

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: FAIL-SAFE

Report Number: P837837

Luminaire Tested: **ORLG-24-2-INS-ASY2R-LD4-6STD-20-120-EDD**

Issue Date: 5/21/2024

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

**Test Information**

Test Method: LM-79-08
Report Number: P837837
Test Lab: INNOVATION CENTER(G2)
Issue Date: 5/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: ORLG-24-2-INS-ASY2R-LD4-6STD-20-120-EDD
Description: 2FT x 2FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and RFI grid
Light Source: 2000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

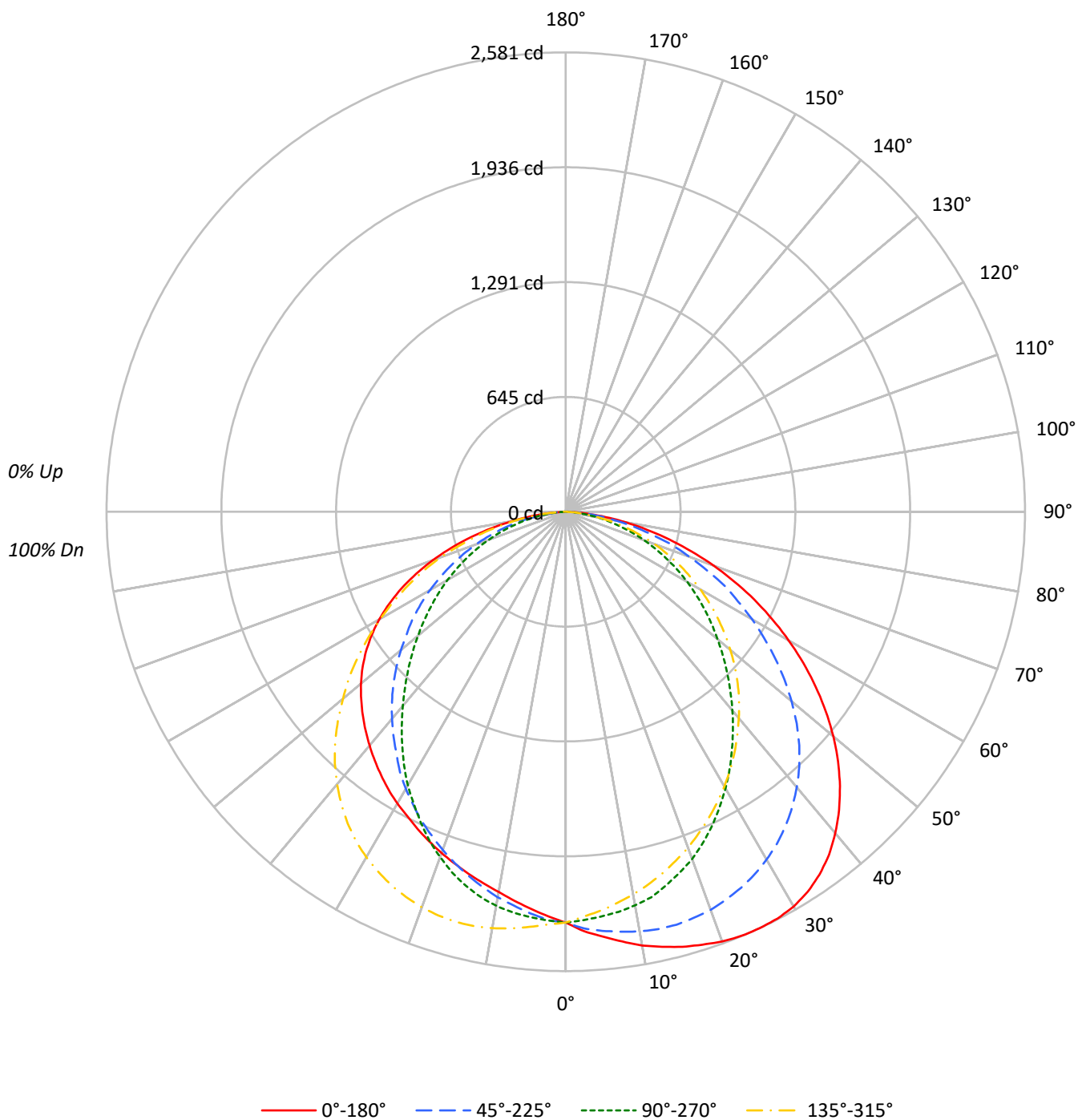
Lumens per Lamp: N/A
Luminaire Lumens: 6771.6 lumens
Efficiency: N/A
Efficacy: 67.8 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 99.9
Input Voltage (V): 120
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102
1	109	104	100	96	106	102	98	94	97	94	91	94	91	89	90	88	86
2	99	91	84	78	96	89	82	77	85	80	75	82	77	73	79	75	72
3	90	79	71	65	88	78	70	64	75	68	63	72	66	62	69	65	61
4	82	70	61	55	80	69	61	54	66	59	53	64	58	53	62	56	52
5	76	63	54	47	74	62	53	47	59	52	46	57	51	46	56	50	45
6	70	56	47	41	68	55	47	41	54	46	40	52	45	40	50	44	40
7	65	51	42	36	63	50	42	36	49	41	36	47	40	35	46	40	35
8	60	47	38	32	59	46	38	32	45	37	32	43	37	32	42	36	31
9	56	43	34	29	55	42	34	29	41	34	29	40	33	28	39	33	28
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	6211	6211	6211	6211
5°	6473	6166	6050	6177
10°	6761	6135	5927	6143
15°	7051	6057	5869	6058
20°	7359	5947	5843	5913
25°	7664	5780	5843	5721
30°	7960	5579	5882	5517
35°	8171	5350	5941	5265
40°	8280	5120	6024	5004
45°	8296	4887	6141	4764
50°	8218	4663	6291	4539
55°	8047	4456	6431	4332
60°	7795	4239	6516	4129
65°	7446	3990	6483	3898
70°	6955	3698	6253	3630
75°	6258	3297	5738	3280
80°	5306	2762	4823	2803
85°	3690	1828	3060	1877

