

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: P201330

Luminaire Tested: **4LBLED-LD4-9-SYMW-UNV-L835-CD1-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P201330
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: 4LBLED-LD4-9-SYMW-UNV-L835-CD1-U
Description: 4 ft. Low Bay Linear, 9000 lm, Wht Sym lens, 3.3.5K
Light Source: (392) 3500K CCT, 80 CRI LEDS
2UT217098A8354C
Ballast/Driver: OSRAM
(OTI85W01480CC)

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8995.3 lumens
Efficiency: N/A
Efficacy: 135.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 2.12 / 1.93
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.21')
CIE Type: Semi-Direct

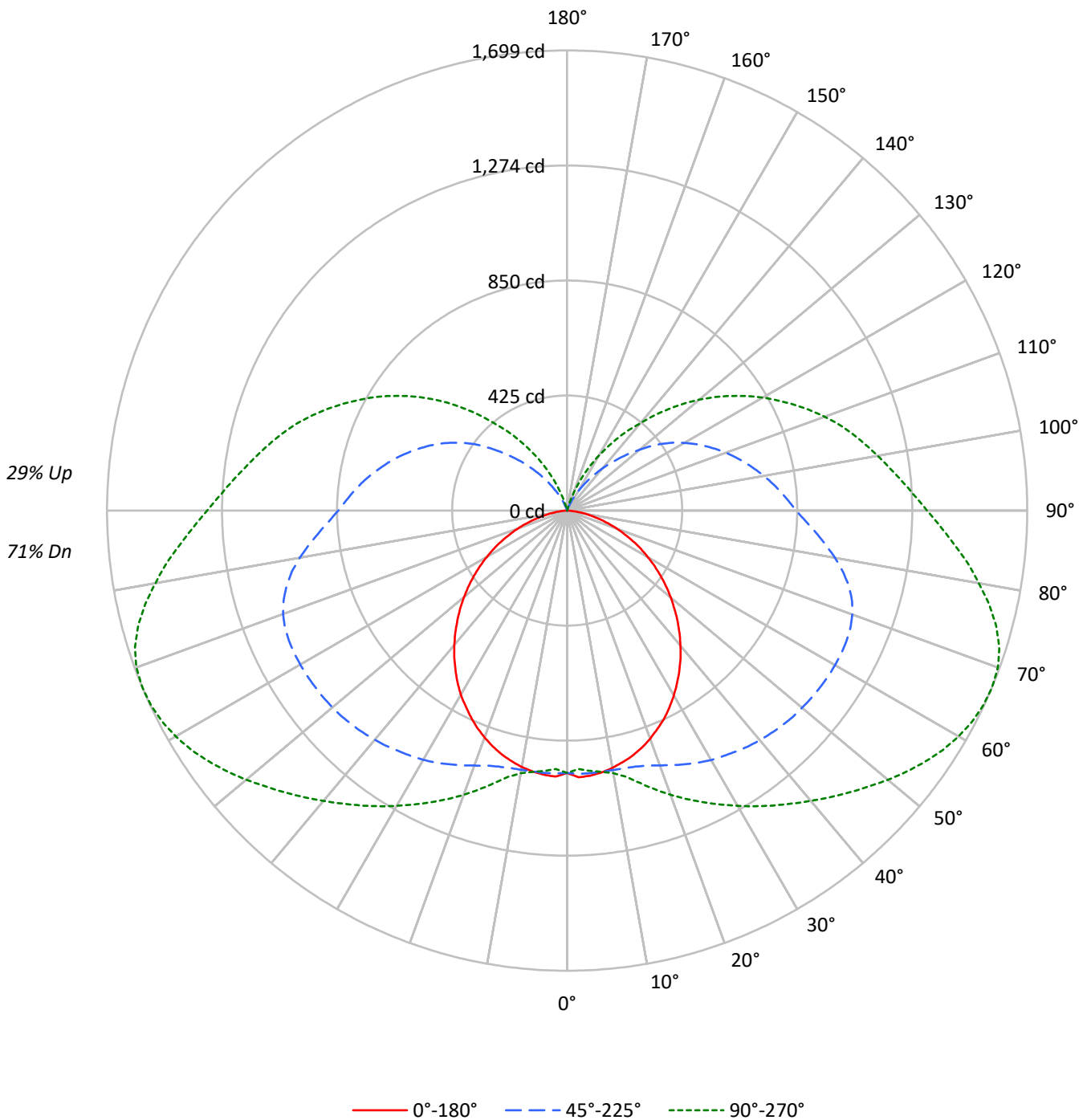
Input Watts (W): 66.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	15609	15609	15609
5°	15819	14069	15767
10°	15640	13212	15588
15°	15406	13026	15339
20°	15079	13174	14997
25°	14711	13357	14599
30°	14229	13623	14186
35°	13709	13964	13647
40°	13109	14392	13059
45°	12477	14938	12408
50°	11786	15603	11730
55°	11028	16328	10965
60°	10200	17029	10129
65°	9227	17621	9145
70°	8059	18033	7960
75°	6570	18068	6319
80°	4866	17767	4515
85°	2528	17411	2250



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	92.5	1.0
10°-20°	278.6	3.1
20°-30°	471.7	5.2
30°-40°	659.5	7.3
40°-50°	831.0	9.2
50°-60°	975.7	10.8
60°-70°	1066.9	11.9
70°-80°	1054.1	11.7
80°-90°	926.0	10.3
90°-100°	788.2	8.8
100°-110°	657.4	7.3
110°-120°	509.1	5.7
120°-130°	354.4	3.9
130°-140°	206.8	2.3
140°-150°	94.4	1.0
150°-160°	26.9	0.3
160°-170°	1.9	0.0
170°-180°	0.0	0.0
0°-30°	842.8	9.4
0°-40°	1502.3	16.7
0°-60°	3309.0	36.8
0°-90°	6356.1	70.7
90°-120°	1954.7	21.7
90°-150°	2610.3	29.0
90°-180°	2639.0	29.3
0°-180°	8995.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	969	969	969	969	969	
5°	982	974	965	972	979	93
15°	936	978	1041	978	932	264
25°	848	1033	1188	1033	841	390
35°	722	1086	1329	1084	719	451
45°	576	1122	1472	1121	573	444
55°	422	1139	1615	1136	419	377
65°	269	1138	1697	1134	267	267
75°	126	1077	1639	1072	121	135
85°	22	921	1435	919	19	28
90°	0	845	1329	845	0	1
95°	0	792	1242	793	0	0
105°	1	681	1092	684	0	1
115°	1	563	925	565	1	1
125°	2	431	738	431	1	1
135°	2	273	529	273	1	1
145°	2	140	328	138	2	1
155°	2	40	145	37	2	1
165°	2	4	10	0	2	0
175°	0	0	0	0	0	0
180°	0	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°	968.7	968.7	968.7	968.7	968.7	968.7	968.7	968.7	968.7	968.7	968.7
2.5°	985.6	984.8	980.8	974.3	971.9	970.3	969.5	967.1	966.3	967.9	972.7
5°	982.4	980.8	977.6	971.9	969.5	968.7	967.9	965.4	964.6	967.1	973.5
7.5°	975.1	974.3	971.1	965.4	964.6	963.0	963.0	961.4	961.4	965.4	972.7
