

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: P563882

Luminaire Tested: **LD4C60D010 EX4C609030 4LBSQLWWLI**

Issue Date: 2/18/2022

**Test Information**

Test Method: LM-79-08  
Report Number: P563882  
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: LD4C60D010 EX4C609030 4LBSQLWWLI  
Description: 4 INCH 6000 LUMEN PORTFOLIO LED DOWNLIGHT WITH, 3000K, 90CRI LEDS  
AND 4LBSQLWW TRIM WITH LI FINISH, DIM TO WARM  
Light Source: -  
Ballast/Driver: -

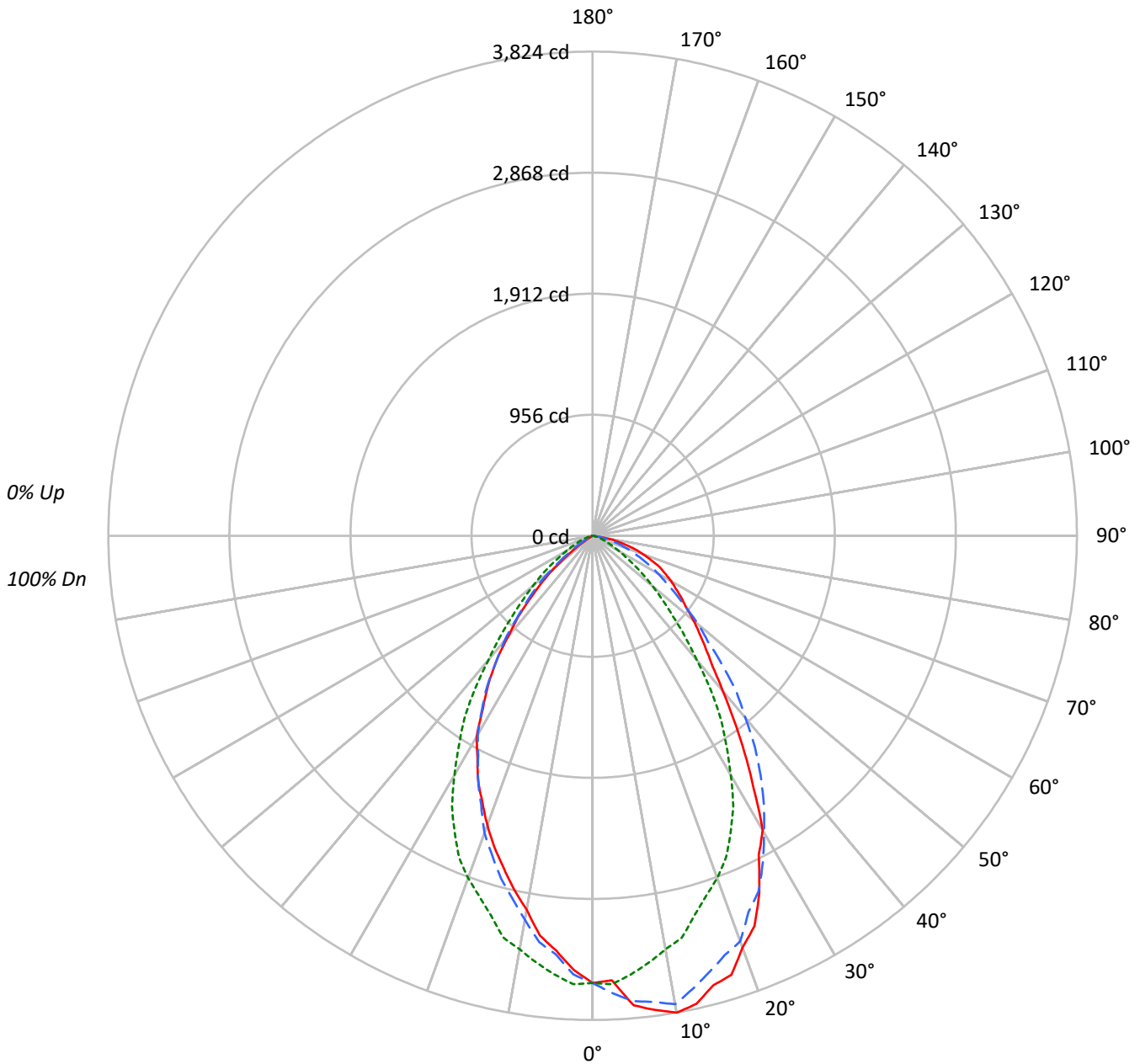
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5062.6 lumens  
Efficiency: N/A  
Efficacy: 70.3 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): 72  
Input Voltage (V):  
Input Current (A<sub>in</sub>): 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

