

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: METALUX

Report Number: P201335

Luminaire Tested: **8LBLED-LD4-12-SYMW-UNV-L835-CD1-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P201335
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P28136)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 8LBLED-LD4-12-SYMW-UNV-L835-CD1-U
Description: 8 ft. Low Bay Linear, 12000 lm, Wht Sym lens, 3.3.5K
Light Source: (784) 3500K CCT, 80 CRI LEDS
2UT217098A8354C
Ballast/Driver: OSRAM
(OTI85W01920CC)

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12047.7 lumens
Efficiency: N/A
Efficacy: 140.7 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 2.12 / 1.93
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 8' x H: 0.21')
CIE Type: Semi-Direct

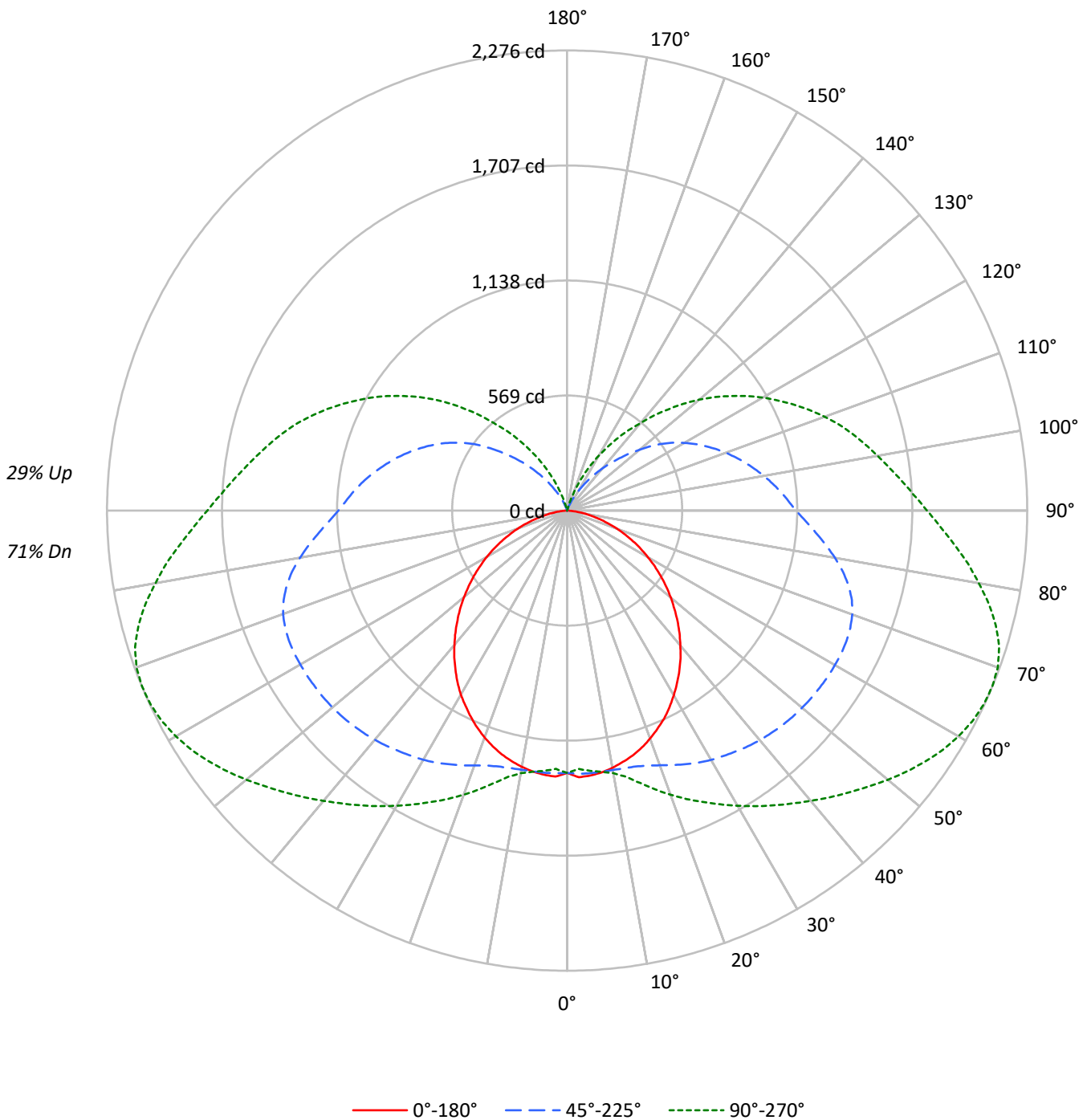
Input Watts (W): 85.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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CATALOG NUMBER: 8LBLEDD4-12-SYMW-UNV-L835-CD1-U

