

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: P251557

Luminaire Tested: **LD4B40D010 EU4B30508030 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251557
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: LD4B40D010 EU4B30508030 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3771.0 lumens
Efficiency: N/A
Efficacy: 87.7 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

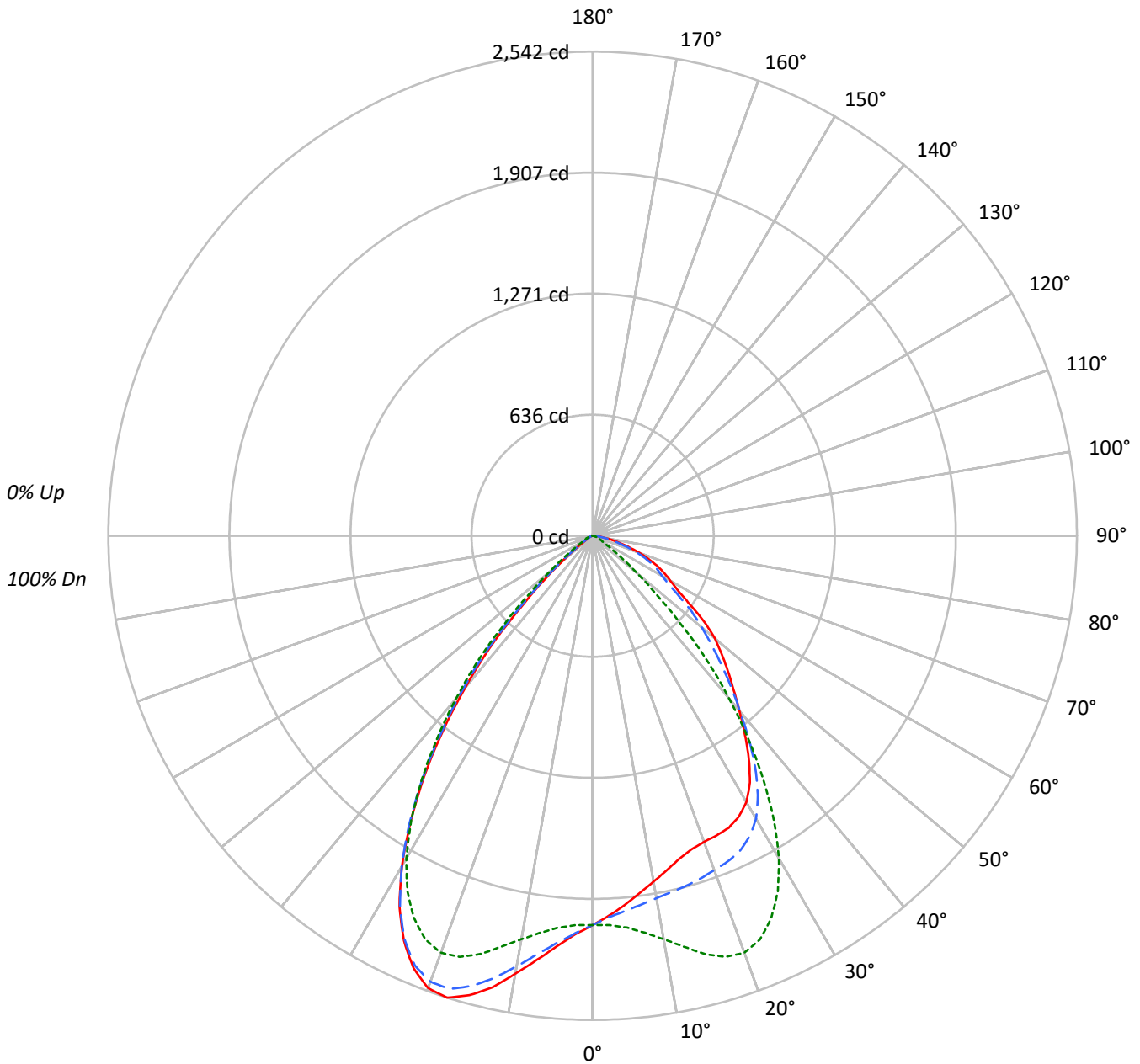
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				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	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90				90
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	85	82	80				80
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72				72
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64				64
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58				58
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53				53
7	75	63	56	51	73	62	55	51	61	55	50	60	54	50	58	53	50	48				48
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44				44
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	46	42	40				40
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37				37

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	199156	199156	199156
5°	190260	202000	211656
10°	182426	212787	231006
15°	177113	229327	251937
20°	177349	241537	262020
25°	181881	238390	252165
30°	181631	220062	225160
35°	170121	185993	183458
40°	152387	141866	132362
45°	138254	90083	73903
50°	127010	45713	31552
55°	104259	20390	10433
60°	91513	11442	5711
65°	86131	8602	4312
70°	73745	6839	3790
75°	56256	5008	3012
80°	40409	2975	1515
85°	29856	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	198.5	5.3
10°-20°	618.6	16.4
20°-30°	957.1	25.4
30°-40°	943.0	25.0
40°-50°	579.1	15.4
50°-60°	257.5	6.8
60°-70°	143.8	3.8
70°-80°	62.2	1.7
80°-90°	11.1	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°	1774.2	47.0
0°-40°	2717.3	72.1
0°-60°	3553.8	94.2
0°-90°	3771.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3771.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2044	2044	2044	2044	2044	
5°	1945	1977	2065	2145	2164	183
15°	1755	1902	2273	2446	2497	498
25°	1691	1827	2217	2337	2345	776
35°	1430	1489	1563	1558	1542	888
45°	1003	952	654	571	536	777
55°	614	555	120	69	61	564
65°	374	336	37	21	19	366
75°	149	128	13	8	8	164
85°	27	21	0	0	0	33
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°	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5
