

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: P251807

Luminaire Tested: **LD4B50D010TE EU4B30508050 4LBLWW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251807
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 EU4B30508050 4LBLWW1H
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4116.0 lumens
Efficiency: N/A
Efficacy: 70.0 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

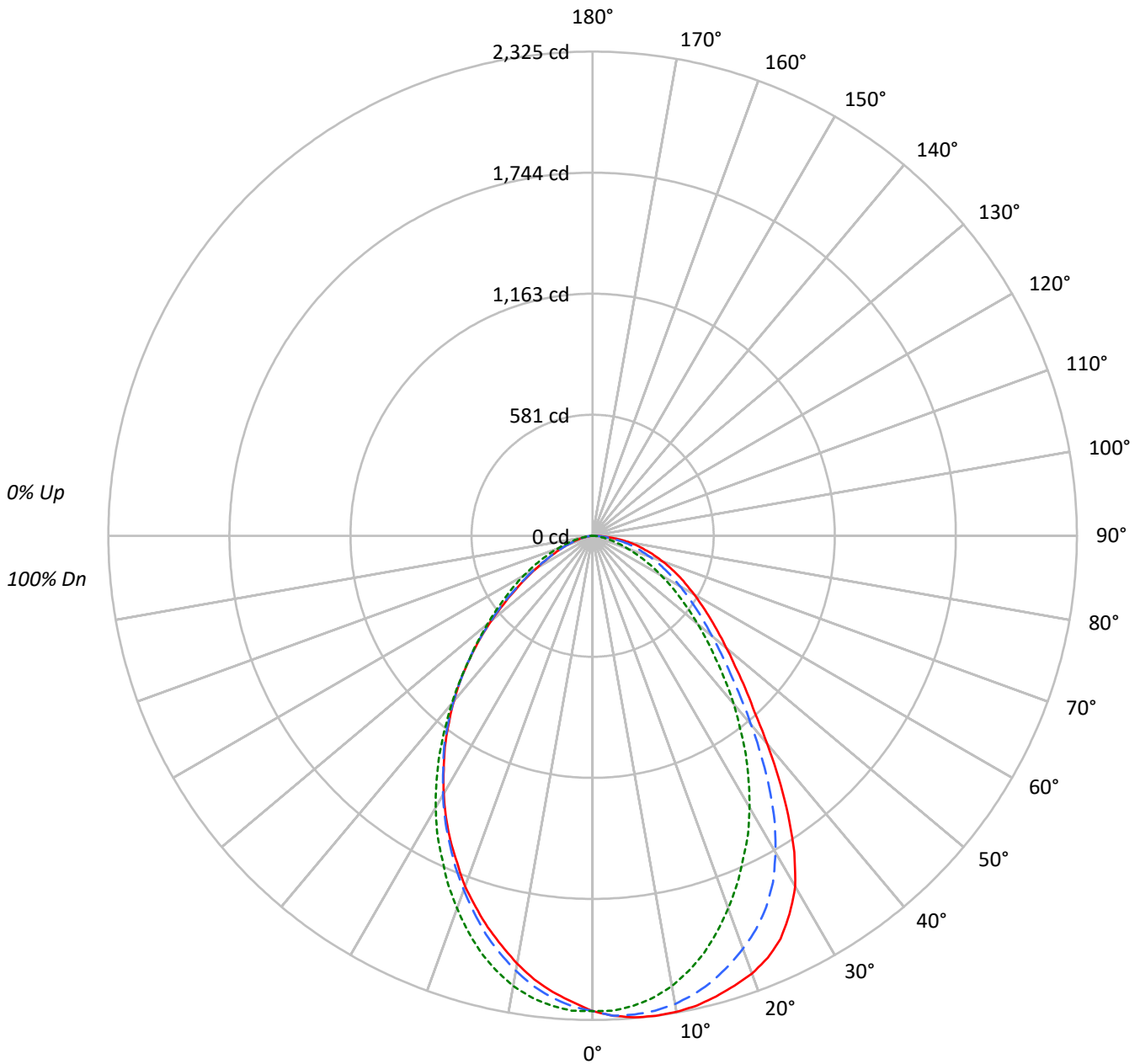
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	222468	222468	222468
5°	227094	221596	215070
10°	229719	217211	206434
15°	231022	209057	196303
20°	232016	197407	185749
25°	229605	183914	173720
30°	218948	169545	160846
35°	194702	152501	147076
40°	165758	134042	131802
45°	142788	115195	114713
50°	127253	99567	96368
55°	116951	85925	76971
60°	109523	73932	60229
65°	105271	62356	46974
70°	101071	50037	38041
75°	97865	39688	29107
80°	98554	27613	17735
85°	82412	19680	7827



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	213.7	5.2
10°-20°	587.5	14.3
20°-30°	821.6	20.0
30°-40°	844.5	20.5
40°-50°	685.4	16.7
50°-60°	482.6	11.7
60°-70°	297.1	7.2
70°-80°	148.4	3.6
80°-90°	35.2	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°	1622.7	39.4
0°-40°	2467.2	59.9
0°-60°	3635.2	88.3
0°-90°	4116.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4116.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2283	2283	2283	2283	2283	
5°	2321	2307	2265	2226	2198	221
15°	2290	2216	2072	1981	1946	647
25°	2135	1970	1710	1626	1616	976
35°	1636	1478	1282	1243	1236	1018
45°	1036	934	836	836	832	806
55°	688	604	506	464	453	619
65°	456	383	270	207	204	451
75°	260	204	105	77	77	277
85°	74	49	18	10	7	86
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°	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7
2.5°	2307.3	2310.8	2300.3	2310.8	2296.8	2303.8	2307.3	2300.3	2293.2	2307.3	2307.3
5°	2321.3	2321.3	2310.8	2324.8	2307.3	2310.8	2317.8	2307.3	2296.8	2310.8	2307.3
7.5°	2324.8	2324.8	2310.8	2324.8	2307.3	2310.8	2314.3	2303.8	2293.2	2303.8	2300.3
10°	2321.3	2317.8	2307.3	2321.3	2303.8	2303.8	2307.3	2296.8	2279.2	2289.7	2282.7
12.5°	2310.8	2310.8	2296.8	2310.8	2286.2	2286.2	2289.7	2275.7	2261.6	2261.6	2254.6
15°	2289.7	2289.7	2275.7	2286.2	2265.1	2265.1	2261.6	2247.6	2230.0	2230.0	2216.0
17.5°	2265.1	2265.1	2251.1	2261.6	2237.1	2237.1	2233.5	2212.5	2187.9	2184.4	2166.8
20°	2237.1	2237.1	2219.5	2226.5	2198.4	2198.4	2194.9	2170.3	2142.2	2135.2	2110.6