10°	964.6	963.8	960.6	956.6	955.7	955.7	955.7	955.7	957.4	963.8	972.7
12.5°	950.9	950.9	948.5	945.2	946.1	946.1	946.9	948.5	953.3	963.0	974.3
15°	936.4	935.6	933.1	932.3	934.7	935.6	938.0	942.0	950.1	963.8	978.4
17.5°	917.8	917.8	915.4	916.2	921.0	923.4	927.5	934.7	947.7	966.3	987.3
20°	896.0	896.8	896.0	898.4	906.5	911.3	916.2	928.3	946.9	972.7	1001.0
22.5°	871.7	873.3	873.3	879.8	890.3	897.6	904.9	921.8	948.5	984.0	1017.2
25°	847.5	847.5	849.9	858.8	873.3	882.2	893.5	917.8	954.1	996.1	1033.3
27.5°	818.4	820.8	824.9	837.0	857.2	869.3	883.0	917.8	960.6	1008.3	1049.5
30°	787.7	790.1	796.6	813.6	839.4	854.8	874.2	917.8	966.3	1018.0	1063.2
32.5°	755.4	759.4	768.3	790.1	821.6	842.6	867.7	917.0	971.1	1026.0	1074.5
35°	722.3	726.3	740.0	765.9	807.1	831.3	860.4	914.5	973.5	1033.3	1085.8
37.5°	687.5	694.8	710.1	742.5	792.6	821.6	852.3	912.1	975.9	1039.0	1097.1
40°	650.4	657.6	679.4	718.2	778.0	808.7	842.6	908.9	977.6	1044.6	1106.8
42.5°	614.0	623.7	648.7	695.6	763.5	797.4	832.9	904.0	976.8	1048.7	1114.9
45°	576.0	587.3	618.0	673.8	747.3	783.7	821.6	897.6	975.1	1051.1	1122.2
47.5°	537.3	551.0	587.3	652.0	731.2	769.1	810.3	891.1	972.7	1052.7	1128.6
50°	499.3	515.4	556.6	630.2	713.4	753.8	796.6	883.8	968.7	1053.5	1132.7
52.5°	461.3	479.1	527.6	608.4	694.8	737.6	782.9	875.0	963.8	1052.7	1136.7
55°	421.7	441.1	498.5	584.9	675.4	719.8	767.5	863.6	956.6	1049.5	1139.1
57.5°	383.8	405.6	471.0	562.3	655.2	702.1	753.0	851.5	948.5	1047.0	1141.6
60°	345.0	370.0	442.7	536.4	634.2	682.7	735.2	837.8	938.8	1041.4	1141.6
62.5°	307.0	335.3	415.3	513.0	613.2	663.3	717.4	822.4	928.3	1035.7	1141.6
65°	269.0	301.3	387.0	487.2	589.8	642.3	697.2	806.3	915.4	1027.7	1138.3
67.5°	231.9	269.0	357.9	460.5	565.5	619.7	676.2	787.7	900.8	1017.2	1131.9
70°	195.5	236.7	328.8	432.2	540.5	593.8	652.8	767.5	883.8	1003.4	1120.6
72.5°	159.2	206.0	298.1	404.0	513.8	568.8	628.5	744.1	862.8	984.8	1102.8
75°	126.0	175.3	269.0	374.9	486.4	542.1	601.9	718.2	837.8	960.6	1076.9
77.5°	96.1	147.0	240.8	346.6	457.3	515.4	574.4	689.9	808.7	929.9	1043.0
80°	67.9	119.6	212.5	317.5	428.2	485.5	543.7	659.2	778.0	893.5	1004.2
82.5°	42.0	94.5	184.2	289.2	399.9	456.5	513.8	628.5	743.3	855.6	962.2
85°	21.8	71.1	157.5	262.6	372.4	428.2	484.7	597.0	707.7	816.8	921.0
87.5°	7.3	51.7	135.7	239.1	347.4	403.1	458.1	567.1	674.6	778.8	880.6
90°	0.0	38.8	119.6	220.6	326.4	380.5	435.5	540.5	645.5	748.1	845.1
92.5°	0.0	33.1	109.1	207.6	311.9	365.2	418.5	522.7	623.7	723.1	817.6
95°	0.0	26.7	100.2	194.7	296.5	349.0	401.5	503.3	602.7	699.6	791.7
97.5°	0.0	21.0	90.5	182.6	281.2	332.0	382.9	483.9	580.9	676.2	765.1
100°	0.8	16.2	80.0	167.2	265.0	315.1	364.4	462.9	557.5	649.6	737.6
