

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: P251657

Luminaire Tested: **LD4B50D010TE EU4B30509050 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251657
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 EU4B30509050 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4021.0 lumens
Efficiency: N/A
Efficacy: 68.4 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

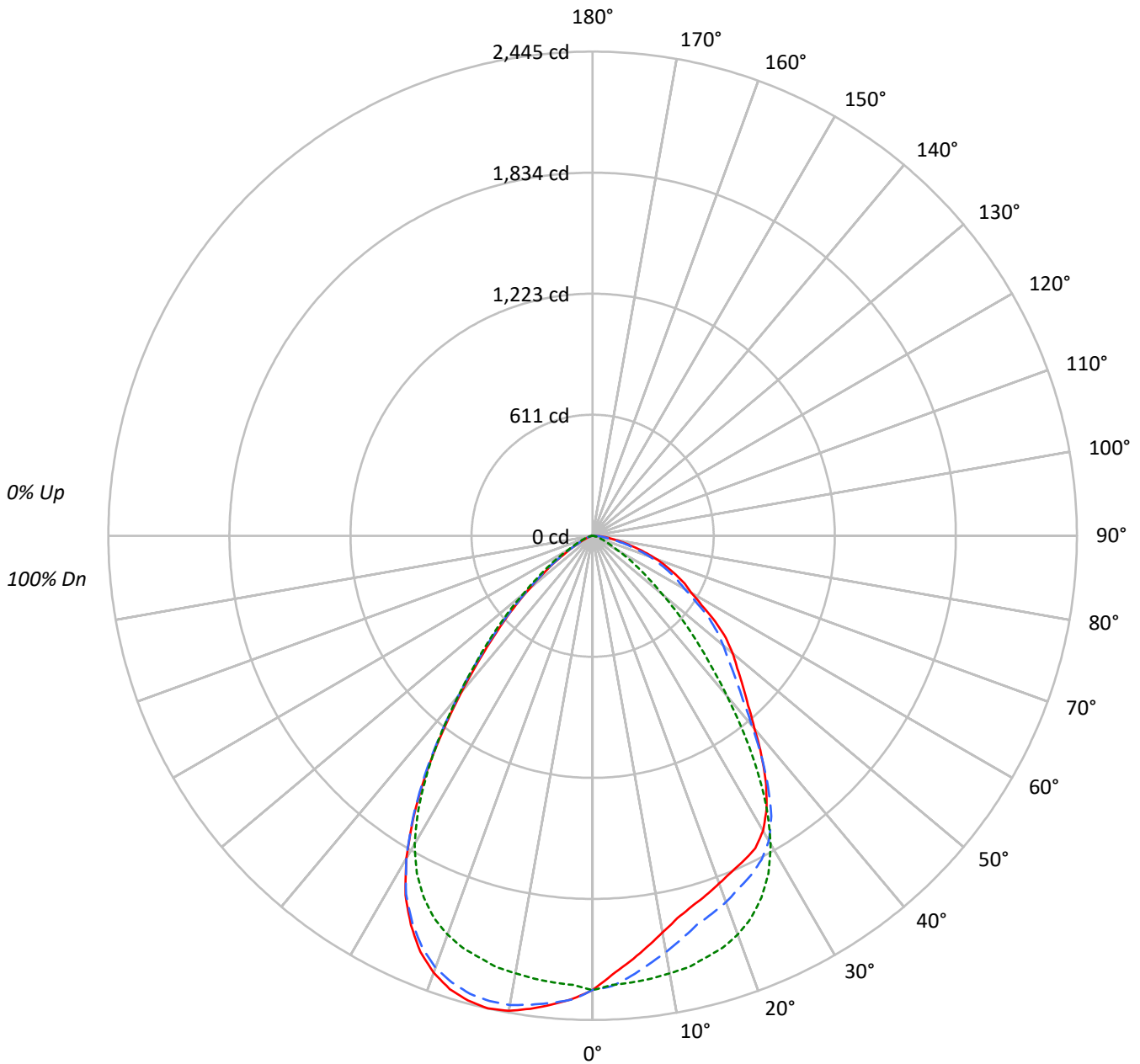
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				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	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89				89
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79				79
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70				70
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62				62
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56				56
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50				50
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46				46
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42				42
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38				38
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35				35

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	223559	223559	223559
5°	211108	221527	232513
10°	201268	222040	241050
15°	195355	222496	245167
20°	193766	222277	243424
25°	194538	216797	233325
30°	193605	202259	211577
35°	181472	172679	174440
40°	161713	133889	130874
45°	147902	99814	93708
50°	139837	69926	63194
55°	128590	47219	39675
60°	112350	27659	21889
65°	106355	17734	12268
70°	96882	12623	7580
75°	80130	8887	5573
80°	63027	4995	3311
85°	56246	3355	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	216.7	5.4
10°-20°	621.8	15.5
20°-30°	921.7	22.9
30°-40°	923.0	23.0
40°-50°	645.1	16.0
50°-60°	383.9	9.5
60°-70°	200.3	5.0
70°-80°	89.1	2.2
80°-90°	19.4	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°	1760.3	43.8
0°-40°	2683.3	66.7
0°-60°	3712.2	92.3
0°-90°	4021.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4021.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2294	2294	2294	2294	2294	
5°	2158	2232	2264	2368	2377	202
15°	1936	2034	2205	2394	2430	548
25°	1809	1892	2016	2155	2170	834
35°	1525	1543	1451	1478	1466	946
45°	1073	1020	724	701	680	833
55°	757	710	278	242	234	672
65°	461	423	77	56	53	456
75°	213	186	24	15	15	230
85°	50	38	3	3	0	56
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°	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9
2.5°	2220.0	2246.6	2220.0	2228.9	2264.4	2231.9	2249.6	2249.6	2240.7	2261.4	2276.2
