

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: P201333

Luminaire Tested: **8LBLED-LD4-9-SYMW-UNV-L835-CD1-U**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P201333  
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-LD4-9-SYMW-UNV-L835-CD1-U  
Description: 8 ft. Low Bay Linear, 9000 lm, Wht Sym lens, 3.3.5K  
Light Source: (784) 3500K CCT, 80 CRI LEDS  
2UT217098A8354C  
Ballast/Driver: OSRAM  
(OTI85W01440CC)

**Summary**

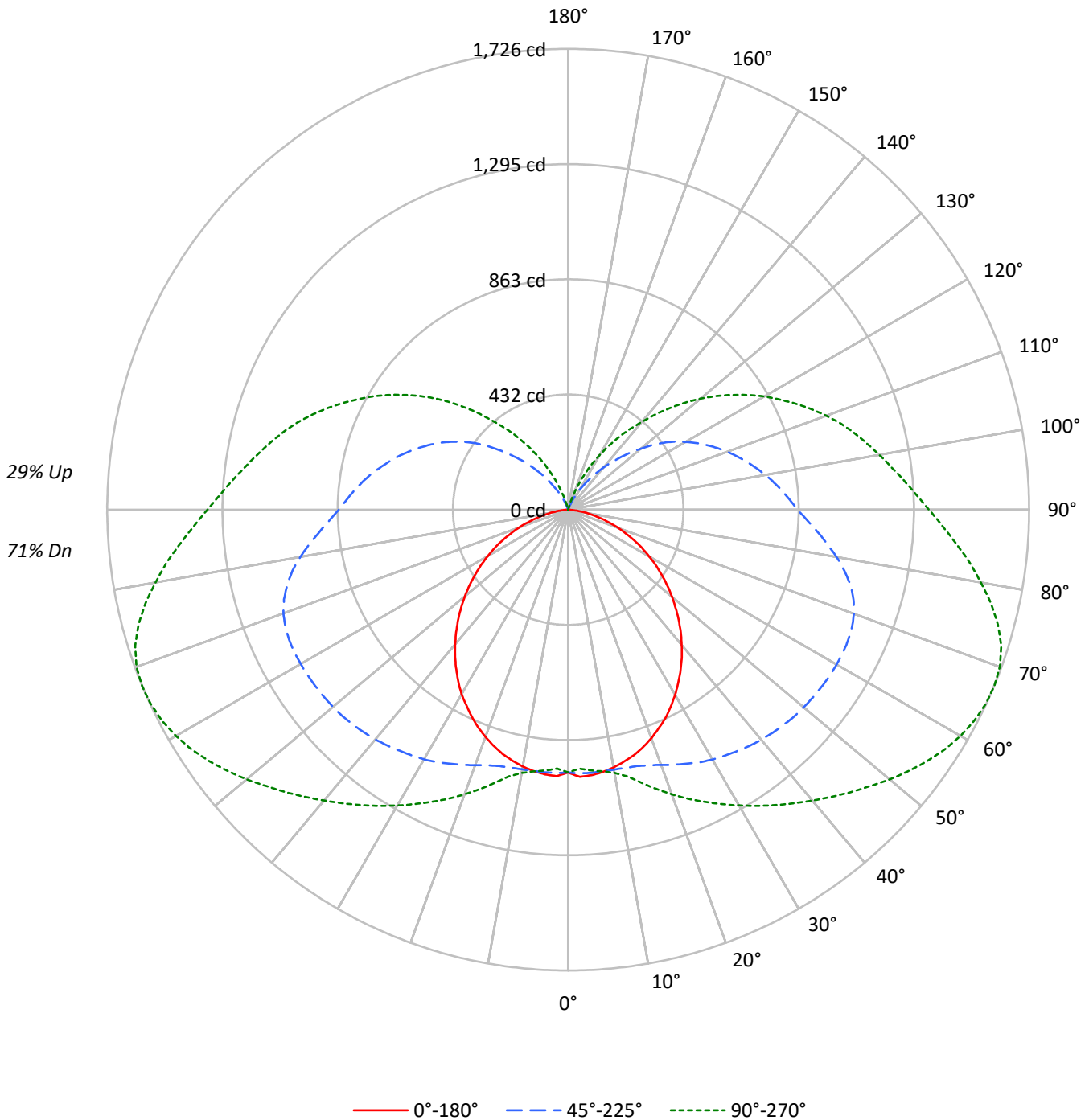
Lumens per Lamp: N/A  
Luminaire Lumens: 9140.5 lumens  
Efficiency: N/A  
Efficacy: 141.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 2.12 / 1.93  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 8' x H: 0.21')  
CIE Type: Semi-Direct  
  
