

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: P201297

Luminaire Tested: **4LBLED-LD4-9-SYMW-UNV-L840-CD1-U**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P201297  
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-L840-CD1-U  
Description: 4 ft. Low Bay Linear, 9000 lm, Wht Sym lens, 4K  
Light Source: (392) 4000K CCT, 80 CRI LEDS  
2UT217098A8404C  
Ballast/Driver: OSRAM  
(OTI85W01480CC)

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9103.0 lumens  
Efficiency: N/A  
Efficacy: 136.7 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

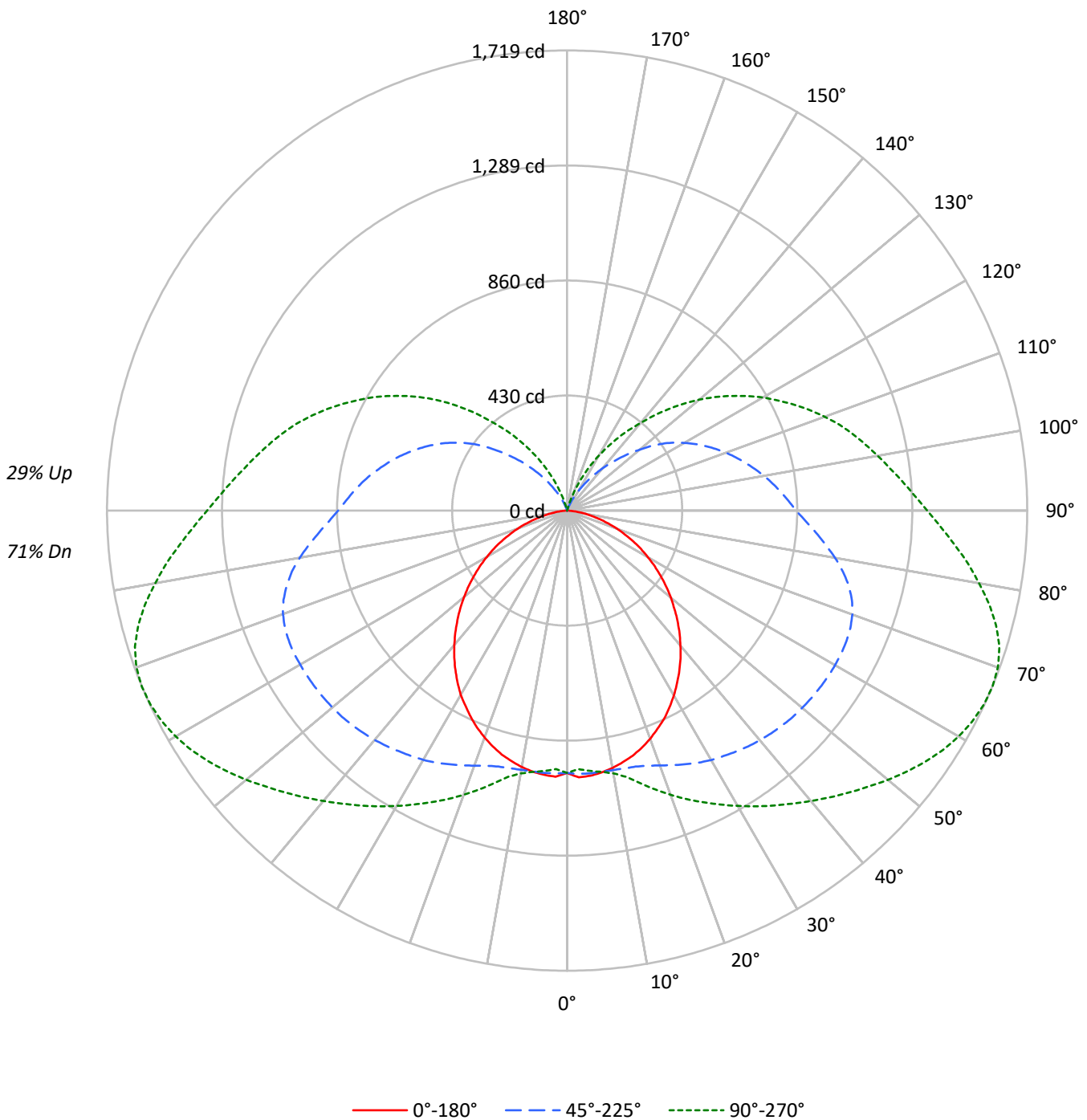
Input Watts (W): 66.6  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	15796	15796	15796
5°	16009	14239	15955
10°	15828	13370	15774
15°	15591	13182	15523
20°	15259	13332	15177
25°	14887	13517	14774
30°	14399	13787	14356
35°	13873	14131	13810
40°	13266	14564	13216
45°	12627	15117	12557
50°	11928	15790	11869
55°	11161	16523	11096
60°	10321	17233	10250
65°	9341	17832	9255
70°	8158	18249	8055
75°	6648	18285	6392
80°	4923	17980	4572
85°	2563	17619	2273



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	93.6	1.0
10°-20°	282.0	3.1
20°-30°	477.3	5.2
30°-40°	667.4	7.3
40°-50°	840.9	9.2
50°-60°	987.4	10.8
60°-70°	1079.7	11.9
70°-80°	1066.7	11.7
80°-90°	937.1	10.3
90°-100°	797.7	8.8
100°-110°	665.2	7.3
110°-120°	515.2	5.7
120°-130°	358.6	3.9
130°-140°	209.3	2.3
140°-150°	95.5	1.0
150°-160°	27.3	0.3
160°-170°	1.9	0.0
170°-180°	0.0	0.0
0°-30°	852.9	9.4
0°-40°	1520.3	16.7
0°-60°	3348.7	36.8
0°-90°	6432.2	70.7
90°-120°	1978.1	21.7
90°-150°	2641.6	29.0
90°-180°	2671.0	29.3
0°-180°	9103.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	980	980	980	980	980	
5°	994	985	976	984	991	94
15°	948	990	1054	990	944	267
25°	858	1046	1202	1046	851	394
35°	731	1099	1345	1097	728	457
45°	583	1136	1490	1134	580	449
55°	427	1153	1634	1150	424	382
65°	272	1152	1717	1148	270	270
75°	128	1090	1659	1085	123	137
85°	22	932	1452	930	20	28
90°	0	855	1345	855	0	1
95°	0	801	1257	802	0	0
105°	1	689	1104	692	0	1
115°	1	570	936	572	1	1
125°	2	436	746	436	1	1
135°	2	276	536	276	1	1
145°	2	141	332	140	2	1
155°	2	40	147	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°	980.3	980.3	980.3	980.3	980.3	980.3	980.3	980.3	980.3	980.3	980.3
2.5°	997.4	996.6	992.5	986.0	983.5	981.9	981.1	978.6	977.8	979.5	984.4
5°	994.2	992.5	989.3	983.5	981.1	980.3	979.5	977.0	976.2	978.6	985.2
7.5°	986.8	986.0	982.7	977.0	976.2	974.6	974.6	972.9	972.9	977.0	984.4
10°	976.2	975.4	972.1	968.0	967.2	967.2	967.2	967.2	968.8	975.4	984.4
12.5°	962.3	962.3	959.8	956.6	957.4	957.4	958.2	959.8	964.7	974.6	986.0