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	0
RCR																		
0	112	112	112	112	106	106	106	106	95	95	95	85	85	85	75	75	75	71
1	97	90	84	79	91	85	80	75	75	71	67	66	63	60	58	55	53	49
2	86	76	67	60	81	71	64	57	63	57	51	55	50	46	48	44	40	36
3	77	65	55	48	72	61	52	45	54	47	41	47	41	36	41	36	32	28
4	70	56	46	39	65	53	44	37	47	39	33	41	35	30	35	30	26	23
5	64	50	40	32	60	47	38	31	41	34	28	36	30	25	31	26	22	19
6	59	44	34	27	55	42	33	26	37	29	24	32	26	21	28	23	19	16
7	54	40	30	24	50	37	29	23	33	26	20	29	23	18	25	20	16	14
8	50	36	27	21	47	34	25	20	30	23	18	26	20	16	23	18	14	12
9	47	33	24	18	44	31	23	17	27	21	16	24	18	14	21	16	13	10
10	43	30	22	16	41	28	21	15	25	19	14	22	17	13	20	15	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	10453	10453	10453
5°	10618	9422	10583
10°	10522	8848	10486
15°	10388	8723	10343
20°	10192	8822	10137
25°	9970	8945	9893
30°	9670	9123	9640
35°	9345	9352	9302
40°	8966	9638	8932
45°	8568	10004	8520
50°	8130	10449	8091
55°	7650	10934	7606
60°	7124	11404	7074
65°	6506	11800	6448
70°	5758	12076	5686
75°	4790	12100	4605
80°	3676	11898	3413
85°	2081	11659	1853