Input Watts (W): 64.5  
Input Voltage (V): NR  
Input 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°	7930	7930	7930
5°	8056	7149	8029
10°	7983	6713	7956
15°	7882	6618	7848
20°	7732	6694	7691
25°	7564	6787	7506
30°	7336	6922	7314
35°	7089	7095	7057
40°	6803	7312	6777
45°	6500	7590	6464
50°	6167	7928	6138
55°	5803	8296	5771
60°	5404	8652	5367
65°	4937	8953	4892
70°	4369	9162	4314
75°	3635	9180	3493
80°	2790	9027	2588
85°	1582	8846	1404



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	94.0	1.0
10°-20°	283.1	3.1
20°-30°	479.3	5.2
30°-40°	670.2	7.3
40°-50°	844.4	9.2
50°-60°	991.5	10.8
60°-70°	1084.1	11.9
70°-80°	1071.1	11.7
80°-90°	941.0	10.3
90°-100°	801.0	8.8
100°-110°	668.0	7.3
110°-120°	517.4	5.7
120°-130°	360.1	3.9
130°-140°	210.2	2.3
140°-150°	95.9	1.0
150°-160°	27.4	0.3
160°-170°	2.0	0.0
170°-180°	0.0	0.0
0°-30°	856.4	9.4
0°-40°	1526.6	16.7
0°-60°	3362.5	36.8
0°-90°	6458.7	70.7
90°-120°	1986.3	21.7
90°-150°	2652.5	29.0
90°-180°	2682.0	29.3
0°-180°	9140.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	984	984	984	984	984	
5°	998	989	980	988	995	95
15°	952	994	1058	994	947	268
25°	861	1050	1207	1050	855	396
35°	734	1103	1350	1102	731	459
45°	585	1140	1496	1139	582	451
55°	428	1158	1641	1154	426	384
65°	273	1157	1724	1153	271	271
75°	128	1094	1666	1089	123	137
85°	22	936	1458	933	20	28
90°	0	859	1350	859	0	1
95°	0	804	1262	805	0	0
105°	1	692	1109	694	0	1
115°	1	572	940	574	1	1
125°	2	438	750	438	1	1
135°	2	278	538	278	1	1
145°	2	142	333	140	2	1
155°	2	40	148	38	2	1
165°	2	4	11	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°	984.3	984.3	984.3	984.3	984.3	984.3	984.3	984.3	984.3	984.3	984.3
2.5°	1001.6	1000.7	996.6	990.1	987.6	986.0	985.1	982.7	981.9	983.5	988.4
5°	998.3	996.6	993.3	987.6	985.1	984.3	983.5	981.0	980.2	982.7	989.2
7.5°	990.9	990.1	986.8	981.0	980.2	978.6	978.6	976.9	976.9	981.0	988.4
10°	980.2	979.4	976.1	972.0	971.2	971.2	971.2	971.2	972.8	979.4	988.4
12.5°	966.3	966.3	963.8	960.5	961.3	961.3	962.2	963.8	968.7	978.6	990.1
15°	951.5	950.7	948.2	947.4	949.8	950.7	953.1	957.2	965.4	979.4	994.2
17.5°	932.6	932.6	930.1	931.0	935.9	938.3	942.5	949.8	963.0	981.9	1003.2
20°	910.4	911.3	910.4	912.9	921.1	926.0	931.0	943.3	962.2	988.4	1017.2
22.5°	885.8	887.4	887.4	894.0	904.7	912.1	919.5	936.7	963.8	999.9	1033.6
25°	861.2	861.2	863.6	872.7	887.4	896.5	908.0	932.6	969.5	1012.2	1050.0
27.5°	831.6	834.1	838.2	850.5	871.0	883.3	897.3	932.6	976.1	1024.5	1066.4
30°	800.4	802.9	809.5	826.7	853.0	868.6	888.3	932.6	981.9	1034.4	1080.4
32.5°	767.6	771.7	780.7	802.9	834.9	856.3	881.7	931.8	986.8	1042.6	1091.9
35°	733.9	738.0	752.0	778.3	820.1	844.8	874.3	929.3	989.2	1050.0	1103.4
37.5°	698.6	706.0	721.6	754.5	805.4	834.9	866.1	926.9	991.7	1055.7	1114.8
40°	660.9	668.3	690.4	729.8	790.6	821.8	856.3	923.6	993.3	1061.5	1124.7
42.5°	623.9	633.8	659.2	706.8	775.8	810.3	846.4	918.6	992.5	1065.6	1132.9
45°	585.3	596.8	628.0	684.7	759.4	796.3	834.9	912.1	990.9	1068.1	1140.3
47.5°	545.9	559.9	596.8	662.5	743.0	781.5	823.4	905.5	988.4	1069.7	1146.9
50°	507.3	523.8	565.6	640.3	724.9	765.9	809.5	898.1	984.3	1070.5	1151.0
52.5°	468.8	486.8	536.1	618.2	706.0	749.5	795.5	889.1	979.4	1069.7	1155.1
55°	428.5	448.2	506.5	594.4	686.3	731.5	779.9	877.6	972.0	1066.4	1157.5
