

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: P251804

Luminaire Tested: **LD4B50D010TE EU4B30508030 4LBLWW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251804  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-12)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B50D010TE EU4B30508030 4LBLWW1H  
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

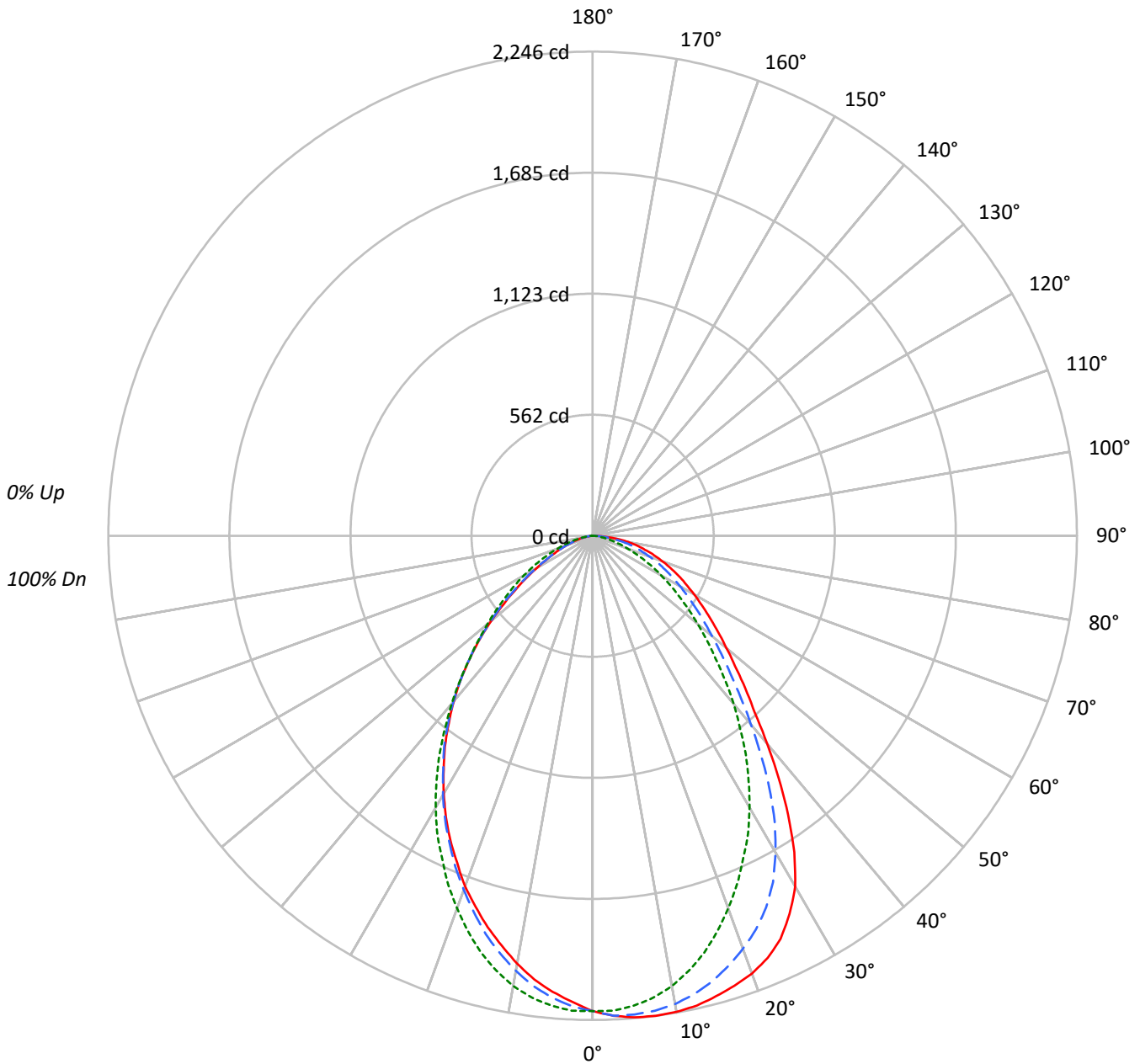
Lumens per Lamp: N/A  
Luminaire Lumens: 3976.0 lumens  
Efficiency: N/A  
Efficacy: 67.7 lumens/watt  
Spacing Criteria (0/90/45): 1.12 / 1.03 / 1.12  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 58.77  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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: P251804