15°	947.6	946.8	944.3	943.5	945.9	946.8	949.2	953.3	961.5	975.4	990.1
17.5°	928.8	928.8	926.3	927.1	932.0	934.5	938.6	945.9	959.0	977.8	999.1
20°	906.7	907.5	906.7	909.1	917.3	922.2	927.1	939.4	958.2	984.4	1013.0
22.5°	882.2	883.8	883.8	890.3	901.0	908.3	915.7	932.9	959.8	995.8	1029.3
25°	857.6	857.6	860.1	869.1	883.8	892.8	904.2	928.8	965.6	1008.1	1045.7
27.5°	828.2	830.7	834.7	847.0	867.5	879.7	893.6	928.8	972.1	1020.3	1062.0
30°	797.1	799.6	806.1	823.3	849.5	865.0	884.6	928.8	977.8	1030.1	1075.9
32.5°	764.4	768.5	777.5	799.6	831.5	852.7	878.1	928.0	982.7	1038.3	1087.4
35°	730.9	735.0	748.9	775.1	816.8	841.3	870.7	925.5	985.2	1045.7	1098.8
37.5°	695.8	703.1	718.7	751.4	802.0	831.5	862.5	923.0	987.6	1051.4	1110.3
40°	658.2	665.5	687.6	726.8	787.3	818.4	852.7	919.8	989.3	1057.1	1120.1
42.5°	621.4	631.2	656.5	703.9	772.6	807.0	842.9	914.9	988.5	1061.2	1128.3
45°	582.9	594.4	625.4	681.9	756.3	793.1	831.5	908.3	986.8	1063.7	1135.6
47.5°	543.7	557.6	594.4	659.8	739.9	778.3	820.0	901.8	984.4	1065.3	1142.2
50°	505.3	521.6	563.3	637.7	721.9	762.8	806.1	894.4	980.3	1066.1	1146.2
52.5°	466.8	484.8	533.9	615.6	703.1	746.4	792.2	885.4	975.4	1065.3	1150.3
55°	426.8	446.4	504.4	591.9	683.5	728.5	776.7	874.0	968.0	1062.0	1152.8
57.5°	388.3	410.4	476.6	569.0	663.1	710.5	762.0	861.7	959.8	1059.6	1155.2
60°	349.1	374.5	448.0	542.9	641.8	690.9	744.0	847.8	950.0	1053.9	1155.2
62.5°	310.7	339.3	420.2	519.2	620.5	671.2	726.0	832.3	939.4	1048.1	1155.2
65°	272.3	305.0	391.6	493.0	596.8	650.0	705.6	815.9	926.3	1040.0	1152.0
67.5°	234.6	272.3	362.2	466.0	572.3	627.1	684.3	797.1	911.6	1029.3	1145.4
70°	197.9	239.6	332.8	437.4	547.0	600.9	660.6	776.7	894.4	1015.4	1134.0
72.5°	161.1	208.5	301.7	408.8	520.0	575.6	636.1	753.0	873.2	996.6	1116.0
75°	127.5	177.4	272.3	379.4	492.2	548.6	609.1	726.8	847.8	972.1	1089.8
77.5°	97.3	148.8	243.6	350.7	462.7	521.6	581.3	698.2	818.4	941.0	1055.5
80°	68.7	121.0	215.0	321.3	433.3	491.4	550.2	667.1	787.3	904.2	1016.3
82.5°	42.5	95.7	186.4	292.7	404.7	461.9	520.0	636.1	752.2	865.8	973.7
85°	22.1	71.9	159.4	265.7	376.9	433.3	490.5	604.2	716.2	826.6	932.0
87.5°	7.4	52.3	137.4	242.0	351.6	408.0	463.6	573.9	682.7	788.1	891.2
90°	0.0	39.2	121.0	223.2	330.3	385.1	440.7	547.0	653.2	757.1	855.2
92.5°	0.0	33.5	110.4	210.1	315.6	369.5	423.5	529.0	631.2	731.7	827.4
95°	0.0	27.0	101.4	197.0	300.1	353.2	406.3	509.4	609.9	708.0	801.2
97.5°	0.0	21.3	91.6	184.8	284.5	336.0	387.5	489.7	587.8	684.3	774.2
100°	0.8	16.4	80.9	169.2	268.2	318.9	368.7	468.5	564.1	657.3	746.4
102.5°	0.8	11.4	71.1	156.2	251.0	300.1	349.1	446.4	540.4	632.8	717.8
