

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: PORTFOLIO

Report Number: P563846

Luminaire Tested: **LD4C45D010 EX4C459030 4LBSQLWWLI**

Issue Date: 2/18/2022



Test Information

Test Method: LM-79-08
Report Number: P563846
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P219529)
Test Lab: INNOVATION CENTER
Issue Date: 2/18/2022
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: PORTFOLIO
Catalog Number: LD4C45D010 EX4C459030 4LBSQLWWLI
Description: 4 INCH 4500 LUMEN PORTFOLIO LED DOWNLIGHT WITH, 3000K, 90CRI LEDS
AND 4LBSQLWW TRIM WITH LI FINISH, DIM TO WARM
Light Source: -
Ballast/Driver: -

Summary

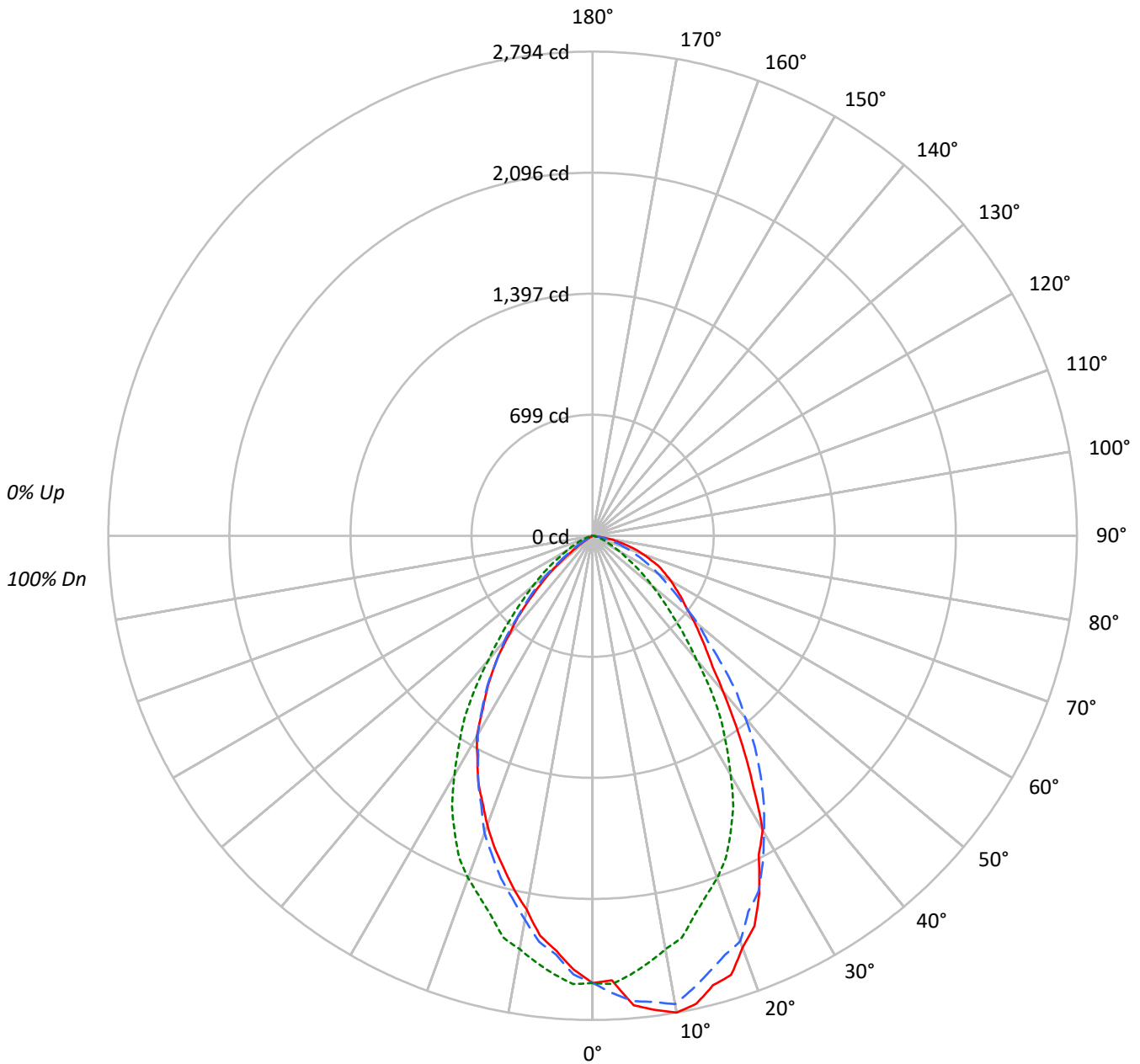
Lumens per Lamp: N/A
Luminaire Lumens: 3698.6 lumens
Efficiency: N/A
Efficacy: 74.6 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 1 / 1.06
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 49.6
Input Voltage (V):
Input Current (A_{in}): 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	84	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	74	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	80	69	61	56	78	68	61	56	66	60	55	65	59	55	63	58	54	53				53
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48				48
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44				44
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41				41
10	62	51	44	40	61	51	44	40	50	44	39	49	43	39	48	43	39	38				38

