

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: P201247

Luminaire Tested: **4LBLED-LD4-8-SYMF-UNV-L840-CD1-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P201247
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: 4LBLED-LD4-8-SYMF-UNV-L840-CD1-U
Description: 4 ft. Low Bay Linear, 8000 lm, Frst Sym lens, 4K
Light Source: (392) 4000K CCT, 80 CRI LEDS
2UT217098A8404C
Ballast/Driver: OSRAM
(OTI85W01280CC)

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8438.4 lumens
Efficiency: N/A
Efficacy: 147.5 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.99 / 1.87
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.21')
CIE Type: Semi-Direct

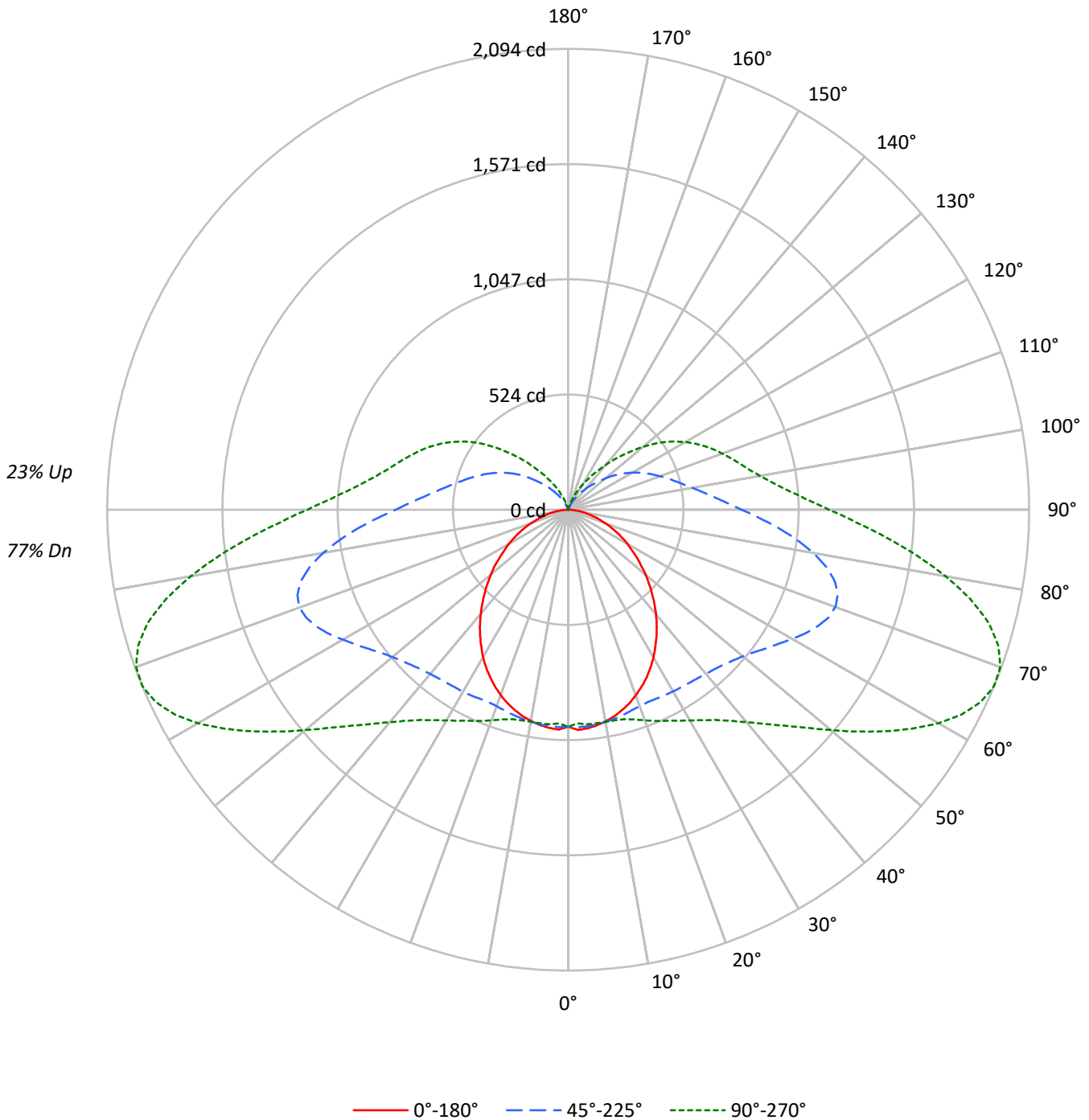
Input Watts (W): 57.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	15886	15886	15886
5°	16058	14275	16025
10°	15833	13130	15798
15°	15513	12331	15489
20°	15108	12021	15084
25°	14626	11902	14564
30°	13991	11965	13978
35°	13273	12256	13244
40°	12506	12955	12448
45°	11671	14077	11639
50°	10823	15717	10790
55°	9969	17746	9948
60°	9192	19811	9215
65°	8332	21476	8356
70°	7412	22251	7412
75°	6314	21773	6278
80°	5081	20035	5031
85°	3490	17596	3328



