

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: P201309

Luminaire Tested: **8LBLED-LD4-14-SYMW-UNV-L840-CD2-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P201309
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-LD4-14-SYMW-UNV-L840-CD2-U
Description: 8 ft. Low Bay Linear, 14000 lm, Wht Sym lens, 4K
Light Source: (784) 4000K CCT, 80 CRI LEDS
2UT217098A8404C
Ballast/Driver: OSRAM
2x(OTi50W01120CC)

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14074.0 lumens
Efficiency: N/A
Efficacy: 141.3 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

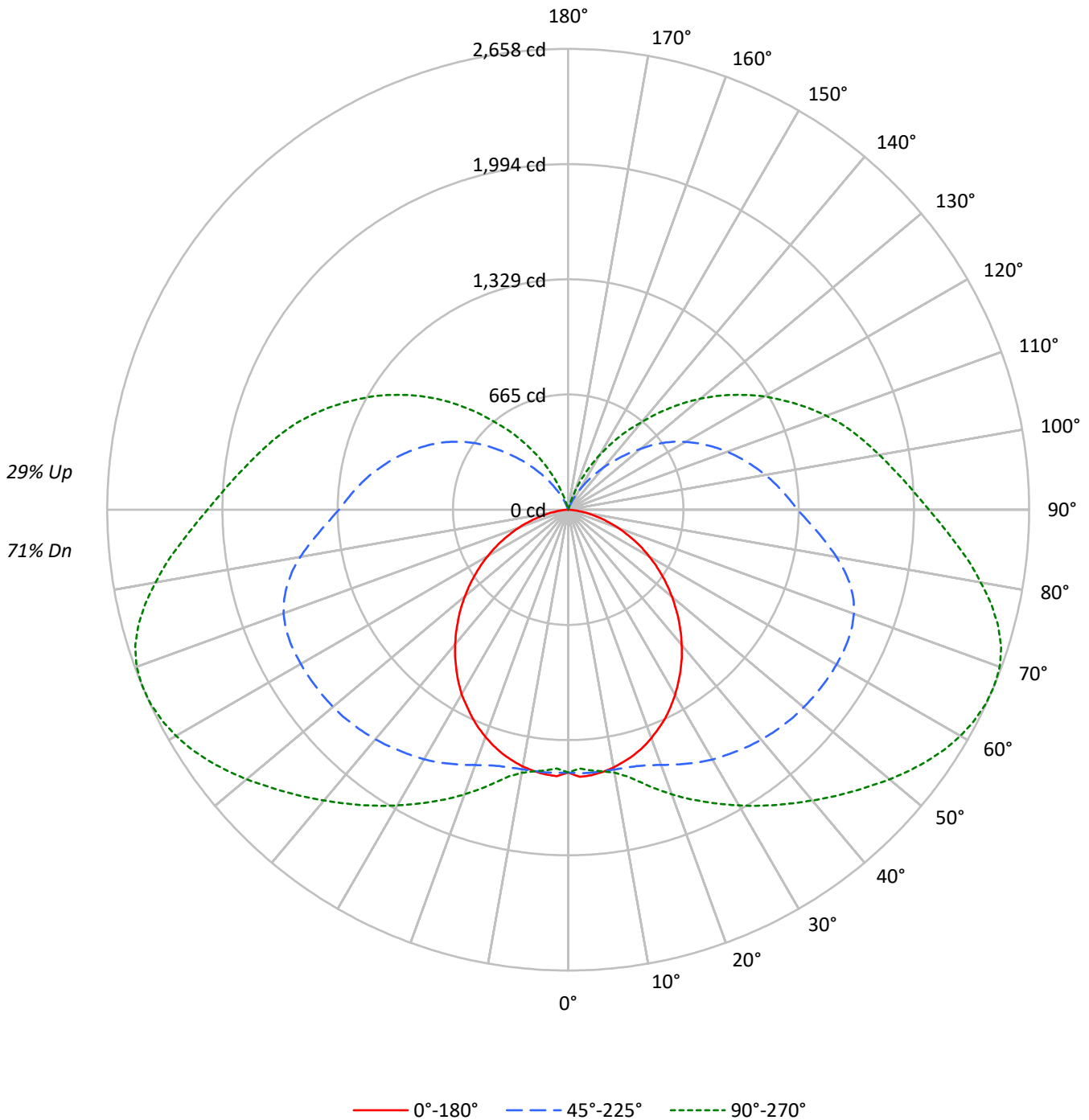
Input Watts (W): 99.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	12211	12211	12211
5°	12403	11007	12362
10°	12291	10336	12250
15°	12135	10190	12083
20°	11906	10306	11842
25°	11647	10449	11558
30°	11296	10658	11262
35°	10916	10925	10867
40°	10474	11259	10435
45°	10009	11686	9953
50°	9497	12207	9451
55°	8936	12773	8885
60°	8322	13322	8265
65°	7600	13785	7532
70°	6726	14107	6642
75°	5596	14135	5380
80°	4294	13899	3987
85°	2430	13620	2159



