

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: P156645

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P156645
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
Description: TALON MEDIUM LED SITE LUMINAIRE
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 4
Light Source: (28) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

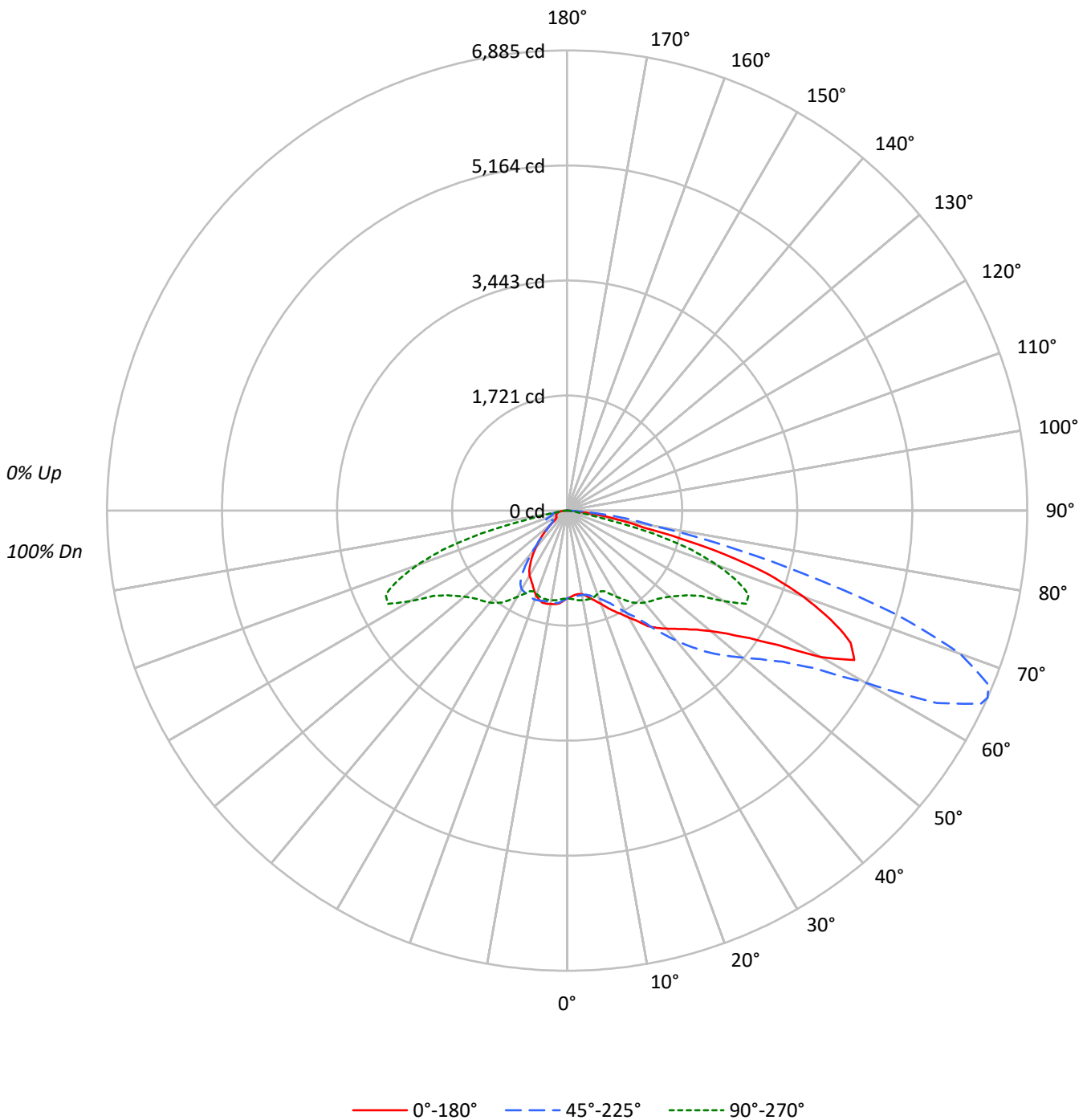
Lumens per Lamp: N/A
Luminaire Lumens: 9979.1 lumens
Efficiency: N/A
Efficacy: 97.6 lumens/watt
Spacing Criteria (0/90/45): 1.73 / 2.02 / 2.64
Luminous Opening: Rectangular (W 0.67' x L: 1' x H: 0')
CIE Type: Direct

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	21131	21131	21131
5°	20449	21586	22508
10°	20685	22230	23145
15°	22665	22683	23744
20°	25404	22732	23147
25°	29404	23627	21678
30°	34304	27667	20847
35°	41382	32857	18759
40°	48362	37718	15490
45°	56993	42689	11778
50°	70069	50070	7538
55°	93199	61783	5641
60°	140725	87072	5941
65°	177956	113811	6862
70°	176513	112452	8169
75°	139992	83289	10043
80°	70980	17514	12527
85°	10341	14396	16037



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	127.7	1.3
10°-20°	387.8	3.9
20°-30°	668.0	6.7
30°-40°	1010.6	10.1
40°-50°	1309.8	13.1
50°-60°	1805.9	18.1
60°-70°	2805.7	28.1
70°-80°	1631.5	16.3
80°-90°	232.0	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°	1183.5	11.9
0°-40°	2194.1	22.0
0°-60°	5309.8	53.2
0°-90°	9979.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9979.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1315	1315	1315	1315	1315	
5°	1268	1287	1338	1382	1396	121
15°	1363	1315	1364	1399	1428	390
25°	1659	1533	1333	1394	1223	773
35°	2110	2062	1675	1182	956	1319
45°	2508	3003	1879	495	518	1961
55°	3327	3942	2206	255	201	3082
65°	4681	6834	2994	361	180	4430
75°	2255	3674	1342	227	162	2323
85°	56	383	78	92	87	243
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°	1315.3	1315.3	1315.3	1315.3	1315.3	1315.3	1315.3	1315.3	1315.3	1315.3	1315.3
2.5°	1291.1	1295.5	1292.2	1293.3	1293.3	1294.4	1294.4	1295.5	1294.4	1297.7	1299.9
