

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: P201307

Luminaire Tested: **8LBLED-LD4-12-SYMW-UNV-L840-CD1-U**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P201307  
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-L840-CD1-U  
Description: 8 ft. Low Bay Linear, 12000 lm, Wht Sym lens, 4K  
Light Source: (784) 4000K CCT, 80 CRI LEDS  
2UT217098A8404C  
Ballast/Driver: OSRAM  
(OTi85W01920CC)

**Summary**

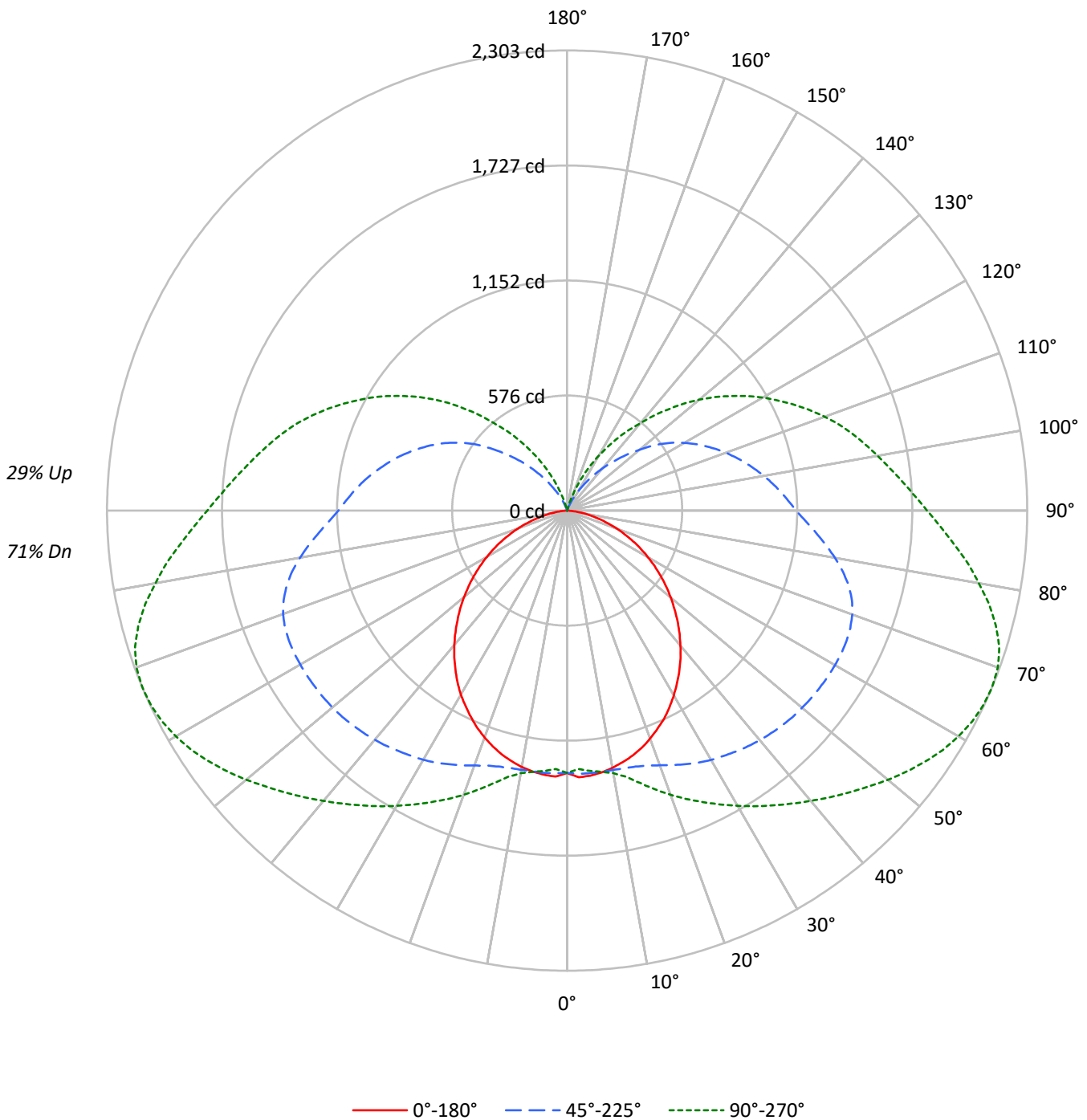
Lumens per Lamp: N/A  
Luminaire Lumens: 12192.0 lumens  
Efficiency: N/A  
Efficacy: 142.4 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 2.12 / 1.93  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 8' x H: 0.21')  
CIE Type: Semi-Direct  
  
Input Watts (W): 85.6  
Input Voltage (V): NR  
Input Current (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: P201307

CATALOG NUMBER: 8LBLEDD4-12-SYMW-UNV-L840-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°	10578	10578	10578
5°	10744	9535	10709
10°	10647	8954	10612
15°	10512	8827	10467
20°	10315	8928	10258
25°	10089	9052	10012
30°	9785	9232	9756
35°	9456	9464	9414
40°	9073	9754	9039
45°	8670	10123	8622
50°	8227	10574	8187
55°	7742	11065	7697
60°	7210	11540	7159
65°	6584	11942	6526
70°	5826	12221	5754
75°	4847	12245	4662
80°	3720	12041	3453
85°	2109	11799	1874