22.5°	2194.9	2194.9	2177.3	2180.9	2152.8	2149.3	2145.7	2117.6	2089.6	2079.0	2047.4
25°	2135.2	2131.7	2117.6	2117.6	2089.6	2082.5	2075.5	2047.4	2019.3	1998.2	1970.2
27.5°	2047.4	2050.9	2033.4	2036.9	2001.8	1994.7	1991.2	1956.1	1924.5	1903.4	1875.3
30°	1945.6	1935.0	1917.5	1917.5	1889.4	1885.9	1878.8	1847.2	1812.1	1787.5	1755.9
32.5°	1801.6	1798.1	1780.5	1780.5	1748.9	1748.9	1734.9	1703.2	1671.6	1657.6	1626.0
35°	1636.5	1633.0	1619.0	1619.0	1590.9	1594.4	1580.3	1555.8	1524.1	1503.1	1478.5
37.5°	1468.0	1464.4	1450.4	1453.9	1429.3	1429.3	1418.8	1394.2	1369.6	1359.1	1327.5
40°	1302.9	1299.4	1281.8	1292.4	1271.3	1264.3	1260.8	1243.2	1215.1	1201.1	1183.5
42.5°	1151.9	1155.4	1137.8	1144.9	1127.3	1120.3	1116.8	1102.7	1081.7	1067.6	1050.0
45°	1036.0	1029.0	1021.9	1021.9	1004.4	1000.9	997.4	979.8	965.8	951.7	934.2
47.5°	927.1	920.1	913.1	916.6	902.5	899.0	892.0	878.0	860.4	853.4	835.8
50°	839.3	835.8	825.3	825.3	811.2	807.7	800.7	790.2	772.6	762.1	748.0
52.5°	758.6	758.6	748.0	744.5	734.0	730.5	727.0	712.9	698.9	684.8	670.8
55°	688.3	684.8	677.8	677.8	663.7	660.2	656.7	642.7	628.6	618.1	604.0
57.5°	621.6	621.6	614.6	614.6	604.0	597.0	597.0	583.0	565.4	558.4	540.8
60°	561.9	561.9	554.9	554.9	544.3	544.3	537.3	523.3	512.7	498.7	484.6
62.5°	505.7	509.2	502.2	498.7	488.1	484.6	484.6	474.1	456.5	446.0	432.0
65°	456.5	453.0	449.5	446.0	435.5	432.0	432.0	417.9	407.4	393.3	382.8
67.5°	403.9	403.9	396.8	396.8	389.8	386.3	379.3	368.7	358.2	347.7	337.1
70°	354.7	354.7	351.2	351.2	340.6	337.1	333.6	323.1	312.6	302.0	288.0
72.5°	309.0	305.5	302.0	302.0	295.0	291.5	288.0	277.4	266.9	256.4	245.8
75°	259.9	259.9	256.4	256.4	249.3	245.8	245.8	238.8	224.8	217.7	203.7
77.5°	217.7	217.7	214.2	214.2	207.2	207.2	203.7	193.2	186.1	175.6	168.6
80°	175.6	172.1	172.1	168.6	161.5	161.5	158.0	154.5	144.0	137.0	126.4
82.5°	122.9	122.9	122.9	119.4	115.9	115.9	112.4	105.4	98.3	94.8	84.3
85°	73.7	73.7	70.2	66.7	70.2	66.7	63.2	59.7	56.2	52.7	49.2
87.5°	31.6	31.6	28.1	28.1	28.1	28.1	28.1	24.6	21.1	21.1	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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7
2.5°	2286.2	2296.8	2293.2	2289.7	2282.7	2282.7	2282.7	2279.2	2282.7	2282.7	2275.7
5°	2286.2	2293.2	2289.7	2282.7	2275.7	2275.7	2272.2	2265.1	2265.1	2265.1	2251.1
7.5°	2275.7	2282.7	2272.2	2265.1	2258.1	2251.1	2251.1	2240.6	2240.6	2237.1	2223.0
10°	2254.6	2258.1	2244.1	2237.1	2226.5	2223.0	2216.0	2201.9	2198.4	2194.9	2180.9
