

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: P251650

Luminaire Tested: **LD4B50D010TE EU4B30508040 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251650
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 EU4B30508040 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4779.0 lumens
Efficiency: N/A
Efficacy: 81.3 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

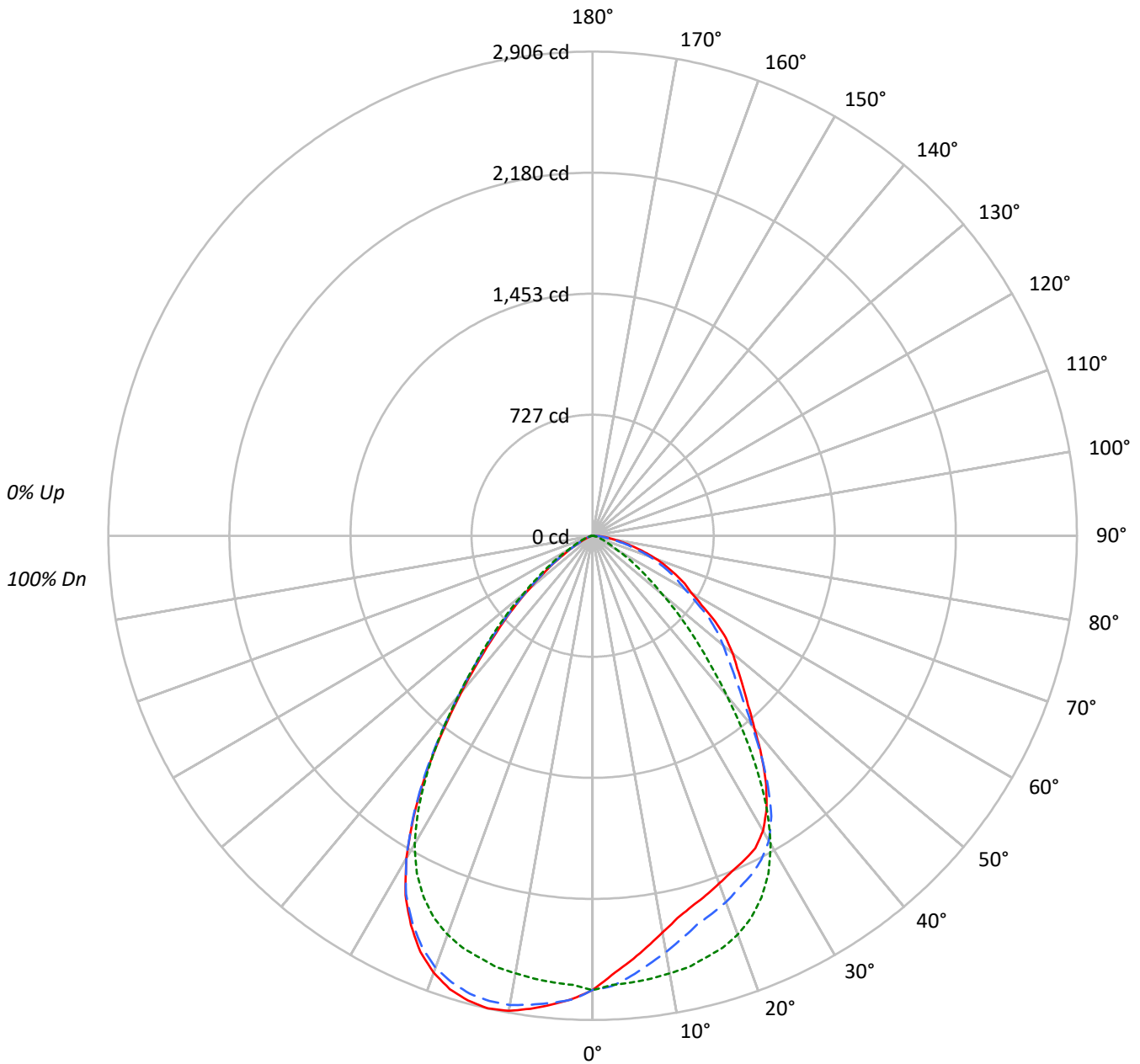
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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	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°	265710	265710	265710
5°	250906	263281	276341
10°	239210	263891	286494
15°	232182	264448	291388
20°	230284	264177	289317
25°	231218	257660	277306
30°	230111	240386	251459
35°	215689	205243	207325
40°	192195	159130	155542
45°	175770	118641	111378
50°	166203	83102	75111
55°	152820	56122	47168
60°	133537	32863	26021
65°	126395	21054	14574
70°	115119	15017	9004
75°	95267	10581	6627
80°	74925	5893	3929
85°	66757	3914	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	257.6	5.4
10°-20°	739.0	15.5
20°-30°	1095.5	22.9
30°-40°	1097.0	23.0
40°-50°	766.7	16.0
50°-60°	456.2	9.5
60°-70°	238.1	5.0
70°-80°	105.9	2.2
80°-90°	23.1	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°	2092.1	43.8
0°-40°	3189.1	66.7
0°-60°	4412.0	92.3
0°-90°	4779.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4779.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2726	2726	2726	2726	2726	
5°	2565	2653	2691	2814	2825	240
15°	2301	2417	2621	2846	2888	652
25°	2150	2248	2396	2561	2579	991
35°	1813	1834	1725	1757	1743	1124
45°	1275	1212	861	833	808	990
55°	899	843	330	288	278	798
65°	548	502	91	67	63	542
75°	253	221	28	18	18	274
85°	60	46	4	4	0	67
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°	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4
2.5°	2638.5	2670.1	2638.5	2649.1	2691.2	2652.6	2673.7	2673.7	2663.1	2687.7	2705.3
5°	2564.7	2596.4	2564.7	2578.8	2624.5	2585.8	2610.4	2603.4	2606.9	2628.0	2652.6
7.5°	2491.0	2515.6	2487.5	2505.0	2547.2	2515.6	2536.6	2536.6	2540.2	2571.8	2592.9
10°	2417.2	2438.3	2417.2	2431.2	2476.9	2448.8	2462.9	2466.4	2476.9	2505.0	2536.6
12.5°	2350.4	2368.0	2346.9	2368.0	2406.6	2378.5	2396.1	2399.6	2410.2	2441.8	2476.9
15°	2301.2	2318.8	2297.7	2315.3	2350.4	2329.4	2343.4	2350.4	2357.5	2385.6	2417.2
17.5°	2262.6	2276.6	2259.1	2280.2	2308.3	2283.7	2304.8	2304.8	2315.3	2343.4	2378.5