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	93.6	1.1
10°-20°	272.2	3.2
20°-30°	437.6	5.2
30°-40°	592.5	7.0
40°-50°	761.2	9.0
50°-60°	979.3	11.6
60°-70°	1198.1	14.2
70°-80°	1211.2	14.4
80°-90°	936.7	11.1
90°-100°	650.8	7.7
100°-110°	486.0	5.8
110°-120°	364.3	4.3
120°-130°	245.3	2.9
130°-140°	134.5	1.6
140°-150°	57.3	0.7
150°-160°	16.4	0.2
160°-170°	1.4	0.0
170°-180°	0.0	0.0
0°-30°	803.4	9.5
0°-40°	1395.9	16.5
0°-60°	3136.4	37.2
0°-90°	6482.3	76.8
90°-120°	1501.1	17.8
90°-150°	1938.3	23.0
90°-180°	1956.0	23.2
0°-180°	8438.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	986	986	986	986	986	
5°	997	988	979	987	995	94
15°	943	965	986	965	941	266
25°	843	947	1058	948	839	387
35°	699	960	1166	961	698	437
45°	539	997	1387	1001	537	416
55°	381	1098	1755	1103	380	341
65°	243	1252	2068	1260	244	241
75°	121	1254	1975	1258	120	129
85°	30	959	1450	956	29	33
90°	1	787	1184	783	0	2
95°	1	664	1002	661	0	0
105°	1	502	808	502	0	1
115°	1	390	684	390	0	1
125°	1	280	536	279	0	1
135°	1	169	352	167	0	1
145°	1	86	193	82	0	1
155°	1	27	80	26	0	1
165°	1	1	8	4	0	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°	985.9	985.9	985.9	985.9	985.9	985.9	985.9	985.9	985.9	985.9	985.9
2.5°	1001.6	1000.9	996.6	990.2	987.3	986.6	985.9	983.0	982.3	983.7	989.4
5°	997.3	996.6	992.3	985.9	983.7	983.0	982.3	980.1	980.1	982.3	988.0
7.5°	988.7	988.0	983.7	978.7	976.5	975.8	975.8	974.4	974.4	978.0	984.4
10°	976.5	975.8	972.2	967.9	966.5	966.5	966.5	965.8	967.2	971.5	978.7
12.5°	962.2	960.8	957.9	954.3	954.3	954.3	955.0	955.0	957.2	964.4	973.0
15°	942.9	943.6	940.7	937.8	939.3	940.0	941.4	942.9	946.4	955.0	965.1
17.5°	922.8	922.8	920.7	919.2	922.1	923.5	925.7	927.8	934.3	945.0	956.5
20°	897.7	898.4	897.7	898.4	902.0	904.2	907.0	912.1	920.7	935.7	949.3
22.5°	870.5	871.9	871.9	874.8	880.5	884.1	887.7	894.9	907.0	926.4	945.7
25°	842.6	841.8	845.4	850.4	856.2	861.2	865.5	876.2	894.1	919.9	947.2
27.5°	808.9	810.3	815.3	822.5	831.1	837.5	844.0	859.0	884.8	919.2	950.7
30°	774.5	776.6	783.1	793.1	805.3	813.9	821.1	844.7	879.8	919.2	953.6
32.5°	737.2	740.8	749.4	762.3	779.5	789.5	801.0	832.5	875.5	917.8	956.5
35°	699.3	703.6	715.0	730.8	750.9	763.0	780.9	823.2	869.8	916.4	960.1
37.5°	660.6	665.6	678.5	698.6	724.3	743.0	764.5	813.2	865.5	916.4	965.1
40°	620.5	626.2	642.7	665.6	698.6	722.9	748.7	803.2	861.2	917.1	973.0
42.5°	579.6	586.1	606.1	633.4	676.3	705.0	733.7	794.6	858.3	920.7	983.0
45°	538.8	547.4	569.6	602.5	656.3	686.4	719.3	786.7	856.9	927.1	996.6
47.5°	497.9	508.0	533.8	573.2	635.5	671.3	705.7	780.2	858.3	935.7	1014.5
50°	458.5	470.0	498.7	546.7	616.2	654.8	692.8	775.9	861.2	948.6	1036.0
52.5°	418.4	433.5	465.0	523.0	599.0	639.8	682.1	773.1	866.9	965.8	1063.9
55°	381.2	396.9	433.5	500.1	582.5	626.9	672.0	772.3	876.9	986.6	1098.3
57.5°	343.2	362.5	402.7	477.9	565.3	614.0	664.2	773.8	889.1	1008.8	1133.4
60°	310.9	328.1	374.7	456.4	550.2	601.8	657.0	775.2	902.0	1034.6	1174.3
62.5°	276.6	295.2	350.3	435.6	535.2	591.1	649.8	777.4	915.6	1061.1	1215.8
65°	242.9	262.2	326.0	415.5	520.2	579.6	641.2	777.4	926.4	1085.4	1251.7
