

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: P251653

Luminaire Tested: **LD4B50D010TE EU4B30509027 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251653
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 EU4B30509027 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3790.0 lumens
Efficiency: N/A
Efficacy: 64.5 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

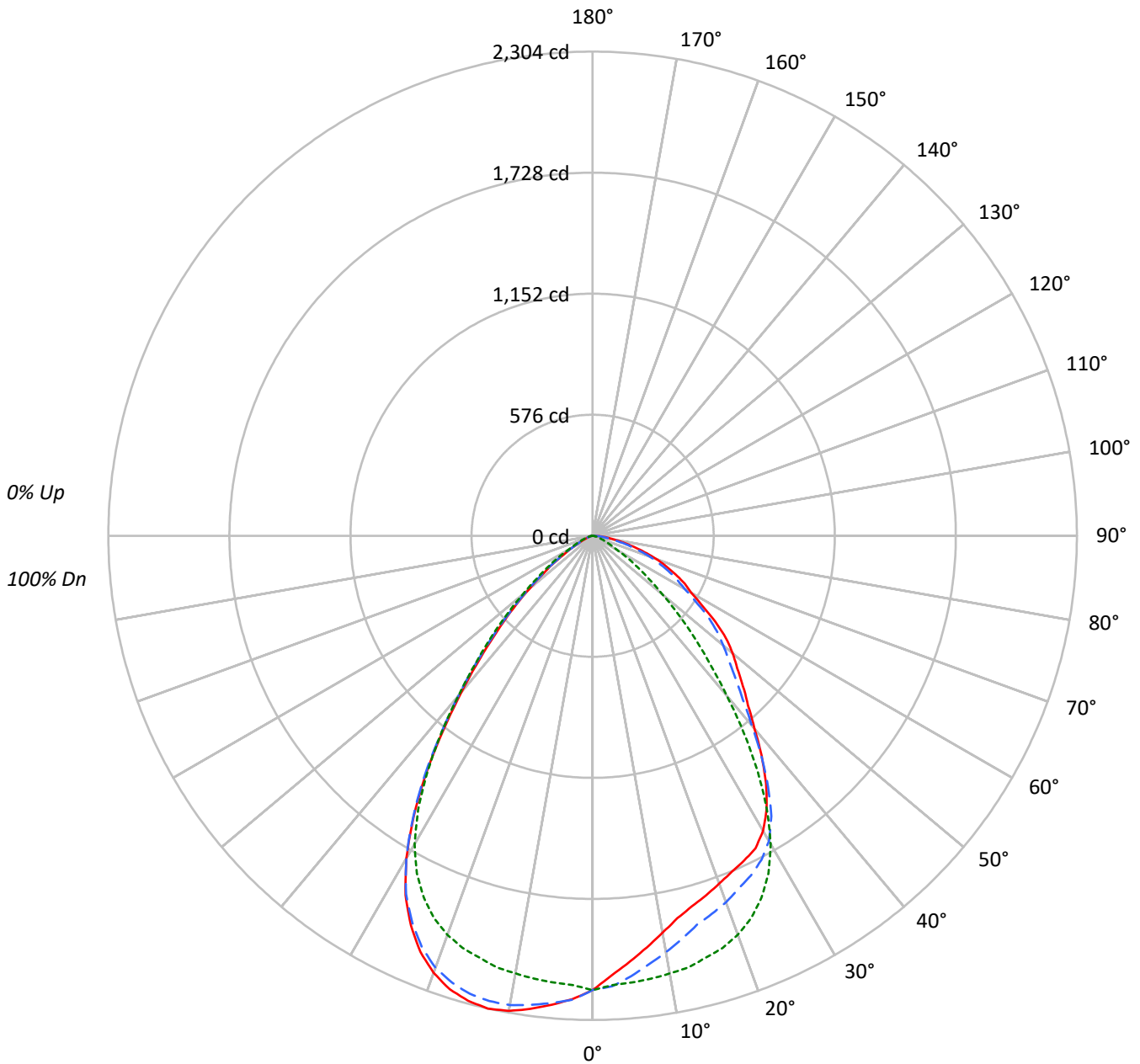
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	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								
1	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89								
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79								
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70								
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62								
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56								
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50								
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46								
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42								
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38								
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	210714	210714	210714
5°	198987	208799	219160
10°	189709	209284	227206
15°	184135	209722	231082
20°	182628	209500	229444
25°	183365	204334	219916
30°	182487	190645	199423
35°	171049	162769	164423
40°	152425	126192	123355
45°	139398	94080	88319
50°	131801	65908	59571
55°	121199	44500	37398
60°	105898	26060	20642
65°	100244	16696	11576
70°	91297	11911	7152
75°	75536	8397	5234
80°	59435	4714	3143
85°	53003	3131	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	204.3	5.4
10°-20°	586.1	15.5
20°-30°	868.8	22.9
30°-40°	870.0	23.0
40°-50°	608.0	16.0
50°-60°	361.8	9.5
60°-70°	188.8	5.0
70°-80°	84.0	2.2
80°-90°	18.3	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°	1659.1	43.8
0°-40°	2529.1	66.7
0°-60°	3498.9	92.3
0°-90°	3790.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3790.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2162	2162	2162	2162	2162	
5°	2034	2104	2134	2232	2240	191
15°	1825	1917	2079	2257	2290	517
25°	1705	1783	1900	2031	2045	786
35°	1438	1454	1368	1393	1382	891
45°	1011	961	683	660	641	785
55°	713	669	262	228	220	633
65°	435	398	72	53	50	430
75°	201	176	22	14	14	217
85°	47	36	3	3	0	53
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°	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1
2.5°	2092.5	2117.6	2092.5	2100.8	2134.3	2103.6	2120.4	2120.4	2112.0	2131.5	2145.4