57.5°	390.0	412.1	478.6	571.4	665.8	713.4	765.1	865.3	963.8	1064.0	1160.0
60°	350.5	376.0	449.9	545.1	644.4	693.7	747.1	851.3	953.9	1058.2	1160.0
62.5°	312.0	340.7	422.0	521.3	623.1	674.0	729.0	835.7	943.3	1052.5	1160.0
65°	273.4	306.2	393.2	495.0	599.3	652.7	708.5	819.3	930.1	1044.2	1156.7
67.5°	235.6	273.4	363.7	467.9	574.7	629.7	687.1	800.4	915.4	1033.6	1150.2
70°	198.7	240.5	334.1	439.2	549.2	603.4	663.3	779.9	898.1	1019.6	1138.7
72.5°	161.7	209.3	302.9	410.5	522.1	577.9	638.7	756.1	876.8	1000.7	1120.6
75°	128.1	178.1	273.4	380.9	494.2	550.9	611.6	729.8	851.3	976.1	1094.3
77.5°	97.7	149.4	244.6	352.2	464.7	523.8	583.7	701.1	821.8	944.9	1059.8
80°	69.0	121.5	215.9	322.6	435.1	493.4	552.5	669.9	790.6	908.0	1020.4
82.5°	42.7	96.1	187.2	293.9	406.4	463.8	522.1	638.7	755.3	869.4	977.8
85°	22.2	72.2	160.1	266.8	378.5	435.1	492.6	606.7	719.2	830.0	935.9
87.5°	7.4	52.5	137.9	243.0	353.0	409.7	465.5	576.3	685.5	791.4	894.8
90°	0.0	39.4	121.5	224.1	331.7	386.7	442.5	549.2	655.9	760.2	858.7
92.5°	0.0	33.7	110.8	211.0	316.9	371.1	425.3	531.2	633.8	734.8	830.8
95°	0.0	27.1	101.8	197.8	301.3	354.7	408.0	511.5	612.4	710.9	804.5
97.5°	0.0	21.3	91.9	185.5	285.7	337.4	389.1	491.7	590.3	687.1	777.4
100°	0.8	16.4	81.3	169.9	269.3	320.2	370.2	470.4	566.5	660.0	749.5
102.5°	0.8	11.5	71.4	156.8	252.0	301.3	350.5	448.2	542.6	635.4	720.8
105°	0.8	8.2	61.6	142.8	235.6	283.2	331.7	426.9	518.8	608.3	692.1
107.5°	0.8	5.7	52.5	129.7	219.2	264.3	311.1	403.9	494.2	581.2	663.3
110°	0.8	4.1	44.3	115.8	201.1	246.3	291.4	380.9	468.8	553.3	633.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.8	3.3	36.1	102.6	183.1	227.4	270.9	357.9	443.3	525.4	603.4
115°	0.8	3.3	28.7	90.3	165.0	207.7	249.6	334.9	416.2	496.7	572.2
117.5°	0.8	2.5	22.2	78.0	148.6	188.0	228.2	309.5	390.0	467.9	541.0
120°	0.8	2.5	16.4	65.7	131.4	168.3	207.7	284.9	362.0	437.6	507.3
122.5°	1.6	2.5	12.3	55.0	115.8	149.4	187.2	260.2	332.5	405.5	474.5
125°	1.6	1.6	9.9	44.3	99.3	130.5	164.2	234.8	300.5	370.2	437.6
127.5°	1.6	1.6	7.4	33.7	82.9	111.6	142.0	207.7	271.7	334.1	398.2
130°	1.6	1.6	6.6	24.6	67.3	92.8	120.7	179.8	239.7	297.2	355.5
132.5°	1.6	1.6	4.9	18.1	53.4	76.3	101.0	153.5	208.5	264.3	316.9
135°	1.6	1.6	4.1	13.1	40.2	60.8	82.1	128.9	179.0	231.5	277.5
137.5°	1.6	1.6	4.1	9.9	29.6	46.0	64.9	107.5	151.9	198.7	240.5
140°	1.6	1.6	3.3	8.2	20.5	33.7	49.3	86.2	124.0	167.5	207.7
142.5°	1.6	1.6	2.5	6.6	14.8	23.8	35.3	66.5	100.2	137.9	173.2
145°	2.5	1.6	2.5	5.7	10.7	16.4	24.6	50.1	77.2	110.8	142.0
147.5°	1.6	1.6	1.6	4.1	8.2	11.5	16.4	34.5	58.3	86.2	112.5
150°	2.5	1.6	1.6	3.3	6.6	8.2	11.5	23.0	40.2	63.2	86.2
152.5°	2.5	1.6	1.6	3.3	4.9	6.6	8.2	14.8	26.3	42.7	61.6
155°	2.5	1.6	1.6	2.5	4.1	4.9	6.6	9.9	15.6	26.3	40.2
157.5°	2.5	2.5	2.5	2.5	3.3	4.1	4.9	7.4	9.0	14.8	23.0
160°	2.5	2.5	1.6	1.6	2.5	2.5	3.3	4.9	6.6	8.2	11.5
162.5°	2.5	2.5	2.5	1.6	1.6	1.6	2.5	3.3	4.1	5.7	7.4
165°	2.5	2.5	1.6	1.6	1.6	1.6	1.6	1.6	2.5	3.3	4.1
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°	984.3	984.3	984.3	984.3	984.3	984.3	984.3	984.3	984.3	984.3	984.3
2.5°	990.1	986.0	984.3	981.0	978.6	976.9	974.5	972.8	971.2	970.4	970.4
5°	990.9	986.8	985.1	982.7	981.9	980.2	978.6	980.2	979.4	980.2	979.4
7.5°	991.7	988.4	988.4	987.6	986.8	986.8	985.1	986.8	987.6	988.4	987.6
10°	994.2	993.3	995.0	995.8	995.8	995.8	995.8	997.5	1000.7	1000.7	999.9
