

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: P#

Luminaire Tested: **LD4C60D010 EX4C609050 4LBSQLWWLI**

Issue Date: 2/18/2022

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



Test Information

Test Method: LM-79-08
Report Number: P#
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 EX4C609050 4LBSQLWWLI
Description: 4 INCH 6000 LUMEN PORTFOLIO LED DOWNLIGHT WITH, 5000K, 90CRI LEDS
AND 4LBSQLWW TRIM WITH LI FINISH
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

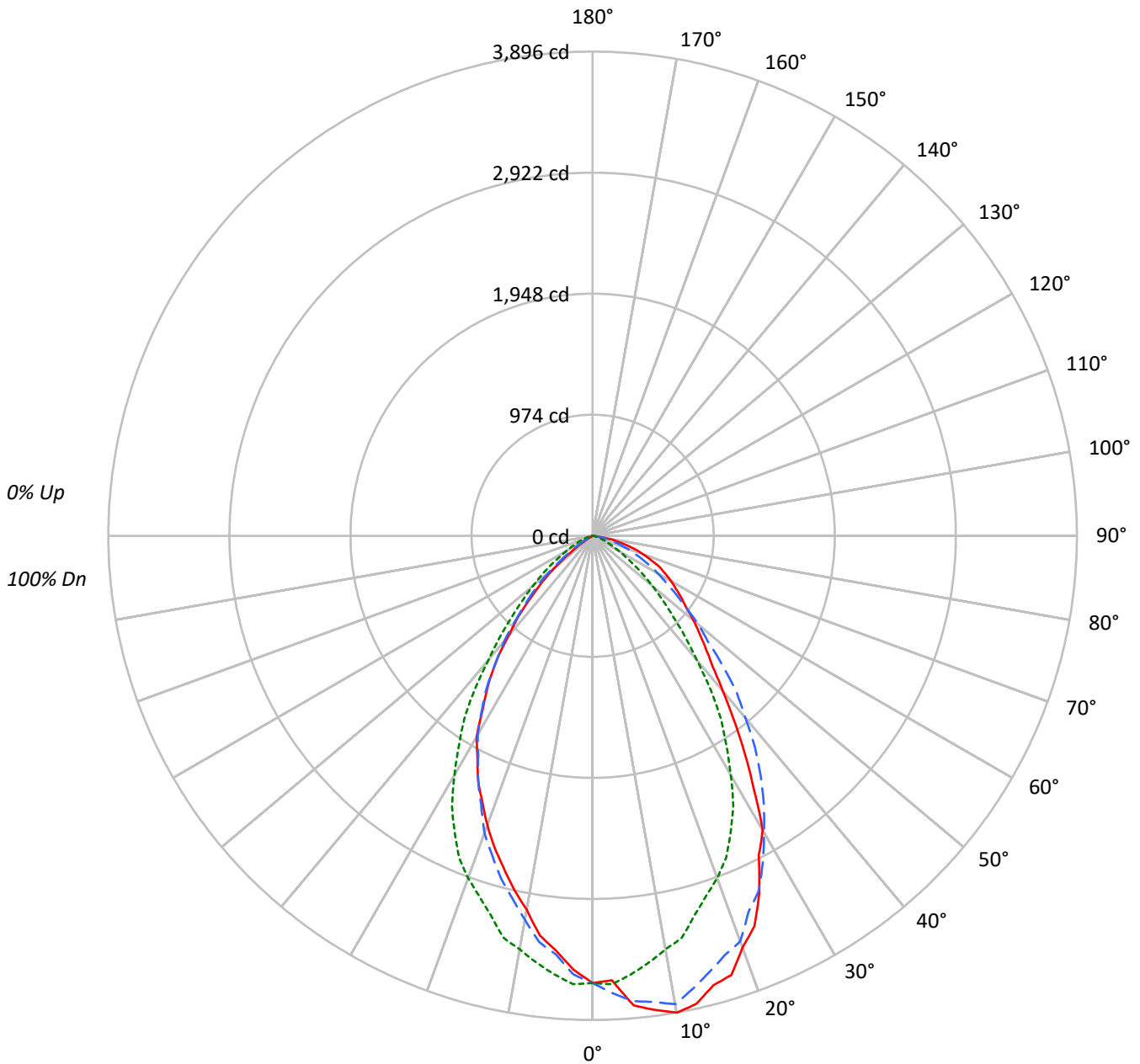
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5158.0 lumens
Efficiency: N/A
Efficacy: 71.6 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): 72
Input Voltage (V):
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