105°	0.8	8.2	61.3	142.3	234.6	282.1	330.3	425.1	516.7	605.8	689.2
107.5°	0.8	5.7	52.3	129.2	218.3	263.3	309.9	402.2	492.2	578.8	660.6
110°	0.8	4.1	44.1	115.3	200.3	245.3	290.2	379.4	466.8	551.0	631.2



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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	36.0	102.2	182.3	226.5	269.8	356.5	441.5	523.3	600.9
115°	0.8	3.3	28.6	89.9	164.3	206.8	248.5	333.6	414.5	494.6	569.9
117.5°	0.8	2.5	22.1	77.7	148.0	187.2	227.3	308.2	388.3	466.0	538.8
120°	0.8	2.5	16.4	65.4	130.8	167.6	206.8	283.7	360.6	435.8	505.3
122.5°	1.6	2.5	12.3	54.8	115.3	148.8	186.4	259.2	331.1	403.9	472.6
125°	1.6	1.6	9.8	44.1	98.9	130.0	163.5	233.8	299.2	368.7	435.8
127.5°	1.6	1.6	7.4	33.5	82.6	111.2	141.4	206.8	270.6	332.8	396.5
130°	1.6	1.6	6.5	24.5	67.0	92.4	120.2	179.0	238.7	296.0	354.0
132.5°	1.6	1.6	4.9	18.0	53.1	76.0	100.6	152.9	207.7	263.3	315.6
135°	1.6	1.6	4.1	13.1	40.1	60.5	81.8	128.4	178.2	230.6	276.3
137.5°	1.6	1.6	4.1	9.8	29.4	45.8	64.6	107.1	151.3	197.9	239.6
140°	1.6	1.6	3.3	8.2	20.4	33.5	49.1	85.8	123.5	166.8	206.8
142.5°	1.6	1.6	2.5	6.5	14.7	23.7	35.2	66.2	99.7	137.4	172.5
145°	2.5	1.6	2.5	5.7	10.6	16.4	24.5	49.9	76.9	110.4	141.4
147.5°	1.6	1.6	1.6	4.1	8.2	11.4	16.4	34.3	58.0	85.8	112.0
150°	2.5	1.6	1.6	3.3	6.5	8.2	11.4	22.9	40.1	63.0	85.8
152.5°	2.5	1.6	1.6	3.3	4.9	6.5	8.2	14.7	26.2	42.5	61.3
155°	2.5	1.6	1.6	2.5	4.1	4.9	6.5	9.8	15.5	26.2	40.1
157.5°	2.5	2.5	2.5	2.5	3.3	4.1	4.9	7.4	9.0	14.7	22.9
160°	2.5	2.5	1.6	1.6	2.5	2.5	3.3	4.9	6.5	8.2	11.4
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°	980.3	980.3	980.3	980.3	980.3	980.3	980.3	980.3	980.3	980.3	980.3
2.5°	986.0	981.9	980.3	977.0	974.6	972.9	970.5	968.8	967.2	966.4	966.4
5°	986.8	982.7	981.1	978.6	977.8	976.2	974.6	976.2	975.4	976.2	975.4
7.5°	987.6	984.4	984.4	983.5	982.7	982.7	981.1	982.7	983.5	984.4	983.5
10°	990.1	989.3	990.9	991.7	991.7	991.7	991.7	993.4	996.6	996.6	995.8
12.5°	994.2	996.6	1001.5	1005.6	1007.3	1007.3	1010.5	1013.8	1017.9	1018.7	1017.9
15°	1002.4	1009.7	1020.3	1029.3	1033.4	1035.9	1042.4	1048.1	1052.2	1053.9	1052.2
17.5°	1017.1	1031.0	1047.3	1060.4	1065.3	1068.6	1077.6	1083.3	1088.2	1092.3	1090.7
20°	1036.7	1055.5	1075.1	1090.7	1097.2	1101.3	1111.1	1121.7	1126.6	1129.9	1129.1
22.5°	1057.9	1080.0	1102.1	1120.9	1128.3	1133.2	1145.4	1155.2	1162.6	1166.7	1165.9
25°	1078.4	1103.7	1130.7	1151.2	1160.1	1165.9	1178.9	1190.4	1198.6	1201.8	1201.0
27.5°	1098.8	1128.3	1157.7	1181.4	1190.4	1197.8	1213.3	1225.6	1235.4	1237.8	1237.8
30°	1115.2	1149.5	1181.4	1208.4	1218.2	1228.0	1245.2	1261.5	1270.5	1273.8	1273.0
