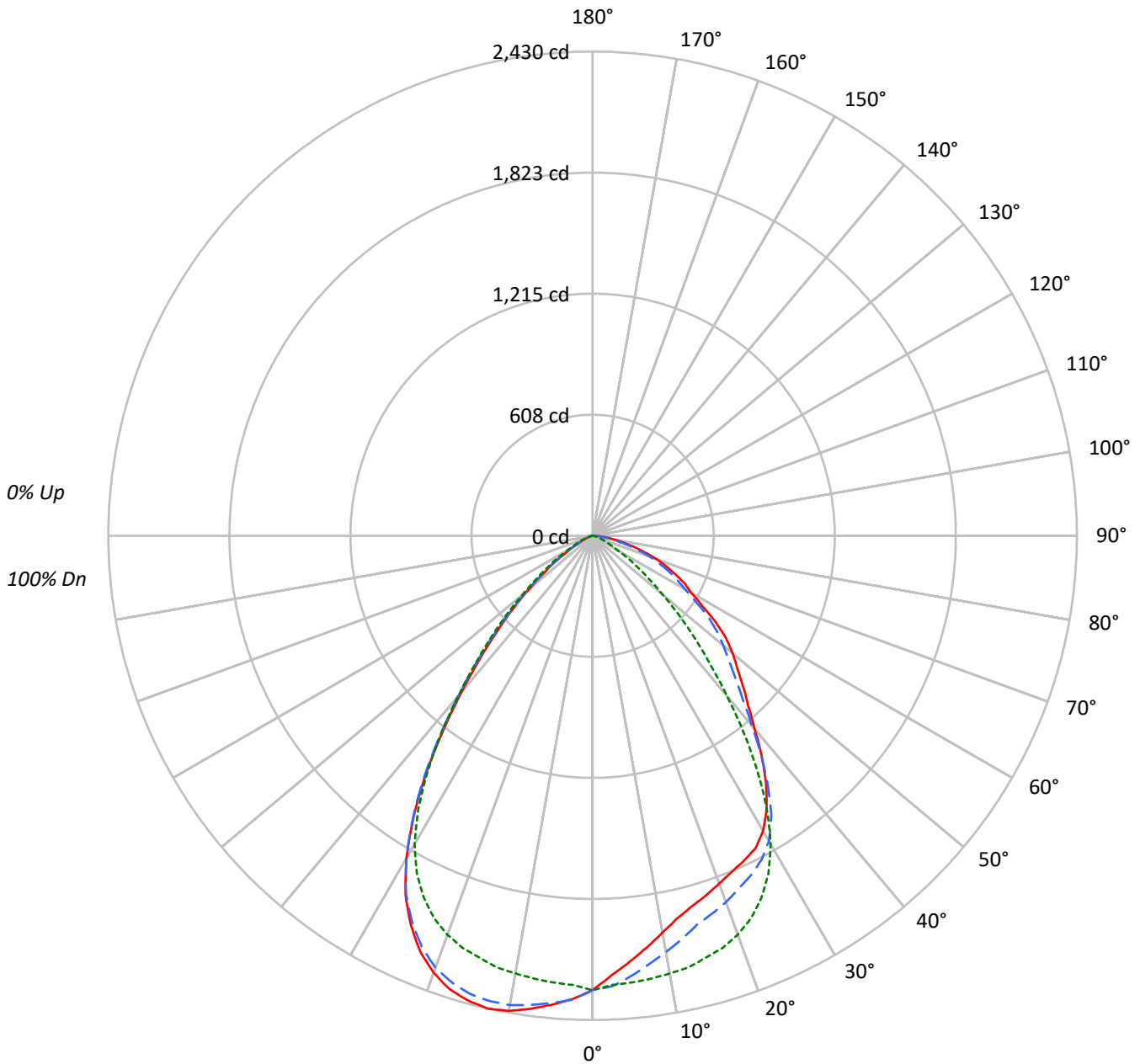
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251655

CATALOG NUMBER: LD4B50D010TE EU4B30509035 4LBSW1H

Luminous Intensity Polar Plot





TEST NUMBER: P251655

CATALOG NUMBER: LD4B50D010TE EU4B30509035 4LBSW1H

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°	222224	222224	222224
5°	209856	220206	231124
10°	200071	220714	239616
15°	194195	221174	243704
20°	192605	220950	241972
25°	193377	215496	231927
30°	192457	201055	210316
35°	180389	171656	173405
40°	160746	133087	130098
45°	147020	99221	93143
50°	139003	69502	62815
55°	127809	46930	39437
60°	111687	27483	21772
65°	105710	17618	12199
70°	96284	12566	7523
75°	79678	8849	5535
80°	62690	4939	3311
85°	55910	3243	0