20°	2220.4	2234.5	2220.4	2238.0	2269.6	2248.5	2266.1	2266.1	2276.6	2308.3	2339.9
22.5°	2181.8	2188.8	2181.8	2195.8	2227.5	2209.9	2220.4	2223.9	2234.5	2262.6	2290.7
25°	2150.2	2164.2	2157.2	2171.2	2192.3	2174.8	2185.3	2188.8	2199.4	2223.9	2248.5
27.5°	2115.0	2122.1	2115.0	2132.6	2150.2	2136.1	2146.7	2143.1	2150.2	2171.2	2192.3
30°	2044.8	2051.8	2051.8	2062.3	2076.4	2069.4	2079.9	2069.4	2076.4	2094.0	2115.0
32.5°	1942.9	1946.4	1949.9	1960.4	1971.0	1960.4	1967.5	1967.5	1967.5	1981.5	1995.6
35°	1812.9	1819.9	1816.4	1823.4	1834.0	1830.5	1830.5	1826.9	1819.9	1826.9	1834.0
37.5°	1665.3	1654.8	1654.8	1665.3	1672.4	1658.3	1665.3	1658.3	1658.3	1661.8	1661.8
40°	1510.7	1500.2	1510.7	1514.3	1517.8	1510.7	1507.2	1500.2	1489.7	1493.2	1486.1
42.5°	1380.7	1373.7	1377.2	1377.2	1380.7	1373.7	1377.2	1363.2	1352.6	1345.6	1335.1
45°	1275.3	1264.8	1275.3	1268.3	1268.3	1264.8	1261.3	1254.3	1240.2	1229.7	1212.1
47.5°	1177.0	1177.0	1180.5	1180.5	1180.5	1173.5	1173.5	1159.4	1145.4	1131.3	1106.7
50°	1096.2	1089.1	1103.2	1103.2	1092.7	1089.1	1092.7	1075.1	1064.5	1047.0	1022.4
52.5°	1008.3	1008.3	1011.8	1011.8	1008.3	1001.3	1004.8	990.8	980.2	962.7	938.1
55°	899.4	892.4	902.9	902.9	899.4	895.9	899.4	888.9	878.3	864.3	843.2
57.5°	776.5	772.9	780.0	783.5	776.5	776.5	780.0	769.4	765.9	751.9	730.8
60°	685.1	681.6	688.6	692.1	685.1	685.1	685.1	671.0	664.0	650.0	635.9
62.5°	621.9	618.3	625.4	621.9	618.3	614.8	618.3	604.3	597.3	583.2	569.2
65°	548.1	551.6	555.1	555.1	551.6	548.1	548.1	541.1	534.0	520.0	502.4
67.5°	477.8	477.8	481.3	484.8	481.3	481.3	481.3	470.8	463.8	453.2	432.1
70°	404.0	400.5	411.1	411.1	404.0	407.5	404.0	400.5	393.5	379.4	361.9
72.5°	326.7	326.7	330.3	330.3	326.7	326.7	326.7	323.2	312.7	305.7	288.1
75°	253.0	253.0	256.5	260.0	253.0	253.0	256.5	249.4	242.4	231.9	221.3
77.5°	189.7	186.2	189.7	189.7	186.2	186.2	186.2	182.7	179.2	168.6	158.1
80°	133.5	130.0	133.5	133.5	133.5	130.0	130.0	126.5	126.5	119.5	108.9
82.5°	91.3	87.8	91.3	91.3	91.3	87.8	87.8	87.8	84.3	80.8	73.8
85°	59.7	56.2	56.2	59.7	56.2	56.2	56.2	56.2	52.7	49.2	45.7
87.5°	28.1	28.1	28.1	28.1	28.1	28.1	28.1	24.6	24.6	24.6	21.1
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°	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4
2.5°	2691.2	2684.2	2705.3	2698.3	2701.8	2684.2	2712.3	2698.3	2715.8	2698.3	2733.4
5°	2645.6	2638.5	2670.1	2666.6	2670.1	2656.1	2687.7	2684.2	2705.3	2691.2	2729.9
