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

Scaled data based on original data using

LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P634028

Luminaire Tested: GWS-SA2F-830-U-SLR-W-GRSBK

Issue Date: 1/10/2023

Report Generated By 670246102 / DESKTOP-G35701P

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Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | P634028 |
| | TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-42) |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Issue Date: | 1/10/2023 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GWS-SA2F-830-U-SLR-W-GRSBK |
| Description: | GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT ELIMINATOR RIGHT OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK |
| Light Source: | (32) 3000K CCT, 80 CRI LEDS |
| Ballast/Driver: | - |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 6875.2 lumens |
| Efficiency: | N/A |
| Efficacy: | 55.2 lumens/watt |
| Luminous Opening: | Rectangular (W 1' x L: 0.5' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B1 - U0 - G1 |
| | |
| Input Watts (W): | 124.5 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | NR |
| Total Harmonic Distortion (THDi): | NR |
| Frequency (hertz): | 0 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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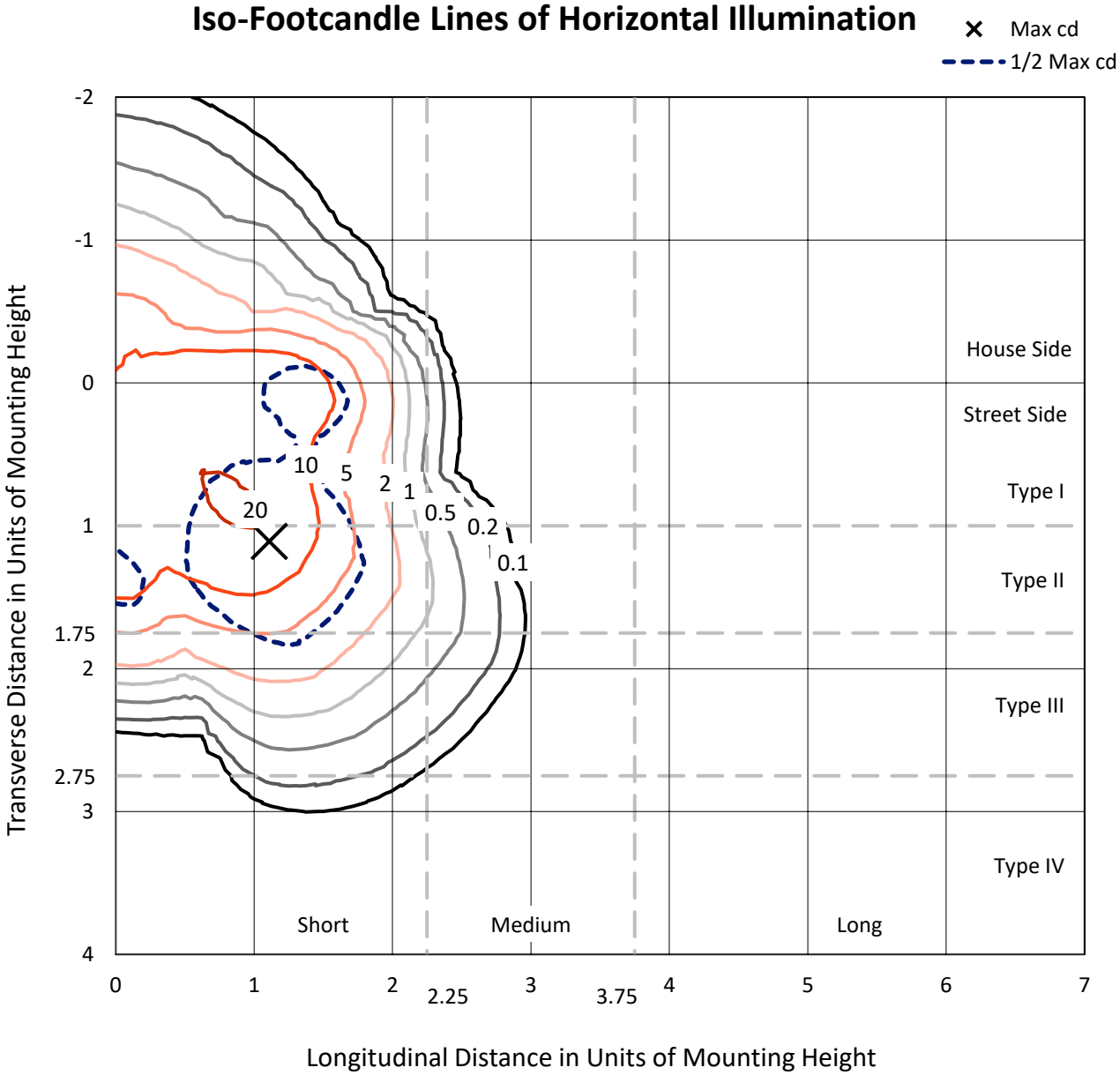
## Iso-Footcandle Lines of Horizontal Illumination