32.5°	1130.7	1169.1	1205.1	1235.4	1247.6	1257.4	1277.9	1295.9	1306.5	1309.8	1306.5
35°	1146.2	1188.8	1228.8	1261.5	1274.6	1286.9	1309.8	1330.2	1341.6	1344.9	1343.3
37.5°	1161.0	1208.4	1251.7	1287.7	1303.2	1316.3	1340.0	1364.5	1376.8	1380.1	1376.8
40°	1174.9	1226.4	1273.8	1313.0	1330.2	1345.7	1373.5	1398.1	1412.0	1416.0	1414.4
42.5°	1187.9	1244.4	1295.9	1339.2	1358.8	1375.2	1406.2	1433.2	1447.9	1452.8	1448.7
45°	1199.4	1262.3	1317.9	1364.5	1385.8	1404.6	1439.8	1469.2	1483.9	1489.6	1484.7
47.5°	1210.8	1278.7	1338.4	1389.9	1414.4	1434.0	1473.3	1504.3	1521.5	1526.4	1521.5
50°	1221.5	1295.0	1360.5	1416.0	1442.2	1464.3	1506.8	1540.3	1557.5	1564.8	1558.3
52.5°	1231.3	1310.6	1380.9	1440.6	1469.2	1493.7	1539.5	1575.5	1595.9	1600.8	1594.3
55°	1241.1	1325.3	1398.9	1463.5	1494.5	1520.7	1570.6	1608.2	1628.6	1634.3	1627.8
57.5°	1249.3	1338.4	1416.0	1485.5	1517.4	1547.7	1597.5	1636.8	1658.0	1664.6	1658.0
60°	1255.0	1349.0	1431.6	1503.5	1537.0	1568.1	1621.3	1660.5	1681.8	1688.3	1681.8
62.5°	1259.1	1357.2	1442.2	1517.4	1553.4	1585.3	1639.2	1677.7	1699.7	1706.3	1699.7
65°	1259.9	1360.5	1447.9	1526.4	1563.2	1595.1	1649.9	1688.3	1711.2	1716.9	1710.4
67.5°	1255.0	1357.2	1447.9	1528.1	1564.8	1597.5	1652.3	1690.8	1712.8	1719.4	1712.8
70°	1245.2	1347.4	1439.8	1521.5	1558.3	1591.0	1645.0	1684.2	1706.3	1712.8	1705.5
72.5°	1226.4	1330.2	1422.6	1506.0	1541.1	1573.0	1626.2	1664.6	1685.8	1693.2	1685.0
75°	1199.4	1303.2	1395.6	1475.7	1512.5	1542.0	1595.1	1632.7	1652.3	1658.9	1651.5
77.5°	1164.2	1268.9	1358.0	1437.3	1474.1	1501.1	1552.6	1589.4	1609.0	1614.7	1607.4
80°	1123.4	1227.2	1313.0	1391.5	1425.9	1451.2	1502.7	1537.9	1556.7	1562.4	1558.3
82.5°	1078.4	1179.8	1263.2	1340.0	1372.7	1398.1	1448.7	1483.1	1501.9	1510.1	1503.5
85°	1032.6	1129.9	1211.7	1286.1	1318.8	1345.7	1392.3	1426.7	1445.5	1452.0	1447.9
87.5°	986.8	1080.8	1160.1	1232.1	1262.3	1290.1	1336.7	1371.1	1389.9	1396.4	1391.5
90°	948.4	1038.3	1114.4	1185.5	1216.6	1241.9	1286.9	1319.6	1338.4	1344.9	1340.8
92.5°	917.3	1003.2	1076.8	1142.2	1171.6	1198.6	1241.9	1273.8	1292.6	1298.3	1294.2
95°	887.9	971.3	1042.4	1106.2	1134.8	1161.0	1201.8	1232.9	1250.9	1256.6	1253.3
97.5°	860.1	940.2	1008.9	1071.0	1100.5	1124.2	1163.4	1192.8	1210.8	1215.7	1210.8
100°	829.0	910.0	977.0	1038.3	1063.7	1087.4	1126.6	1156.1	1171.6	1178.1	1174.0
102.5°	799.6	877.3	943.5	1004.0	1031.0	1054.7	1090.7	1119.3	1137.3	1141.3	1137.3
105°	769.3	844.6	909.1	968.8	995.8	1018.7	1054.7	1082.5	1099.6	1104.5	1100.5
107.5°	738.3	811.0	875.6	932.0	958.2	979.5	1016.3	1043.2	1057.9	1066.9	1060.4
