

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P156646

Luminaire Tested: **TLM-F04-LED-E1-T4-7050**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P156646  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33673)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: TLM-F04-LED-E1-T4-7050  
Description: TALON MEDIUM LED SITE LUMINAIRE  
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 4  
Light Source: (28) 5000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10239.6 lumens  
Efficiency: N/A  
Efficacy: 100.2 lumens/watt  
Spacing Criteria (0/90/45): 1.73 / 2.02 / 2.64  
Luminous Opening: Rectangular (W 0.67' x L: 1' x H: 0')  
CIE Type: Direct

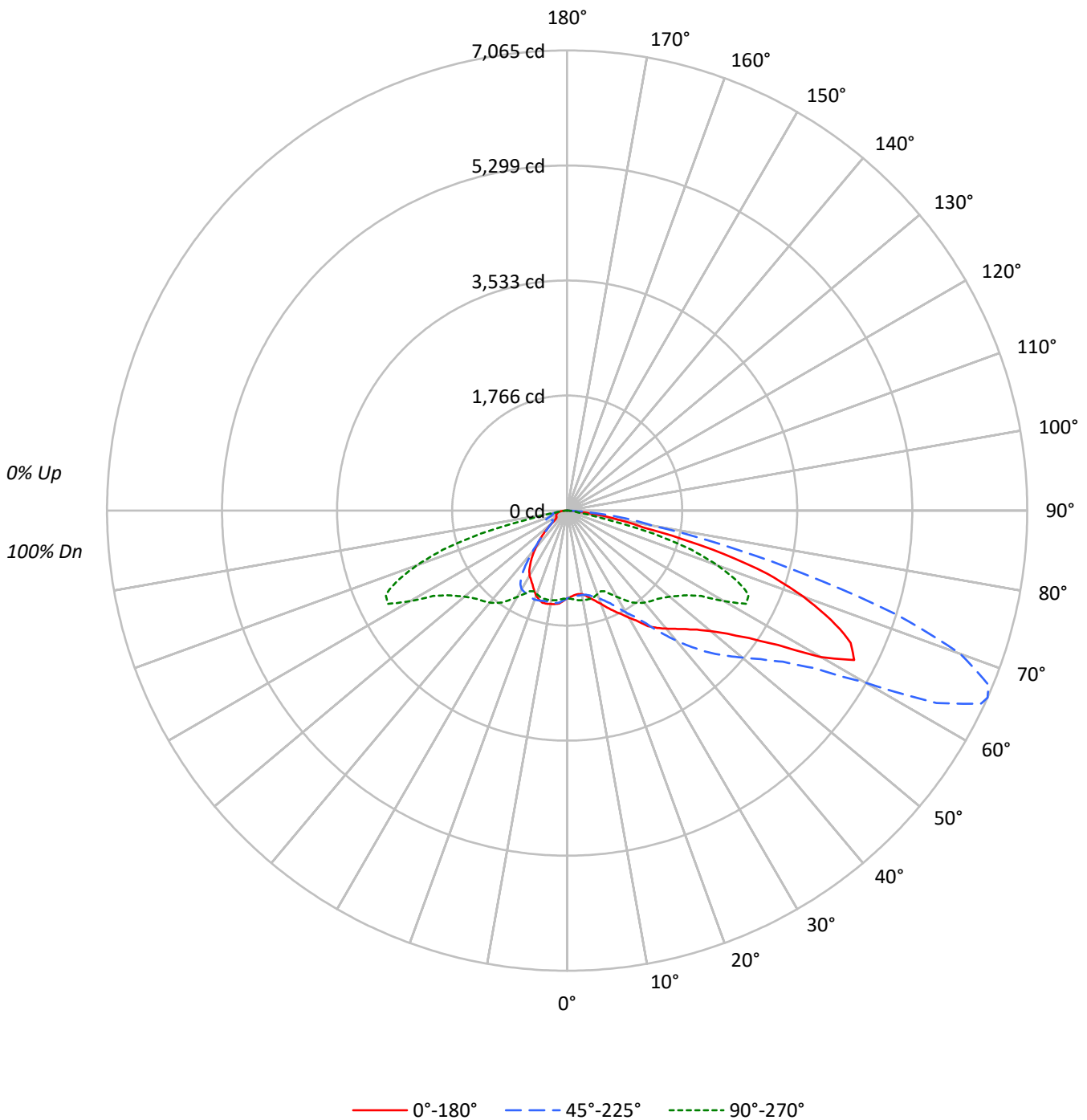
Input Watts (W): 102.2  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	105	99	93	88	102	96	91	87	92	88	84	88	84	81	84	81	79	76
2	92	81	72	65	89	79	71	64	76	69	62	72	66	61	69	64	59	57
3	82	68	58	49	79	66	57	49	63	55	48	60	53	47	57	51	46	43
4	73	58	47	39	70	57	46	38	54	45	38	51	43	37	49	42	36	34
5	66	50	39	31	64	49	39	31	47	38	31	45	36	30	42	35	30	27
6	60	44	34	26	58	43	33	26	41	32	25	39	31	25	38	30	25	22
7	55	39	29	22	53	38	29	22	37	28	22	35	27	21	34	27	21	19
8	51	35	26	19	49	35	25	19	33	25	19	32	24	18	31	23	18	16
9	47	32	23	16	46	31	23	16	30	22	16	29	22	16	28	21	16	14
10	44	29	21	15	43	29	20	15	28	20	14	27	19	14	26	19	14	12

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	21684	21684	21684
5°	20983	22149	23095
10°	21225	22809	23749
15°	23255	23275	24365
20°	26067	23327	23751
25°	30172	24244	22243
30°	35198	28390	21393
35°	42463	33714	19250
40°	49624	38704	15895
45°	58482	43802	12087
50°	71899	51377	7736
55°	95633	63397	5790
60°	144397	89347	6095
65°	182602	116784	7040
70°	181121	115388	8385
75°	143648	85461	10304
80°	72830	17976	12851
85°	10617	14783	16442



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	131.1	1.3
10°-20°	397.9	3.9
20°-30°	685.4	6.7
30°-40°	1037.0	10.1
40°-50°	1344.0	13.1
50°-60°	1853.0	18.1
60°-70°	2879.0	28.1
70°-80°	1674.1	16.3
80°-90°	238.1	2.3
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1214.4	11.9
0°-40°	2251.3	22.0
0°-60°	5448.4	53.2