5°	2034.0	2059.1	2034.0	2045.1	2081.3	2050.7	2070.2	2064.6	2067.4	2084.1	2103.6
7.5°	1975.5	1995.0	1972.7	1986.6	2020.0	1995.0	2011.7	2011.7	2014.5	2039.6	2056.3
10°	1917.0	1933.7	1917.0	1928.1	1964.3	1942.0	1953.2	1956.0	1964.3	1986.6	2011.7
12.5°	1864.0	1877.9	1861.2	1877.9	1908.6	1886.3	1900.2	1903.0	1911.4	1936.5	1964.3
15°	1825.0	1838.9	1822.2	1836.2	1864.0	1847.3	1858.4	1864.0	1869.6	1891.9	1917.0
17.5°	1794.4	1805.5	1791.6	1808.3	1830.6	1811.1	1827.8	1827.8	1836.2	1858.4	1886.3
20°	1760.9	1772.1	1760.9	1774.9	1799.9	1783.2	1797.1	1797.1	1805.5	1830.6	1855.7
22.5°	1730.3	1735.8	1730.3	1741.4	1766.5	1752.6	1760.9	1763.7	1772.1	1794.4	1816.6
25°	1705.2	1716.3	1710.8	1721.9	1738.6	1724.7	1733.1	1735.8	1744.2	1763.7	1783.2
27.5°	1677.3	1682.9	1677.3	1691.3	1705.2	1694.1	1702.4	1699.6	1705.2	1721.9	1738.6
30°	1621.6	1627.2	1627.2	1635.5	1646.7	1641.1	1649.5	1641.1	1646.7	1660.6	1677.3
32.5°	1540.8	1543.6	1546.4	1554.7	1563.1	1554.7	1560.3	1560.3	1560.3	1571.5	1582.6
35°	1437.7	1443.3	1440.5	1446.1	1454.4	1451.6	1451.6	1448.9	1443.3	1448.9	1454.4
37.5°	1320.7	1312.3	1312.3	1320.7	1326.3	1315.1	1320.7	1315.1	1315.1	1317.9	1317.9
40°	1198.1	1189.7	1198.1	1200.9	1203.7	1198.1	1195.3	1189.7	1181.4	1184.2	1178.6
42.5°	1095.0	1089.4	1092.2	1092.2	1095.0	1089.4	1092.2	1081.1	1072.7	1067.1	1058.8
45°	1011.4	1003.1	1011.4	1005.8	1005.8	1003.1	1000.3	994.7	983.6	975.2	961.3
47.5°	933.4	933.4	936.2	936.2	936.2	930.6	930.6	919.5	908.3	897.2	877.7
50°	869.3	863.7	874.9	874.9	866.5	863.7	866.5	852.6	844.2	830.3	810.8
52.5°	799.7	799.7	802.4	802.4	799.7	794.1	796.9	785.7	777.4	763.4	743.9
55°	713.3	707.7	716.1	716.1	713.3	710.5	713.3	704.9	696.6	685.4	668.7
57.5°	615.8	613.0	618.6	621.3	615.8	615.8	618.6	610.2	607.4	596.3	579.5
60°	543.3	540.5	546.1	548.9	543.3	543.3	543.3	532.2	526.6	515.5	504.3
62.5°	493.2	490.4	496.0	493.2	490.4	487.6	490.4	479.2	473.7	462.5	451.4
65°	434.7	437.4	440.2	440.2	437.4	434.7	434.7	429.1	423.5	412.4	398.4
67.5°	378.9	378.9	381.7	384.5	381.7	381.7	381.7	373.4	367.8	359.4	342.7
70°	320.4	317.6	326.0	326.0	320.4	323.2	320.4	317.6	312.1	300.9	287.0
72.5°	259.1	259.1	261.9	261.9	259.1	259.1	259.1	256.3	248.0	242.4	228.5
75°	200.6	200.6	203.4	206.2	200.6	200.6	203.4	197.8	192.3	183.9	175.5
77.5°	150.5	147.7	150.5	150.5	147.7	147.7	147.7	144.9	142.1	133.7	125.4
80°	105.9	103.1	105.9	105.9	105.9	103.1	103.1	100.3	100.3	94.7	86.4
82.5°	72.4	69.7	72.4	72.4	72.4	69.7	69.7	69.7	66.9	64.1	58.5
85°	47.4	44.6	44.6	47.4	44.6	44.6	44.6	44.6	41.8	39.0	36.2