110°	704.8	776.7	838.8	893.6	919.0	939.4	975.4	1002.4	1016.3	1024.4	1018.7





TEST NUMBER: P201297

CATALOG NUMBER: 4LBLED-LD4-9-SYMW-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	673.7	741.5	801.2	854.4	878.1	898.5	933.7	959.8	972.9	981.1	975.4
115°	641.0	703.9	762.8	813.5	837.2	856.0	891.2	915.7	928.8	936.1	931.2
117.5°	605.8	667.1	722.7	772.6	794.7	813.5	847.0	871.5	883.8	889.5	884.6
120°	571.5	631.2	683.5	730.9	753.0	771.0	803.7	826.6	838.0	844.6	839.7
122.5°	535.5	593.6	641.0	688.4	708.8	726.0	755.4	780.0	790.6	796.3	793.1
125°	497.1	554.3	600.1	643.4	663.1	679.4	708.0	728.5	740.7	746.4	743.2
127.5°	457.0	511.8	558.4	598.5	617.3	635.3	659.0	681.9	690.0	696.6	693.3
130°	412.1	466.8	510.2	551.0	569.0	583.8	609.9	628.7	639.3	645.1	642.6
132.5°	367.9	418.6	464.4	501.2	518.3	533.9	557.6	575.6	590.3	591.1	587.8
135°	325.4	369.5	411.2	450.5	467.7	483.2	504.4	520.8	534.7	535.5	531.4
137.5°	284.5	325.4	361.4	398.2	416.1	432.5	452.1	467.7	480.7	483.2	477.5
140°	245.3	282.9	315.6	348.3	365.5	381.0	402.2	415.3	426.0	426.8	423.5
142.5°	207.7	242.0	270.6	300.9	316.4	330.3	354.0	367.1	376.9	379.4	374.5
145°	172.5	202.8	229.7	255.9	269.0	282.1	305.8	321.3	329.5	331.9	327.0
147.5°	139.0	164.3	188.0	211.8	223.2	235.5	255.1	274.7	282.1	283.7	279.6
150°	107.9	129.2	150.4	170.1	179.9	190.5	207.7	225.7	235.5	237.1	233.8
152.5°	79.3	97.3	114.5	130.8	139.0	147.2	161.9	179.0	191.3	192.1	188.9
155°	54.0	68.7	82.6	94.8	102.2	108.7	120.2	133.3	146.3	147.2	144.7
157.5°	32.7	42.5	54.0	63.8	68.7	74.4	82.6	92.4	103.8	106.3	103.8
160°	16.4	22.1	28.6	35.2	39.2	43.3	47.4	55.6	62.1	67.9	64.6
162.5°	8.2	9.8	11.4	14.7	16.4	18.8	22.1	25.3	28.6	34.3	30.3
165°	4.9	5.7	6.5	6.5	7.4	7.4	7.4	7.4	7.4	10.6	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: P201297

CATALOG NUMBER: 4LBLEDD4-9-SYMW-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	980.3	980.3	980.3	980.3	980.3	980.3	980.3	980.3	980.3	980.3	980.3
2.5°	968.8	970.5	973.7	975.4	977.0	978.6	981.9	986.8	982.7	978.6	979.5
5°	975.4	975.4	976.2	978.6	978.6	979.5	982.7	987.6	983.5	977.8	977.8
7.5°	983.5	982.7	983.5	984.4	983.5	983.5	985.2	987.6	982.7	976.2	974.6
10°	995.0	992.5	991.7	992.5	991.7	989.3	990.1	990.1	983.5	973.7	969.6
12.5°	1015.4	1011.3	1008.1	1007.3	1004.8	1000.7	998.3	995.0	985.2	973.7	965.6
15°	1049.0	1042.4	1035.9	1033.4	1029.3	1019.5	1011.3	1004.0	990.1	973.7	962.3
17.5°	1086.6	1078.4	1069.4	1066.1	1060.4	1046.5	1032.6	1018.7	999.1	976.2	959.8
20°	1122.5	1112.7	1102.1	1096.4	1090.7	1073.5	1057.1	1039.1	1013.8	983.5	959.0
22.5°	1158.5	1147.1	1132.3	1127.4	1120.1	1100.5	1080.8	1060.4	1030.1	994.2	960.7