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	248961	248961	248961
5°	263404	246028	232836
10°	273719	237350	214600
15°	268252	226527	198097
20°	259548	215703	182342
25°	242109	200588	166339
30°	218553	177519	148918
35°	180020	151962	123539
40°	146917	117291	95085
45°	126222	89078	68392
50°	114249	67805	43202
55°	105140	48919	15628
60°	100908	33424	2393
65°	97466	22626	731
70°	87258	15686	903
75°	71504	8090	0
80°	44730	3445	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	241.7	6.5
10°-20°	651.3	17.6
20°-30°	869.7	23.5
30°-40°	825.6	22.3
40°-50°	570.7	15.4
50°-60°	315.3	8.5
60°-70°	156.6	4.2
70°-80°	61.7	1.7
80°-90°	5.9	0.2
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°	1762.8	47.7
0°-40°	2588.4	70.0
0°-60°	3474.4	93.9
0°-90°	3698.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3698.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2580	2580	2580	2580	2580	
5°	2720	2695	2540	2426	2404	260
15°	2685	2605	2268	2045	1983	760
25°	2274	2265	1884	1562	1562	1037
35°	1528	1689	1290	1061	1049	957
45°	925	1061	653	535	501	722
55°	625	588	291	148	93	563
65°	427	309	99	3	3	414
75°	192	118	22	0	0	204
85°	0	3	0	0	0	18
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°	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2
2.5°	2567.8	2638.9	2645.1	2638.9	2648.3	2645.1	2660.7	2645.1	2663.8	2636.0	2642.1
5°	2719.5	2691.6	2750.4	2719.5	2719.5	2716.4	2707.1	2703.9	2716.4	2676.2	2694.8
7.5°	2759.7	2799.9	2852.5	2787.5	2790.6	2790.6	2772.1	2765.9	2765.9	2691.6	2713.3
10°	2793.7	2768.9	2796.8	2772.1	2793.7	2790.6	2803.0	2762.7	2790.6	2747.4	2744.2
12.5°	2765.9	2756.5	2793.7	2753.6	2741.2	2744.2	2728.7	2719.5	2728.7	2679.2	2676.2
15°	2685.4	2694.8	2750.4	2707.1	2700.9	2694.8	2676.2	2645.1	2670.0	2601.9	2605.0
17.5°	2657.6	2642.1	2651.4	2614.2	2623.6	2617.4	2614.2	2586.5	2580.2	2536.9	2536.9
20°	2527.7	2561.6	2561.6	2536.9	2536.9	2533.8	2493.7	2518.4	2490.5	2478.1	2490.5
22.5°	2437.9	2441.1	2441.1	2419.3	2422.5	2410.2	2388.4	2372.9	2388.4	2372.9	2348.2
25°	2274.1	2280.2	2317.3	2277.0	2270.9	2283.2	2264.7	2255.3	2252.3	2215.3	2264.7
27.5°	2076.0	2137.7	2134.7	2119.2	2137.7	2113.0	2103.9	2106.8	2116.2	2113.0	2125.4
30°	1961.6	1970.7	1980.1	1967.7	1970.7	1961.6	1961.6	1964.5	1989.3	1980.1	1976.9
32.5°	1729.4	1760.4	1785.2	1785.2	1788.2	1797.5	1794.3	1859.3	1874.9	1844.0	1837.8
35°	1528.3	1550.0	1571.6	1574.7	1615.0	1618.1	1621.2	1639.7	1683.0	1692.3	1689.2
37.5°	1336.6	1358.2	1364.4	1392.2	1413.9	1435.5	1460.3	1485.0	1522.1	1553.1	1537.7
40°	1166.4	1175.6	1191.1	1203.4	1246.8	1246.8	1259.1	1308.7	1348.9	1373.6	1370.5
42.5°	1024.1	1027.2	1039.5	1061.1	1101.4	1092.1	1101.4	1135.5	1194.2	1197.3	1231.3
45°	925.0	921.9	931.2	934.3	959.1	971.5	977.6	1002.5	1051.9	1058.0	1061.1
47.5°	835.4	832.3	847.7	853.9	863.1	875.5	875.5	878.7	897.2	912.7	900.3
50°	761.1	761.1	761.1	767.3	782.7	779.6	782.7	795.1	804.3	798.2	795.1
52.5°	680.6	692.9	702.3	705.4	708.5	708.5	711.6	705.4	702.3	692.9	674.4
55°	625.0	637.3	637.3	637.3	637.3	649.7	634.3	637.3	637.3	612.6	587.8