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	125.4	1.0
10°-20°	377.6	3.1
20°-30°	639.3	5.2
30°-40°	893.9	7.3
40°-50°	1126.3	9.2
50°-60°	1322.5	10.8
60°-70°	1446.1	11.9
70°-80°	1428.7	11.7
80°-90°	1255.1	10.3
90°-100°	1068.4	8.8
100°-110°	891.0	7.3
110°-120°	690.1	5.7
120°-130°	480.3	3.9
130°-140°	280.4	2.3
140°-150°	127.9	1.0
150°-160°	36.5	0.3
160°-170°	2.6	0.0
170°-180°	0.0	0.0
0°-30°	1142.3	9.4
0°-40°	2036.2	16.7
0°-60°	4485.0	36.8
0°-90°	8614.9	70.7
90°-120°	2649.4	21.7
90°-150°	3538.0	29.0
90°-180°	3577.0	29.3
0°-180°	12192.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1313	1313	1313	1313	1313	
5°	1332	1320	1307	1317	1327	126
15°	1269	1326	1412	1326	1264	357
25°	1149	1400	1610	1400	1140	528
35°	979	1472	1801	1470	975	612
45°	781	1521	1995	1519	776	602
55°	572	1544	2189	1540	568	512
65°	365	1543	2300	1537	361	361
75°	171	1460	2222	1453	164	183
85°	30	1248	1945	1245	26	37
90°	0	1145	1801	1145	0	1
95°	0	1073	1683	1074	0	0
105°	1	923	1479	926	0	1
115°	1	763	1254	765	1	1
125°	2	584	1000	584	1	2
135°	2	370	717	370	1	2
145°	3	189	445	187	2	2
155°	3	54	197	50	2	2
165°	3	6	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°	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9
2.5°	1335.9	1334.8	1329.3	1320.6	1317.3	1315.1	1314.0	1310.7	1309.6	1311.8	1318.4
5°	1331.5	1329.3	1325.0	1317.3	1314.0	1312.9	1311.8	1308.5	1307.4	1310.7	1319.5
7.5°	1321.7	1320.6	1316.2	1308.5	1307.4	1305.3	1305.3	1303.1	1303.1	1308.5	1318.4
10°	1307.4	1306.4	1302.0	1296.5	1295.4	1295.4	1295.4	1295.4	1297.6	1306.4	1318.4
12.5°	1288.8	1288.8	1285.5	1281.2	1282.3	1282.3	1283.4	1285.5	1292.1	1305.3	1320.6
15°	1269.1	1268.0	1264.7	1263.6	1266.9	1268.0	1271.3	1276.8	1287.7	1306.4	1326.1
17.5°	1243.9	1243.9	1240.7	1241.7	1248.3	1251.6	1257.1	1266.9	1284.5	1309.6	1338.1
20°	1214.4	1215.5	1214.4	1217.7	1228.6	1235.2	1241.7	1258.2	1283.4	1318.4	1356.7
22.5°	1181.5	1183.7	1183.7	1192.5	1206.7	1216.6	1226.4	1249.4	1285.5	1333.7	1378.6
25°	1148.7	1148.7	1152.0	1164.0	1183.7	1195.8	1211.1	1243.9	1293.2	1350.2	1400.5
27.5°	1109.3	1112.5	1118.0	1134.4	1161.8	1178.2	1196.9	1243.9	1302.0	1366.6	1422.4
30°	1067.6	1070.9	1079.7	1102.7	1137.7	1158.5	1184.8	1243.9	1309.6	1379.7	1441.0
32.5°	1023.8	1029.3	1041.4	1070.9	1113.6	1142.1	1176.0	1242.8	1316.2	1390.7	1456.4
35°	978.9	984.4	1003.0	1038.1	1093.9	1126.8	1166.2	1239.6	1319.5	1400.5	1471.7
37.5°	931.9	941.7	962.5	1006.3	1074.2	1113.6	1155.2	1236.3	1322.8	1408.2	1487.0
40°	881.5	891.3	920.9	973.5	1054.5	1096.1	1142.1	1231.9	1325.0	1415.9	1500.2
42.5°	832.2	845.4	879.3	942.8	1034.8	1080.8	1129.0	1225.3	1323.9	1421.3	1511.1
45°	780.7	796.1	837.7	913.2	1012.9	1062.2	1113.6	1216.6	1321.7	1424.6	1521.0
47.5°	728.2	746.8	796.1	883.7	991.0	1042.5	1098.3	1207.8	1318.4	1426.8	1529.7
50°	676.7	698.6	754.5	854.1	966.9	1021.6	1079.7	1197.9	1312.9	1427.9	1535.2
52.5°	625.3	649.3	715.0	824.5	941.7	999.7	1061.1	1185.9	1306.4	1426.8	1540.7
55°	571.6	597.9	675.6	792.8	915.4	975.7	1040.3	1170.6	1296.5	1422.4	1544.0
57.5°	520.1	549.7	638.4	762.1	888.1	951.6	1020.6	1154.1	1285.5	1419.1	1547.3
60°	467.6	501.5	600.1	727.1	859.6	925.3	996.5	1135.5	1272.4	1411.5	1547.3
62.5°	416.1	454.4	562.8	695.3	831.1	899.0	972.4	1114.7	1258.2	1403.8	1547.3