2.5°	1995.5	1995.5	1995.5	1995.5	2000.8	1992.8	2000.8	2000.8	2008.8	2011.5	2003.5
5°	1944.8	1942.1	1944.8	1944.8	1950.1	1947.5	1955.5	1960.8	1971.5	1976.8	1976.8
7.5°	1891.4	1891.4	1891.4	1896.8	1904.8	1902.1	1910.1	1918.1	1934.1	1944.8	1952.8
10°	1843.4	1840.7	1848.8	1851.4	1859.4	1859.4	1872.8	1880.8	1899.4	1920.8	1931.5
12.5°	1798.1	1795.4	1800.7	1808.7	1822.1	1822.1	1832.7	1846.1	1872.8	1896.8	1915.4
15°	1755.4	1758.0	1766.1	1771.4	1787.4	1787.4	1800.7	1816.7	1846.1	1875.4	1902.1
17.5°	1726.0	1728.7	1734.0	1742.0	1758.0	1758.0	1771.4	1790.1	1822.1	1854.1	1886.1
20°	1710.0	1712.7	1718.0	1726.0	1739.4	1742.0	1752.7	1774.1	1803.4	1838.1	1867.4
22.5°	1702.0	1707.4	1712.7	1718.0	1731.4	1731.4	1744.7	1760.7	1790.1	1824.7	1851.4
25°	1691.4	1696.7	1699.4	1707.4	1718.0	1718.0	1726.0	1744.7	1771.4	1800.7	1827.4
27.5°	1662.0	1667.3	1670.0	1678.0	1688.7	1686.0	1696.7	1710.0	1734.0	1760.7	1782.1
30°	1614.0	1616.7	1622.0	1624.7	1632.7	1632.7	1640.7	1654.0	1670.0	1694.0	1715.4
32.5°	1536.6	1542.0	1544.6	1547.3	1555.3	1552.6	1555.3	1563.3	1579.3	1600.6	1614.0
35°	1429.9	1440.6	1440.6	1445.9	1448.6	1445.9	1445.9	1456.6	1464.6	1480.6	1488.6
37.5°	1312.5	1320.5	1317.9	1323.2	1325.9	1317.9	1323.2	1325.9	1336.5	1344.5	1347.2
40°	1197.8	1200.5	1200.5	1200.5	1200.5	1197.8	1200.5	1203.2	1211.2	1211.2	1203.2
42.5°	1093.8	1096.4	1096.4	1091.1	1096.4	1093.8	1093.8	1093.8	1093.8	1083.1	1075.1
45°	1003.1	1005.7	1005.7	1003.1	1003.1	997.7	995.1	992.4	984.4	971.1	952.4
47.5°	917.7	923.0	925.7	920.4	917.7	912.4	912.4	896.4	885.7	869.7	843.0
50°	837.7	843.0	843.0	837.7	837.7	829.7	821.7	816.3	800.3	781.7	749.6
52.5°	736.3	744.3	744.3	741.6	741.6	731.0	728.3	717.6	704.3	682.9	656.3
55°	613.6	624.3	621.6	618.9	613.6	613.6	613.6	605.6	597.6	581.6	554.9
57.5°	525.5	528.2	528.2	525.5	525.5	520.2	520.2	512.2	509.5	493.5	472.2
60°	469.5	469.5	472.2	469.5	466.9	464.2	461.5	456.2	448.2	437.5	421.5
62.5°	424.2	426.8	426.8	424.2	421.5	418.8	416.2	410.8	405.5	397.5	381.5
65°	373.5	378.8	376.2	373.5	370.8	368.1	368.1	362.8	357.5	352.1	336.1
67.5°	317.5	320.1	322.8	317.5	317.5	314.8	314.8	309.5	306.8	296.1	285.4
70°	258.8	261.4	261.4	258.8	258.8	256.1	256.1	253.4	250.8	242.8	232.1
72.5°	202.7	205.4	202.7	200.1	200.1	200.1	197.4	194.7	192.1	186.7	178.7
75°	149.4	149.4	152.1	149.4	146.7	146.7	144.1	144.1	138.7	136.1	128.1
77.5°	106.7	109.4	106.7	106.7	104.0	101.4	101.4	98.7	98.7	96.0	90.7
80°	72.0	72.0	74.7	72.0	69.4	72.0	69.4	66.7	66.7	64.0	58.7