5°	2157.9	2184.6	2157.9	2169.8	2208.2	2175.7	2196.4	2190.5	2193.4	2211.2	2231.9
7.5°	2095.9	2116.6	2092.9	2107.7	2143.2	2116.6	2134.3	2134.3	2137.3	2163.9	2181.6
10°	2033.8	2051.5	2033.8	2045.6	2084.0	2060.4	2072.2	2075.2	2084.0	2107.7	2134.3
12.5°	1977.6	1992.4	1974.7	1992.4	2024.9	2001.3	2016.1	2019.0	2027.9	2054.5	2084.0
15°	1936.2	1951.0	1933.3	1948.1	1977.6	1959.9	1971.7	1977.6	1983.5	2007.2	2033.8
17.5°	1903.7	1915.5	1900.8	1918.5	1942.2	1921.5	1939.2	1939.2	1948.1	1971.7	2001.3
20°	1868.3	1880.1	1868.3	1883.0	1909.6	1891.9	1906.7	1906.7	1915.5	1942.2	1968.8
22.5°	1835.7	1841.6	1835.7	1847.6	1874.2	1859.4	1868.3	1871.2	1880.1	1903.7	1927.4
25°	1809.1	1821.0	1815.0	1826.9	1844.6	1829.8	1838.7	1841.6	1850.5	1871.2	1891.9
27.5°	1779.6	1785.5	1779.6	1794.3	1809.1	1797.3	1806.2	1803.2	1809.1	1826.9	1844.6
30°	1720.4	1726.4	1726.4	1735.2	1747.1	1741.1	1750.0	1741.1	1747.1	1761.8	1779.6
32.5°	1634.7	1637.7	1640.6	1649.5	1658.4	1649.5	1655.4	1655.4	1655.4	1667.2	1679.1
35°	1525.3	1531.3	1528.3	1534.2	1543.1	1540.1	1540.1	1537.2	1531.3	1537.2	1543.1
37.5°	1401.2	1392.3	1392.3	1401.2	1407.1	1395.3	1401.2	1395.3	1395.3	1398.2	1398.2
40°	1271.1	1262.3	1271.1	1274.1	1277.0	1271.1	1268.2	1262.3	1253.4	1256.3	1250.4
42.5°	1161.7	1155.8	1158.8	1158.8	1161.7	1155.8	1158.8	1147.0	1138.1	1132.2	1123.3
45°	1073.1	1064.2	1073.1	1067.2	1067.2	1064.2	1061.2	1055.3	1043.5	1034.6	1019.9
47.5°	990.3	990.3	993.2	993.2	993.2	987.3	987.3	975.5	963.7	951.9	931.2
50°	922.3	916.4	928.2	928.2	919.3	916.4	919.3	904.6	895.7	880.9	860.2
52.5°	848.4	848.4	851.4	851.4	848.4	842.5	845.4	833.6	824.8	810.0	789.3
55°	756.8	750.8	759.7	759.7	756.8	753.8	756.8	747.9	739.0	727.2	709.5
57.5°	653.3	650.3	656.3	659.2	653.3	653.3	656.3	647.4	644.4	632.6	614.9
60°	576.4	573.5	579.4	582.4	576.4	576.4	576.4	564.6	558.7	546.9	535.1
62.5°	523.2	520.3	526.2	523.2	520.3	517.3	520.3	508.4	502.5	490.7	478.9
65°	461.2	464.1	467.1	467.1	464.1	461.2	461.2	455.2	449.3	437.5	422.7
67.5°	402.0	402.0	405.0	407.9	405.0	405.0	405.0	396.1	390.2	381.3	363.6
70°	340.0	337.0	345.9	345.9	340.0	342.9	340.0	337.0	331.1	319.3	304.5
72.5°	274.9	274.9	277.9	277.9	274.9	274.9	274.9	272.0	263.1	257.2	242.4
75°	212.8	212.8	215.8	218.8	212.8	212.8	215.8	209.9	204.0	195.1	186.2
77.5°	159.6	156.7	159.6	159.6	156.7	156.7	156.7	153.7	150.8	141.9	133.0
80°	112.3	109.4	112.3	112.3	112.3	109.4	109.4	106.4	106.4	100.5	91.6
82.5°	76.9	73.9	76.9	76.9	76.9	73.9	73.9	73.9	70.9	68.0	62.1
85°	50.3	47.3	47.3	50.3	47.3	47.3	47.3	47.3	44.3	41.4	38.4