12.5°	998.3	1000.7	1005.7	1009.8	1011.4	1011.4	1014.7	1018.0	1022.1	1022.9	1022.1
15°	1006.5	1013.9	1024.5	1033.6	1037.7	1040.1	1046.7	1052.5	1056.6	1058.2	1056.6
17.5°	1021.3	1035.2	1051.6	1064.8	1069.7	1073.0	1082.0	1087.8	1092.7	1096.8	1095.1
20°	1041.0	1059.8	1079.5	1095.1	1101.7	1105.8	1115.7	1126.3	1131.3	1134.6	1133.7
22.5°	1062.3	1084.5	1106.6	1125.5	1132.9	1137.8	1150.2	1160.0	1167.4	1171.5	1170.7
25°	1082.8	1108.3	1135.4	1155.9	1164.9	1170.7	1183.8	1195.3	1203.5	1206.8	1206.0
27.5°	1103.4	1132.9	1162.5	1186.3	1195.3	1202.7	1218.3	1230.6	1240.5	1242.9	1242.9
30°	1119.8	1154.3	1186.3	1213.4	1223.2	1233.1	1250.3	1266.7	1275.8	1279.0	1278.2
32.5°	1135.4	1174.0	1210.1	1240.5	1252.8	1262.6	1283.1	1301.2	1311.9	1315.2	1311.9
35°	1151.0	1193.7	1233.9	1266.7	1279.9	1292.2	1315.2	1335.7	1347.2	1350.5	1348.8
37.5°	1165.7	1213.4	1256.9	1293.0	1308.6	1321.7	1345.5	1370.2	1382.5	1385.8	1382.5
40°	1179.7	1231.4	1279.0	1318.4	1335.7	1351.3	1379.2	1403.8	1417.8	1421.9	1420.2
42.5°	1192.8	1249.5	1301.2	1344.7	1364.4	1380.8	1412.0	1439.1	1453.9	1458.8	1454.7
45°	1204.3	1267.5	1323.4	1370.2	1391.5	1410.4	1445.7	1475.2	1490.0	1495.8	1490.8
47.5°	1215.8	1284.0	1343.9	1395.6	1420.2	1439.9	1479.4	1510.5	1527.8	1532.7	1527.8
50°	1226.5	1300.4	1366.1	1421.9	1448.2	1470.3	1513.0	1546.7	1563.9	1571.3	1564.7
52.5°	1236.4	1316.0	1386.6	1446.5	1475.2	1499.9	1545.8	1582.0	1602.5	1607.4	1600.9
55°	1246.2	1330.8	1404.6	1469.5	1500.7	1527.0	1577.0	1614.8	1635.3	1641.1	1634.5
57.5°	1254.4	1343.9	1421.9	1491.7	1523.7	1554.1	1604.1	1643.5	1664.9	1671.5	1664.9
60°	1260.2	1354.6	1437.5	1509.7	1543.4	1574.6	1627.9	1667.3	1688.7	1695.3	1688.7
62.5°	1264.3	1362.8	1448.2	1523.7	1559.8	1591.8	1646.0	1684.6	1706.8	1713.3	1706.8
65°	1265.1	1366.1	1453.9	1532.7	1569.7	1601.7	1656.7	1695.3	1718.2	1724.0	1717.4
67.5°	1260.2	1362.8	1453.9	1534.4	1571.3	1604.1	1659.1	1697.7	1719.9	1726.5	1719.9
70°	1250.3	1352.9	1445.7	1527.8	1564.7	1597.6	1651.8	1691.2	1713.3	1719.9	1712.5
72.5°	1231.4	1335.7	1428.5	1512.2	1547.5	1579.5	1632.9	1671.5	1692.8	1700.2	1692.0
75°	1204.3	1308.6	1401.4	1481.8	1518.8	1548.3	1601.7	1639.4	1659.1	1665.7	1658.3
77.5°	1169.0	1274.1	1363.6	1443.2	1480.2	1507.3	1559.0	1595.9	1615.6	1621.4	1614.0
80°	1128.0	1232.2	1318.4	1397.3	1431.7	1457.2	1508.9	1544.2	1563.1	1568.8	1564.7
82.5°	1082.8	1184.6	1268.4	1345.5	1378.4	1403.8	1454.7	1489.2	1508.1	1516.3	1509.7
85°	1036.9	1134.6	1216.6	1291.4	1324.2	1351.3	1398.1	1432.6	1451.4	1458.0	1453.9
87.5°	990.9	1085.3	1164.9	1237.2	1267.5	1295.5	1342.3	1376.7	1395.6	1402.2	1397.3
90°	952.3	1042.6	1119.0	1190.4	1221.6	1247.0	1292.2	1325.0	1343.9	1350.5	1346.4
92.5°	921.1	1007.3	1081.2	1146.9	1176.4	1203.5	1247.0	1279.0	1297.9	1303.7	1299.6
95°	891.6	975.3	1046.7	1110.7	1139.5	1165.7	1206.8	1238.0	1256.1	1261.8	1258.5
97.5°	863.6	944.1	1013.1	1075.4	1105.0	1128.8	1168.2	1197.8	1215.8	1220.8	1215.8
100°	832.4	913.7	981.0	1042.6	1068.1	1091.9	1131.3	1160.8	1176.4	1183.0	1178.9
102.5°	802.9	880.9	947.4	1008.1	1035.2	1059.0	1095.1	1123.9	1141.9	1146.0	1141.9
105°	772.5	848.0	912.9	972.8	999.9	1022.9	1059.0	1086.9	1104.2	1109.1	1105.0
107.5°	741.3	814.4	879.2	935.9	962.2	983.5	1020.4	1047.5	1062.3	1071.3	1064.8
110°	707.7	779.9	842.3	897.3	922.7	943.3	979.4	1006.5	1020.4	1028.7	1022.9