7.5°	2596.4	2589.3	2624.5	2628.0	2635.0	2621.0	2663.1	2663.1	2684.2	2680.7	2722.8
10°	2540.2	2543.7	2578.8	2585.8	2599.9	2592.9	2631.5	2642.0	2670.1	2666.6	2719.3
12.5°	2487.5	2487.5	2533.1	2547.2	2557.7	2554.2	2599.9	2613.9	2645.6	2652.6	2701.8
15°	2434.8	2438.3	2480.4	2501.5	2515.6	2512.0	2561.2	2578.8	2617.4	2621.0	2680.7
17.5°	2392.6	2389.1	2434.8	2452.3	2473.4	2469.9	2522.6	2543.7	2582.3	2592.9	2649.1
20°	2357.5	2353.9	2396.1	2417.2	2431.2	2427.7	2480.4	2505.0	2540.2	2547.2	2603.4
22.5°	2315.3	2308.3	2350.4	2368.0	2382.1	2378.5	2424.2	2441.8	2476.9	2483.9	2536.6
25°	2266.1	2259.1	2297.7	2308.3	2318.8	2311.8	2350.4	2361.0	2389.1	2396.1	2448.8
27.5°	2209.9	2192.3	2223.9	2223.9	2231.0	2220.4	2248.5	2259.1	2283.7	2283.7	2332.9
30°	2122.1	2097.5	2115.0	2111.5	2115.0	2101.0	2118.5	2122.1	2139.6	2136.1	2171.2
32.5°	1999.1	1964.0	1974.5	1964.0	1953.4	1932.3	1953.4	1946.4	1960.4	1946.4	1978.0
35°	1830.5	1795.3	1791.8	1777.8	1767.2	1749.6	1749.6	1732.1	1735.6	1725.1	1746.1
37.5°	1647.8	1602.1	1595.1	1567.0	1549.4	1528.3	1528.3	1514.3	1496.7	1489.7	1507.2
40°	1468.6	1419.4	1401.8	1356.2	1338.6	1317.5	1303.5	1285.9	1278.9	1250.8	1264.8
42.5°	1314.0	1261.3	1222.6	1173.5	1155.9	1124.3	1103.2	1082.1	1071.6	1040.0	1054.0
45°	1184.0	1120.8	1078.6	1015.4	990.8	955.6	924.0	899.4	874.8	860.8	853.7
47.5°	1075.1	1008.3	952.1	881.9	843.2	811.6	769.4	744.8	713.2	695.6	685.1
50°	983.7	910.0	846.7	765.9	727.3	692.1	642.9	604.3	576.2	548.1	541.1
52.5°	902.9	825.6	755.4	664.0	618.3	576.2	523.5	481.3	456.7	425.1	421.6
55°	808.1	741.3	664.0	569.2	523.5	481.3	425.1	383.0	351.3	330.3	323.2
57.5°	706.2	642.9	569.2	474.3	428.6	383.0	330.3	291.6	263.5	245.9	242.4
60°	611.3	551.6	481.3	386.5	340.8	302.1	245.9	207.3	182.7	168.6	161.6
62.5°	541.1	484.8	418.1	330.3	288.1	249.4	196.7	161.6	140.5	126.5	119.5
65°	474.3	418.1	358.4	277.6	242.4	207.3	158.1	126.5	105.4	91.3	84.3
67.5°	404.0	354.8	298.6	231.9	196.7	168.6	126.5	98.4	80.8	70.3	63.2
70°	333.8	288.1	242.4	186.2	161.6	133.5	98.4	77.3	59.7	52.7	45.7
72.5°	263.5	228.4	189.7	144.0	123.0	105.4	77.3	56.2	45.7	38.6	31.6
75°	196.7	172.2	140.5	108.9	91.3	77.3	56.2	42.2	35.1	28.1	24.6
77.5°	140.5	119.5	98.4	73.8	66.8	56.2	38.6	31.6	24.6	17.6	14.1
80°	94.9	84.3	66.8	52.7	42.2	38.6	28.1	21.1	14.1	10.5	10.5
82.5°	63.2	52.7	42.2	31.6	28.1	24.6	17.6	14.1	10.5	7.0	7.0
85°	38.6	31.6	24.6	17.6	17.6	14.1	10.5	7.0	3.5	3.5	3.5