0°-90°	10239.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10239.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1350	1350	1350	1350	1350	
5°	1301	1320	1373	1419	1432	124
15°	1398	1350	1399	1436	1465	401
25°	1702	1573	1368	1430	1255	794
35°	2165	2115	1719	1213	982	1353
45°	2574	3081	1928	508	532	2012
55°	3414	4044	2263	262	207	3162
65°	4804	7013	3072	370	185	4546
75°	2314	3770	1377	233	166	2383
85°	58	393	80	95	89	249
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	47.5°
0°	1349.7	1349.7	1349.7	1349.7	1349.7	1349.7	1349.7	1349.7	1349.7	1349.7	1349.7
2.5°	1324.8	1329.3	1326.0	1327.1	1327.1	1328.2	1328.2	1329.3	1328.2	1331.6	1333.9
5°	1301.1	1303.4	1302.2	1304.5	1306.8	1311.3	1310.1	1315.8	1316.9	1320.3	1326.0
7.5°	1292.1	1289.8	1290.9	1294.3	1296.6	1298.8	1301.1	1305.6	1309.0	1316.9	1321.4
10°	1301.1	1300.0	1301.1	1303.4	1303.4	1304.5	1302.2	1306.8	1309.0	1315.8	1320.3
12.5°	1338.4	1338.4	1336.1	1336.1	1333.9	1331.6	1326.0	1322.6	1321.4	1322.6	1324.8
15°	1398.2	1396.0	1391.5	1388.1	1383.6	1375.7	1367.7	1361.0	1356.5	1349.7	1347.4
17.5°	1457.0	1453.6	1449.1	1444.5	1438.9	1431.0	1418.6	1410.7	1398.2	1390.3	1385.8
20°	1524.7	1518.0	1512.3	1506.7	1495.4	1493.1	1480.7	1467.1	1452.5	1434.4	1432.1
22.5°	1612.8	1601.5	1594.8	1591.4	1580.1	1576.7	1556.4	1537.2	1519.1	1495.4	1489.7
25°	1702.1	1690.8	1687.4	1682.9	1675.0	1670.4	1651.2	1629.8	1606.1	1573.3	1566.5
27.5°	1789.0	1790.2	1781.1	1784.5	1782.2	1774.3	1755.1	1733.7	1715.6	1677.2	1669.3
30°	1897.4	1890.7	1886.2	1892.9	1885.0	1886.2	1869.2	1857.9	1828.6	1806.0	1790.2
32.5°	2010.4	2009.3	2016.0	2020.6	2019.4	2017.2	2003.6	1992.3	1966.3	1933.6	1926.8
35°	2165.1	2171.9	2177.5	2197.9	2197.9	2212.6	2199.0	2185.5	2155.0	2115.4	2101.9
37.5°	2270.2	2272.4	2295.0	2322.1	2356.0	2387.6	2396.7	2400.0	2387.6	2358.3	2337.9
40°	2366.2	2370.7	2406.8	2448.6	2498.3	2560.4	2597.7	2614.6	2618.0	2604.5	2560.4
42.5°	2462.2	2468.9	2506.2	2567.2	2636.1	2715.2	2780.7	2822.5	2846.2	2846.2	2820.2
45°	2574.0	2583.0	2623.7	2690.3	2770.5	2869.9	2960.2	3040.4	3078.8	3081.1	3056.2
47.5°	2706.1	2714.0	2761.5	2829.2	2911.7	3012.2	3126.3	3217.8	3288.9	3293.4	3273.1
50°	2876.7	2888.0	2927.5	2988.5	3073.2	3174.8	3288.9	3416.5	3491.1	3509.2	3487.7
52.5°	3102.6	3104.8	3137.6	3194.0	3276.5	3373.6	3494.5	3633.4	3731.7	3746.3	3711.3