67.5°	210.6	231.4	301.6	394.1	503.0	565.3	630.5	773.8	932.8	1102.6	1279.6
70°	179.8	202.8	278.0	371.1	484.3	548.1	615.4	765.9	932.1	1109.1	1291.8
72.5°	149.0	175.5	252.2	348.2	464.3	528.7	597.5	750.9	922.1	1101.2	1283.9
75°	121.1	149.7	229.3	325.3	441.3	505.8	575.3	727.9	899.9	1076.8	1253.8
77.5°	95.3	126.8	204.9	300.2	415.5	479.3	547.4	698.6	864.8	1033.9	1200.8
80°	70.9	106.0	182.0	275.1	387.6	449.9	515.9	661.3	818.9	975.8	1129.9
82.5°	49.4	86.7	159.8	250.0	358.9	418.4	481.5	616.9	765.9	908.5	1048.2
85°	30.1	69.5	137.6	225.7	329.6	385.5	444.9	570.3	707.9	835.4	958.6
87.5°	12.9	53.7	118.2	202.0	300.2	353.2	407.7	525.9	646.2	759.4	869.1
90°	0.7	40.1	101.0	179.8	272.3	321.7	372.6	478.6	589.6	690.0	787.4
92.5°	0.0	34.4	91.0	166.2	252.9	298.8	346.1	443.5	543.8	633.4	720.0
95°	0.7	28.7	82.4	151.2	233.6	277.3	321.0	412.0	502.2	584.6	664.2
97.5°	0.7	23.6	73.1	137.6	215.7	255.8	296.6	381.2	462.8	540.9	614.7
100°	0.7	18.6	64.5	124.7	197.0	234.3	273.0	352.5	429.2	502.2	571.7
102.5°	0.7	13.6	57.3	112.5	179.8	214.9	250.8	326.0	398.4	468.6	534.5
105°	0.7	9.3	50.2	101.0	164.1	197.0	230.7	301.6	370.4	437.8	502.2
107.5°	0.7	6.4	43.7	90.3	146.9	179.8	211.4	278.7	344.6	409.8	472.9
110°	0.7	5.7	38.0	81.0	133.3	163.4	193.4	257.2	320.3	382.6	444.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.7	5.0	32.2	72.4	119.6	146.9	176.2	236.4	298.0	358.2	417.0
115°	0.7	5.0	26.5	64.5	108.2	132.5	159.8	216.4	275.1	333.2	390.5
117.5°	0.7	5.0	21.5	57.3	97.4	119.6	143.3	197.7	252.2	308.8	364.7
120°	0.7	4.3	17.2	50.2	88.1	108.2	130.4	179.8	230.0	283.0	336.7
122.5°	0.7	4.3	14.3	43.7	78.8	97.4	117.5	161.2	209.2	257.9	308.1
125°	0.7	3.6	12.2	36.5	69.5	87.4	105.3	144.7	189.1	234.3	280.1
127.5°	1.4	3.6	10.0	30.1	60.2	75.9	93.1	129.0	167.7	208.5	252.2
130°	1.4	3.6	8.6	22.9	50.9	65.2	80.2	113.2	149.0	184.1	222.1
132.5°	1.4	2.9	7.9	17.9	42.3	55.2	68.8	98.2	129.7	161.2	194.2
135°	1.4	2.9	6.4	14.3	33.7	45.1	58.0	83.8	111.8	141.1	169.1
137.5°	1.4	2.1	5.7	11.5	25.8	36.5	48.0	70.9	95.3	120.4	146.2
140°	1.4	2.1	5.0	9.3	19.3	27.2	38.0	58.0	79.5	101.7	123.9
142.5°	1.4	2.1	4.3	7.9	15.0	20.8	28.7	47.3	65.9	84.5	103.9
145°	1.4	2.1	3.6	6.4	11.5	15.8	20.8	36.5	53.0	69.5	86.0
147.5°	1.4	2.1	3.6	5.7	9.3	12.2	15.8	26.5	41.6	55.2	69.5
150°	1.4	2.1	2.9	5.0	7.9	9.3	11.5	18.6	30.1	42.3	54.5
152.5°	1.4	1.4	2.9	4.3	5.7	7.2	8.6	13.6	20.8	30.1	40.8
155°	1.4	1.4	2.1	3.6	5.0	5.7	6.4	9.3	13.6	19.3	27.2
157.5°	1.4	1.4	2.1	2.9	3.6	4.3	5.0	6.4	9.3	12.2	16.5
160°	1.4	1.4	2.1	2.9	2.9	3.6	3.6	4.3	5.7	7.2	9.3
162.5°	1.4	1.4	2.1	2.1	2.1	2.9	2.9	2.9	3.6	3.6	4.3
165°	1.4	1.4	1.4	2.1	1.4	2.1	1.4	2.1	2.1	1.4	1.4
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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	985.9	985.9	985.9	985.9	985.9	985.9	985.9	985.9	985.9	985.9	985.9
2.5°	991.6	986.6	984.4	981.6	979.4	978.0	975.8	974.4	972.2	972.2	973.0
5°	990.2	985.1	983.7	980.8	979.4	978.7	977.3	978.0	978.0	978.7	978.0
7.5°	987.3	983.0	981.6	980.1	978.7	978.0	977.3	978.7	978.7	979.4	979.4
10°	982.3	979.4	979.4	978.0	977.3	976.5	975.1	977.3	977.3	978.7	978.0
12.5°	976.5	975.8	976.5	977.3	977.3	976.5	975.8	978.7	980.1	980.1	980.8