65°	364.6	408.4	524.5	660.3	799.4	870.5	945.0	1092.8	1240.7	1392.9	1542.9
67.5°	314.3	364.6	485.1	624.2	766.5	839.9	916.5	1067.6	1220.9	1378.6	1534.1
70°	265.0	320.8	445.7	585.8	732.6	804.8	884.8	1040.3	1197.9	1360.0	1518.8
72.5°	215.7	279.2	404.1	547.5	696.4	770.9	851.9	1008.5	1169.5	1334.8	1494.7
75°	170.8	237.6	364.6	508.1	659.2	734.8	815.8	973.5	1135.5	1302.0	1459.7
77.5°	130.3	199.3	326.3	469.8	619.8	698.6	778.6	935.1	1096.1	1260.4	1413.7
80°	92.0	162.1	288.0	430.3	580.4	658.1	736.9	893.5	1054.5	1211.1	1361.1
82.5°	56.9	128.1	249.7	392.0	542.0	618.7	696.4	851.9	1007.4	1159.6	1304.2
85°	29.6	96.4	213.5	355.9	504.8	580.4	657.0	809.2	959.2	1107.1	1248.3
87.5°	9.9	70.1	184.0	324.1	470.9	546.4	620.9	768.7	914.3	1055.6	1193.6
90°	0.0	52.6	162.1	298.9	442.4	515.8	590.2	732.6	874.9	1014.0	1145.4
92.5°	0.0	44.9	147.8	281.4	422.7	494.9	567.2	708.5	845.4	980.0	1108.2
95°	0.0	36.1	135.8	263.9	401.9	473.0	544.2	682.2	816.9	948.3	1073.1
97.5°	0.0	28.5	122.6	247.5	381.1	450.1	519.0	655.9	787.3	916.5	1037.0
100°	1.1	21.9	108.4	226.7	359.2	427.1	493.9	627.4	755.6	880.4	999.7
102.5°	1.1	15.3	95.3	209.1	336.2	401.9	467.6	597.9	723.8	847.5	961.4
105°	1.1	11.0	82.1	190.5	314.3	377.8	442.4	569.4	692.0	811.4	923.1
107.5°	1.1	7.7	70.1	173.0	292.4	352.6	415.0	538.7	659.2	775.3	884.8
110°	1.1	5.5	59.1	154.4	268.3	328.5	388.7	508.1	625.3	738.0	845.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	1.1	4.4	48.2	136.9	244.2	303.3	361.4	477.4	591.3	700.8	804.8
115°	1.1	4.4	38.3	120.5	220.1	277.0	332.9	446.8	555.2	662.5	763.2
117.5°	1.1	3.3	29.6	104.0	198.2	250.8	304.4	412.8	520.1	624.2	721.6
120°	1.1	3.3	21.9	87.6	175.2	224.5	277.0	380.0	482.9	583.6	676.7
122.5°	2.2	3.3	16.4	73.4	154.4	199.3	249.7	347.1	443.5	540.9	632.9
125°	2.2	2.2	13.1	59.1	132.5	174.1	219.0	313.2	400.8	493.9	583.6
127.5°	2.2	2.2	9.9	44.9	110.6	148.9	189.4	277.0	362.4	445.7	531.1
130°	2.2	2.2	8.8	32.9	89.8	123.7	161.0	239.8	319.7	396.4	474.1
132.5°	2.2	2.2	6.6	24.1	71.2	101.8	134.7	204.8	278.1	352.6	422.7
135°	2.2	2.2	5.5	17.5	53.7	81.0	109.5	171.9	238.7	308.8	370.1
137.5°	2.2	2.2	5.5	13.1	39.4	61.3	86.5	143.4	202.6	265.0	320.8
140°	2.2	2.2	4.4	11.0	27.4	44.9	65.7	115.0	165.3	223.4	277.0
142.5°	2.2	2.2	3.3	8.8	19.7	31.8	47.1	88.7	133.6	184.0	231.0
145°	3.3	2.2	3.3	7.7	14.2	21.9	32.9	66.8	102.9	147.8	189.4
147.5°	2.2	2.2	2.2	5.5	11.0	15.3	21.9	46.0	77.7	115.0	150.0
150°	3.3	2.2	2.2	4.4	8.8	11.0	15.3	30.7	53.7	84.3	115.0
152.5°	3.3	2.2	2.2	4.4	6.6	8.8	11.0	19.7	35.0	56.9	82.1
155°	3.3	2.2	2.2	3.3	5.5	6.6	8.8	13.1	20.8	35.0	53.7
157.5°	3.3	3.3	3.3	3.3	4.4	5.5	6.6	9.9	12.0	19.7	30.7
160°	3.3	3.3	2.2	2.2	3.3	3.3	4.4	6.6	8.8	11.0	15.3
162.5°	3.3	3.3	3.3	2.2	2.2	2.2	3.3	4.4	5.5	7.7	9.9
165°	3.3	3.3	2.2	2.2	2.2	2.2	2.2	2.2	3.3	4.4	5.5
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°	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9
2.5°	1320.6	1315.1	1312.9	1308.5	1305.3	1303.1	1299.8	1297.6	1295.4	1294.3	1294.3
5°	1321.7	1316.2	1314.0	1310.7	1309.6	1307.4	1305.3	1307.4	1306.4	1307.4	1306.4
7.5°	1322.8	1318.4	1318.4	1317.3	1316.2	1316.2	1314.0	1316.2	1317.3	1318.4	1317.3
10°	1326.1	1325.0	1327.2	1328.3	1328.3	1328.3	1328.3	1330.4	1334.8	1334.8	1333.7
12.5°	1331.5	1334.8	1341.4	1346.9	1349.1	1349.1	1353.4	1357.8	1363.3	1364.4	1363.3