TEST NUMBER: P201333

CATALOG NUMBER: 8LBLED-LD4-9-SYMW-UNV-L835-CD1-U

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	676.5	744.6	804.5	857.9	881.7	902.2	937.5	963.8	976.9	985.1	979.4
115°	643.6	706.8	765.9	816.8	840.7	859.5	894.8	919.5	932.6	940.0	935.1
117.5°	608.3	669.9	725.7	775.8	798.0	816.8	850.5	875.1	887.4	893.2	888.3
120°	573.8	633.8	686.3	733.9	756.1	774.2	807.0	830.0	841.5	848.0	843.1
122.5°	537.7	596.0	643.6	691.2	711.8	729.0	758.6	783.2	793.9	799.6	796.3
125°	499.1	556.6	602.6	646.1	665.8	682.2	710.9	731.5	743.8	749.5	746.2
127.5°	458.9	513.9	560.7	600.9	619.8	637.9	661.7	684.7	692.9	699.4	696.2
130°	413.8	468.8	512.3	553.3	571.4	586.2	612.4	631.3	642.0	647.7	645.3
132.5°	369.4	420.3	466.3	503.2	520.5	536.1	559.9	577.9	592.7	593.5	590.3
135°	326.7	371.1	412.9	452.3	469.6	485.2	506.5	522.9	536.9	537.7	533.6
137.5°	285.7	326.7	362.9	399.8	417.9	434.3	454.0	469.6	482.7	485.2	479.4
140°	246.3	284.0	316.9	349.7	367.0	382.6	403.9	417.0	427.7	428.5	425.3
142.5°	208.5	243.0	271.7	302.1	317.7	331.7	355.5	368.6	378.5	380.9	376.0
145°	173.2	203.6	230.7	257.0	270.1	283.2	307.0	322.6	330.8	333.3	328.4
147.5°	139.6	165.0	188.8	212.6	224.1	236.4	256.1	275.8	283.2	284.9	280.8
150°	108.4	129.7	151.1	170.8	180.6	191.3	208.5	226.6	236.4	238.1	234.8
152.5°	79.6	97.7	114.9	131.4	139.6	147.8	162.5	179.8	192.1	192.9	189.6
155°	54.2	69.0	82.9	95.2	102.6	109.2	120.7	133.8	147.0	147.8	145.3
157.5°	32.8	42.7	54.2	64.0	69.0	74.7	82.9	92.8	104.3	106.7	104.3
160°	16.4	22.2	28.7	35.3	39.4	43.5	47.6	55.8	62.4	68.1	64.9
162.5°	8.2	9.9	11.5	14.8	16.4	18.9	22.2	25.4	28.7	34.5	30.4
165°	4.9	5.7	6.6	6.6	7.4	7.4	7.4	7.4	7.4	10.7	7.4
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