12.5°	2223.0	2226.5	2209.0	2194.9	2180.9	2177.3	2170.3	2152.8	2145.7	2138.7	2121.2
15°	2177.3	2177.3	2156.3	2138.7	2124.7	2121.2	2103.6	2086.0	2079.0	2072.0	2047.4
17.5°	2124.7	2121.2	2093.1	2075.5	2057.9	2050.9	2033.4	2012.3	1998.2	1991.2	1970.2
20°	2068.5	2057.9	2026.3	2008.8	1987.7	1977.2	1959.6	1931.5	1917.5	1903.4	1882.4
22.5°	2001.8	1987.7	1952.6	1928.0	1906.9	1896.4	1871.8	1847.2	1826.2	1812.1	1787.5
25°	1921.0	1903.4	1864.8	1833.2	1815.6	1805.1	1780.5	1752.4	1731.3	1710.3	1689.2
27.5°	1826.2	1805.1	1766.5	1734.9	1717.3	1699.7	1682.2	1650.6	1633.0	1615.5	1590.9
30°	1710.3	1685.7	1650.6	1622.5	1601.4	1587.4	1566.3	1538.2	1517.1	1506.6	1482.0
32.5°	1583.8	1555.8	1524.1	1496.0	1485.5	1468.0	1450.4	1422.3	1404.7	1394.2	1376.6
35°	1443.4	1422.3	1387.2	1366.1	1348.6	1341.5	1327.5	1299.4	1292.4	1281.8	1260.8
37.5°	1295.9	1278.3	1253.7	1236.2	1222.1	1215.1	1201.1	1183.5	1173.0	1162.4	1151.9
40°	1158.9	1144.9	1123.8	1109.7	1092.2	1081.7	1081.7	1060.6	1053.6	1053.6	1043.0
42.5°	1025.5	1018.4	1000.9	979.8	976.3	965.8	962.2	951.7	944.7	941.2	937.7
45°	913.1	902.5	885.0	874.5	863.9	863.9	853.4	842.8	839.3	835.8	832.3
47.5°	814.8	800.7	786.7	776.1	769.1	765.6	755.0	748.0	744.5	744.5	741.0
50°	727.0	716.4	702.4	691.8	684.8	677.8	670.8	663.7	660.2	656.7	656.7
52.5°	653.2	639.2	625.1	614.6	604.0	600.5	593.5	586.5	583.0	579.5	575.9
55°	586.5	575.9	558.4	547.8	537.3	537.3	526.8	516.2	509.2	505.7	502.2
57.5°	523.3	512.7	495.2	484.6	477.6	470.6	463.6	456.5	449.5	442.5	435.5
60°	467.1	456.5	439.0	424.9	421.4	414.4	407.4	393.3	386.3	379.3	372.3
62.5°	414.4	400.4	386.3	372.3	368.7	361.7	351.2	340.6	330.1	323.1	312.6
65°	365.2	354.7	337.1	326.6	316.1	312.6	302.0	288.0	277.4	270.4	259.9
67.5°	319.6	305.5	288.0	277.4	270.4	263.4	252.9	242.3	231.8	221.2	210.7
70°	273.9	263.4	245.8	235.3	228.3	221.2	210.7	196.7	186.1	175.6	168.6
72.5°	231.8	217.7	203.7	193.2	186.1	179.1	168.6	158.0	147.5	140.5	129.9
75°	193.2	179.1	168.6	154.5	151.0	144.0	133.5	122.9	112.4	105.4	98.3
77.5°	154.5	144.0	129.9	122.9	115.9	108.9	101.8	91.3	84.3	73.7	66.7
80°	115.9	105.4	94.8	87.8	80.8	77.3	70.2	63.2	56.2	49.2	45.7
82.5°	77.3	70.2	59.7	56.2	52.7	49.2	42.1	38.6	35.1	31.6	28.1
85°	42.1	38.6	35.1	28.1	28.1	24.6	21.1	21.1	17.6	17.6	14.0
87.5°	17.6	14.0	14.0	10.5	10.5	10.5	7.0	7.0	7.0	3.5	3.5
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°	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7