5°	1268.0	1270.2	1269.1	1271.3	1273.5	1277.9	1276.8	1282.3	1283.4	1286.7	1292.2
7.5°	1259.2	1257.0	1258.1	1261.4	1263.6	1265.8	1268.0	1272.4	1275.7	1283.4	1287.8
10°	1268.0	1266.9	1268.0	1270.2	1270.2	1271.3	1269.1	1273.5	1275.7	1282.3	1286.7
12.5°	1304.3	1304.3	1302.1	1302.1	1299.9	1297.7	1292.2	1288.9	1287.8	1288.9	1291.1
15°	1362.7	1360.5	1356.1	1352.8	1348.4	1340.7	1332.9	1326.3	1321.9	1315.3	1313.1
17.5°	1419.9	1416.6	1412.2	1407.8	1402.3	1394.6	1382.5	1374.8	1362.7	1355.0	1350.6
20°	1485.9	1479.3	1473.8	1468.3	1457.3	1455.1	1443.0	1429.8	1415.5	1397.9	1395.7
22.5°	1571.8	1560.8	1554.2	1550.9	1539.9	1536.6	1516.8	1498.1	1480.4	1457.3	1451.8
25°	1658.8	1647.7	1644.4	1640.0	1632.3	1627.9	1609.2	1588.3	1565.2	1533.3	1526.7
27.5°	1743.5	1744.6	1735.8	1739.1	1736.9	1729.2	1710.5	1689.6	1672.0	1634.5	1626.8
30°	1849.2	1842.6	1838.2	1844.8	1837.1	1838.2	1821.7	1810.7	1782.0	1760.0	1744.6
32.5°	1959.2	1958.1	1964.7	1969.2	1968.1	1965.9	1952.6	1941.6	1916.3	1884.4	1877.8
35°	2110.0	2116.6	2122.1	2142.0	2142.0	2156.3	2143.1	2129.9	2100.1	2061.6	2048.4
37.5°	2212.4	2214.6	2236.6	2263.0	2296.1	2326.9	2335.7	2339.0	2326.9	2298.3	2278.4
40°	2306.0	2310.4	2345.6	2386.3	2434.7	2495.3	2531.6	2548.1	2551.4	2538.2	2495.3
42.5°	2399.5	2406.1	2442.5	2501.9	2569.0	2646.1	2709.9	2750.6	2773.8	2773.8	2748.4
45°	2508.5	2517.3	2556.9	2621.9	2700.0	2796.9	2884.9	2963.1	3000.5	3002.7	2978.5
47.5°	2637.3	2645.0	2691.2	2757.3	2837.6	2935.6	3046.7	3135.9	3205.2	3209.6	3189.8
50°	2803.5	2814.5	2853.0	2912.5	2995.0	3094.1	3205.2	3329.6	3402.3	3419.9	3399.0
52.5°	3023.6	3025.8	3057.7	3112.8	3193.1	3287.8	3405.6	3541.0	3636.7	3651.0	3616.9
55°	3327.4	3324.1	3345.0	3404.5	3465.0	3538.8	3660.9	3812.8	3919.6	3941.6	3906.4
57.5°	3740.2	3736.9	3754.5	3768.8	3882.2	3953.7	4073.7	4219.0	4322.4	4386.3	4325.8
60°	4379.7	4376.4	4405.0	4488.7	4573.4	4678.0	4794.6	4968.6	5113.9	5132.6	5073.1
62.5°	4843.1	4859.6	4922.3	5020.3	5192.0	5396.7	5610.3	5839.2	6137.5	6232.2	6203.5
65°	4681.3	4714.3	4801.3	4949.8	5178.8	5461.7	5796.3	6211.2	6610.8	6834.2	6827.6
