

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: P563845

Luminaire Tested: **LD4C45D010 EX4C459030 4LBSQLWWH**

Issue Date: 2/18/2022

Test Information

Test Method: LM-79-08
Report Number: P563845
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 4LBSQLWWH
Description: 4 INCH 4500 LUMEN PORTFOLIO LED DOWNLIGHT WITH, 3000K, 90CRI LEDS
AND 4LBSQLWW TRIM WITH H FINISH, DIM TO WARM
Light Source: -
Ballast/Driver: -

Summary

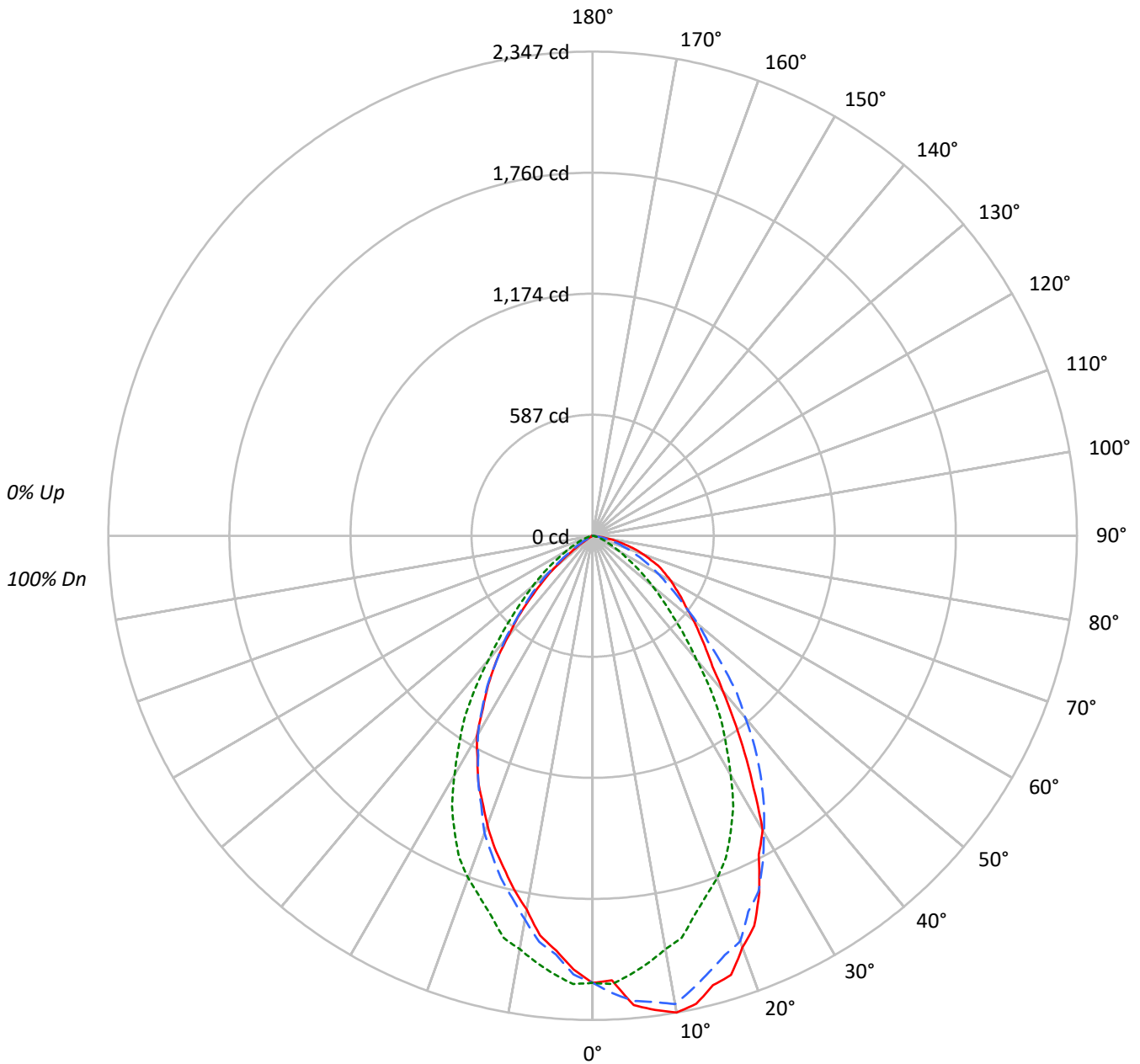
Lumens per Lamp: N/A
Luminaire Lumens: 3106.5 lumens
Efficiency: N/A
Efficacy: 62.6 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 1 / 1.06
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P563845