Based on 10 foot mounting height. Maximum calculated value = 21.5 fc
Type III - Short - N/A

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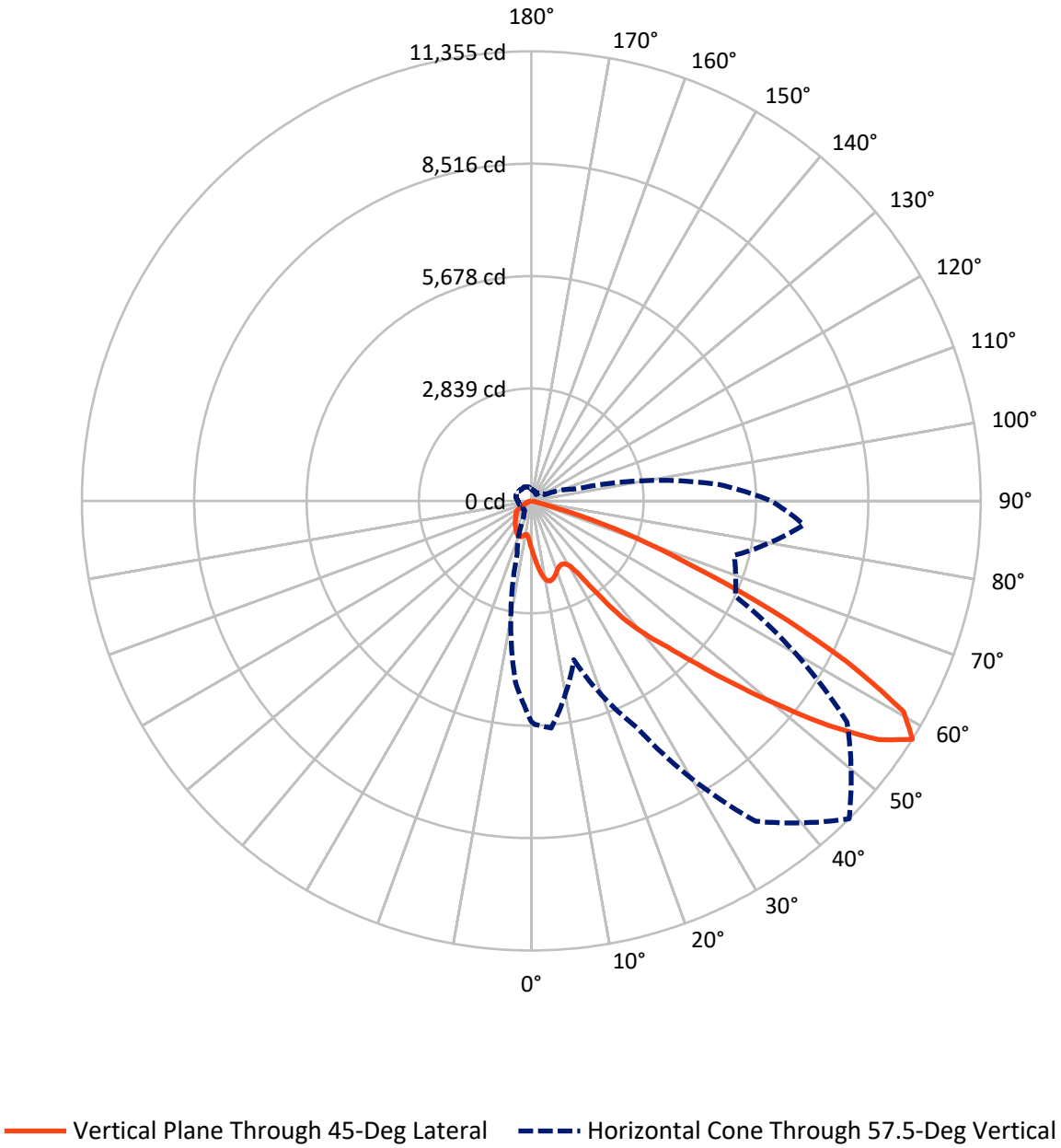
## Luminous Intensity Polar Plot