Classified

Scaled Data Report

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.1	3.2
10°-20°	634.6	9.4
20°-30°	972.5	14.4
30°-40°	1182.5	17.5
40°-50°	1229.3	18.2
50°-60°	1110.4	16.4
60°-70°	844.2	12.5
70°-80°	470.6	7.0
80°-90°	108.4	1.6
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°	1826.2	27.0
0°-40°	3008.7	44.4
0°-60°	5348.4	79.0
0°-90°	6771.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6771.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2308	2308	2308	2308	2308	
5°	2396	2283	2240	2287	2396	231
15°	2531	2174	2107	2175	2531	718
25°	2581	1947	1968	1927	2581	1192
35°	2487	1629	1808	1603	2487	1554
45°	2180	1284	1614	1252	2180	1678
55°	1715	950	1371	923	1715	1531
65°	1169	627	1018	612	1169	1156
75°	602	317	552	316	602	639
85°	120	59	99	61	120	150
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1
2.5°	2359.2	2324.8	2325.3	2355.5	2332.3	2343.6	2311.3	2323.7	2319.9	2322.6	2296.2
5°	2396.4	2359.2	2358.7	2384.5	2358.7	2363.5	2322.6	2330.7	2318.9	2311.3	2282.8
7.5°	2435.7	2398.5	2394.8	2417.4	2383.5	2379.7	2334.5	2334.5	2312.9	2294.1	2267.2
10°	2474.4	2436.2	2431.4	2448.6	2406.6	2394.2	2339.3	2330.7	2302.2	2274.2	2245.1
12.5°	2503.5	2464.8	2461.0	2471.8	2424.4	2401.8	2339.3	2322.6	2280.6	2241.3	2218.7
15°	2531.0	2491.1	2480.9	2486.3	2431.9	2401.8	2331.8	2305.9	2252.1	2200.4	2174.0
17.5°	2550.4	2512.1	2501.9	2501.4	2435.7	2392.6	2315.6	2280.1	2215.5	2153.0	2126.6
20°	2569.7	2531.5	2518.6	2508.9	2434.6	2380.2	2291.9	2244.0	2168.6	2098.7	2076.6
22.5°	2579.4	2540.1	2526.1	2511.6	2427.6	2357.6	2262.9	2202.0	2115.9	2032.4	2014.1
25°	2581.1	2540.7	2525.6	2504.6	2413.6	2330.7	2225.2	2151.4	2055.0	1962.4	1946.8
27.5°	2576.7	2532.6	2517.5	2492.2	2392.6	2297.9	2180.5	2093.8	1990.4	1888.1	1871.5
30°	2561.7	2517.0	2502.4	2469.6	2363.0	2257.5	2131.5	2029.7	1918.8	1810.1	1795.5
32.5°	2531.5	2487.9	2476.1	2443.2	2330.7	2210.6	2074.4	1960.8	1839.7	1735.8	1714.2
35°	2487.4	2443.8	2436.2	2401.8	2285.5	2154.6	2012.0	1885.4	1755.7	1649.6	1628.6
37.5°	2429.8	2393.2	2381.8	2347.9	2232.2	2091.1	1940.4	1803.6	1670.1	1556.0	1543.0
40°	2357.1	2322.6	2314.0	2283.9	2170.3	2020.6	1862.8	1719.1	1581.8	1475.7	1457.4
42.5°	2274.2	2241.9	2237.0	2205.8	2093.8	1942.5	1778.8	1631.3	1489.7	1387.4	1369.1
45°	2179.9	2148.7	2147.6	2118.0	2010.4	1855.8	1690.6	1542.5	1399.8	1293.8	1284.1