CATALOG NUMBER: LD4C45D010 EX4C459030 4LBSQLWWH

Luminous Intensity Polar Plot





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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°	209101	209101	209101
5°	221232	206645	195565
10°	229914	199355	180259
15°	225308	190266	166391
20°	218003	181171	153159
25°	203346	168479	139712
30°	183569	149097	125086
35°	151209	127639	103762
40°	123400	98524	79857
45°	106026	74832	57448
50°	95950	56952	36282
55°	88300	41080	13121
60°	84756	28078	2007
65°	81873	18996	594
70°	73293	13175	733
75°	60059	6785	0
80°	37562	2889	0
85°	0	0	0



TEST NUMBER: P563845

CATALOG NUMBER: LD4C45D010 EX4C459030 4LBSQLWWH

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	203.1	6.5
10°-20°	547.1	17.6
20°-30°	730.5	23.5
30°-40°	693.5	22.3
40°-50°	479.3	15.4
50°-60°	264.9	8.5
60°-70°	131.5	4.2
70°-80°	51.8	1.7
80°-90°	4.9	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°	1480.6	47.7
0°-40°	2174.1	70.0
0°-60°	2918.3	93.9
0°-90°	3106.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3106.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2167	2167	2167	2167	2167	
5°	2284	2263	2134	2037	2019	219
15°	2256	2188	1905	1718	1666	638
25°	1910	1902	1582	1312	1312	871
35°	1284	1419	1084	891	881	804
45°	777	891	548	450	421	606
55°	525	494	244	125	78	472
65°	359	260	83	3	3	348
75°	161	99	18	0	0	172
85°	0	3	0	0	0	15
90°	0	0	0	0	0	



TEST NUMBER: P563845

CATALOG NUMBER: LD4C45D010 EX4C459030 4LBSQLWWH

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1
2.5°	2156.8	2216.6	2221.8	2216.6	2224.4	2221.8	2234.8	2221.8	2237.4	2214.0	2219.2
5°	2284.1	2260.7	2310.2	2284.1	2284.1	2281.6	2273.7	2271.1	2281.6	2247.8	2263.4
7.5°	2318.0	2351.8	2395.9	2341.4	2343.9	2343.9	2328.4	2323.2	2323.2	2260.7	2278.9
10°	2346.6	2325.7	2349.1	2328.4	2346.6	2343.9	2354.3	2320.5	2343.9	2307.6	2305.0
12.5°	2323.2	2315.4	2346.6	2312.8	2302.4	2305.0	2292.0	2284.1	2292.0	2250.4	2247.8
15°	2255.5	2263.4	2310.2	2273.7	2268.6	2263.4	2247.8	2221.8	2242.6	2185.5	2188.1
17.5°	2232.2	2219.2	2227.1	2195.8	2203.7	2198.5	2195.8	2172.4	2167.1	2130.8	2130.8
20°	2123.1	2151.6	2151.6	2130.8	2130.8	2128.3	2094.5	2115.3	2091.9	2081.5	2091.9
22.5°	2047.6	2050.3	2050.3	2032.1	2034.7	2024.3	2006.1	1993.1	2006.1	1993.1	1972.4
25°	1910.0	1915.2	1946.4	1912.5	1907.4	1917.7	1902.2	1894.3	1891.8	1860.7	1902.2
27.5°	1743.7	1795.6	1793.0	1780.0	1795.6	1774.8	1767.1	1769.6	1777.5	1774.8	1785.2
30°	1647.6	1655.3	1663.1	1652.7	1655.3	1647.6	1647.6	1650.1	1670.9	1663.1	1660.5
32.5°	1452.6	1478.6	1499.5	1499.5	1502.0	1509.8	1507.2	1561.7	1574.7	1548.8	1543.6
35°	1283.7	1301.9	1320.0	1322.7	1356.5	1359.1	1361.7	1377.3	1413.6	1421.4	1418.8
37.5°	1122.7	1140.8	1146.0	1169.4	1187.6	1205.7	1226.5	1247.4	1278.5	1304.5	1291.5
40°	979.7	987.4	1000.4	1010.9	1047.2	1047.2	1057.6	1099.2	1133.1	1153.8	1151.2
42.5°	860.1	862.7	873.1	891.4	925.1	917.3	925.1	953.7	1003.1	1005.7	1034.3
45°	777.0	774.4	782.2	784.8	805.6	816.0	821.2	841.9	883.5	888.7	891.4
47.5°	701.7	699.0	712.0	717.2	725.0	735.3	735.3	738.0	753.5	766.7	756.2
50°	639.2	639.2	639.2	644.4	657.5	654.9	657.5	667.9	675.6	670.4	667.9
52.5°	571.7	582.0	589.9	592.5	595.1	595.1	597.7	592.5	589.9	582.0	566.5
55°	524.9	535.4	535.4	535.4	535.4	545.7	532.8	535.4	535.4	514.5	493.7
57.5°	478.2	488.6	496.3	485.9	496.3	485.9	480.7	478.2	472.9	452.1	421.0
60°	439.2	444.4	441.8	439.2	444.4	436.6	431.4	421.0	415.8	387.1	366.4
62.5°	395.0	397.5	400.2	395.0	389.8	387.1	376.8	361.2	350.8	327.4	309.2
65°	358.6	350.8	348.2	345.6	340.5	332.6	324.9	306.7	298.9	278.0	259.8
67.5°	304.0	301.5	306.7	298.9	285.8	285.8	278.0	262.4	244.2	231.3	213.1
70°	259.8	257.2	252.1	244.2	241.7	231.3	231.3	213.1	207.9	184.5	168.9
72.5°	213.1	213.1	205.3	197.5	189.7	184.5	182.0	168.9	161.1	148.1	135.1
75°	161.1	161.1	158.5	150.6	145.5	140.3	137.7	127.4	119.5	106.6	98.8
77.5°	114.3	114.3	104.0	98.8	101.3	96.1	90.9	88.4	85.7	78.0	67.6
80°	67.6	65.0	57.2	59.8	57.2	57.2	54.5	51.9	46.7	41.5	36.3
82.5°	18.2	20.8	20.8	20.8	23.4	18.2	18.2	18.2	20.8	20.8	13.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	2.6	2.6
87.5°	2.6	5.2	10.4	10.4	10.4	10.4	10.4	7.8	7.8	7.8	5.2
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: P563845