15°	1342.5	1352.3	1366.6	1378.6	1384.1	1387.4	1396.1	1403.8	1409.3	1411.5	1409.3
17.5°	1362.2	1380.8	1402.7	1420.2	1426.8	1431.2	1443.2	1450.9	1457.5	1462.9	1460.7
20°	1388.5	1413.7	1439.9	1460.7	1469.5	1475.0	1488.1	1502.4	1508.9	1513.3	1512.2
22.5°	1416.9	1446.5	1476.1	1501.3	1511.1	1517.7	1534.1	1547.3	1557.1	1562.6	1561.5
25°	1444.3	1478.3	1514.4	1541.8	1553.8	1561.5	1579.0	1594.3	1605.3	1609.7	1608.6
27.5°	1471.7	1511.1	1550.5	1582.3	1594.3	1604.2	1625.0	1641.4	1654.6	1657.9	1657.9
30°	1493.6	1539.6	1582.3	1618.4	1631.6	1644.7	1667.7	1689.6	1701.7	1706.0	1704.9
32.5°	1514.4	1565.9	1614.1	1654.6	1671.0	1684.1	1711.5	1735.6	1749.8	1754.2	1749.8
35°	1535.2	1592.2	1645.8	1689.6	1707.1	1723.6	1754.2	1781.6	1796.9	1801.3	1799.1
37.5°	1554.9	1618.4	1676.5	1724.6	1745.5	1763.0	1794.7	1827.6	1844.0	1848.4	1844.0
40°	1573.5	1642.5	1706.0	1758.6	1781.6	1802.4	1839.6	1872.5	1891.1	1896.6	1894.4
42.5°	1591.1	1666.6	1735.6	1793.6	1819.9	1841.8	1883.4	1919.6	1939.3	1945.8	1940.4
45°	1606.4	1690.7	1765.2	1827.6	1856.1	1881.2	1928.3	1967.7	1987.5	1995.1	1988.5
47.5°	1621.7	1712.6	1792.5	1861.5	1894.4	1920.7	1973.2	2014.8	2037.8	2044.4	2037.8
50°	1636.0	1734.5	1822.1	1896.6	1931.6	1961.2	2018.1	2063.0	2086.0	2095.9	2087.1
52.5°	1649.1	1755.3	1849.5	1929.4	1967.7	2000.6	2061.9	2110.1	2137.5	2144.0	2135.3
55°	1662.2	1775.0	1873.6	1960.1	2001.7	2036.7	2103.5	2153.9	2181.3	2188.9	2180.2
57.5°	1673.2	1792.5	1896.6	1989.6	2032.3	2072.9	2139.7	2192.2	2220.7	2229.5	2220.7
60°	1680.8	1806.8	1917.4	2013.7	2058.6	2100.2	2171.4	2224.0	2252.4	2261.2	2252.4
62.5°	1686.3	1817.7	1931.6	2032.3	2080.5	2123.2	2195.5	2247.0	2276.5	2285.3	2276.5
65°	1687.4	1822.1	1939.3	2044.4	2093.7	2136.4	2209.7	2261.2	2291.9	2299.5	2290.8
67.5°	1680.8	1817.7	1939.3	2046.6	2095.9	2139.7	2213.0	2264.5	2294.1	2302.8	2294.1
70°	1667.7	1804.6	1928.3	2037.8	2087.1	2130.9	2203.2	2255.7	2285.3	2294.1	2284.2
72.5°	1642.5	1781.6	1905.3	2017.0	2064.1	2106.8	2178.0	2229.5	2257.9	2267.8	2256.8
75°	1606.4	1745.5	1869.2	1976.5	2025.8	2065.2	2136.4	2186.7	2213.0	2221.8	2211.9
77.5°	1559.3	1699.5	1818.8	1925.0	1974.3	2010.4	2079.4	2128.7	2155.0	2162.7	2152.8
80°	1504.6	1643.6	1758.6	1863.7	1909.7	1943.7	2012.6	2059.7	2084.9	2092.6	2087.1
82.5°	1444.3	1580.1	1691.8	1794.7	1838.5	1872.5	1940.4	1986.4	2011.5	2022.5	2013.7
85°	1383.0	1513.3	1622.8	1722.5	1766.3	1802.4	1864.8	1910.8	1936.0	1944.7	1939.3
87.5°	1321.7	1447.6	1553.8	1650.2	1690.7	1727.9	1790.3	1836.3	1861.5	1870.3	1863.7
90°	1270.2	1390.7	1492.5	1587.8	1629.4	1663.3	1723.6	1767.4	1792.5	1801.3	1795.8
92.5°	1228.6	1343.6	1442.1	1529.7	1569.2	1605.3	1663.3	1706.0	1731.2	1738.9	1733.4
95°	1189.2	1300.9	1396.1	1481.6	1519.9	1554.9	1609.7	1651.3	1675.4	1683.0	1678.7
97.5°	1152.0	1259.3	1351.2	1434.5	1473.9	1505.6	1558.2	1597.6	1621.7	1628.3	1621.7
100°	1110.3	1218.8	1308.5	1390.7	1424.6	1456.4	1508.9	1548.4	1569.2	1577.9	1572.4
102.5°	1070.9	1175.0	1263.6	1344.7	1380.8	1412.6	1460.7	1499.1	1523.2	1528.6	1523.2
105°	1030.4	1131.2	1217.7	1297.6	1333.7	1364.4	1412.6	1449.8	1472.8	1479.4	1473.9
107.5°	988.8	1086.3	1172.8	1248.3	1283.4	1311.8	1361.1	1397.2	1416.9	1429.0	1420.2
110°	943.9	1040.3	1123.5	1196.9	1230.8	1258.2	1306.4	1342.5	1361.1	1372.1	1364.4