47.5°	2076.0	2048.0	2048.0	2020.6	1917.2	1760.5	1599.6	1449.9	1309.4	1215.7	1198.5
50°	1963.0	1936.6	1928.5	1915.1	1814.4	1656.6	1503.7	1359.4	1220.0	1130.6	1113.9
52.5°	1842.4	1819.8	1825.1	1800.4	1702.9	1548.4	1406.8	1257.7	1130.1	1048.8	1032.1
55°	1715.3	1683.0	1687.9	1678.7	1586.6	1437.0	1298.1	1173.7	1041.8	965.3	949.7
57.5°	1583.4	1541.4	1558.6	1553.3	1462.8	1322.8	1198.5	1078.4	954.0	883.5	868.4
60°	1448.3	1407.9	1425.7	1420.8	1335.8	1208.7	1095.6	984.2	866.8	802.7	787.7
62.5°	1309.4	1272.2	1288.4	1284.6	1206.5	1091.9	993.3	891.0	779.1	721.4	707.4
65°	1169.4	1133.9	1148.4	1145.7	1073.6	986.3	888.3	794.7	690.8	640.7	626.7
67.5°	1026.2	993.3	1006.8	1006.8	940.6	857.1	782.8	697.2	604.1	561.0	548.1
70°	884.0	853.4	865.2	864.1	808.1	740.3	676.2	599.8	516.3	480.8	470.0
72.5°	740.8	713.9	724.7	723.6	676.8	633.1	569.6	503.4	430.7	402.2	392.5
75°	601.9	576.6	586.8	585.8	547.5	506.6	464.1	409.2	346.7	326.8	317.1
77.5°	469.5	443.6	452.2	452.2	424.3	394.6	360.7	318.2	274.0	252.5	245.5
80°	342.4	330.0	325.7	326.3	307.4	288.0	270.8	229.9	197.6	183.1	178.2
82.5°	225.0	214.8	210.5	211.6	200.8	189.0	178.2	149.7	128.1	119.5	116.8
85°	119.5	112.0	108.2	110.9	108.8	102.3	96.9	77.5	64.1	60.8	59.2
87.5°	37.7	32.8	30.1	39.8	33.9	30.1	29.1	23.2	17.8	17.8	17.2
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1
2.5°	2304.9	2304.9	2283.9	2279.0	2276.9	2279.6	2258.6	2254.8	2284.9	2274.7	2251.6
5°	2286.6	2285.5	2255.9	2250.5	2250.5	2247.2	2223.6	2218.2	2248.3	2239.7	2214.4
7.5°	2263.9	2260.7	2225.7	2221.9	2216.6	2214.4	2188.0	2184.3	2210.1	2204.7	2181.0
10°	2236.5	2233.2	2191.8	2189.1	2183.2	2178.9	2154.1	2151.4	2177.8	2169.2	2150.3
12.5°	2200.4	2194.5	2152.0	2149.3	2144.4	2142.8	2118.6	2117.5	2146.6	2138.0	2118.0
15°	2153.0	2148.2	2100.8	2101.9	2102.4	2102.4	2083.0	2082.0	2110.5	2106.7	2085.2
17.5°	2100.8	2094.3	2049.1	2052.4	2056.1	2060.4	2045.4	2048.0	2078.2	2073.3	2054.0
20°	2041.6	2035.1	1991.0	2000.1	2008.2	2016.8	2007.1	2014.7	2042.7	2040.5	2026.0
22.5°	1975.4	1968.9	1928.0	1942.0	1955.4	1971.6	1967.3	1975.9	2005.5	2005.0	1992.1
25°	1894.6	1896.2	1860.1	1877.4	1900.0	1922.6	1924.2	1938.2	1971.1	1967.8	1956.0
27.5°	1819.2	1821.4	1783.2	1812.2	1842.4	1871.5	1878.4	1897.8	1931.2	1928.5	1918.3
30°	1740.1	1742.8	1705.6	1745.5	1782.1	1817.6	1832.7	1859.1	1893.0	1893.0	1882.2