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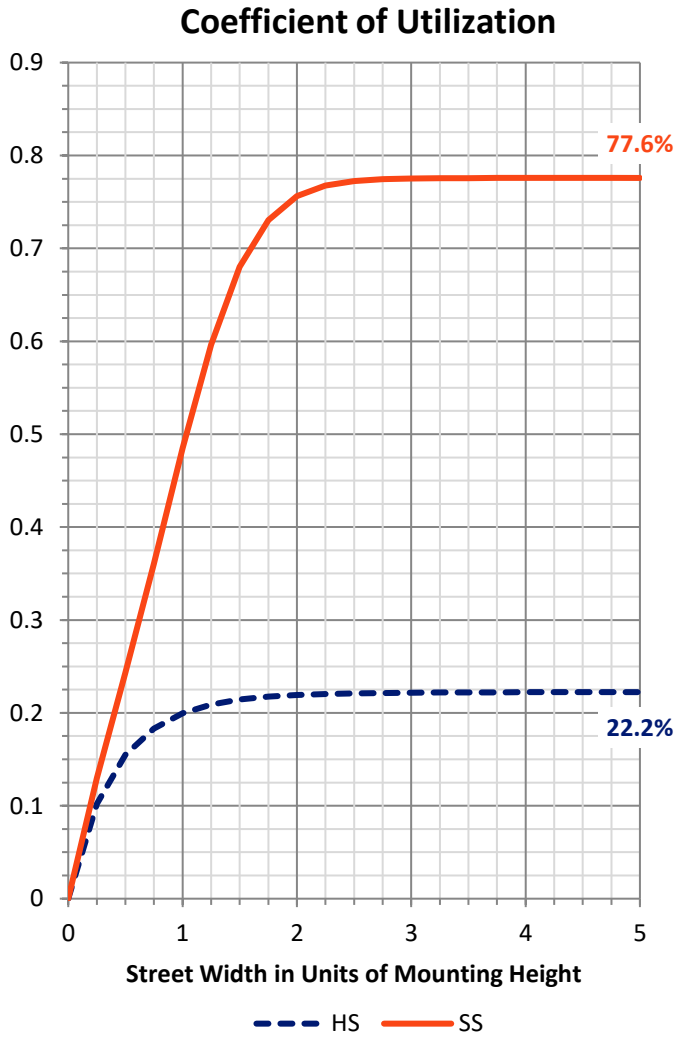
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 1539.5 | 0.0 | 1539.5 |
| | % Fixture | 22.4 | 0.0 | 22.4 |
| **Street Side** | Lumens | 5335.7 | 0.0 | 5335.7 |
| | % Fixture | 77.6 | 0.0 | 77.6 |
| **Total** | Lumens | 6875.2 | 0.0 | 6875.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 118.9 | 1.7 |
| 10°-20° | 384.6 | 5.6 |
| 20°-30° | 624.7 | 9.1 |
| 30°-40° | 965.3 | 14.0 |
| 40°-50° | 1547.8 | 22.5 |
| 50°-60° | 2115.4 | 30.8 |
| 60°-70° | 1024.5 | 14.9 |
| 70°-80° | 93.8 | 1.4 |
| 80°-90° | 0.3 | 0.0 |
| 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°-90° | 6875.2 | 100.0 |
| 0°-180° | 6875.2 | 100.0 |