15°	970.1	971.5	975.1	977.3	978.7	978.7	980.1	983.0	985.1	985.9	985.9
17.5°	965.1	968.7	975.1	980.8	983.7	985.1	988.7	994.4	998.0	998.7	998.7
20°	961.5	970.1	981.6	992.3	995.9	998.7	1005.9	1013.1	1018.1	1018.8	1018.8
22.5°	964.4	978.7	994.4	1006.6	1011.6	1015.2	1023.1	1032.4	1038.2	1038.9	1038.9
25°	971.5	988.7	1006.6	1021.7	1027.4	1031.7	1040.3	1050.3	1056.1	1058.2	1057.5
27.5°	978.0	998.7	1019.5	1036.7	1043.2	1048.9	1059.6	1071.1	1078.3	1080.4	1079.0
30°	983.7	1008.1	1031.7	1052.5	1061.1	1067.5	1080.4	1094.0	1103.4	1105.5	1103.4
32.5°	989.4	1018.8	1046.8	1071.1	1079.7	1089.0	1105.5	1121.3	1130.6	1133.4	1132.0
35°	997.3	1031.7	1064.7	1092.6	1104.1	1114.8	1134.2	1152.8	1164.3	1166.4	1164.3
37.5°	1008.1	1048.2	1084.7	1119.8	1132.0	1147.1	1170.0	1192.2	1205.8	1208.7	1205.8
40°	1021.7	1069.0	1111.9	1152.8	1169.3	1185.0	1213.0	1239.5	1254.5	1259.5	1257.4
42.5°	1039.6	1094.8	1144.9	1193.6	1212.3	1232.3	1265.3	1296.1	1313.3	1319.0	1313.3
45°	1061.8	1127.0	1185.0	1241.6	1263.1	1287.5	1326.9	1362.0	1382.1	1387.1	1382.1
47.5°	1091.2	1165.0	1232.3	1297.5	1323.3	1352.0	1398.5	1438.7	1460.1	1465.9	1460.9
50°	1122.7	1210.8	1288.2	1362.7	1395.0	1425.0	1479.5	1523.9	1546.8	1557.6	1548.3
52.5°	1162.1	1261.0	1352.0	1435.1	1473.8	1509.6	1569.8	1618.5	1646.4	1655.7	1642.8
55°	1209.4	1321.2	1422.9	1518.9	1557.6	1597.7	1664.3	1715.9	1745.3	1755.3	1746.0
57.5°	1261.7	1384.9	1497.4	1598.4	1643.6	1684.4	1758.9	1812.6	1838.4	1851.3	1839.9
60°	1316.1	1450.8	1572.6	1680.1	1729.5	1771.8	1847.8	1900.8	1928.0	1940.9	1930.1
62.5°	1369.2	1514.6	1642.8	1754.6	1801.9	1848.5	1924.4	1975.3	2003.2	2014.7	2004.7
65°	1415.0	1568.3	1700.2	1815.5	1864.2	1910.1	1981.7	2030.5	2059.8	2067.7	2060.5
67.5°	1449.4	1604.9	1738.1	1852.1	1899.3	1945.2	2013.3	2058.4	2087.1	2094.2	2087.8
70°	1465.2	1619.2	1751.0	1862.1	1908.7	1949.5	2014.0	2057.0	2084.2	2088.5	2083.5
72.5°	1455.1	1604.9	1732.4	1838.4	1882.9	1918.7	1978.2	2019.0	2044.8	2048.4	2044.8
75°	1417.9	1561.2	1681.5	1780.4	1822.0	1852.1	1908.7	1946.6	1972.4	1975.3	1971.0
77.5°	1354.8	1488.1	1598.4	1693.7	1728.1	1757.5	1811.2	1844.9	1865.7	1870.0	1865.0
80°	1270.3	1392.8	1491.7	1576.9	1609.9	1635.0	1687.3	1723.8	1735.3	1741.0	1733.8
82.5°	1173.6	1283.2	1371.3	1448.7	1478.1	1508.9	1542.5	1576.2	1592.7	1597.7	1592.0
85°	1069.7	1167.1	1245.2	1314.7	1340.5	1368.4	1397.8	1430.8	1445.1	1450.1	1444.4
87.5°	965.8	1051.8	1120.5	1182.2	1205.8	1230.9	1266.0	1283.2	1302.5	1308.3	1301.8
90°	872.7	950.0	1011.6	1067.5	1089.7	1112.7	1139.9	1161.4	1179.3	1184.3	1178.6
92.5°	797.4	866.9	923.5	973.7	993.0	1014.5	1041.0	1061.8	1077.6	1082.6	1076.8
95°	735.1	798.9	851.9	898.4	917.1	937.1	966.5	983.0	997.3	1001.6	997.3
97.5°	682.1	742.3	792.4	837.5	855.5	874.1	902.7	919.2	932.8	936.4	932.8
100°	635.5	694.3	743.7	786.7	804.6	822.5	850.4	866.9	879.8	884.1	879.8
102.5°	596.8	653.4	702.1	745.8	763.0	780.9	807.5	826.8	836.8	841.8	837.5
105°	563.1	618.3	667.0	710.0	727.9	745.1	772.3	790.3	801.7	807.5	802.4
107.5°	532.3	586.8	636.2	677.8	695.7	712.9	740.8	758.7	769.5	775.9	770.2
110°	503.0	556.7	604.0	647.0	664.9	682.8	710.7	728.6	739.4	745.1	740.1



