

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: P838154

Luminaire Tested: **ORLG-24-4-INS-ASY2R-LD4-4LO-20-120-EDD-90**

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: P838154
Test Lab: INNOVATION CENTER(G2)
Issue Date: 5/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: ORLG-24-4-INS-ASY2R-LD4-4LO-20-120-EDD-90
Description: 2FT x 4FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 2000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

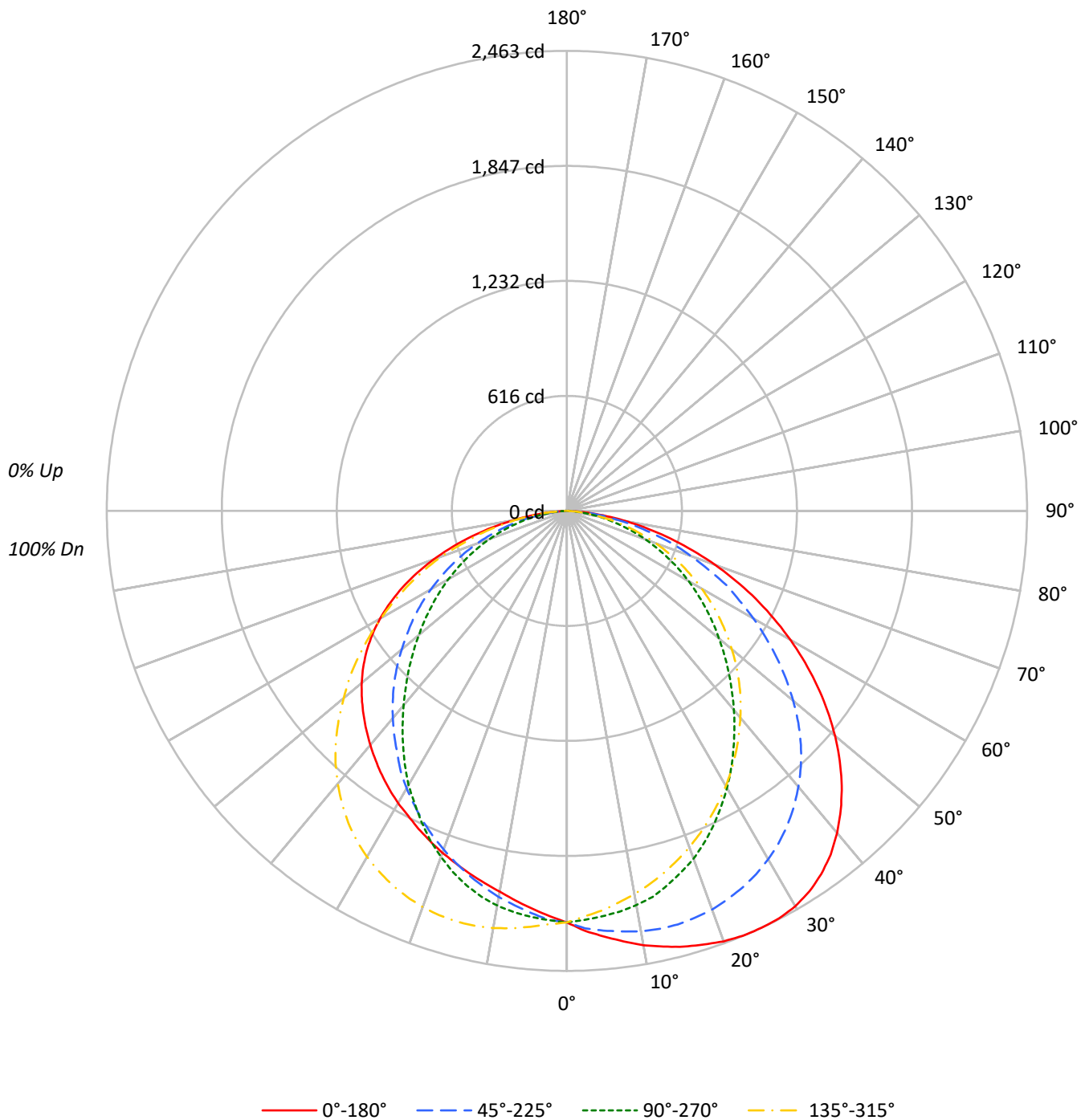
Lumens per Lamp: N/A
Luminaire Lumens: 6462.7 lumens
Efficiency: N/A
Efficacy: 69.0 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 93.6
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	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	109	104	100	96	106	102	98	94	97	94	91	94	91	89	90	88	86	84		
2	99	91	84	78	96	89	82	77	85	80	75	82	77	73	79	75	72	70		
3	90	79	71	65	88	78	70	64	75	68	63	72	66	62	69	65	61	59		
4	82	70	61	55	80	69	61	54	66	59	53	64	58	53	62	56	52	50		
5	76	63	54	47	74	62	53	47	59	52	46	57	51	46	56	50	45	43		
6	70	56	47	41	68	55	47	41	54	46	40	52	45	40	50	44	40	38		
7	65	51	42	36	63	50	42	36	49	41	36	47	40	35	46	40	35	33		
8	60	47	38	32	59	46	38	32	45	37	32	43	37	32	42	36	31	29		
9	56	43	34	29	55	42	34	29	41	34	29	40	33	28	39	33	28	26		
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	2964	2964	2964	2964
5°	3089	2943	2887	2947
10°	3227	2927	2828	2932
15°	3365	2890	2801	2891
20°	3512	2838	2788	2821
25°	3657	2758	2788	2730
30°	3798	2662	2807	2633
35°	3899	2553	2835	2513
40°	3951	2443	2875	2388
45°	3959	2332	2930	2273
50°	3921	2225	3002	2166
55°	3840	2126	3069	2067
60°	3719	2023	3110	1970
65°	3553	1904	3094	1860
70°	3319	1765	2984	1733
75°	2987	1573	2738	1565
80°	2532	1318	2301	1337
85°	1761	872	1459	897

Classified

Scaled Data Report

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	209.1	3.2
10°-20°	605.6	9.4
20°-30°	928.1	14.4
30°-40°	1128.6	17.5
40°-50°	1173.2	18.2
50°-60°	1059.8	16.4
60°-70°	805.7	12.5
70°-80°	449.2	7.0
80°-90°	103.4	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°	1742.9	27.0
0°-40°	2871.5	44.4
0°-60°	5104.4	79.0
0°-90°	6462.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6462.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2203	2203	2203	2203	2203	
