

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: **LD4C45D010 EX4C459030 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: LD4C45D010 EX4C459030 4LBSQLWWLI  
Description: 4 INCH 4500 LUMEN PORTFOLIO LED DOWNLIGHT WITH, 3000K, 90CRI LEDS  
AND 4LBSQLWW TRIM WITH LI FINISH  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

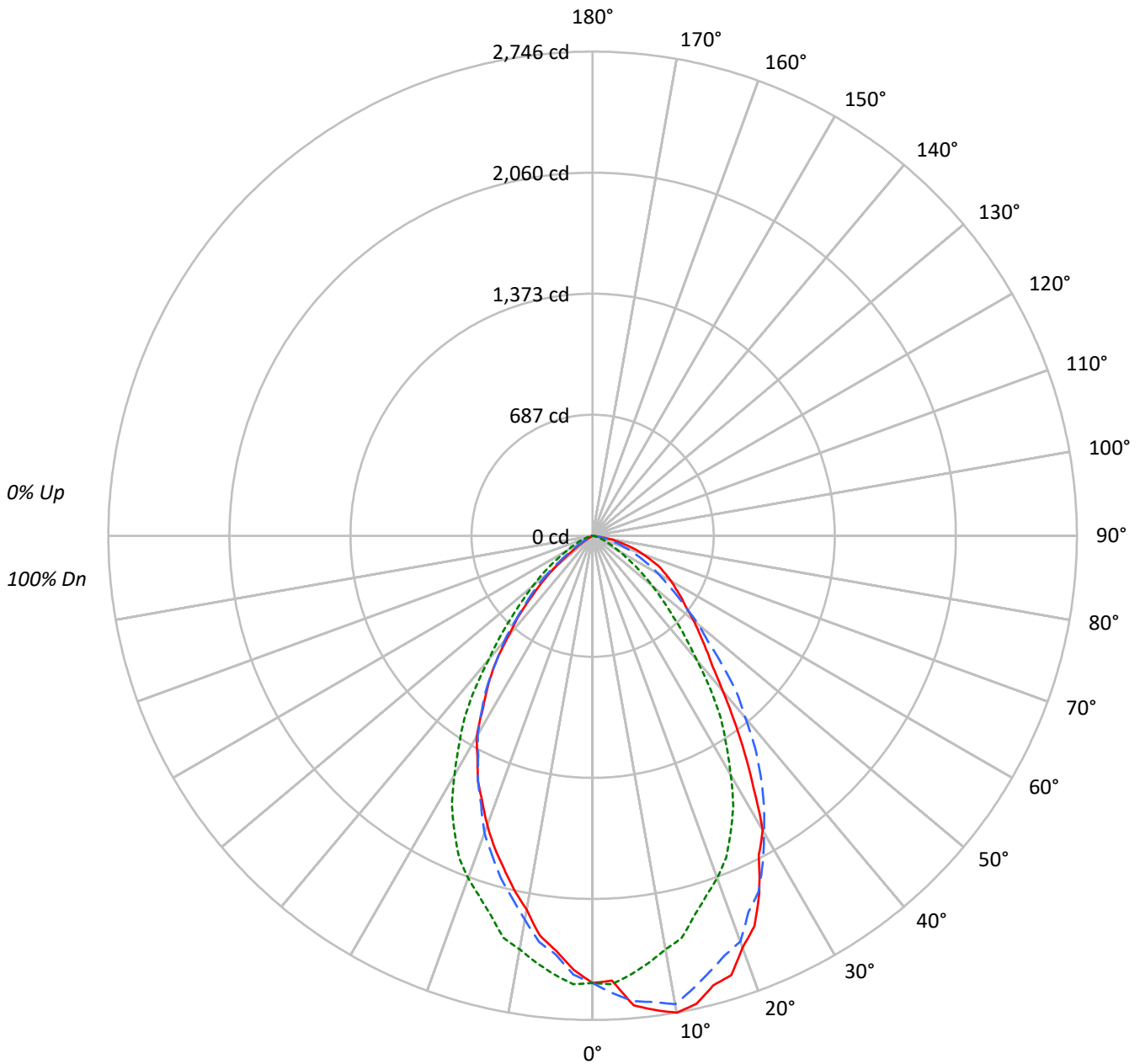
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3636.0 lumens  
Efficiency: N/A  
Efficacy: 73.3 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): 49.6  
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

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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	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°	244754	244754	244754
5°	258948	241863	228903
10°	269095	233333	210975
15°	263717	222701	194751
20°	255163	212057	179261
25°	238010	197192	163528
30°	214854	174522	146400
35°	176981	149395	121454
40°	144435	115314	93473
45°	124093	87577	67232
50°	112312	66664	42466
55°	103356	48095	15359
60°	99210	32864	2354
65°	95823	22238	708
70°	85791	15432	875
75°	70311	7941	0
80°	43952	3390	0
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	237.7	6.5
10°-20°	640.3	17.6
20°-30°	855.0	23.5
30°-40°	811.6	22.3
40°-50°	561.0	15.4
50°-60°	310.0	8.5
60°-70°	153.9	4.2
70°-80°	60.6	1.7
80°-90°	5.8	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°	1733.0	47.7
0°-40°	2544.6	70.0
0°-60°	3415.6	93.9
0°-90°	3636.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3636.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2537	2537	2537	2537	2537	
5°	2674	2649	2497	2384	2363	256
15°	2640	2561	2229	2010	1950	747
25°	2236	2226	1852	1536	1536	1019
35°	1502	1661	1268	1043	1031	941
45°	909	1043	642	526	493	709
55°	614	578	286	146	91	553
65°	420	304	97	3	3	407
75°	189	116	21	0	0	201
85°	0	3	0	0	0	17
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°	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6
2.5°	2524.4	2594.3	2600.4	2594.3	2603.5	2600.4	2615.7	2600.4	2618.8	2591.4	2597.4
5°	2673.5	2646.1	2703.9	2673.5	2673.5	2670.5	2661.3	2658.2	2670.5	2630.9	2649.2
7.5°	2713.0	2752.6	2804.3	2740.4	2743.4	2743.4	2725.2	2719.1	2719.1	2646.1	2667.4
10°	2746.5	2722.1	2749.5	2725.2	2746.5	2743.4	2755.6	2716.0	2743.4	2700.9	2697.8