TEST NUMBER: P201247

CATALOG NUMBER: 4LBLED-LD4-8-SYMF-UNV-L840-CD1-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	474.3	526.6	575.3	616.9	634.1	652.0	680.6	699.3	709.3	715.7	710.0
115°	445.6	497.2	544.5	584.6	601.8	620.5	648.4	667.7	678.5	683.5	677.8
117.5°	417.7	467.1	512.3	551.7	568.9	586.8	614.0	633.4	644.8	649.8	644.1
120°	389.0	436.3	480.7	516.6	534.5	551.0	578.9	597.5	609.0	614.0	608.3
122.5°	358.2	404.8	447.1	482.2	499.4	515.1	542.4	561.0	571.7	576.8	571.7
125°	326.7	370.4	411.2	446.4	460.7	475.7	502.2	520.2	531.6	535.9	531.6
127.5°	295.2	335.3	373.3	404.1	419.8	434.2	459.3	476.4	486.5	491.5	487.9
130°	263.7	301.6	336.0	364.0	377.6	391.2	414.1	429.9	439.9	444.2	440.6
132.5°	230.0	266.5	300.2	324.6	337.5	348.9	369.7	383.3	391.9	396.9	392.6
135°	199.9	230.0	261.5	286.6	299.5	309.5	328.1	339.6	347.5	351.8	347.5
137.5°	172.7	198.5	224.3	246.5	258.6	269.4	287.3	298.0	305.2	309.5	305.2
140°	147.6	169.8	192.7	210.6	221.4	230.0	246.5	255.8	262.2	265.8	261.5
142.5°	123.2	143.3	162.6	179.1	188.4	195.6	211.4	218.5	223.5	225.7	223.5
145°	102.5	118.9	135.4	150.5	157.6	163.4	179.1	187.0	191.3	193.4	191.3
147.5°	83.1	96.7	110.3	122.5	129.0	136.1	146.9	156.2	159.8	161.2	159.8
150°	65.2	77.4	88.1	98.2	103.2	108.2	117.5	126.8	130.4	132.5	130.4
152.5°	49.4	59.5	68.1	75.9	80.2	84.5	92.4	101.0	104.6	106.0	104.6
155°	35.8	43.0	50.9	56.6	60.2	63.0	68.8	74.5	80.2	80.2	80.2
157.5°	22.2	27.9	34.4	39.4	41.6	44.4	48.7	53.7	58.0	60.2	60.2
160°	11.5	15.0	19.3	22.9	25.1	27.2	30.1	34.4	37.3	39.4	38.0
162.5°	5.0	6.4	8.6	10.0	11.5	12.2	14.3	16.5	17.9	21.5	18.6
165°	1.4	1.4	2.1	2.9	2.9	2.9	3.6	4.3	5.0	7.9	5.7
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: P201247