102.5°	0.8	11.3	70.3	154.3	248.0	296.5	345.0	441.1	534.0	625.3	709.3
105°	0.8	8.1	60.6	140.6	231.9	278.7	326.4	420.1	510.6	598.7	681.1
107.5°	0.8	5.7	51.7	127.6	215.7	260.1	306.2	397.5	486.4	572.0	652.8
110°	0.8	4.0	43.6	113.9	197.9	242.4	286.8	374.9	461.3	544.5	623.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.8	3.2	35.5	101.0	180.2	223.8	266.6	352.2	436.3	517.1	593.8
115°	0.8	3.2	28.3	88.9	162.4	204.4	245.6	329.6	409.6	488.8	563.1
117.5°	0.8	2.4	21.8	76.8	146.2	185.0	224.6	304.6	383.8	460.5	532.4
120°	0.8	2.4	16.2	64.6	129.3	165.6	204.4	280.3	356.3	430.6	499.3
122.5°	1.6	2.4	12.1	54.1	113.9	147.0	184.2	256.1	327.2	399.1	467.0
125°	1.6	1.6	9.7	43.6	97.8	128.5	161.6	231.1	295.7	364.4	430.6
127.5°	1.6	1.6	7.3	33.1	81.6	109.9	139.8	204.4	267.4	328.8	391.8
130°	1.6	1.6	6.5	24.2	66.2	91.3	118.8	176.9	235.9	292.5	349.8
132.5°	1.6	1.6	4.8	17.8	52.5	75.1	99.4	151.1	205.2	260.1	311.9
135°	1.6	1.6	4.0	12.9	39.6	59.8	80.8	126.8	176.1	227.8	273.1
137.5°	1.6	1.6	4.0	9.7	29.1	45.2	63.8	105.8	149.5	195.5	236.7
140°	1.6	1.6	3.2	8.1	20.2	33.1	48.5	84.8	122.0	164.8	204.4
142.5°	1.6	1.6	2.4	6.5	14.5	23.4	34.7	65.4	98.6	135.7	170.5
145°	2.4	1.6	2.4	5.7	10.5	16.2	24.2	49.3	75.9	109.1	139.8
147.5°	1.6	1.6	1.6	4.0	8.1	11.3	16.2	33.9	57.4	84.8	110.7
150°	2.4	1.6	1.6	3.2	6.5	8.1	11.3	22.6	39.6	62.2	84.8
152.5°	2.4	1.6	1.6	3.2	4.8	6.5	8.1	14.5	25.9	42.0	60.6
155°	2.4	1.6	1.6	2.4	4.0	4.8	6.5	9.7	15.4	25.9	39.6
157.5°	2.4	2.4	2.4	2.4	3.2	4.0	4.8	7.3	8.9	14.5	22.6
160°	2.4	2.4	1.6	1.6	2.4	2.4	3.2	4.8	6.5	8.1	11.3
162.5°	2.4	2.4	2.4	1.6	1.6	1.6	2.4	3.2	4.0	5.7	7.3
165°	2.4	2.4	1.6	1.6	1.6	1.6	1.6	1.6	2.4	3.2	4.0
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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	968.7	968.7	968.7	968.7	968.7	968.7	968.7	968.7	968.7	968.7	968.7
2.5°	974.3	970.3	968.7	965.4	963.0	961.4	959.0	957.4	955.7	954.9	954.9
5°	975.1	971.1	969.5	967.1	966.3	964.6	963.0	964.6	963.8	964.6	963.8
7.5°	975.9	972.7	972.7	971.9	971.1	971.1	969.5	971.1	971.9	972.7	971.9
10°	978.4	977.6	979.2	980.0	980.0	980.0	980.0	981.6	984.8	984.8	984.0
12.5°	982.4	984.8	989.7	993.7	995.3	995.3	998.6	1001.8	1005.8	1006.6	1005.8
15°	990.5	997.8	1008.3	1017.2	1021.2	1023.6	1030.1	1035.7	1039.8	1041.4	1039.8
17.5°	1005.0	1018.8	1034.9	1047.9	1052.7	1055.9	1064.8	1070.5	1075.3	1079.4	1077.7
20°	1024.4	1043.0	1062.4	1077.7	1084.2	1088.2	1097.9	1108.4	1113.3	1116.5	1115.7
22.5°	1045.4	1067.2	1089.1	1107.6	1114.9	1119.8	1131.9	1141.6	1148.8	1152.9	1152.1
25°	1065.6	1090.7	1117.3	1137.5	1146.4	1152.1	1165.0	1176.3	1184.4	1187.6	1186.8
27.5°	1085.8	1114.9	1144.0	1167.4	1176.3	1183.6	1198.9	1211.0	1220.7	1223.2	1223.2