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	144.7	1.0
10°-20°	435.9	3.1
20°-30°	737.9	5.2
30°-40°	1031.9	7.3
40°-50°	1300.2	9.2
50°-60°	1526.6	10.8
60°-70°	1669.3	11.9
70°-80°	1649.2	11.7
80°-90°	1448.9	10.3
90°-100°	1233.3	8.8
100°-110°	1028.5	7.3
110°-120°	796.6	5.7
120°-130°	554.5	3.9
130°-140°	323.6	2.3
140°-150°	147.6	1.0
150°-160°	42.1	0.3
160°-170°	3.0	0.0
170°-180°	0.0	0.0
0°-30°	1318.6	9.4
0°-40°	2350.5	16.7
0°-60°	5177.3	36.8
0°-90°	9944.7	70.7
90°-120°	3058.4	21.7
90°-150°	4084.1	29.0
90°-180°	4129.0	29.3
0°-180°	14074.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1516	1516	1516	1516	1516	
5°	1537	1523	1509	1521	1532	146
15°	1465	1531	1629	1531	1459	413
25°	1326	1617	1858	1617	1316	610
35°	1130	1699	2079	1696	1125	706
45°	901	1756	2303	1753	896	695
55°	660	1782	2527	1777	656	591
65°	421	1781	2654	1775	417	417
75°	197	1685	2565	1677	190	212
85°	34	1441	2245	1437	30	43
90°	0	1322	2079	1322	0	2
95°	0	1239	1943	1240	0	1
105°	1	1066	1708	1069	0	1
115°	1	881	1447	884	1	1
125°	2	674	1154	674	1	2
135°	2	427	828	427	1	2
145°	4	219	513	216	2	2
155°	4	62	228	58	2	2
165°	4	6	16	0	2	1
175°	0	0	0	0	0	0
180°	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°	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6
2.5°	1542.1	1540.9	1534.6	1524.4	1520.6	1518.1	1516.9	1513.1	1511.8	1514.3	1521.9
5°	1537.1	1534.6	1529.5	1520.6	1516.9	1515.6	1514.3	1510.5	1509.3	1513.1	1523.2
7.5°	1525.7	1524.4	1519.4	1510.5	1509.3	1506.7	1506.7	1504.2	1504.2	1510.5	1521.9
10°	1509.3	1508.0	1502.9	1496.6	1495.4	1495.4	1495.4	1495.4	1497.9	1508.0	1521.9
12.5°	1487.8	1487.8	1484.0	1478.9	1480.2	1480.2	1481.5	1484.0	1491.6	1506.7	1524.4
15°	1465.0	1463.8	1460.0	1458.7	1462.5	1463.8	1467.6	1473.9	1486.5	1508.0	1530.8
17.5°	1436.0	1436.0	1432.2	1433.4	1441.0	1444.8	1451.1	1462.5	1482.7	1511.8	1544.7
20°	1401.8	1403.1	1401.8	1405.6	1418.3	1425.8	1433.4	1452.4	1481.5	1521.9	1566.2
22.5°	1363.9	1366.4	1366.4	1376.5	1393.0	1404.4	1415.7	1442.3	1484.0	1539.6	1591.4
25°	1326.0	1326.0	1329.8	1343.7	1366.4	1380.3	1398.0	1436.0	1492.8	1558.6	1616.7
27.5°	1280.5	1284.3	1290.6	1309.6	1341.2	1360.1	1381.6	1436.0	1502.9	1577.5	1642.0
30°	1232.4	1236.2	1246.3	1272.9	1313.3	1337.4	1367.7	1436.0	1511.8	1592.7	1663.5
32.5°	1181.9	1188.2	1202.1	1236.2	1285.5	1318.4	1357.6	1434.7	1519.4	1605.3	1681.2
35°	1130.1	1136.4	1157.9	1198.3	1262.8	1300.7	1346.2	1430.9	1523.2	1616.7	1698.9
37.5°	1075.7	1087.1	1111.1	1161.7	1240.0	1285.5	1333.6	1427.1	1527.0	1625.6	1716.6
40°	1017.6	1028.9	1063.1	1123.7	1217.3	1265.3	1318.4	1422.1	1529.5	1634.4	1731.7
42.5°	960.7	975.8	1015.0	1088.3	1194.5	1247.6	1303.2	1414.5	1528.2	1640.7	1744.4
45°	901.3	919.0	967.0	1054.2	1169.2	1226.1	1285.5	1404.4	1525.7	1644.5	1755.8
47.5°	840.6	862.1	919.0	1020.1	1144.0	1203.4	1267.8	1394.2	1521.9	1647.1	1765.9
50°	781.2	806.5	870.9	986.0	1116.2	1179.4	1246.3	1382.9	1515.6	1648.3	1772.2
52.5°	721.8	749.6	825.4	951.8	1087.1	1154.1	1224.9	1369.0	1508.0	1647.1	1778.5
55°	659.8	690.2	779.9	915.2	1056.7	1126.3	1200.8	1351.3	1496.6	1642.0	1782.3
57.5°	600.4	634.6	736.9	879.8	1025.1	1098.5	1178.1	1332.3	1484.0	1638.2	1786.1
60°	539.7	578.9	692.7	839.3	992.3	1068.1	1150.3	1310.8	1468.8	1629.4	1786.1
62.5°	480.3	524.6	649.7	802.7	959.4	1037.8	1122.5	1286.8	1452.4	1620.5	1786.1