TEST NUMBER: P201333

CATALOG NUMBER: 8LBLED-LD4-9-SYMW-UNV-L835-CD1-U

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	984.3	984.3	984.3	984.3	984.3	984.3	984.3	984.3	984.3	984.3	984.3
2.5°	972.8	974.5	977.8	979.4	981.0	982.7	986.0	990.9	986.8	982.7	983.5
5°	979.4	979.4	980.2	982.7	982.7	983.5	986.8	991.7	987.6	981.9	981.9
7.5°	987.6	986.8	987.6	988.4	987.6	987.6	989.2	991.7	986.8	980.2	978.6
10°	999.1	996.6	995.8	996.6	995.8	993.3	994.2	994.2	987.6	977.8	973.6
12.5°	1019.6	1015.5	1012.2	1011.4	1008.9	1004.8	1002.4	999.1	989.2	977.8	969.5
15°	1053.3	1046.7	1040.1	1037.7	1033.6	1023.7	1015.5	1008.1	994.2	977.8	966.3
17.5°	1091.0	1082.8	1073.8	1070.5	1064.8	1050.8	1036.9	1022.9	1003.2	980.2	963.8
20°	1127.2	1117.3	1106.6	1100.9	1095.1	1077.9	1061.5	1043.4	1018.0	987.6	963.0
22.5°	1163.3	1151.8	1137.0	1132.1	1124.7	1105.0	1085.3	1064.8	1034.4	998.3	964.6
25°	1198.6	1185.5	1171.5	1163.3	1155.1	1132.9	1109.1	1084.5	1050.0	1010.6	970.4
27.5°	1233.9	1219.1	1201.9	1192.8	1184.6	1160.0	1132.9	1105.0	1066.4	1022.1	977.8
30°	1268.4	1251.9	1231.4	1221.6	1211.7	1183.8	1152.6	1121.4	1079.5	1031.9	982.7
32.5°	1302.8	1284.8	1261.8	1250.3	1238.8	1206.8	1172.3	1137.0	1091.0	1041.0	986.8
35°	1336.5	1316.8	1291.4	1277.4	1265.1	1230.6	1192.0	1152.6	1101.7	1048.4	989.2
37.5°	1371.0	1348.8	1320.9	1305.3	1291.4	1253.6	1210.9	1166.6	1113.2	1054.1	991.7
40°	1405.5	1381.7	1350.5	1334.0	1316.8	1275.8	1229.8	1180.5	1123.1	1059.8	992.5
42.5°	1440.8	1414.5	1380.0	1362.0	1343.9	1297.9	1247.0	1192.8	1131.3	1064.0	991.7
45°	1476.1	1446.5	1409.6	1389.0	1369.3	1319.3	1264.3	1203.5	1138.7	1066.4	990.1
47.5°	1511.4	1480.2	1439.9	1417.8	1394.0	1340.6	1280.7	1215.0	1145.2	1067.2	988.4
50°	1547.5	1513.8	1470.3	1445.7	1421.1	1361.1	1297.1	1224.9	1149.3	1068.1	984.3
52.5°	1582.8	1546.7	1499.9	1473.6	1444.9	1381.7	1312.7	1234.7	1152.6	1067.2	978.6
55°	1614.8	1577.0	1527.8	1499.9	1467.9	1400.5	1326.7	1242.9	1154.3	1064.8	971.2
57.5°	1644.4	1605.8	1554.1	1522.9	1491.7	1418.6	1339.8	1251.9	1155.9	1060.7	963.0
60°	1667.3	1628.8	1574.6	1543.4	1509.7	1433.4	1350.5	1256.9	1155.9	1054.9	952.3
62.5°	1684.6	1646.0	1591.8	1559.0	1523.7	1445.7	1358.7	1261.8	1155.9	1049.2	941.6
65°	1695.3	1657.5	1601.7	1568.8	1532.7	1451.4	1362.8	1262.6	1152.6	1041.0	928.5
67.5°	1696.9	1659.1	1603.3	1571.3	1534.4	1451.4	1360.3	1258.5	1146.0	1030.3	913.7
70°	1689.5	1651.8	1596.7	1563.9	1527.8	1444.1	1351.3	1248.7	1134.6	1016.3	896.5
72.5°	1670.6	1632.0	1578.7	1545.0	1509.7	1426.8	1332.4	1230.6	1115.7	996.6	876.0
75°	1637.8	1600.0	1547.5	1516.3	1480.2	1398.9	1303.7	1204.3	1089.4	972.0	850.5
77.5°	1594.3	1557.3	1505.6	1474.4	1440.8	1361.1	1267.5	1169.0	1057.4	941.6	820.9
80°	1542.6	1507.3	1456.4	1426.0	1393.2	1316.0	1224.0	1128.0	1018.0	905.5	788.1
82.5°	1487.6	1453.1	1403.8	1372.6	1341.4	1266.7	1178.9	1083.7	976.1	866.9	752.8
85°	1434.2	1397.3	1348.0	1319.3	1288.1	1215.0	1132.1	1037.7	933.4	827.5	718.3
87.5°	1378.4	1342.3	1293.8	1266.7	1237.2	1163.3	1084.5	992.5	893.2	792.2	684.7
90°	1327.5	1292.2	1245.4	1218.3	1190.4	1119.0	1041.8	954.8	858.7	761.0	656.8
92.5°	1280.7	1247.8	1203.5	1177.2	1150.2	1082.0	1008.1	923.6	830.8	736.4	634.6
95°	1240.5	1208.4	1167.4	1141.9	1114.0	1049.2	976.9	894.0	805.4	713.4	614.1
97.5°	1200.2	1169.9	1129.6	1105.0	1078.7	1015.5	945.7	866.1	779.1	688.0	591.9
100°	1163.3	1133.7	1092.7	1070.5	1045.1	984.3	915.4	837.4	752.0	662.5	568.1
102.5°	1127.2	1097.6	1058.2	1036.0	1011.4	950.7	883.3	806.2	723.3	637.1	545.1
105°	1090.2	1061.5	1022.1	999.9	975.3	916.2	850.5	775.8	694.5	610.8	521.3
107.5°	1050.0	1022.1	984.3	962.2	939.2	880.1	816.8	743.8	665.8	583.7	496.7
110°	1008.9	981.0	946.6	922.7	900.6	843.1	781.5	711.8	635.4	555.8	471.2