87.5°	23.6	23.6	23.6	23.6	23.6	23.6	23.6	20.7	20.7	20.7	17.7
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°	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9
2.5°	2264.4	2258.5	2276.2	2270.3	2273.2	2258.5	2282.1	2270.3	2285.1	2270.3	2299.8
5°	2225.9	2220.0	2246.6	2243.7	2246.6	2234.8	2261.4	2258.5	2276.2	2264.4	2296.9
7.5°	2184.6	2178.6	2208.2	2211.2	2217.1	2205.2	2240.7	2240.7	2258.5	2255.5	2291.0
10°	2137.3	2140.2	2169.8	2175.7	2187.5	2181.6	2214.1	2223.0	2246.6	2243.7	2288.0
12.5°	2092.9	2092.9	2131.3	2143.2	2152.0	2149.1	2187.5	2199.3	2225.9	2231.9	2273.2
15°	2048.6	2051.5	2087.0	2104.7	2116.6	2113.6	2155.0	2169.8	2202.3	2205.2	2255.5
17.5°	2013.1	2010.1	2048.6	2063.4	2081.1	2078.1	2122.5	2140.2	2172.7	2181.6	2228.9
20°	1983.5	1980.6	2016.1	2033.8	2045.6	2042.7	2087.0	2107.7	2137.3	2143.2	2190.5
22.5°	1948.1	1942.2	1977.6	1992.4	2004.2	2001.3	2039.7	2054.5	2084.0	2090.0	2134.3
25°	1906.7	1900.8	1933.3	1942.2	1951.0	1945.1	1977.6	1986.5	2010.1	2016.1	2060.4
27.5°	1859.4	1844.6	1871.2	1871.2	1877.1	1868.3	1891.9	1900.8	1921.5	1921.5	1962.8
30°	1785.5	1764.8	1779.6	1776.6	1779.6	1767.7	1782.5	1785.5	1800.3	1797.3	1826.9
32.5°	1682.0	1652.5	1661.3	1652.5	1643.6	1625.9	1643.6	1637.7	1649.5	1637.7	1664.3
35°	1540.1	1510.6	1507.6	1495.8	1486.9	1472.1	1472.1	1457.4	1460.3	1451.4	1469.2
37.5°	1386.4	1348.0	1342.1	1318.4	1303.6	1285.9	1285.9	1274.1	1259.3	1253.4	1268.2
40°	1235.6	1194.3	1179.5	1141.1	1126.3	1108.5	1096.7	1081.9	1076.0	1052.4	1064.2
42.5°	1105.6	1061.2	1028.7	987.3	972.6	946.0	928.2	910.5	901.6	875.0	886.8
45°	996.2	943.0	907.5	854.3	833.6	804.1	777.5	756.8	736.1	724.2	718.3
47.5°	904.6	848.4	801.1	742.0	709.5	682.9	647.4	626.7	600.1	585.3	576.4
50°	827.7	765.6	712.4	644.4	611.9	582.4	541.0	508.4	484.8	461.2	455.2
52.5°	759.7	694.7	635.6	558.7	520.3	484.8	440.5	405.0	384.3	357.7	354.7
55°	679.9	623.7	558.7	478.9	440.5	405.0	357.7	322.2	295.6	277.9	272.0
57.5°	594.2	541.0	478.9	399.1	360.6	322.2	277.9	245.4	221.7	206.9	204.0
60°	514.4	464.1	405.0	325.2	286.7	254.2	206.9	174.4	153.7	141.9	136.0
62.5°	455.2	407.9	351.8	277.9	242.4	209.9	165.5	136.0	118.2	106.4	100.5
65°	399.1	351.8	301.5	233.5	204.0	174.4	133.0	106.4	88.7	76.9	70.9
67.5°	340.0	298.6	251.3	195.1	165.5	141.9	106.4	82.8	68.0	59.1	53.2
70°	280.8	242.4	204.0	156.7	136.0	112.3	82.8	65.0	50.3	44.3	38.4
72.5°	221.7	192.1	159.6	121.2	103.5	88.7	65.0	47.3	38.4	32.5	26.6
75°	165.5	144.8	118.2	91.6	76.9	65.0	47.3	35.5	29.6	23.6	20.7
77.5°	118.2	100.5	82.8	62.1	56.2	47.3	32.5	26.6	20.7	14.8	11.8