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	123.9	1.0
10°-20°	373.2	3.1
20°-30°	631.7	5.2
30°-40°	883.3	7.3
40°-50°	1113.0	9.2
50°-60°	1306.8	10.8
60°-70°	1429.0	11.9
70°-80°	1411.8	11.7
80°-90°	1240.3	10.3
90°-100°	1055.7	8.8
100°-110°	880.4	7.3
110°-120°	681.9	5.7
120°-130°	474.7	3.9
130°-140°	277.0	2.3
140°-150°	126.4	1.0
150°-160°	36.1	0.3
160°-170°	2.6	0.0
170°-180°	0.0	0.0
0°-30°	1128.8	9.4
0°-40°	2012.1	16.7
0°-60°	4431.9	36.8
0°-90°	8512.9	70.7
90°-120°	2618.0	21.7
90°-150°	3496.1	29.0
90°-180°	3535.0	29.3
0°-180°	12047.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1297	1297	1297	1297	1297	
5°	1316	1304	1292	1302	1312	125
15°	1254	1310	1395	1310	1249	353
25°	1135	1384	1591	1384	1126	522
35°	967	1454	1780	1452	963	604
45°	772	1503	1972	1501	767	595
55°	565	1526	2163	1521	562	506
65°	360	1525	2272	1519	357	357
75°	169	1442	2196	1436	162	181
85°	29	1234	1922	1230	26	37
90°	0	1132	1780	1132	0	1
95°	0	1060	1663	1062	0	0
105°	1	912	1462	915	0	1
115°	1	754	1239	756	1	1
125°	2	577	988	577	1	2
135°	2	366	709	366	1	2
145°	3	187	439	185	2	2
155°	3	53	195	50	2	1
165°	3	5	14	0	2	1
175°	0	0	0	0	0	0
180°	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°	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4
2.5°	1320.1	1319.0	1313.6	1305.0	1301.7	1299.5	1298.5	1295.2	1294.1	1296.3	1302.8
5°	1315.8	1313.6	1309.3	1301.7	1298.5	1297.4	1296.3	1293.1	1292.0	1295.2	1303.9
7.5°	1306.0	1305.0	1300.6	1293.1	1292.0	1289.8	1289.8	1287.6	1287.6	1293.1	1302.8
10°	1292.0	1290.9	1286.6	1281.2	1280.1	1280.1	1280.1	1280.1	1282.2	1290.9	1302.8
12.5°	1273.6	1273.6	1270.3	1266.0	1267.1	1267.1	1268.2	1270.3	1276.8	1289.8	1305.0
15°	1254.1	1253.0	1249.8	1248.7	1251.9	1253.0	1256.3	1261.7	1272.5	1290.9	1310.4
17.5°	1229.2	1229.2	1226.0	1227.1	1233.5	1236.8	1242.2	1251.9	1269.3	1294.1	1322.3
20°	1200.0	1201.1	1200.0	1203.2	1214.1	1220.6	1227.1	1243.3	1268.2	1302.8	1340.7
22.5°	1167.5	1169.7	1169.7	1178.4	1192.4	1202.2	1211.9	1234.6	1270.3	1317.9	1362.3
25°	1135.1	1135.1	1138.3	1150.2	1169.7	1181.6	1196.8	1229.2	1277.9	1334.2	1383.9
27.5°	1096.1	1099.4	1104.8	1121.0	1148.1	1164.3	1182.7	1229.2	1286.6	1350.4	1405.6
30°	1055.0	1058.3	1066.9	1089.6	1124.3	1144.8	1170.8	1229.2	1294.1	1363.4	1424.0
32.5°	1011.7	1017.1	1029.0	1058.3	1100.5	1128.6	1162.1	1228.1	1300.6	1374.2	1439.1
35°	967.4	972.8	991.2	1025.8	1081.0	1113.4	1152.4	1224.9	1303.9	1383.9	1454.3
37.5°	920.8	930.6	951.1	994.4	1061.5	1100.5	1141.6	1221.6	1307.1	1391.5	1469.4
40°	871.1	880.8	910.0	961.9	1042.0	1083.1	1128.6	1217.3	1309.3	1399.1	1482.4
42.5°	822.4	835.3	868.9	931.7	1022.5	1068.0	1115.6	1210.8	1308.2	1404.5	1493.2
45°	771.5	786.7	827.8	902.4	1000.9	1049.6	1100.5	1202.2	1306.0	1407.8	1503.0
47.5°	719.6	738.0	786.7	873.2	979.3	1030.1	1085.3	1193.5	1302.8	1409.9	1511.6
50°	668.7	690.4	745.5	844.0	955.5	1009.6	1066.9	1183.8	1297.4	1411.0	1517.0
52.5°	617.9	641.7	706.6	814.8	930.6	987.9	1048.5	1171.9	1290.9	1409.9	1522.5
55°	564.8	590.8	667.6	783.4	904.6	964.1	1028.0	1156.7	1281.2	1405.6	1525.7
57.5°	514.0	543.2	630.8	753.1	877.5	940.3	1008.5	1140.5	1270.3	1402.3	1528.9
60°	462.0	495.6	593.0	718.5	849.4	914.3	984.7	1122.1	1257.3	1394.8	1528.9
62.5°	411.2	449.1	556.2	687.1	821.3	888.4	960.9	1101.5	1243.3	1387.2	1528.9
65°	360.3	403.6	518.3	652.5	789.9	860.2	933.8	1079.9	1226.0	1376.4	1524.6
67.5°	310.6	360.3	479.4	616.8	757.4	829.9	905.7	1055.0	1206.5	1362.3	1516.0
70°	261.9	317.0	440.4	578.9	723.9	795.3	874.3	1028.0	1183.8	1343.9	1500.8
72.5°	213.2	275.9	399.3	541.0	688.2	761.8	841.8	996.6	1155.6	1319.0	1477.0
75°	168.8	234.8	360.3	502.1	651.4	726.1	806.1	961.9	1122.1	1286.6	1442.4
77.5°	128.8	196.9	322.5	464.2	612.4	690.4	769.3	924.1	1083.1	1245.4	1396.9
80°	90.9	160.1	284.6	425.2	573.5	650.3	728.2	883.0	1042.0	1196.8	1345.0
82.5°	56.3	126.6	246.7	387.4	535.6	611.4	688.2	841.8	995.5	1145.9	1288.7
85°	29.2	95.2	211.0	351.7	498.8	573.5	649.2	799.6	947.9	1094.0	1233.5
87.5°	9.7	69.3	181.8	320.3	465.3	539.9	613.5	759.6	903.5	1043.1	1179.4
90°	0.0	51.9	160.1	295.4	437.2	509.6	583.2	723.9	864.6	1002.0	1131.8
92.5°	0.0	44.4	146.1	278.1	417.7	489.1	560.5	700.1	835.3	968.4	1095.0
95°	0.0	35.7	134.2	260.8	397.1	467.4	537.8	674.1	807.2	937.1	1060.4
97.5°	0.0	28.1	121.2	244.5	376.6	444.7	512.9	648.2	778.0	905.7	1024.7
100°	1.1	21.6	107.1	224.0	354.9	422.0	488.0	620.0	746.6	870.0	987.9
102.5°	1.1	15.1	94.1	206.7	332.2	397.1	462.0	590.8	715.2	837.5	950.0
105°	1.1	10.8	81.2	188.3	310.6	373.3	437.2	562.7	683.9	801.8	912.2
107.5°	1.1	7.6	69.3	171.0	288.9	348.4	410.1	532.4	651.4	766.1	874.3
110°	1.1	5.4	58.4	152.6	265.1	324.6	384.1	502.1	617.9	729.3	835.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	1.1	4.3	47.6	135.3	241.3	299.7	357.1	471.8	584.3	692.5	795.3
115°	1.1	4.3	37.9	119.0	217.5	273.8	328.9	441.5	548.6	654.6	754.2
117.5°	1.1	3.2	29.2	102.8	195.9	247.8	300.8	407.9	514.0	616.8	713.1
120°	1.1	3.2	21.6	86.6	173.1	221.8	273.8	375.5	477.2	576.7	668.7