CATALOG NUMBER: LD4B50D010TE EU4B30508030 4LBLWW1H

### Luminous Intensity Polar Plot





TEST NUMBER: P251804

CATALOG NUMBER: LD4B50D010TE EU4B30508030 4LBLWW1H

**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	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88																			
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76																			
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67																			
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59																			
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52																			
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47																			
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42																			
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38																			
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35																			
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	214905	214905	214905
5°	219375	214063	207753
10°	221911	209828	199417
15°	223162	201943	189624
20°	224123	190697	179433
25°	221798	177655	167805
30°	211498	163772	155377
35°	188087	147314	142067
40°	160122	129474	127324
45°	137937	111281	110813
50°	122932	96186	93093
55°	112975	83002	74354
60°	105800	71417	58182
65°	101697	60234	45383
70°	97623	48327	36730
75°	94514	38333	28091
80°	95186	26659	17118
85°	79616	19010	7604



TEST NUMBER: P251804

CATALOG NUMBER: LD4B50D010TE EU4B30508030 4LBLWW1H

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	206.4	5.2
10°-20°	567.5	14.3
20°-30°	793.6	20.0
30°-40°	815.7	20.5
40°-50°	662.1	16.7
50°-60°	466.2	11.7
60°-70°	287.0	7.2
70°-80°	143.4	3.6
80°-90°	34.1	0.9
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°	1567.5	39.4
0°-40°	2383.3	59.9
0°-60°	3511.6	88.3
0°-90°	3976.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3976.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2205	2205	2205	2205	2205	
5°	2242	2229	2188	2151	2124	214
15°	2212	2141	2002	1913	1879	625
25°	2063	1903	1652	1571	1560	943
35°	1581	1428	1238	1201	1194	983
45°	1001	902	807	807	804	778
55°	665	584	488	448	438	598
65°	441	370	261	200	197	436
75°	251	197	102	75	75	268
85°	71	48	17	10	7	83
90°	0	0	0	0	0	