66°	4536.0	4572.3	4679.1	4822.2	5064.3	5373.6	5739.0	6191.4	6638.3	6884.9	6900.3
67.5°	4271.8	4312.5	4417.1	4586.6	4822.2	5151.3	5544.2	6036.2	6541.5	6828.7	6869.5
70°	3757.8	3804.0	3880.0	4019.8	4252.0	4545.9	4959.8	5400.0	5929.5	6258.6	6308.1
72.5°	3141.4	3182.1	3266.9	3381.4	3571.8	3756.7	4081.4	4406.1	4784.7	5160.1	5123.8
75°	2255.3	2272.9	2323.6	2448.0	2550.3	2716.5	2977.4	3243.8	3502.4	3674.1	3698.4
77.5°	1172.2	1218.5	1290.0	1427.6	1538.8	1688.5	1858.0	2058.3	2247.6	2405.0	2362.1
80°	767.2	787.0	850.8	921.3	1002.7	1098.5	1211.9	1286.7	1310.9	1301.0	1310.9
82.5°	442.5	478.8	563.6	617.5	678.0	711.1	801.3	887.2	935.6	875.1	853.0
85°	56.1	72.6	228.9	288.4	330.2	379.7	407.3	459.0	428.2	383.0	466.7
87.5°	12.1	11.0	15.4	33.0	34.1	28.6	53.9	57.2	35.2	17.6	22.0
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°	1315.3	1315.3	1315.3	1315.3	1315.3	1315.3	1315.3	1315.3	1315.3	1315.3	1315.3
2.5°	1302.1	1303.2	1305.4	1308.7	1310.9	1313.1	1315.3	1318.6	1320.8	1323.0	1327.4
5°	1296.6	1301.0	1305.4	1309.8	1315.3	1324.1	1329.6	1334.0	1338.5	1347.3	1350.6
7.5°	1293.3	1301.0	1307.6	1315.3	1324.1	1331.8	1341.8	1347.3	1353.9	1359.4	1366.0
10°	1291.1	1302.1	1308.7	1319.7	1329.6	1337.4	1348.4	1355.0	1362.7	1369.3	1372.6
12.5°	1295.5	1301.0	1307.6	1318.6	1330.7	1341.8	1353.9	1359.4	1366.0	1371.5	1372.6
15°	1314.2	1314.2	1315.3	1324.1	1336.2	1345.1	1355.0	1360.5	1363.8	1367.1	1367.1
17.5°	1348.4	1340.7	1335.1	1336.2	1344.0	1349.5	1355.0	1355.0	1352.8	1351.7	1349.5
20°	1388.0	1378.1	1367.1	1359.4	1357.2	1352.8	1349.5	1338.5	1329.6	1321.9	1316.4
22.5°	1445.2	1429.8	1414.4	1400.1	1386.9	1370.4	1351.7	1329.6	1308.7	1294.4	1285.6
25°	1515.7	1503.6	1484.8	1462.8	1446.3	1415.5	1391.3	1359.4	1332.9	1314.2	1298.8
27.5°	1615.8	1601.5	1583.9	1564.1	1539.9	1505.8	1476.0	1438.6	1406.7	1379.2	1359.4
30°	1740.2	1721.5	1708.3	1684.1	1667.6	1629.0	1599.3	1553.1	1491.4	1447.4	1419.9
32.5°	1867.9	1847.0	1836.0	1817.3	1798.5	1775.4	1730.3	1658.8	1579.5	1508.0	1460.6
35°	2038.5	2016.5	1996.7	1980.2	1952.6	1909.7	1870.1	1784.2	1675.3	1575.1	1495.9