87.5°	22.3	22.3	22.3	22.3	22.3	22.3	22.3	19.5	19.5	19.5	16.7
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°	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1
2.5°	2134.3	2128.7	2145.4	2139.9	2142.6	2128.7	2151.0	2139.9	2153.8	2139.9	2167.7
5°	2098.1	2092.5	2117.6	2114.8	2117.6	2106.4	2131.5	2128.7	2145.4	2134.3	2164.9
7.5°	2059.1	2053.5	2081.3	2084.1	2089.7	2078.6	2112.0	2112.0	2128.7	2125.9	2159.4
10°	2014.5	2017.3	2045.1	2050.7	2061.8	2056.3	2086.9	2095.3	2117.6	2114.8	2156.6
12.5°	1972.7	1972.7	2008.9	2020.0	2028.4	2025.6	2061.8	2073.0	2098.1	2103.6	2142.6
15°	1930.9	1933.7	1967.1	1983.8	1995.0	1992.2	2031.2	2045.1	2075.8	2078.6	2125.9
17.5°	1897.5	1894.7	1930.9	1944.8	1961.5	1958.7	2000.5	2017.3	2047.9	2056.3	2100.8
20°	1869.6	1866.8	1900.2	1917.0	1928.1	1925.3	1967.1	1986.6	2014.5	2020.0	2064.6
22.5°	1836.2	1830.6	1864.0	1877.9	1889.1	1886.3	1922.5	1936.5	1964.3	1969.9	2011.7
25°	1797.1	1791.6	1822.2	1830.6	1838.9	1833.4	1864.0	1872.4	1894.7	1900.2	1942.0
27.5°	1752.6	1738.6	1763.7	1763.7	1769.3	1760.9	1783.2	1791.6	1811.1	1811.1	1850.1
30°	1682.9	1663.4	1677.3	1674.5	1677.3	1666.2	1680.1	1682.9	1696.8	1694.1	1721.9
32.5°	1585.4	1557.5	1565.9	1557.5	1549.2	1532.4	1549.2	1543.6	1554.7	1543.6	1568.7
35°	1451.6	1423.8	1421.0	1409.9	1401.5	1387.6	1387.6	1373.6	1376.4	1368.1	1384.8
37.5°	1306.8	1270.5	1265.0	1242.7	1228.7	1212.0	1212.0	1200.9	1187.0	1181.4	1195.3
40°	1164.7	1125.7	1111.7	1075.5	1061.6	1044.9	1033.7	1019.8	1014.2	991.9	1003.1
42.5°	1042.1	1000.3	969.6	930.6	916.7	891.6	874.9	858.2	849.8	824.7	835.9
45°	939.0	888.8	855.4	805.2	785.7	757.9	732.8	713.3	693.8	682.6	677.1
47.5°	852.6	799.7	755.1	699.4	668.7	643.6	610.2	590.7	565.6	551.7	543.3
50°	780.2	721.6	671.5	607.4	576.8	548.9	509.9	479.2	456.9	434.7	429.1
52.5°	716.1	654.8	599.0	526.6	490.4	456.9	415.2	381.7	362.2	337.1	334.4
55°	640.8	587.9	526.6	451.4	415.2	381.7	337.1	303.7	278.6	261.9	256.3
57.5°	560.0	509.9	451.4	376.1	339.9	303.7	261.9	231.3	209.0	195.0	192.3
60°	484.8	437.4	381.7	306.5	270.3	239.6	195.0	164.4	144.9	133.7	128.2
62.5°	429.1	384.5	331.6	261.9	228.5	197.8	156.0	128.2	111.5	100.3	94.7
65°	376.1	331.6	284.2	220.1	192.3	164.4	125.4	100.3	83.6	72.4	66.9
67.5°	320.4	281.4	236.8	183.9	156.0	133.7	100.3	78.0	64.1	55.7	50.2
70°	264.7	228.5	192.3	147.7	128.2	105.9	78.0	61.3	47.4	41.8	36.2
72.5°	209.0	181.1	150.5	114.2	97.5	83.6	61.3	44.6	36.2	30.6	25.1
75°	156.0	136.5	111.5	86.4	72.4	61.3	44.6	33.4	27.9	22.3	19.5
77.5°	111.5	94.7	78.0	58.5	52.9	44.6	30.6	25.1	19.5	13.9	11.1