TEST NUMBER: P251804

CATALOG NUMBER: LD4B50D010TE EU4B30508030 4LBLWW1H

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1
2.5°	2228.8	2232.2	2222.0	2232.2	2218.6	2225.4	2228.8	2222.0	2215.2	2228.8	2228.8
5°	2242.4	2242.4	2232.2	2245.8	2228.8	2232.2	2239.0	2228.8	2218.6	2232.2	2228.8
7.5°	2245.8	2245.8	2232.2	2245.8	2228.8	2232.2	2235.6	2225.4	2215.2	2225.4	2222.0
10°	2242.4	2239.0	2228.8	2242.4	2225.4	2225.4	2228.8	2218.6	2201.7	2211.8	2205.1
12.5°	2232.2	2232.2	2218.6	2232.2	2208.5	2208.5	2211.8	2198.3	2184.7	2184.7	2177.9
15°	2211.8	2211.8	2198.3	2208.5	2188.1	2188.1	2184.7	2171.1	2154.2	2154.2	2140.6
17.5°	2188.1	2188.1	2174.5	2184.7	2161.0	2161.0	2157.6	2137.2	2113.5	2110.1	2093.1
20°	2161.0	2161.0	2144.0	2150.8	2123.6	2123.6	2120.3	2096.5	2069.4	2062.6	2038.8
22.5°	2120.3	2120.3	2103.3	2106.7	2079.5	2076.2	2072.8	2045.6	2018.5	2008.3	1977.8
25°	2062.6	2059.2	2045.6	2045.6	2018.5	2011.7	2004.9	1977.8	1950.6	1930.3	1903.1
27.5°	1977.8	1981.2	1964.2	1967.6	1933.7	1926.9	1923.5	1889.6	1859.0	1838.7	1811.5
30°	1879.4	1869.2	1852.3	1852.3	1825.1	1821.7	1814.9	1784.4	1750.5	1726.7	1696.2
32.5°	1740.3	1736.9	1719.9	1719.9	1689.4	1689.4	1675.8	1645.3	1614.8	1601.2	1570.7
35°	1580.9	1577.5	1563.9	1563.9	1536.8	1540.2	1526.6	1502.8	1472.3	1451.9	1428.2
37.5°	1418.0	1414.6	1401.1	1404.5	1380.7	1380.7	1370.5	1346.8	1323.0	1312.9	1282.3
40°	1258.6	1255.2	1238.2	1248.4	1228.1	1221.3	1217.9	1200.9	1173.8	1160.2	1143.2
42.5°	1112.7	1116.1	1099.1	1105.9	1089.0	1082.2	1078.8	1065.2	1044.9	1031.3	1014.3
45°	1000.8	994.0	987.2	987.2	970.2	966.8	963.4	946.5	932.9	919.3	902.4
47.5°	895.6	888.8	882.0	885.4	871.8	868.5	861.7	848.1	831.1	824.4	807.4
50°	810.8	807.4	797.2	797.2	783.6	780.3	773.5	763.3	746.3	736.2	722.6
52.5°	732.8	732.8	722.6	719.2	709.0	705.6	702.2	688.7	675.1	661.5	647.9
55°	664.9	661.5	654.7	654.7	641.2	637.8	634.4	620.8	607.2	597.1	583.5
57.5°	600.5	600.5	593.7	593.7	583.5	576.7	576.7	563.1	546.2	539.4	522.4
60°	542.8	542.8	536.0	536.0	525.8	525.8	519.0	505.5	495.3	481.7	468.2
62.5°	488.5	491.9	485.1	481.7	471.5	468.2	468.2	458.0	441.0	430.8	417.3
65°	441.0	437.6	434.2	430.8	420.7	417.3	417.3	403.7	393.5	379.9	369.8
67.5°	390.1	390.1	383.3	383.3	376.6	373.2	366.4	356.2	346.0	335.8	325.7
70°	342.6	342.6	339.2	339.2	329.1	325.7	322.3	312.1	301.9	291.7	278.2
72.5°	298.5	295.1	291.7	291.7	285.0	281.6	278.2	268.0	257.8	247.6	237.5
75°	251.0	251.0	247.6	247.6	240.9	237.5	237.5	230.7	217.1	210.3	196.8
77.5°	210.3	210.3	206.9	206.9	200.2	200.2	196.8	186.6	179.8	169.6	162.8
80°	169.6	166.2	166.2	162.8	156.1	156.1	152.7	149.3	139.1	132.3	122.1
82.5°	118.7	118.7	118.7	115.3	111.9	111.9	108.6	101.8	95.0	91.6	81.4
85°	71.2	71.2	67.8	64.5	67.8	64.5	61.1	57.7	54.3	50.9	47.5
87.5°	30.5	30.5	27.1	27.1	27.1	27.1	27.1	23.7	20.4	20.4	17.0
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: P251804