30°	1102.0	1135.9	1167.4	1194.1	1203.8	1213.5	1230.4	1246.6	1255.5	1258.7	1257.9
32.5°	1117.3	1155.3	1190.8	1220.7	1232.9	1242.6	1262.8	1280.5	1291.0	1294.3	1291.0
35°	1132.7	1174.7	1214.3	1246.6	1259.5	1271.6	1294.3	1314.5	1325.8	1329.0	1327.4
37.5°	1147.2	1194.1	1236.9	1272.4	1287.8	1300.7	1324.2	1348.4	1360.5	1363.7	1360.5
40°	1161.0	1211.9	1258.7	1297.5	1314.5	1329.8	1357.3	1381.5	1395.2	1399.3	1397.7
42.5°	1173.9	1229.6	1280.5	1323.3	1342.7	1358.9	1389.6	1416.3	1430.8	1435.6	1431.6
45°	1185.2	1247.4	1302.3	1348.4	1369.4	1388.0	1422.7	1451.8	1466.3	1472.0	1467.2
47.5°	1196.5	1263.6	1322.5	1373.4	1397.7	1417.1	1455.8	1486.5	1503.5	1508.4	1503.5
50°	1207.0	1279.7	1344.4	1399.3	1425.1	1447.0	1489.0	1522.1	1539.1	1546.3	1539.9
52.5°	1216.7	1295.1	1364.5	1423.5	1451.8	1476.0	1521.3	1556.8	1577.0	1581.9	1575.4
55°	1226.4	1309.6	1382.3	1446.1	1476.8	1502.7	1552.0	1589.1	1609.3	1615.0	1608.5
57.5°	1234.5	1322.5	1399.3	1468.0	1499.5	1529.4	1578.6	1617.4	1638.4	1644.9	1638.4
60°	1240.1	1333.0	1414.6	1485.7	1518.9	1549.6	1602.1	1640.9	1661.9	1668.3	1661.9
62.5°	1244.2	1341.1	1425.1	1499.5	1535.0	1566.5	1619.8	1657.8	1679.6	1686.1	1679.6
65°	1245.0	1344.4	1430.8	1508.4	1544.7	1576.2	1630.3	1668.3	1690.9	1696.6	1690.1
67.5°	1240.1	1341.1	1430.8	1510.0	1546.3	1578.6	1632.8	1670.7	1692.6	1699.0	1692.6
70°	1230.4	1331.4	1422.7	1503.5	1539.9	1572.2	1625.5	1664.3	1686.1	1692.6	1685.3
72.5°	1211.9	1314.5	1405.8	1488.2	1522.9	1554.4	1606.9	1644.9	1665.9	1673.2	1665.1
75°	1185.2	1287.8	1379.1	1458.3	1494.6	1523.7	1576.2	1613.4	1632.8	1639.2	1632.0
77.5°	1150.5	1253.9	1341.9	1420.3	1456.6	1483.3	1534.2	1570.6	1590.0	1595.6	1588.3
80°	1110.1	1212.7	1297.5	1375.1	1409.0	1434.0	1484.9	1519.7	1538.2	1543.9	1539.9
82.5°	1065.6	1165.8	1248.2	1324.2	1356.5	1381.5	1431.6	1465.5	1484.1	1492.2	1485.7
85°	1020.4	1116.5	1197.3	1270.8	1303.1	1329.8	1375.9	1409.8	1428.4	1434.8	1430.8
87.5°	975.1	1068.0	1146.4	1217.5	1247.4	1274.9	1320.9	1354.9	1373.4	1379.9	1375.1
90°	937.2	1026.0	1101.2	1171.5	1202.2	1227.2	1271.6	1304.0	1322.5	1329.0	1325.0
92.5°	906.5	991.3	1064.0	1128.6	1157.7	1184.4	1227.2	1258.7	1277.3	1283.0	1278.9
95°	877.4	959.8	1030.1	1093.1	1121.4	1147.2	1187.6	1218.3	1236.1	1241.7	1238.5
97.5°	849.9	929.1	997.0	1058.4	1087.4	1110.9	1149.6	1178.7	1196.5	1201.4	1196.5
100°	819.2	899.2	965.4	1026.0	1051.1	1074.5	1113.3	1142.4	1157.7	1164.2	1160.1
102.5°	790.1	866.9	932.3	992.1	1018.8	1042.2	1077.7	1106.0	1123.8	1127.8	1123.8
105°	760.2	834.6	898.4	957.4	984.0	1006.6	1042.2	1069.7	1086.6	1091.5	1087.4
107.5°	729.5	801.4	865.3	921.0	946.9	967.9	1004.2	1030.9	1045.4	1054.3	1047.9