32.5°	1657.7	1662.6	1623.8	1677.1	1719.6	1761.1	1787.5	1814.9	1853.7	1852.6	1843.5
35°	1573.2	1578.6	1543.0	1610.9	1653.4	1704.0	1736.9	1773.5	1807.9	1808.5	1801.5
37.5°	1487.0	1493.5	1461.2	1535.5	1583.9	1643.7	1685.7	1722.3	1760.5	1762.7	1756.2
40°	1401.4	1408.4	1380.4	1452.0	1513.4	1580.2	1628.6	1671.7	1713.7	1714.8	1710.5
42.5°	1315.8	1323.4	1302.4	1372.4	1441.8	1513.4	1570.5	1619.5	1662.6	1665.2	1660.4
45°	1232.4	1238.8	1223.8	1300.2	1367.0	1445.0	1510.7	1566.2	1609.8	1613.6	1611.9
47.5°	1149.5	1155.4	1141.9	1211.9	1288.9	1371.8	1447.7	1509.1	1555.4	1559.7	1558.6
50°	1068.2	1073.0	1058.5	1131.7	1208.2	1296.4	1375.6	1446.7	1498.3	1502.7	1502.1
52.5°	987.4	992.3	979.9	1056.9	1126.3	1219.5	1305.6	1382.6	1433.7	1440.2	1441.3
55°	909.3	911.5	901.8	975.6	1042.9	1140.3	1239.4	1314.2	1365.4	1370.7	1374.0
57.5°	831.3	831.8	823.7	894.3	958.9	1058.5	1162.4	1241.0	1289.4	1294.8	1299.7
60°	753.7	753.2	744.1	812.4	874.3	972.9	1081.1	1159.2	1206.0	1210.8	1217.3
62.5°	676.8	675.1	667.1	730.1	788.2	885.7	994.4	1069.8	1114.5	1117.7	1126.3
65°	600.3	598.7	591.2	649.3	702.1	795.2	901.8	973.4	1013.8	1018.1	1016.5
67.5°	524.9	521.7	515.8	568.0	615.9	702.1	804.4	872.7	906.1	909.9	920.1
70°	449.6	445.8	432.3	487.8	529.8	606.8	702.1	762.9	790.9	794.7	793.1
72.5°	375.3	371.5	357.0	408.1	443.6	510.9	596.0	646.6	670.8	674.1	674.1
75°	303.1	301.0	291.8	330.6	360.2	415.1	487.2	529.2	548.1	551.9	550.8
77.5°	233.7	232.0	222.9	256.3	279.4	320.3	378.5	411.3	425.3	429.6	438.8
80°	167.4	166.9	152.4	185.2	195.4	229.9	272.4	297.7	305.3	311.2	317.7
82.5°	107.1	107.7	93.1	121.1	125.4	147.5	173.9	189.5	194.9	199.7	204.6
85°	52.2	54.4	46.3	64.1	64.6	75.9	87.2	93.1	95.3	99.1	103.4
87.5°	13.5	15.6	8.6	18.3	16.2	21.0	24.2	25.8	25.3	28.0	29.6
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1
2.5°	2259.1	2276.3	2267.7	2295.7	2306.5	2289.2	2319.4	2319.9	2298.4	2323.7	2337.7
5°	2224.1	2241.9	2236.5	2265.6	2279.0	2263.9	2300.5	2307.5	2286.6	2315.1	2337.7
7.5°	2188.6	2209.6	2202.6	2232.2	2248.3	2236.5	2275.8	2287.1	2270.9	2302.2	2332.3
10°	2157.9	2175.6	2168.1	2199.3	2213.3	2203.6	2242.4	2263.4	2248.3	2286.6	2322.6
12.5°	2127.7	2142.3	2133.6	2159.5	2173.0	2160.6	2207.9	2227.3	2216.6	2256.4	2302.7
15°	2089.0	2105.1	2093.3	2116.4	2126.6	2115.9	2154.6	2188.0	2174.6	2218.2	2269.3