TEST NUMBER: P201307

CATALOG NUMBER: 8LBLED-LD4-12-SYMW-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	902.3	993.2	1073.1	1144.3	1176.0	1203.4	1250.5	1285.5	1303.1	1314.0	1306.4
115°	858.5	942.8	1021.6	1089.5	1121.3	1146.5	1193.6	1226.4	1243.9	1253.8	1247.2
117.5°	811.4	893.5	968.0	1034.8	1064.4	1089.5	1134.4	1167.3	1183.7	1191.4	1184.8
120°	765.4	845.4	915.4	978.9	1008.5	1032.6	1076.4	1107.1	1122.4	1131.2	1124.6
122.5°	717.2	795.0	858.5	922.0	949.4	972.4	1011.8	1044.6	1058.9	1066.5	1062.2
125°	665.8	742.4	803.7	861.8	888.1	910.0	948.3	975.7	992.1	999.7	995.4
127.5°	612.1	685.5	747.9	801.6	826.7	850.8	882.6	913.2	924.2	933.0	928.6
130°	551.9	625.3	683.3	738.0	762.1	781.8	816.9	842.1	856.3	864.0	860.7
132.5°	492.8	560.6	622.0	671.2	694.2	715.0	746.8	770.9	790.6	791.7	787.3
135°	435.8	494.9	550.8	603.4	626.3	647.2	675.6	697.5	716.1	717.2	711.8
137.5°	381.1	435.8	484.0	533.3	557.4	579.3	605.5	626.3	643.9	647.2	639.5
140°	328.5	378.9	422.7	466.5	489.5	510.3	538.7	556.3	570.5	571.6	567.2
142.5°	278.1	324.1	362.4	403.0	423.8	442.4	474.1	491.7	504.8	508.1	501.5
145°	231.0	271.6	307.7	342.7	360.3	377.8	409.5	430.3	441.3	444.6	438.0
147.5°	186.2	220.1	251.9	283.6	298.9	315.4	341.6	367.9	377.8	380.0	374.5
150°	144.5	173.0	201.5	227.8	240.9	255.1	278.1	302.2	315.4	317.6	313.2
152.5°	106.2	130.3	153.3	175.2	186.2	197.1	216.8	239.8	256.2	257.3	252.9
155°	72.3	92.0	110.6	127.0	136.9	145.6	161.0	178.5	196.0	197.1	193.8
157.5°	43.8	56.9	72.3	85.4	92.0	99.6	110.6	123.7	139.1	142.4	139.1
160°	21.9	29.6	38.3	47.1	52.6	58.0	63.5	74.5	83.2	90.9	86.5
162.5°	11.0	13.1	15.3	19.7	21.9	25.2	29.6	33.9	38.3	46.0	40.5
165°	6.6	7.7	8.8	8.8	9.9	9.9	9.9	9.9	9.9	14.2	9.9
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: P201307