37.5°	2253.1	2216.8	2167.3	2125.5	2077.0	2015.4	1954.8	1866.8	1742.4	1612.5	1506.9
40°	2482.1	2418.2	2347.8	2269.6	2186.0	2096.8	2027.5	1938.3	1798.5	1644.4	1499.2
42.5°	2720.9	2619.7	2521.7	2411.6	2295.0	2189.3	2099.0	2001.1	1840.4	1653.3	1468.3
45°	2957.6	2844.2	2695.6	2551.4	2403.9	2272.9	2171.7	2061.6	1878.9	1656.6	1427.6
47.5°	3153.5	3036.8	2867.3	2686.8	2511.8	2363.2	2244.3	2125.5	1930.6	1679.7	1417.7
50°	3360.4	3218.4	3030.2	2816.7	2618.6	2452.4	2325.8	2202.5	2003.3	1739.1	1449.6
52.5°	3586.1	3423.2	3203.0	2964.2	2747.3	2561.3	2423.7	2297.2	2095.7	1822.8	1510.2
55°	3861.3	3662.0	3423.2	3153.5	2921.3	2715.4	2563.5	2413.8	2205.8	1921.8	1586.1
57.5°	4281.7	4037.4	3768.8	3461.7	3204.1	2960.9	2779.3	2606.5	2376.4	2069.3	1689.6
60°	5042.3	4781.4	4432.5	4060.5	3757.8	3473.8	3207.4	2992.8	2709.9	2359.9	1918.5
62.5°	6132.0	5785.3	5319.7	4799.1	4402.8	3993.3	3692.8	3373.6	3022.5	2645.0	2188.2
65°	6737.4	6316.9	5693.9	5089.6	4580.0	4135.3	3753.4	3383.6	2993.9	2632.9	2250.9
66°	6812.2	6374.2	5726.9	5090.7	4555.8	4099.0	3697.3	3314.2	2915.8	2571.2	2224.5
67.5°	6781.4	6333.4	5666.4	4995.0	4451.2	3960.3	3545.4	3148.0	2750.6	2429.2	2136.5
70°	6276.2	5851.3	5196.4	4545.9	4029.7	3545.4	3149.1	2758.4	2394.0	2118.8	1903.1
72.5°	5211.8	4848.6	4279.5	3768.8	3363.7	2964.2	2628.5	2255.3	1947.1	1743.5	1615.8
75°	3762.2	3542.1	3023.6	2730.8	2375.3	2110.0	1784.2	1563.0	1341.8	1242.7	1220.7
77.5°	2376.4	2080.3	1751.2	1441.9	1185.5	982.9	765.0	649.4	541.5	530.5	640.6
80°	1203.1	1083.1	834.3	664.8	559.2	452.4	357.7	270.8	189.3	227.8	273.0
82.5°	788.1	657.1	515.1	423.8	368.7	306.0	237.8	165.1	121.1	136.5	187.1
85°	426.0	363.2	292.8	231.1	187.1	167.3	112.3	79.3	78.1	83.7	106.8
87.5°	30.8	30.8	24.2	22.0	26.4	22.0	19.8	19.8	18.7	19.8	26.4
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°	1315.3	1315.3	1315.3	1315.3	1315.3	1315.3	1315.3	1315.3	1315.3	1315.3	1315.3
2.5°	1329.6	1332.9	1334.0	1339.6	1342.9	1345.1	1347.3	1347.3	1348.4	1351.7	1352.8
5°	1355.0	1360.5	1367.1	1371.5	1373.7	1380.3	1382.5	1382.5	1384.7	1389.1	1392.4
7.5°	1370.4	1378.1	1384.7	1386.9	1391.3	1393.5	1396.8	1399.0	1399.0	1403.4	1405.6