CATALOG NUMBER: LD4B50D010TE EU4B30508030 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1
2.5°	2208.5	2218.6	2215.2	2211.8	2205.1	2205.1	2205.1	2201.7	2205.1	2205.1	2198.3
5°	2208.5	2215.2	2211.8	2205.1	2198.3	2198.3	2194.9	2188.1	2188.1	2188.1	2174.5
7.5°	2198.3	2205.1	2194.9	2188.1	2181.3	2174.5	2174.5	2164.4	2164.4	2161.0	2147.4
10°	2177.9	2181.3	2167.7	2161.0	2150.8	2147.4	2140.6	2127.0	2123.6	2120.3	2106.7
12.5°	2147.4	2150.8	2133.8	2120.3	2106.7	2103.3	2096.5	2079.5	2072.8	2066.0	2049.0
15°	2103.3	2103.3	2082.9	2066.0	2052.4	2049.0	2032.0	2015.1	2008.3	2001.5	1977.8
17.5°	2052.4	2049.0	2021.9	2004.9	1987.9	1981.2	1964.2	1943.8	1930.3	1923.5	1903.1
20°	1998.1	1987.9	1957.4	1940.5	1920.1	1909.9	1893.0	1865.8	1852.3	1838.7	1818.3
22.5°	1933.7	1920.1	1886.2	1862.4	1842.1	1831.9	1808.2	1784.4	1764.0	1750.5	1726.7
25°	1855.6	1838.7	1801.4	1770.8	1753.9	1743.7	1719.9	1692.8	1672.5	1652.1	1631.7
27.5°	1764.0	1743.7	1706.4	1675.8	1658.9	1641.9	1625.0	1594.4	1577.5	1560.5	1536.8
30°	1652.1	1628.4	1594.4	1567.3	1546.9	1533.4	1513.0	1485.9	1465.5	1455.3	1431.6
32.5°	1530.0	1502.8	1472.3	1445.2	1435.0	1418.0	1401.1	1373.9	1357.0	1346.8	1329.8
35°	1394.3	1373.9	1340.0	1319.6	1302.7	1295.9	1282.3	1255.2	1248.4	1238.2	1217.9
37.5°	1251.8	1234.8	1211.1	1194.1	1180.6	1173.8	1160.2	1143.2	1133.1	1122.9	1112.7
40°	1119.5	1105.9	1085.6	1072.0	1055.0	1044.9	1044.9	1024.5	1017.7	1017.7	1007.5
42.5°	990.6	983.8	966.8	946.5	943.1	932.9	929.5	919.3	912.6	909.2	905.8
45°	882.0	871.8	854.9	844.7	834.5	834.5	824.4	814.2	810.8	807.4	804.0
47.5°	787.0	773.5	759.9	749.7	742.9	739.5	729.4	722.6	719.2	719.2	715.8
50°	702.2	692.1	678.5	668.3	661.5	654.7	647.9	641.2	637.8	634.4	634.4
52.5°	631.0	617.4	603.8	593.7	583.5	580.1	573.3	566.5	563.1	559.7	556.4
55°	566.5	556.4	539.4	529.2	519.0	519.0	508.9	498.7	491.9	488.5	485.1
57.5°	505.5	495.3	478.3	468.2	461.4	454.6	447.8	441.0	434.2	427.4	420.7
60°	451.2	441.0	424.1	410.5	407.1	400.3	393.5	379.9	373.2	366.4	359.6
62.5°	400.3	386.7	373.2	359.6	356.2	349.4	339.2	329.1	318.9	312.1	301.9
65°	352.8	342.6	325.7	315.5	305.3	301.9	291.7	278.2	268.0	261.2	251.0
67.5°	308.7	295.1	278.2	268.0	261.2	254.4	244.3	234.1	223.9	213.7	203.5
70°	264.6	254.4	237.5	227.3	220.5	213.7	203.5	190.0	179.8	169.6	162.8
72.5°	223.9	210.3	196.8	186.6	179.8	173.0	162.8	152.7	142.5	135.7	125.5
75°	186.6	173.0	162.8	149.3	145.9	139.1	128.9	118.7	108.6	101.8	95.0
77.5°	149.3	139.1	125.5	118.7	111.9	105.2	98.4	88.2	81.4	71.2	64.5
80°	111.9	101.8	91.6	84.8	78.0	74.6	67.8	61.1	54.3	47.5	44.1
82.5°	74.6	67.8	57.7	54.3	50.9	47.5	40.7	37.3	33.9	30.5	27.1
85°	40.7	37.3	33.9	27.1	27.1	23.7	20.4	20.4	17.0	17.0	13.6
87.5°	17.0	13.6	13.6	10.2	10.2	10.2	6.8	6.8	6.8	3.4	3.4
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: P251804