5°	2287	2179	2138	2182	2287	221
15°	2416	2075	2011	2075	2416	685
25°	2463	1858	1878	1839	2463	1138
35°	2374	1554	1726	1530	2374	1483
45°	2080	1226	1540	1195	2080	1602
55°	1637	906	1308	881	1637	1461
65°	1116	598	972	584	1116	1103
75°	574	303	527	301	574	610
85°	114	56	94	58	114	144
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°	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8
2.5°	2251.6	2218.7	2219.2	2248.0	2225.9	2236.7	2205.9	2217.7	2214.1	2216.7	2191.5
5°	2287.1	2251.6	2251.1	2275.8	2251.1	2255.7	2216.7	2224.4	2213.1	2205.9	2178.7
7.5°	2324.6	2289.1	2285.5	2307.1	2274.7	2271.1	2228.0	2228.0	2207.4	2189.4	2163.7
10°	2361.6	2325.1	2320.5	2336.9	2296.8	2285.0	2232.6	2224.4	2197.1	2170.4	2142.7
12.5°	2389.3	2352.3	2348.7	2359.0	2313.8	2292.2	2232.6	2216.7	2176.6	2139.1	2117.5
15°	2415.5	2377.5	2367.7	2372.9	2321.0	2292.2	2225.4	2200.7	2149.4	2100.0	2074.9
17.5°	2434.0	2397.5	2387.8	2387.3	2324.6	2283.5	2210.0	2176.1	2114.4	2054.8	2029.6
20°	2452.5	2416.0	2403.7	2394.5	2323.6	2271.7	2187.4	2141.7	2069.7	2002.9	1981.9
22.5°	2461.8	2424.3	2410.9	2397.0	2316.9	2250.1	2159.6	2101.6	2019.4	1939.7	1922.2
25°	2463.3	2424.8	2410.4	2390.3	2303.5	2224.4	2123.7	2053.3	1961.3	1872.9	1858.0
27.5°	2459.2	2417.1	2402.7	2378.5	2283.5	2193.0	2081.0	1998.3	1899.6	1802.0	1786.1
30°	2444.8	2402.2	2388.3	2357.0	2255.2	2154.5	2034.3	1937.1	1831.3	1727.5	1713.6
32.5°	2416.0	2374.4	2363.1	2331.8	2224.4	2109.8	1979.8	1871.4	1755.8	1656.6	1636.0
35°	2373.9	2332.3	2325.1	2292.2	2181.2	2056.4	1920.2	1799.4	1675.6	1574.4	1554.3
37.5°	2318.9	2284.0	2273.2	2240.8	2130.4	1995.7	1851.9	1721.3	1593.9	1485.0	1472.6
40°	2249.6	2216.7	2208.5	2179.7	2071.3	1928.4	1777.9	1640.7	1509.6	1408.4	1390.9
42.5°	2170.4	2139.6	2135.0	2105.2	1998.3	1853.9	1697.7	1556.9	1421.8	1324.1	1306.7
45°	2080.5	2050.7	2049.7	2021.4	1918.7	1771.2	1613.4	1472.1	1336.0	1234.7	1225.5
47.5°	1981.3	1954.6	1954.6	1928.4	1829.8	1680.2	1526.6	1383.8	1249.6	1160.2	1143.8
50°	1873.4	1848.3	1840.5	1827.7	1731.6	1581.1	1435.1	1297.4	1164.3	1079.0	1063.1
52.5°	1758.3	1736.8	1741.9	1718.3	1625.3	1477.8	1342.6	1200.3	1078.5	1000.9	985.0
55°	1637.1	1606.2	1610.9	1602.1	1514.3	1371.4	1238.9	1120.2	994.3	921.3	906.4
