

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: P201323

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P201323
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P28138)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 8LBLED-LD4-12-SYMF-UNV-L835-CD1-U
Description: 8 ft. Low Bay Linear, 12000 lm, Frst Sym lens, 3.5K
Light Source: (784) 3500K CCT, 80 CRI LEDS
2UT217098A8354C
Ballast/Driver: OSRAM
(OTI85W01920CC)

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12744.6 lumens
Efficiency: N/A
Efficacy: 148.9 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.99 / 1.87
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 8' x H: 0.21')
CIE Type: Semi-Direct

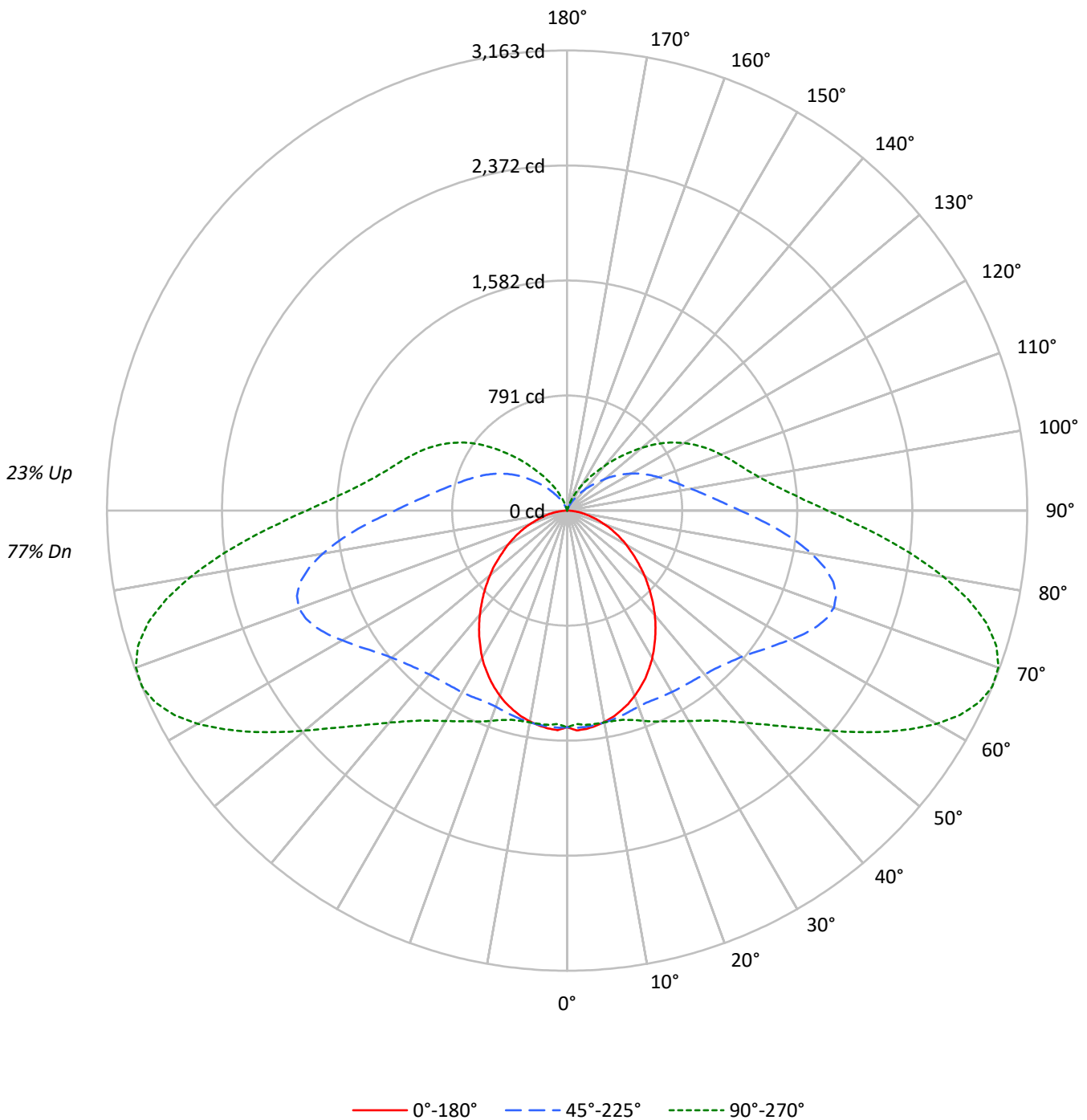
Input Watts (W): 85.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	114	114	114	114	108	108	108	108	98	98	98	89	89	89	81	81	81	77
1	98	91	84	78	92	86	80	75	77	73	68	69	65	62	62	59	56	52
2	86	75	66	59	81	71	63	56	64	57	51	57	51	47	50	46	42	38
3	77	64	54	46	72	61	51	44	54	46	40	48	42	37	43	37	33	29
4	70	55	45	37	65	52	43	36	47	39	32	42	35	30	37	31	27	23
5	63	49	38	31	59	46	37	29	41	33	27	37	30	25	32	27	22	19
6	58	43	33	26	55	41	32	25	37	29	23	33	26	21	29	23	19	16
7	54	39	29	22	50	37	28	21	33	25	20	30	23	18	26	21	16	14
8	50	35	26	19	47	33	25	19	30	22	17	27	20	16	24	18	14	12
9	46	32	23	17	44	30	22	16	27	20	15	25	18	14	22	17	13	10
10	43	29	21	15	41	28	20	15	25	18	14	23	17	12	20	15	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	11996	11996	11996
5°	12155	10780	12128
10°	12011	9915	11984
15°	11795	9311	11777
20°	11516	9078	11498
25°	11177	8988	11129
30°	10721	9035	10711
35°	10202	9255	10180
40°	9645	9783	9601
45°	9036	10630	9013
50°	8419	11869	8394
55°	7797	13401	7782
60°	7241	14960	7258
65°	6623	16218	6643
70°	5971	16803	5971
75°	5190	16442	5159
80°	4331	15129	4286
85°	3235	13288	3086