CATALOG NUMBER: 8LBLED-LD4-12-SYMW-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9
2.5°	1297.6	1299.8	1304.2	1306.4	1308.5	1310.7	1315.1	1321.7	1316.2	1310.7	1311.8
5°	1306.4	1306.4	1307.4	1310.7	1310.7	1311.8	1316.2	1322.8	1317.3	1309.6	1309.6
7.5°	1317.3	1316.2	1317.3	1318.4	1317.3	1317.3	1319.5	1322.8	1316.2	1307.4	1305.3
10°	1332.6	1329.3	1328.3	1329.3	1328.3	1325.0	1326.1	1326.1	1317.3	1304.2	1298.7
12.5°	1360.0	1354.5	1350.2	1349.1	1345.8	1340.3	1337.0	1332.6	1319.5	1304.2	1293.2
15°	1404.9	1396.1	1387.4	1384.1	1378.6	1365.5	1354.5	1344.7	1326.1	1304.2	1288.8
17.5°	1455.3	1444.3	1432.3	1427.9	1420.2	1401.6	1383.0	1364.4	1338.1	1307.4	1285.5
20°	1503.5	1490.3	1476.1	1468.4	1460.7	1437.8	1415.9	1391.8	1357.8	1317.3	1284.5
22.5°	1551.6	1536.3	1516.6	1510.0	1500.2	1473.9	1447.6	1420.2	1379.7	1331.5	1286.6
25°	1598.7	1581.2	1562.6	1551.6	1540.7	1511.1	1479.4	1446.5	1400.5	1348.0	1294.3
27.5°	1645.8	1626.1	1603.1	1591.1	1580.1	1547.3	1511.1	1473.9	1422.4	1363.3	1304.2
30°	1691.8	1669.9	1642.5	1629.4	1616.2	1579.0	1537.4	1495.8	1439.9	1376.4	1310.7
32.5°	1737.8	1713.7	1683.0	1667.7	1652.4	1609.7	1563.7	1516.6	1455.3	1388.5	1316.2
35°	1782.7	1756.4	1722.5	1703.8	1687.4	1641.4	1590.0	1537.4	1469.5	1398.3	1319.5
37.5°	1828.7	1799.1	1761.9	1741.1	1722.5	1672.1	1615.1	1556.0	1484.8	1406.0	1322.8
40°	1874.7	1842.9	1801.3	1779.4	1756.4	1701.7	1640.3	1574.6	1498.0	1413.7	1323.9
42.5°	1921.8	1886.7	1840.7	1816.6	1792.5	1731.2	1663.3	1591.1	1508.9	1419.1	1322.8
45°	1968.8	1929.4	1880.1	1852.8	1826.5	1759.7	1686.3	1605.3	1518.8	1422.4	1320.6
47.5°	2015.9	1974.3	1920.7	1891.1	1859.3	1788.2	1708.2	1620.6	1527.5	1423.5	1318.4
50°	2064.1	2019.2	1961.2	1928.3	1895.5	1815.5	1730.1	1633.8	1533.0	1424.6	1312.9
52.5°	2111.2	2063.0	2000.6	1965.6	1927.2	1842.9	1750.9	1646.9	1537.4	1423.5	1305.3
55°	2153.9	2103.5	2037.8	2000.6	1957.9	1868.1	1769.5	1657.9	1539.6	1420.2	1295.4
57.5°	2193.3	2141.8	2072.9	2031.3	1989.6	1892.2	1787.1	1669.9	1541.8	1414.8	1284.5
60°	2224.0	2172.5	2100.2	2058.6	2013.7	1911.9	1801.3	1676.5	1541.8	1407.1	1270.2
62.5°	2247.0	2195.5	2123.2	2079.4	2032.3	1928.3	1812.2	1683.0	1541.8	1399.4	1256.0
65°	2261.2	2210.8	2136.4	2092.6	2044.4	1936.0	1817.7	1684.1	1537.4	1388.5	1238.5
67.5°	2263.4	2213.0	2138.6	2095.9	2046.6	1936.0	1814.4	1678.7	1528.6	1374.2	1218.8
70°	2253.5	2203.2	2129.8	2086.0	2037.8	1926.1	1802.4	1665.5	1513.3	1355.6	1195.8
72.5°	2228.4	2176.9	2105.7	2060.8	2013.7	1903.1	1777.2	1641.4	1488.1	1329.3	1168.4
75°	2184.6	2134.2	2064.1	2022.5	1974.3	1865.9	1738.9	1606.4	1453.1	1296.5	1134.4
77.5°	2126.5	2077.2	2008.3	1966.6	1921.8	1815.5	1690.7	1559.3	1410.4	1256.0	1095.0
80°	2057.5	2010.4	1942.6	1902.0	1858.2	1755.3	1632.7	1504.6	1357.8	1207.8	1051.2
82.5°	1984.2	1938.2	1872.5	1830.9	1789.3	1689.6	1572.4	1445.4	1302.0	1156.3	1004.1
85°	1913.0	1863.7	1798.0	1759.7	1718.1	1620.6	1510.0	1384.1	1245.0	1103.8	958.1
87.5°	1838.5	1790.3	1725.7	1689.6	1650.2	1551.6	1446.5	1323.9	1191.4	1056.7	913.2
90°	1770.6	1723.6	1661.1	1625.0	1587.8	1492.5	1389.6	1273.5	1145.4	1015.1	876.0
92.5°	1708.2	1664.4	1605.3	1570.3	1534.1	1443.2	1344.7	1231.9	1108.2	982.2	846.4
95°	1654.6	1611.9	1557.1	1523.2	1485.9	1399.4	1303.1	1192.5	1074.2	951.6	819.1
97.5°	1600.9	1560.4	1506.7	1473.9	1438.8	1354.5	1261.5	1155.2	1039.2	917.6	789.5
100°	1551.6	1512.2	1457.5	1427.9	1394.0	1312.9	1220.9	1116.9	1003.0	883.7	757.8
102.5°	1503.5	1464.0	1411.5	1381.9	1349.1	1268.0	1178.2	1075.3	964.7	849.7	727.1
105°	1454.2	1415.9	1363.3	1333.7	1300.9	1222.0	1134.4	1034.8	926.4	814.7	695.3
107.5°	1400.5	1363.3	1312.9	1283.4	1252.7	1173.9	1089.5	992.1	888.1	778.6	662.5
110°	1345.8	1308.5	1262.6	1230.8	1201.2	1124.6	1042.5	949.4	847.5	741.3	628.5