65°	420.9	471.5	605.5	762.2	922.8	1004.9	1090.9	1261.5	1432.2	1607.9	1781.0
67.5°	362.8	420.9	560.0	720.5	884.8	969.5	1058.0	1232.4	1409.4	1591.4	1770.9
70°	305.9	370.4	514.5	676.3	845.6	929.1	1021.3	1200.8	1382.9	1569.9	1753.2
72.5°	249.0	322.3	466.4	632.0	803.9	889.9	983.4	1164.2	1350.0	1540.9	1725.4
75°	197.2	274.3	420.9	586.5	761.0	848.2	941.7	1123.7	1310.8	1502.9	1685.0
77.5°	150.4	230.1	376.7	542.3	715.4	806.5	898.7	1079.5	1265.3	1454.9	1631.9
80°	106.2	187.1	332.4	496.8	669.9	759.7	850.7	1031.5	1217.3	1398.0	1571.2
82.5°	65.7	147.9	288.2	452.5	625.7	714.2	803.9	983.4	1162.9	1338.6	1505.5
85°	34.1	111.2	246.5	410.8	582.7	669.9	758.4	934.1	1107.3	1277.9	1441.0
87.5°	11.4	80.9	212.4	374.2	543.5	630.8	716.7	887.4	1055.5	1218.5	1377.8
90°	0.0	60.7	187.1	345.1	510.7	595.4	681.3	845.6	1010.0	1170.5	1322.2
92.5°	0.0	51.8	170.6	324.9	487.9	571.3	654.8	817.8	975.8	1131.3	1279.2
95°	0.0	41.7	156.7	304.6	463.9	546.1	628.2	787.5	943.0	1094.7	1238.8
97.5°	0.0	32.9	141.6	285.7	439.9	519.5	599.2	757.2	908.8	1058.0	1197.1
100°	1.3	25.3	125.1	261.7	414.6	493.0	570.1	724.3	872.2	1016.3	1154.1
102.5°	1.3	17.7	110.0	241.4	388.1	463.9	539.7	690.2	835.5	978.4	1109.8
105°	1.3	12.6	94.8	219.9	362.8	436.1	510.7	657.3	798.9	936.7	1065.6
107.5°	1.3	8.8	80.9	199.7	337.5	407.0	479.1	621.9	761.0	894.9	1021.3
110°	1.3	6.3	68.3	178.2	309.7	379.2	448.7	586.5	721.8	852.0	975.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	1.3	5.1	55.6	158.0	281.9	350.1	417.1	551.1	682.6	809.0	929.1
115°	1.3	5.1	44.2	139.0	254.1	319.8	384.3	515.7	640.9	764.7	881.0
117.5°	1.3	3.8	34.1	120.1	228.8	289.5	351.4	476.5	600.4	720.5	833.0
120°	1.3	3.8	25.3	101.1	202.2	259.1	319.8	438.6	557.4	673.7	781.2
122.5°	2.5	3.8	19.0	84.7	178.2	230.1	288.2	400.7	511.9	624.4	730.6
125°	2.5	2.5	15.2	68.3	152.9	201.0	252.8	361.5	462.6	570.1	673.7
127.5°	2.5	2.5	11.4	51.8	127.7	171.9	218.7	319.8	418.4	514.5	613.1
130°	2.5	2.5	10.1	37.9	103.7	142.8	185.8	276.8	369.1	457.6	547.3
132.5°	2.5	2.5	7.6	27.8	82.2	117.6	155.5	236.4	321.1	407.0	487.9
135°	2.5	2.5	6.3	20.2	61.9	93.5	126.4	198.5	275.6	356.5	427.2
137.5°	2.5	2.5	6.3	15.2	45.5	70.8	99.9	165.6	233.8	305.9	370.4
140°	2.5	2.5	5.1	12.6	31.6	51.8	75.8	132.7	190.9	257.9	319.8
142.5°	2.5	2.5	3.8	10.1	22.8	36.7	54.4	102.4	154.2	212.4	266.7
145°	3.8	2.5	3.8	8.8	16.4	25.3	37.9	77.1	118.8	170.6	218.7
147.5°	2.5	2.5	2.5	6.3	12.6	17.7	25.3	53.1	89.7	132.7	173.2
150°	3.8	2.5	2.5	5.1	10.1	12.6	17.7	35.4	61.9	97.3	132.7
152.5°	3.8	2.5	2.5	5.1	7.6	10.1	12.6	22.8	40.4	65.7	94.8
155°	3.8	2.5	2.5	3.8	6.3	7.6	10.1	15.2	24.0	40.4	61.9
157.5°	3.8	3.8	3.8	3.8	5.1	6.3	7.6	11.4	13.9	22.8	35.4
160°	3.8	3.8	2.5	2.5	3.8	3.8	5.1	7.6	10.1	12.6	17.7
162.5°	3.8	3.8	3.8	2.5	2.5	2.5	3.8	5.1	6.3	8.8	11.4
165°	3.8	3.8	2.5	2.5	2.5	2.5	2.5	2.5	3.8	5.1	6.3
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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6
2.5°	1524.4	1518.1	1515.6	1510.5	1506.7	1504.2	1500.4	1497.9	1495.4	1494.1	1494.1
5°	1525.7	1519.4	1516.9	1513.1	1511.8	1509.3	1506.7	1509.3	1508.0	1509.3	1508.0
7.5°	1527.0	1521.9	1521.9	1520.6	1519.4	1519.4	1516.9	1519.4	1520.6	1521.9	1520.6
10°	1530.8	1529.5	1532.0	1533.3	1533.3	1533.3	1533.3	1535.8	1540.9	1540.9	1539.6