87.5°	17.6	14.1	10.5	7.0	7.0	3.5	3.5	3.5	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°	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4
2.5°	2761.5	2740.4	2726.4	2743.9	2751.0	2740.4	2751.0	2768.5	2786.1	2789.6	2740.4
5°	2765.0	2743.9	2736.9	2758.0	2761.5	2758.0	2768.5	2793.1	2814.2	2821.2	2772.0
7.5°	2765.0	2751.0	2747.4	2772.0	2775.5	2772.0	2789.6	2817.7	2838.8	2852.8	2803.7
10°	2758.0	2751.0	2754.5	2775.5	2782.6	2782.6	2807.2	2838.8	2859.9	2873.9	2824.7
12.5°	2747.4	2747.4	2747.4	2772.0	2779.1	2782.6	2803.7	2845.8	2859.9	2880.9	2831.8
15°	2729.9	2729.9	2729.9	2754.5	2765.0	2765.0	2789.6	2828.2	2845.8	2866.9	2817.7
17.5°	2698.3	2698.3	2701.8	2722.8	2733.4	2733.4	2758.0	2800.1	2810.7	2835.3	2786.1
20°	2652.6	2652.6	2656.1	2677.2	2687.7	2680.7	2712.3	2747.4	2758.0	2779.1	2729.9
22.5°	2585.8	2585.8	2585.8	2606.9	2613.9	2610.4	2642.0	2673.7	2673.7	2701.8	2649.1
25°	2487.5	2494.5	2487.5	2508.5	2515.6	2512.0	2540.2	2568.3	2561.2	2592.9	2540.2
27.5°	2368.0	2364.5	2364.5	2382.1	2382.1	2378.5	2399.6	2431.2	2424.2	2445.3	2396.1
30°	2202.9	2213.4	2195.8	2220.4	2209.9	2202.9	2216.9	2245.0	2234.5	2252.1	2213.4
32.5°	2013.1	1999.1	1999.1	1999.1	2006.1	1988.6	2002.6	2016.7	2006.1	2023.7	1981.5
35°	1763.7	1767.2	1756.7	1760.2	1763.7	1742.6	1756.7	1770.7	1756.7	1767.2	1728.6
37.5°	1514.3	1517.8	1493.2	1507.2	1493.2	1486.1	1500.2	1507.2	1493.2	1503.7	1461.6
40°	1264.8	1257.8	1254.3	1254.3	1257.8	1240.2	1250.8	1261.3	1250.8	1257.8	1219.1
42.5°	1047.0	1043.5	1036.4	1040.0	1029.4	1025.9	1029.4	1040.0	1029.4	1036.4	1008.3
45°	857.3	850.2	839.7	843.2	843.2	825.6	836.2	843.2	832.7	836.2	811.6
47.5°	681.6	671.0	671.0	667.5	667.5	660.5	671.0	667.5	657.0	664.0	639.4
50°	530.5	523.5	523.5	523.5	523.5	512.9	516.5	523.5	512.9	512.9	498.9
52.5°	414.6	404.0	397.0	397.0	397.0	393.5	393.5	397.0	386.5	386.5	383.0
55°	312.7	309.2	298.6	298.6	298.6	288.1	291.6	291.6	288.1	288.1	277.6
57.5°	231.9	221.3	214.3	214.3	207.3	207.3	203.8	207.3	200.3	200.3	193.2
60°	154.6	147.6	144.0	140.5	140.5	137.0	140.5	137.0	137.0	133.5	130.0
62.5°	112.4	105.4	98.4	98.4	98.4	94.9	94.9	94.9	94.9	94.9	91.3
65°	80.8	73.8	73.8	70.3	70.3	66.8	66.8	66.8	66.8	66.8	63.2
67.5°	56.2	52.7	49.2	49.2	49.2	49.2	49.2	49.2	45.7	45.7	45.7
70°	42.2	38.6	35.1	35.1	35.1	35.1	35.1	31.6	35.1	35.1	31.6
72.5°	28.1	28.1	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.6
75°	21.1	21.1	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6