CATALOG NUMBER: 4LBLELD4-8-SYMF-UNV-L840-CD1-U

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	985.9	985.9	985.9	985.9	985.9	985.9	985.9	985.9	985.9	985.9	985.9
2.5°	974.4	976.5	979.4	980.8	983.0	984.4	988.0	992.3	988.7	983.7	984.4
5°	978.0	977.3	979.4	980.8	982.3	983.0	986.6	990.9	986.6	981.6	981.6
7.5°	979.4	978.7	979.4	980.1	980.8	980.8	984.4	988.0	983.7	977.3	975.8
10°	977.3	976.5	977.3	978.7	978.7	978.7	980.8	983.7	978.7	970.8	967.9
12.5°	978.7	976.5	976.5	977.3	977.3	975.8	976.5	978.7	972.2	963.6	959.3
15°	983.7	980.1	978.7	978.7	977.3	973.7	972.2	972.2	965.1	953.6	947.9
17.5°	995.9	990.2	985.9	983.7	980.8	974.4	969.4	966.5	957.2	944.3	935.0
20°	1014.5	1006.6	1000.2	995.9	992.3	980.8	970.8	962.9	950.0	934.3	922.1
22.5°	1033.1	1024.5	1015.2	1010.9	1005.9	993.0	979.4	965.8	946.4	925.0	908.5
25°	1051.0	1042.5	1031.7	1027.4	1021.0	1005.9	988.7	973.0	947.9	918.5	894.9
27.5°	1071.8	1061.1	1049.6	1043.2	1036.0	1018.8	999.5	980.1	952.2	918.5	885.5
30°	1095.5	1082.6	1067.5	1060.4	1051.8	1031.7	1008.1	985.1	955.0	918.5	880.5
32.5°	1122.7	1107.7	1089.7	1079.7	1069.7	1046.0	1018.1	991.6	957.2	917.8	876.2
35°	1154.2	1137.0	1115.5	1104.1	1091.9	1063.9	1031.0	998.7	960.8	917.1	870.5
37.5°	1193.6	1173.6	1147.8	1133.4	1119.1	1086.2	1048.2	1009.5	966.5	917.8	866.2
40°	1240.9	1217.3	1187.2	1169.3	1152.1	1114.1	1069.0	1023.1	974.4	919.2	861.9
42.5°	1296.8	1268.1	1234.5	1213.7	1193.6	1146.3	1094.8	1040.3	985.1	922.1	859.8
45°	1363.4	1333.3	1290.3	1264.6	1242.3	1187.2	1127.7	1063.2	1000.9	929.3	859.0
47.5°	1440.1	1402.1	1355.5	1325.5	1298.9	1235.2	1166.4	1091.9	1018.8	938.6	860.5
50°	1526.1	1483.1	1429.3	1397.8	1364.9	1291.8	1212.3	1125.6	1041.7	952.2	864.1
52.5°	1620.6	1573.4	1515.3	1478.1	1441.5	1357.0	1263.8	1168.5	1068.2	969.4	870.5
55°	1718.8	1667.9	1603.4	1562.6	1521.8	1428.6	1324.7	1215.1	1103.4	990.9	881.2
57.5°	1814.1	1761.8	1690.9	1649.3	1603.4	1504.6	1389.9	1266.0	1141.3	1015.9	893.4
60°	1902.2	1849.9	1778.3	1736.0	1685.8	1579.8	1456.6	1321.9	1180.7	1042.5	907.8
62.5°	1976.7	1926.6	1854.9	1811.9	1760.3	1650.7	1520.3	1376.3	1223.7	1070.4	921.4
65°	2031.9	1984.6	1915.1	1870.7	1821.2	1707.3	1574.1	1424.3	1259.5	1094.8	933.6
67.5°	2059.8	2015.4	1948.1	1905.8	1857.1	1743.9	1610.6	1456.6	1286.8	1111.9	941.4
70°	2057.0	2014.7	1951.6	1910.1	1863.5	1754.6	1623.5	1469.5	1298.9	1118.4	940.0
72.5°	2019.7	1977.4	1920.8	1880.7	1836.3	1734.6	1605.6	1458.0	1289.6	1108.4	928.5
75°	1945.9	1907.2	1849.9	1816.9	1776.8	1682.3	1559.0	1415.7	1258.1	1081.9	904.9
77.5°	1839.9	1810.5	1754.6	1723.8	1684.4	1597.0	1480.9	1352.0	1202.9	1037.4	868.4
80°	1710.2	1685.8	1631.4	1604.2	1565.5	1489.5	1389.2	1264.6	1129.9	977.3	821.1
82.5°	1568.3	1540.4	1497.4	1472.3	1435.8	1367.7	1272.4	1170.7	1045.3	908.5	765.9
85°	1421.5	1395.7	1356.3	1334.8	1302.5	1241.6	1156.4	1066.8	955.8	832.5	706.4
87.5°	1281.8	1256.7	1219.4	1200.1	1170.7	1116.2	1041.7	962.9	864.8	759.4	643.4
90°	1160.7	1137.0	1101.9	1084.0	1057.5	1008.1	940.7	869.8	783.1	686.4	586.8
92.5°	1061.1	1039.6	1006.6	989.4	965.8	920.7	859.8	795.3	717.2	633.4	540.9
95°	982.3	961.5	932.1	915.6	893.4	846.9	793.1	732.9	661.3	584.6	499.4
97.5°	918.5	901.3	869.1	853.3	835.4	788.1	739.4	679.9	613.3	541.6	462.1
100°	866.9	847.6	818.2	803.2	784.5	740.1	690.7	634.8	570.3	502.2	428.4
102.5°	826.8	806.7	779.5	762.3	744.4	699.3	650.5	596.1	534.5	468.6	397.6
105°	791.0	771.6	744.4	727.2	709.3	664.9	618.3	563.1	502.2	438.5	369.7
107.5°	757.3	740.1	712.9	695.7	677.8	633.4	586.8	532.3	472.9	410.5	343.9
110°	728.6	710.0	681.4	664.9	645.5	603.3	556.7	503.7	444.2	383.3	319.5