110°	696.4	767.5	828.9	883.0	908.1	928.3	963.8	990.5	1004.2	1012.3	1006.6



TEST NUMBER: P201330

CATALOG NUMBER: 4LBLED-LD4-9-SYMW-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	665.7	732.8	791.7	844.3	867.7	887.9	922.6	948.5	961.4	969.5	963.8
115°	633.4	695.6	753.8	803.9	827.3	845.9	880.6	904.9	917.8	925.0	920.2
117.5°	598.7	659.2	714.2	763.5	785.3	803.9	837.0	861.2	873.3	879.0	874.2
120°	564.7	623.7	675.4	722.3	744.1	761.9	794.2	816.8	828.1	834.6	829.7
122.5°	529.2	586.5	633.4	680.3	700.5	717.4	746.5	770.7	781.2	786.9	783.7
125°	491.2	547.8	593.0	635.8	655.2	671.4	699.6	719.8	732.0	737.6	734.4
127.5°	451.6	505.7	551.8	591.4	610.0	627.7	651.2	673.8	681.9	688.3	685.1
130°	407.2	461.3	504.1	544.5	562.3	576.8	602.7	621.3	631.8	637.4	635.0
132.5°	363.6	413.6	458.9	495.2	512.2	527.6	551.0	568.8	583.3	584.1	580.9
135°	321.5	365.2	406.4	445.2	462.1	477.5	498.5	514.6	528.4	529.2	525.1
137.5°	281.2	321.5	357.1	393.4	411.2	427.4	446.8	462.1	475.0	477.5	471.8
140°	242.4	279.5	311.9	344.2	361.1	376.5	397.5	410.4	420.9	421.7	418.5
142.5°	205.2	239.1	267.4	297.3	312.7	326.4	349.8	362.7	372.4	374.9	370.0
145°	170.5	200.4	227.0	252.9	265.8	278.7	302.2	317.5	325.6	328.0	323.2
147.5°	137.3	162.4	185.8	209.2	220.6	232.7	252.1	271.5	278.7	280.3	276.3
150°	106.6	127.6	148.7	168.0	177.7	188.2	205.2	223.0	232.7	234.3	231.1
152.5°	78.4	96.1	113.1	129.3	137.3	145.4	160.0	176.9	189.0	189.9	186.6
155°	53.3	67.9	81.6	93.7	101.0	107.5	118.8	131.7	144.6	145.4	143.0
157.5°	32.3	42.0	53.3	63.0	67.9	73.5	81.6	91.3	102.6	105.0	102.6
160°	16.2	21.8	28.3	34.7	38.8	42.8	46.9	54.9	61.4	67.1	63.8
162.5°	8.1	9.7	11.3	14.5	16.2	18.6	21.8	25.0	28.3	33.9	29.9
165°	4.8	5.7	6.5	6.5	7.3	7.3	7.3	7.3	7.3	10.5	7.3
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: P201330

CATALOG NUMBER: 4LBLED-LD4-9-SYMW-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	968.7	968.7	968.7	968.7	968.7	968.7	968.7	968.7	968.7	968.7	968.7
2.5°	957.4	959.0	962.2	963.8	965.4	967.1	970.3	975.1	971.1	967.1	967.9
5°	963.8	963.8	964.6	967.1	967.1	967.9	971.1	975.9	971.9	966.3	966.3
7.5°	971.9	971.1	971.9	972.7	971.9	971.9	973.5	975.9	971.1	964.6	963.0
10°	983.2	980.8	980.0	980.8	980.0	977.6	978.4	978.4	971.9	962.2	958.2
12.5°	1003.4	999.4	996.1	995.3	992.9	988.9	986.4	983.2	973.5	962.2	954.1
15°	1036.5	1030.1	1023.6	1021.2	1017.2	1007.5	999.4	992.1	978.4	962.2	950.9
17.5°	1073.7	1065.6	1056.7	1053.5	1047.9	1034.1	1020.4	1006.6	987.3	964.6	948.5
20°	1109.3	1099.6	1089.1	1083.4	1077.7	1060.8	1044.6	1026.8	1001.8	971.9	947.7
22.5°	1144.8	1133.5	1118.9	1114.1	1106.8	1087.4	1068.0	1047.9	1018.0	982.4	949.3
25°	1179.5	1166.6	1152.9	1144.8	1136.7	1114.9	1091.5	1067.2	1033.3	994.5	954.9