12.5°	2719.1	2709.9	2746.5	2707.0	2694.8	2697.8	2682.6	2673.5	2682.6	2633.9	2630.9
15°	2640.0	2649.2	2703.9	2661.3	2655.2	2649.2	2630.9	2600.4	2624.9	2557.9	2561.0
17.5°	2612.7	2597.4	2606.6	2570.0	2579.2	2573.1	2570.0	2542.8	2536.6	2494.0	2494.0
20°	2485.0	2518.3	2518.3	2494.0	2494.0	2491.0	2451.5	2475.8	2448.4	2436.2	2448.4
22.5°	2396.7	2399.8	2399.8	2378.4	2381.5	2369.4	2348.0	2332.8	2348.0	2332.8	2308.5
25°	2235.6	2241.6	2278.1	2238.5	2232.5	2244.6	2226.4	2217.2	2214.2	2177.8	2226.4
27.5°	2040.9	2101.6	2098.6	2083.4	2101.6	2077.3	2068.3	2071.2	2080.4	2077.3	2089.5
30°	1928.4	1937.4	1946.6	1934.4	1937.4	1928.4	1928.4	1931.3	1955.7	1946.6	1943.5
32.5°	1700.2	1730.6	1755.0	1755.0	1758.0	1767.1	1764.0	1827.9	1843.2	1812.8	1806.7
35°	1502.5	1523.8	1545.0	1548.1	1587.7	1590.7	1593.8	1612.0	1654.5	1663.7	1660.6
37.5°	1314.0	1335.2	1341.3	1368.7	1390.0	1411.2	1435.6	1459.9	1496.4	1526.8	1511.7
40°	1146.7	1155.7	1171.0	1183.1	1225.7	1225.7	1237.8	1286.6	1326.1	1350.4	1347.3
42.5°	1006.8	1009.8	1021.9	1043.2	1082.8	1073.6	1082.8	1116.3	1174.0	1177.1	1210.5
45°	909.4	906.3	915.5	918.5	942.9	955.1	961.1	985.5	1034.1	1040.1	1043.2
47.5°	821.3	818.2	833.4	839.5	848.5	860.7	860.7	863.8	882.0	897.3	885.1
50°	748.2	748.2	748.2	754.3	769.5	766.4	769.5	781.7	790.7	784.7	781.7
52.5°	669.1	681.2	690.4	693.5	696.5	696.5	699.6	693.5	690.4	681.2	663.0
55°	614.4	626.5	626.5	626.5	626.5	638.7	623.6	626.5	626.5	602.2	577.9
57.5°	559.7	571.8	580.9	568.8	580.9	568.8	562.7	559.7	553.5	529.2	492.7
60°	514.1	520.1	517.0	514.1	520.1	511.0	504.9	492.7	486.6	453.2	428.9
62.5°	462.3	465.3	468.4	462.3	456.3	453.2	441.0	422.8	410.6	383.2	361.9
65°	419.7	410.6	407.5	404.5	398.5	389.3	380.2	358.9	349.7	325.4	304.1
67.5°	355.8	352.8	358.9	349.7	334.6	334.6	325.4	307.2	285.9	270.7	249.4
70°	304.1	301.1	295.0	285.9	282.9	270.7	270.7	249.4	243.3	215.9	197.7
72.5°	249.4	249.4	240.2	231.2	222.0	215.9	212.9	197.7	188.6	173.4	158.1
75°	188.6	188.6	185.5	176.4	170.3	164.2	161.2	149.1	139.9	124.8	115.6
77.5°	133.8	133.8	121.7	115.6	118.6	112.5	106.4	103.4	100.3	91.3	79.1
80°	79.1	76.0	67.0	69.9	67.0	67.0	63.9	60.8	54.7	48.6	42.5
82.5°	21.3	24.3	24.3	24.3	27.4	21.3	21.3	21.3	24.3	24.3	15.3
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	3.1	3.1
87.5°	3.1	6.1	12.2	12.2	12.2	12.2	12.2	9.2	9.2	9.2	6.1