TEST NUMBER: P563882

CATALOG NUMBER: LD4C60D010 EX4C609030 4LBSQLWWLI

### Luminous Intensity Polar Plot





TEST NUMBER: P563882

CATALOG NUMBER: LD4C60D010 EX4C609030 4LBSQLWWLI

**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	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90								
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80								
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72								
4	91	81	74	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64								
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58								
6	80	69	61	56	78	68	61	56	66	60	55	65	59	55	63	58	54	53								
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48								
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44								
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41								
10	62	51	44	40	61	51	44	40	50	44	39	49	43	39	48	43	39	38								

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	340779	340779	340779
5°	360542	336764	318709
10°	374685	324893	293756
15°	367185	310077	271159
20°	355267	295250	249598
25°	331390	274559	227694
30°	299151	242987	203835
35°	246419	208019	169113
40°	201103	160570	130152
45°	172780	121937	93609
50°	156385	92828	59128
55°	143915	66953	21364
60°	138114	45755	3261
65°	133426	30959	982
70°	119476	21497	1213
75°	97898	11072	0
80°	61233	4668	0
85°	0	0	0



TEST NUMBER: P563882

CATALOG NUMBER: LD4C60D010 EX4C609030 4LBSQLWWLI

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	330.9	6.5
10°-20°	891.5	17.6
20°-30°	1190.5	23.5
30°-40°	1130.1	22.3
40°-50°	781.2	15.4
50°-60°	431.6	8.5
60°-70°	214.3	4.2
70°-80°	84.4	1.7
80°-90°	8.0	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°	2412.9	47.7
0°-40°	3543.0	70.0
0°-60°	4755.8	93.9
0°-90°	5062.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5062.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	3532	3532	3532	3532	3532	
5°	3722	3689	3477	3320	3290	356
15°	3676	3566	3104	2799	2714	1040
25°	3113	3100	2579	2139	2139	1419
35°	2092	2312	1766	1453	1436	1311
45°	1266	1453	894	733	686	988
55°	856	805	398	203	127	770
65°	584	424	136	4	4	567
75°	263	161	30	0	0	280
85°	0	4	0	0	0	24
90°	0	0	0	0	0	