57.5°	1511.2	1471.1	1487.5	1482.4	1396.1	1262.5	1143.8	1029.2	910.5	843.2	828.8
60°	1382.2	1343.7	1360.6	1356.0	1274.8	1153.6	1045.6	939.3	827.3	766.1	751.7
62.5°	1249.6	1214.2	1229.6	1226.0	1151.5	1042.1	948.0	850.4	743.5	688.5	675.2
65°	1116.0	1082.1	1096.0	1093.4	1024.6	941.3	847.8	758.4	659.2	611.5	598.1
67.5°	979.4	948.0	960.9	960.9	897.7	818.0	747.1	665.4	576.5	535.4	523.1
70°	843.7	814.4	825.7	824.7	771.3	706.5	645.4	572.4	492.8	458.9	448.6
72.5°	707.0	681.3	691.6	690.6	645.9	604.3	543.6	480.4	411.1	383.8	374.6
75°	574.5	550.3	560.1	559.0	522.6	483.5	442.9	390.5	330.9	311.9	302.6
77.5°	448.1	423.4	431.6	431.6	404.9	376.6	344.3	303.7	261.5	241.0	234.3
80°	326.8	315.0	310.9	311.4	293.4	274.9	258.5	219.4	188.6	174.7	170.1
82.5°	214.8	205.0	200.9	201.9	191.7	180.4	170.1	142.8	122.3	114.1	111.5
85°	114.1	106.9	103.3	105.8	103.8	97.6	92.5	74.0	61.1	58.1	56.5
87.5°	36.0	31.3	28.8	38.0	32.4	28.8	27.7	22.1	17.0	17.0	16.4
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8
2.5°	2199.7	2199.7	2179.7	2175.1	2173.0	2175.6	2155.5	2151.9	2180.7	2170.9	2148.8
5°	2182.2	2181.2	2153.0	2147.8	2147.8	2144.7	2122.1	2117.0	2145.8	2137.5	2113.4
7.5°	2160.7	2157.6	2124.2	2120.6	2115.4	2113.4	2088.2	2084.6	2109.3	2104.1	2081.5
10°	2134.5	2131.4	2091.8	2089.2	2083.6	2079.5	2055.8	2053.3	2078.5	2070.2	2052.2
12.5°	2100.0	2094.4	2053.8	2051.2	2046.6	2045.1	2021.9	2020.9	2048.7	2040.4	2021.4
15°	2054.8	2050.2	2005.0	2006.0	2006.5	2006.5	1988.0	1987.0	2014.2	2010.6	1990.1
17.5°	2005.0	1998.8	1955.6	1958.7	1962.3	1966.4	1952.1	1954.6	1983.4	1978.8	1960.3
20°	1948.5	1942.3	1900.2	1908.9	1916.6	1924.8	1915.6	1922.8	1949.5	1947.4	1933.6
22.5°	1885.3	1879.1	1840.0	1853.4	1866.2	1881.7	1877.5	1885.8	1914.0	1913.5	1901.2
25°	1808.2	1809.7	1775.3	1791.7	1813.3	1834.9	1836.4	1849.8	1881.1	1878.1	1866.8
27.5°	1736.2	1738.3	1701.8	1729.6	1758.3	1786.1	1792.8	1811.3	1843.1	1840.5	1830.8
30°	1660.7	1663.3	1627.8	1665.8	1700.8	1734.7	1749.1	1774.3	1806.6	1806.6	1796.4
32.5°	1582.1	1586.7	1549.7	1600.6	1641.2	1680.7	1705.9	1732.1	1769.1	1768.1	1759.4
35°	1501.4	1506.6	1472.6	1537.4	1578.0	1626.3	1657.6	1692.6	1725.4	1726.0	1719.3