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°	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6
2.5°	2567.1	2564.0	2567.1	2545.7	2594.3	2557.9	2551.8	2545.7	2567.1	2545.7	2515.3
5°	2621.8	2591.4	2582.2	2573.1	2600.4	2557.9	2548.8	2551.8	2536.6	2497.1	2500.1
7.5°	2640.0	2612.7	2585.3	2527.5	2551.8	2542.8	2518.3	2500.1	2475.8	2442.3	2436.2
10°	2646.1	2615.7	2576.1	2557.9	2521.4	2509.3	2500.1	2469.7	2439.3	2381.5	2366.3
12.5°	2627.8	2591.4	2542.8	2527.5	2500.1	2460.5	2439.3	2408.8	2381.5	2335.9	2302.4
15°	2548.8	2518.3	2503.2	2451.5	2439.3	2414.9	2372.4	2329.8	2290.3	2229.4	2211.1
17.5°	2457.6	2445.4	2430.1	2390.6	2387.6	2363.3	2323.7	2287.2	2235.6	2141.2	2110.8
20°	2363.3	2363.3	2314.6	2299.4	2329.8	2281.1	2250.7	2217.2	2110.8	2065.2	2010.5
22.5°	2293.4	2259.9	2232.5	2208.2	2211.1	2180.7	2138.2	2071.2	2031.7	1977.0	1913.1
25°	2156.4	2168.6	2107.8	2098.6	2107.8	2037.8	2016.5	1961.7	1903.9	1852.2	1803.6
27.5°	2071.2	2037.8	1998.3	1964.8	1964.8	1937.4	1876.6	1864.5	1776.2	1727.6	1666.7
30°	1943.5	1919.2	1885.7	1837.1	1831.0	1809.7	1761.1	1730.6	1639.4	1566.4	1532.9
32.5°	1782.3	1773.2	1745.8	1691.1	1672.9	1648.5	1587.7	1536.0	1493.4	1411.2	1371.8
35°	1666.7	1633.3	1575.5	1529.9	1514.6	1472.1	1423.4	1386.9	1341.3	1268.3	1216.6
37.5°	1493.4	1459.9	1405.1	1350.4	1350.4	1307.9	1240.9	1204.5	1140.6	1097.9	1055.4
40°	1341.3	1298.7	1244.0	1180.2	1171.0	1110.1	1082.8	1021.9	982.4	915.5	909.4
42.5°	1171.0	1131.4	1082.8	1034.1	997.6	967.2	897.3	851.6	809.1	775.6	766.4
45°	1015.8	964.1	921.6	860.7	824.2	787.8	742.1	711.7	678.3	641.8	620.5
47.5°	882.0	839.5	778.6	723.9	687.4	669.1	617.4	584.0	556.6	532.3	517.0
50°	745.2	693.5	660.0	599.1	593.1	550.5	508.0	480.6	465.3	444.1	422.8
52.5°	641.8	593.1	547.4	501.9	477.5	462.3	422.8	395.4	374.2	358.9	346.8
55°	541.3	498.8	462.3	416.7	401.4	380.2	334.6	328.5	307.2	285.9	270.7
57.5°	465.3	425.8	383.2	352.8	325.4	310.3	273.7	249.4	237.2	219.0	203.8
60°	395.4	352.8	319.3	282.9	270.7	249.4	222.0	200.8	185.5	170.3	155.1
62.5°	331.5	295.0	258.6	228.1	209.8	197.7	176.4	158.1	143.0	130.8	118.6
65°	273.7	240.2	209.8	179.5	170.3	155.1	139.9	124.8	112.5	97.4	85.2
67.5°	225.1	194.7	164.2	143.0	133.8	127.7	109.5	94.3	85.2	76.0	63.9
70°	176.4	155.1	130.8	112.5	103.4	94.3	82.1	73.0	60.8	54.7	45.6