2.5°	2279.2	2265.1	2265.1	2265.1	2254.6	2258.1	2261.6	2265.1	2261.6	2251.1	2261.6
5°	2254.6	2240.6	2240.6	2233.5	2226.5	2226.5	2226.5	2230.0	2226.5	2216.0	2219.5
7.5°	2223.0	2205.4	2201.9	2194.9	2187.9	2184.4	2184.4	2184.4	2180.9	2166.8	2173.8
10°	2173.8	2156.3	2149.3	2145.7	2135.2	2131.7	2128.2	2124.7	2121.2	2107.1	2114.1
12.5°	2114.1	2100.1	2086.0	2082.5	2072.0	2065.0	2061.5	2061.5	2054.4	2040.4	2047.4
15°	2043.9	2022.8	2012.3	2005.3	1994.7	1987.7	1980.7	1984.2	1980.7	1966.6	1970.2
17.5°	1959.6	1938.5	1928.0	1924.5	1910.4	1903.4	1899.9	1899.9	1896.4	1882.4	1885.9
20°	1868.3	1847.2	1840.2	1833.2	1826.2	1819.1	1815.6	1812.1	1808.6	1794.6	1805.1
22.5°	1777.0	1752.4	1741.9	1741.9	1727.8	1724.3	1720.8	1724.3	1720.8	1706.8	1713.8
25°	1682.2	1657.6	1650.6	1640.0	1633.0	1629.5	1629.5	1629.5	1626.0	1619.0	1626.0
27.5°	1576.8	1559.3	1548.7	1545.2	1538.2	1534.7	1531.2	1534.7	1534.7	1524.1	1531.2
30°	1471.5	1457.4	1450.4	1446.9	1436.3	1432.8	1436.3	1436.3	1436.3	1425.8	1436.3
32.5°	1366.1	1355.6	1352.1	1341.5	1334.5	1334.5	1334.5	1338.0	1334.5	1327.5	1338.0
35°	1260.8	1246.7	1243.2	1239.7	1239.7	1232.7	1239.7	1236.2	1243.2	1232.7	1239.7
37.5°	1148.4	1141.4	1137.8	1137.8	1130.8	1134.3	1134.3	1134.3	1141.4	1130.8	1137.8
40°	1043.0	1036.0	1036.0	1036.0	1032.5	1032.5	1032.5	1036.0	1039.5	1032.5	1039.5
42.5°	937.7	934.2	934.2	930.6	927.1	930.6	934.2	934.2	937.7	930.6	934.2
45°	835.8	832.3	835.8	832.3	832.3	828.8	832.3	835.8	835.8	832.3	832.3
47.5°	741.0	741.0	737.5	737.5	737.5	737.5	737.5	737.5	737.5	730.5	737.5
50°	656.7	649.7	653.2	649.7	649.7	646.2	646.2	642.7	639.2	635.6	635.6
52.5°	575.9	568.9	568.9	565.4	561.9	561.9	558.4	554.9	551.4	544.3	544.3
55°	498.7	491.7	488.1	484.6	481.1	477.6	474.1	470.6	463.6	460.1	460.1
57.5°	428.4	421.4	414.4	414.4	407.4	403.9	396.8	389.8	386.3	379.3	379.3
60°	365.2	358.2	347.7	344.2	340.6	333.6	323.1	319.6	316.1	309.0	312.6
62.5°	305.5	295.0	284.5	280.9	277.4	270.4	263.4	256.4	252.9	256.4	256.4
65°	249.3	238.8	231.8	224.8	221.2	214.2	210.7	207.2	207.2	207.2	210.7
67.5°	200.2	189.6	182.6	179.1	172.1	168.6	168.6	168.6	168.6	168.6	168.6
70°	158.0	151.0	144.0	137.0	137.0	133.5	133.5	133.5	133.5	133.5	133.5
72.5°	119.4	112.4	108.9	108.9	105.4	105.4	105.4	105.4	101.8	101.8	105.4
75°	87.8	84.3	80.8	80.8	80.8	77.3	77.3	77.3	77.3	77.3	77.3
77.5°	63.2	59.7	59.7	56.2	56.2	56.2	56.2	56.2	56.2	52.7	52.7
80°	42.1	38.6	38.6	38.6	38.6	35.1	35.1	35.1	35.1	35.1	35.1