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	141.4	1.1
10°-20°	411.2	3.2
20°-30°	660.9	5.2
30°-40°	894.9	7.0
40°-50°	1149.6	9.0
50°-60°	1479.0	11.6
60°-70°	1809.4	14.2
70°-80°	1829.3	14.4
80°-90°	1414.6	11.1
90°-100°	982.8	7.7
100°-110°	734.1	5.8
110°-120°	550.2	4.3
120°-130°	370.5	2.9
130°-140°	203.2	1.6
140°-150°	86.6	0.7
150°-160°	24.8	0.2
160°-170°	2.1	0.0
170°-180°	0.0	0.0
0°-30°	1213.4	9.5
0°-40°	2108.3	16.5
0°-60°	4736.9	37.2
0°-90°	9790.3	76.8
90°-120°	2267.1	17.8
90°-150°	2927.4	23.0
90°-180°	2954.0	23.2
0°-180°	12744.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1489	1489	1489	1489	1489	
5°	1506	1492	1478	1490	1503	143
15°	1424	1458	1489	1458	1422	401
25°	1272	1430	1598	1432	1267	584
35°	1056	1450	1762	1451	1054	660
45°	814	1505	2095	1512	812	628
55°	576	1659	2651	1666	575	516
65°	367	1890	3123	1902	368	364
75°	183	1894	2983	1900	182	195
85°	45	1448	2190	1444	43	50
90°	1	1189	1789	1183	0	3
95°	1	1003	1513	999	0	1
105°	1	758	1220	758	0	1
115°	1	590	1032	590	0	1
125°	1	423	809	421	0	1
135°	2	255	531	252	0	2
145°	2	130	292	124	0	1
155°	2	41	121	39	0	1
165°	2	2	12	5	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P201323