TEST NUMBER: P201307

CATALOG NUMBER: 8LBLED-LD4-12-SYMW-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	1288.8	1252.7	1207.8	1178.2	1147.6	1074.2	995.4	905.6	807.0	703.0	593.5
115°	1230.8	1194.7	1149.8	1120.2	1092.8	1022.7	946.1	860.7	765.4	664.7	558.5
117.5°	1167.3	1135.5	1092.8	1066.5	1038.1	968.0	896.8	814.7	723.8	624.2	522.3
120°	1108.2	1077.5	1035.9	1007.4	982.2	915.4	847.5	767.6	677.8	584.7	485.1
122.5°	1045.7	1012.9	974.6	950.5	923.1	861.8	796.1	719.4	631.8	539.8	444.6
125°	980.0	949.4	912.1	889.2	864.0	805.9	743.5	666.9	583.6	494.9	403.0
127.5°	913.2	884.8	848.6	827.8	803.7	746.8	686.6	612.1	528.9	445.7	360.3
130°	845.4	816.9	784.0	762.1	739.1	685.5	626.3	553.0	474.1	396.4	318.6
132.5°	774.2	746.8	713.9	694.2	673.4	622.0	561.7	490.6	420.5	350.4	278.1
135°	700.8	675.6	646.1	627.4	606.6	554.1	497.1	432.5	370.1	305.5	238.7
137.5°	629.6	606.6	578.2	559.6	536.6	487.3	436.9	378.9	321.9	261.7	199.3
140°	559.6	538.7	511.4	490.6	470.9	424.9	378.9	326.3	274.8	220.1	164.3
142.5°	493.9	475.2	444.6	424.9	406.3	365.7	325.2	275.9	230.0	180.7	132.5
145°	429.2	412.8	378.9	361.4	346.0	309.9	269.4	228.9	187.2	144.5	102.9
147.5°	366.8	347.1	315.4	300.0	285.8	254.0	220.1	182.9	148.9	111.7	75.6
150°	306.6	282.5	255.1	242.0	230.0	202.6	173.0	142.4	112.8	81.0	52.6
152.5°	244.2	219.0	200.4	187.2	176.3	154.4	130.3	104.0	79.9	54.8	32.9
155°	180.7	163.2	145.6	139.1	129.2	110.6	90.9	70.1	50.4	32.9	18.6
157.5°	124.8	111.7	100.7	94.2	86.5	72.3	55.8	40.5	28.5	17.5	8.8
160°	75.6	66.8	59.1	53.7	48.2	38.3	27.4	18.6	12.0	5.5	3.3
162.5°	33.9	28.5	25.2	21.9	18.6	14.2	8.8	4.4	2.2	1.1	1.1
165°	6.6	4.4	3.3	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: P201307