122.5°	2.2	3.2	16.2	72.5	152.6	196.9	246.7	343.0	438.2	534.5	625.4
125°	2.2	2.2	13.0	58.4	130.9	172.0	216.4	309.5	396.0	488.0	576.7
127.5°	2.2	2.2	9.7	44.4	109.3	147.2	187.2	273.8	358.2	440.4	524.8
130°	2.2	2.2	8.7	32.5	88.7	122.3	159.1	237.0	316.0	391.7	468.5
132.5°	2.2	2.2	6.5	23.8	70.3	100.6	133.1	202.3	274.8	348.4	417.7
135°	2.2	2.2	5.4	17.3	53.0	80.1	108.2	169.9	235.9	305.1	365.7
137.5°	2.2	2.2	5.4	13.0	39.0	60.6	85.5	141.7	200.2	261.9	317.0
140°	2.2	2.2	4.3	10.8	27.1	44.4	64.9	113.6	163.4	220.7	273.8
142.5°	2.2	2.2	3.2	8.7	19.5	31.4	46.5	87.6	132.0	181.8	228.3
145°	3.2	2.2	3.2	7.6	14.1	21.6	32.5	66.0	101.7	146.1	187.2
147.5°	2.2	2.2	2.2	5.4	10.8	15.1	21.6	45.4	76.8	113.6	148.2
150°	3.2	2.2	2.2	4.3	8.7	10.8	15.1	30.3	53.0	83.3	113.6
152.5°	3.2	2.2	2.2	4.3	6.5	8.7	10.8	19.5	34.6	56.3	81.2
155°	3.2	2.2	2.2	3.2	5.4	6.5	8.7	13.0	20.6	34.6	53.0
157.5°	3.2	3.2	3.2	3.2	4.3	5.4	6.5	9.7	11.9	19.5	30.3
160°	3.2	3.2	2.2	2.2	3.2	3.2	4.3	6.5	8.7	10.8	15.1
162.5°	3.2	3.2	3.2	2.2	2.2	2.2	3.2	4.3	5.4	7.6	9.7
165°	3.2	3.2	2.2	2.2	2.2	2.2	2.2	2.2	3.2	4.3	5.4
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	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°	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4
2.5°	1305.0	1299.5	1297.4	1293.1	1289.8	1287.6	1284.4	1282.2	1280.1	1279.0	1279.0
5°	1306.0	1300.6	1298.5	1295.2	1294.1	1292.0	1289.8	1292.0	1290.9	1292.0	1290.9
7.5°	1307.1	1302.8	1302.8	1301.7	1300.6	1300.6	1298.5	1300.6	1301.7	1302.8	1301.7
10°	1310.4	1309.3	1311.5	1312.5	1312.5	1312.5	1312.5	1314.7	1319.0	1319.0	1317.9
12.5°	1315.8	1319.0	1325.5	1330.9	1333.1	1333.1	1337.4	1341.7	1347.2	1348.2	1347.2
15°	1326.6	1336.3	1350.4	1362.3	1367.7	1371.0	1379.6	1387.2	1392.6	1394.8	1392.6
17.5°	1346.1	1364.5	1386.1	1403.4	1409.9	1414.2	1426.1	1433.7	1440.2	1445.6	1443.5
20°	1372.0	1396.9	1422.9	1443.5	1452.1	1457.5	1470.5	1484.6	1491.1	1495.4	1494.3
22.5°	1400.2	1429.4	1458.6	1483.5	1493.2	1499.7	1516.0	1528.9	1538.7	1544.1	1543.0
25°	1427.2	1460.8	1496.5	1523.5	1535.4	1543.0	1560.3	1575.5	1586.3	1590.6	1589.5
27.5°	1454.3	1493.2	1532.2	1563.6	1575.5	1585.2	1605.8	1622.0	1635.0	1638.2	1638.2
30°	1475.9	1521.4	1563.6	1599.3	1612.3	1625.2	1648.0	1669.6	1681.5	1685.8	1684.8
32.5°	1496.5	1547.3	1595.0	1635.0	1651.2	1664.2	1691.3	1715.1	1729.1	1733.5	1729.1
35°	1517.0	1573.3	1626.3	1669.6	1686.9	1703.2	1733.5	1760.5	1775.7	1780.0	1777.8
37.5°	1536.5	1599.3	1656.6	1704.2	1724.8	1742.1	1773.5	1806.0	1822.2	1826.5	1822.2
40°	1554.9	1623.1	1685.8	1737.8	1760.5	1781.1	1817.9	1850.3	1868.7	1874.1	1872.0
42.5°	1572.2	1646.9	1715.1	1772.4	1798.4	1820.0	1861.1	1896.8	1916.3	1922.8	1917.4
45°	1587.4	1670.7	1744.3	1806.0	1834.1	1859.0	1905.5	1944.5	1963.9	1971.5	1965.0
47.5°	1602.5	1692.3	1771.3	1839.5	1872.0	1897.9	1949.9	1991.0	2013.7	2020.2	2013.7
50°	1616.6	1714.0	1800.5	1874.1	1908.7	1938.0	1994.2	2038.6	2061.3	2071.1	2062.4
52.5°	1629.6	1734.5	1827.6	1906.6	1944.5	1976.9	2037.5	2085.1	2112.2	2118.7	2110.0
55°	1642.6	1754.0	1851.4	1936.9	1978.0	2012.6	2078.6	2128.4	2155.5	2163.0	2154.4
57.5°	1653.4	1771.3	1874.1	1966.1	2008.3	2048.3	2114.3	2166.3	2194.4	2203.1	2194.4
60°	1661.0	1785.4	1894.7	1989.9	2034.3	2075.4	2145.7	2197.7	2225.8	2234.4	2225.8
62.5°	1666.4	1796.2	1908.7	2008.3	2055.9	2098.1	2169.5	2220.4	2249.6	2258.3	2249.6
65°	1667.4	1800.5	1916.3	2020.2	2068.9	2111.1	2183.6	2234.4	2264.7	2272.3	2263.7
67.5°	1661.0	1796.2	1916.3	2022.4	2071.1	2114.3	2186.8	2237.7	2266.9	2275.6	2266.9
70°	1648.0	1783.2	1905.5	2013.7	2062.4	2105.7	2177.1	2229.0	2258.3	2266.9	2257.2
72.5°	1623.1	1760.5	1882.8	1993.1	2039.7	2081.9	2152.2	2203.1	2231.2	2240.9	2230.1
75°	1587.4	1724.8	1847.1	1953.1	2001.8	2040.8	2111.1	2160.9	2186.8	2195.5	2185.8
77.5°	1540.8	1679.4	1797.3	1902.3	1950.9	1986.7	2054.8	2103.5	2129.5	2137.1	2127.3
80°	1486.7	1624.2	1737.8	1841.7	1887.1	1920.6	1988.8	2035.3	2060.2	2067.8	2062.4
82.5°	1427.2	1561.4	1671.8	1773.5	1816.8	1850.3	1917.4	1962.8	1987.7	1998.6	1989.9
85°	1366.6	1495.4	1603.6	1702.1	1745.4	1781.1	1842.7	1888.2	1913.1	1921.7	1916.3
87.5°	1306.0	1430.5	1535.4	1630.7	1670.7	1707.5	1769.2	1814.6	1839.5	1848.2	1841.7
90°	1255.2	1374.2	1474.8	1569.0	1610.1	1643.6	1703.2	1746.4	1771.3	1780.0	1774.6
92.5°	1214.1	1327.7	1425.1	1511.6	1550.6	1586.3	1643.6	1685.8	1710.7	1718.3	1712.9
95°	1175.1	1285.5	1379.6	1464.0	1501.9	1536.5	1590.6	1631.7	1655.5	1663.1	1658.8
97.5°	1138.3	1244.4	1335.3	1417.5	1456.4	1487.8	1539.8	1578.7	1602.5	1609.0	1602.5
100°	1097.2	1204.3	1293.1	1374.2	1407.8	1439.1	1491.1	1530.0	1550.6	1559.2	1553.8
102.5°	1058.3	1161.0	1248.7	1328.8	1364.5	1395.9	1443.5	1481.3	1505.1	1510.6	1505.1
105°	1018.2	1117.8	1203.2	1282.2	1317.9	1348.2	1395.9	1432.6	1455.4	1461.9	1456.4
107.5°	977.1	1073.4	1158.9	1233.5	1268.2	1296.3	1345.0	1380.7	1400.2	1412.1	1403.4
110°	932.7	1028.0	1110.2	1182.7	1216.2	1243.3	1290.9	1326.6	1345.0	1355.8	1348.2