TEST NUMBER: P251655

CATALOG NUMBER: LD4B50D010TE EU4B30509035 4LBSW1H

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	215.4	5.4
10°-20°	618.1	15.5
20°-30°	916.2	22.9
30°-40°	917.5	23.0
40°-50°	641.2	16.0
50°-60°	381.6	9.5
60°-70°	199.1	5.0
70°-80°	88.5	2.2
80°-90°	19.3	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°	1749.8	43.8
0°-40°	2667.2	66.7
0°-60°	3690.0	92.3
0°-90°	3997.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3997.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2280	2280	2280	2280	2280	
5°	2145	2218	2251	2354	2362	201
15°	1925	2022	2192	2380	2415	545
25°	1798	1881	2004	2142	2157	829
35°	1516	1534	1443	1469	1458	940
45°	1067	1014	720	696	676	828
55°	752	705	276	241	232	667
65°	458	420	76	56	53	454
75°	212	185	24	15	15	229
85°	50	38	3	3	0	56
90°	0	0	0	0	0	



TEST NUMBER: P251655

CATALOG NUMBER: LD4B50D010TE EU4B30509035 4LBSW1H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2
2.5°	2206.8	2233.2	2206.8	2215.6	2250.9	2218.5	2236.2	2236.2	2227.3	2247.9	2262.6
5°	2145.1	2171.5	2145.1	2156.8	2195.0	2162.7	2183.3	2177.4	2180.3	2198.0	2218.5
7.5°	2083.4	2103.9	2080.4	2095.1	2130.4	2103.9	2121.6	2121.6	2124.5	2150.9	2168.6
10°	2021.7	2039.3	2021.7	2033.4	2071.6	2048.1	2059.9	2062.8	2071.6	2095.1	2121.6
12.5°	1965.8	1980.5	1962.9	1980.5	2012.8	1989.3	2004.0	2007.0	2015.8	2042.2	2071.6
15°	1924.7	1939.4	1921.7	1936.4	1965.8	1948.2	1959.9	1965.8	1971.7	1995.2	2021.7
17.5°	1892.4	1904.1	1889.4	1907.1	1930.6	1910.0	1927.6	1927.6	1936.4	1959.9	1989.3
20°	1857.1	1868.9	1857.1	1871.8	1898.2	1880.6	1895.3	1895.3	1904.1	1930.6	1957.0
22.5°	1824.8	1830.7	1824.8	1836.5	1863.0	1848.3	1857.1	1860.0	1868.9	1892.4	1915.9
25°	1798.3	1810.1	1804.2	1816.0	1833.6	1818.9	1827.7	1830.7	1839.5	1860.0	1880.6
27.5°	1768.9	1774.8	1768.9	1783.6	1798.3	1786.6	1795.4	1792.5	1798.3	1816.0	1833.6
30°	1710.2	1716.1	1716.1	1724.9	1736.6	1730.7	1739.6	1730.7	1736.6	1751.3	1768.9
32.5°	1625.0	1627.9	1630.8	1639.7	1648.5	1639.7	1645.5	1645.5	1645.5	1657.3	1669.0
35°	1516.2	1522.1	1519.2	1525.1	1533.9	1530.9	1530.9	1528.0	1522.1	1528.0	1533.9
37.5°	1392.8	1384.0	1384.0	1392.8	1398.7	1386.9	1392.8	1386.9	1386.9	1389.9	1389.9
40°	1263.5	1254.7	1263.5	1266.5	1269.4	1263.5	1260.6	1254.7	1245.9	1248.8	1243.0
42.5°	1154.8	1148.9	1151.9	1151.9	1154.8	1148.9	1151.9	1140.1	1131.3	1125.4	1116.6
45°	1066.7	1057.8	1066.7	1060.8	1060.8	1057.8	1054.9	1049.0	1037.3	1028.5	1013.8
47.5°	984.4	984.4	987.3	987.3	987.3	981.4	981.4	969.7	957.9	946.2	925.6
50°	916.8	910.9	922.7	922.7	913.9	910.9	913.9	899.2	890.4	875.7	855.1
52.5°	843.3	843.3	846.3	846.3	843.3	837.5	840.4	828.6	819.8	805.1	784.6
55°	752.2	746.4	755.2	755.2	752.2	749.3	752.2	743.4	734.6	722.9	705.2
57.5°	649.4	646.5	652.3	655.3	649.4	649.4	652.3	643.5	640.6	628.8	611.2
60°	573.0	570.1	575.9	578.9	573.0	573.0	573.0	561.2	555.4	543.6	531.9
62.5°	520.1	517.2	523.0	520.1	517.2	514.2	517.2	505.4	499.5	487.8	476.0
65°	458.4	461.3	464.3	464.3	461.3	458.4	458.4	452.5	446.6	434.9	420.2
67.5°	399.6	399.6	402.6	405.5	402.6	402.6	402.6	393.8	387.9	379.1	361.4
70°	337.9	335.0	343.8	343.8	337.9	340.9	337.9	335.0	329.1	317.4	302.7
72.5°	273.3	273.3	276.2	276.2	273.3	273.3	273.3	270.3	261.5	255.6	241.0
75°	211.6	211.6	214.5	217.4	211.6	211.6	214.5	208.6	202.8	193.9	185.1
77.5°	158.7	155.7	158.7	158.7	155.7	155.7	155.7	152.8	149.9	141.0	132.2
80°	111.7	108.7	111.7	111.7	111.7	108.7	108.7	105.8	105.8	99.9	91.1
82.5°	76.4	73.5	76.4	76.4	76.4	73.5	73.5	73.5	70.5	67.6	61.7
85°	50.0	47.0	47.0	50.0	47.0	47.0	47.0	47.0	44.1	41.1	38.2
87.5°	23.5	23.5	23.5	23.5	23.5	23.5	23.5	20.6	20.6	20.6	17.6
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: P251655