TEST NUMBER: P563882

CATALOG NUMBER: LD4C60D010 EX4C609030 4LBSQLWWLI

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8
2.5°	3514.8	3612.3	3620.7	3612.3	3625.0	3620.7	3642.0	3620.7	3646.3	3608.1	3616.6
5°	3722.4	3684.3	3764.8	3722.4	3722.4	3718.3	3705.5	3701.2	3718.3	3663.2	3688.6
7.5°	3777.5	3832.6	3904.6	3815.6	3819.8	3819.8	3794.5	3785.9	3785.9	3684.3	3714.0
10°	3824.2	3790.1	3828.2	3794.5	3824.2	3819.8	3836.8	3781.6	3819.8	3760.6	3756.3
12.5°	3785.9	3773.2	3824.2	3769.0	3752.1	3756.3	3735.2	3722.4	3735.2	3667.3	3663.2
15°	3675.8	3688.6	3764.8	3705.5	3697.0	3688.6	3663.2	3620.7	3654.7	3561.5	3565.8
17.5°	3637.8	3616.6	3629.4	3578.4	3591.2	3582.7	3578.4	3540.5	3531.8	3472.5	3472.5
20°	3459.9	3506.4	3506.4	3472.5	3472.5	3468.4	3413.3	3447.2	3409.0	3392.1	3409.0
22.5°	3337.0	3341.3	3341.3	3311.6	3316.0	3299.0	3269.3	3248.1	3269.3	3248.1	3214.3
25°	3112.7	3121.2	3171.9	3116.8	3108.4	3125.3	3099.9	3087.1	3083.0	3032.3	3099.9
27.5°	2841.5	2926.2	2922.0	2900.9	2926.2	2892.4	2879.8	2883.9	2896.7	2892.4	2909.3
30°	2685.0	2697.6	2710.3	2693.4	2697.6	2685.0	2685.0	2689.1	2722.9	2710.3	2706.1
32.5°	2367.2	2409.5	2443.5	2443.5	2447.7	2460.5	2456.1	2545.1	2566.3	2524.1	2515.5
35°	2092.0	2121.7	2151.3	2155.5	2210.6	2214.7	2219.1	2244.5	2303.7	2316.5	2312.2
37.5°	1829.5	1859.0	1867.5	1905.7	1935.3	1964.9	1998.9	2032.8	2083.5	2125.8	2104.8
40°	1596.6	1609.2	1630.5	1647.4	1706.6	1706.6	1723.5	1791.4	1846.4	1880.3	1876.0
42.5°	1401.8	1406.0	1422.9	1452.6	1507.7	1494.9	1507.7	1554.3	1634.5	1638.9	1685.5
45°	1266.2	1261.9	1274.8	1278.8	1312.9	1329.8	1338.2	1372.1	1439.7	1448.3	1452.6
47.5°	1143.4	1139.2	1160.4	1168.9	1181.5	1198.4	1198.4	1202.7	1228.1	1249.3	1232.4
50°	1041.8	1041.8	1041.8	1050.3	1071.4	1067.1	1071.4	1088.4	1101.0	1092.6	1088.4
52.5°	931.6	948.5	961.3	965.6	969.8	969.8	974.1	965.6	961.3	948.5	923.1
55°	855.5	872.4	872.4	872.4	872.4	889.3	868.2	872.4	872.4	838.5	804.7
57.5°	779.3	796.3	808.8	791.9	808.8	791.9	783.4	779.3	770.6	736.9	686.0
60°	715.7	724.2	719.9	715.7	724.2	711.4	703.0	686.0	677.6	631.0	597.1
62.5°	643.8	647.9	652.2	643.8	635.2	631.0	614.1	588.7	571.8	533.6	503.9
65°	584.4	571.8	567.4	563.2	554.8	542.1	529.5	499.8	486.9	453.1	423.5
67.5°	495.4	491.3	499.8	486.9	465.9	465.9	453.1	427.7	398.0	377.0	347.3
70°	423.5	419.3	410.8	398.0	393.9	377.0	377.0	347.3	338.8	300.7	275.3
72.5°	347.3	347.3	334.5	321.8	309.1	300.7	296.5	275.3	262.6	241.4	220.1
75°	262.6	262.6	258.4	245.6	237.1	228.7	224.5	207.5	194.8	173.7	160.9
77.5°	186.4	186.4	169.4	160.9	165.1	156.6	148.2	144.0	139.7	127.0	110.2
80°	110.2	105.9	93.3	97.3	93.3	93.3	88.9	84.6	76.2	67.6	59.2
82.5°	29.7	33.9	33.9	33.9	38.1	29.7	29.7	29.7	33.9	33.9	21.3
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	4.3	4.3
87.5°	4.3	8.4	16.9	16.9	16.9	16.9	16.9	12.8	12.8	12.8	8.4
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: P563882