TEST NUMBER: P201335

CATALOG NUMBER: 8LBLED-LD4-12-SYMW-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	891.6	981.4	1060.4	1130.7	1162.1	1189.2	1235.7	1270.3	1287.6	1298.5	1290.9
115°	848.3	931.7	1009.6	1076.6	1108.0	1132.9	1179.4	1211.9	1229.2	1239.0	1232.5
117.5°	801.8	883.0	956.5	1022.5	1051.8	1076.6	1121.0	1153.5	1169.7	1177.3	1170.8
120°	756.4	835.3	904.6	967.4	996.6	1020.4	1063.7	1094.0	1109.1	1117.8	1111.3
122.5°	708.7	785.6	848.3	911.1	938.1	960.9	999.8	1032.3	1046.3	1053.9	1049.6
125°	657.9	733.6	794.2	851.6	877.5	899.2	937.1	964.1	980.3	987.9	983.6
127.5°	604.9	677.4	739.0	792.1	817.0	840.8	872.1	902.4	913.3	921.9	917.6
130°	545.4	617.9	675.2	729.3	753.1	772.6	807.2	832.1	846.2	853.7	850.5
132.5°	486.9	554.0	614.6	663.3	686.0	706.6	738.0	761.8	781.2	782.3	778.0
135°	430.7	489.1	544.3	596.2	618.9	639.5	667.6	689.3	707.7	708.7	703.3
137.5°	376.6	430.7	478.3	527.0	550.8	572.4	598.4	618.9	636.2	639.5	631.9
140°	324.6	374.4	417.7	461.0	483.7	504.2	532.4	549.7	563.8	564.8	560.5
142.5°	274.8	320.3	358.2	398.2	418.8	437.2	468.5	485.8	498.8	502.1	495.6
145°	228.3	268.3	304.1	338.7	356.0	373.3	404.7	425.2	436.1	439.3	432.8
147.5°	183.9	217.5	248.9	280.3	295.4	311.6	337.6	363.6	373.3	375.5	370.1
150°	142.8	171.0	199.1	225.1	238.1	252.1	274.8	298.6	311.6	313.8	309.5
152.5°	105.0	128.8	151.5	173.1	183.9	194.8	214.2	237.0	253.2	254.3	250.0
155°	71.4	90.9	109.3	125.5	135.3	143.9	159.1	176.4	193.7	194.8	191.5
157.5°	43.3	56.3	71.4	84.4	90.9	98.5	109.3	122.3	137.4	140.7	137.4
160°	21.6	29.2	37.9	46.5	51.9	57.3	62.8	73.6	82.2	89.8	85.5
162.5°	10.8	13.0	15.1	19.5	21.6	24.9	29.2	33.5	37.9	45.4	40.0
165°	6.5	7.6	8.7	8.7	9.7	9.7	9.7	9.7	9.7	14.1	9.7
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P201335