CATALOG NUMBER: LD4C45D010 EX4C459030 4LBSQLWWH

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1
2.5°	2193.3	2190.6	2193.3	2175.0	2216.6	2185.5	2180.3	2175.0	2193.3	2175.0	2149.0
5°	2240.0	2214.0	2206.2	2198.5	2221.8	2185.5	2177.6	2180.3	2167.1	2133.5	2136.0
7.5°	2255.5	2232.2	2208.8	2159.4	2180.3	2172.4	2151.6	2136.0	2115.3	2086.7	2081.5
10°	2260.7	2234.8	2201.0	2185.5	2154.2	2143.9	2136.0	2110.1	2084.1	2034.7	2021.7
12.5°	2245.2	2214.0	2172.4	2159.4	2136.0	2102.2	2084.1	2058.0	2034.7	1995.7	1967.2
15°	2177.6	2151.6	2138.7	2094.5	2084.1	2063.3	2026.9	1990.6	1956.8	1904.7	1889.1
17.5°	2099.7	2089.3	2076.3	2042.4	2039.9	2019.1	1985.4	1954.1	1910.0	1829.4	1803.4
20°	2019.1	2019.1	1977.5	1964.6	1990.6	1949.0	1922.9	1894.3	1803.4	1764.4	1717.7
22.5°	1959.4	1930.7	1907.4	1886.6	1889.1	1863.2	1826.9	1769.6	1735.9	1689.1	1634.5
25°	1842.5	1852.8	1800.9	1793.0	1800.9	1741.0	1722.9	1676.0	1626.7	1582.5	1541.0
27.5°	1769.6	1741.0	1707.3	1678.7	1678.7	1655.3	1603.4	1593.0	1517.6	1476.1	1424.0
30°	1660.5	1639.7	1611.1	1569.5	1564.4	1546.1	1504.6	1478.6	1400.7	1338.2	1309.6
32.5°	1522.7	1515.0	1491.6	1444.8	1429.3	1408.4	1356.5	1312.3	1276.0	1205.7	1172.0
35°	1424.0	1395.5	1346.1	1307.1	1294.1	1257.8	1216.1	1184.9	1146.0	1083.6	1039.5
37.5°	1276.0	1247.4	1200.5	1153.8	1153.8	1117.4	1060.2	1029.1	974.5	938.1	901.7
40°	1146.0	1109.6	1062.9	1008.4	1000.4	948.4	925.1	873.1	839.3	782.2	777.0
42.5°	1000.4	966.6	925.1	883.5	852.3	826.4	766.7	727.6	691.3	662.7	654.9
45°	867.9	823.7	787.4	735.3	704.2	673.1	634.0	608.1	579.5	548.4	530.2
47.5°	753.5	717.2	665.2	618.5	587.3	571.7	527.4	498.9	475.5	454.8	441.8
50°	636.7	592.5	563.9	511.9	506.7	470.4	434.0	410.5	397.5	379.4	361.2
52.5°	548.4	506.7	467.7	428.9	407.9	395.0	361.2	337.8	319.7	306.7	296.3
55°	462.5	426.2	395.0	356.0	343.0	324.9	285.8	280.6	262.4	244.2	231.3
57.5°	397.5	363.8	327.4	301.5	278.0	265.1	233.9	213.1	202.7	187.2	174.0
60°	337.8	301.5	272.8	241.7	231.3	213.1	189.7	171.5	158.5	145.5	132.5
62.5°	283.2	252.1	220.9	194.9	179.3	168.9	150.6	135.1	122.2	111.8	101.3
65°	233.9	205.3	179.3	153.3	145.5	132.5	119.5	106.6	96.1	83.2	72.8
67.5°	192.4	166.3	140.3	122.2	114.3	109.1	93.6	80.6	72.8	65.0	54.5
70°	150.6	132.5	111.8	96.1	88.4	80.6	70.2	62.5	51.9	46.7	39.0
72.5°	117.0	101.3	83.2	70.2	65.0	59.8	49.3	41.5	36.3	31.1	25.9
75°	83.2	70.2	59.8	46.7	44.1	41.5	33.8	28.6	23.4	18.2	15.6
77.5°	57.2	46.7	36.3	31.1	28.6	23.4	20.8	15.6	13.0	10.4	7.8
80°	31.1	23.4	18.2	15.6	13.0	10.4	10.4	7.8	5.2	5.2	2.6
82.5°	10.4	7.8	5.2	2.6	2.6	2.6	2.6	2.6	2.6	0.0	2.6