CATALOG NUMBER: 8LBLELD4-12-SYMF-UNV-L835-CD1-U

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9
2.5°	1512.7	1511.7	1505.2	1495.4	1491.1	1490.0	1488.9	1484.6	1483.5	1485.7	1494.3
5°	1506.3	1505.2	1498.7	1488.9	1485.7	1484.6	1483.5	1480.3	1480.3	1483.5	1492.2
7.5°	1493.3	1492.2	1485.7	1478.1	1474.9	1473.8	1473.8	1471.6	1471.6	1477.0	1486.8
10°	1474.9	1473.8	1468.4	1461.9	1459.7	1459.7	1459.7	1458.6	1460.8	1467.3	1478.1
12.5°	1453.2	1451.1	1446.7	1441.3	1441.3	1441.3	1442.4	1442.4	1445.7	1456.5	1469.5
15°	1424.0	1425.1	1420.8	1416.4	1418.6	1419.7	1421.8	1424.0	1429.4	1442.4	1457.6
17.5°	1393.7	1393.7	1390.5	1388.3	1392.6	1394.8	1398.0	1401.3	1411.0	1427.3	1444.6
20°	1355.8	1356.9	1355.8	1356.9	1362.3	1365.6	1369.9	1377.5	1390.5	1413.2	1433.8
22.5°	1314.7	1316.9	1316.9	1321.2	1329.9	1335.3	1340.7	1351.5	1369.9	1399.1	1428.3
25°	1272.5	1271.4	1276.9	1284.4	1293.1	1300.7	1307.1	1323.4	1350.4	1389.4	1430.5
27.5°	1221.7	1223.8	1231.4	1242.2	1255.2	1264.9	1274.7	1297.4	1336.4	1388.3	1435.9
30°	1169.7	1173.0	1182.7	1197.9	1216.3	1229.2	1240.1	1275.8	1328.8	1388.3	1440.2
32.5°	1113.5	1118.9	1131.9	1151.3	1177.3	1192.4	1209.8	1257.4	1322.3	1386.1	1444.6
35°	1056.1	1062.6	1079.9	1103.7	1134.0	1152.4	1179.5	1243.3	1313.6	1384.0	1450.0
37.5°	997.7	1005.2	1024.7	1055.0	1094.0	1122.1	1154.6	1228.2	1307.1	1384.0	1457.6
40°	937.1	945.7	970.6	1005.2	1055.0	1091.8	1130.8	1213.0	1300.7	1385.1	1469.5
42.5°	875.4	885.1	915.4	956.6	1021.5	1064.8	1108.0	1200.0	1296.3	1390.5	1484.6
45°	813.7	826.7	860.3	910.0	991.2	1036.6	1086.4	1188.1	1294.2	1400.2	1505.2
47.5°	752.0	767.2	806.1	865.7	959.8	1013.9	1065.8	1178.4	1296.3	1413.2	1532.2
50°	692.5	709.8	753.1	825.6	930.6	989.0	1046.4	1171.9	1300.7	1432.7	1564.7
52.5°	631.9	654.7	702.3	789.9	904.6	966.3	1030.1	1167.6	1309.3	1458.6	1606.9
55°	575.7	599.5	654.7	755.3	879.7	946.8	1015.0	1166.5	1324.5	1490.0	1658.8
57.5°	518.3	547.5	608.1	721.7	853.8	927.3	1003.1	1168.6	1342.9	1523.6	1711.8
60°	469.6	495.6	565.9	689.3	831.0	908.9	992.3	1170.8	1362.3	1562.5	1773.5
62.5°	417.7	445.8	529.1	657.9	808.3	892.7	981.4	1174.1	1382.9	1602.6	1836.3
65°	366.8	396.0	492.3	627.6	785.6	875.4	968.5	1174.1	1399.1	1639.3	1890.4
67.5°	318.1	349.5	455.6	595.1	759.6	853.8	952.2	1168.6	1408.9	1665.3	1932.6
70°	271.6	306.2	419.8	560.5	731.5	827.8	929.5	1156.7	1407.8	1675.1	1951.0
72.5°	225.1	265.1	380.9	525.9	701.2	798.6	902.5	1134.0	1392.6	1663.2	1939.1
75°	182.9	226.2	346.3	491.3	666.6	763.9	868.9	1099.4	1359.1	1626.4	1893.6
77.5°	143.9	191.5	309.5	453.4	627.6	723.9	826.7	1055.0	1306.1	1561.4	1813.6
80°	107.1	160.1	274.8	415.5	585.4	679.5	779.1	998.8	1236.8	1473.8	1706.4
82.5°	74.7	130.9	241.3	377.6	542.1	631.9	727.2	931.7	1156.7	1372.1	1583.1
85°	45.4	105.0	207.8	340.9	497.8	582.2	672.0	861.3	1069.1	1261.7	1447.8
87.5°	19.5	81.2	178.5	305.1	453.4	533.5	615.7	794.2	976.0	1147.0	1312.6
90°	1.1	60.6	152.6	271.6	411.2	485.9	562.7	722.8	890.5	1042.0	1189.2
92.5°	0.0	51.9	137.4	251.0	382.0	451.2	522.6	669.8	821.3	956.6	1087.5
95°	1.1	43.3	124.4	228.3	352.8	418.8	484.8	622.2	758.5	883.0	1003.1
97.5°	1.1	35.7	110.4	207.8	325.7	386.3	448.0	575.7	699.0	817.0	928.4
100°	1.1	28.1	97.4	188.3	297.6	353.8	412.3	532.4	648.2	758.5	863.5
102.5°	1.1	20.6	86.6	169.9	271.6	324.6	378.7	492.3	601.6	707.7	807.2
105°	1.1	14.1	75.7	152.6	247.8	297.6	348.4	455.6	559.4	661.1	758.5
107.5°	1.1	9.7	66.0	136.3	221.8	271.6	319.2	420.9	520.5	618.9	714.2
110°	1.1	8.7	57.4	122.3	201.3	246.7	292.2	388.5	483.7	577.8	670.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	1.1	7.6	48.7	109.3	180.7	221.8	266.2	357.1	450.1	541.0	629.8
115°	1.1	7.6	40.0	97.4	163.4	200.2	241.3	326.8	415.5	503.2	589.7
117.5°	1.1	7.6	32.5	86.6	147.2	180.7	216.4	298.7	380.9	466.4	550.8
120°	1.1	6.5	26.0	75.7	133.1	163.4	196.9	271.6	347.3	427.4	508.6
122.5°	1.1	6.5	21.6	66.0	119.0	147.2	177.5	243.5	316.0	389.5	465.3
125°	1.1	5.4	18.4	55.2	105.0	132.0	159.1	218.6	285.7	353.8	423.1
127.5°	2.2	5.4	15.1	45.4	90.9	114.7	140.7	194.8	253.2	314.9	380.9
130°	2.2	5.4	13.0	34.6	76.8	98.5	121.2	171.0	225.1	278.1	335.4
132.5°	2.2	4.3	11.9	27.1	63.8	83.3	103.9	148.2	195.9	243.5	293.2
135°	2.2	4.3	9.7	21.6	50.9	68.2	87.6	126.6	168.8	213.2	255.4
137.5°	2.2	3.2	8.7	17.3	39.0	55.2	72.5	107.1	143.9	181.8	220.7
140°	2.2	3.2	7.6	14.1	29.2	41.1	57.4	87.6	120.1	153.7	187.2