CATALOG NUMBER: 8LBLED-LD4-12-SYMW-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4
2.5°	1282.2	1284.4	1288.7	1290.9	1293.1	1295.2	1299.5	1306.0	1300.6	1295.2	1296.3
5°	1290.9	1290.9	1292.0	1295.2	1295.2	1296.3	1300.6	1307.1	1301.7	1294.1	1294.1
7.5°	1301.7	1300.6	1301.7	1302.8	1301.7	1301.7	1303.9	1307.1	1300.6	1292.0	1289.8
10°	1316.9	1313.6	1312.5	1313.6	1312.5	1309.3	1310.4	1310.4	1301.7	1288.7	1283.3
12.5°	1343.9	1338.5	1334.2	1333.1	1329.8	1324.4	1321.2	1316.9	1303.9	1288.7	1277.9
15°	1388.3	1379.6	1371.0	1367.7	1362.3	1349.3	1338.5	1328.8	1310.4	1288.7	1273.6
17.5°	1438.1	1427.2	1415.3	1411.0	1403.4	1385.0	1366.6	1348.2	1322.3	1292.0	1270.3
20°	1485.7	1472.7	1458.6	1451.0	1443.5	1420.7	1399.1	1375.3	1341.7	1301.7	1269.3
22.5°	1533.3	1518.1	1498.6	1492.2	1482.4	1456.4	1430.5	1403.4	1363.4	1315.8	1271.4
25°	1579.8	1562.5	1544.1	1533.3	1522.5	1493.2	1461.9	1429.4	1383.9	1332.0	1279.0
27.5°	1626.3	1606.9	1584.1	1572.2	1561.4	1528.9	1493.2	1456.4	1405.6	1347.2	1288.7
30°	1671.8	1650.1	1623.1	1610.1	1597.1	1560.3	1519.2	1478.1	1422.9	1360.1	1295.2
32.5°	1717.2	1693.4	1663.1	1648.0	1632.8	1590.6	1545.2	1498.6	1438.1	1372.0	1300.6
35°	1761.6	1735.6	1702.1	1683.7	1667.4	1622.0	1571.1	1519.2	1452.1	1381.8	1303.9
37.5°	1807.0	1777.8	1741.0	1720.5	1702.1	1652.3	1596.0	1537.6	1467.3	1389.4	1307.1
40°	1852.5	1821.1	1780.0	1758.3	1735.6	1681.5	1620.9	1556.0	1480.3	1396.9	1308.2
42.5°	1899.0	1864.4	1818.9	1795.1	1771.3	1710.7	1643.6	1572.2	1491.1	1402.3	1307.1
45°	1945.5	1906.6	1857.9	1830.8	1804.9	1738.9	1666.4	1586.3	1500.8	1405.6	1305.0
47.5°	1992.1	1950.9	1897.9	1868.7	1837.3	1767.0	1688.0	1601.4	1509.5	1406.7	1302.8
50°	2039.7	1995.3	1938.0	1905.5	1873.0	1794.0	1709.6	1614.4	1514.9	1407.8	1297.4
52.5°	2086.2	2038.6	1976.9	1942.3	1904.4	1821.1	1730.2	1627.4	1519.2	1406.7	1289.8
55°	2128.4	2078.6	2013.7	1976.9	1934.7	1846.0	1748.6	1638.2	1521.4	1403.4	1280.1
57.5°	2167.4	2116.5	2048.3	2007.2	1966.1	1869.8	1765.9	1650.1	1523.5	1398.0	1269.3
60°	2197.7	2146.8	2075.4	2034.3	1989.9	1889.3	1780.0	1656.6	1523.5	1390.4	1255.2
62.5°	2220.4	2169.5	2098.1	2054.8	2008.3	1905.5	1790.8	1663.1	1523.5	1382.9	1241.1
65°	2234.4	2184.7	2111.1	2067.8	2020.2	1913.1	1796.2	1664.2	1519.2	1372.0	1223.8
67.5°	2236.6	2186.8	2113.3	2071.1	2022.4	1913.1	1793.0	1658.8	1510.6	1358.0	1204.3
70°	2226.9	2177.1	2104.6	2061.3	2013.7	1903.3	1781.1	1645.8	1495.4	1339.6	1181.6
72.5°	2202.0	2151.1	2080.8	2036.4	1989.9	1880.6	1756.2	1622.0	1470.5	1313.6	1154.6
75°	2158.7	2108.9	2039.7	1998.6	1950.9	1843.8	1718.3	1587.4	1435.9	1281.2	1121.0
77.5°	2101.4	2052.7	1984.5	1943.4	1899.0	1794.0	1670.7	1540.8	1393.7	1241.1	1082.1
80°	2033.2	1986.7	1919.6	1879.5	1836.2	1734.5	1613.3	1486.7	1341.7	1193.5	1038.8
82.5°	1960.7	1915.2	1850.3	1809.2	1768.1	1669.6	1553.8	1428.3	1286.6	1142.7	992.2
85°	1890.4	1841.7	1776.7	1738.9	1697.7	1601.4	1492.2	1367.7	1230.3	1090.7	946.8
87.5°	1816.8	1769.2	1705.3	1669.6	1630.7	1533.3	1429.4	1308.2	1177.3	1044.2	902.4
90°	1749.7	1703.2	1641.5	1605.8	1569.0	1474.8	1373.1	1258.4	1131.8	1003.1	865.6
92.5°	1688.0	1644.7	1586.3	1551.7	1516.0	1426.1	1328.8	1217.3	1095.0	970.6	836.4
95°	1635.0	1592.8	1538.7	1505.1	1468.4	1382.9	1287.6	1178.4	1061.5	940.3	809.4
97.5°	1582.0	1541.9	1488.9	1456.4	1421.8	1338.5	1246.5	1141.6	1026.9	906.8	780.2
100°	1533.3	1494.3	1440.2	1411.0	1377.5	1297.4	1206.5	1103.7	991.2	873.2	748.8
102.5°	1485.7	1446.7	1394.8	1365.6	1333.1	1253.0	1164.3	1062.6	953.3	839.7	718.5
105°	1437.0	1399.1	1347.2	1317.9	1285.5	1207.6	1121.0	1022.5	915.4	805.0	687.1
107.5°	1383.9	1347.2	1297.4	1268.2	1237.9	1160.0	1076.6	980.3	877.5	769.3	654.6
110°	1329.8	1293.1	1247.6	1216.2	1187.0	1111.3	1030.1	938.1	837.5	732.6	621.1