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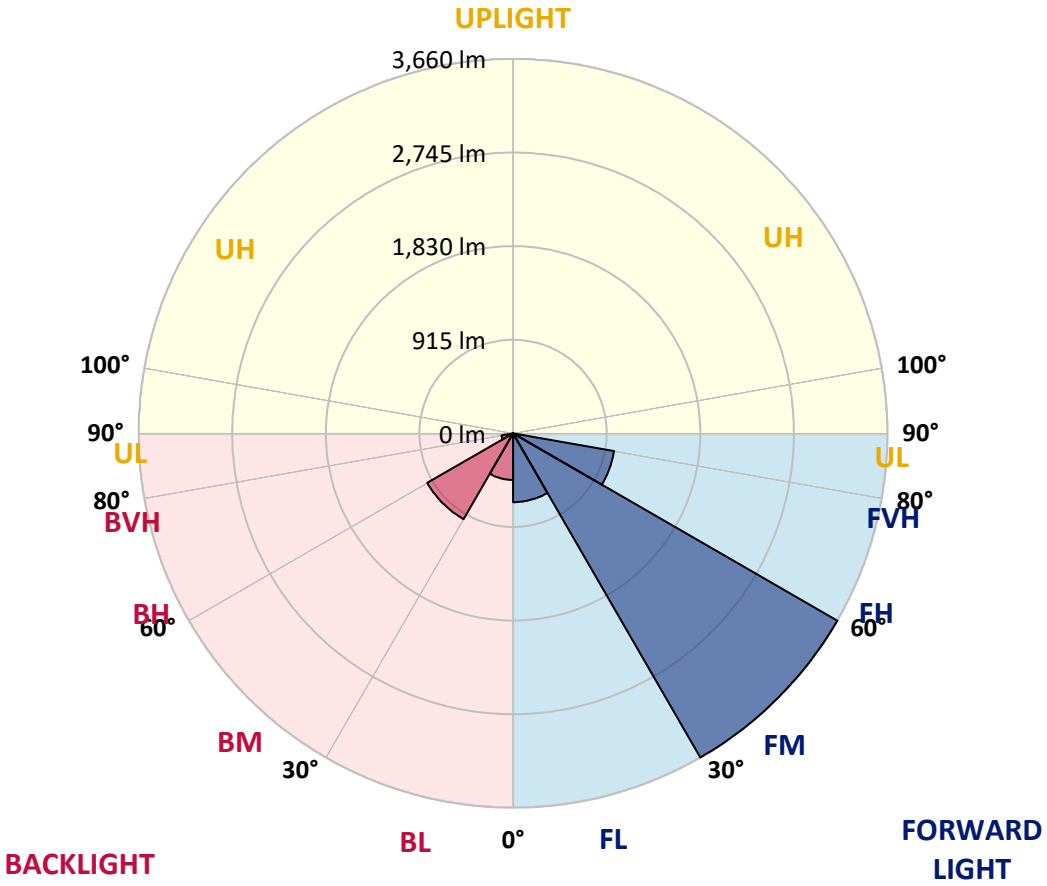
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 672.6 | 9.8 | | | |
| FM | (30°-60°) | 3659.8 | 53.2 | | | |
| FH | (60°-80°) | 1003.0 | 14.6 | | | G1/1800 |
| FVH | (80°-90°) | 0.3 | 0.0 | | | G0/10 |
| BL | (0°-30°) | 455.5 | 6.6 | B1/500 | | |
| BM | (30°-60°) | 968.6 | 14.1 | B1/1000 | | |
| BH | (60°-80°) | 115.4 | 1.7 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 0.0 | 0.0 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B1-U0-G1**
Type III Short