12.5°	1537.1	1540.9	1548.5	1554.8	1557.3	1557.3	1562.4	1567.4	1573.7	1575.0	1573.7
15°	1549.7	1561.1	1577.5	1591.4	1597.8	1601.5	1611.7	1620.5	1626.8	1629.4	1626.8
17.5°	1572.5	1594.0	1619.2	1639.5	1647.1	1652.1	1666.0	1674.9	1682.4	1688.8	1686.2
20°	1602.8	1631.9	1662.2	1686.2	1696.3	1702.7	1717.8	1734.3	1741.9	1746.9	1745.6
22.5°	1635.7	1669.8	1703.9	1733.0	1744.4	1752.0	1770.9	1786.1	1797.5	1803.8	1802.5
25°	1667.3	1706.5	1748.2	1779.8	1793.7	1802.5	1822.8	1840.4	1853.1	1858.1	1856.9
27.5°	1698.9	1744.4	1789.9	1826.5	1840.4	1851.8	1875.8	1894.8	1910.0	1913.8	1913.8
30°	1724.2	1777.2	1826.5	1868.3	1883.4	1898.6	1925.1	1950.4	1964.3	1969.4	1968.1
32.5°	1748.2	1807.6	1863.2	1910.0	1928.9	1944.1	1975.7	2003.5	2019.9	2025.0	2019.9
35°	1772.2	1837.9	1899.9	1950.4	1970.6	1989.6	2025.0	2056.6	2074.3	2079.4	2076.8
37.5°	1794.9	1868.3	1935.3	1990.9	2014.9	2035.1	2071.8	2109.7	2128.7	2133.7	2128.7
40°	1816.4	1896.1	1969.4	2030.1	2056.6	2080.6	2123.6	2161.5	2183.0	2189.3	2186.8
42.5°	1836.7	1923.9	2003.5	2070.5	2100.8	2126.1	2174.2	2215.9	2238.6	2246.2	2239.9
45°	1854.4	1951.7	2037.6	2109.7	2142.6	2171.6	2226.0	2271.5	2294.2	2303.1	2295.5
47.5°	1872.1	1977.0	2069.2	2148.9	2186.8	2217.1	2277.8	2325.8	2352.4	2360.0	2352.4
50°	1888.5	2002.2	2103.4	2189.3	2229.8	2263.9	2329.6	2381.5	2408.0	2419.4	2409.3
52.5°	1903.7	2026.3	2135.0	2227.2	2271.5	2309.4	2380.2	2435.8	2467.4	2475.0	2464.9
55°	1918.8	2049.0	2162.8	2262.6	2310.7	2351.1	2428.2	2486.4	2518.0	2526.8	2516.7
57.5°	1931.5	2069.2	2189.3	2296.8	2346.1	2392.8	2469.9	2530.6	2563.5	2573.6	2563.5
60°	1940.3	2085.7	2213.3	2324.6	2376.4	2424.4	2506.6	2567.3	2600.1	2610.3	2600.1
62.5°	1946.6	2098.3	2229.8	2346.1	2401.7	2451.0	2534.4	2593.8	2628.0	2638.1	2628.0
65°	1947.9	2103.4	2238.6	2360.0	2416.9	2466.2	2550.8	2610.3	2645.6	2654.5	2644.4
67.5°	1940.3	2098.3	2238.6	2362.5	2419.4	2469.9	2554.6	2614.0	2648.2	2658.3	2648.2
70°	1925.1	2083.1	2226.0	2352.4	2409.3	2459.8	2543.3	2603.9	2638.1	2648.2	2636.8
72.5°	1896.1	2056.6	2199.4	2328.4	2382.7	2432.0	2514.2	2573.6	2606.5	2617.8	2605.2
75°	1854.4	2014.9	2157.7	2281.6	2338.5	2384.0	2466.2	2524.3	2554.6	2564.7	2553.4
77.5°	1800.0	1961.8	2099.6	2222.2	2279.1	2320.8	2400.4	2457.3	2487.6	2496.5	2485.1
80°	1736.8	1897.3	2030.1	2151.4	2204.5	2243.7	2323.3	2377.7	2406.7	2415.6	2409.3
82.5°	1667.3	1824.0	1952.9	2071.8	2122.3	2161.5	2239.9	2293.0	2322.1	2334.7	2324.6
85°	1596.5	1746.9	1873.3	1988.3	2038.9	2080.6	2152.7	2205.8	2234.8	2244.9	2238.6
87.5°	1525.7	1671.1	1793.7	1904.9	1951.7	1994.7	2066.7	2119.8	2148.9	2159.0	2151.4
90°	1466.3	1605.3	1722.9	1832.9	1880.9	1920.1	1989.6	2040.2	2069.2	2079.4	2073.0
92.5°	1418.3	1551.0	1664.7	1765.9	1811.4	1853.1	1920.1	1969.4	1998.5	2007.3	2001.0
95°	1372.8	1501.7	1611.7	1710.3	1754.5	1794.9	1858.1	1906.2	1934.0	1942.8	1937.8
97.5°	1329.8	1453.7	1559.8	1655.9	1701.4	1738.1	1798.7	1844.2	1872.1	1879.6	1872.1
100°	1281.7	1406.9	1510.5	1605.3	1644.5	1681.2	1741.9	1787.4	1811.4	1821.5	1815.2
102.5°	1236.2	1356.3	1458.7	1552.2	1594.0	1630.6	1686.2	1730.5	1758.3	1764.6	1758.3
105°	1189.5	1305.8	1405.6	1497.9	1539.6	1575.0	1630.6	1673.6	1700.1	1707.7	1701.4
107.5°	1141.4	1253.9	1353.8	1441.0	1481.5	1514.3	1571.2	1612.9	1635.7	1649.6	1639.5
110°	1089.6	1200.8	1296.9	1381.6	1420.8	1452.4	1508.0	1549.7	1571.2	1583.8	1575.0