TEST NUMBER: P#
CATALOG NUMBER: LD4C60D010 EX4C609050 4LBSQLWWLI

Luminous Intensity Polar Plot





TEST NUMBER: P#

CATALOG NUMBER: LD4C60D010 EX4C609050 4LBSQLWWLI

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	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°	347196	347196	347196
5°	367342	343108	324724
10°	381740	331007	299292
15°	374108	315921	276273
20°	361962	300815	254301
25°	337628	279733	231974
30°	304789	247566	207679
35°	251060	211942	172293
40°	204895	163581	132608
45°	176042	124229	95383
50°	159327	94569	60239
55°	146623	68215	21785
60°	140719	46623	3319
65°	135937	31530	1005
70°	121704	21892	1241
75°	99762	11296	0
80°	62345	4779	0
85°	0	0	0



TEST NUMBER: P#

CATALOG NUMBER: LD4C60D010 EX4C609050 4LBSQLWWLI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	337.1	6.5
10°-20°	908.3	17.6
20°-30°	1212.9	23.5
30°-40°	1151.4	22.3
40°-50°	795.9	15.4
50°-60°	439.8	8.5
60°-70°	218.4	4.2
70°-80°	86.0	1.7
80°-90°	8.2	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°	2458.4	47.7
0°-40°	3609.8	70.0
0°-60°	4845.4	93.9
0°-90°	5158.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5158.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3598	3598	3598	3598	3598	
5°	3793	3758	3542	3383	3353	363
15°	3745	3633	3163	2852	2766	1059
25°	3171	3158	2628	2179	2179	1446
35°	2131	2356	1799	1480	1463	1335
45°	1290	1480	910	746	699	1006
55°	872	820	406	207	130	785
65°	595	431	138	4	4	578
75°	268	164	30	0	0	285
85°	0	4	0	0	0	25
90°	0	0	0	0	0	



TEST NUMBER: P#

CATALOG NUMBER: LD4C60D010 EX4C609050 4LBSQLWWLI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3
2.5°	3581.1	3680.3	3688.9	3680.3	3693.3	3688.9	3710.6	3688.9	3715.0	3676.1	3684.7
5°	3792.6	3753.7	3835.7	3792.6	3792.6	3788.3	3775.3	3770.9	3788.3	3732.2	3758.1
7.5°	3848.7	3904.8	3978.2	3887.6	3891.8	3891.8	3865.9	3857.3	3857.3	3753.7	3783.9
10°	3896.2	3861.5	3900.4	3865.9	3896.2	3891.8	3909.0	3852.9	3891.8	3831.4	3827.0
12.5°	3857.3	3844.3	3896.2	3840.1	3822.8	3827.0	3805.6	3792.6	3805.6	3736.4	3732.2
15°	3745.1	3758.1	3835.7	3775.3	3766.7	3758.1	3732.2	3688.9	3723.6	3628.6	3633.0
17.5°	3706.4	3684.7	3697.7	3645.8	3658.9	3650.2	3645.8	3607.1	3598.3	3538.0	3538.0
20°	3525.1	3572.5	3572.5	3538.0	3538.0	3533.8	3477.6	3512.1	3473.2	3456.0	3473.2
22.5°	3399.9	3404.3	3404.3	3374.0	3378.4	3361.2	3330.9	3309.3	3330.9	3309.3	3274.8
25°	3171.3	3180.0	3231.7	3175.6	3167.0	3184.2	3158.3	3145.3	3141.1	3089.4	3158.3
27.5°	2895.1	2981.3	2977.1	2955.5	2981.3	2946.9	2934.0	2938.2	2951.3	2946.9	2964.1
30°	2735.6	2748.4	2761.4	2744.2	2748.4	2735.6	2735.6	2739.8	2774.3	2761.4	2757.0
32.5°	2411.9	2455.0	2489.6	2489.6	2493.8	2506.9	2502.5	2593.1	2614.7	2571.6	2563.0
35°	2131.4	2161.7	2191.8	2196.2	2252.3	2256.5	2260.9	2286.8	2347.1	2360.1	2355.7
37.5°	1864.0	1894.1	1902.7	1941.6	1971.8	2001.9	2036.6	2071.1	2122.8	2165.9	2144.4
40°	1626.7	1639.5	1661.1	1678.4	1738.7	1738.7	1756.0	1825.1	1881.2	1915.7	1911.3
42.5°	1428.2	1432.4	1449.7	1479.9	1536.1	1523.0	1536.1	1583.6	1665.4	1669.8	1717.3
45°	1290.1	1285.7	1298.7	1303.0	1337.6	1354.8	1363.5	1398.0	1466.9	1475.5	1479.9
47.5°	1165.0	1160.6	1182.3	1190.9	1203.7	1221.0	1221.0	1225.4	1251.2	1272.9	1255.6
50°	1061.4	1061.4	1061.4	1070.0	1091.7	1087.3	1091.7	1108.9	1121.7	1113.1	1108.9
52.5°	949.2	966.4	979.4	983.8	988.0	988.0	992.4	983.8	979.4	966.4	940.5
55°	871.6	888.8	888.8	888.8	888.8	906.1	884.6	888.8	888.8	854.3	819.8
57.5°	794.0	811.2	824.1	806.8	824.1	806.8	798.2	794.0	785.2	750.7	699.0
60°	729.2	737.9	733.5	729.2	737.9	724.8	716.2	699.0	690.4	642.9	608.4
62.5°	655.9	660.1	664.5	655.9	647.3	642.9	625.6	599.8	582.5	543.6	513.4
65°	595.4	582.5	578.1	573.9	565.3	552.3	539.4	509.1	496.1	461.6	431.4
67.5°	504.8	500.5	509.1	496.1	474.7	474.7	461.6	435.8	405.5	384.1	353.8
70°	431.4	427.2	418.5	405.5	401.3	384.1	384.1	353.8	345.2	306.3	280.4
72.5°	353.8	353.8	340.8	327.9	314.9	306.3	302.1	280.4	267.6	246.0	224.3
75°	267.6	267.6	263.2	250.2	241.6	232.9	228.7	211.5	198.5	177.0	164.0
77.5°	189.8	189.8	172.6	164.0	168.2	159.6	151.0	146.7	142.3	129.5	112.2
80°	112.2	107.8	95.0	99.2	95.0	95.0	90.6	86.2	77.6	69.0	60.3
82.5°	30.3	34.5	34.5	34.5	38.9	30.3	30.3	30.3	34.5	34.5	21.6
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	4.4	4.4
87.5°	4.4	8.6	17.2	17.2	17.2	17.2	17.2	13.0	13.0	13.0	8.6
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: P#