27.5°	1214.3	1199.7	1182.8	1173.9	1165.8	1141.6	1114.9	1087.4	1049.5	1005.8	962.2
30°	1248.2	1232.1	1211.9	1202.2	1192.5	1165.0	1134.3	1103.6	1062.4	1015.5	967.1
32.5°	1282.1	1264.4	1241.7	1230.4	1219.1	1187.6	1153.7	1118.9	1073.7	1024.4	971.1
35°	1315.3	1295.9	1270.8	1257.1	1245.0	1211.0	1173.1	1134.3	1084.2	1031.7	973.5
37.5°	1349.2	1327.4	1299.9	1284.6	1270.8	1233.7	1191.7	1148.0	1095.5	1037.3	975.9
40°	1383.1	1359.7	1329.0	1312.8	1295.9	1255.5	1210.2	1161.8	1105.2	1043.0	976.8
42.5°	1417.9	1392.0	1358.1	1340.3	1322.5	1277.3	1227.2	1173.9	1113.3	1047.0	975.9
45°	1452.6	1423.5	1387.2	1367.0	1347.6	1298.3	1244.2	1184.4	1120.6	1049.5	974.3
47.5°	1487.3	1456.6	1417.1	1395.2	1371.8	1319.3	1260.3	1195.7	1127.0	1050.3	972.7
50°	1522.9	1489.8	1447.0	1422.7	1398.5	1339.5	1276.5	1205.4	1131.1	1051.1	968.7
52.5°	1557.6	1522.1	1476.0	1450.2	1421.9	1359.7	1291.8	1215.1	1134.3	1050.3	963.0
55°	1589.1	1552.0	1503.5	1476.0	1444.5	1378.3	1305.6	1223.2	1135.9	1047.9	955.7
57.5°	1618.2	1580.3	1529.4	1498.7	1468.0	1396.1	1318.5	1232.1	1137.5	1043.8	947.7
60°	1640.9	1602.9	1549.6	1518.9	1485.7	1410.6	1329.0	1236.9	1137.5	1038.2	937.2
62.5°	1657.8	1619.8	1566.5	1534.2	1499.5	1422.7	1337.1	1241.7	1137.5	1032.5	926.7
65°	1668.3	1631.2	1576.2	1543.9	1508.4	1428.4	1341.1	1242.6	1134.3	1024.4	913.7
67.5°	1669.9	1632.8	1577.8	1546.3	1510.0	1428.4	1338.7	1238.5	1127.8	1013.9	899.2
70°	1662.7	1625.5	1571.4	1539.1	1503.5	1421.1	1329.8	1228.8	1116.5	1000.2	882.2
72.5°	1644.1	1606.1	1553.6	1520.5	1485.7	1404.1	1311.2	1211.0	1097.9	980.8	862.0
75°	1611.8	1574.6	1522.9	1492.2	1456.6	1376.7	1283.0	1185.2	1072.1	956.6	837.0
77.5°	1568.9	1532.6	1481.7	1451.0	1417.9	1339.5	1247.4	1150.5	1040.6	926.7	807.9
80°	1518.1	1483.3	1433.2	1403.3	1371.0	1295.1	1204.6	1110.1	1001.8	891.1	775.6
82.5°	1463.9	1430.0	1381.5	1350.8	1320.1	1246.6	1160.1	1066.4	960.6	853.1	740.8
85°	1411.4	1375.1	1326.6	1298.3	1267.6	1195.7	1114.1	1021.2	918.6	814.4	706.9
87.5°	1356.5	1320.9	1273.3	1246.6	1217.5	1144.8	1067.2	976.8	879.0	779.6	673.8
90°	1306.4	1271.6	1225.6	1198.9	1171.5	1101.2	1025.2	939.6	845.1	748.9	646.3
92.5°	1260.3	1228.0	1184.4	1158.5	1131.9	1064.8	992.1	908.9	817.6	724.7	624.5
95°	1220.7	1189.2	1148.8	1123.8	1096.3	1032.5	961.4	879.8	792.6	702.1	604.3
97.5°	1181.2	1151.3	1111.7	1087.4	1061.6	999.4	930.7	852.3	766.7	677.0	582.5
100°	1144.8	1115.7	1075.3	1053.5	1028.5	968.7	900.8	824.1	740.0	652.0	559.1
102.5°	1109.3	1080.2	1041.4	1019.6	995.3	935.6	869.3	793.4	711.8	626.9	536.4
105°	1072.9	1044.6	1005.8	984.0	959.8	901.6	837.0	763.5	683.5	601.1	513.0
107.5°	1033.3	1005.8	968.7	946.9	924.2	866.1	803.9	732.0	655.2	574.4	488.8