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 1° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | *1208.4* | 1208.4 | 1208.4 | 1208.4 | 1208.4 |
| 2.5° | 1309.1 | 1317.4 | 1331.3 | 1360.8 | 1385.8 | 1402.4 | *1409.8* | 1407.9 | 1397.8 | 1390.4 | 1375.6 |
| 5° | 1449.5 | 1449.5 | 1476.3 | 1543.7 | 1595.5 | 1627.8 | *1644.4* | 1634.3 | 1614.0 | 1581.6 | 1531.7 |
| 7.5° | 1572.4 | 1577.0 | 1622.3 | 1718.4 | 1796.9 | 1843.1 | *1869.9* | 1864.3 | 1828.3 | 1766.4 | 1666.6 |
| 10° | 1668.5 | 1674.0 | 1734.1 | 1851.4 | 1943.8 | 1990.9 | *2030.6* | 2034.3 | 1994.6 | 1912.4 | 1797.8 |
| 12.5° | 1761.8 | 1767.3 | 1830.1 | 1942.8 | 2024.1 | 2043.5 | *2078.7* | 2092.5 | 2082.3 | 2024.1 | 1905.0 |
| 15° | 1862.5 | 1875.4 | 1929.0 | 2013.1 | 2047.2 | 2024.1 | *2047.2* | 2072.2 | 2106.4 | 2100.8 | 1993.7 |
| 17.5° | 1961.3 | 1970.6 | 2025.1 | 2054.6 | 2016.8 | 1956.7 | *1967.8* | 1997.4 | 2075.0 | 2150.7 | 2081.4 |
| 20° | 2052.8 | 2065.7 | 2111.0 | 2072.2 | 1957.6 | 1864.3 | *1865.2* | 1904.0 | 2022.3 | 2181.2 | 2171.0 |
| 22.5° | 2148.9 | 2168.3 | 2200.6 | 2091.6 | 1903.1 | 1791.3 | *1796.0* | 1831.1 | 1980.7 | 2209.8 | 2272.7 |
| 25° | 2274.5 | 2293.0 | 2314.2 | 2139.6 | 1885.6 | 1755.3 | *1772.9* | 1805.2 | 1980.7 | 2258.8 | 2398.3 |
| 27.5° | 2444.5 | 2457.4 | 2458.4 | 2229.2 | 1916.1 | 1760.8 | *1797.8* | 1834.8 | 2039.9 | 2356.7 | 2566.4 |
| 30° | 2657.9 | 2678.2 | 2651.4 | 2368.7 | 2011.2 | 1834.8 | *1889.3* | 1935.5 | 2167.3 | 2522.1 | 2814.0 |
| 32.5° | 2917.5 | 2946.1 | 2910.1 | 2575.7 | 2209.8 | 2089.7 | *2188.6* | 2215.4 | 2370.6 | 2761.4 | 3094.9 |
| 35° | 3222.4 | 3246.4 | 3207.6 | 2862.1 | 2673.6 | 2695.8 | *2875.0* | 2840.8 | 2778.9 | 3056.1 | 3422.8 |
| 37.5° | 3556.8 | 3579.0 | 3504.1 | 3296.3 | 3359.1 | 3455.2 | *3741.6* | 3624.2 | 3424.7 | 3435.8 | 3778.5 |
| 40° | 3863.5 | 3887.5 | 3770.2 | 3768.4 | 3897.7 | 4073.2 | *4418.8* | 4257.1 | 3985.5 | 3932.8 | 4112.0 |
| 42.5° | 4181.3 | 4198.0 | 4091.7 | 4019.7 | 4313.4 | 4674.7 | *5040.5* | 4822.5 | 4356.9 | 4299.6 | 4529.6 |
| 45° | 4634.9 | 4670.0 | 4480.7 | 4143.4 | 4687.6 | 5366.6 | *5876.6* | 5450.7 | 4610.0 | 4563.8 | 5168.9 |
| 47.5° | 5302.0 | 5327.8 | 4941.7 | 4221.1 | 5035.9 | 6228.6 | *6921.5* | 6265.5 | 4832.6 | 4727.3 | 6042.9 |
| 50° | 5853.5 | 5871.0 | 5365.7 | 4306.0 | 5406.3 | 7158.0 | *8112.3* | 7231.9 | 5083.0 | 4998.0 | 6858.6 |
| 52.5° | 6260.0 | 6326.5 | 5922.8 | 4480.7 | 5893.2 | 8250.9 | *9430.6* | 8376.5 | 5473.8 | 5520.9 | 7534.9 |
| 55° | 6344.0 | 6434.6 | 6303.4 | 4587.8 | 6321.9 | 9364.1 | *10648.2* | 9401.1 | 5863.6 | 5917.2 | 7762.2 |
| 57.5° | *5575.4* | *5647.5* | *5756.5* | *4155.5* | *6311.7* | *9874.1* | *11355.0* | *9741.0* | *5686.3* | *5306.6* | *6911.3* |
| 60° | 4176.7 | 4226.6 | 4424.3 | 3176.2 | 5804.5 | 9423.2 | *10804.4* | 9162.7 | 4972.1 | 4049.2 | 5265.9 |
| 62.5° | 2476.8 | 2499.0 | 2749.4 | 2057.4 | 4817.9 | 8115.1 | *8960.4* | 7906.3 | 3929.1 | 2723.5 | 3225.1 |
| 65° | 950.6 | 941.4 | 1132.6 | 1015.3 | 3542.9 | 6464.1 | *6664.6* | 6027.2 | 2695.8 | 1248.1 | 1229.6 |
| 67.5° | 146.9 | 140.4 | 189.4 | 300.2 | 2555.4 | 4479.7 | *4397.5* | 4343.9 | 1688.8 | 291.0 | 254.1 |
| 70° | 33.3 | 33.3 | 40.6 | 88.7 | 1561.3 | 2632.0 | *2816.8* | 2685.6 | 1080.9 | 61.9 | 33.3 |
| 72.5° | 15.7 | 15.7 | 19.4 | 37.9 | 565.4 | 1084.6 | *1263.8* | 1244.4 | 351.1 | 20.3 | 12.0 |
| 75° | 5.5 | 6.5 | 6.5 | 8.3 | 34.2 | 56.4 | *129.3* | 92.4 | 22.2 | 0.0 | 0.0 |