CATALOG NUMBER: LD4C60D010 EX4C609050 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3
2.5°	3641.6	3637.2	3641.6	3611.4	3680.3	3628.6	3620.0	3611.4	3641.6	3611.4	3568.2
5°	3719.2	3676.1	3663.1	3650.2	3688.9	3628.6	3615.7	3620.0	3598.3	3542.4	3546.6
7.5°	3745.1	3706.4	3667.5	3585.5	3620.0	3607.1	3572.5	3546.6	3512.1	3464.6	3456.0
10°	3753.7	3710.6	3654.5	3628.6	3576.9	3559.6	3546.6	3503.5	3460.4	3378.4	3356.8
12.5°	3727.8	3676.1	3607.1	3585.5	3546.6	3490.5	3460.4	3417.1	3378.4	3313.7	3266.2
15°	3615.7	3572.5	3551.0	3477.6	3460.4	3425.7	3365.4	3305.1	3248.9	3162.6	3136.7
17.5°	3486.3	3469.0	3447.4	3391.3	3387.0	3352.6	3296.4	3244.5	3171.3	3037.5	2994.4
20°	3352.6	3352.6	3283.4	3262.0	3305.1	3235.9	3192.8	3145.3	2994.4	2929.6	2852.0
22.5°	3253.3	3205.8	3167.0	3132.5	3136.7	3093.6	3033.2	2938.2	2882.1	2804.5	2713.9
25°	3059.1	3076.3	2990.1	2977.1	2990.1	2890.7	2860.7	2782.9	2700.9	2627.5	2558.6
27.5°	2938.2	2890.7	2834.8	2787.3	2787.3	2748.4	2662.2	2645.0	2519.7	2450.7	2364.4
30°	2757.0	2722.5	2675.0	2606.1	2597.5	2567.2	2498.2	2455.0	2325.6	2222.0	2174.5
32.5°	2528.3	2515.5	2476.6	2399.0	2373.1	2338.5	2252.3	2178.9	2118.6	2001.9	1946.0
35°	2364.4	2317.0	2235.0	2170.3	2148.7	2088.3	2019.2	1967.4	1902.7	1799.3	1725.9
37.5°	2118.6	2071.1	1993.3	1915.7	1915.7	1855.4	1760.4	1708.6	1618.0	1557.5	1497.2
40°	1902.7	1842.4	1764.8	1674.2	1661.1	1574.8	1536.1	1449.7	1393.6	1298.7	1290.1
42.5°	1661.1	1605.0	1536.1	1466.9	1415.2	1372.1	1272.9	1208.1	1147.8	1100.3	1087.3
45°	1441.1	1367.7	1307.3	1221.0	1169.2	1117.5	1052.8	1009.7	962.2	910.4	880.2
47.5°	1251.2	1190.9	1104.5	1026.9	975.2	949.2	875.8	828.5	789.6	755.1	733.5
50°	1057.2	983.8	936.3	849.9	841.3	781.0	720.6	681.7	660.1	630.0	599.8
52.5°	910.4	841.3	776.6	712.0	677.3	655.9	599.8	560.9	530.8	509.1	491.9
55°	767.9	707.6	655.9	591.1	569.5	539.4	474.7	466.0	435.8	405.5	384.1
57.5°	660.1	604.0	543.6	500.5	461.6	440.2	388.3	353.8	336.6	310.7	289.1
60°	560.9	500.5	453.0	401.3	384.1	353.8	314.9	284.8	263.2	241.6	220.1
62.5°	470.3	418.5	366.8	323.5	297.7	280.4	250.2	224.3	202.8	185.6	168.2
65°	388.3	340.8	297.7	254.6	241.6	220.1	198.5	177.0	159.6	138.1	120.9
67.5°	319.3	276.2	232.9	202.8	189.8	181.2	155.3	133.7	120.9	107.8	90.6
70°	250.2	220.1	185.6	159.6	146.7	133.7	116.5	103.6	86.2	77.6	64.7
72.5°	194.2	168.2	138.1	116.5	107.8	99.2	82.0	69.0	60.3	51.7	43.1
75°	138.1	116.5	99.2	77.6	73.4	69.0	56.1	47.5	38.9	30.3	25.9
77.5°	95.0	77.6	60.3	51.7	47.5	38.9	34.5	25.9	21.6	17.2	13.0
80°	51.7	38.9	30.3	25.9	21.6	17.2	17.2	13.0	8.6	8.6	4.4
82.5°	17.2	13.0	8.6	4.4	4.4	4.4	4.4	4.4	4.4	0.0	4.4
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°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	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: P#