110°	992.9	965.4	931.5	908.1	886.3	829.7	769.1	700.5	625.3	547.0	463.7



TEST NUMBER: P201330

CATALOG NUMBER: 4LBLED-LD4-9-SYMW-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	950.9	924.2	891.1	869.3	846.7	792.6	734.4	668.1	595.4	518.7	437.9
115°	908.1	881.4	848.3	826.5	806.3	754.6	698.0	635.0	564.7	490.4	412.0
117.5°	861.2	837.8	806.3	786.9	765.9	714.2	661.7	601.1	534.0	460.5	385.4
120°	817.6	795.0	764.3	743.3	724.7	675.4	625.3	566.3	500.1	431.4	357.9
122.5°	771.5	747.3	719.0	701.3	681.1	635.8	587.3	530.8	466.2	398.3	328.0
125°	723.1	700.5	673.0	656.0	637.4	594.6	548.6	492.0	430.6	365.2	297.3
127.5°	673.8	652.8	626.1	610.8	593.0	551.0	506.6	451.6	390.2	328.8	265.8
130°	623.7	602.7	578.5	562.3	545.3	505.7	462.1	408.0	349.8	292.5	235.1
132.5°	571.2	551.0	526.8	512.2	496.9	458.9	414.5	361.9	310.2	258.5	205.2
135°	517.1	498.5	476.7	462.9	447.6	408.8	366.8	319.1	273.1	225.4	176.1
137.5°	464.5	447.6	426.6	412.8	395.9	359.5	322.4	279.5	237.5	193.1	147.0
140°	412.8	397.5	377.3	361.9	347.4	313.5	279.5	240.8	202.8	162.4	121.2
142.5°	364.4	350.6	328.0	313.5	299.7	269.8	239.9	203.6	169.7	133.3	97.8
145°	316.7	304.6	279.5	266.6	255.3	228.6	198.7	168.9	138.2	106.6	75.9
147.5°	270.6	256.1	232.7	221.4	210.9	187.4	162.4	134.9	109.9	82.4	55.7
150°	226.2	208.4	188.2	178.5	169.7	149.5	127.6	105.0	83.2	59.8	38.8
152.5°	180.2	161.6	147.8	138.2	130.1	113.9	96.1	76.8	59.0	40.4	24.2
155°	133.3	120.4	107.5	102.6	95.3	81.6	67.1	51.7	37.2	24.2	13.7
157.5°	92.1	82.4	74.3	69.5	63.8	53.3	41.2	29.9	21.0	12.9	6.5
160°	55.7	49.3	43.6	39.6	35.5	28.3	20.2	13.7	8.9	4.0	2.4
162.5°	25.0	21.0	18.6	16.2	13.7	10.5	6.5	3.2	1.6	0.8	0.8
165°	4.8	3.2	2.4	1.6	0.8	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: P201330

CATALOG NUMBER: 4LBLED-LD4-9-SYMW-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	968.7	968.7	968.7	968.7	968.7	968.7	968.7	968.7
2.5°	968.7	969.5	970.3	970.3	972.7	976.8	982.4	983.2
5°	966.3	967.1	967.1	967.9	970.3	973.5	978.4	979.2
7.5°	962.2	962.2	962.2	962.2	963.8	967.1	971.1	971.9
10°	956.6	954.9	954.1	953.3	954.1	957.4	960.6	961.4
12.5°	950.1	946.1	944.4	943.6	943.6	944.4	947.7	947.7
15°	942.8	936.4	933.9	932.3	929.1	929.1	932.3	932.3
17.5°	935.6	926.7	921.8	918.6	913.7	912.9	914.5	912.9
20°	929.1	915.4	908.9	903.2	896.0	893.5	893.5	891.1
22.5°	922.6	904.0	895.2	887.1	875.8	871.7	869.3	867.7
25°	918.6	891.9	880.6	870.9	855.6	846.7	844.3	841.0
27.5°	917.8	882.2	866.9	854.8	833.8	823.3	816.8	812.8
30°	917.8	872.5	852.3	835.4	809.5	793.4	786.9	785.3
32.5°	917.0	865.3	841.0	819.2	786.1	765.1	755.4	753.0
35°	914.5	858.0	829.7	803.1	762.7	736.0	722.3	719.0