17.5°	2059.3	2068.5	2052.4	2070.7	2076.6	2062.0	2101.3	2134.2	2124.5	2171.9	2231.1
20°	2026.5	2034.0	2011.4	2021.7	2021.1	2002.8	2038.9	2071.2	2064.7	2117.0	2184.3
22.5°	1989.9	1993.7	1967.3	1969.4	1968.4	1938.2	1970.5	2003.4	2000.7	2053.4	2128.8
25°	1951.1	1951.7	1917.8	1916.7	1904.8	1869.3	1897.8	1935.0	1926.9	1984.0	2063.1
27.5°	1912.9	1907.5	1866.6	1856.9	1838.1	1795.5	1820.8	1854.2	1849.4	1905.4	1993.1
30°	1872.0	1865.0	1814.9	1797.2	1769.7	1720.7	1741.7	1772.9	1775.6	1824.6	1916.7
32.5°	1833.2	1815.5	1760.0	1734.2	1699.7	1642.6	1653.9	1685.7	1690.0	1739.5	1834.3
35°	1783.2	1771.3	1702.9	1658.8	1624.9	1562.4	1574.3	1596.3	1602.8	1651.2	1747.6
37.5°	1735.8	1716.9	1644.2	1590.4	1546.8	1481.1	1484.3	1507.0	1513.4	1562.4	1657.7
40°	1686.8	1659.9	1581.8	1518.8	1468.7	1399.8	1396.1	1419.7	1424.6	1472.5	1558.6
42.5°	1634.6	1602.3	1514.5	1445.6	1388.0	1318.0	1310.4	1330.9	1336.3	1383.1	1467.7
45°	1581.8	1543.0	1445.6	1370.2	1307.2	1235.6	1228.1	1243.7	1251.8	1295.9	1377.2
47.5°	1525.8	1480.6	1374.5	1290.5	1225.4	1153.8	1144.6	1160.2	1166.7	1210.3	1287.3
50°	1467.1	1412.2	1301.3	1208.7	1144.1	1073.6	1060.1	1078.4	1084.3	1125.2	1200.6
52.5°	1402.5	1341.7	1223.2	1126.3	1061.7	994.4	978.3	996.0	1003.0	1042.9	1112.3
55°	1334.1	1268.5	1144.6	1050.4	980.4	914.7	901.3	908.3	923.3	961.0	1025.6
57.5°	1257.1	1192.0	1061.7	965.9	898.6	835.6	824.3	830.7	844.7	881.3	939.5
60°	1175.3	1106.4	977.2	881.3	816.2	756.4	746.2	752.1	767.2	800.6	854.4
62.5°	1094.6	1017.0	890.0	794.7	735.4	680.0	677.3	675.1	689.1	721.4	768.8
65°	996.6	922.3	799.0	708.5	654.7	604.6	593.8	598.7	612.2	641.8	691.3
67.5°	891.6	824.3	705.8	622.4	574.5	529.8	520.6	522.8	536.8	562.6	605.7
70°	780.1	720.9	610.5	535.7	495.3	453.3	447.4	447.9	461.4	484.0	521.7
72.5°	663.3	610.0	514.2	450.1	416.7	386.6	381.2	374.7	387.1	406.5	438.8
75°	544.3	497.5	418.3	366.1	339.7	314.4	309.6	303.1	315.5	332.2	357.5
77.5°	424.3	386.6	325.2	284.8	264.4	245.5	241.2	234.2	246.6	259.0	278.9
80°	306.9	279.4	242.8	200.3	193.3	180.9	176.6	169.1	180.9	189.0	204.1
82.5°	198.1	179.8	158.8	129.2	128.1	119.0	116.8	108.2	119.0	123.8	135.1
85°	100.1	91.5	86.1	65.7	67.8	61.9	61.4	52.2	60.8	63.0	69.5
87.5°	28.5	30.1	26.9	16.2	20.5	19.4	19.4	14.0	19.4	19.4	22.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P837837