CATALOG NUMBER: LD4C60D010 EX4C609050 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3
2.5°	3594.1	3546.6	3559.6	3559.6	3551.0	3551.0	3542.4	3529.4	3533.8	3507.7	3451.8
5°	3555.2	3494.9	3486.3	3494.9	3460.4	3451.8	3434.5	3460.4	3382.6	3412.9	3378.4
7.5°	3443.2	3387.0	3374.0	3404.3	3361.2	3335.1	3330.9	3365.4	3296.4	3262.0	3223.1
10°	3317.9	3296.4	3257.6	3235.9	3223.1	3227.3	3192.8	3149.7	3136.7	3128.1	3093.6
12.5°	3205.8	3158.3	3123.8	3098.0	3089.4	3089.4	3033.2	3024.6	2985.7	2977.1	2925.4
15°	3072.0	3016.0	2994.4	2959.9	2929.6	2946.9	2882.1	2864.9	2852.0	2795.9	2804.5
17.5°	2955.5	2895.1	2843.4	2821.8	2795.9	2770.0	2709.5	2722.5	2692.3	2692.3	2614.7
20°	2804.5	2739.8	2700.9	2657.8	2657.8	2623.3	2580.2	2584.4	2545.6	2506.9	2437.7
22.5°	2645.0	2575.8	2528.3	2511.1	2468.0	2459.4	2407.6	2394.6	2342.9	2347.1	2286.8
25°	2476.6	2407.6	2342.9	2347.1	2308.4	2291.2	2260.9	2200.6	2178.9	2153.1	2135.8
27.5°	2278.1	2230.6	2174.5	2170.3	2096.9	2101.2	2062.4	2045.2	1993.3	2006.3	1967.4
30°	2096.9	2028.0	1976.1	1963.2	1933.0	1924.3	1864.0	1838.0	1846.8	1812.1	1790.6
32.5°	1911.3	1807.9	1786.2	1760.4	1743.1	1721.5	1678.4	1695.6	1656.8	1665.4	1630.9
35°	1665.4	1622.3	1566.1	1566.1	1548.9	1531.7	1501.6	1518.8	1479.9	1462.7	1428.2
37.5°	1458.3	1419.6	1363.5	1380.7	1350.5	1324.6	1298.7	1303.0	1268.5	1264.2	1229.6
40°	1234.0	1212.3	1173.6	1173.6	1152.0	1152.0	1139.0	1126.1	1104.5	1078.6	1039.8
42.5°	1022.5	1005.3	988.0	992.4	962.2	988.0	953.6	975.2	906.1	901.8	875.8
45°	867.2	828.5	832.7	815.4	798.2	806.8	776.6	785.2	746.5	737.9	712.0
47.5°	703.4	690.4	664.5	655.9	655.9	642.9	630.0	625.6	608.4	586.7	552.3
50°	578.1	530.8	522.0	509.1	500.5	500.5	483.3	457.4	461.6	440.2	405.5
52.5°	453.0	414.1	396.9	392.7	375.4	366.8	345.2	327.9	314.9	306.3	284.8
55°	349.4	314.9	293.5	293.5	267.6	267.6	237.3	224.3	207.1	189.8	177.0
57.5°	263.2	246.0	224.3	207.1	198.5	177.0	159.6	138.1	125.1	99.2	82.0
60°	198.5	181.2	159.6	146.7	138.1	116.5	95.0	77.6	47.5	38.9	34.5
62.5°	146.7	129.5	107.8	99.2	90.6	73.4	51.7	25.9	13.0	13.0	13.0
65°	107.8	86.2	69.0	60.3	51.7	38.9	17.2	8.6	4.4	4.4	4.4
67.5°	73.4	56.1	38.9	34.5	25.9	13.0	4.4	4.4	4.4	4.4	4.4
70°	47.5	34.5	17.2	13.0	8.6	4.4	4.4	4.4	4.4	4.4	4.4
72.5°	30.3	17.2	8.6	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	17.2	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	8.6	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	4.4	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	4.4	4.4	4.4
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: P#