TEST NUMBER: P201309

CATALOG NUMBER: 8LBLED-LD4-14-SYMW-UNV-L840-CD2-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	1041.6	1146.5	1238.8	1320.9	1357.6	1389.2	1443.5	1484.0	1504.2	1516.9	1508.0
115°	991.0	1088.3	1179.4	1257.7	1294.4	1323.5	1377.8	1415.7	1436.0	1447.3	1439.7
117.5°	936.7	1031.5	1117.4	1194.5	1228.7	1257.7	1309.6	1347.5	1366.4	1375.3	1367.7
120°	883.6	975.8	1056.7	1130.1	1164.2	1192.0	1242.6	1277.9	1295.6	1305.8	1298.2
122.5°	827.9	917.7	991.0	1064.3	1095.9	1122.5	1168.0	1205.9	1222.3	1231.2	1226.1
125°	768.5	857.0	927.8	994.8	1025.1	1050.4	1094.7	1126.3	1145.2	1154.1	1149.0
127.5°	706.6	791.3	863.3	925.3	954.4	982.2	1018.8	1054.2	1066.9	1077.0	1071.9
130°	637.1	721.8	788.8	852.0	879.8	902.5	943.0	972.1	988.5	997.3	993.5
132.5°	568.8	647.2	718.0	774.9	801.4	825.4	862.1	889.9	912.6	913.9	908.8
135°	503.1	571.3	635.8	696.5	723.0	747.1	779.9	805.2	826.7	827.9	821.6
137.5°	439.9	503.1	558.7	615.6	643.4	668.7	699.0	723.0	743.3	747.1	738.2
140°	379.2	437.4	487.9	538.5	565.0	589.0	621.9	642.1	658.6	659.8	654.8
142.5°	321.1	374.2	418.4	465.2	489.2	510.7	547.3	567.6	582.7	586.5	578.9
145°	266.7	313.5	355.2	395.6	415.9	436.1	472.8	496.8	509.4	513.2	505.6
147.5°	214.9	254.1	290.7	327.4	345.1	364.0	394.4	424.7	436.1	438.6	432.3
150°	166.9	199.7	232.6	262.9	278.1	294.5	321.1	348.9	364.0	366.6	361.5
152.5°	122.6	150.4	177.0	202.2	214.9	227.5	250.3	276.8	295.8	297.1	292.0
155°	83.4	106.2	127.7	146.6	158.0	168.1	185.8	206.0	226.3	227.5	223.7
157.5°	50.6	65.7	83.4	98.6	106.2	115.0	127.7	142.8	160.5	164.3	160.5
160°	25.3	34.1	44.2	54.4	60.7	67.0	73.3	86.0	96.1	104.9	99.9
162.5°	12.6	15.2	17.7	22.8	25.3	29.1	34.1	39.2	44.2	53.1	46.8
165°	7.6	8.8	10.1	10.1	11.4	11.4	11.4	11.4	11.4	16.4	11.4
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: P201309