77.5°	14.1	14.1	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
80°	10.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
82.5°	7.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
85°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	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: P251650

CATALOG NUMBER: LD4B50D010TE EU4B30508040 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4	2726.4
2.5°	2793.1	2789.6	2782.6	2793.1	2765.0	2754.5	2751.0	2782.6
5°	2831.8	2824.7	2824.7	2835.3	2803.7	2796.6	2789.6	2824.7
7.5°	2866.9	2859.9	2859.9	2870.4	2842.3	2835.3	2828.2	2863.4
10°	2888.0	2888.0	2888.0	2895.0	2870.4	2863.4	2859.9	2895.0
12.5°	2898.5	2898.5	2895.0	2909.1	2877.4	2877.4	2870.4	2905.5
15°	2884.5	2884.5	2884.5	2895.0	2866.9	2859.9	2859.9	2888.0
17.5°	2849.3	2849.3	2845.8	2856.4	2824.7	2824.7	2821.2	2852.8
20°	2796.6	2796.6	2789.6	2803.7	2772.0	2761.5	2758.0	2789.6
22.5°	2712.3	2708.8	2705.3	2712.3	2684.2	2677.2	2673.7	2701.8
25°	2603.4	2599.9	2592.9	2599.9	2568.3	2557.7	2557.7	2578.8
27.5°	2448.8	2448.8	2438.3	2448.8	2413.7	2410.2	2406.6	2431.2
30°	2259.1	2245.0	2238.0	2252.1	2216.9	2216.9	2209.9	2234.5
32.5°	2023.7	2009.6	2006.1	2013.1	1981.5	1971.0	1985.0	1999.1
35°	1753.2	1756.7	1742.6	1742.6	1714.5	1718.0	1721.5	1742.6
37.5°	1493.2	1486.1	1482.6	1486.1	1465.1	1458.0	1451.0	1472.1
40°	1250.8	1233.2	1229.7	1229.7	1212.1	1208.6	1212.1	1222.6
42.5°	1022.4	1018.9	1004.8	1011.8	994.3	1001.3	997.8	997.8
45°	825.6	829.2	815.1	825.6	811.6	801.0	801.0	808.1
47.5°	653.5	653.5	650.0	650.0	639.4	642.9	635.9	646.5
50°	505.9	505.9	498.9	502.4	495.4	495.4	491.9	495.4
52.5°	386.5	383.0	383.0	379.4	372.4	375.9	379.4	372.4
55°	281.1	284.6	277.6	281.1	274.0	277.6	274.0	277.6
57.5°	193.2	196.7	189.7	196.7	189.7	193.2	189.7	189.7
60°	133.5	133.5	130.0	133.5	130.0	130.0	126.5	133.5
62.5°	91.3	91.3	91.3	91.3	91.3	87.8	91.3	91.3
65°	66.8	63.2	63.2	63.2	63.2	63.2	63.2	63.2
67.5°	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7
70°	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6
72.5°	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.6
75°	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6
77.5°	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
80°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
82.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
85°	3.5	3.5	3.5	0.0	3.5	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)