

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: P251579

Luminaire Tested: **LD4B50D010TE EU4B30509050 4LBSW1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251579  
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 EU4B30509050 4LBSW1LI  
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

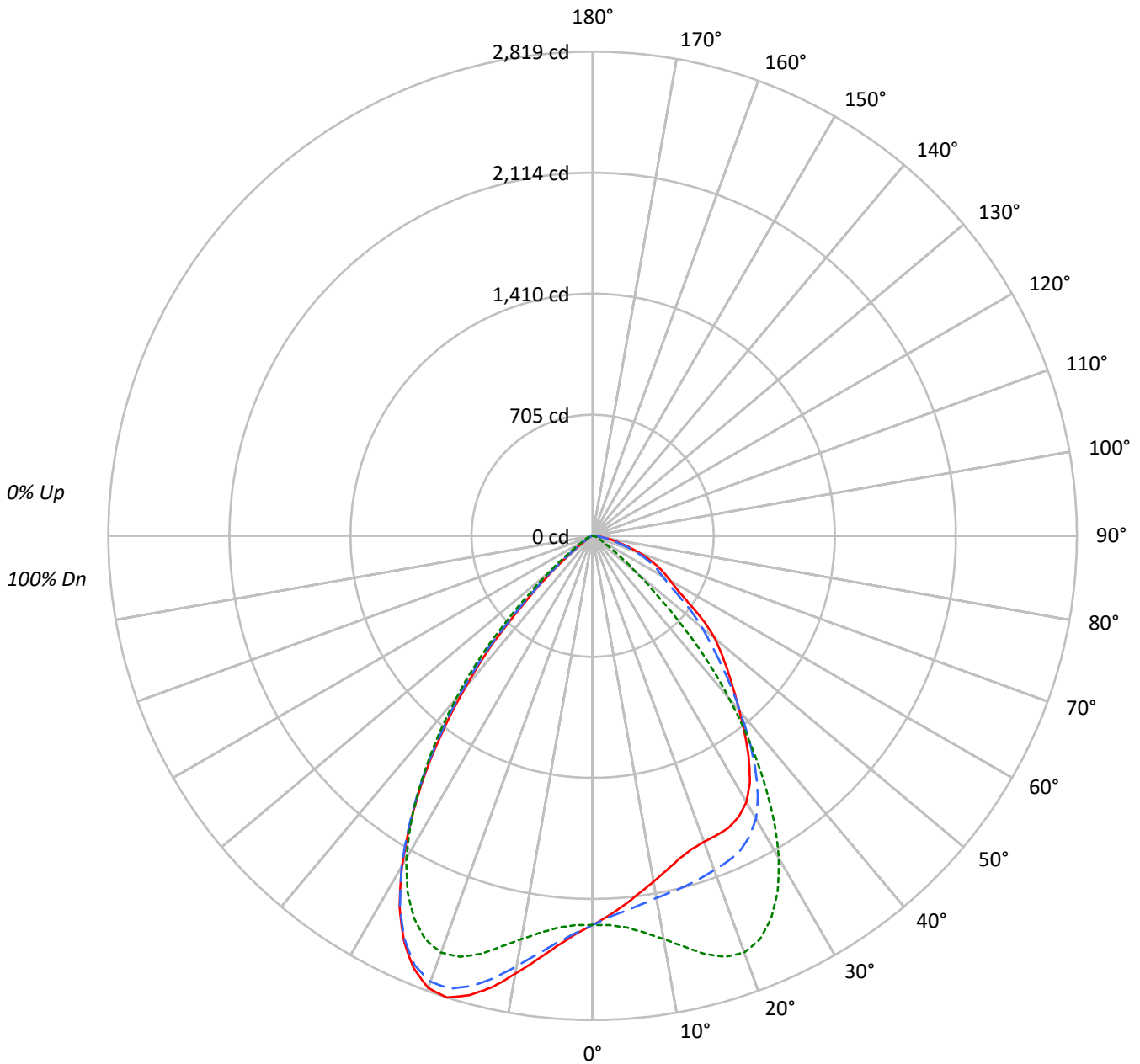
Lumens per Lamp: N/A  
Luminaire Lumens: 4181.0 lumens  
Efficiency: N/A  
Efficacy: 71.1 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.19  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 58.77  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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



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### Luminous Intensity Polar Plot





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**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°	220811	220811	220811
5°	210942	223963	234675
10°	202258	235924	256122
15°	196364	254258	279331
20°	196629	267807	290499
25°	201646	264306	279575
30°	201381	243987	249636
35°	188622	206218	203399
40°	168964	157298	146751
45°	153277	99883	81938
50°	140808	50671	34978
55°	115592	22615	11554
60°	101473	12689	6335
65°	95494	9547	4774
70°	81752	7580	4217
75°	62357	5573	3351
80°	44843	3311	1684
85°	33099	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	220.1	5.3
10°-20°	685.9	16.4
20°-30°	1061.2	25.4
30°-40°	1045.6	25.0
40°-50°	642.0	15.4
50°-60°	285.5	6.8
60°-70°	159.4	3.8
70°-80°	69.0	1.7
80°-90°	12.3	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°	1967.2	47.0
0°-40°	3012.7	72.1
0°-60°	3940.2	94.2
0°-90°	4181.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4181.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2266	2266	2266	2266	2266	
5°	2156	2192	2289	2378	2399	202
15°	1946	2109	2520	2712	2768	552
25°	1875	2026	2458	2591	2600	860
35°	1585	1650	1733	1727	1710	984
45°	1112	1056	725	633	594	861
55°	680	615	133	77	68	625
65°	414	373	41	24	21	406
75°	166	142	15	9	9	182
85°	30	24	0	0	0	37
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°	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7
2.5°	2212.4	2212.4	2212.4	2212.4	2218.3	2209.5	2218.3	2218.3	2227.2	2230.2	2221.3
5°	2156.2	2153.3	2156.2	2156.2	2162.2	2159.2	2168.1	2174.0	2185.8	2191.7	2191.7
7.5°	2097.1	2097.1	2097.1	2103.0	2111.9	2108.9	2117.8	2126.7	2144.4	2156.2	2165.1
10°	2043.8	2040.9	2049.8	2052.7	2061.6	2061.6	2076.4	2085.2	2106.0	2129.6	2141.4