72.5°	136.9	118.6	97.4	82.1	76.0	69.9	57.8	48.6	42.5	36.5	30.4
75°	97.4	82.1	69.9	54.7	51.7	48.6	39.6	33.5	27.4	21.3	18.2
77.5°	67.0	54.7	42.5	36.5	33.5	27.4	24.3	18.2	15.3	12.2	9.2
80°	36.5	27.4	21.3	18.2	15.3	12.2	12.2	9.2	6.1	6.1	3.1
82.5°	12.2	9.2	6.1	3.1	3.1	3.1	3.1	3.1	3.1	0.0	3.1
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°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	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°	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6
2.5°	2533.6	2500.1	2509.3	2509.3	2503.2	2503.2	2497.1	2487.9	2491.0	2472.7	2433.2
5°	2506.2	2463.6	2457.6	2463.6	2439.3	2433.2	2421.1	2439.3	2384.5	2405.8	2381.5
7.5°	2427.2	2387.6	2378.4	2399.8	2369.4	2351.0	2348.0	2372.4	2323.7	2299.4	2272.0
10°	2338.9	2323.7	2296.3	2281.1	2272.0	2275.0	2250.7	2220.3	2211.1	2205.1	2180.7
12.5°	2259.9	2226.4	2202.1	2183.8	2177.8	2177.8	2138.2	2132.1	2104.7	2098.6	2062.2
15°	2165.5	2126.1	2110.8	2086.5	2065.2	2077.3	2031.7	2019.5	2010.5	1970.9	1977.0
17.5°	2083.4	2040.9	2004.4	1989.1	1970.9	1952.7	1910.0	1919.2	1897.9	1897.9	1843.2
20°	1977.0	1931.3	1903.9	1873.6	1873.6	1849.2	1818.9	1821.8	1794.4	1767.1	1718.4
22.5°	1864.5	1815.8	1782.3	1770.1	1739.7	1733.7	1697.2	1688.0	1651.6	1654.5	1612.0
25°	1745.8	1697.2	1651.6	1654.5	1627.2	1615.1	1593.8	1551.2	1536.0	1517.7	1505.6
27.5°	1605.9	1572.4	1532.9	1529.9	1478.2	1481.2	1453.9	1441.7	1405.1	1414.3	1386.9
30°	1478.2	1429.6	1393.0	1383.9	1362.6	1356.5	1314.0	1295.6	1301.8	1277.4	1262.3
32.5°	1347.3	1274.4	1259.2	1240.9	1228.8	1213.5	1183.1	1195.3	1167.9	1174.0	1149.7
35°	1174.0	1143.6	1104.0	1104.0	1091.9	1079.7	1058.5	1070.7	1043.2	1031.1	1006.8
37.5°	1028.0	1000.7	961.1	973.3	952.0	933.7	915.5	918.5	894.2	891.2	866.8
40°	869.9	854.6	827.3	827.3	812.1	812.1	802.9	793.8	778.6	760.4	733.0
42.5°	720.8	708.6	696.5	699.6	678.3	696.5	672.2	687.4	638.7	635.7	617.4
45°	611.3	584.0	587.0	574.8	562.7	568.8	547.4	553.5	526.2	520.1	501.9
47.5°	495.8	486.6	468.4	462.3	462.3	453.2	444.1	441.0	428.9	413.6	389.3
50°	407.5	374.2	368.0	358.9	352.8	352.8	340.7	322.4	325.4	310.3	285.9
52.5°	319.3	291.9	279.8	276.8	264.7	258.6	243.3	231.2	222.0	215.9	200.8
55°	246.3	222.0	206.9	206.9	188.6	188.6	167.3	158.1	146.0	133.8	124.8
57.5°	185.5	173.4	158.1	146.0	139.9	124.8	112.5	97.4	88.2	69.9	57.8