142.5°	2.2	3.2	6.5	11.9	22.7	31.4	43.3	71.4	99.6	127.7	156.9
145°	2.2	3.2	5.4	9.7	17.3	23.8	31.4	55.2	80.1	105.0	129.8
147.5°	2.2	3.2	5.4	8.7	14.1	18.4	23.8	40.0	62.8	83.3	105.0
150°	2.2	3.2	4.3	7.6	11.9	14.1	17.3	28.1	45.4	63.8	82.2
152.5°	2.2	2.2	4.3	6.5	8.7	10.8	13.0	20.6	31.4	45.4	61.7
155°	2.2	2.2	3.2	5.4	7.6	8.7	9.7	14.1	20.6	29.2	41.1
157.5°	2.2	2.2	3.2	4.3	5.4	6.5	7.6	9.7	14.1	18.4	24.9
160°	2.2	2.2	3.2	4.3	4.3	5.4	5.4	6.5	8.7	10.8	14.1
162.5°	2.2	2.2	3.2	3.2	3.2	4.3	4.3	4.3	5.4	5.4	6.5
165°	2.2	2.2	2.2	3.2	2.2	3.2	2.2	3.2	3.2	2.2	2.2
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°	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9
2.5°	1497.6	1490.0	1486.8	1482.4	1479.2	1477.0	1473.8	1471.6	1468.4	1468.4	1469.5
5°	1495.4	1487.9	1485.7	1481.4	1479.2	1478.1	1476.0	1477.0	1477.0	1478.1	1477.0
7.5°	1491.1	1484.6	1482.4	1480.3	1478.1	1477.0	1476.0	1478.1	1478.1	1479.2	1479.2
10°	1483.5	1479.2	1479.2	1477.0	1476.0	1474.9	1472.7	1476.0	1476.0	1478.1	1477.0
12.5°	1474.9	1473.8	1474.9	1476.0	1476.0	1474.9	1473.8	1478.1	1480.3	1480.3	1481.4
15°	1465.1	1467.3	1472.7	1476.0	1478.1	1478.1	1480.3	1484.6	1487.9	1488.9	1488.9
17.5°	1457.6	1463.0	1472.7	1481.4	1485.7	1487.9	1493.3	1501.9	1507.3	1508.4	1508.4
20°	1452.1	1465.1	1482.4	1498.7	1504.1	1508.4	1519.2	1530.1	1537.6	1538.7	1538.7
22.5°	1456.5	1478.1	1501.9	1520.3	1527.9	1533.3	1545.2	1559.3	1567.9	1569.0	1569.0
25°	1467.3	1493.3	1520.3	1543.0	1551.7	1558.2	1571.2	1586.3	1595.0	1598.2	1597.1
27.5°	1477.0	1508.4	1539.8	1565.8	1575.5	1584.2	1600.4	1617.7	1628.5	1631.8	1629.6
30°	1485.7	1522.5	1558.2	1589.6	1602.6	1612.3	1631.8	1652.3	1666.4	1669.6	1666.4
32.5°	1494.3	1538.7	1580.9	1617.7	1630.7	1644.8	1669.6	1693.5	1707.5	1711.8	1709.7
35°	1506.3	1558.2	1608.0	1650.2	1667.5	1683.7	1712.9	1741.1	1758.4	1761.6	1758.4
37.5°	1522.5	1583.1	1638.3	1691.3	1709.7	1732.4	1767.0	1800.6	1821.1	1825.5	1821.1
40°	1543.0	1614.5	1679.4	1741.1	1765.9	1789.8	1832.0	1872.0	1894.7	1902.3	1899.0
42.5°	1570.1	1653.4	1729.2	1802.7	1830.9	1861.2	1910.9	1957.5	1983.4	1992.1	1983.4
45°	1603.6	1702.1	1789.8	1875.2	1907.7	1944.5	2004.0	2057.0	2087.3	2094.9	2087.3
47.5°	1648.0	1759.5	1861.2	1959.6	1998.6	2041.9	2112.2	2172.8	2205.3	2213.9	2206.4
50°	1695.6	1828.7	1945.6	2058.1	2106.8	2152.3	2234.5	2301.6	2336.2	2352.4	2338.4
52.5°	1755.1	1904.5	2041.9	2167.4	2225.8	2279.9	2370.8	2444.4	2486.6	2500.7	2481.2
55°	1826.5	1995.3	2149.0	2294.0	2352.4	2413.0	2513.7	2591.6	2635.9	2651.1	2637.0
57.5°	1905.5	2091.7	2261.5	2414.1	2482.3	2544.0	2656.5	2737.7	2776.6	2796.1	2778.8
60°	1987.8	2191.2	2375.2	2537.5	2612.1	2676.0	2790.7	2870.8	2911.9	2931.3	2915.1
62.5°	2067.8	2287.5	2481.2	2650.0	2721.4	2791.8	2906.5	2983.3	3025.5	3042.8	3027.7
65°	2137.1	2368.7	2567.8	2742.0	2815.6	2884.8	2993.0	3066.6	3111.0	3122.9	3112.1
67.5°	2189.0	2423.9	2625.1	2797.2	2868.6	2937.8	3040.6	3108.8	3152.1	3162.9	3153.2
70°	2212.8	2445.5	2644.6	2812.3	2882.7	2944.3	3041.7	3106.6	3147.8	3154.3	3146.7
72.5°	2197.7	2423.9	2616.5	2776.6	2843.7	2897.8	2987.6	3049.3	3088.2	3093.7	3088.2
75°	2141.4	2357.8	2539.6	2689.0	2751.7	2797.2	2882.7	2940.0	2979.0	2983.3	2976.8
77.5°	2046.2	2247.5	2414.1	2558.0	2610.0	2654.3	2735.5	2786.3	2817.7	2824.2	2816.6
80°	1918.5	2103.6	2252.9	2381.7	2431.4	2469.3	2548.3	2603.5	2620.8	2629.4	2618.6
82.5°	1772.4	1938.0	2071.1	2188.0	2232.3	2278.9	2329.7	2380.6	2405.5	2413.0	2404.4
85°	1615.5	1762.7	1880.6	1985.6	2024.6	2066.8	2111.1	2160.9	2182.5	2190.1	2181.5
87.5°	1458.6	1588.5	1692.4	1785.4	1821.1	1859.0	1912.0	1938.0	1967.2	1975.9	1966.1
90°	1318.0	1434.8	1527.9	1612.3	1645.8	1680.5	1721.6	1754.0	1781.1	1788.7	1780.0
92.5°	1204.4	1309.3	1394.8	1470.5	1499.8	1532.2	1572.3	1603.6	1627.4	1635.0	1626.4
95°	1110.2	1206.5	1286.6	1356.9	1385.1	1415.4	1459.7	1484.6	1506.3	1512.7	1506.3
97.5°	1030.1	1121.0	1196.8	1264.9	1292.0	1320.1	1363.4	1388.3	1408.9	1414.3	1408.9
100°	959.8	1048.5	1123.2	1188.1	1215.2	1242.2	1284.4	1309.3	1328.8	1335.3	1328.8
102.5°	901.4	986.9	1060.4	1126.4	1152.4	1179.5	1219.5	1248.7	1263.9	1271.4	1264.9
105°	850.5	933.8	1007.4	1072.3	1099.4	1125.4	1166.5	1193.5	1210.8	1219.5	1211.9
107.5°	804.0	886.2	960.9	1023.6	1050.7	1076.7	1118.9	1145.9	1162.2	1171.9	1163.2
110°	759.6	840.8	912.2	977.1	1004.2	1031.2	1073.4	1100.5	1116.7	1125.4	1117.8