CATALOG NUMBER: LD4C60D010 EX4C609030 4LBSQLWWLI

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8
2.5°	3574.2	3570.0	3574.2	3544.5	3612.3	3561.5	3553.0	3544.5	3574.2	3544.5	3502.2
5°	3650.4	3608.1	3595.3	3582.7	3620.7	3561.5	3548.9	3553.0	3531.8	3476.9	3481.1
7.5°	3675.8	3637.8	3599.7	3519.2	3553.0	3540.5	3506.4	3481.1	3447.2	3400.6	3392.1
10°	3684.3	3642.0	3586.9	3561.5	3510.8	3493.8	3481.1	3438.7	3396.4	3316.0	3294.7
12.5°	3658.9	3608.1	3540.5	3519.2	3481.1	3425.9	3396.4	3353.9	3316.0	3252.4	3205.8
15°	3548.9	3506.4	3485.3	3413.3	3396.4	3362.4	3303.2	3244.0	3188.8	3104.1	3078.7
17.5°	3421.8	3404.9	3383.6	3328.6	3324.4	3290.5	3235.5	3184.5	3112.7	2981.3	2939.0
20°	3290.5	3290.5	3222.7	3201.6	3244.0	3176.1	3133.8	3087.1	2939.0	2875.4	2799.2
22.5°	3193.2	3146.5	3108.4	3074.5	3078.7	3036.3	2977.1	2883.9	2828.8	2752.6	2663.7
25°	3002.6	3019.5	2934.8	2922.0	2934.8	2837.3	2807.8	2731.4	2650.9	2578.9	2511.3
27.5°	2883.9	2837.3	2782.3	2735.8	2735.8	2697.6	2613.0	2596.0	2473.1	2405.4	2320.6
30°	2706.1	2672.2	2625.6	2557.9	2549.4	2519.7	2452.1	2409.5	2282.6	2180.9	2134.3
32.5°	2481.6	2468.9	2430.8	2354.6	2329.3	2295.2	2210.6	2138.7	2079.4	1964.9	1910.0
35°	2320.6	2274.2	2193.7	2130.1	2109.0	2049.7	1981.8	1931.1	1867.5	1766.0	1693.9
37.5°	2079.4	2032.8	1956.5	1880.3	1880.3	1821.1	1727.8	1677.1	1588.2	1528.7	1469.4
40°	1867.5	1808.3	1732.1	1643.2	1630.5	1545.6	1507.7	1422.9	1367.8	1274.8	1266.2
42.5°	1630.5	1575.3	1507.7	1439.7	1389.0	1346.7	1249.3	1185.8	1126.5	1080.0	1067.1
45°	1414.4	1342.4	1283.2	1198.4	1147.6	1096.8	1033.3	991.0	944.4	893.6	863.9
47.5°	1228.1	1168.9	1084.0	1007.9	957.2	931.6	859.6	813.1	775.0	741.1	719.9
50°	1037.6	965.6	919.0	834.2	825.8	766.6	707.3	669.1	647.9	618.4	588.7
52.5°	893.6	825.8	762.2	698.8	664.8	643.8	588.7	550.5	521.0	499.8	482.8
55°	753.7	694.5	643.8	580.2	559.0	529.5	465.9	457.4	427.7	398.0	377.0
57.5°	647.9	592.8	533.6	491.3	453.1	432.0	381.1	347.3	330.3	305.0	283.7
60°	550.5	491.3	444.6	393.9	377.0	347.3	309.1	279.5	258.4	237.1	216.1
62.5°	461.6	410.8	360.0	317.6	292.1	275.3	245.6	220.1	199.1	182.2	165.1
65°	381.1	334.5	292.1	249.8	237.1	216.1	194.8	173.7	156.6	135.6	118.6
67.5°	313.4	271.1	228.7	199.1	186.4	177.9	152.5	131.2	118.6	105.9	88.9
70°	245.6	216.1	182.2	156.6	144.0	131.2	114.3	101.7	84.6	76.2	63.6
72.5°	190.6	165.1	135.6	114.3	105.9	97.3	80.5	67.6	59.2	50.8	42.3
75°	135.6	114.3	97.3	76.2	72.0	67.6	55.1	46.6	38.1	29.7	25.4
77.5°	93.3	76.2	59.2	50.8	46.6	38.1	33.9	25.4	21.3	16.9	12.8
80°	50.8	38.1	29.7	25.4	21.3	16.9	16.9	12.8	8.4	8.4	4.3
82.5°	16.9	12.8	8.4	4.3	4.3	4.3	4.3	4.3	4.3	0.0	4.3
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°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	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: P563882

CATALOG NUMBER: LD4C60D010 EX4C609030 4LBSQLWWLI

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8
2.5°	3527.6	3481.1	3493.8	3493.8	3485.3	3485.3	3476.9	3464.1	3468.4	3442.8	3388.0
5°	3489.5	3430.2	3421.8	3430.2	3396.4	3388.0	3371.0	3396.4	3320.0	3349.7	3316.0
7.5°	3379.4	3324.4	3311.6	3341.3	3299.0	3273.5	3269.3	3303.2	3235.5	3201.6	3163.5
10°	3256.6	3235.5	3197.3	3176.1	3163.5	3167.6	3133.8	3091.5	3078.7	3070.2	3036.3
12.5°	3146.5	3099.9	3066.0	3040.7	3032.3	3032.3	2977.1	2968.7	2930.6	2922.0	2871.3
15°	3015.2	2960.3	2939.0	2905.1	2875.4	2892.4	2828.8	2811.8	2799.2	2744.2	2752.6
17.5°	2900.9	2841.5	2790.8	2769.6	2744.2	2718.8	2659.4	2672.2	2642.5	2642.5	2566.3
20°	2752.6	2689.1	2650.9	2608.6	2608.6	2574.8	2532.5	2536.7	2498.4	2460.5	2392.7
22.5°	2596.0	2528.1	2481.6	2464.7	2422.4	2413.9	2363.1	2350.3	2299.6	2303.7	2244.5
25°	2430.8	2363.1	2299.6	2303.7	2265.7	2248.8	2219.1	2159.8	2138.7	2113.2	2096.3
27.5°	2236.0	2189.4	2134.3	2130.1	2058.1	2062.3	2024.3	2007.3	1956.5	1969.2	1931.1
30°	2058.1	1990.5	1939.5	1926.9	1897.2	1888.7	1829.5	1804.0	1812.5	1778.6	1757.5
32.5°	1876.0	1774.4	1753.2	1727.8	1710.9	1689.7	1647.4	1664.2	1626.1	1634.5	1600.8
35°	1634.5	1592.2	1537.2	1537.2	1520.3	1503.3	1473.8	1490.7	1452.6	1435.7	1401.8
37.5°	1431.3	1393.4	1338.2	1355.2	1325.5	1300.1	1274.8	1278.8	1245.1	1240.9	1206.8
40°	1211.2	1189.9	1152.0	1152.0	1130.7	1130.7	1117.9	1105.3	1084.0	1058.7	1020.6
42.5°	1003.6	986.7	969.8	974.1	944.4	969.8	935.9	957.2	889.3	885.2	859.6
45°	851.1	813.1	817.3	800.3	783.4	791.9	762.2	770.6	732.7	724.2	698.8
47.5°	690.4	677.6	652.2	643.8	643.8	631.0	618.4	614.1	597.1	575.8	542.1
50°	567.4	521.0	512.4	499.8	491.3	491.3	474.3	449.0	453.1	432.0	398.0
52.5°	444.6	406.5	389.6	385.4	368.5	360.0	338.8	321.8	309.1	300.7	279.5
55°	342.9	309.1	288.1	288.1	262.6	262.6	232.9	220.1	203.2	186.4	173.7
57.5°	258.4	241.4	220.1	203.2	194.8	173.7	156.6	135.6	122.8	97.3	80.5
60°	194.8	177.9	156.6	144.0	135.6	114.3	93.3	76.2	46.6	38.1	33.9
62.5°	144.0	127.0	105.9	97.3	88.9	72.0	50.8	25.4	12.8	12.8	12.8
65°	105.9	84.6	67.6	59.2	50.8	38.1	16.9	8.4	4.3	4.3	4.3
67.5°	72.0	55.1	38.1	33.9	25.4	12.8	4.3	4.3	4.3	4.3	4.3
70°	46.6	33.9	16.9	12.8	8.4	4.3	4.3	4.3	4.3	4.3	4.3
72.5°	29.7	16.9	8.4	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	16.9	8.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	8.4	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	4.3	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	4.3	4.3	4.3
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: P563882