55°	3414.3	3410.9	3432.4	3493.3	3555.5	3631.1	3756.5	3912.4	4021.9	4044.5	4008.4
57.5°	3837.8	3834.4	3852.5	3867.2	3983.5	4056.9	4180.0	4329.1	4435.3	4500.8	4438.7
60°	4494.0	4490.6	4520.0	4605.8	4692.8	4800.1	4919.8	5098.3	5247.4	5266.6	5205.6
62.5°	4969.5	4986.5	5050.8	5151.3	5327.5	5537.6	5756.7	5991.6	6297.7	6394.9	6365.5
65°	4803.5	4837.4	4926.6	5079.1	5314.0	5604.3	5947.6	6373.4	6783.4	7012.7	7005.9
66°	4654.4	4691.7	4801.2	4948.1	5196.5	5513.9	5888.9	6353.1	6811.6	7064.6	7080.4
67.5°	4383.3	4425.1	4532.4	4706.4	4948.1	5285.8	5689.0	6193.8	6712.2	7007.0	7048.8
70°	3855.9	3903.3	3981.3	4124.7	4363.0	4664.6	5089.2	5541.0	6084.3	6422.0	6472.8
72.5°	3223.4	3265.2	3352.2	3469.6	3665.0	3854.8	4187.9	4521.1	4909.7	5294.8	5257.5
75°	2314.2	2332.3	2384.2	2511.9	2616.9	2787.4	3055.1	3328.4	3593.9	3770.1	3794.9
77.5°	1202.8	1250.3	1323.7	1464.9	1578.9	1732.6	1906.5	2112.0	2306.3	2467.8	2423.8
80°	787.2	807.5	873.1	945.3	1028.9	1127.2	1243.5	1320.3	1345.2	1335.0	1345.2
82.5°	454.0	491.3	578.3	633.6	695.7	729.6	822.2	910.3	960.0	897.9	875.3
85°	57.6	74.5	234.9	295.9	338.8	389.7	417.9	471.0	439.3	393.0	478.9
87.5°	12.4	11.3	15.8	33.9	35.0	29.4	55.3	58.7	36.1	18.1	22.6
90°	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°	70°	75°	80°	85°	90°	95°	100°
0°	1349.7	1349.7	1349.7	1349.7	1349.7	1349.7	1349.7	1349.7	1349.7	1349.7	1349.7
2.5°	1336.1	1337.3	1339.5	1342.9	1345.2	1347.4	1349.7	1353.1	1355.3	1357.6	1362.1
5°	1330.5	1335.0	1339.5	1344.0	1349.7	1358.7	1364.4	1368.9	1373.4	1382.4	1385.8
7.5°	1327.1	1335.0	1341.8	1349.7	1358.7	1366.6	1376.8	1382.4	1389.2	1394.9	1401.6
10°	1324.8	1336.1	1342.9	1354.2	1364.4	1372.3	1383.6	1390.3	1398.2	1405.0	1408.4
12.5°	1329.3	1335.0	1341.8	1353.1	1365.5	1376.8	1389.2	1394.9	1401.6	1407.3	1408.4
15°	1348.5	1348.5	1349.7	1358.7	1371.1	1380.2	1390.3	1396.0	1399.4	1402.8	1402.8
17.5°	1383.6	1375.7	1370.0	1371.1	1379.0	1384.7	1390.3	1390.3	1388.1	1386.9	1384.7
20°	1424.2	1414.1	1402.8	1394.9	1392.6	1388.1	1384.7	1373.4	1364.4	1356.5	1350.8
22.5°	1482.9	1467.1	1451.3	1436.6	1423.1	1406.1	1386.9	1364.4	1342.9	1328.2	1319.2
25°	1555.2	1542.8	1523.6	1501.0	1484.1	1452.5	1427.6	1394.9	1367.7	1348.5	1332.7