TEST NUMBER: P201323

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

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	716.3	795.3	868.9	931.7	957.6	984.7	1028.0	1056.1	1071.3	1081.0	1072.3
115°	673.1	751.0	822.4	883.0	908.9	937.1	979.3	1008.5	1024.7	1032.3	1023.6
117.5°	630.9	705.5	773.7	833.2	859.2	886.2	927.3	956.6	973.9	981.4	972.8
120°	587.6	659.0	726.1	780.2	807.2	832.1	874.3	902.5	919.8	927.3	918.7
122.5°	541.0	611.4	675.2	728.2	754.2	778.0	819.1	847.3	863.5	871.1	863.5
125°	493.4	559.4	621.1	674.1	695.8	718.5	758.5	785.6	802.9	809.4	802.9
127.5°	445.8	506.4	563.8	610.3	634.1	655.7	693.6	719.6	734.7	742.3	736.9
130°	398.2	455.6	507.5	549.7	570.3	590.8	625.4	649.2	664.4	670.9	665.5
132.5°	347.3	402.5	453.4	490.2	509.7	527.0	558.4	578.9	591.9	599.5	593.0
135°	301.9	347.3	395.0	432.8	452.3	467.5	495.6	512.9	524.8	531.3	524.8
137.5°	260.8	299.7	338.7	372.2	390.6	406.9	433.9	450.1	461.0	467.5	461.0
140°	222.9	256.5	291.1	318.1	334.4	347.3	372.2	386.3	396.0	401.5	395.0
142.5°	186.1	216.4	245.6	270.5	284.6	295.4	319.2	330.0	337.6	340.9	337.6
145°	154.7	179.6	204.5	227.2	238.1	246.7	270.5	282.4	288.9	292.2	288.9
147.5°	125.5	146.1	166.6	185.0	194.8	205.6	221.8	235.9	241.3	243.5	241.3
150°	98.5	116.9	133.1	148.2	155.8	163.4	177.5	191.5	196.9	200.2	196.9
152.5°	74.7	89.8	102.8	114.7	121.2	127.7	139.6	152.6	158.0	160.1	158.0
155°	54.1	64.9	76.8	85.5	90.9	95.2	103.9	112.5	121.2	121.2	121.2
157.5°	33.5	42.2	51.9	59.5	62.8	67.1	73.6	81.2	87.6	90.9	90.9
160°	17.3	22.7	29.2	34.6	37.9	41.1	45.4	51.9	56.3	59.5	57.4
162.5°	7.6	9.7	13.0	15.1	17.3	18.4	21.6	24.9	27.1	32.5	28.1
165°	2.2	2.2	3.2	4.3	4.3	4.3	5.4	6.5	7.6	11.9	8.7
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: P201323