CATALOG NUMBER: 8LBLELD4-14-SYMW-UNV-L840-CD2-U

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6
2.5°	1497.9	1500.4	1505.5	1508.0	1510.5	1513.1	1518.1	1525.7	1519.4	1513.1	1514.3
5°	1508.0	1508.0	1509.3	1513.1	1513.1	1514.3	1519.4	1527.0	1520.6	1511.8	1511.8
7.5°	1520.6	1519.4	1520.6	1521.9	1520.6	1520.6	1523.2	1527.0	1519.4	1509.3	1506.7
10°	1538.3	1534.6	1533.3	1534.6	1533.3	1529.5	1530.8	1530.8	1520.6	1505.5	1499.2
12.5°	1569.9	1563.6	1558.6	1557.3	1553.5	1547.2	1543.4	1538.3	1523.2	1505.5	1492.8
15°	1621.8	1611.7	1601.5	1597.8	1591.4	1576.3	1563.6	1552.2	1530.8	1505.5	1487.8
17.5°	1679.9	1667.3	1653.4	1648.3	1639.5	1618.0	1596.5	1575.0	1544.7	1509.3	1484.0
20°	1735.5	1720.4	1703.9	1695.1	1686.2	1659.7	1634.4	1606.6	1567.4	1520.6	1482.7
22.5°	1791.2	1773.5	1750.7	1743.1	1731.7	1701.4	1671.1	1639.5	1592.7	1537.1	1485.3
25°	1845.5	1825.3	1803.8	1791.2	1778.5	1744.4	1707.7	1669.8	1616.7	1556.0	1494.1
27.5°	1899.9	1877.1	1850.6	1836.7	1824.0	1786.1	1744.4	1701.4	1642.0	1573.7	1505.5
30°	1952.9	1927.7	1896.1	1880.9	1865.7	1822.8	1774.7	1726.7	1662.2	1588.9	1513.1
32.5°	2006.0	1978.2	1942.8	1925.1	1907.4	1858.1	1805.1	1750.7	1679.9	1602.8	1519.4
35°	2057.9	2027.5	1988.3	1966.9	1947.9	1894.8	1835.4	1774.7	1696.3	1614.2	1523.2
37.5°	2111.0	2076.8	2033.8	2009.8	1988.3	1930.2	1864.5	1796.2	1714.0	1623.0	1527.0
40°	2164.0	2127.4	2079.4	2054.1	2027.5	1964.3	1893.5	1817.7	1729.2	1631.9	1528.2
42.5°	2218.4	2177.9	2124.9	2097.1	2069.2	1998.5	1920.1	1836.7	1741.9	1638.2	1527.0
45°	2272.8	2227.2	2170.4	2138.8	2108.4	2031.3	1946.6	1853.1	1753.2	1642.0	1524.4
47.5°	2327.1	2279.1	2217.1	2183.0	2146.3	2064.2	1971.9	1870.8	1763.3	1643.3	1521.9
50°	2382.7	2330.9	2263.9	2226.0	2188.1	2095.8	1997.2	1886.0	1769.7	1644.5	1515.6
52.5°	2437.1	2381.5	2309.4	2269.0	2224.7	2127.4	2021.2	1901.1	1774.7	1643.3	1506.7
55°	2486.4	2428.2	2352.4	2309.4	2260.1	2156.5	2042.7	1913.8	1777.2	1639.5	1495.4
57.5°	2531.9	2472.5	2392.8	2344.8	2296.8	2184.3	2062.9	1927.7	1779.8	1633.1	1482.7
60°	2567.3	2507.9	2424.4	2376.4	2324.6	2207.0	2079.4	1935.3	1779.8	1624.3	1466.3
62.5°	2593.8	2534.4	2451.0	2400.4	2346.1	2226.0	2092.0	1942.8	1779.8	1615.4	1449.9
65°	2610.3	2552.1	2466.2	2415.6	2360.0	2234.8	2098.3	1944.1	1774.7	1602.8	1429.6
67.5°	2612.8	2554.6	2468.7	2419.4	2362.5	2234.8	2094.5	1937.8	1764.6	1586.4	1406.9
70°	2601.4	2543.3	2458.6	2408.0	2352.4	2223.5	2080.6	1922.6	1746.9	1564.9	1380.3
72.5°	2572.3	2512.9	2430.8	2378.9	2324.6	2196.9	2051.5	1894.8	1717.8	1534.6	1348.7
75°	2521.8	2463.6	2382.7	2334.7	2279.1	2153.9	2007.3	1854.4	1677.4	1496.6	1309.6
77.5°	2454.8	2397.9	2318.3	2270.2	2218.4	2095.8	1951.7	1800.0	1628.1	1449.9	1264.0
80°	2375.1	2320.8	2242.4	2195.6	2145.1	2026.3	1884.7	1736.8	1567.4	1394.2	1213.5
82.5°	2290.4	2237.4	2161.5	2113.5	2065.4	1950.4	1815.2	1668.5	1502.9	1334.8	1159.1
85°	2208.3	2151.4	2075.6	2031.3	1983.3	1870.8	1743.1	1597.8	1437.2	1274.2	1106.0
87.5°	2122.3	2066.7	1992.1	1950.4	1904.9	1791.2	1669.8	1528.2	1375.3	1219.8	1054.2
90°	2044.0	1989.6	1917.6	1875.8	1832.9	1722.9	1604.1	1470.1	1322.2	1171.8	1011.2
92.5°	1971.9	1921.3	1853.1	1812.6	1770.9	1666.0	1552.2	1422.1	1279.2	1133.8	977.1
95°	1910.0	1860.7	1797.5	1758.3	1715.3	1615.4	1504.2	1376.5	1240.0	1098.5	945.5
97.5°	1848.0	1801.3	1739.3	1701.4	1661.0	1563.6	1456.2	1333.6	1199.6	1059.3	911.4
100°	1791.2	1745.6	1682.4	1648.3	1609.1	1515.6	1409.4	1289.3	1157.9	1020.1	874.7
102.5°	1735.5	1690.0	1629.4	1595.2	1557.3	1463.8	1360.1	1241.3	1113.6	980.9	839.3
105°	1678.7	1634.4	1573.7	1539.6	1501.7	1410.7	1309.6	1194.5	1069.4	940.4	802.7
107.5°	1616.7	1573.7	1515.6	1481.5	1446.1	1355.1	1257.7	1145.2	1025.1	898.7	764.7
110°	1553.5	1510.5	1457.4	1420.8	1386.7	1298.2	1203.4	1095.9	978.4	855.8	725.6