| 77.5° | 1.8 | 1.8 | 1.8 | 1.8 | 0.0 | 0.0 | *0.0* | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 | 0.0 | 0.0 | 0.0 |
| 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):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 |
| 2.5° | 1343.3 | 1336.8 | 1312.8 | 1280.5 | 1249.0 | 1221.3 | 1192.7 | 1158.5 | 1133.6 | 1104.9 | 1095.7 |
| 5° | 1492.9 | 1452.3 | 1386.7 | 1318.3 | 1255.5 | 1201.9 | 1150.2 | 1094.8 | 1054.1 | 1013.5 | 999.6 |
| 7.5° | 1619.5 | 1559.5 | 1453.2 | 1350.7 | 1264.7 | 1189.0 | 1114.2 | 1038.4 | 979.3 | 931.2 | 916.5 |
| 10° | 1733.1 | 1663.8 | 1521.6 | 1395.0 | 1286.9 | 1199.2 | 1108.6 | 1013.5 | 936.8 | 879.5 | 865.6 |
| 12.5° | 1831.1 | 1750.7 | 1579.8 | 1428.3 | 1296.2 | 1195.5 | 1107.7 | 1031.9 | 962.6 | 897.1 | 879.5 |
| 15° | 1913.3 | 1824.6 | 1628.7 | 1450.4 | 1282.3 | 1149.3 | 1072.6 | 1060.6 | 1055.0 | 983.0 | 948.8 |
| 17.5° | 1993.7 | 1893.9 | 1668.5 | 1460.6 | 1243.5 | 1068.0 | 1012.5 | 1067.0 | 1125.2 | 1078.1 | 1034.7 |
| 20° | 2077.7 | 1964.1 | 1709.1 | 1462.4 | 1178.8 | 976.5 | 967.3 | 1053.2 | 1127.1 | 1112.3 | 1071.7 |
| 22.5° | 2176.6 | 2051.9 | 1759.9 | 1461.5 | 1097.5 | 898.9 | 934.0 | 1026.4 | 1086.4 | 1085.5 | 1053.2 |
| 25° | 2319.8 | 2162.7 | 1828.3 | 1467.1 | 1008.8 | 838.9 | 897.1 | 981.1 | 1030.1 | 1028.2 | 1001.4 |
| 27.5° | 2473.1 | 2294.8 | 1917.0 | 1480.9 | 933.1 | 803.7 | 853.6 | 919.2 | 961.7 | 959.9 | 936.8 |
| 30° | 2688.4 | 2447.3 | 2002.0 | 1481.8 | 878.6 | 785.3 | 805.6 | 850.9 | 891.5 | 886.9 | 869.3 |
| 32.5° | 2949.8 | 2619.1 | 2073.1 | 1429.2 | 844.4 | 767.7 | 755.7 | 778.8 | 810.2 | 803.7 | 799.1 |
| 35° | 3265.8 | 2823.3 | 2134.1 | 1313.7 | 791.7 | 732.6 | 700.3 | 704.9 | 727.1 | 730.8 | 728.9 |
| 37.5° | 3626.1 | 3066.2 | 2209.8 | 1161.3 | 720.6 | 681.8 | 638.4 | 634.7 | 647.6 | 659.6 | 668.9 |
| 40° | 3981.8 | 3339.7 | 2312.4 | 1007.0 | 655.9 | 617.1 | 575.6 | 566.3 | 571.9 | 593.1 | 612.5 |
| 42.5° | 4381.8 | 3656.6 | 2423.2 | 874.9 | 611.6 | 546.0 | 506.3 | 488.7 | 504.4 | 538.6 | 561.7 |
| 45° | 4958.3 | 4101.0 | 2531.3 | 769.6 | 593.1 | 483.2 | 429.6 | 427.7 | 445.3 | 489.6 | 515.5 |
| 47.5° | 5767.6 | 4675.6 | 2602.5 | 687.3 | 592.2 | 434.2 | 370.5 | 381.5 | 401.9 | 445.3 | 474.9 |
| 50° | 6556.5 | 5395.3 | 2523.9 | 624.5 | 572.8 | 401.9 | 326.1 | 348.3 | 368.6 | 406.5 | 437.0 |
| 52.5° | 7032.3 | 5782.4 | 2218.2 | 565.4 | 512.7 | 387.1 | 282.7 | 321.5 | 325.2 | 359.4 | 391.7 |
| 55° | 6982.4 | 5532.0 | 1699.0 | 473.9 | 424.0 | 365.8 | 237.4 | 290.1 | 291.9 | 317.8 | 345.5 |
| 57.5° | *6060.4* | *4749.5* | *1166.8* | *384.3* | *318.7* | *302.1* | *195.9* | *244.8* | *262.4* | *278.1* | *298.4* |
| 60° | 4516.7 | 3465.3 | 520.1 | 312.3 | 202.3 | 204.2 | 167.2 | 184.8 | 211.6 | 230.0 | 247.6 |
| 62.5° | 2661.6 | 1993.7 | 211.6 | 187.5 | 111.8 | 128.4 | 134.9 | 134.9 | 151.5 | 165.4 | 176.5 |
| 65° | 1006.1 | 697.5 | 85.9 | 94.2 | 58.2 | 60.0 | 79.5 | 97.9 | 110.9 | 122.9 | 137.7 |
| 67.5° | 176.5 | 121.9 | 44.3 | 35.1 | 34.2 | 30.5 | 40.6 | 63.7 | 71.1 | 80.4 | 86.8 |
| 70° | 29.6 | 24.9 | 18.5 | 17.6 | 15.7 | 16.6 | 26.8 | 45.3 | 49.9 | 52.7 | 55.4 |
| 72.5° | 8.3 | 7.4 | 5.5 | 4.6 | 3.7 | 4.6 | 16.6 | 35.1 | 37.0 | 38.8 | 41.6 |
| 75° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.5 | 24.9 | 26.8 | 27.7 | 30.5 |
| 77.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.5 | 7.4 | 9.2 | 7.4 |
| 80° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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):**