TEST NUMBER: P201333

CATALOG NUMBER: 8LBLED-LD4-9-SYMW-UNV-L835-CD1-U

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	966.3	939.2	905.5	883.3	860.4	805.4	746.2	678.9	605.0	527.0	445.0
115°	922.7	895.7	862.0	839.8	819.3	766.8	709.3	645.3	573.8	498.3	418.7
117.5°	875.1	851.3	819.3	799.6	778.3	725.7	672.4	610.8	542.6	467.9	391.6
120°	830.8	807.8	776.6	755.3	736.4	686.3	635.4	575.5	508.2	438.4	363.7
122.5°	784.0	759.4	730.6	712.6	692.1	646.1	596.8	539.4	473.7	404.7	333.3
125°	734.8	711.8	683.9	666.6	647.7	604.2	557.4	500.0	437.6	371.1	302.1
127.5°	684.7	663.3	636.2	620.6	602.6	559.9	514.7	458.9	396.5	334.1	270.1
130°	633.8	612.4	587.8	571.4	554.1	513.9	469.6	414.6	355.5	297.2	238.9
132.5°	580.4	559.9	535.3	520.5	504.9	466.3	421.1	367.8	315.2	262.7	208.5
135°	525.4	506.5	484.4	470.4	454.8	415.4	372.7	324.3	277.5	229.0	179.0
137.5°	472.0	454.8	433.5	419.5	402.3	365.3	327.6	284.0	241.4	196.2	149.4
140°	419.5	403.9	383.4	367.8	353.0	318.5	284.0	244.6	206.1	165.0	123.1
142.5°	370.2	356.3	333.3	318.5	304.6	274.2	243.8	206.9	172.4	135.5	99.3
145°	321.8	309.5	284.0	270.9	259.4	232.3	202.0	171.6	140.4	108.4	77.2
147.5°	275.0	260.2	236.4	224.9	214.3	190.5	165.0	137.1	111.6	83.7	56.6
150°	229.9	211.8	191.3	181.4	172.4	151.9	129.7	106.7	84.6	60.8	39.4
152.5°	183.1	164.2	150.2	140.4	132.2	115.8	97.7	78.0	59.9	41.0	24.6
155°	135.5	122.3	109.2	104.3	96.9	82.9	68.1	52.5	37.8	24.6	14.0
157.5°	93.6	83.7	75.5	70.6	64.9	54.2	41.9	30.4	21.3	13.1	6.6
160°	56.6	50.1	44.3	40.2	36.1	28.7	20.5	14.0	9.0	4.1	2.5
162.5°	25.4	21.3	18.9	16.4	14.0	10.7	6.6	3.3	1.6	0.8	0.8
165°	4.9	3.3	2.5	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: P201333