10°	1375.9	1380.3	1386.9	1386.9	1391.3	1391.3	1394.6	1395.7	1395.7	1400.1	1403.4
12.5°	1375.9	1378.1	1383.6	1383.6	1386.9	1388.0	1392.4	1395.7	1396.8	1402.3	1406.7
15°	1369.3	1371.5	1375.9	1377.0	1384.7	1389.1	1399.0	1405.6	1405.6	1411.1	1413.3
17.5°	1350.6	1356.1	1364.9	1373.7	1388.0	1397.9	1410.0	1415.5	1411.1	1407.8	1404.5
20°	1319.7	1329.6	1350.6	1372.6	1397.9	1411.1	1417.7	1412.2	1396.8	1381.4	1371.5
22.5°	1288.9	1308.7	1344.0	1377.0	1405.6	1414.4	1411.1	1391.3	1366.0	1347.3	1334.0
25°	1303.2	1326.3	1360.5	1390.2	1408.9	1406.7	1393.5	1366.0	1338.5	1314.2	1292.2
27.5°	1362.7	1388.0	1406.7	1416.6	1414.4	1399.0	1378.1	1347.3	1314.2	1282.3	1251.5
30°	1418.8	1432.0	1436.4	1428.7	1411.1	1385.8	1359.4	1324.1	1280.1	1240.5	1205.3
32.5°	1444.1	1430.9	1410.0	1389.1	1360.5	1338.5	1302.1	1263.6	1208.6	1161.2	1126.0
35°	1444.1	1391.3	1338.5	1294.4	1251.5	1224.0	1182.2	1130.4	1079.8	1040.2	1012.6
37.5°	1412.2	1310.9	1224.0	1152.4	1098.5	1068.8	1006.0	959.8	916.9	903.7	886.1
40°	1353.9	1204.2	1078.7	985.1	916.9	872.9	810.1	778.2	761.7	755.1	751.8
42.5°	1275.7	1085.3	918.0	802.4	728.7	679.1	637.3	617.5	616.4	615.3	615.3
45°	1192.1	957.6	761.7	624.1	559.2	515.1	495.3	487.6	494.2	493.1	494.2
47.5°	1140.3	860.7	618.6	472.2	422.7	394.1	384.1	387.4	392.9	390.7	390.7
50°	1133.7	811.2	522.8	367.6	330.2	315.9	313.7	313.7	317.0	314.8	313.7
52.5°	1157.9	803.5	473.3	315.9	286.2	274.1	271.9	270.8	269.7	263.1	257.6
55°	1199.8	821.1	459.0	302.7	271.9	258.7	255.4	253.2	248.8	240.0	230.0
57.5°	1283.4	876.2	472.2	309.3	276.3	265.3	262.0	262.0	253.2	238.9	224.5
60°	1484.8	1015.9	526.1	334.6	297.2	286.2	288.4	287.3	274.1	253.2	231.1
62.5°	1744.6	1198.7	596.6	369.8	323.6	321.4	332.4	330.2	308.2	276.3	244.4
65°	1864.6	1284.5	616.4	377.5	329.1	339.0	361.0	358.8	331.3	287.3	246.6
66°	1866.8	1284.5	607.6	370.9	321.4	333.5	355.5	354.4	326.9	282.9	242.2
67.5°	1821.7	1249.3	582.3	357.7	306.0	314.8	334.6	333.5	308.2	271.9	233.3
70°	1652.2	1118.3	517.3	334.6	285.1	280.7	287.3	282.9	266.4	241.1	214.6