CATALOG NUMBER: LD4B50D010TE EU4B30508030 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1
2.5°	2201.7	2188.1	2188.1	2188.1	2177.9	2181.3	2184.7	2188.1	2184.7	2174.5	2184.7
5°	2177.9	2164.4	2164.4	2157.6	2150.8	2150.8	2150.8	2154.2	2150.8	2140.6	2144.0
7.5°	2147.4	2130.4	2127.0	2120.3	2113.5	2110.1	2110.1	2110.1	2106.7	2093.1	2099.9
10°	2099.9	2082.9	2076.2	2072.8	2062.6	2059.2	2055.8	2052.4	2049.0	2035.4	2042.2
12.5°	2042.2	2028.7	2015.1	2011.7	2001.5	1994.7	1991.3	1991.3	1984.6	1971.0	1977.8
15°	1974.4	1954.0	1943.8	1937.1	1926.9	1920.1	1913.3	1916.7	1913.3	1899.7	1903.1
17.5°	1893.0	1872.6	1862.4	1859.0	1845.5	1838.7	1835.3	1835.3	1831.9	1818.3	1821.7
20°	1804.8	1784.4	1777.6	1770.8	1764.0	1757.3	1753.9	1750.5	1747.1	1733.5	1743.7
22.5°	1716.6	1692.8	1682.6	1682.6	1669.1	1665.7	1662.3	1665.7	1662.3	1648.7	1655.5
25°	1625.0	1601.2	1594.4	1584.3	1577.5	1574.1	1574.1	1574.1	1570.7	1563.9	1570.7
27.5°	1523.2	1506.2	1496.0	1492.7	1485.9	1482.5	1479.1	1482.5	1482.5	1472.3	1479.1
30°	1421.4	1407.8	1401.1	1397.7	1387.5	1384.1	1387.5	1387.5	1387.5	1377.3	1387.5
32.5°	1319.6	1309.5	1306.1	1295.9	1289.1	1289.1	1289.1	1292.5	1289.1	1282.3	1292.5
35°	1217.9	1204.3	1200.9	1197.5	1197.5	1190.7	1197.5	1194.1	1200.9	1190.7	1197.5
37.5°	1109.3	1102.5	1099.1	1099.1	1092.4	1095.7	1095.7	1095.7	1102.5	1092.4	1099.1
40°	1007.5	1000.8	1000.8	1000.8	997.4	997.4	997.4	1000.8	1004.2	997.4	1004.2
42.5°	905.8	902.4	902.4	899.0	895.6	899.0	902.4	902.4	905.8	899.0	902.4
45°	807.4	804.0	807.4	804.0	804.0	800.6	804.0	807.4	807.4	804.0	804.0
47.5°	715.8	715.8	712.4	712.4	712.4	712.4	712.4	712.4	712.4	705.6	712.4
50°	634.4	627.6	631.0	627.6	627.6	624.2	624.2	620.8	617.4	614.0	614.0
52.5°	556.4	549.6	549.6	546.2	542.8	542.8	539.4	536.0	532.6	525.8	525.8
55°	481.7	474.9	471.5	468.2	464.8	461.4	458.0	454.6	447.8	444.4	444.4
57.5°	413.9	407.1	400.3	400.3	393.5	390.1	383.3	376.6	373.2	366.4	366.4
60°	352.8	346.0	335.8	332.5	329.1	322.3	312.1	308.7	305.3	298.5	301.9
62.5°	295.1	285.0	274.8	271.4	268.0	261.2	254.4	247.6	244.3	247.6	247.6
65°	240.9	230.7	223.9	217.1	213.7	206.9	203.5	200.2	200.2	200.2	203.5
67.5°	193.4	183.2	176.4	173.0	166.2	162.8	162.8	162.8	162.8	162.8	162.8
70°	152.7	145.9	139.1	132.3	132.3	128.9	128.9	128.9	128.9	128.9	128.9
72.5°	115.3	108.6	105.2	105.2	101.8	101.8	101.8	101.8	98.4	98.4	101.8
75°	84.8	81.4	78.0	78.0	78.0	74.6	74.6	74.6	74.6	74.6	74.6
77.5°	61.1	57.7	57.7	54.3	54.3	54.3	54.3	54.3	54.3	50.9	50.9
80°	40.7	37.3	37.3	37.3	37.3	33.9	33.9	33.9	33.9	33.9	33.9
82.5°	23.7	23.7	23.7	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4
85°	13.6	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
87.5°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	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: P251804