CATALOG NUMBER: 8LBLED-LD4-9-SYMW-UNV-L835-CD1-U

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	984.3	984.3	984.3	984.3	984.3	984.3	984.3	984.3
2.5°	984.3	985.1	986.0	986.0	988.4	992.5	998.3	999.1
5°	981.9	982.7	982.7	983.5	986.0	989.2	994.2	995.0
7.5°	977.8	977.8	977.8	977.8	979.4	982.7	986.8	987.6
10°	972.0	970.4	969.5	968.7	969.5	972.8	976.1	976.9
12.5°	965.4	961.3	959.7	958.9	958.9	959.7	963.0	963.0
15°	958.0	951.5	949.0	947.4	944.1	944.1	947.4	947.4
17.5°	950.7	941.6	936.7	933.4	928.5	927.7	929.3	927.7
20°	944.1	930.1	923.6	917.8	910.4	908.0	908.0	905.5
22.5°	937.5	918.6	909.6	901.4	889.9	885.8	883.3	881.7
25°	933.4	906.3	894.8	885.0	869.4	860.4	857.9	854.6
27.5°	932.6	896.5	880.9	868.6	847.2	836.5	830.0	825.9
30°	932.6	886.6	866.1	848.9	822.6	806.2	799.6	798.0
32.5°	931.8	879.2	854.6	832.4	798.8	777.4	767.6	765.1
35°	929.3	871.8	843.1	816.0	775.0	747.9	733.9	730.6
37.5°	926.0	862.8	832.4	801.2	750.3	717.5	700.3	695.3
40°	922.7	853.8	819.3	785.6	725.7	686.3	664.1	658.4
42.5°	917.0	843.9	807.8	770.9	702.7	655.1	629.7	620.6
45°	911.3	832.4	793.9	754.5	679.7	623.1	591.1	582.1
47.5°	903.9	820.1	779.9	736.4	658.4	591.9	555.8	544.3
50°	895.7	807.8	764.3	719.2	635.4	561.5	517.2	504.9
52.5°	886.6	793.9	748.7	701.1	612.4	532.8	481.1	465.5
55°	875.1	778.3	730.6	680.6	588.6	503.2	444.1	426.1
57.5°	862.8	762.7	713.4	661.7	564.8	475.3	408.0	387.5
60°	848.0	744.6	692.1	640.3	540.2	446.6	371.9	348.1
62.5°	832.4	726.5	673.2	618.2	515.6	418.7	336.6	309.5
65°	816.0	706.0	651.8	595.2	489.3	389.1	302.1	270.9
67.5°	796.3	683.9	628.0	570.6	462.2	359.6	268.5	233.1
70°	776.6	660.0	601.8	544.3	434.3	330.0	236.4	196.2
72.5°	752.8	634.6	575.5	517.2	405.5	301.3	205.2	159.3
75°	726.5	608.3	548.4	489.3	376.0	270.9	174.0	123.1
77.5°	698.6	579.6	520.5	460.6	348.1	242.2	145.3	92.8
80°	669.1	549.2	490.9	431.0	318.5	213.4	117.4	64.0
82.5°	636.2	519.7	461.4	401.4	290.6	185.5	91.9	39.4
85°	605.0	490.1	433.5	374.4	263.5	157.6	69.0	19.7
87.5°	574.7	463.0	408.0	349.7	240.5	136.3	50.1	5.7
90°	550.0	440.9	386.7	330.0	222.5	120.7	37.8	0.0
92.5°	530.3	423.6	370.2	315.2	209.3	110.0	32.0	0.0
95°	511.5	405.5	354.7	299.6	196.2	101.0	25.4	0.0
97.5°	490.9	388.3	337.4	284.0	183.1	91.1	20.5	0.0
100°	470.4	369.4	320.2	268.5	168.3	81.3	14.8	0.0
102.5°	448.2	349.7	301.3	251.2	155.2	70.6	9.9	0.0
105°	426.9	330.0	283.2	234.0	141.2	61.6	6.6	0.0
107.5°	403.9	310.3	264.3	217.6	127.2	51.7	4.1	0.0
110°	380.9	290.6	245.5	200.3	114.1	42.7	3.3	0.0



TEST NUMBER: P201333

CATALOG NUMBER: 8LBLED-LD4-9-SYMW-UNV-L835-CD1-U

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	357.9	270.1	226.6	182.3	101.0	34.5	2.5	0.8
115°	333.3	248.7	206.9	164.2	87.8	27.1	2.5	0.8
117.5°	308.7	226.6	188.0	147.0	75.5	20.5	1.6	0.8
120°	283.2	206.9	167.5	130.5	64.0	14.8	1.6	0.8
122.5°	258.6	186.4	148.6	113.3	52.5	11.5	1.6	0.8
125°	233.1	162.5	129.7	97.7	41.9	9.0	1.6	0.8
127.5°	206.1	140.4	110.0	80.5	32.0	6.6	1.6	0.8
130°	178.1	118.2	91.1	65.7	23.0	4.9	1.6	0.8
132.5°	151.9	99.3	73.9	51.7	16.4	4.1	1.6	0.8
135°	128.1	80.5	58.3	38.6	11.5	3.3	0.8	0.8
137.5°	105.1	64.0	44.3	27.9	8.2	2.5	1.6	0.8
140°	84.6	48.4	32.0	19.7	5.7	1.6	1.6	0.8
142.5°	65.7	34.5	22.2	13.1	4.1	1.6	0.8	0.8
145°	48.4	23.0	14.8	8.2	3.3	1.6	1.6	1.6
147.5°	32.8	15.6	9.0	5.7	2.5	1.6	1.6	0.8
150°	21.3	9.9	5.7	4.1	1.6	1.6	1.6	0.8
152.5°	13.1	5.7	3.3	2.5	1.6	1.6	1.6	0.8
155°	6.6	3.3	2.5	1.6	1.6	1.6	1.6	1.6
157.5°	3.3	2.5	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)