60°	139.9	127.7	112.5	103.4	97.4	82.1	67.0	54.7	33.5	27.4	24.3
62.5°	103.4	91.3	76.0	69.9	63.9	51.7	36.5	18.2	9.2	9.2	9.2
65°	76.0	60.8	48.6	42.5	36.5	27.4	12.2	6.1	3.1	3.1	3.1
67.5°	51.7	39.6	27.4	24.3	18.2	9.2	3.1	3.1	3.1	3.1	3.1
70°	33.5	24.3	12.2	9.2	6.1	3.1	3.1	3.1	3.1	3.1	3.1
72.5°	21.3	12.2	6.1	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	12.2	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	6.1	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	3.1	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	3.1	3.1	3.1
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: LD4C45D010 EX4C459030 4LBSQLWWLI

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6	2536.6
2.5°	2475.8	2454.5	2466.6	2439.3	2451.5	2472.7	2457.6	2463.6
5°	2390.6	2378.4	2363.3	2323.7	2354.1	2378.4	2366.3	2363.3
7.5°	2299.4	2256.8	2278.1	2265.9	2259.9	2284.2	2256.8	2287.2
10°	2205.1	2174.7	2171.7	2150.4	2150.4	2168.6	2171.7	2153.3
12.5°	2065.2	2050.0	2050.0	2046.9	2043.8	2062.2	2065.2	2056.1
15°	1964.8	1958.8	1943.5	1940.5	1922.3	1949.6	1952.7	1949.6
17.5°	1843.2	1846.1	1831.0	1831.0	1843.2	1852.2	1827.9	1852.2
20°	1761.1	1745.8	1739.7	1712.3	1727.6	1742.8	1742.8	1745.8
22.5°	1642.4	1618.1	1627.2	1612.0	1602.8	1624.1	1624.1	1633.3
25°	1508.6	1508.6	1514.6	1505.6	1511.7	1523.8	1514.6	1536.0
27.5°	1380.8	1393.0	1393.0	1380.8	1386.9	1423.4	1438.6	1414.3
30°	1262.3	1265.2	1274.4	1268.3	1286.6	1298.7	1295.6	1314.0
32.5°	1128.4	1143.6	1149.7	1140.6	1146.7	1174.0	1158.8	1155.7
35°	1025.0	997.6	994.6	997.6	1009.8	1015.8	1009.8	1031.1
37.5°	875.9	866.8	854.6	857.7	866.8	879.0	885.1	900.3
40°	733.0	720.8	720.8	717.8	708.6	742.1	742.1	742.1
42.5°	608.3	605.2	590.1	590.1	602.2	611.3	605.2	626.5
45°	498.8	486.6	477.5	477.5	486.6	486.6	495.8	492.7
47.5°	392.4	380.2	383.2	374.2	383.2	395.4	380.2	383.2
50°	295.0	295.0	289.0	295.0	291.9	295.0	289.0	282.9
52.5°	200.8	228.1	231.2	219.0	191.6	167.3	152.0	164.2
55°	115.6	103.4	103.4	100.3	94.3	91.3	82.1	91.3
57.5°	57.8	51.7	51.7	51.7	48.6	45.6	39.6	39.6
60°	24.3	21.3	21.3	18.2	15.3	12.2	9.2	12.2
62.5°	9.2	6.1	6.1	6.1	6.1	6.1	6.1	6.1
65°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
67.5°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
70°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
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)