CATALOG NUMBER: 8LBLELD4-12-SYMF-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9
2.5°	1471.6	1474.9	1479.2	1481.4	1484.6	1486.8	1492.2	1498.7	1493.3	1485.7	1486.8
5°	1477.0	1476.0	1479.2	1481.4	1483.5	1484.6	1490.0	1496.5	1490.0	1482.4	1482.4
7.5°	1479.2	1478.1	1479.2	1480.3	1481.4	1481.4	1486.8	1492.2	1485.7	1476.0	1473.8
10°	1476.0	1474.9	1476.0	1478.1	1478.1	1478.1	1481.4	1485.7	1478.1	1466.2	1461.9
12.5°	1478.1	1474.9	1474.9	1476.0	1476.0	1473.8	1474.9	1478.1	1468.4	1455.4	1448.9
15°	1485.7	1480.3	1478.1	1478.1	1476.0	1470.5	1468.4	1468.4	1457.6	1440.2	1431.6
17.5°	1504.1	1495.4	1488.9	1485.7	1481.4	1471.6	1464.1	1459.7	1445.7	1426.2	1412.1
20°	1532.2	1520.3	1510.6	1504.1	1498.7	1481.4	1466.2	1454.3	1434.8	1411.0	1392.6
22.5°	1560.4	1547.4	1533.3	1526.8	1519.2	1499.8	1479.2	1458.6	1429.4	1397.0	1372.1
25°	1587.4	1574.4	1558.2	1551.7	1542.0	1519.2	1493.3	1469.5	1431.6	1387.2	1351.5
27.5°	1618.8	1602.6	1585.2	1575.5	1564.7	1538.7	1509.5	1480.3	1438.1	1387.2	1337.4
30°	1654.5	1635.0	1612.3	1601.5	1588.5	1558.2	1522.5	1487.9	1442.4	1387.2	1329.9
32.5°	1695.6	1672.9	1645.8	1630.7	1615.5	1579.8	1537.6	1497.6	1445.7	1386.1	1323.4
35°	1743.2	1717.3	1684.8	1667.5	1649.1	1606.9	1557.1	1508.4	1451.1	1385.1	1314.7
37.5°	1802.7	1772.4	1733.5	1711.8	1690.2	1640.4	1583.1	1524.6	1459.7	1386.1	1308.2
40°	1874.2	1838.4	1793.0	1765.9	1740.0	1682.6	1614.5	1545.2	1471.6	1388.3	1301.7
42.5°	1958.6	1915.3	1864.4	1833.0	1802.7	1731.3	1653.4	1571.2	1487.9	1392.6	1298.5
45°	2059.2	2013.7	1948.8	1909.9	1876.3	1793.0	1703.2	1605.8	1511.7	1403.5	1297.4
47.5°	2175.0	2117.6	2047.3	2001.8	1961.8	1865.5	1761.6	1649.1	1538.7	1417.5	1299.6
50°	2304.8	2239.9	2158.7	2111.1	2061.4	1951.0	1830.9	1699.9	1573.3	1438.1	1305.0
52.5°	2447.7	2376.2	2288.6	2232.3	2177.1	2049.5	1908.8	1764.9	1613.4	1464.1	1314.7
55°	2595.9	2519.1	2421.7	2360.0	2298.3	2157.7	2000.8	1835.2	1666.4	1496.5	1331.0
57.5°	2739.8	2660.8	2553.7	2490.9	2421.7	2272.4	2099.2	1912.0	1723.7	1534.4	1349.4
60°	2872.9	2793.9	2685.7	2621.9	2546.1	2386.0	2199.9	1996.4	1783.3	1574.4	1371.0
62.5°	2985.5	2909.7	2801.5	2736.6	2658.7	2493.1	2296.2	2078.7	1848.2	1616.6	1391.6
65°	3068.8	2997.4	2892.4	2825.3	2750.6	2578.6	2377.3	2151.2	1902.3	1653.4	1409.9
67.5°	3111.0	3043.9	2942.2	2878.3	2804.7	2633.8	2432.5	2199.9	1943.4	1679.4	1421.8
70°	3106.6	3042.8	2947.6	2884.8	2814.5	2650.0	2452.0	2219.3	1961.8	1689.1	1419.7
72.5°	3050.4	2986.5	2901.0	2840.5	2773.4	2619.7	2424.9	2202.0	1947.7	1674.0	1402.4
75°	2938.9	2880.5	2793.9	2744.1	2683.6	2540.7	2354.6	2138.2	1900.1	1633.9	1366.7
77.5°	2778.8	2734.4	2650.0	2603.5	2544.0	2411.9	2236.7	2041.9	1816.8	1566.8	1311.5
80°	2582.9	2546.1	2463.9	2422.8	2364.3	2249.6	2098.1	1909.9	1706.4	1476.0	1240.1
82.5°	2368.7	2326.5	2261.5	2223.7	2168.5	2065.7	1921.8	1768.1	1578.8	1372.1	1156.7
85°	2146.8	2107.9	2048.4	2015.9	1967.2	1875.2	1746.5	1611.2	1443.5	1257.4	1066.9
87.5°	1935.8	1898.0	1841.7	1812.5	1768.1	1685.9	1573.3	1454.3	1306.1	1147.0	971.7
90°	1753.0	1717.3	1664.2	1637.2	1597.1	1522.5	1420.8	1313.6	1182.7	1036.6	886.2
92.5°	1602.6	1570.1	1520.3	1494.3	1458.6	1390.5	1298.5	1201.1	1083.2	956.6	817.0
95°	1483.5	1452.1	1407.8	1382.9	1349.4	1279.0	1197.9	1107.0	998.8	883.0	754.2
97.5°	1387.2	1361.3	1312.6	1288.8	1261.7	1190.3	1116.7	1026.9	926.3	818.1	697.9
100°	1309.3	1280.1	1235.7	1213.0	1184.9	1117.8	1043.1	958.7	861.3	758.5	647.1
102.5°	1248.7	1218.4	1177.3	1151.3	1124.3	1056.1	982.5	900.3	807.2	707.7	600.6
105°	1194.6	1165.4	1124.3	1098.3	1071.3	1004.2	933.8	850.5	758.5	662.2	558.4
107.5°	1143.8	1117.8	1076.7	1050.7	1023.6	956.6	886.2	804.0	714.2	620.0	519.4
110°	1100.5	1072.3	1029.1	1004.2	975.0	911.1	840.8	760.7	670.9	578.9	482.6