CATALOG NUMBER: ORLG-24-2-INS-ASY2R-LD4-6STD-20-120-EDD

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1	2308.1
2.5°	2310.2	2319.4	2321.5	2321.0	2326.9	2359.2	2348.5	2359.2
5°	2315.6	2336.1	2341.5	2349.0	2358.7	2395.3	2383.5	2396.4
7.5°	2318.9	2349.5	2361.4	2375.9	2391.5	2432.5	2422.8	2435.7
10°	2318.9	2358.7	2375.9	2400.2	2421.1	2468.5	2459.4	2474.4
12.5°	2309.2	2360.3	2384.5	2418.5	2445.4	2496.5	2492.8	2503.5
15°	2289.2	2352.2	2385.6	2429.2	2462.6	2519.7	2518.1	2531.0
17.5°	2262.3	2338.2	2378.6	2433.5	2475.5	2539.6	2543.4	2550.4
20°	2228.4	2311.9	2364.6	2431.9	2484.7	2555.2	2560.1	2569.7
22.5°	2183.7	2280.1	2343.6	2424.9	2485.8	2561.7	2570.3	2579.4
25°	2131.0	2241.9	2316.2	2411.5	2480.4	2561.1	2573.0	2581.1
27.5°	2070.7	2192.3	2281.2	2389.9	2465.3	2552.5	2567.1	2576.7
30°	2000.7	2139.6	2241.3	2361.9	2444.8	2536.4	2552.0	2561.7
32.5°	1928.5	2081.4	2193.9	2325.9	2415.2	2510.5	2524.0	2531.5
35°	1849.9	2010.9	2136.9	2279.6	2377.0	2469.1	2479.3	2487.4
37.5°	1764.3	1934.4	2071.7	2227.3	2323.2	2411.5	2420.6	2429.8
40°	1676.0	1854.2	1998.5	2163.3	2259.1	2340.9	2350.6	2357.1
42.5°	1587.2	1765.4	1920.4	2087.9	2183.2	2261.8	2267.7	2274.2
45°	1497.3	1673.3	1832.7	2004.4	2098.7	2172.4	2174.6	2179.9
47.5°	1405.7	1578.0	1736.3	1909.1	2002.3	2069.6	2071.7	2076.0
50°	1313.7	1482.7	1633.5	1806.3	1897.3	1968.4	1958.7	1963.0
52.5°	1223.2	1382.6	1536.6	1695.4	1785.3	1848.3	1851.0	1842.4
55°	1134.4	1284.6	1426.2	1579.1	1664.7	1713.7	1712.1	1715.3
57.5°	1044.5	1185.5	1315.3	1455.3	1538.7	1585.0	1594.7	1583.4
60°	953.0	1085.4	1201.7	1328.2	1409.0	1447.7	1459.0	1448.3
62.5°	862.0	983.6	1089.2	1199.5	1274.4	1322.3	1321.2	1309.4
65°	771.0	881.3	975.6	1069.2	1134.4	1182.3	1180.2	1169.4
67.5°	687.0	778.0	862.5	938.4	994.9	1027.8	1039.1	1026.2
70°	594.4	673.0	747.3	808.1	855.0	884.6	895.3	884.0
72.5°	501.8	568.5	620.8	679.5	715.5	740.3	751.6	740.8
75°	410.3	465.2	507.7	553.5	578.8	599.8	612.7	601.9
77.5°	321.4	364.0	397.9	431.3	460.3	465.2	476.5	469.5
80°	236.9	267.6	292.3	314.4	335.4	337.6	346.7	342.4
82.5°	157.7	178.2	184.7	207.8	221.3	219.1	228.3	225.0
85°	83.5	95.8	107.1	114.1	121.7	114.7	122.8	119.5
87.5°	28.0	29.6	25.8	36.6	40.4	34.5	39.3	37.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)