72.5°	1415.5	938.9	451.3	317.0	270.8	253.2	248.8	245.5	232.2	217.9	201.4
75°	1115.0	743.0	396.3	303.8	257.6	234.4	226.7	222.3	213.5	203.6	190.4
77.5°	687.9	531.6	345.6	286.2	247.7	224.5	219.0	212.4	199.2	187.1	177.2
80°	307.1	329.1	284.0	249.9	221.2	200.3	191.5	181.6	168.4	160.7	155.2
82.5°	204.7	212.4	205.8	187.1	167.3	150.8	137.6	137.6	135.4	128.8	126.6
85°	131.0	132.1	127.7	115.6	107.9	98.0	92.5	93.6	98.0	96.9	95.8
87.5°	29.7	29.7	35.2	33.0	38.5	40.7	44.0	47.3	53.9	53.9	57.2
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: P156645

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

CANDELA DISTRIBUTION (continued):

	160°	165°	170°	175°	180°
0°	1315.3	1315.3	1315.3	1315.3	1315.3
2.5°	1353.9	1356.1	1358.3	1355.0	1356.1
5°	1392.4	1391.3	1396.8	1393.5	1395.7
7.5°	1404.5	1405.6	1410.0	1410.0	1411.1
10°	1405.6	1407.8	1413.3	1416.6	1418.8
12.5°	1411.1	1415.5	1424.3	1426.5	1426.5
15°	1415.5	1417.7	1423.2	1425.4	1427.6
17.5°	1400.1	1395.7	1397.9	1399.0	1397.9
20°	1361.6	1357.2	1356.1	1351.7	1353.9
22.5°	1319.7	1307.6	1299.9	1291.1	1291.1
25°	1269.1	1250.4	1235.0	1219.6	1222.9
27.5°	1221.8	1197.6	1182.2	1172.2	1170.0
30°	1175.5	1150.2	1135.9	1123.8	1123.8
32.5°	1098.5	1080.9	1062.2	1054.5	1053.4
35°	991.7	980.7	965.3	962.0	956.5
37.5°	871.8	868.5	855.2	854.1	848.6
40°	746.3	748.5	744.1	741.9	738.6
42.5°	620.8	631.8	629.6	628.5	626.3
45°	500.8	508.5	509.6	512.9	518.4
47.5°	394.1	396.3	398.5	397.4	398.5
50°	308.2	302.7	301.6	298.3	301.6
52.5°	248.8	240.0	235.5	231.1	228.9
55°	219.0	210.2	205.8	203.6	201.4
57.5°	211.3	202.5	195.9	191.5	190.4
60°	213.5	200.3	191.5	186.0	184.9
62.5°	219.0	201.4	189.3	183.8	182.7
65°	217.9	199.2	188.2	181.6	180.5
66°	214.6	197.0	186.0	180.5	179.4
67.5°	209.1	193.7	183.8	179.4	177.2
70°	199.2	189.3	181.6	176.1	173.9
72.5°	190.4	182.7	176.1	170.6	169.5
75°	180.5	173.9	167.3	162.9	161.8
77.5°	168.4	161.8	157.4	154.1	153.0
80°	148.6	144.2	139.8	135.4	135.4
82.5°	123.3	120.0	115.6	112.3	111.2
85°	94.7	94.7	91.4	88.1	87.0
87.5°	56.1	55.0	55.0	51.7	51.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)