37.5°	1419.2	1425.4	1394.5	1465.5	1511.7	1568.7	1608.8	1643.8	1680.2	1682.3	1676.1
40°	1337.5	1344.2	1317.5	1385.8	1444.4	1508.1	1554.3	1595.5	1635.5	1636.6	1632.4
42.5°	1255.8	1263.0	1243.0	1309.8	1376.0	1444.4	1498.8	1545.6	1586.7	1589.3	1584.7
45°	1176.2	1182.3	1167.9	1240.9	1304.6	1379.1	1441.8	1494.7	1536.4	1540.0	1538.4
47.5°	1097.0	1102.7	1089.8	1156.6	1230.1	1309.2	1381.7	1440.3	1484.5	1488.6	1487.5
50°	1019.4	1024.1	1010.2	1080.1	1153.0	1237.3	1312.8	1380.7	1430.0	1434.1	1433.6
52.5°	942.4	947.0	935.2	1008.7	1074.9	1163.8	1246.0	1319.5	1368.3	1374.5	1375.5
55°	867.9	869.9	860.7	931.1	995.3	1088.3	1182.8	1254.3	1303.1	1308.2	1311.3
57.5°	793.4	793.9	786.2	853.5	915.1	1010.2	1109.4	1184.4	1230.6	1235.8	1240.4
60°	719.4	718.9	710.1	775.4	834.5	928.5	1031.8	1106.3	1151.0	1155.6	1161.8
62.5°	645.9	644.3	636.6	696.8	752.3	845.3	949.0	1021.0	1063.6	1066.7	1074.9
65°	572.9	571.4	564.2	619.7	670.0	758.9	860.7	929.0	967.5	971.7	970.1
67.5°	501.0	497.9	492.3	542.1	587.8	670.0	767.7	832.9	864.8	868.4	878.1
70°	429.1	425.5	412.6	465.5	505.6	579.1	670.0	728.1	754.8	758.4	756.9
72.5°	358.1	354.5	340.7	389.5	423.4	487.6	568.8	617.1	640.2	643.3	643.3
75°	289.3	287.2	278.5	315.5	343.8	396.2	465.0	505.1	523.1	526.7	525.7
77.5°	223.0	221.5	212.7	244.6	266.7	305.7	361.2	392.6	405.9	410.0	418.8
80°	159.8	159.3	145.4	176.8	186.5	219.4	260.0	284.1	291.3	297.0	303.2
82.5°	102.3	102.8	88.9	115.6	119.7	140.8	166.0	180.9	186.0	190.6	195.3
85°	49.8	51.9	44.2	61.1	61.7	72.5	83.2	88.9	90.9	94.5	98.7
87.5°	12.8	14.9	8.2	17.5	15.4	20.0	23.1	24.7	24.2	26.7	28.3
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°	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8
2.5°	2156.0	2172.5	2164.3	2191.0	2201.3	2184.8	2213.6	2214.1	2193.6	2217.7	2231.1
5°	2122.6	2139.6	2134.5	2162.2	2175.1	2160.7	2195.6	2202.3	2182.2	2209.5	2231.1
7.5°	2088.7	2108.8	2102.1	2130.4	2145.8	2134.5	2172.0	2182.8	2167.3	2197.1	2225.9
10°	2059.4	2076.4	2069.2	2099.0	2112.4	2103.1	2140.1	2160.2	2145.8	2182.2	2216.7
12.5°	2030.7	2044.5	2036.3	2061.0	2073.8	2062.0	2107.2	2125.7	2115.4	2153.5	2197.7
15°	1993.7	2009.1	1997.8	2019.9	2029.6	2019.4	2056.4	2088.2	2075.4	2117.0	2165.8
17.5°	1965.4	1974.1	1958.7	1976.2	1981.9	1968.0	2005.5	2036.8	2027.6	2072.8	2129.3