TEST NUMBER: P201247

CATALOG NUMBER: 4LBLED-LD4-8-SYMF-UNV-L840-CD1-U

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	700.0	679.9	651.3	634.8	615.4	573.2	527.3	475.0	417.0	358.2	296.6
115°	668.5	649.1	619.0	602.5	583.2	541.6	497.2	446.4	390.5	333.2	273.7
117.5°	634.8	615.4	585.3	569.6	551.0	510.1	467.8	418.4	364.0	308.8	250.8
120°	598.2	579.6	551.0	535.2	517.3	477.9	437.0	387.6	336.0	283.0	229.3
122.5°	561.0	543.1	515.1	499.4	482.2	444.9	404.8	356.8	307.4	257.9	208.5
125°	520.9	503.0	476.4	461.4	444.2	408.4	369.7	324.6	278.7	234.3	187.0
127.5°	474.3	460.0	434.2	419.1	403.4	371.8	334.6	293.7	251.5	208.5	166.2
130°	429.9	414.8	390.5	376.9	363.2	334.6	301.6	262.2	220.7	183.4	145.4
132.5°	383.3	369.7	348.9	337.5	325.3	299.5	265.8	227.1	192.0	159.8	126.1
135°	339.6	328.1	309.5	299.5	287.3	260.1	228.6	196.3	166.9	138.3	108.2
137.5°	298.8	287.3	270.1	259.4	246.5	222.1	196.3	169.8	142.6	118.2	91.7
140°	255.8	246.5	230.7	221.4	209.9	189.1	167.7	142.6	121.1	98.9	75.9
142.5°	219.2	211.4	195.6	187.0	177.0	159.8	139.7	120.4	101.0	81.7	62.3
145°	187.7	179.8	162.6	156.2	146.9	131.8	115.4	98.2	82.4	65.9	50.2
147.5°	156.9	147.6	132.5	126.8	119.6	106.8	93.9	80.2	66.6	52.3	38.7
150°	128.2	117.5	105.3	101.7	94.6	84.5	73.8	62.3	51.6	40.1	27.9
152.5°	101.0	91.7	81.7	78.1	72.4	65.9	56.6	47.3	38.7	27.9	19.3
155°	75.2	68.1	60.2	58.0	53.7	48.7	40.8	33.7	25.8	18.6	13.6
157.5°	53.0	47.3	41.6	40.1	37.3	33.0	26.5	20.8	16.5	12.2	9.3
160°	33.0	29.4	25.1	23.6	21.5	18.6	14.3	12.2	10.0	7.9	5.7
162.5°	15.8	13.6	12.2	11.5	10.0	8.6	7.9	6.4	5.7	5.0	4.3
165°	5.7	5.7	5.7	5.0	5.0	5.0	5.0	4.3	3.6	3.6	2.9
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P201247