27.5°	1658.0	1643.3	1625.3	1604.9	1580.1	1545.1	1514.6	1476.2	1443.4	1415.2	1394.9
30°	1785.6	1766.4	1752.9	1728.0	1711.1	1671.6	1641.1	1593.6	1530.4	1485.2	1457.0
32.5°	1916.6	1895.2	1883.9	1864.7	1845.5	1821.8	1775.5	1702.1	1620.7	1547.3	1498.8
35°	2091.7	2069.1	2048.8	2031.9	2003.6	1959.6	1918.9	1830.8	1719.0	1616.2	1534.9
37.5°	2312.0	2274.7	2223.9	2180.9	2131.2	2068.0	2005.9	1915.5	1787.9	1654.6	1546.2
40°	2546.9	2481.4	2409.1	2328.9	2243.1	2151.6	2080.4	1988.9	1845.5	1687.4	1538.3
42.5°	2792.0	2688.1	2587.5	2474.6	2354.9	2246.4	2153.8	2053.3	1888.4	1696.4	1506.7
45°	3034.8	2918.5	2766.0	2618.0	2466.7	2332.3	2228.4	2115.4	1927.9	1699.8	1464.9
47.5°	3235.8	3116.1	2942.2	2756.9	2577.4	2424.9	2302.9	2180.9	1981.0	1723.5	1454.7
50°	3448.2	3302.5	3109.3	2890.2	2686.9	2516.4	2386.5	2260.0	2055.6	1784.5	1487.5
52.5°	3679.7	3512.5	3286.7	3041.6	2819.1	2628.2	2487.0	2357.1	2150.4	1870.3	1549.6
55°	3962.1	3757.6	3512.5	3235.8	2997.5	2786.3	2630.5	2476.8	2263.4	1972.0	1627.5
57.5°	4393.5	4142.8	3867.2	3552.1	3287.8	3038.2	2851.8	2674.5	2438.4	2123.3	1733.7
60°	5173.9	4906.3	4548.2	4166.5	3855.9	3564.5	3291.2	3070.9	2780.7	2421.5	1968.6
62.5°	6292.1	5936.3	5458.6	4924.3	4517.7	4097.6	3789.3	3461.7	3101.4	2714.0	2245.3
65°	6913.3	6481.8	5842.6	5222.5	4699.6	4243.3	3851.4	3471.9	3072.1	2701.6	2309.7
66°	6990.1	6540.6	5876.4	5223.6	4674.7	4206.0	3793.8	3400.7	2991.9	2638.4	2282.6
67.5°	6958.4	6498.8	5814.3	5125.4	4567.4	4063.7	3637.9	3230.2	2822.5	2492.7	2192.2
70°	6440.0	6004.1	5332.1	4664.6	4134.9	3637.9	3231.3	2830.4	2456.5	2174.2	1952.8
72.5°	5347.9	4975.2	4391.2	3867.2	3451.6	3041.6	2697.1	2314.2	1998.0	1789.0	1658.0
75°	3860.4	3634.5	3102.6	2802.1	2437.3	2165.1	1830.8	1603.8	1376.8	1275.1	1252.5
77.5°	2438.4	2134.6	1796.9	1479.6	1216.4	1008.6	785.0	666.4	555.7	544.4	657.3
80°	1234.5	1111.4	856.1	682.2	573.8	464.2	367.1	277.8	194.3	233.8	280.1
82.5°	808.7	674.3	528.6	434.8	378.4	314.0	244.0	169.4	124.2	140.0	192.0
85°	437.1	372.7	300.4	237.2	192.0	171.7	115.2	81.3	80.2	85.8	109.6
87.5°	31.6	31.6	24.8	22.6	27.1	22.6	20.3	20.3	19.2	20.3	27.1
90°	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):**

	105°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°