12.5°	1993.6	1990.6	1996.5	2005.4	2020.2	2020.2	2032.0	2046.8	2076.4	2103.0	2123.7
15°	1946.2	1949.2	1958.1	1964.0	1981.7	1981.7	1996.5	2014.3	2046.8	2079.3	2108.9
17.5°	1913.7	1916.7	1922.6	1931.4	1949.2	1949.2	1964.0	1984.7	2020.2	2055.7	2091.2
20°	1895.9	1898.9	1904.8	1913.7	1928.5	1931.4	1943.3	1966.9	1999.5	2037.9	2070.5
22.5°	1887.1	1893.0	1898.9	1904.8	1919.6	1919.6	1934.4	1952.1	1984.7	2023.1	2052.7
25°	1875.2	1881.2	1884.1	1893.0	1904.8	1904.8	1913.7	1934.4	1964.0	1996.5	2026.1
27.5°	1842.7	1848.6	1851.6	1860.5	1872.3	1869.3	1881.2	1895.9	1922.6	1952.1	1975.8
30°	1789.5	1792.4	1798.3	1801.3	1810.2	1810.2	1819.0	1833.8	1851.6	1878.2	1901.9
32.5°	1703.7	1709.6	1712.6	1715.5	1724.4	1721.4	1724.4	1733.3	1751.0	1774.7	1789.5
35°	1585.4	1597.2	1597.2	1603.1	1606.1	1603.1	1603.1	1615.0	1623.8	1641.6	1650.5
37.5°	1455.2	1464.1	1461.2	1467.1	1470.0	1461.2	1467.1	1470.0	1481.9	1490.7	1493.7
40°	1328.1	1331.0	1331.0	1331.0	1331.0	1328.1	1331.0	1334.0	1342.8	1342.8	1334.0
42.5°	1212.7	1215.7	1215.7	1209.7	1215.7	1212.7	1212.7	1212.7	1212.7	1200.9	1192.0
45°	1112.1	1115.1	1115.1	1112.1	1112.1	1106.2	1103.3	1100.3	1091.4	1076.6	1055.9
47.5°	1017.5	1023.4	1026.4	1020.4	1017.5	1011.6	1011.6	993.8	982.0	964.2	934.7
50°	928.7	934.7	934.7	928.7	928.7	919.9	911.0	905.1	887.3	866.6	831.1
52.5°	816.4	825.2	825.2	822.3	822.3	810.4	807.5	795.6	780.9	757.2	727.6
55°	680.3	692.1	689.2	686.2	680.3	680.3	680.3	671.4	662.5	644.8	615.2
57.5°	582.7	585.6	585.6	582.7	582.7	576.8	576.8	567.9	564.9	547.2	523.5
60°	520.6	520.6	523.5	520.6	517.6	514.7	511.7	505.8	496.9	485.1	467.3
62.5°	470.3	473.2	473.2	470.3	467.3	464.4	461.4	455.5	449.6	440.7	423.0
65°	414.1	420.0	417.0	414.1	411.1	408.2	408.2	402.3	396.3	390.4	372.7
67.5°	352.0	354.9	357.9	352.0	352.0	349.0	349.0	343.1	340.1	328.3	316.5
70°	286.9	289.9	289.9	286.9	286.9	283.9	283.9	281.0	278.0	269.2	257.3
72.5°	224.8	227.8	224.8	221.8	221.8	221.8	218.9	215.9	213.0	207.0	198.2
75°	165.6	165.6	168.6	165.6	162.7	162.7	159.7	159.7	153.8	150.8	142.0
77.5°	118.3	121.3	118.3	118.3	115.4	112.4	112.4	109.4	109.4	106.5	100.6
80°	79.9	79.9	82.8	79.9	76.9	79.9	76.9	73.9	73.9	71.0	65.1
82.5°	50.3	53.2	50.3	50.3	50.3	50.3	50.3	47.3	47.3	44.4	41.4
85°	29.6	29.6	29.6	29.6	29.6	29.6	29.6	26.6	26.6	26.6	23.7
87.5°	14.8	14.8	11.8	11.8	14.8	14.8	14.8	11.8	11.8	11.8	11.8
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°	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7