TEST NUMBER: P201335

CATALOG NUMBER: 8LBLED-LD4-12-SYMW-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	1273.6	1237.9	1193.5	1164.3	1134.0	1061.5	983.6	894.9	797.5	694.7	586.5
115°	1216.2	1180.5	1136.2	1106.9	1079.9	1010.6	934.9	850.5	756.4	656.8	551.8
117.5°	1153.5	1122.1	1079.9	1053.9	1025.8	956.5	886.2	805.0	715.2	616.8	516.1
120°	1095.0	1064.7	1023.6	995.5	970.6	904.6	837.5	758.5	669.8	577.8	479.4
122.5°	1033.4	1000.9	963.0	939.2	912.2	851.6	786.7	710.9	624.3	533.5	439.3
125°	968.4	938.1	901.4	878.6	853.7	796.4	734.7	659.0	576.7	489.1	398.2
127.5°	902.4	874.3	838.6	818.0	794.2	738.0	678.4	604.9	522.6	440.4	356.0
130°	835.3	807.2	774.8	753.1	730.4	677.4	618.9	546.4	468.5	391.7	314.9
132.5°	765.0	738.0	705.5	686.0	665.5	614.6	555.1	484.8	415.5	346.3	274.8
135°	692.5	667.6	638.4	620.0	599.5	547.5	491.3	427.4	365.7	301.9	235.9
137.5°	622.2	599.5	571.3	552.9	530.2	481.5	431.7	374.4	318.1	258.6	196.9
140°	552.9	532.4	505.3	484.8	465.3	419.8	374.4	322.5	271.6	217.5	162.3
142.5°	488.0	469.6	439.3	419.8	401.4	361.4	321.4	272.7	227.2	178.5	130.9
145°	424.2	407.9	374.4	357.1	341.9	306.2	266.2	226.1	185.0	142.8	101.7
147.5°	362.5	343.0	311.6	296.5	282.4	251.0	217.5	180.7	147.2	110.4	74.7
150°	303.0	279.2	252.1	239.1	227.2	200.2	171.0	140.7	111.5	80.1	51.9
152.5°	241.3	216.4	198.0	185.0	174.2	152.6	128.8	102.8	79.0	54.1	32.5
155°	178.5	161.2	143.9	137.4	127.7	109.3	89.8	69.3	49.8	32.5	18.4
157.5°	123.4	110.4	99.5	93.1	85.5	71.4	55.2	40.0	28.1	17.3	8.7
160°	74.7	66.0	58.4	53.0	47.6	37.9	27.1	18.4	11.9	5.4	3.2
162.5°	33.5	28.1	24.9	21.6	18.4	14.1	8.7	4.3	2.2	1.1	1.1
165°	6.5	4.3	3.2	2.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P201335