57.5°	569.3	581.6	590.9	578.6	590.9	578.6	572.4	569.3	563.0	538.3	501.2
60°	522.9	529.0	525.9	522.9	529.0	519.8	513.6	501.2	495.0	461.0	436.3
62.5°	470.3	473.3	476.5	470.3	464.1	461.0	448.6	430.1	417.7	389.8	368.1
65°	426.9	417.7	414.5	411.5	405.4	396.0	386.7	365.1	355.7	331.0	309.3
67.5°	361.9	358.9	365.1	355.7	340.4	340.4	331.0	312.5	290.8	275.4	253.7
70°	309.3	306.3	300.1	290.8	287.8	275.4	275.4	253.7	247.5	219.6	201.1
72.5°	253.7	253.7	244.3	235.2	225.8	219.6	216.6	201.1	191.8	176.4	160.8
75°	191.8	191.8	188.7	179.4	173.2	167.0	164.0	151.7	142.3	126.9	117.6
77.5°	136.1	136.1	123.8	117.6	120.6	114.4	108.2	105.2	102.0	92.9	80.5
80°	80.5	77.3	68.2	71.1	68.2	68.2	65.0	61.8	55.6	49.4	43.2
82.5°	21.7	24.7	24.7	24.7	27.9	21.7	21.7	21.7	24.7	24.7	15.6
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	3.2	3.2
87.5°	3.2	6.2	12.4	12.4	12.4	12.4	12.4	9.4	9.4	9.4	6.2
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°	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2
2.5°	2611.3	2608.1	2611.3	2589.5	2638.9	2601.9	2595.7	2589.5	2611.3	2589.5	2558.6
5°	2666.9	2636.0	2626.6	2617.4	2645.1	2601.9	2592.6	2595.7	2580.2	2540.1	2543.1
7.5°	2685.4	2657.6	2629.8	2571.0	2595.7	2586.5	2561.6	2543.1	2518.4	2484.3	2478.1
10°	2691.6	2660.7	2620.4	2601.9	2564.8	2552.5	2543.1	2512.2	2481.3	2422.5	2407.0
12.5°	2673.0	2636.0	2586.5	2571.0	2543.1	2502.8	2481.3	2450.2	2422.5	2376.1	2342.0
15°	2592.6	2561.6	2546.3	2493.7	2481.3	2456.4	2413.2	2369.9	2329.7	2267.7	2249.1
17.5°	2499.9	2487.5	2471.9	2431.7	2428.7	2403.9	2363.7	2326.5	2274.1	2178.0	2147.1
20°	2403.9	2403.9	2354.4	2338.9	2369.9	2320.3	2289.4	2255.3	2147.1	2100.7	2045.1
22.5°	2332.8	2298.8	2270.9	2246.2	2249.1	2218.2	2175.0	2106.8	2066.6	2011.0	1946.0
25°	2193.5	2205.9	2144.1	2134.7	2144.1	2072.9	2051.2	1995.4	1936.6	1884.1	1834.6
27.5°	2106.8	2072.9	2032.7	1998.6	1998.6	1970.7	1908.9	1896.6	1806.8	1757.3	1695.4
30°	1976.9	1952.2	1918.1	1868.7	1862.5	1840.8	1791.4	1760.4	1667.6	1593.3	1559.3
32.5°	1813.0	1803.7	1775.8	1720.2	1701.7	1676.9	1615.0	1562.4	1519.1	1435.5	1395.4
35°	1695.4	1661.4	1602.6	1556.2	1540.7	1497.4	1447.9	1410.8	1364.4	1290.1	1237.5
37.5°	1519.1	1485.0	1429.3	1373.6	1373.6	1330.4	1262.2	1225.2	1160.2	1116.8	1073.6
40°	1364.4	1321.0	1265.4	1200.5	1191.1	1129.2	1101.4	1039.5	999.3	931.2	925.0
42.5°	1191.1	1150.9	1101.4	1051.9	1014.8	983.8	912.7	866.2	823.0	788.9	779.6
45°	1033.3	980.7	937.5	875.5	838.4	801.4	754.9	723.9	690.0	652.8	631.2
47.5°	897.2	853.9	792.0	736.4	699.2	680.6	628.0	594.0	566.2	541.5	525.9
50°	758.0	705.4	671.4	609.4	603.3	560.0	516.7	488.9	473.3	451.7	430.1
52.5°	652.8	603.3	556.8	510.5	485.7	470.3	430.1	402.2	380.6	365.1	352.8
55°	550.6	507.4	470.3	423.9	408.3	386.7	340.4	334.2	312.5	290.8	275.4
57.5°	473.3	433.1	389.8	358.9	331.0	315.6	278.4	253.7	241.3	222.8	207.3
60°	402.2	358.9	324.8	287.8	275.4	253.7	225.8	204.3	188.7	173.2	157.8
62.5°	337.2	300.1	263.0	232.0	213.4	201.1	179.4	160.8	145.5	133.0	120.6
65°	278.4	244.3	213.4	182.6	173.2	157.8	142.3	126.9	114.4	99.1	86.7
67.5°	229.0	198.0	167.0	145.5	136.1	129.9	111.4	95.9	86.7	77.3	65.0