2.5°	2233.1	2236.1	2242.0	2250.9	2250.9	2245.0	2259.8	2259.8	2265.7	2268.6	2280.5
5°	2209.5	2215.4	2227.2	2242.0	2245.0	2242.0	2262.7	2271.6	2280.5	2289.3	2307.1
7.5°	2188.8	2200.6	2221.3	2242.0	2250.9	2250.9	2283.4	2295.3	2313.0	2330.7	2351.5
10°	2176.9	2194.7	2224.3	2256.8	2265.7	2274.5	2313.0	2336.7	2360.3	2384.0	2413.6
12.5°	2162.2	2194.7	2233.1	2274.5	2292.3	2304.1	2357.4	2386.9	2419.5	2449.1	2487.5
15°	2159.2	2197.6	2247.9	2301.2	2324.8	2342.6	2401.7	2443.1	2481.6	2520.0	2558.5
17.5°	2147.4	2194.7	2256.8	2316.0	2345.5	2369.2	2437.2	2487.5	2531.9	2570.3	2614.7
20°	2132.6	2185.8	2253.8	2318.9	2351.5	2375.1	2449.1	2496.4	2546.7	2582.2	2623.6
22.5°	2111.9	2165.1	2233.1	2298.2	2327.8	2348.5	2422.4	2463.8	2508.2	2543.7	2582.2
25°	2076.4	2126.7	2185.8	2239.1	2268.6	2286.4	2351.5	2389.9	2422.4	2457.9	2493.4
27.5°	2026.1	2064.5	2114.8	2153.3	2171.0	2188.8	2242.0	2274.5	2304.1	2333.7	2357.4
30°	1937.4	1966.9	2002.4	2035.0	2052.7	2055.7	2106.0	2123.7	2147.4	2168.1	2185.8
32.5°	1819.0	1842.7	1863.4	1881.2	1893.0	1895.9	1934.4	1940.3	1964.0	1964.0	1990.6
35°	1668.2	1680.0	1694.8	1694.8	1703.7	1694.8	1721.4	1727.4	1730.3	1733.3	1754.0
37.5°	1496.6	1502.6	1511.4	1493.7	1493.7	1484.8	1493.7	1499.6	1487.8	1487.8	1502.6
40°	1334.0	1322.1	1310.3	1292.6	1283.7	1265.9	1265.9	1251.1	1242.3	1236.4	1239.3
42.5°	1177.2	1150.6	1124.0	1085.5	1067.8	1050.0	1032.3	1011.6	1005.7	990.9	982.0
45°	1026.4	987.9	952.4	890.3	854.8	837.1	798.6	757.2	730.6	724.7	701.0
47.5°	899.2	843.0	783.8	709.9	674.4	641.8	585.6	550.2	514.7	496.9	482.1
50°	786.8	736.5	659.6	579.7	535.4	502.8	440.7	399.3	360.9	334.2	316.5
52.5°	689.2	633.0	562.0	470.3	425.9	390.4	322.4	275.1	242.5	215.9	195.2
55°	579.7	535.4	464.4	378.6	334.2	292.8	233.7	183.4	150.8	133.1	118.3
57.5°	499.9	461.4	393.4	310.6	269.2	230.7	171.6	130.1	103.5	85.8	76.9
60°	446.6	411.1	352.0	272.1	233.7	198.2	142.0	103.5	79.9	65.1	59.2
62.5°	402.3	366.8	313.5	239.6	207.0	171.6	121.3	85.8	65.1	53.2	44.4
65°	352.0	319.4	272.1	207.0	177.5	147.9	103.5	71.0	53.2	41.4	35.5
67.5°	298.7	269.2	227.8	171.6	147.9	124.2	82.8	59.2	44.4	35.5	29.6
70°	242.5	218.9	180.4	139.0	118.3	97.6	68.0	47.3	32.5	26.6	23.7
72.5°	186.3	165.6	139.0	106.5	88.7	73.9	50.3	35.5	26.6	20.7	17.7
75°	133.1	118.3	97.6	76.9	65.1	53.2	38.5	26.6	17.7	14.8	11.8
77.5°	91.7	82.8	68.0	53.2	44.4	38.5	26.6	17.7	14.8	11.8	8.9
80°	59.2	53.2	44.4	32.5	26.6	23.7	14.8	11.8	8.9	5.9	5.9