CATALOG NUMBER: 8LBLED-LD4-12-SYMW-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9	1312.9
2.5°	1312.9	1314.0	1315.1	1315.1	1318.4	1323.9	1331.5	1332.6
5°	1309.6	1310.7	1310.7	1311.8	1315.1	1319.5	1326.1	1327.2
7.5°	1304.2	1304.2	1304.2	1304.2	1306.4	1310.7	1316.2	1317.3
10°	1296.5	1294.3	1293.2	1292.1	1293.2	1297.6	1302.0	1303.1
12.5°	1287.7	1282.3	1280.1	1279.0	1279.0	1280.1	1284.5	1284.5
15°	1277.9	1269.1	1265.8	1263.6	1259.3	1259.3	1263.6	1263.6
17.5°	1268.0	1256.0	1249.4	1245.0	1238.5	1237.4	1239.6	1237.4
20°	1259.3	1240.7	1231.9	1224.2	1214.4	1211.1	1211.1	1207.8
22.5°	1250.5	1225.3	1213.3	1202.3	1187.0	1181.5	1178.2	1176.0
25°	1245.0	1208.9	1193.6	1180.4	1159.6	1147.6	1144.3	1139.9
27.5°	1243.9	1195.8	1175.0	1158.5	1130.1	1115.8	1107.1	1101.6
30°	1243.9	1182.6	1155.2	1132.2	1097.2	1075.3	1066.5	1064.4
32.5°	1242.8	1172.8	1139.9	1110.3	1065.4	1037.0	1023.8	1020.6
35°	1239.6	1162.9	1124.6	1088.4	1033.7	997.6	978.9	974.6
37.5°	1235.2	1150.9	1110.3	1068.7	1000.8	957.0	934.0	927.5
40°	1230.8	1138.8	1092.8	1047.9	968.0	915.4	885.9	878.2
42.5°	1223.1	1125.7	1077.5	1028.2	937.3	873.8	839.9	827.8
45°	1215.5	1110.3	1058.9	1006.3	906.7	831.1	788.4	776.4
47.5°	1205.6	1093.9	1040.3	982.2	878.2	789.5	741.3	726.0
50°	1194.7	1077.5	1019.5	959.2	847.5	749.0	689.9	673.4
52.5°	1182.6	1058.9	998.7	935.1	816.9	710.7	641.7	620.9
55°	1167.3	1038.1	974.6	907.8	785.1	671.2	592.4	568.3
57.5°	1150.9	1017.3	951.6	882.6	753.4	634.0	544.2	516.8
60°	1131.2	993.2	923.1	854.1	720.5	595.7	496.0	464.3
62.5°	1110.3	969.1	897.9	824.5	687.7	558.5	449.0	412.8
65°	1088.4	941.7	869.4	793.9	652.6	519.0	403.0	361.4
67.5°	1062.2	912.1	837.7	761.0	616.5	479.6	358.1	311.0
70°	1035.9	880.4	802.6	726.0	579.3	440.2	315.4	261.7
72.5°	1004.1	846.4	767.6	689.9	540.9	401.9	273.8	212.4
75°	969.1	811.4	731.5	652.6	501.5	361.4	232.1	164.3
77.5°	931.9	773.1	694.2	614.3	464.3	323.0	193.8	123.7
80°	892.4	732.6	654.8	574.9	424.9	284.7	156.6	85.4
82.5°	848.6	693.1	615.4	535.5	387.6	247.5	122.6	52.6
85°	807.0	653.7	578.2	499.3	351.5	210.2	92.0	26.3
87.5°	766.5	617.6	544.2	466.5	320.8	181.8	66.8	7.7
90°	733.7	588.0	515.8	440.2	296.7	161.0	50.4	0.0
92.5°	707.4	565.0	493.9	420.5	279.2	146.7	42.7	0.0
95°	682.2	540.9	473.0	399.7	261.7	134.7	33.9	0.0
97.5°	654.8	517.9	450.1	378.9	244.2	121.5	27.4	0.0
100°	627.4	492.8	427.1	358.1	224.5	108.4	19.7	0.0
102.5°	597.9	466.5	401.9	335.1	207.0	94.2	13.1	0.0
105°	569.4	440.2	377.8	312.1	188.3	82.1	8.8	0.0
107.5°	538.7	413.9	352.6	290.2	169.7	69.0	5.5	0.0
110°	508.1	387.6	327.4	267.2	152.2	56.9	4.4	0.0



TEST NUMBER: P201307

CATALOG NUMBER: 8LBLED-LD4-12-SYMW-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	477.4	360.3	302.2	243.1	134.7	46.0	3.3	1.1
115°	444.6	331.8	275.9	219.0	117.2	36.1	3.3	1.1
117.5°	411.7	302.2	250.8	196.0	100.7	27.4	2.2	1.1
120°	377.8	275.9	223.4	174.1	85.4	19.7	2.2	1.1
122.5°	344.9	248.6	198.2	151.1	70.1	15.3	2.2	1.1
125°	311.0	216.8	173.0	130.3	55.8	12.0	2.2	1.1
127.5°	274.8	187.2	146.7	107.3	42.7	8.8	2.2	1.1
130°	237.6	157.7	121.5	87.6	30.7	6.6	2.2	1.1
132.5°	202.6	132.5	98.6	69.0	21.9	5.5	2.2	1.1
135°	170.8	107.3	77.7	51.5	15.3	4.4	1.1	1.1
137.5°	140.2	85.4	59.1	37.2	11.0	3.3	2.2	1.1
140°	112.8	64.6	42.7	26.3	7.7	2.2	2.2	1.1
142.5°	87.6	46.0	29.6	17.5	5.5	2.2	1.1	1.1
145°	64.6	30.7	19.7	11.0	4.4	2.2	2.2	2.2
147.5°	43.8	20.8	12.0	7.7	3.3	2.2	2.2	1.1
150°	28.5	13.1	7.7	5.5	2.2	2.2	2.2	1.1
152.5°	17.5	7.7	4.4	3.3	2.2	2.2	2.2	1.1
155°	8.8	4.4	3.3	2.2	2.2	2.2	2.2	2.2
157.5°	4.4	3.3	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)