CATALOG NUMBER: LD4B50D010TE EU4B30509035 4LBSW1H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2
2.5°	2250.9	2245.0	2262.6	2256.7	2259.7	2245.0	2268.5	2256.7	2271.4	2256.7	2286.1
5°	2212.7	2206.8	2233.2	2230.3	2233.2	2221.5	2247.9	2245.0	2262.6	2250.9	2283.2
7.5°	2171.5	2165.6	2195.0	2198.0	2203.8	2192.1	2227.3	2227.3	2245.0	2242.0	2277.3
10°	2124.5	2127.4	2156.8	2162.7	2174.5	2168.6	2200.9	2209.7	2233.2	2230.3	2274.4
12.5°	2080.4	2080.4	2118.6	2130.4	2139.2	2136.3	2174.5	2186.2	2212.7	2218.5	2259.7
15°	2036.3	2039.3	2074.5	2092.2	2103.9	2101.0	2142.1	2156.8	2189.1	2192.1	2242.0
17.5°	2001.1	1998.1	2036.3	2051.0	2068.7	2065.7	2109.8	2127.4	2159.8	2168.6	2215.6
20°	1971.7	1968.8	2004.0	2021.7	2033.4	2030.5	2074.5	2095.1	2124.5	2130.4	2177.4
22.5°	1936.4	1930.6	1965.8	1980.5	1992.3	1989.3	2027.5	2042.2	2071.6	2077.5	2121.6
25°	1895.3	1889.4	1921.7	1930.6	1939.4	1933.5	1965.8	1974.6	1998.1	2004.0	2048.1
27.5°	1848.3	1833.6	1860.0	1860.0	1865.9	1857.1	1880.6	1889.4	1910.0	1910.0	1951.1
30°	1774.8	1754.3	1768.9	1766.0	1768.9	1757.2	1771.9	1774.8	1789.5	1786.6	1816.0
32.5°	1672.0	1642.6	1651.4	1642.6	1633.8	1616.1	1633.8	1627.9	1639.7	1627.9	1654.3
35°	1530.9	1501.5	1498.6	1486.9	1478.0	1463.3	1463.3	1448.7	1451.6	1442.8	1460.4
37.5°	1378.1	1339.9	1334.1	1310.5	1295.9	1278.2	1278.2	1266.5	1251.8	1245.9	1260.6
40°	1228.3	1187.1	1172.4	1134.2	1119.5	1101.9	1090.2	1075.5	1069.6	1046.1	1057.8
42.5°	1099.0	1054.9	1022.6	981.4	966.8	940.3	922.7	905.0	896.2	869.8	881.5
45°	990.3	937.4	902.1	849.2	828.6	799.3	772.8	752.2	731.7	719.9	714.0
47.5°	899.2	843.3	796.3	737.6	705.2	678.8	643.5	623.0	596.5	581.8	573.0
50°	822.8	761.1	708.2	640.6	608.3	578.9	537.7	505.4	481.9	458.4	452.5
52.5°	755.2	690.5	631.8	555.4	517.2	481.9	437.8	402.6	382.0	355.6	352.6
55°	675.8	620.0	555.4	476.0	437.8	402.6	355.6	320.3	293.8	276.2	270.3
57.5°	590.6	537.7	476.0	396.7	358.5	320.3	276.2	243.9	220.4	205.7	202.8
60°	511.3	461.3	402.6	323.2	285.0	252.7	205.7	173.4	152.8	141.0	135.2
62.5°	452.5	405.5	349.7	276.2	241.0	208.6	164.6	135.2	117.5	105.8	99.9
65°	396.7	349.7	299.7	232.1	202.8	173.4	132.2	105.8	88.2	76.4	70.5
67.5°	337.9	296.8	249.8	193.9	164.6	141.0	105.8	82.3	67.6	58.8	52.9
70°	279.2	241.0	202.8	155.7	135.2	111.7	82.3	64.6	50.0	44.1	38.2
72.5°	220.4	191.0	158.7	120.5	102.8	88.2	64.6	47.0	38.2	32.3	26.4
75°	164.6	144.0	117.5	91.1	76.4	64.6	47.0	35.3	29.4	23.5	20.6
77.5°	117.5	99.9	82.3	61.7	55.8	47.0	32.3	26.4	20.6	14.7	11.8
80°	79.3	70.5	55.8	44.1	35.3	32.3	23.5	17.6	11.8	8.8	8.8
82.5°	52.9	44.1	35.3	26.4	23.5	20.6	14.7	11.8	8.8	5.9	5.9
85°	32.3	26.4	20.6	14.7	14.7	11.8	8.8	5.9	2.9	2.9	2.9
87.5°	14.7	11.8	8.8	5.9	5.9	2.9	2.9	2.9	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: P251655