82.5°	45.4	48.0	45.4	45.4	45.4	45.4	45.4	42.7	42.7	40.0	37.3
85°	26.7	26.7	26.7	26.7	26.7	26.7	26.7	24.0	24.0	24.0	21.3
87.5°	13.3	13.3	10.7	10.7	13.3	13.3	13.3	10.7	10.7	10.7	10.7
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°	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5
2.5°	2014.2	2016.8	2022.2	2030.2	2030.2	2024.8	2038.2	2038.2	2043.5	2046.2	2056.8
5°	1992.8	1998.1	2008.8	2022.2	2024.8	2022.2	2040.8	2048.8	2056.8	2064.8	2080.8
7.5°	1974.1	1984.8	2003.5	2022.2	2030.2	2030.2	2059.5	2070.2	2086.2	2102.2	2120.9
10°	1963.5	1979.5	2006.1	2035.5	2043.5	2051.5	2086.2	2107.5	2128.9	2150.2	2176.9
12.5°	1950.1	1979.5	2014.2	2051.5	2067.5	2078.2	2126.2	2152.9	2182.2	2208.9	2243.6
15°	1947.5	1982.1	2027.5	2075.5	2096.9	2112.9	2166.2	2203.6	2238.2	2272.9	2307.6
17.5°	1936.8	1979.5	2035.5	2088.8	2115.5	2136.9	2198.2	2243.6	2283.6	2318.3	2358.3
20°	1923.4	1971.5	2032.8	2091.5	2120.9	2142.2	2208.9	2251.6	2296.9	2328.9	2366.3
22.5°	1904.8	1952.8	2014.2	2072.8	2099.5	2118.2	2184.9	2222.2	2262.3	2294.3	2328.9
25°	1872.8	1918.1	1971.5	2019.5	2046.2	2062.2	2120.9	2155.5	2184.9	2216.9	2248.9
27.5°	1827.4	1862.1	1907.4	1942.1	1958.1	1974.1	2022.2	2051.5	2078.2	2104.9	2126.2
30°	1747.4	1774.1	1806.1	1835.4	1851.4	1854.1	1899.4	1915.4	1936.8	1955.5	1971.5
32.5°	1640.7	1662.0	1680.7	1696.7	1707.4	1710.0	1744.7	1750.0	1771.4	1771.4	1795.4
35°	1504.6	1515.3	1528.6	1528.6	1536.6	1528.6	1552.6	1558.0	1560.6	1563.3	1582.0
37.5°	1349.9	1355.2	1363.2	1347.2	1347.2	1339.2	1347.2	1352.5	1341.9	1341.9	1355.2
40°	1203.2	1192.5	1181.8	1165.8	1157.8	1141.8	1141.8	1128.5	1120.5	1115.1	1117.8
42.5°	1061.8	1037.8	1013.7	979.1	963.1	947.1	931.0	912.4	907.0	893.7	885.7
45°	925.7	891.0	859.0	803.0	771.0	755.0	720.3	682.9	658.9	653.6	632.3
47.5°	811.0	760.3	707.0	640.3	608.2	578.9	528.2	496.2	464.2	448.2	434.8
50°	709.6	664.3	594.9	522.9	482.9	453.5	397.5	360.1	325.5	301.5	285.4
52.5°	621.6	570.9	506.9	424.2	384.2	352.1	290.8	248.1	218.8	194.7	176.1
55°	522.9	482.9	418.8	341.5	301.5	264.1	210.8	165.4	136.1	120.0	106.7
57.5°	450.8	416.2	354.8	280.1	242.8	208.1	154.7	117.4	93.4	77.4	69.4
60°	402.8	370.8	317.5	245.4	210.8	178.7	128.1	93.4	72.0	58.7	53.4
62.5°	362.8	330.8	282.8	216.1	186.7	154.7	109.4	77.4	58.7	48.0	40.0
65°	317.5	288.1	245.4	186.7	160.1	133.4	93.4	64.0	48.0	37.3	32.0
67.5°	269.4	242.8	205.4	154.7	133.4	112.0	74.7	53.4	40.0	32.0	26.7
70°	218.8	197.4	162.7	125.4	106.7	88.0	61.4	42.7	29.3	24.0	21.3
72.5°	168.1	149.4	125.4	96.0	80.0	66.7	45.4	32.0	24.0	18.7	16.0