82.5°	24.6	24.6	24.6	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1
85°	14.0	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
87.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	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: P251807

CATALOG NUMBER: LD4B50D010TE EU4B30508050 4LBLWW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7	2282.7
2.5°	2240.6	2254.6	2258.1	2247.6	2251.1	2244.1	2247.6	2240.6
5°	2201.9	2212.5	2216.0	2209.0	2209.0	2201.9	2205.4	2198.4
7.5°	2152.8	2163.3	2166.8	2159.8	2159.8	2152.8	2152.8	2149.3
10°	2096.6	2100.1	2107.1	2096.6	2100.1	2093.1	2093.1	2086.0
12.5°	2026.3	2033.4	2040.4	2029.9	2029.9	2026.3	2026.3	2015.8
15°	1952.6	1959.6	1963.1	1956.1	1956.1	1952.6	1949.1	1945.6
17.5°	1875.3	1878.8	1885.9	1875.3	1882.4	1875.3	1875.3	1868.3
20°	1787.5	1798.1	1801.6	1791.0	1794.6	1791.0	1791.0	1791.0
22.5°	1703.2	1710.3	1713.8	1706.8	1710.3	1703.2	1706.8	1699.7
25°	1615.5	1619.0	1622.5	1615.5	1622.5	1619.0	1615.5	1615.5
27.5°	1524.1	1527.7	1531.2	1524.1	1531.2	1527.7	1531.2	1524.1
30°	1425.8	1432.8	1439.9	1432.8	1436.3	1432.8	1432.8	1429.3
32.5°	1327.5	1334.5	1341.5	1334.5	1341.5	1334.5	1338.0	1331.0
35°	1236.2	1239.7	1243.2	1236.2	1239.7	1239.7	1239.7	1236.2
37.5°	1134.3	1141.4	1141.4	1137.8	1144.9	1141.4	1141.4	1134.3
40°	1036.0	1039.5	1043.0	1036.0	1039.5	1036.0	1039.5	1036.0
42.5°	934.2	941.2	944.7	937.7	937.7	937.7	934.2	937.7
45°	828.8	835.8	842.8	832.3	835.8	835.8	835.8	832.3
47.5°	734.0	734.0	737.5	734.0	737.5	730.5	737.5	734.0
50°	635.6	635.6	642.7	635.6	635.6	635.6	635.6	635.6
52.5°	540.8	544.3	544.3	537.3	540.8	537.3	540.8	537.3
55°	453.0	453.0	456.5	453.0	453.0	453.0	453.0	453.0
57.5°	375.8	379.3	379.3	375.8	379.3	375.8	375.8	375.8
60°	312.6	312.6	312.6	309.0	312.6	309.0	312.6	309.0
62.5°	252.9	256.4	256.4	252.9	256.4	252.9	252.9	252.9
65°	207.2	207.2	207.2	207.2	207.2	207.2	207.2	203.7
67.5°	165.1	165.1	168.6	165.1	168.6	168.6	168.6	168.6
70°	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5
72.5°	101.8	101.8	105.4	101.8	101.8	101.8	101.8	101.8
75°	77.3	77.3	77.3	77.3	77.3	73.7	73.7	77.3
77.5°	52.7	52.7	52.7	52.7	52.7	52.7	52.7	56.2
80°	35.1	35.1	35.1	35.1	31.6	31.6	35.1	31.6
82.5°	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6
85°	10.5	10.5	7.0	7.0	7.0	7.0	7.0	7.0
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



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— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)