CATALOG NUMBER: LD4B50D010TE EU4B30508030 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1	2205.1
2.5°	2164.4	2177.9	2181.3	2171.1	2174.5	2167.7	2171.1	2164.4
5°	2127.0	2137.2	2140.6	2133.8	2133.8	2127.0	2130.4	2123.6
7.5°	2079.5	2089.7	2093.1	2086.3	2086.3	2079.5	2079.5	2076.2
10°	2025.3	2028.7	2035.4	2025.3	2028.7	2021.9	2021.9	2015.1
12.5°	1957.4	1964.2	1971.0	1960.8	1960.8	1957.4	1957.4	1947.2
15°	1886.2	1893.0	1896.4	1889.6	1889.6	1886.2	1882.8	1879.4
17.5°	1811.5	1814.9	1821.7	1811.5	1818.3	1811.5	1811.5	1804.8
20°	1726.7	1736.9	1740.3	1730.1	1733.5	1730.1	1730.1	1730.1
22.5°	1645.3	1652.1	1655.5	1648.7	1652.1	1645.3	1648.7	1641.9
25°	1560.5	1563.9	1567.3	1560.5	1567.3	1563.9	1560.5	1560.5
27.5°	1472.3	1475.7	1479.1	1472.3	1479.1	1475.7	1479.1	1472.3
30°	1377.3	1384.1	1390.9	1384.1	1387.5	1384.1	1384.1	1380.7
32.5°	1282.3	1289.1	1295.9	1289.1	1295.9	1289.1	1292.5	1285.7
35°	1194.1	1197.5	1200.9	1194.1	1197.5	1197.5	1197.5	1194.1
37.5°	1095.7	1102.5	1102.5	1099.1	1105.9	1102.5	1102.5	1095.7
40°	1000.8	1004.2	1007.5	1000.8	1004.2	1000.8	1004.2	1000.8
42.5°	902.4	909.2	912.6	905.8	905.8	905.8	902.4	905.8
45°	800.6	807.4	814.2	804.0	807.4	807.4	807.4	804.0
47.5°	709.0	709.0	712.4	709.0	712.4	705.6	712.4	709.0
50°	614.0	614.0	620.8	614.0	614.0	614.0	614.0	614.0
52.5°	522.4	525.8	525.8	519.0	522.4	519.0	522.4	519.0
55°	437.6	437.6	441.0	437.6	437.6	437.6	437.6	437.6
57.5°	363.0	366.4	366.4	363.0	366.4	363.0	363.0	363.0
60°	301.9	301.9	301.9	298.5	301.9	298.5	301.9	298.5
62.5°	244.3	247.6	247.6	244.3	247.6	244.3	244.3	244.3
65°	200.2	200.2	200.2	200.2	200.2	200.2	200.2	196.8
67.5°	159.4	159.4	162.8	159.4	162.8	162.8	162.8	162.8
70°	128.9	128.9	128.9	128.9	128.9	128.9	128.9	128.9
72.5°	98.4	98.4	101.8	98.4	98.4	98.4	98.4	98.4
75°	74.6	74.6	74.6	74.6	74.6	71.2	71.2	74.6
77.5°	50.9	50.9	50.9	50.9	50.9	50.9	50.9	54.3
80°	33.9	33.9	33.9	33.9	30.5	30.5	33.9	30.5
82.5°	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
85°	10.2	10.2	6.8	6.8	6.8	6.8	6.8	6.8
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)