80°	75.2	66.9	52.9	41.8	33.4	30.6	22.3	16.7	11.1	8.4	8.4
82.5°	50.2	41.8	33.4	25.1	22.3	19.5	13.9	11.1	8.4	5.6	5.6
85°	30.6	25.1	19.5	13.9	13.9	11.1	8.4	5.6	2.8	2.8	2.8
87.5°	13.9	11.1	8.4	5.6	5.6	2.8	2.8	2.8	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°	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1
2.5°	2190.0	2173.3	2162.1	2176.1	2181.7	2173.3	2181.7	2195.6	2209.5	2212.3	2173.3
5°	2192.8	2176.1	2170.5	2187.2	2190.0	2187.2	2195.6	2215.1	2231.8	2237.4	2198.4
7.5°	2192.8	2181.7	2178.9	2198.4	2201.2	2198.4	2212.3	2234.6	2251.3	2262.5	2223.4
10°	2187.2	2181.7	2184.4	2201.2	2206.7	2206.7	2226.2	2251.3	2268.0	2279.2	2240.2
12.5°	2178.9	2178.9	2178.9	2198.4	2203.9	2206.7	2223.4	2256.9	2268.0	2284.7	2245.7
15°	2164.9	2164.9	2164.9	2184.4	2192.8	2192.8	2212.3	2242.9	2256.9	2273.6	2234.6
17.5°	2139.9	2139.9	2142.6	2159.4	2167.7	2167.7	2187.2	2220.7	2229.0	2248.5	2209.5
20°	2103.6	2103.6	2106.4	2123.1	2131.5	2125.9	2151.0	2178.9	2187.2	2203.9	2164.9
22.5°	2050.7	2050.7	2050.7	2067.4	2073.0	2070.2	2095.3	2120.4	2120.4	2142.6	2100.8
25°	1972.7	1978.3	1972.7	1989.4	1995.0	1992.2	2014.5	2036.8	2031.2	2056.3	2014.5
27.5°	1877.9	1875.2	1875.2	1889.1	1889.1	1886.3	1903.0	1928.1	1922.5	1939.2	1900.2
30°	1747.0	1755.4	1741.4	1760.9	1752.6	1747.0	1758.1	1780.4	1772.1	1786.0	1755.4
32.5°	1596.5	1585.4	1585.4	1585.4	1591.0	1577.0	1588.2	1599.3	1591.0	1604.9	1571.5
35°	1398.7	1401.5	1393.1	1395.9	1398.7	1382.0	1393.1	1404.3	1393.1	1401.5	1370.8
37.5°	1200.9	1203.7	1184.2	1195.3	1184.2	1178.6	1189.7	1195.3	1184.2	1192.5	1159.1
40°	1003.1	997.5	994.7	994.7	997.5	983.6	991.9	1000.3	991.9	997.5	966.8
42.5°	830.3	827.5	822.0	824.7	816.4	813.6	816.4	824.7	816.4	822.0	799.7
45°	679.9	674.3	665.9	668.7	668.7	654.8	663.1	668.7	660.3	663.1	643.6
47.5°	540.5	532.2	532.2	529.4	529.4	523.8	532.2	529.4	521.0	526.6	507.1
50°	420.7	415.2	415.2	415.2	415.2	406.8	409.6	415.2	406.8	406.8	395.7
52.5°	328.8	320.4	314.8	314.8	314.8	312.1	312.1	314.8	306.5	306.5	303.7
55°	248.0	245.2	236.8	236.8	236.8	228.5	231.3	231.3	228.5	228.5	220.1
57.5°	183.9	175.5	170.0	170.0	164.4	164.4	161.6	164.4	158.8	158.8	153.2
60°	122.6	117.0	114.2	111.5	111.5	108.7	111.5	108.7	108.7	105.9	103.1
62.5°	89.2	83.6	78.0	78.0	78.0	75.2	75.2	75.2	75.2	75.2	72.4
65°	64.1	58.5	58.5	55.7	55.7	52.9	52.9	52.9	52.9	52.9	50.2
67.5°	44.6	41.8	39.0	39.0	39.0	39.0	39.0	39.0	36.2	36.2	36.2
70°	33.4	30.6	27.9	27.9	27.9	27.9	27.9	25.1	27.9	27.9	25.1
72.5°	22.3	22.3	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