0°	1349.7	1349.7	1349.7	1349.7	1349.7	1349.7	1349.7	1349.7	1349.7	1349.7	1349.7
2.5°	1364.4	1367.7	1368.9	1374.5	1377.9	1380.2	1382.4	1382.4	1383.6	1386.9	1388.1
5°	1390.3	1396.0	1402.8	1407.3	1409.5	1416.3	1418.6	1418.6	1420.8	1425.3	1428.7
7.5°	1406.1	1414.1	1420.8	1423.1	1427.6	1429.9	1433.3	1435.5	1435.5	1440.0	1442.3
10°	1411.8	1416.3	1423.1	1423.1	1427.6	1427.6	1431.0	1432.1	1432.1	1436.6	1440.0
12.5°	1411.8	1414.1	1419.7	1419.7	1423.1	1424.2	1428.7	1432.1	1433.3	1438.9	1443.4
15°	1405.0	1407.3	1411.8	1412.9	1420.8	1425.3	1435.5	1442.3	1442.3	1447.9	1450.2
17.5°	1385.8	1391.5	1400.5	1409.5	1424.2	1434.4	1446.8	1452.5	1447.9	1444.5	1441.2
20°	1354.2	1364.4	1385.8	1408.4	1434.4	1447.9	1454.7	1449.1	1433.3	1417.4	1407.3
22.5°	1322.6	1342.9	1379.0	1412.9	1442.3	1451.3	1447.9	1427.6	1401.6	1382.4	1368.9
25°	1337.3	1361.0	1396.0	1426.5	1445.7	1443.4	1429.9	1401.6	1373.4	1348.5	1326.0
27.5°	1398.2	1424.2	1443.4	1453.6	1451.3	1435.5	1414.1	1382.4	1348.5	1315.8	1284.2
30°	1455.8	1469.4	1473.9	1466.0	1447.9	1422.0	1394.9	1358.7	1313.5	1272.9	1236.7
32.5°	1481.8	1468.3	1446.8	1425.3	1396.0	1373.4	1336.1	1296.6	1240.1	1191.6	1155.4
35°	1481.8	1427.6	1373.4	1328.2	1284.2	1255.9	1213.0	1159.9	1108.0	1067.3	1039.1
37.5°	1449.1	1345.2	1255.9	1182.5	1127.2	1096.7	1032.3	984.9	940.8	927.3	909.2
40°	1389.2	1235.6	1106.8	1010.8	940.8	895.6	831.3	798.5	781.6	774.8	771.4
42.5°	1309.0	1113.6	941.9	823.4	747.7	696.9	653.9	633.6	632.5	631.4	631.4
45°	1223.2	982.6	781.6	640.4	573.8	528.6	508.2	500.3	507.1	506.0	507.1
47.5°	1170.1	883.2	634.7	484.5	433.7	404.3	394.2	397.6	403.2	400.9	400.9
50°	1163.3	832.4	536.5	377.2	338.8	324.1	321.9	321.9	325.3	323.0	321.9
52.5°	1188.2	824.5	485.7	324.1	293.7	281.2	279.0	277.8	276.7	269.9	264.3
55°	1231.1	842.6	471.0	310.6	279.0	265.4	262.0	259.8	255.3	246.2	236.1
57.5°	1316.9	899.0	484.5	317.4	283.5	272.2	268.8	268.8	259.8	245.1	230.4
60°	1523.6	1042.5	539.9	343.3	304.9	293.7	295.9	294.8	281.2	259.8	237.2
62.5°	1790.2	1230.0	612.2	379.5	332.1	329.8	341.1	338.8	316.2	283.5	250.7
65°	1913.3	1318.0	632.5	387.4	337.7	347.9	370.5	368.2	340.0	294.8	253.0
66°	1915.5	1318.0	623.4	380.6	329.8	342.2	364.8	363.7	335.4	290.3	248.5