37.5°	911.3	849.1	819.2	788.5	738.4	706.1	689.1	684.3
40°	908.1	840.2	806.3	773.2	714.2	675.4	653.6	647.9
42.5°	902.4	830.5	795.0	758.6	691.6	644.7	619.7	610.8
45°	896.8	819.2	781.2	742.5	668.9	613.2	581.7	572.8
47.5°	889.5	807.1	767.5	724.7	647.9	582.5	547.0	535.6
50°	881.4	795.0	752.2	707.7	625.3	552.6	509.0	496.9
52.5°	872.5	781.2	736.8	689.9	602.7	524.3	473.4	458.1
55°	861.2	765.9	719.0	669.8	579.3	495.2	437.1	419.3
57.5°	849.1	750.5	702.1	651.2	555.8	467.8	401.5	381.3
60°	834.6	732.8	681.1	630.2	531.6	439.5	366.0	342.6
62.5°	819.2	715.0	662.5	608.4	507.4	412.0	331.2	304.6
65°	803.1	694.8	641.5	585.7	481.5	382.9	297.3	266.6
67.5°	783.7	673.0	618.0	561.5	454.8	353.9	264.2	229.4
70°	764.3	649.6	592.2	535.6	427.4	324.8	232.7	193.1
72.5°	740.8	624.5	566.3	509.0	399.1	296.5	202.0	156.7
75°	715.0	598.7	539.7	481.5	370.0	266.6	171.3	121.2
77.5°	687.5	570.4	512.2	453.2	342.6	238.3	143.0	91.3
80°	658.4	540.5	483.1	424.1	313.5	210.1	115.5	63.0
82.5°	626.1	511.4	454.0	395.1	286.0	182.6	90.5	38.8
85°	595.4	482.3	426.6	368.4	259.3	155.1	67.9	19.4
87.5°	565.5	455.7	401.5	344.2	236.7	134.1	49.3	5.7
90°	541.3	433.8	380.5	324.8	218.9	118.8	37.2	0.0
92.5°	521.9	416.9	364.4	310.2	206.0	108.3	31.5	0.0
95°	503.3	399.1	349.0	294.9	193.1	99.4	25.0	0.0
97.5°	483.1	382.1	332.0	279.5	180.2	89.7	20.2	0.0
100°	462.9	363.6	315.1	264.2	165.6	80.0	14.5	0.0
102.5°	441.1	344.2	296.5	247.2	152.7	69.5	9.7	0.0
105°	420.1	324.8	278.7	230.3	139.0	60.6	6.5	0.0
107.5°	397.5	305.4	260.1	214.1	125.2	50.9	4.0	0.0
110°	374.9	286.0	241.6	197.1	112.3	42.0	3.2	0.0



TEST NUMBER: P201330

CATALOG NUMBER: 4LBLED-LD4-9-SYMW-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	352.2	265.8	223.0	179.4	99.4	33.9	2.4	0.8
115°	328.0	244.8	203.6	161.6	86.4	26.7	2.4	0.8
117.5°	303.8	223.0	185.0	144.6	74.3	20.2	1.6	0.8
120°	278.7	203.6	164.8	128.5	63.0	14.5	1.6	0.8
122.5°	254.5	183.4	146.2	111.5	51.7	11.3	1.6	0.8
125°	229.4	160.0	127.6	96.1	41.2	8.9	1.6	0.8
127.5°	202.8	138.2	108.3	79.2	31.5	6.5	1.6	0.8
130°	175.3	116.3	89.7	64.6	22.6	4.8	1.6	0.8
132.5°	149.5	97.8	72.7	50.9	16.2	4.0	1.6	0.8
135°	126.0	79.2	57.4	38.0	11.3	3.2	0.8	0.8
137.5°	103.4	63.0	43.6	27.5	8.1	2.4	1.6	0.8
140°	83.2	47.7	31.5	19.4	5.7	1.6	1.6	0.8
142.5°	64.6	33.9	21.8	12.9	4.0	1.6	0.8	0.8
145°	47.7	22.6	14.5	8.1	3.2	1.6	1.6	1.6
147.5°	32.3	15.4	8.9	5.7	2.4	1.6	1.6	0.8
150°	21.0	9.7	5.7	4.0	1.6	1.6	1.6	0.8
152.5°	12.9	5.7	3.2	2.4	1.6	1.6	1.6	0.8
155°	6.5	3.2	2.4	1.6	1.6	1.6	1.6	1.6
157.5°	3.2	2.4	1.6	1.6	1.6	1.6	1.6	1.6
160°	1.6	1.6	0.8	0.8	1.6	1.6	1.6	1.6
162.5°	0.8	0.8	0.8	0.8	1.6	1.6	1.6	1.6
165°	0.0	0.8	0.8	0.8	1.6	1.6	1.6	1.6
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)