70°	179.4	157.8	133.0	114.4	105.2	95.9	83.5	74.3	61.8	55.6	46.4
72.5°	139.3	120.6	99.1	83.5	77.3	71.1	58.8	49.4	43.2	37.1	30.9
75°	99.1	83.5	71.1	55.6	52.6	49.4	40.3	34.1	27.9	21.7	18.5
77.5°	68.2	55.6	43.2	37.1	34.1	27.9	24.7	18.5	15.6	12.4	9.4
80°	37.1	27.9	21.7	18.5	15.6	12.4	12.4	9.4	6.2	6.2	3.2
82.5°	12.4	9.4	6.2	3.2	3.2	3.2	3.2	3.2	3.2	0.0	3.2
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°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	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°	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2
2.5°	2577.2	2543.1	2552.5	2552.5	2546.3	2546.3	2540.1	2530.7	2533.8	2515.2	2475.1
5°	2549.3	2506.0	2499.9	2506.0	2481.3	2475.1	2462.7	2481.3	2425.5	2447.2	2422.5
7.5°	2468.9	2428.7	2419.3	2441.1	2410.2	2391.4	2388.4	2413.2	2363.7	2338.9	2311.1
10°	2379.1	2363.7	2335.8	2320.3	2311.1	2314.1	2289.4	2258.5	2249.1	2243.0	2218.2
12.5°	2298.8	2264.7	2240.0	2221.4	2215.3	2215.3	2175.0	2168.8	2140.9	2134.7	2097.7
15°	2202.7	2162.7	2147.1	2122.4	2100.7	2113.0	2066.6	2054.2	2045.1	2004.8	2011.0
17.5°	2119.2	2076.0	2038.9	2023.3	2004.8	1986.3	1942.9	1952.2	1930.5	1930.5	1874.9
20°	2011.0	1964.5	1936.6	1905.8	1905.8	1881.0	1850.2	1853.1	1825.3	1797.5	1748.0
22.5°	1896.6	1847.0	1813.0	1800.5	1769.6	1763.5	1726.4	1717.0	1680.0	1683.0	1639.7
25°	1775.8	1726.4	1680.0	1683.0	1655.2	1642.9	1621.2	1577.9	1562.4	1543.8	1531.5
27.5°	1633.5	1599.4	1559.3	1556.2	1503.6	1506.7	1478.9	1466.5	1429.3	1438.6	1410.8
30°	1503.6	1454.2	1417.0	1407.7	1386.0	1379.8	1336.6	1317.9	1324.2	1299.4	1284.0
32.5°	1370.5	1296.3	1280.9	1262.2	1249.9	1234.4	1203.4	1215.9	1188.0	1194.2	1169.5
35°	1194.2	1163.3	1123.0	1123.0	1110.7	1098.3	1076.7	1089.1	1061.1	1048.8	1024.1
37.5°	1045.7	1017.9	977.6	990.0	968.4	949.8	931.2	934.3	909.6	906.5	881.7
40°	884.9	869.3	841.5	841.5	826.1	826.1	816.7	807.5	792.0	773.5	745.6
42.5°	733.2	720.8	708.5	711.6	690.0	708.5	683.8	699.2	649.7	646.6	628.0
45°	621.8	594.0	597.1	584.7	572.4	578.6	556.8	563.0	535.3	529.0	510.5
47.5°	504.3	495.0	476.5	470.3	470.3	461.0	451.7	448.6	436.3	420.7	396.0
50°	414.5	380.6	374.3	365.1	358.9	358.9	346.6	327.9	331.0	315.6	290.8
52.5°	324.8	296.9	284.6	281.6	269.3	263.0	247.5	235.2	225.8	219.6	204.3
55°	250.5	225.8	210.5	210.5	191.8	191.8	170.2	160.8	148.5	136.1	126.9
57.5°	188.7	176.4	160.8	148.5	142.3	126.9	114.4	99.1	89.7	71.1	58.8
60°	142.3	129.9	114.4	105.2	99.1	83.5	68.2	55.6	34.1	27.9	24.7
62.5°	105.2	92.9	77.3	71.1	65.0	52.6	37.1	18.5	9.4	9.4	9.4
65°	77.3	61.8	49.4	43.2	37.1	27.9	12.4	6.2	3.2	3.2	3.2
67.5°	52.6	40.3	27.9	24.7	18.5	9.4	3.2	3.2	3.2	3.2	3.2
70°	34.1	24.7	12.4	9.4	6.2	3.2	3.2	3.2	3.2	3.2	3.2
72.5°	21.7	12.4	6.2	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	12.4	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	6.2	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	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	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	3.2	3.2
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: P563846