25°	1193.7	1180.6	1166.7	1158.5	1150.3	1128.3	1104.5	1080.0	1045.7	1006.4	966.4
27.5°	1228.8	1214.1	1196.9	1187.9	1179.8	1155.2	1128.3	1100.5	1062.0	1017.9	973.7
30°	1263.2	1246.8	1226.4	1216.6	1206.7	1178.9	1147.9	1116.8	1075.1	1027.7	978.6
32.5°	1297.5	1279.5	1256.6	1245.2	1233.7	1201.8	1167.5	1132.3	1086.6	1036.7	982.7
35°	1331.0	1311.4	1286.1	1272.2	1259.9	1225.6	1187.1	1147.9	1097.2	1044.0	985.2
37.5°	1365.4	1343.3	1315.5	1300.0	1286.1	1248.4	1205.9	1161.8	1108.6	1049.8	987.6
40°	1399.7	1376.0	1344.9	1328.6	1311.4	1270.5	1224.7	1175.7	1118.4	1055.5	988.5
42.5°	1434.9	1408.7	1374.3	1356.4	1338.4	1292.6	1241.9	1187.9	1126.6	1059.6	987.6
45°	1470.0	1440.6	1403.8	1383.3	1363.7	1313.8	1259.1	1198.6	1134.0	1062.0	986.0
47.5°	1505.2	1474.1	1434.0	1412.0	1388.2	1335.1	1275.4	1210.0	1140.5	1062.9	984.4
50°	1541.1	1507.6	1464.3	1439.8	1415.2	1355.5	1291.8	1219.8	1144.6	1063.7	980.3
52.5°	1576.3	1540.3	1493.7	1467.6	1438.9	1376.0	1307.3	1229.6	1147.9	1062.9	974.6
55°	1608.2	1570.6	1521.5	1493.7	1461.8	1394.8	1321.2	1237.8	1149.5	1060.4	967.2
57.5°	1637.6	1599.2	1547.7	1516.6	1485.5	1412.8	1334.3	1246.8	1151.2	1056.3	959.0
60°	1660.5	1622.1	1568.1	1537.0	1503.5	1427.5	1344.9	1251.7	1151.2	1050.6	948.4
62.5°	1677.7	1639.2	1585.3	1552.6	1517.4	1439.8	1353.1	1256.6	1151.2	1044.9	937.8
65°	1688.3	1650.7	1595.1	1562.4	1526.4	1445.5	1357.2	1257.4	1147.9	1036.7	924.7
67.5°	1689.9	1652.3	1596.7	1564.8	1528.1	1445.5	1354.7	1253.3	1141.3	1026.1	910.0
70°	1682.6	1645.0	1590.2	1557.5	1521.5	1438.1	1345.7	1243.5	1129.9	1012.2	892.8
72.5°	1663.8	1625.3	1572.2	1538.7	1503.5	1421.0	1326.9	1225.6	1111.1	992.5	872.4
75°	1631.1	1593.5	1541.1	1510.1	1474.1	1393.2	1298.3	1199.4	1084.9	968.0	847.0
77.5°	1587.7	1550.9	1499.4	1468.4	1434.9	1355.5	1262.3	1164.2	1053.0	937.8	817.6
80°	1536.2	1501.1	1450.4	1420.1	1387.4	1310.6	1219.0	1123.4	1013.8	901.8	784.9
82.5°	1481.5	1447.1	1398.1	1367.0	1335.9	1261.5	1174.0	1079.2	972.1	863.4	749.7
85°	1428.3	1391.5	1342.5	1313.8	1282.8	1210.0	1127.4	1033.4	929.6	824.1	715.4
87.5°	1372.7	1336.7	1288.5	1261.5	1232.1	1158.5	1080.0	988.5	889.5	789.0	681.9
90°	1322.0	1286.9	1240.3	1213.3	1185.5	1114.4	1037.5	950.8	855.2	757.9	654.1
92.5°	1275.4	1242.7	1198.6	1172.4	1145.4	1077.6	1004.0	919.8	827.4	733.4	632.0
95°	1235.4	1203.5	1162.6	1137.3	1109.5	1044.9	972.9	890.3	802.0	710.5	611.5
97.5°	1195.3	1165.0	1125.0	1100.5	1074.3	1011.3	941.9	862.5	775.9	685.1	589.5
100°	1158.5	1129.1	1088.2	1066.1	1040.8	980.3	911.6	833.9	748.9	659.8	565.8
102.5°	1122.5	1093.1	1053.9	1031.8	1007.3	946.8	879.7	802.9	720.3	634.4	542.9