80°	79.8	70.9	56.2	44.3	35.5	32.5	23.6	17.7	11.8	8.9	8.9
82.5°	53.2	44.3	35.5	26.6	23.6	20.7	14.8	11.8	8.9	5.9	5.9
85°	32.5	26.6	20.7	14.8	14.8	11.8	8.9	5.9	3.0	3.0	3.0
87.5°	14.8	11.8	8.9	5.9	5.9	3.0	3.0	3.0	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°	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9
2.5°	2323.5	2305.8	2293.9	2308.7	2314.6	2305.8	2314.6	2329.4	2344.2	2347.1	2305.8
5°	2326.4	2308.7	2302.8	2320.5	2323.5	2320.5	2329.4	2350.1	2367.8	2373.7	2332.4
7.5°	2326.4	2314.6	2311.7	2332.4	2335.3	2332.4	2347.1	2370.8	2388.5	2400.3	2359.0
10°	2320.5	2314.6	2317.6	2335.3	2341.2	2341.2	2361.9	2388.5	2406.3	2418.1	2376.7
12.5°	2311.7	2311.7	2311.7	2332.4	2338.3	2341.2	2359.0	2394.4	2406.3	2424.0	2382.6
15°	2296.9	2296.9	2296.9	2317.6	2326.4	2326.4	2347.1	2379.7	2394.4	2412.2	2370.8
17.5°	2270.3	2270.3	2273.2	2291.0	2299.8	2299.8	2320.5	2356.0	2364.9	2385.6	2344.2
20°	2231.9	2231.9	2234.8	2252.5	2261.4	2255.5	2282.1	2311.7	2320.5	2338.3	2296.9
22.5°	2175.7	2175.7	2175.7	2193.4	2199.3	2196.4	2223.0	2249.6	2249.6	2273.2	2228.9
25°	2092.9	2098.8	2092.9	2110.7	2116.6	2113.6	2137.3	2160.9	2155.0	2181.6	2137.3
27.5°	1992.4	1989.5	1989.5	2004.2	2004.2	2001.3	2019.0	2045.6	2039.7	2057.4	2016.1
30°	1853.5	1862.3	1847.6	1868.3	1859.4	1853.5	1865.3	1888.9	1880.1	1894.9	1862.3
32.5°	1693.8	1682.0	1682.0	1682.0	1687.9	1673.1	1685.0	1696.8	1687.9	1702.7	1667.2
35°	1484.0	1486.9	1478.0	1481.0	1484.0	1466.2	1478.0	1489.9	1478.0	1486.9	1454.4
37.5°	1274.1	1277.0	1256.3	1268.2	1256.3	1250.4	1262.3	1268.2	1256.3	1265.2	1229.7
40°	1064.2	1058.3	1055.3	1055.3	1058.3	1043.5	1052.4	1061.2	1052.4	1058.3	1025.8
42.5°	880.9	878.0	872.0	875.0	866.1	863.2	866.1	875.0	866.1	872.0	848.4
45°	721.3	715.4	706.5	709.5	709.5	694.7	703.6	709.5	700.6	703.6	682.9
47.5°	573.5	564.6	564.6	561.7	561.7	555.7	564.6	561.7	552.8	558.7	538.0
50°	446.4	440.5	440.5	440.5	440.5	431.6	434.5	440.5	431.6	431.6	419.8
52.5°	348.8	340.0	334.0	334.0	334.0	331.1	331.1	334.0	325.2	325.2	322.2
55°	263.1	260.1	251.3	251.3	251.3	242.4	245.4	245.4	242.4	242.4	233.5
57.5°	195.1	186.2	180.3	180.3	174.4	174.4	171.5	174.4	168.5	168.5	162.6
60°	130.1	124.2	121.2	118.2	118.2	115.3	118.2	115.3	115.3	112.3	109.4
62.5°	94.6	88.7	82.8	82.8	82.8	79.8	79.8	79.8	79.8	79.8	76.9
65°	68.0	62.1	62.1	59.1	59.1	56.2	56.2	56.2	56.2	56.2	53.2
67.5°	47.3	44.3	41.4	41.4	41.4	41.4	41.4	41.4	38.4	38.4	38.4
70°	35.5	32.5	29.6	29.6	29.6	29.6	29.6	26.6	29.6	29.6	26.6
72.5°	23.6	23.6	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7