CATALOG NUMBER: LD4B50D010TE EU4B30509035 4LBSW1H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2
2.5°	2309.6	2292.0	2280.2	2294.9	2300.8	2292.0	2300.8	2315.5	2330.2	2333.1	2292.0
5°	2312.6	2294.9	2289.1	2306.7	2309.6	2306.7	2315.5	2336.1	2353.7	2359.6	2318.4
7.5°	2312.6	2300.8	2297.9	2318.4	2321.4	2318.4	2333.1	2356.6	2374.3	2386.0	2344.9
10°	2306.7	2300.8	2303.7	2321.4	2327.3	2327.3	2347.8	2374.3	2391.9	2403.7	2362.5
12.5°	2297.9	2297.9	2297.9	2318.4	2324.3	2327.3	2344.9	2380.1	2391.9	2409.5	2368.4
15°	2283.2	2283.2	2283.2	2303.7	2312.6	2312.6	2333.1	2365.5	2380.1	2397.8	2356.6
17.5°	2256.7	2256.7	2259.7	2277.3	2286.1	2286.1	2306.7	2341.9	2350.8	2371.3	2330.2
20°	2218.5	2218.5	2221.5	2239.1	2247.9	2242.0	2268.5	2297.9	2306.7	2324.3	2283.2
22.5°	2162.7	2162.7	2162.7	2180.3	2186.2	2183.3	2209.7	2236.2	2236.2	2259.7	2215.6
25°	2080.4	2086.3	2080.4	2098.1	2103.9	2101.0	2124.5	2148.0	2142.1	2168.6	2124.5
27.5°	1980.5	1977.6	1977.6	1992.3	1992.3	1989.3	2007.0	2033.4	2027.5	2045.2	2004.0
30°	1842.4	1851.2	1836.5	1857.1	1848.3	1842.4	1854.2	1877.7	1868.9	1883.5	1851.2
32.5°	1683.7	1672.0	1672.0	1672.0	1677.9	1663.2	1674.9	1686.7	1677.9	1692.5	1657.3
35°	1475.1	1478.0	1469.2	1472.2	1475.1	1457.5	1469.2	1481.0	1469.2	1478.0	1445.7
37.5°	1266.5	1269.4	1248.8	1260.6	1248.8	1243.0	1254.7	1260.6	1248.8	1257.7	1222.4
40°	1057.8	1052.0	1049.0	1049.0	1052.0	1037.3	1046.1	1054.9	1046.1	1052.0	1019.6
42.5°	875.7	872.7	866.8	869.8	861.0	858.0	861.0	869.8	861.0	866.8	843.3
45°	717.0	711.1	702.3	705.2	705.2	690.5	699.4	705.2	696.4	699.4	678.8
47.5°	570.1	561.2	561.2	558.3	558.3	552.4	561.2	558.3	549.5	555.4	534.8
50°	443.7	437.8	437.8	437.8	437.8	429.0	432.0	437.8	429.0	429.0	417.3
52.5°	346.7	337.9	332.0	332.0	332.0	329.1	329.1	332.0	323.2	323.2	320.3
55°	261.5	258.6	249.8	249.8	249.8	241.0	243.9	243.9	241.0	241.0	232.1
57.5°	193.9	185.1	179.2	179.2	173.4	173.4	170.4	173.4	167.5	167.5	161.6
60°	129.3	123.4	120.5	117.5	117.5	114.6	117.5	114.6	114.6	111.7	108.7
62.5°	94.0	88.2	82.3	82.3	82.3	79.3	79.3	79.3	79.3	79.3	76.4
65°	67.6	61.7	61.7	58.8	58.8	55.8	55.8	55.8	55.8	55.8	52.9
67.5°	47.0	44.1	41.1	41.1	41.1	41.1	41.1	41.1	38.2	38.2	38.2
70°	35.3	32.3	29.4	29.4	29.4	29.4	29.4	26.4	29.4	29.4	26.4
72.5°	23.5	23.5	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6
75°	17.6	17.6	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
77.5°	11.8	11.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
80°	8.8	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
82.5°	5.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
85°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	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: P251655