| | 185° | 195° | 205° | 215° | 225° | 235° | 245° | 255° | 265° | 270° | 275° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 |
| 2.5° | 1090.1 | 1071.7 | 1061.5 | 1056.0 | 1056.0 | 1048.6 | 1040.3 | 1037.5 | 1049.5 | 1049.5 | 1069.8 |
| 5° | 982.0 | 967.3 | 950.6 | 940.5 | 924.8 | 927.5 | 918.3 | 917.4 | 929.4 | 934.9 | 956.2 |
| 7.5° | 907.2 | 888.7 | 878.6 | 872.1 | 863.8 | 860.1 | 851.8 | 849.0 | 855.5 | 864.7 | 885.0 |
| 10° | 857.3 | 854.6 | 853.6 | 858.3 | 858.3 | 853.6 | 846.2 | 841.6 | 843.5 | 861.0 | 884.1 |
| 12.5° | 870.3 | 875.8 | 877.7 | 885.0 | 888.7 | 885.0 | 879.5 | 881.3 | 893.4 | 925.7 | 959.9 |
| 15° | 926.6 | 922.0 | 920.2 | 923.8 | 926.6 | 922.9 | 921.1 | 934.9 | 976.5 | 1022.7 | 1061.5 |
| 17.5° | 986.7 | 957.1 | 944.2 | 944.2 | 946.0 | 944.2 | 946.0 | 972.8 | 1040.3 | 1086.4 | 1115.1 |
| 20° | 1017.2 | 962.6 | 942.3 | 937.7 | 941.4 | 942.3 | 948.8 | 979.3 | 1053.2 | 1085.5 | 1092.0 |
| 22.5° | 1007.9 | 939.6 | 916.5 | 912.8 | 916.5 | 920.2 | 926.6 | 952.5 | 1021.8 | 1038.4 | 1035.6 |
| 25° | 961.7 | 894.3 | 875.8 | 875.8 | 884.1 | 883.2 | 886.0 | 904.4 | 961.7 | 971.9 | 967.3 |
| 27.5° | 903.5 | 839.8 | 824.1 | 833.3 | 840.7 | 838.9 | 839.8 | 855.5 | 898.0 | 900.7 | 896.1 |
| 30° | 844.4 | 789.0 | 774.2 | 785.3 | 795.4 | 793.6 | 794.5 | 810.2 | 837.0 | 834.2 | 827.8 |
| 32.5° | 784.3 | 743.7 | 732.6 | 739.1 | 754.8 | 752.9 | 756.6 | 773.3 | 783.4 | 771.4 | 764.0 |
| 35° | 728.9 | 707.7 | 699.4 | 703.0 | 715.1 | 717.8 | 724.3 | 735.4 | 735.4 | 720.6 | 707.7 |
| 37.5° | 677.2 | 674.4 | 668.9 | 664.2 | 675.3 | 683.6 | 692.9 | 705.8 | 687.3 | 666.1 | 654.1 |
| 40° | 629.1 | 641.1 | 633.8 | 621.7 | 628.2 | 640.2 | 658.7 | 668.9 | 646.7 | 625.4 | 605.1 |
| 42.5° | 584.8 | 605.1 | 602.3 | 587.6 | 593.1 | 604.2 | 625.4 | 633.8 | 607.9 | 583.9 | 564.5 |
| 45° | 542.3 | 570.9 | 572.8 | 554.3 | 559.9 | 570.9 | 595.9 | 598.7 | 565.4 | 539.5 | 525.7 |
| 47.5° | 505.3 | 536.8 | 537.7 | 523.8 | 525.7 | 541.4 | 564.5 | 565.4 | 527.5 | 503.5 | 485.9 |
| 50° | 470.2 | 506.3 | 509.0 | 497.0 | 498.9 | 517.4 | 536.8 | 533.1 | 492.4 | 467.5 | 451.8 |
| 52.5° | 427.7 | 476.7 | 483.2 | 477.6 | 485.0 | 499.8 | 511.8 | 498.9 | 451.8 | 426.8 | 413.0 |
| 55° | 381.5 | 445.3 | 459.2 | 455.5 | 463.8 | 475.8 | 478.6 | 470.2 | 411.1 | 386.2 | 373.2 |
| 57.5° | *328.0* | *366.8* | *390.8* | *383.4* | *389.9* | *401.9* | *410.2* | *403.7* | *359.4* | *340.0* | *328.9* |
| 60° | 271.6 | 297.5 | 303.0 | 291.0 | 285.5 | 306.7 | 326.1 | 317.8 | 279.9 | 267.9 | 255.0 |
| 62.5° | 198.6 | 228.2 | 231.9 | 216.2 | 209.7 | 232.8 | 249.4 | 241.1 | 199.6 | 186.6 | 176.5 |
| 65° | 158.9 | 186.6 | 194.0 | 179.2 | 175.5 | 193.1 | 203.2 | 182.9 | 153.4 | 139.5 | 128.4 |
| 67.5° | 104.4 | 126.6 | 146.0 | 145.0 | 137.7 | 143.2 | 135.8 | 119.2 | 97.9 | 90.5 | 83.1 |
| 70° | 64.7 | 77.6 | 89.6 | 94.2 | 93.3 | 91.5 | 81.3 | 69.3 | 62.8 | 60.0 | 56.4 |
| 72.5° | 49.9 | 62.8 | 72.1 | 74.8 | 75.8 | 73.0 | 64.7 | 53.6 | 47.1 | 43.4 | 40.6 |
| 75° | 37.0 | 47.1 | 54.5 | 58.2 | 60.0 | 58.2 | 49.9 | 42.5 | 36.0 | 33.3 | 30.5 |
| 77.5° | 12.9 | 15.7 | 19.4 | 21.2 | 20.3 | 19.4 | 17.6 | 17.6 | 13.9 | 12.9 | 11.1 |
| 80° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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