TEST NUMBER: P201309

CATALOG NUMBER: 8LBLED-LD4-14-SYMW-UNV-L840-CD2-U

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	1487.8	1446.1	1394.2	1360.1	1324.7	1240.0	1149.0	1045.4	931.6	811.5	685.1
115°	1420.8	1379.1	1327.2	1293.1	1261.5	1180.6	1092.1	993.5	883.6	767.3	644.7
117.5°	1347.5	1310.8	1261.5	1231.2	1198.3	1117.4	1035.3	940.4	835.5	720.5	602.9
120°	1279.2	1243.8	1195.8	1162.9	1133.8	1056.7	978.4	886.1	782.4	675.0	560.0
122.5°	1207.2	1169.2	1125.0	1097.2	1065.6	994.8	919.0	830.5	729.4	623.2	513.2
125°	1131.3	1095.9	1052.9	1026.4	997.3	930.3	858.3	769.8	673.7	571.3	465.2
127.5°	1054.2	1021.3	979.6	955.6	927.8	862.1	792.6	706.6	610.5	514.5	415.9
130°	975.8	943.0	905.1	879.8	853.2	791.3	723.0	638.3	547.3	457.6	367.8
132.5°	893.7	862.1	824.2	801.4	777.4	718.0	648.5	566.3	485.4	404.5	321.1
135°	809.0	779.9	745.8	724.3	700.3	639.6	573.9	499.3	427.2	352.7	275.6
137.5°	726.8	700.3	667.4	645.9	619.4	562.5	504.4	437.4	371.6	302.1	230.1
140°	645.9	621.9	590.3	566.3	543.5	490.4	437.4	376.7	317.3	254.1	189.6
142.5°	570.1	548.6	513.2	490.4	469.0	422.2	375.4	318.5	265.4	208.6	152.9
145°	495.5	476.5	437.4	417.1	399.4	357.7	311.0	264.2	216.2	166.9	118.8
147.5°	423.5	400.7	364.0	346.3	329.9	293.3	254.1	211.1	171.9	128.9	87.2
150°	353.9	326.1	294.5	279.4	265.4	233.8	199.7	164.3	130.2	93.5	60.7
152.5°	281.9	252.8	231.3	216.2	203.5	178.2	150.4	120.1	92.3	63.2	37.9
155°	208.6	188.3	168.1	160.5	149.2	127.7	104.9	80.9	58.1	37.9	21.5
157.5°	144.1	128.9	116.3	108.7	99.9	83.4	64.5	46.8	32.9	20.2	10.1
160°	87.2	77.1	68.3	61.9	55.6	44.2	31.6	21.5	13.9	6.3	3.8
162.5°	39.2	32.9	29.1	25.3	21.5	16.4	10.1	5.1	2.5	1.3	1.3
165°	7.6	5.1	3.8	2.5	1.3	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: P201309