TEST NUMBER: P201323

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

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	1057.2	1026.9	983.6	958.7	929.5	865.7	796.4	717.4	629.8	541.0	448.0
115°	1009.6	980.4	934.9	910.0	880.8	818.1	751.0	674.1	589.7	503.2	413.4
117.5°	958.7	929.5	884.1	860.3	832.1	770.4	706.6	631.9	549.7	466.4	378.7
120°	903.5	875.4	832.1	808.3	781.3	721.7	660.1	585.4	507.5	427.4	346.3
122.5°	847.3	820.2	778.0	754.2	728.2	672.0	611.4	538.9	464.2	389.5	314.9
125°	786.7	759.6	719.6	696.9	670.9	616.8	558.4	490.2	420.9	353.8	282.4
127.5°	716.3	694.7	655.7	633.0	609.2	561.6	505.3	443.7	379.8	314.9	251.0
130°	649.2	626.5	589.7	569.2	548.6	505.3	455.6	396.0	333.3	277.0	219.7
132.5°	578.9	558.4	527.0	509.7	491.3	452.3	401.5	343.0	290.0	241.3	190.4
135°	512.9	495.6	467.5	452.3	433.9	392.8	345.2	296.5	252.1	208.8	163.4
137.5°	451.2	433.9	407.9	391.7	372.2	335.4	296.5	256.5	215.3	178.5	138.5
140°	386.3	372.2	348.4	334.4	317.0	285.7	253.2	215.3	182.9	149.3	114.7
142.5°	331.1	319.2	295.4	282.4	267.3	241.3	211.0	181.8	152.6	123.4	94.1
145°	283.5	271.6	245.6	235.9	221.8	199.1	174.2	148.2	124.4	99.6	75.7
147.5°	237.0	222.9	200.2	191.5	180.7	161.2	141.8	121.2	100.6	79.0	58.4
150°	193.7	177.5	159.1	153.7	142.8	127.7	111.5	94.1	77.9	60.6	42.2
152.5°	152.6	138.5	123.4	117.9	109.3	99.6	85.5	71.4	58.4	42.2	29.2
155°	113.6	102.8	90.9	87.6	81.2	73.6	61.7	50.9	39.0	28.1	20.6
157.5°	80.1	71.4	62.8	60.6	56.3	49.8	40.0	31.4	24.9	18.4	14.1
160°	49.8	44.4	37.9	35.7	32.5	28.1	21.6	18.4	15.1	11.9	8.7
162.5°	23.8	20.6	18.4	17.3	15.1	13.0	11.9	9.7	8.7	7.6	6.5
165°	8.7	8.7	8.7	7.6	7.6	7.6	7.6	6.5	5.4	5.4	4.3
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: P201323