20°	1934.1	1941.3	1919.7	1929.4	1928.9	1911.5	1945.9	1976.7	1970.5	2020.4	2084.6
22.5°	1899.1	1902.7	1877.5	1879.6	1878.6	1849.8	1880.6	1912.0	1909.4	1959.8	2031.7
25°	1862.1	1862.6	1830.3	1829.2	1817.9	1784.0	1811.3	1846.7	1839.0	1893.5	1969.0
27.5°	1825.6	1820.5	1781.5	1772.2	1754.2	1713.6	1737.8	1769.6	1765.0	1818.5	1902.2
30°	1786.6	1779.9	1732.1	1715.2	1689.0	1642.2	1662.2	1692.1	1694.6	1741.4	1829.2
32.5°	1749.6	1732.6	1679.7	1655.1	1622.2	1567.7	1578.5	1608.8	1612.9	1660.2	1750.6
35°	1701.8	1690.5	1625.3	1583.1	1550.7	1491.1	1502.4	1523.5	1529.7	1575.9	1667.9
37.5°	1656.6	1638.6	1569.2	1517.9	1476.2	1413.6	1416.6	1438.2	1444.4	1491.1	1582.1
40°	1609.8	1584.1	1509.6	1449.5	1401.7	1336.0	1332.4	1355.0	1359.6	1405.3	1487.5
42.5°	1560.0	1529.2	1445.4	1379.6	1324.7	1257.9	1250.7	1270.2	1275.3	1320.0	1400.7
45°	1509.6	1472.6	1379.6	1307.7	1247.6	1179.2	1172.1	1187.0	1194.7	1236.8	1314.4
47.5°	1456.2	1413.0	1311.8	1231.7	1169.5	1101.1	1092.4	1107.3	1113.5	1155.1	1228.6
50°	1400.2	1347.8	1241.9	1153.6	1091.9	1024.6	1011.7	1029.2	1034.9	1073.9	1145.8
52.5°	1338.5	1280.5	1167.4	1074.9	1013.3	949.0	933.6	950.6	957.3	995.3	1061.6
55°	1273.3	1210.6	1092.4	1002.5	935.7	873.0	860.2	866.8	881.2	917.2	978.9
57.5°	1199.8	1137.6	1013.3	921.8	857.6	797.5	786.7	792.8	806.2	841.1	896.6
60°	1121.7	1055.9	932.6	841.1	779.0	721.9	712.2	717.8	732.2	764.1	815.5
62.5°	1044.6	970.6	849.4	758.4	701.9	649.0	646.4	644.3	657.7	688.5	733.8
65°	951.1	880.2	762.5	676.2	624.8	577.0	566.8	571.4	584.2	612.5	659.8
67.5°	850.9	786.7	673.6	594.0	548.3	505.6	496.9	498.9	512.3	537.0	578.1
70°	744.5	688.0	582.7	511.3	472.7	432.6	427.0	427.5	440.4	461.9	497.9
72.5°	633.0	582.2	490.7	429.6	397.7	368.9	363.8	357.6	369.4	387.9	418.8
75°	519.5	474.8	399.2	349.4	324.2	300.1	295.5	289.3	301.1	317.0	341.2
77.5°	404.9	368.9	310.4	271.8	252.3	234.3	230.2	223.5	235.3	247.2	266.2
80°	292.9	266.7	231.7	191.1	184.5	172.6	168.5	161.3	172.6	180.4	194.7
82.5°	189.1	171.6	151.6	123.3	122.3	113.6	111.5	103.3	113.6	118.2	129.0
85°	95.6	87.4	82.2	62.7	64.7	59.1	58.6	49.8	58.1	60.1	66.3
87.5°	27.2	28.8	25.7	15.4	19.5	18.5	18.5	13.4	18.5	18.5	21.1
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: P838154