75°	120.0	106.7	88.0	69.4	58.7	48.0	34.7	24.0	16.0	13.3	10.7
77.5°	82.7	74.7	61.4	48.0	40.0	34.7	24.0	16.0	13.3	10.7	8.0
80°	53.4	48.0	40.0	29.3	24.0	21.3	13.3	10.7	8.0	5.3	5.3
82.5°	32.0	29.3	24.0	16.0	13.3	10.7	8.0	5.3	5.3	2.7	2.7
85°	18.7	16.0	10.7	8.0	8.0	5.3	5.3	2.7	2.7	0.0	0.0
87.5°	8.0	5.3	5.3	2.7	2.7	2.7	2.7	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°	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5
2.5°	2051.5	2064.8	2062.2	2070.2	2067.5	2067.5	2080.8	2075.5	2088.8	2088.8	2091.5
5°	2080.8	2099.5	2099.5	2112.9	2110.2	2115.5	2128.9	2128.9	2144.9	2150.2	2150.2
7.5°	2123.5	2147.5	2152.9	2166.2	2168.9	2179.6	2190.2	2192.9	2214.2	2219.6	2222.2
10°	2182.2	2211.6	2219.6	2232.9	2238.2	2248.9	2262.3	2267.6	2294.3	2296.9	2307.6
12.5°	2254.2	2286.3	2294.3	2310.3	2312.9	2326.3	2345.0	2350.3	2377.0	2385.0	2393.0
15°	2323.6	2353.0	2366.3	2382.3	2385.0	2401.0	2417.0	2422.3	2446.3	2457.0	2465.0
17.5°	2371.6	2406.3	2414.3	2435.7	2435.7	2449.0	2465.0	2470.3	2494.3	2502.3	2507.7
20°	2382.3	2414.3	2425.0	2441.0	2443.7	2451.7	2465.0	2470.3	2491.7	2494.3	2502.3
22.5°	2342.3	2374.3	2379.6	2395.6	2398.3	2406.3	2417.0	2414.3	2441.0	2438.3	2441.0
25°	2256.9	2286.3	2286.3	2304.9	2302.3	2310.3	2315.6	2312.9	2336.9	2336.9	2336.9
27.5°	2134.2	2160.9	2163.5	2176.9	2168.9	2171.5	2176.9	2174.2	2190.2	2190.2	2190.2
30°	1982.1	2003.5	1995.5	2006.1	2000.8	2006.1	2000.8	1998.1	2003.5	2008.8	2006.1
32.5°	1792.7	1808.7	1808.7	1811.4	1811.4	1795.4	1790.1	1790.1	1787.4	1784.7	1784.7
35°	1574.0	1587.3	1582.0	1582.0	1579.3	1563.3	1555.3	1550.0	1558.0	1542.0	1552.6
37.5°	1349.9	1352.5	1344.5	1341.9	1328.5	1328.5	1315.2	1304.5	1309.9	1307.2	1296.5
40°	1104.4	1115.1	1099.1	1093.8	1101.8	1091.1	1077.8	1064.4	1075.1	1061.8	1067.1
42.5°	864.4	861.7	856.3	856.3	856.3	840.3	837.7	835.0	837.7	827.0	819.0
45°	624.3	616.3	608.2	608.2	597.6	592.2	592.2	584.2	570.9	570.9	554.9
47.5°	421.5	402.8	397.5	394.8	389.5	389.5	384.2	378.8	376.2	362.8	362.8
50°	274.8	256.1	250.8	248.1	250.8	245.4	240.1	234.8	229.4	226.8	221.4
52.5°	165.4	157.4	152.1	149.4	144.1	141.4	138.7	133.4	130.7	130.7	128.1
55°	98.7	90.7	80.0	80.0	80.0	77.4	74.7	72.0	69.4	69.4	66.7
57.5°	61.4	56.0	50.7	48.0	48.0	48.0	45.4	45.4	45.4	45.4	42.7
60°	45.4	40.0	37.3	37.3	37.3	34.7	34.7	34.7	34.7	32.0	32.0
62.5°	34.7	32.0	29.3	29.3	26.7	26.7	26.7	26.7	26.7	26.7	24.0
65°	29.3	24.0	24.0	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3