CATALOG NUMBER: 8LBLELD4-12-SYMF-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9	1488.9
2.5°	1487.9	1490.0	1490.0	1491.1	1494.3	1500.8	1509.5	1510.6
5°	1483.5	1484.6	1484.6	1484.6	1487.9	1493.3	1501.9	1503.0
7.5°	1473.8	1473.8	1473.8	1473.8	1477.0	1481.4	1488.9	1490.0
10°	1460.8	1459.7	1459.7	1458.6	1460.8	1464.1	1472.7	1471.6
12.5°	1444.6	1442.4	1441.3	1441.3	1440.2	1443.5	1448.9	1450.0
15°	1426.2	1421.8	1419.7	1417.5	1416.4	1416.4	1422.9	1421.8
17.5°	1404.5	1398.0	1394.8	1391.6	1387.2	1387.2	1391.6	1390.5
20°	1379.6	1371.0	1365.6	1361.3	1354.8	1352.6	1354.8	1353.7
22.5°	1354.8	1340.7	1335.3	1328.8	1319.1	1314.7	1313.6	1312.6
25°	1325.5	1308.2	1300.7	1294.2	1280.1	1274.7	1269.3	1267.1
27.5°	1299.6	1274.7	1264.9	1254.1	1237.9	1230.3	1221.7	1219.5
30°	1276.9	1240.1	1224.9	1214.1	1193.5	1181.6	1170.8	1168.6
32.5°	1259.5	1208.7	1188.1	1175.1	1147.0	1130.8	1116.7	1110.2
35°	1244.4	1179.5	1152.4	1131.9	1098.3	1078.8	1059.4	1053.9
37.5°	1230.3	1154.6	1118.9	1090.7	1052.9	1024.7	1003.1	994.4
40°	1216.3	1131.9	1088.6	1052.9	1003.1	970.6	943.6	932.8
42.5°	1203.3	1109.1	1062.6	1019.3	954.4	915.4	886.2	871.1
45°	1191.4	1088.6	1037.7	990.1	906.8	861.3	825.6	811.6
47.5°	1182.7	1069.1	1012.8	960.9	862.4	806.1	769.4	751.0
50°	1176.2	1050.7	989.0	931.7	823.5	753.1	712.0	690.4
52.5°	1173.0	1034.5	967.4	905.7	787.8	702.3	653.6	637.3
55°	1174.1	1021.5	949.0	881.9	754.2	653.6	599.5	574.6
57.5°	1176.2	1009.6	930.6	858.1	720.7	606.0	545.4	519.4
60°	1180.5	999.8	914.4	835.4	689.3	564.8	495.6	470.7
62.5°	1184.9	991.2	898.1	813.7	659.0	527.0	445.8	417.7
65°	1186.0	978.2	880.8	792.1	628.7	489.1	395.0	367.9
67.5°	1181.6	962.0	859.2	767.2	597.3	452.3	347.3	319.2
70°	1168.6	940.3	834.3	739.1	562.7	416.6	301.9	271.6
72.5°	1144.8	912.2	805.1	707.7	529.1	378.7	260.8	224.0
75°	1111.3	877.6	770.4	672.0	493.4	343.0	222.9	181.8
77.5°	1065.8	833.2	729.3	631.9	454.5	306.2	190.4	142.8
80°	1007.4	786.7	683.9	588.6	416.6	272.7	159.1	106.0
82.5°	938.2	733.6	635.2	544.3	380.9	238.1	129.8	73.6
85°	866.7	676.3	584.3	497.8	343.0	205.6	105.0	43.3
87.5°	796.4	618.9	535.6	455.6	304.1	176.4	81.2	17.3
90°	727.2	563.8	484.8	410.1	270.5	149.3	60.6	0.0
92.5°	669.8	522.6	451.2	379.8	248.9	135.3	51.9	0.0
95°	618.9	483.7	415.5	349.5	226.2	122.3	43.3	0.0
97.5°	572.4	446.9	384.1	321.4	205.6	108.2	35.7	0.0
100°	528.1	410.1	351.7	295.4	186.1	96.3	27.1	0.0
102.5°	489.1	377.6	322.5	267.3	166.6	84.4	19.5	0.0
105°	451.2	346.3	295.4	242.4	149.3	73.6	11.9	0.0
107.5°	417.7	317.0	268.4	219.7	133.1	63.8	7.6	0.0
110°	385.2	290.0	242.4	198.0	119.0	55.2	6.5	0.0



TEST NUMBER: P201323

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	354.9	264.0	219.7	177.5	107.1	46.5	6.5	0.0
115°	323.5	239.1	198.0	160.1	95.2	37.9	5.4	0.0
117.5°	296.5	215.3	178.5	146.1	83.3	30.3	5.4	0.0
120°	269.4	194.8	162.3	130.9	72.5	22.7	5.4	0.0
122.5°	242.4	176.4	145.0	116.9	62.8	18.4	4.3	0.0
125°	217.5	156.9	128.8	101.7	51.9	16.2	4.3	0.0
127.5°	192.6	137.4	111.5	87.6	41.1	14.1	3.2	0.0
130°	167.7	117.9	95.2	73.6	31.4	11.9	3.2	0.0
132.5°	145.0	99.6	80.1	60.6	24.9	9.7	2.2	0.0
135°	122.3	83.3	66.0	47.6	19.5	8.7	2.2	0.0
137.5°	102.8	68.2	51.9	35.7	16.2	6.5	2.2	0.0
140°	84.4	54.1	39.0	27.1	13.0	5.4	1.1	0.0
142.5°	67.1	40.0	29.2	20.6	10.8	4.3	1.1	0.0
145°	51.9	29.2	21.6	16.2	9.7	3.2	1.1	0.0
147.5°	37.9	22.7	17.3	14.1	7.6	3.2	1.1	0.0
150°	27.1	17.3	14.1	10.8	5.4	2.2	1.1	0.0
152.5°	20.6	13.0	10.8	8.7	4.3	2.2	1.1	0.0
155°	15.1	9.7	8.7	6.5	3.2	2.2	1.1	0.0
157.5°	10.8	7.6	6.5	4.3	3.2	2.2	1.1	0.0
160°	6.5	5.4	4.3	3.2	2.2	1.1	1.1	0.0
162.5°	5.4	3.2	3.2	3.2	2.2	1.1	1.1	0.0
165°	3.2	2.2	2.2	2.2	1.1	1.1	1.1	0.0
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)