CATALOG NUMBER: 8LBLELD4-14-SYMW-UNV-L840-CD2-U

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6	1515.6
2.5°	1515.6	1516.9	1518.1	1518.1	1521.9	1528.2	1537.1	1538.3
5°	1511.8	1513.1	1513.1	1514.3	1518.1	1523.2	1530.8	1532.0
7.5°	1505.5	1505.5	1505.5	1505.5	1508.0	1513.1	1519.4	1520.6
10°	1496.6	1494.1	1492.8	1491.6	1492.8	1497.9	1502.9	1504.2
12.5°	1486.5	1480.2	1477.7	1476.4	1476.4	1477.7	1482.7	1482.7
15°	1475.1	1465.0	1461.2	1458.7	1453.7	1453.7	1458.7	1458.7
17.5°	1463.8	1449.9	1442.3	1437.2	1429.6	1428.4	1430.9	1428.4
20°	1453.7	1432.2	1422.1	1413.2	1401.8	1398.0	1398.0	1394.2
22.5°	1443.5	1414.5	1400.6	1387.9	1370.2	1363.9	1360.1	1357.6
25°	1437.2	1395.5	1377.8	1362.6	1338.6	1324.7	1320.9	1315.9
27.5°	1436.0	1380.3	1356.3	1337.4	1304.5	1288.1	1277.9	1271.6
30°	1436.0	1365.2	1333.6	1307.0	1266.6	1241.3	1231.2	1228.7
32.5°	1434.7	1353.8	1315.9	1281.7	1229.9	1197.1	1181.9	1178.1
35°	1430.9	1342.4	1298.2	1256.5	1193.3	1151.5	1130.1	1125.0
37.5°	1425.8	1328.5	1281.7	1233.7	1155.3	1104.8	1078.2	1070.6
40°	1420.8	1314.6	1261.5	1209.7	1117.4	1056.7	1022.6	1013.8
42.5°	1411.9	1299.4	1243.8	1186.9	1082.0	1008.7	969.5	955.6
45°	1403.1	1281.7	1222.3	1161.7	1046.6	959.4	910.1	896.2
47.5°	1391.7	1262.8	1200.8	1133.8	1013.8	911.4	855.8	838.1
50°	1379.1	1243.8	1176.8	1107.3	978.4	864.6	796.3	777.4
52.5°	1365.2	1222.3	1152.8	1079.5	943.0	820.4	740.7	716.7
55°	1347.5	1198.3	1125.0	1047.9	906.3	774.9	683.8	656.0
57.5°	1328.5	1174.3	1098.5	1018.8	869.7	731.9	628.2	596.6
60°	1305.8	1146.5	1065.6	986.0	831.7	687.6	572.6	536.0
62.5°	1281.7	1118.7	1036.5	951.8	793.8	644.7	518.3	476.5
65°	1256.5	1087.1	1003.7	916.4	753.4	599.2	465.2	417.1
67.5°	1226.1	1052.9	967.0	878.5	711.7	553.7	413.3	359.0
70°	1195.8	1016.3	926.5	838.1	668.7	508.1	364.0	302.1
72.5°	1159.1	977.1	886.1	796.3	624.4	463.9	316.0	245.2
75°	1118.7	936.7	844.4	753.4	578.9	417.1	268.0	189.6
77.5°	1075.7	892.4	801.4	709.1	536.0	372.9	223.7	142.8
80°	1030.2	845.6	755.9	663.6	490.4	328.7	180.8	98.6
82.5°	979.6	800.1	710.4	618.1	447.5	285.7	141.6	60.7
85°	931.6	754.6	667.4	576.4	405.8	242.7	106.2	30.3
87.5°	884.8	712.9	628.2	538.5	370.4	209.8	77.1	8.8
90°	846.9	678.8	595.4	508.1	342.6	185.8	58.1	0.0
92.5°	816.6	652.2	570.1	485.4	322.3	169.4	49.3	0.0
95°	787.5	624.4	546.1	461.4	302.1	155.5	39.2	0.0
97.5°	755.9	597.9	519.5	437.4	281.9	140.3	31.6	0.0
100°	724.3	568.8	493.0	413.3	259.1	125.1	22.8	0.0
102.5°	690.2	538.5	463.9	386.8	238.9	108.7	15.2	0.0
105°	657.3	508.1	436.1	360.3	217.4	94.8	10.1	0.0
107.5°	621.9	477.8	407.0	335.0	195.9	79.6	6.3	0.0
110°	586.5	447.5	377.9	308.4	175.7	65.7	5.1	0.0



TEST NUMBER: P201309

CATALOG NUMBER: 8LBLED-LD4-14-SYMW-UNV-L840-CD2-U

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	551.1	415.9	348.9	280.6	155.5	53.1	3.8	1.3
115°	513.2	383.0	318.5	252.8	135.3	41.7	3.8	1.3
117.5°	475.3	348.9	289.5	226.3	116.3	31.6	2.5	1.3
120°	436.1	318.5	257.9	201.0	98.6	22.8	2.5	1.3
122.5°	398.2	286.9	228.8	174.4	80.9	17.7	2.5	1.3
125°	359.0	250.3	199.7	150.4	64.5	13.9	2.5	1.3
127.5°	317.3	216.2	169.4	123.9	49.3	10.1	2.5	1.3
130°	274.3	182.0	140.3	101.1	35.4	7.6	2.5	1.3
132.5°	233.8	152.9	113.8	79.6	25.3	6.3	2.5	1.3
135°	197.2	123.9	89.7	59.4	17.7	5.1	1.3	1.3
137.5°	161.8	98.6	68.3	43.0	12.6	3.8	2.5	1.3
140°	130.2	74.6	49.3	30.3	8.8	2.5	2.5	1.3
142.5°	101.1	53.1	34.1	20.2	6.3	2.5	1.3	1.3
145°	74.6	35.4	22.8	12.6	5.1	2.5	2.5	2.5
147.5°	50.6	24.0	13.9	8.8	3.8	2.5	2.5	1.3
150°	32.9	15.2	8.8	6.3	2.5	2.5	2.5	1.3
152.5°	20.2	8.8	5.1	3.8	2.5	2.5	2.5	1.3
155°	10.1	5.1	3.8	2.5	2.5	2.5	2.5	2.5
157.5°	5.1	3.8	2.5	2.5	2.5	2.5	2.5	2.5
160°	2.5	2.5	1.3	1.3	2.5	2.5	2.5	2.5
162.5°	1.3	1.3	1.3	1.3	2.5	2.5	2.5	2.5
165°	0.0	1.3	1.3	1.3	2.5	2.5	2.5	2.5
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)