105°	1085.7	1057.1	1017.9	995.8	971.3	912.4	847.0	772.6	691.7	608.3	519.2
107.5°	1045.7	1017.9	980.3	958.2	935.3	876.4	813.5	740.7	663.1	581.3	494.6
110°	1004.8	977.0	942.7	919.0	896.9	839.7	778.3	708.8	632.8	553.5	469.3



TEST NUMBER: P201297

CATALOG NUMBER: 4LBLED-LD4-9-SYMW-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	962.3	935.3	901.8	879.7	856.8	802.0	743.2	676.1	602.6	524.9	443.1
115°	919.0	892.0	858.5	836.4	815.9	763.6	706.4	642.6	571.5	496.3	417.0
117.5°	871.5	847.8	815.9	796.3	775.1	722.7	669.6	608.3	540.4	466.0	390.0
120°	827.4	804.5	773.4	752.2	733.4	683.5	632.8	573.1	506.1	436.6	362.2
122.5°	780.8	756.3	727.6	709.7	689.2	643.4	594.4	537.1	471.7	403.1	331.9
125°	731.7	708.8	681.0	663.9	645.1	601.7	555.1	497.9	435.8	369.5	300.9
127.5°	681.9	660.6	633.6	618.1	600.1	557.6	512.6	457.0	394.9	332.8	269.0
130°	631.2	609.9	585.4	569.0	551.9	511.8	467.7	412.9	354.0	296.0	237.9
132.5°	578.0	557.6	533.1	518.3	502.8	464.4	419.4	366.3	314.0	261.6	207.7
135°	523.3	504.4	482.4	468.5	452.9	413.7	371.2	322.9	276.3	228.1	178.2
137.5°	470.1	452.9	431.7	417.8	400.6	363.8	326.2	282.9	240.4	195.4	148.8
140°	417.8	402.2	381.8	366.3	351.6	317.2	282.9	243.6	205.2	164.3	122.6
142.5°	368.7	354.8	331.9	317.2	303.3	273.1	242.8	206.0	171.7	134.9	98.9
145°	320.5	308.2	282.9	269.8	258.4	231.4	201.1	170.9	139.8	107.9	76.9
147.5°	273.9	259.2	235.5	224.0	213.4	189.7	164.3	136.5	111.2	83.4	56.4
150°	228.9	210.9	190.5	180.7	171.7	151.3	129.2	106.3	84.2	60.5	39.2
152.5°	182.3	163.5	149.6	139.8	131.6	115.3	97.3	77.7	59.7	40.9	24.5
155°	134.9	121.8	108.7	103.8	96.5	82.6	67.9	52.3	37.6	24.5	13.9
157.5°	93.2	83.4	75.2	70.3	64.6	54.0	41.7	30.3	21.3	13.1	6.5
160°	56.4	49.9	44.1	40.1	36.0	28.6	20.4	13.9	9.0	4.1	2.5
162.5°	25.3	21.3	18.8	16.4	13.9	10.6	6.5	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: P201297

CATALOG NUMBER: 4LBLED-LD4-9-SYMW-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	980.3	980.3	980.3	980.3	980.3	980.3	980.3	980.3
2.5°	980.3	981.1	981.9	981.9	984.4	988.5	994.2	995.0
5°	977.8	978.6	978.6	979.5	981.9	985.2	990.1	990.9
7.5°	973.7	973.7	973.7	973.7	975.4	978.6	982.7	983.5
10°	968.0	966.4	965.6	964.7	965.6	968.8	972.1	972.9
12.5°	961.5	957.4	955.7	954.9	954.9	955.7	959.0	959.0
15°	954.1	947.6	945.1	943.5	940.2	940.2	943.5	943.5
17.5°	946.8	937.8	932.9	929.6	924.7	923.9	925.5	923.9
20°	940.2	926.3	919.8	914.1	906.7	904.2	904.2	901.8
22.5°	933.7	914.9	905.9	897.7	886.3	882.2	879.7	878.1
25°	929.6	902.6	891.2	881.3	865.8	856.8	854.4	851.1
27.5°	928.8	892.8	877.3	865.0	843.7	833.1	826.6	822.5
30°	928.8	883.0	862.5	845.4	819.2	802.9	796.3	794.7