75°	16.7	16.7	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9
77.5°	11.1	11.1	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
80°	8.4	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
82.5°	5.6	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
85°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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: P251653

CATALOG NUMBER: LD4B50D010TE EU4B30509027 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1	2162.1
2.5°	2215.1	2212.3	2206.7	2215.1	2192.8	2184.4	2181.7	2206.7
5°	2245.7	2240.2	2240.2	2248.5	2223.4	2217.9	2212.3	2240.2
7.5°	2273.6	2268.0	2268.0	2276.4	2254.1	2248.5	2242.9	2270.8
10°	2290.3	2290.3	2290.3	2295.9	2276.4	2270.8	2268.0	2295.9
12.5°	2298.7	2298.7	2295.9	2307.0	2282.0	2282.0	2276.4	2304.2
15°	2287.5	2287.5	2287.5	2295.9	2273.6	2268.0	2268.0	2290.3
17.5°	2259.7	2259.7	2256.9	2265.2	2240.2	2240.2	2237.4	2262.5
20°	2217.9	2217.9	2212.3	2223.4	2198.4	2190.0	2187.2	2212.3
22.5°	2151.0	2148.2	2145.4	2151.0	2128.7	2123.1	2120.4	2142.6
25°	2064.6	2061.8	2056.3	2061.8	2036.8	2028.4	2028.4	2045.1
27.5°	1942.0	1942.0	1933.7	1942.0	1914.2	1911.4	1908.6	1928.1
30°	1791.6	1780.4	1774.9	1786.0	1758.1	1758.1	1752.6	1772.1
32.5°	1604.9	1593.7	1591.0	1596.5	1571.5	1563.1	1574.2	1585.4
35°	1390.3	1393.1	1382.0	1382.0	1359.7	1362.5	1365.3	1382.0
37.5°	1184.2	1178.6	1175.8	1178.6	1161.9	1156.3	1150.7	1167.4
40°	991.9	978.0	975.2	975.2	961.3	958.5	961.3	969.6
42.5°	810.8	808.0	796.9	802.4	788.5	794.1	791.3	791.3
45°	654.8	657.6	646.4	654.8	643.6	635.3	635.3	640.8
47.5°	518.2	518.2	515.5	515.5	507.1	509.9	504.3	512.7
50°	401.2	401.2	395.7	398.4	392.9	392.9	390.1	392.9
52.5°	306.5	303.7	303.7	300.9	295.3	298.1	300.9	295.3
55°	222.9	225.7	220.1	222.9	217.3	220.1	217.3	220.1
57.5°	153.2	156.0	150.5	156.0	150.5	153.2	150.5	150.5
60°	105.9	105.9	103.1	105.9	103.1	103.1	100.3	105.9
62.5°	72.4	72.4	72.4	72.4	72.4	69.7	72.4	72.4
65°	52.9	50.2	50.2	50.2	50.2	50.2	50.2	50.2
67.5°	36.2	36.2	36.2	36.2	36.2	36.2	36.2	36.2
70°	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1
72.5°	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
75°	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9
77.5°	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
80°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
82.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
85°	2.8	2.8	2.8	0.0	2.8	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



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













(END OF REPORT)