CATALOG NUMBER: LD4B50D010TE EU4B30509035 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2	2280.2
2.5°	2336.1	2333.1	2327.3	2336.1	2312.6	2303.7	2300.8	2327.3
5°	2368.4	2362.5	2362.5	2371.3	2344.9	2339.0	2333.1	2362.5
7.5°	2397.8	2391.9	2391.9	2400.7	2377.2	2371.3	2365.5	2394.8
10°	2415.4	2415.4	2415.4	2421.3	2400.7	2394.8	2391.9	2421.3
12.5°	2424.2	2424.2	2421.3	2433.0	2406.6	2406.6	2400.7	2430.1
15°	2412.5	2412.5	2412.5	2421.3	2397.8	2391.9	2391.9	2415.4
17.5°	2383.1	2383.1	2380.1	2389.0	2362.5	2362.5	2359.6	2386.0
20°	2339.0	2339.0	2333.1	2344.9	2318.4	2309.6	2306.7	2333.1
22.5°	2268.5	2265.5	2262.6	2268.5	2245.0	2239.1	2236.2	2259.7
25°	2177.4	2174.5	2168.6	2174.5	2148.0	2139.2	2139.2	2156.8
27.5°	2048.1	2048.1	2039.3	2048.1	2018.7	2015.8	2012.8	2033.4
30°	1889.4	1877.7	1871.8	1883.5	1854.2	1854.2	1848.3	1868.9
32.5°	1692.5	1680.8	1677.9	1683.7	1657.3	1648.5	1660.2	1672.0
35°	1466.3	1469.2	1457.5	1457.5	1434.0	1436.9	1439.8	1457.5
37.5°	1248.8	1243.0	1240.0	1243.0	1225.3	1219.5	1213.6	1231.2
40°	1046.1	1031.4	1028.5	1028.5	1013.8	1010.8	1013.8	1022.6
42.5°	855.1	852.2	840.4	846.3	831.6	837.5	834.5	834.5
45°	690.5	693.5	681.7	690.5	678.8	670.0	670.0	675.8
47.5°	546.6	546.6	543.6	543.6	534.8	537.7	531.9	540.7
50°	423.1	423.1	417.3	420.2	414.3	414.3	411.4	414.3
52.5°	323.2	320.3	320.3	317.4	311.5	314.4	317.4	311.5
55°	235.1	238.0	232.1	235.1	229.2	232.1	229.2	232.1
57.5°	161.6	164.6	158.7	164.6	158.7	161.6	158.7	158.7
60°	111.7	111.7	108.7	111.7	108.7	108.7	105.8	111.7
62.5°	76.4	76.4	76.4	76.4	76.4	73.5	76.4	76.4
65°	55.8	52.9	52.9	52.9	52.9	52.9	52.9	52.9
67.5°	38.2	38.2	38.2	38.2	38.2	38.2	38.2	38.2
70°	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4
72.5°	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6
75°	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
77.5°	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
80°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
82.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
85°	2.9	2.9	2.9	0.0	2.9	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)