82.5°	35.5	32.5	26.6	17.7	14.8	11.8	8.9	5.9	5.9	3.0	3.0
85°	20.7	17.7	11.8	8.9	8.9	5.9	5.9	3.0	3.0	0.0	0.0
87.5°	8.9	5.9	5.9	3.0	3.0	3.0	3.0	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



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**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7
2.5°	2274.5	2289.3	2286.4	2295.3	2292.3	2292.3	2307.1	2301.2	2316.0	2316.0	2318.9
5°	2307.1	2327.8	2327.8	2342.6	2339.6	2345.5	2360.3	2360.3	2378.1	2384.0	2384.0
7.5°	2354.4	2381.0	2386.9	2401.7	2404.7	2416.5	2428.4	2431.3	2455.0	2460.9	2463.8
10°	2419.5	2452.0	2460.9	2475.7	2481.6	2493.4	2508.2	2514.1	2543.7	2546.7	2558.5
12.5°	2499.3	2534.8	2543.7	2561.5	2564.4	2579.2	2599.9	2605.8	2635.4	2644.3	2653.1
15°	2576.2	2608.8	2623.6	2641.3	2644.3	2662.0	2679.8	2685.7	2712.3	2724.1	2733.0
17.5°	2629.5	2667.9	2676.8	2700.5	2700.5	2715.3	2733.0	2738.9	2765.5	2774.4	2780.3
20°	2641.3	2676.8	2688.6	2706.4	2709.3	2718.2	2733.0	2738.9	2762.6	2765.5	2774.4
22.5°	2596.9	2632.4	2638.4	2656.1	2659.1	2667.9	2679.8	2676.8	2706.4	2703.4	2706.4
25°	2502.3	2534.8	2534.8	2555.5	2552.6	2561.5	2567.4	2564.4	2591.0	2591.0	2591.0
27.5°	2366.2	2395.8	2398.8	2413.6	2404.7	2407.6	2413.6	2410.6	2428.4	2428.4	2428.4
30°	2197.6	2221.3	2212.4	2224.3	2218.3	2224.3	2218.3	2215.4	2221.3	2227.2	2224.3
32.5°	1987.6	2005.4	2005.4	2008.3	2008.3	1990.6	1984.7	1984.7	1981.7	1978.8	1978.8
35°	1745.1	1759.9	1754.0	1754.0	1751.0	1733.3	1724.4	1718.5	1727.4	1709.6	1721.4
37.5°	1496.6	1499.6	1490.7	1487.8	1473.0	1473.0	1458.2	1446.4	1452.3	1449.3	1437.5
40°	1224.5	1236.4	1218.6	1212.7	1221.6	1209.7	1195.0	1180.2	1192.0	1177.2	1183.1
42.5°	958.3	955.4	949.5	949.5	949.5	931.7	928.7	925.8	928.7	916.9	908.0
45°	692.1	683.3	674.4	674.4	662.5	656.6	656.6	647.8	633.0	633.0	615.2
47.5°	467.3	446.6	440.7	437.8	431.8	431.8	425.9	420.0	417.0	402.3	402.3
50°	304.7	283.9	278.0	275.1	278.0	272.1	266.2	260.3	254.4	251.4	245.5
52.5°	183.4	174.5	168.6	165.6	159.7	156.8	153.8	147.9	144.9	144.9	142.0
55°	109.4	100.6	88.7	88.7	88.7	85.8	82.8	79.9	76.9	76.9	73.9
57.5°	68.0	62.1	56.2	53.2	53.2	53.2	50.3	50.3	50.3	50.3	47.3
60°	50.3	44.4	41.4	41.4	41.4	38.5	38.5	38.5	38.5	35.5	35.5
62.5°	38.5	35.5	32.5	32.5	29.6	29.6	29.6	29.6	29.6	29.6	26.6
65°	32.5	26.6	26.6	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
67.5°	23.7	20.7	20.7	20.7	20.7	17.7	17.7	17.7	17.7	17.7	17.7
70°	17.7	17.7	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8