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°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	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: P563845

CATALOG NUMBER: LD4C45D010 EX4C459030 4LBSQLWWH

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1
2.5°	2164.6	2136.0	2143.9	2143.9	2138.7	2138.7	2133.5	2125.6	2128.3	2112.6	2079.0
5°	2141.2	2104.9	2099.7	2104.9	2084.1	2079.0	2068.6	2084.1	2037.2	2055.5	2034.7
7.5°	2073.8	2039.9	2032.1	2050.3	2024.3	2008.7	2006.1	2026.9	1985.4	1964.6	1941.1
10°	1998.3	1985.4	1962.0	1949.0	1941.1	1943.8	1922.9	1897.0	1889.1	1884.0	1863.2
12.5°	1930.7	1902.2	1881.4	1865.8	1860.7	1860.7	1826.9	1821.6	1798.2	1793.0	1761.9
15°	1850.2	1816.4	1803.4	1782.6	1764.4	1774.8	1735.9	1725.5	1717.7	1683.9	1689.1
17.5°	1780.0	1743.7	1712.6	1699.4	1683.9	1668.3	1631.9	1639.7	1621.5	1621.5	1574.7
20°	1689.1	1650.1	1626.7	1600.8	1600.8	1579.9	1554.0	1556.5	1533.1	1509.8	1468.1
22.5°	1593.0	1551.3	1522.7	1512.4	1486.4	1481.2	1450.0	1442.2	1411.1	1413.6	1377.3
25°	1491.6	1450.0	1411.1	1413.6	1390.3	1379.9	1361.7	1325.3	1312.3	1296.7	1286.4
27.5°	1372.1	1343.4	1309.6	1307.1	1263.0	1265.5	1242.2	1231.7	1200.5	1208.3	1184.9
30°	1263.0	1221.4	1190.1	1182.4	1164.2	1159.0	1122.7	1106.9	1112.2	1091.4	1078.4
32.5°	1151.2	1088.8	1075.8	1060.2	1049.9	1036.8	1010.9	1021.3	997.8	1003.1	982.2
35°	1003.1	977.0	943.2	943.2	932.9	922.5	904.4	914.8	891.4	880.9	860.1
37.5°	878.3	855.0	821.2	831.6	813.4	797.8	782.2	784.8	763.9	761.4	740.5
40°	743.2	730.1	706.9	706.9	693.8	693.8	686.0	678.3	665.2	649.7	626.2
42.5°	615.8	605.4	595.1	597.7	579.5	595.1	574.3	587.3	545.7	543.2	527.4
45°	522.2	498.9	501.5	491.1	480.7	485.9	467.7	472.9	449.6	444.4	428.9
47.5°	423.7	415.8	400.2	395.0	395.0	387.1	379.4	376.8	366.4	353.4	332.6
50°	348.2	319.7	314.4	306.7	301.5	301.5	291.0	275.5	278.0	265.1	244.2
52.5°	272.8	249.4	239.0	236.5	226.1	220.9	207.9	197.5	189.7	184.5	171.5
55°	210.5	189.7	176.8	176.8	161.1	161.1	142.9	135.1	124.7	114.3	106.6
57.5°	158.5	148.1	135.1	124.7	119.5	106.6	96.1	83.2	75.4	59.8	49.3
60°	119.5	109.1	96.1	88.4	83.2	70.2	57.2	46.7	28.6	23.4	20.8
62.5°	88.4	78.0	65.0	59.8	54.5	44.1	31.1	15.6	7.8	7.8	7.8
65°	65.0	51.9	41.5	36.3	31.1	23.4	10.4	5.2	2.6	2.6	2.6
67.5°	44.1	33.8	23.4	20.8	15.6	7.8	2.6	2.6	2.6	2.6	2.6
70°	28.6	20.8	10.4	7.8	5.2	2.6	2.6	2.6	2.6	2.6	2.6
72.5°	18.2	10.4	5.2	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	10.4	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	5.2	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	2.6	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	2.6	2.6	2.6
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: P563845