CATALOG NUMBER: LD4C60D010 EX4C609030 4LBSQLWWLI

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8	3531.8
2.5°	3447.2	3417.5	3434.4	3396.4	3413.3	3442.8	3421.8	3430.2
5°	3328.6	3311.6	3290.5	3235.5	3277.8	3311.6	3294.7	3290.5
7.5°	3201.6	3142.2	3171.9	3155.0	3146.5	3180.4	3142.2	3184.5
10°	3070.2	3027.9	3023.7	2994.0	2994.0	3019.5	3023.7	2998.2
12.5°	2875.4	2854.4	2854.4	2850.1	2845.7	2871.3	2875.4	2862.8
15°	2735.8	2727.3	2706.1	2701.9	2676.5	2714.5	2718.8	2714.5
17.5°	2566.3	2570.5	2549.4	2549.4	2566.3	2578.9	2545.1	2578.9
20°	2452.1	2430.8	2422.4	2384.2	2405.4	2426.6	2426.6	2430.8
22.5°	2286.8	2252.9	2265.7	2244.5	2231.7	2261.4	2261.4	2274.2
25°	2100.4	2100.4	2109.0	2096.3	2104.8	2121.7	2109.0	2138.7
27.5°	1922.6	1939.5	1939.5	1922.6	1931.1	1981.8	2003.1	1969.2
30°	1757.5	1761.7	1774.4	1766.0	1791.4	1808.3	1804.0	1829.5
32.5°	1571.2	1592.2	1600.8	1588.2	1596.6	1634.5	1613.5	1609.2
35°	1427.2	1389.0	1384.9	1389.0	1406.0	1414.4	1406.0	1435.7
37.5°	1219.6	1206.8	1189.9	1194.2	1206.8	1223.9	1232.4	1253.5
40°	1020.6	1003.6	1003.6	999.5	986.7	1033.3	1033.3	1033.3
42.5°	847.0	842.6	821.6	821.6	838.5	851.1	842.6	872.4
45°	694.5	677.6	664.8	664.8	677.6	677.6	690.4	686.0
47.5°	546.3	529.5	533.6	521.0	533.6	550.5	529.5	533.6
50°	410.8	410.8	402.3	410.8	406.5	410.8	402.3	393.9
52.5°	279.5	317.6	321.8	305.0	266.8	232.9	211.7	228.7
55°	160.9	144.0	144.0	139.7	131.2	127.0	114.3	127.0
57.5°	80.5	72.0	72.0	72.0	67.6	63.6	55.1	55.1
60°	33.9	29.7	29.7	25.4	21.3	16.9	12.8	16.9
62.5°	12.8	8.4	8.4	8.4	8.4	8.4	8.4	8.4
65°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
67.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
70°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
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)