CATALOG NUMBER: LD4C45D010 EX4C459030 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2	2580.2
2.5°	2518.4	2496.7	2509.0	2481.3	2493.7	2515.2	2499.9	2506.0
5°	2431.7	2419.3	2403.9	2363.7	2394.6	2419.3	2407.0	2403.9
7.5°	2338.9	2295.6	2317.3	2304.9	2298.8	2323.5	2295.6	2326.5
10°	2243.0	2212.1	2209.1	2187.4	2187.4	2205.9	2209.1	2190.3
12.5°	2100.7	2085.3	2085.3	2082.1	2079.0	2097.7	2100.7	2091.5
15°	1998.6	1992.5	1976.9	1973.9	1955.4	1983.1	1986.3	1983.1
17.5°	1874.9	1877.9	1862.5	1862.5	1874.9	1884.1	1859.3	1884.1
20°	1791.4	1775.8	1769.6	1741.8	1757.3	1772.8	1772.8	1775.8
22.5°	1670.6	1645.9	1655.2	1639.7	1630.4	1652.0	1652.0	1661.4
25°	1534.5	1534.5	1540.7	1531.5	1537.7	1550.0	1540.7	1562.4
27.5°	1404.5	1417.0	1417.0	1404.5	1410.8	1447.9	1463.3	1438.6
30°	1284.0	1287.0	1296.3	1290.1	1308.7	1321.0	1317.9	1336.6
32.5°	1147.8	1163.3	1169.5	1160.2	1166.4	1194.2	1178.7	1175.6
35°	1042.6	1014.8	1011.7	1014.8	1027.2	1033.3	1027.2	1048.8
37.5°	891.0	881.7	869.3	872.5	881.7	894.1	900.3	915.8
40°	745.6	733.2	733.2	730.1	720.8	754.9	754.9	754.9
42.5°	618.8	615.6	600.2	600.2	612.6	621.8	615.6	637.3
45°	507.4	495.0	485.7	485.7	495.0	495.0	504.3	501.2
47.5°	399.1	386.7	389.8	380.6	389.8	402.2	386.7	389.8
50°	300.1	300.1	294.0	300.1	296.9	300.1	294.0	287.8
52.5°	204.3	232.0	235.2	222.8	194.9	170.2	154.6	167.0
55°	117.6	105.2	105.2	102.0	95.9	92.9	83.5	92.9
57.5°	58.8	52.6	52.6	52.6	49.4	46.4	40.3	40.3
60°	24.7	21.7	21.7	18.5	15.6	12.4	9.4	12.4
62.5°	9.4	6.2	6.2	6.2	6.2	6.2	6.2	6.2
65°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
67.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
70°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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 670246072 / DESKTOP-50001EG





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













(END OF REPORT)