CATALOG NUMBER: LD4C45D010 EX4C459030 4LBSQLWWH

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1	2167.1
2.5°	2115.3	2097.1	2107.4	2084.1	2094.5	2112.6	2099.7	2104.9
5°	2042.4	2032.1	2019.1	1985.4	2011.3	2032.1	2021.7	2019.1
7.5°	1964.6	1928.1	1946.4	1935.9	1930.7	1951.6	1928.1	1954.1
10°	1884.0	1858.0	1855.5	1837.3	1837.3	1852.8	1855.5	1839.8
12.5°	1764.4	1751.5	1751.5	1748.9	1746.2	1761.9	1764.4	1756.7
15°	1678.7	1673.5	1660.5	1657.9	1642.4	1665.7	1668.3	1665.7
17.5°	1574.7	1577.3	1564.4	1564.4	1574.7	1582.5	1561.7	1582.5
20°	1504.6	1491.6	1486.4	1462.9	1476.1	1489.1	1489.1	1491.6
22.5°	1403.2	1382.5	1390.3	1377.3	1369.5	1387.7	1387.7	1395.5
25°	1288.9	1288.9	1294.1	1286.4	1291.5	1301.9	1294.1	1312.3
27.5°	1179.7	1190.1	1190.1	1179.7	1184.9	1216.1	1229.1	1208.3
30°	1078.4	1081.0	1088.8	1083.6	1099.2	1109.6	1106.9	1122.7
32.5°	964.1	977.0	982.2	974.5	979.7	1003.1	990.0	987.4
35°	875.7	852.3	849.8	852.3	862.7	867.9	862.7	880.9
37.5°	748.4	740.5	730.1	732.8	740.5	751.0	756.2	769.2
40°	626.2	615.8	615.8	613.3	605.4	634.0	634.0	634.0
42.5°	519.7	517.0	504.1	504.1	514.5	522.2	517.0	535.4
45°	426.2	415.8	407.9	407.9	415.8	415.8	423.7	421.0
47.5°	335.3	324.9	327.4	319.7	327.4	337.8	324.9	327.4
50°	252.1	252.1	246.9	252.1	249.4	252.1	246.9	241.7
52.5°	171.5	194.9	197.5	187.2	163.7	142.9	129.9	140.3
55°	98.8	88.4	88.4	85.7	80.6	78.0	70.2	78.0
57.5°	49.3	44.1	44.1	44.1	41.5	39.0	33.8	33.8
60°	20.8	18.2	18.2	15.6	13.0	10.4	7.8	10.4
62.5°	7.8	5.2	5.2	5.2	5.2	5.2	5.2	5.2
65°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
67.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
70°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
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)