CATALOG NUMBER: LD4C60D010 EX4C609050 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3	3598.3
2.5°	3512.1	3481.9	3499.1	3460.4	3477.6	3507.7	3486.3	3494.9
5°	3391.3	3374.0	3352.6	3296.4	3339.5	3374.0	3356.8	3352.6
7.5°	3262.0	3201.4	3231.7	3214.5	3205.8	3240.3	3201.4	3244.5
10°	3128.1	3085.0	3080.7	3050.5	3050.5	3076.3	3080.7	3054.7
12.5°	2929.6	2908.2	2908.2	2903.8	2899.4	2925.4	2929.6	2916.8
15°	2787.3	2778.7	2757.0	2752.8	2726.9	2765.7	2770.0	2765.7
17.5°	2614.7	2618.9	2597.5	2597.5	2614.7	2627.5	2593.1	2627.5
20°	2498.2	2476.6	2468.0	2429.1	2450.7	2472.4	2472.4	2476.6
22.5°	2329.9	2295.4	2308.4	2286.8	2273.7	2304.0	2304.0	2317.0
25°	2140.0	2140.0	2148.7	2135.8	2144.4	2161.7	2148.7	2178.9
27.5°	1958.8	1976.1	1976.1	1958.8	1967.4	2019.2	2040.8	2006.3
30°	1790.6	1794.9	1807.9	1799.3	1825.1	1842.4	1838.0	1864.0
32.5°	1600.8	1622.3	1630.9	1618.0	1626.7	1665.4	1643.9	1639.5
35°	1454.1	1415.2	1411.0	1415.2	1432.4	1441.1	1432.4	1462.7
37.5°	1242.6	1229.6	1212.3	1216.7	1229.6	1247.0	1255.6	1277.1
40°	1039.8	1022.5	1022.5	1018.3	1005.3	1052.8	1052.8	1052.8
42.5°	862.9	858.6	837.1	837.1	854.3	867.2	858.6	888.8
45°	707.6	690.4	677.3	677.3	690.4	690.4	703.4	699.0
47.5°	556.6	539.4	543.6	530.8	543.6	560.9	539.4	543.6
50°	418.5	418.5	409.9	418.5	414.1	418.5	409.9	401.3
52.5°	284.8	323.5	327.9	310.7	271.8	237.3	215.7	232.9
55°	164.0	146.7	146.7	142.3	133.7	129.5	116.5	129.5
57.5°	82.0	73.4	73.4	73.4	69.0	64.7	56.1	56.1
60°	34.5	30.3	30.3	25.9	21.6	17.2	13.0	17.2
62.5°	13.0	8.6	8.6	8.6	8.6	8.6	8.6	8.6
65°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
67.5°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
70°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
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)