67.5°	1869.2	1281.9	597.5	367.1	314.0	323.0	343.3	342.2	316.2	279.0	239.4
70°	1695.3	1147.5	530.8	343.3	292.5	288.0	294.8	290.3	273.3	247.3	220.2
72.5°	1452.5	963.4	463.1	325.3	277.8	259.8	255.3	251.9	238.3	223.6	206.7
75°	1144.1	762.4	406.6	311.7	264.3	240.6	232.7	228.1	219.1	208.9	195.4
77.5°	705.9	545.5	354.6	293.7	254.1	230.4	224.8	218.0	204.4	192.0	181.8
80°	315.1	337.7	291.4	256.4	227.0	205.6	196.5	186.4	172.8	164.9	159.3
82.5°	210.1	218.0	211.2	192.0	171.7	154.7	141.2	141.2	138.9	132.1	129.9
85°	134.4	135.5	131.0	118.6	110.7	100.5	94.9	96.0	100.5	99.4	98.3
87.5°	30.5	30.5	36.1	33.9	39.5	41.8	45.2	48.6	55.3	55.3	58.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





TEST NUMBER: P156646

CATALOG NUMBER: TLM-F04-LED-E1-T4-7050

**CANDELA DISTRIBUTION (continued):**

	160°	165°	170°	175°	180°
0°	1349.7	1349.7	1349.7	1349.7	1349.7
2.5°	1389.2	1391.5	1393.7	1390.3	1391.5
5°	1428.7	1427.6	1433.3	1429.9	1432.1
7.5°	1441.2	1442.3	1446.8	1446.8	1447.9
10°	1442.3	1444.5	1450.2	1453.6	1455.8
12.5°	1447.9	1452.5	1461.5	1463.7	1463.7
15°	1452.5	1454.7	1460.4	1462.6	1464.9
17.5°	1436.6	1432.1	1434.4	1435.5	1434.4
20°	1397.1	1392.6	1391.5	1386.9	1389.2
22.5°	1354.2	1341.8	1333.9	1324.8	1324.8
25°	1302.2	1283.0	1267.2	1251.4	1254.8
27.5°	1253.7	1228.8	1213.0	1202.8	1200.6
30°	1206.2	1180.3	1165.6	1153.2	1153.2
32.5°	1127.2	1109.1	1089.9	1082.0	1080.9
35°	1017.6	1006.3	990.5	987.1	981.5
37.5°	894.5	891.1	877.6	876.4	870.8
40°	765.8	768.0	763.5	761.2	757.9
42.5°	637.0	648.3	646.0	644.9	642.6
45°	513.9	521.8	522.9	526.3	532.0
47.5°	404.3	406.6	408.9	407.7	408.9
50°	316.2	310.6	309.5	306.1	309.5
52.5°	255.3	246.2	241.7	237.2	234.9
55°	224.8	215.7	211.2	208.9	206.7
57.5°	216.9	207.8	201.0	196.5	195.4
60°	219.1	205.6	196.5	190.9	189.7
62.5°	224.8	206.7	194.3	188.6	187.5
65°	223.6	204.4	193.1	186.4	185.2
66°	220.2	202.2	190.9	185.2	184.1
67.5°	214.6	198.8	188.6	184.1	181.8
70°	204.4	194.3	186.4	180.7	178.5
72.5°	195.4	187.5	180.7	175.1	173.9
75°	185.2	178.5	171.7	167.2	166.0
77.5°	172.8	166.0	161.5	158.1	157.0
80°	152.5	148.0	143.4	138.9	138.9
82.5°	126.5	123.1	118.6	115.2	114.1
85°	97.1	97.1	93.7	90.4	89.2
87.5°	57.6	56.5	56.5	53.1	53.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)