CATALOG NUMBER: 4LBLED-LD4-8-SYMF-UNV-L840-CD1-U

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	985.9	985.9	985.9	985.9	985.9	985.9	985.9	985.9
2.5°	985.1	986.6	986.6	987.3	989.4	993.7	999.5	1000.2
5°	982.3	983.0	983.0	983.0	985.1	988.7	994.4	995.2
7.5°	975.8	975.8	975.8	975.8	978.0	980.8	985.9	986.6
10°	967.2	966.5	966.5	965.8	967.2	969.4	975.1	974.4
12.5°	956.5	955.0	954.3	954.3	953.6	955.8	959.3	960.1
15°	944.3	941.4	940.0	938.6	937.8	937.8	942.1	941.4
17.5°	930.0	925.7	923.5	921.4	918.5	918.5	921.4	920.7
20°	913.5	907.8	904.2	901.3	897.0	895.6	897.0	896.3
22.5°	897.0	887.7	884.1	879.8	873.4	870.5	869.8	869.1
25°	877.7	866.2	861.2	856.9	847.6	844.0	840.4	839.0
27.5°	860.5	844.0	837.5	830.4	819.6	814.6	808.9	807.5
30°	845.4	821.1	811.0	803.9	790.3	782.4	775.2	773.8
32.5°	834.0	800.3	786.7	778.1	759.4	748.7	739.4	735.1
35°	823.9	780.9	763.0	749.4	727.2	714.3	701.4	697.8
37.5°	814.6	764.5	740.8	722.2	697.1	678.5	664.2	658.4
40°	805.3	749.4	720.8	697.1	664.2	642.7	624.8	617.6
42.5°	796.7	734.4	703.6	674.9	631.9	606.1	586.8	576.8
45°	788.8	720.8	687.1	655.6	600.4	570.3	546.7	537.3
47.5°	783.1	707.9	670.6	636.2	571.0	533.8	509.4	497.2
50°	778.8	695.7	654.8	616.9	545.2	498.7	471.4	457.1
52.5°	776.6	684.9	640.5	599.7	521.6	465.0	432.7	422.0
55°	777.4	676.3	628.3	583.9	499.4	432.7	396.9	380.4
57.5°	778.8	668.5	616.2	568.2	477.2	401.2	361.1	343.9
60°	781.7	662.0	605.4	553.1	456.4	374.0	328.1	311.7
62.5°	784.5	656.3	594.7	538.8	436.3	348.9	295.2	276.6
65°	785.2	647.7	583.2	524.5	416.3	323.8	261.5	243.6
67.5°	782.4	636.9	568.9	508.0	395.5	299.5	230.0	211.4
70°	773.8	622.6	552.4	489.3	372.6	275.8	199.9	179.8
72.5°	758.0	604.0	533.0	468.6	350.3	250.8	172.7	148.3
75°	735.8	581.1	510.1	444.9	326.7	227.1	147.6	120.4
77.5°	705.7	551.7	482.9	418.4	300.9	202.8	126.1	94.6
80°	667.0	520.9	452.8	389.8	275.8	180.5	105.3	70.2
82.5°	621.2	485.8	420.6	360.4	252.2	157.6	86.0	48.7
85°	573.9	447.8	386.9	329.6	227.1	136.1	69.5	28.7
87.5°	527.3	409.8	354.6	301.6	201.3	116.8	53.7	11.5
90°	481.5	373.3	321.0	271.5	179.1	98.9	40.1	0.0
92.5°	443.5	346.1	298.8	251.5	164.8	89.6	34.4	0.0
95°	409.8	320.3	275.1	231.4	149.7	81.0	28.7	0.0
97.5°	379.0	295.9	254.3	212.8	136.1	71.6	23.6	0.0
100°	349.6	271.5	232.9	195.6	123.2	63.8	17.9	0.0
102.5°	323.8	250.0	213.5	177.0	110.3	55.9	12.9	0.0
105°	298.8	229.3	195.6	160.5	98.9	48.7	7.9	0.0
107.5°	276.6	209.9	177.7	145.4	88.1	42.3	5.0	0.0
110°	255.1	192.0	160.5	131.1	78.8	36.5	4.3	0.0



TEST NUMBER: P201247

CATALOG NUMBER: 4LBLED-LD4-8-SYMF-UNV-L840-CD1-U

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	235.0	174.8	145.4	117.5	70.9	30.8	4.3	0.0
115°	214.2	158.3	131.1	106.0	63.0	25.1	3.6	0.0
117.5°	196.3	142.6	118.2	96.7	55.2	20.1	3.6	0.0
120°	178.4	129.0	107.5	86.7	48.0	15.0	3.6	0.0
122.5°	160.5	116.8	96.0	77.4	41.6	12.2	2.9	0.0
125°	144.0	103.9	85.3	67.3	34.4	10.7	2.9	0.0
127.5°	127.5	91.0	73.8	58.0	27.2	9.3	2.1	0.0
130°	111.1	78.1	63.0	48.7	20.8	7.9	2.1	0.0
132.5°	96.0	65.9	53.0	40.1	16.5	6.4	1.4	0.0
135°	81.0	55.2	43.7	31.5	12.9	5.7	1.4	0.0
137.5°	68.1	45.1	34.4	23.6	10.7	4.3	1.4	0.0
140°	55.9	35.8	25.8	17.9	8.6	3.6	0.7	0.0
142.5°	44.4	26.5	19.3	13.6	7.2	2.9	0.7	0.0
145°	34.4	19.3	14.3	10.7	6.4	2.1	0.7	0.0
147.5°	25.1	15.0	11.5	9.3	5.0	2.1	0.7	0.0
150°	17.9	11.5	9.3	7.2	3.6	1.4	0.7	0.0
152.5°	13.6	8.6	7.2	5.7	2.9	1.4	0.7	0.0
155°	10.0	6.4	5.7	4.3	2.1	1.4	0.7	0.0
157.5°	7.2	5.0	4.3	2.9	2.1	1.4	0.7	0.0
160°	4.3	3.6	2.9	2.1	1.4	0.7	0.7	0.0
162.5°	3.6	2.1	2.1	2.1	1.4	0.7	0.7	0.0
165°	2.1	1.4	1.4	1.4	0.7	0.7	0.7	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)