75°	17.7	17.7	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8
77.5°	11.8	11.8	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
80°	8.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
82.5°	5.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
85°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	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: P251657

CATALOG NUMBER: LD4B50D010TE EU4B30509050 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9	2293.9
2.5°	2350.1	2347.1	2341.2	2350.1	2326.4	2317.6	2314.6	2341.2
5°	2382.6	2376.7	2376.7	2385.6	2359.0	2353.1	2347.1	2376.7
7.5°	2412.2	2406.3	2406.3	2415.1	2391.5	2385.6	2379.7	2409.2
10°	2429.9	2429.9	2429.9	2435.8	2415.1	2409.2	2406.3	2435.8
12.5°	2438.8	2438.8	2435.8	2447.6	2421.0	2421.0	2415.1	2444.7
15°	2427.0	2427.0	2427.0	2435.8	2412.2	2406.3	2406.3	2429.9
17.5°	2397.4	2397.4	2394.4	2403.3	2376.7	2376.7	2373.7	2400.3
20°	2353.1	2353.1	2347.1	2359.0	2332.4	2323.5	2320.5	2347.1
22.5°	2282.1	2279.1	2276.2	2282.1	2258.5	2252.5	2249.6	2273.2
25°	2190.5	2187.5	2181.6	2187.5	2160.9	2152.0	2152.0	2169.8
27.5°	2060.4	2060.4	2051.5	2060.4	2030.8	2027.9	2024.9	2045.6
30°	1900.8	1888.9	1883.0	1894.9	1865.3	1865.3	1859.4	1880.1
32.5°	1702.7	1690.9	1687.9	1693.8	1667.2	1658.4	1670.2	1682.0
35°	1475.1	1478.0	1466.2	1466.2	1442.6	1445.5	1448.5	1466.2
37.5°	1256.3	1250.4	1247.5	1250.4	1232.7	1226.8	1220.9	1238.6
40°	1052.4	1037.6	1034.6	1034.6	1019.9	1016.9	1019.9	1028.7
42.5°	860.2	857.3	845.4	851.4	836.6	842.5	839.5	839.5
45°	694.7	697.6	685.8	694.7	682.9	674.0	674.0	679.9
47.5°	549.8	549.8	546.9	546.9	538.0	541.0	535.1	543.9
50°	425.7	425.7	419.8	422.7	416.8	416.8	413.9	416.8
52.5°	325.2	322.2	322.2	319.3	313.3	316.3	319.3	313.3
55°	236.5	239.4	233.5	236.5	230.6	233.5	230.6	233.5
57.5°	162.6	165.5	159.6	165.5	159.6	162.6	159.6	159.6
60°	112.3	112.3	109.4	112.3	109.4	109.4	106.4	112.3
62.5°	76.9	76.9	76.9	76.9	76.9	73.9	76.9	76.9
65°	56.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2
67.5°	38.4	38.4	38.4	38.4	38.4	38.4	38.4	38.4
70°	26.6	26.6	26.6	26.6	26.6	26.6	26.6	26.6
72.5°	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7
75°	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8
77.5°	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
80°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
82.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
85°	3.0	3.0	3.0	0.0	3.0	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



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













(END OF REPORT)