72.5°	14.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
75°	11.8	11.8	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
77.5°	8.9	8.9	8.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
80°	5.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
82.5°	3.0	3.0	3.0	3.0	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	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: P251579

CATALOG NUMBER: LD4B50D010TE EU4B30509050 4LBSW1LI

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7	2265.7
2.5°	2318.9	2333.7	2318.9	2318.9	2327.8	2324.8	2330.7	2321.9
5°	2386.9	2407.6	2392.9	2389.9	2404.7	2401.7	2404.7	2398.8
7.5°	2469.8	2490.5	2475.7	2475.7	2490.5	2487.5	2496.4	2490.5
10°	2564.4	2588.1	2567.4	2570.3	2591.0	2588.1	2588.1	2588.1
12.5°	2662.0	2685.7	2673.9	2673.9	2688.6	2691.6	2694.6	2691.6
15°	2741.9	2765.5	2750.8	2750.8	2771.5	2768.5	2771.5	2768.5
17.5°	2789.2	2812.9	2795.1	2795.1	2812.9	2812.9	2815.8	2818.8
20°	2777.4	2804.0	2789.2	2783.3	2804.0	2804.0	2801.0	2801.0
22.5°	2709.3	2733.0	2721.2	2715.3	2730.0	2724.1	2721.2	2724.1
25°	2591.0	2614.7	2591.0	2591.0	2602.9	2599.9	2602.9	2599.9
27.5°	2431.3	2449.1	2425.4	2422.4	2434.3	2428.4	2425.4	2434.3
30°	2218.3	2236.1	2224.3	2215.4	2230.2	2221.3	2215.4	2218.3
32.5°	1975.8	1987.6	1981.7	1966.9	1975.8	1969.9	1966.9	1969.9
35°	1709.6	1724.4	1700.7	1697.8	1712.6	1700.7	1694.8	1709.6
37.5°	1434.5	1452.3	1431.6	1434.5	1425.7	1428.6	1422.7	1431.6
40°	1174.2	1171.3	1165.4	1162.4	1165.4	1156.5	1162.4	1153.5
42.5°	893.3	899.2	896.2	893.3	896.2	884.4	878.5	890.3
45°	621.1	618.2	612.3	606.3	606.3	603.4	603.4	594.5
47.5°	399.3	396.3	384.5	387.5	393.4	387.5	378.6	390.4
50°	242.5	239.6	239.6	236.6	242.5	236.6	230.7	230.7
52.5°	136.1	136.1	133.1	133.1	133.1	133.1	130.1	127.2
55°	73.9	71.0	71.0	71.0	68.0	68.0	68.0	68.0
57.5°	47.3	47.3	47.3	47.3	47.3	47.3	44.4	44.4
60°	35.5	35.5	35.5	35.5	32.5	35.5	32.5	32.5
62.5°	26.6	26.6	26.6	26.6	26.6	26.6	26.6	26.6
65°	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7
67.5°	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7
70°	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8
72.5°	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
75°	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
77.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
80°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
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)