32.5°	928.0	875.6	851.1	829.0	795.5	774.2	764.4	762.0
35°	925.5	868.3	839.7	812.7	771.8	744.8	730.9	727.6
37.5°	922.2	859.3	829.0	798.0	747.3	714.6	697.4	692.5
40°	919.0	850.3	815.9	782.4	722.7	683.5	661.4	655.7
42.5°	913.2	840.5	804.5	767.7	699.8	652.4	627.1	618.1
45°	907.5	829.0	790.6	751.4	677.0	620.5	588.7	579.7
47.5°	900.2	816.8	776.7	733.4	655.7	589.5	553.5	542.1
50°	892.0	804.5	761.2	716.2	632.8	559.2	515.1	502.8
52.5°	883.0	790.6	745.6	698.2	609.9	530.6	479.1	463.6
55°	871.5	775.1	727.6	677.8	586.2	501.2	442.3	424.3
57.5°	859.3	759.5	710.5	659.0	562.5	473.4	406.3	385.9
60°	844.6	741.5	689.2	637.7	538.0	444.8	370.4	346.7
62.5°	829.0	723.6	670.4	615.6	513.4	417.0	335.2	308.2
65°	812.7	703.1	649.2	592.7	487.3	387.5	300.9	269.8
67.5°	793.1	681.0	625.4	568.2	460.3	358.1	267.3	232.2
70°	773.4	657.3	599.3	542.1	432.5	328.7	235.5	195.4
72.5°	749.7	632.0	573.1	515.1	403.9	300.1	204.4	158.6
75°	723.6	605.8	546.1	487.3	374.5	269.8	173.3	122.6
77.5°	695.8	577.2	518.3	458.7	346.7	241.2	144.7	92.4
80°	666.3	547.0	488.9	429.2	317.2	212.6	116.9	63.8
82.5°	633.6	517.5	459.5	399.8	289.4	184.8	91.6	39.2
85°	602.6	488.1	431.7	372.8	262.4	157.0	68.7	19.6
87.5°	572.3	461.1	406.3	348.3	239.6	135.7	49.9	5.7
90°	547.8	439.0	385.1	328.7	221.6	120.2	37.6	0.0
92.5°	528.2	421.9	368.7	314.0	208.5	109.6	31.9	0.0
95°	509.4	403.9	353.2	298.4	195.4	100.6	25.3	0.0
97.5°	488.9	386.7	336.0	282.9	182.3	90.8	20.4	0.0
100°	468.5	367.9	318.9	267.3	167.6	80.9	14.7	0.0
102.5°	446.4	348.3	300.1	250.2	154.5	70.3	9.8	0.0
105°	425.1	328.7	282.1	233.0	140.6	61.3	6.5	0.0
107.5°	402.2	309.0	263.3	216.7	126.7	51.5	4.1	0.0
110°	379.4	289.4	244.5	199.5	113.6	42.5	3.3	0.0



TEST NUMBER: P201297

CATALOG NUMBER: 4LBLED-LD4-9-SYMW-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	356.5	269.0	225.7	181.5	100.6	34.3	2.5	0.8
115°	331.9	247.7	206.0	163.5	87.5	27.0	2.5	0.8
117.5°	307.4	225.7	187.2	146.3	75.2	20.4	1.6	0.8
120°	282.1	206.0	166.8	130.0	63.8	14.7	1.6	0.8
122.5°	257.5	185.6	148.0	112.8	52.3	11.4	1.6	0.8
125°	232.2	161.9	129.2	97.3	41.7	9.0	1.6	0.8
127.5°	205.2	139.8	109.6	80.1	31.9	6.5	1.6	0.8
130°	177.4	117.7	90.8	65.4	22.9	4.9	1.6	0.8
132.5°	151.3	98.9	73.6	51.5	16.4	4.1	1.6	0.8
135°	127.5	80.1	58.0	38.4	11.4	3.3	0.8	0.8
137.5°	104.7	63.8	44.1	27.8	8.2	2.5	1.6	0.8
140°	84.2	48.2	31.9	19.6	5.7	1.6	1.6	0.8
142.5°	65.4	34.3	22.1	13.1	4.1	1.6	0.8	0.8
145°	48.2	22.9	14.7	8.2	3.3	1.6	1.6	1.6
147.5°	32.7	15.5	9.0	5.7	2.5	1.6	1.6	0.8
150°	21.3	9.8	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°	6.5	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)