67.5°	21.3	18.7	18.7	18.7	18.7	16.0	16.0	16.0	16.0	16.0	16.0
70°	16.0	16.0	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3
72.5°	13.3	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
75°	10.7	10.7	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
77.5°	8.0	8.0	8.0	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
80°	5.3	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
82.5°	2.7	2.7	2.7	2.7	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: P251557

CATALOG NUMBER: LD4B40D010 EU4B30508030 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5	2043.5
2.5°	2091.5	2104.9	2091.5	2091.5	2099.5	2096.9	2102.2	2094.2
5°	2152.9	2171.5	2158.2	2155.5	2168.9	2166.2	2168.9	2163.5
7.5°	2227.6	2246.2	2232.9	2232.9	2246.2	2243.6	2251.6	2246.2
10°	2312.9	2334.3	2315.6	2318.3	2336.9	2334.3	2334.3	2334.3
12.5°	2401.0	2422.3	2411.6	2411.6	2425.0	2427.7	2430.3	2427.7
15°	2473.0	2494.3	2481.0	2481.0	2499.7	2497.0	2499.7	2497.0
17.5°	2515.7	2537.0	2521.0	2521.0	2537.0	2537.0	2539.7	2542.4
20°	2505.0	2529.0	2515.7	2510.4	2529.0	2529.0	2526.4	2526.4
22.5°	2443.7	2465.0	2454.3	2449.0	2462.3	2457.0	2454.3	2457.0
25°	2336.9	2358.3	2336.9	2336.9	2347.6	2345.0	2347.6	2345.0
27.5°	2192.9	2208.9	2187.6	2184.9	2195.6	2190.2	2187.6	2195.6
30°	2000.8	2016.8	2006.1	1998.1	2011.5	2003.5	1998.1	2000.8
32.5°	1782.1	1792.7	1787.4	1774.1	1782.1	1776.7	1774.1	1776.7
35°	1542.0	1555.3	1534.0	1531.3	1544.6	1534.0	1528.6	1542.0
37.5°	1293.9	1309.9	1291.2	1293.9	1285.9	1288.5	1283.2	1291.2
40°	1059.1	1056.4	1051.1	1048.4	1051.1	1043.1	1048.4	1040.4
42.5°	805.7	811.0	808.3	805.7	808.3	797.7	792.3	803.0
45°	560.2	557.6	552.2	546.9	546.9	544.2	544.2	536.2
47.5°	360.1	357.5	346.8	349.5	354.8	349.5	341.5	352.1
50°	218.8	216.1	216.1	213.4	218.8	213.4	208.1	208.1
52.5°	122.7	122.7	120.0	120.0	120.0	120.0	117.4	114.7
55°	66.7	64.0	64.0	64.0	61.4	61.4	61.4	61.4
57.5°	42.7	42.7	42.7	42.7	42.7	42.7	40.0	40.0
60°	32.0	32.0	32.0	32.0	29.3	32.0	29.3	29.3
62.5°	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
65°	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7
67.5°	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
70°	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3
72.5°	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
75°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
77.5°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
80°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
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)