CATALOG NUMBER: 8LBLED-LD4-12-SYMW-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4	1297.4
2.5°	1297.4	1298.5	1299.5	1299.5	1302.8	1308.2	1315.8	1316.9
5°	1294.1	1295.2	1295.2	1296.3	1299.5	1303.9	1310.4	1311.5
7.5°	1288.7	1288.7	1288.7	1288.7	1290.9	1295.2	1300.6	1301.7
10°	1281.2	1279.0	1277.9	1276.8	1277.9	1282.2	1286.6	1287.6
12.5°	1272.5	1267.1	1264.9	1263.8	1263.8	1264.9	1269.3	1269.3
15°	1262.8	1254.1	1250.9	1248.7	1244.4	1244.4	1248.7	1248.7
17.5°	1253.0	1241.1	1234.6	1230.3	1223.8	1222.7	1224.9	1222.7
20°	1244.4	1226.0	1217.3	1209.7	1200.0	1196.8	1196.8	1193.5
22.5°	1235.7	1210.8	1198.9	1188.1	1172.9	1167.5	1164.3	1162.1
25°	1230.3	1194.6	1179.4	1166.5	1145.9	1134.0	1130.7	1126.4
27.5°	1229.2	1181.6	1161.0	1144.8	1116.7	1102.6	1094.0	1088.5
30°	1229.2	1168.6	1141.6	1118.8	1084.2	1062.6	1053.9	1051.8
32.5°	1228.1	1158.9	1126.4	1097.2	1052.8	1024.7	1011.7	1008.5
35°	1224.9	1149.1	1111.3	1075.6	1021.5	985.8	967.4	963.0
37.5°	1220.6	1137.2	1097.2	1056.1	989.0	945.7	923.0	916.5
40°	1216.2	1125.3	1079.9	1035.5	956.5	904.6	875.4	867.8
42.5°	1208.7	1112.4	1064.7	1016.1	926.2	863.5	829.9	818.0
45°	1201.1	1097.2	1046.3	994.4	895.9	821.3	779.1	767.2
47.5°	1191.3	1081.0	1028.0	970.6	867.8	780.2	732.6	717.4
50°	1180.5	1064.7	1007.4	947.9	837.5	740.1	681.7	665.5
52.5°	1168.6	1046.3	986.8	924.1	807.2	702.3	634.1	613.5
55°	1153.5	1025.8	963.0	897.0	775.8	663.3	585.4	561.6
57.5°	1137.2	1005.2	940.3	872.1	744.5	626.5	537.8	510.7
60°	1117.8	981.4	912.2	844.0	712.0	588.6	490.2	458.8
62.5°	1097.2	957.6	887.3	814.8	679.5	551.8	443.6	407.9
65°	1075.6	930.6	859.2	784.5	644.9	512.9	398.2	357.1
67.5°	1049.6	901.4	827.8	752.0	609.2	473.9	353.8	307.3
70°	1023.6	870.0	793.1	717.4	572.4	435.0	311.6	258.6
72.5°	992.2	836.4	758.5	681.7	534.5	397.1	270.5	209.9
75°	957.6	801.8	722.8	644.9	495.6	357.1	229.4	162.3
77.5°	920.8	763.9	686.0	607.0	458.8	319.2	191.5	122.3
80°	881.9	723.9	647.1	568.1	419.8	281.3	154.7	84.4
82.5°	838.6	684.9	608.1	529.1	383.0	244.5	121.2	51.9
85°	797.5	646.0	571.3	493.4	347.3	207.8	90.9	26.0
87.5°	757.4	610.3	537.8	461.0	317.0	179.6	66.0	7.6
90°	725.0	581.1	509.6	435.0	293.2	159.1	49.8	0.0
92.5°	699.0	558.3	488.0	415.5	275.9	145.0	42.2	0.0
95°	674.1	534.5	467.4	395.0	258.6	133.1	33.5	0.0
97.5°	647.1	511.8	444.7	374.4	241.3	120.1	27.1	0.0
100°	620.0	486.9	422.0	353.8	221.8	107.1	19.5	0.0
102.5°	590.8	461.0	397.1	331.1	204.5	93.1	13.0	0.0
105°	562.7	435.0	373.3	308.4	186.1	81.2	8.7	0.0
107.5°	532.4	409.0	348.4	286.7	167.7	68.2	5.4	0.0
110°	502.1	383.0	323.5	264.0	150.4	56.3	4.3	0.0



TEST NUMBER: P201335

CATALOG NUMBER: 8LBLED-LD4-12-SYMW-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	471.8	356.0	298.6	240.2	133.1	45.4	3.2	1.1
115°	439.3	327.9	272.7	216.4	115.8	35.7	3.2	1.1
117.5°	406.9	298.6	247.8	193.7	99.5	27.1	2.2	1.1
120°	373.3	272.7	220.7	172.0	84.4	19.5	2.2	1.1
122.5°	340.8	245.6	195.9	149.3	69.3	15.1	2.2	1.1
125°	307.3	214.2	171.0	128.8	55.2	11.9	2.2	1.1
127.5°	271.6	185.0	145.0	106.0	42.2	8.7	2.2	1.1
130°	234.8	155.8	120.1	86.6	30.3	6.5	2.2	1.1
132.5°	200.2	130.9	97.4	68.2	21.6	5.4	2.2	1.1
135°	168.8	106.0	76.8	50.9	15.1	4.3	1.1	1.1
137.5°	138.5	84.4	58.4	36.8	10.8	3.2	2.2	1.1
140°	111.5	63.8	42.2	26.0	7.6	2.2	2.2	1.1
142.5°	86.6	45.4	29.2	17.3	5.4	2.2	1.1	1.1
145°	63.8	30.3	19.5	10.8	4.3	2.2	2.2	2.2
147.5°	43.3	20.6	11.9	7.6	3.2	2.2	2.2	1.1
150°	28.1	13.0	7.6	5.4	2.2	2.2	2.2	1.1
152.5°	17.3	7.6	4.3	3.2	2.2	2.2	2.2	1.1
155°	8.7	4.3	3.2	2.2	2.2	2.2	2.2	2.2
157.5°	4.3	3.2	2.2	2.2	2.2	2.2	2.2	2.2
160°	2.2	2.2	1.1	1.1	2.2	2.2	2.2	2.2
162.5°	1.1	1.1	1.1	1.1	2.2	2.2	2.2	2.2
165°	0.0	1.1	1.1	1.1	2.2	2.2	2.2	2.2
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)