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-4LO-20-120-EDD-90

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8	2202.8
2.5°	2204.9	2213.6	2215.6	2215.1	2220.8	2251.6	2241.3	2251.6
5°	2210.0	2229.5	2234.7	2241.9	2251.1	2286.0	2274.7	2287.1
7.5°	2213.1	2242.4	2253.7	2267.5	2282.4	2321.5	2312.2	2324.6
10°	2213.1	2251.1	2267.5	2290.7	2310.7	2355.9	2347.2	2361.6
12.5°	2203.8	2252.6	2275.8	2308.1	2333.8	2382.6	2379.0	2389.3
15°	2184.8	2244.9	2276.8	2318.4	2350.3	2404.7	2403.2	2415.5
17.5°	2159.1	2231.6	2270.1	2322.5	2362.6	2423.7	2427.3	2434.0
20°	2126.8	2206.4	2256.8	2321.0	2371.3	2438.6	2443.3	2452.5
22.5°	2084.1	2176.1	2236.7	2314.3	2372.4	2444.8	2453.0	2461.8
25°	2033.7	2139.6	2210.5	2301.5	2367.2	2444.3	2455.6	2463.3
27.5°	1976.2	2092.3	2177.1	2280.9	2352.8	2436.1	2450.0	2459.2
30°	1909.4	2042.0	2139.1	2254.2	2333.3	2420.7	2435.6	2444.8
32.5°	1840.5	1986.5	2093.9	2219.8	2305.1	2396.0	2408.8	2416.0
35°	1765.5	1919.2	2039.4	2175.6	2268.6	2356.4	2366.2	2373.9
37.5°	1683.8	1846.2	1977.2	2125.7	2217.2	2301.5	2310.2	2318.9
40°	1599.6	1769.6	1907.3	2064.6	2156.0	2234.1	2243.4	2249.6
42.5°	1514.8	1684.9	1832.8	1992.6	2083.6	2158.6	2164.3	2170.4
45°	1429.0	1597.0	1749.1	1913.0	2002.9	2073.3	2075.4	2080.5
47.5°	1341.6	1506.0	1657.1	1822.1	1910.9	1975.2	1977.2	1981.3
50°	1253.8	1415.1	1559.0	1723.9	1810.7	1878.6	1869.3	1873.4
52.5°	1167.4	1319.5	1466.5	1618.1	1703.9	1764.0	1766.6	1758.3
55°	1082.6	1226.0	1361.1	1507.1	1588.8	1635.5	1634.0	1637.1
57.5°	996.8	1131.5	1255.3	1388.9	1468.5	1512.7	1522.0	1511.2
60°	909.5	1035.9	1146.9	1267.6	1344.7	1381.7	1392.5	1382.2
62.5°	822.6	938.8	1039.5	1144.8	1216.2	1262.0	1260.9	1249.6
65°	735.8	841.1	931.1	1020.5	1082.6	1128.4	1126.3	1116.0
67.5°	655.7	742.5	823.2	895.6	949.6	980.9	991.7	979.4
70°	567.3	642.3	713.2	771.3	816.0	844.2	854.5	843.7
72.5°	478.9	542.6	592.4	648.5	682.9	706.5	717.3	707.0
75°	391.5	444.0	484.5	528.2	552.4	572.4	584.7	574.5
77.5°	306.8	347.4	379.7	411.6	439.3	444.0	454.7	448.1
80°	226.1	255.4	279.0	300.1	320.1	322.2	330.9	326.8
82.5°	150.6	170.1	176.2	198.3	211.2	209.1	217.9	214.8
85°	79.6	91.5	102.3	108.9	116.1	109.4	117.2	114.1
87.5°	26.7	28.3	24.7	34.9	38.5	32.9	37.5	36.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)