Scaled Data Report

REPORT NUMBER: P634028
CATALOG NUMBER: GWS-SA2F-830-U-SLR-W-GRSBK

**CANDELA DISTRIBUTION (continued):**

| | 285° | 295° | 305° | 315° | 325° | 335° | 345° | 355° | 359° | 360° |
|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 | 1208.4 |
| 2.5° | 1092.9 | 1109.5 | 1140.0 | 1167.7 | 1197.3 | 1227.8 | 1261.0 | 1295.2 | 1310.9 | 1309.1 |
| 5° | 988.5 | 1024.5 | 1074.4 | 1128.9 | 1189.9 | 1255.5 | 1328.5 | 1403.3 | 1435.7 | 1449.5 |
| 7.5° | 922.9 | 973.7 | 1039.3 | 1108.6 | 1189.0 | 1282.3 | 1392.2 | 1509.6 | 1556.7 | 1572.4 |
| 10° | 931.2 | 990.4 | 1044.9 | 1112.3 | 1198.2 | 1319.3 | 1456.0 | 1595.5 | 1650.9 | 1668.5 |
| 12.5° | 998.7 | 1011.6 | 1026.4 | 1081.8 | 1189.9 | 1347.0 | 1514.2 | 1680.5 | 1744.2 | 1761.8 |
| 15° | 1059.7 | 999.6 | 971.9 | 1022.7 | 1160.4 | 1366.4 | 1573.3 | 1771.9 | 1842.1 | 1862.5 |
| 17.5° | 1062.4 | 971.9 | 910.0 | 949.7 | 1112.3 | 1374.7 | 1631.5 | 1865.2 | 1941.9 | 1961.3 |
| 20° | 1028.2 | 941.4 | 861.9 | 862.9 | 1046.7 | 1372.8 | 1679.6 | 1949.3 | 2035.2 | 2052.8 |
| 22.5° | 978.4 | 905.4 | 823.1 | 794.5 | 976.5 | 1369.1 | 1732.2 | 2038.9 | 2132.2 | 2148.9 |
| 25° | 922.9 | 859.2 | 786.2 | 742.8 | 906.3 | 1372.8 | 1806.1 | 2156.3 | 2258.8 | 2274.5 |
| 27.5° | 862.9 | 808.4 | 757.6 | 722.4 | 847.2 | 1386.7 | 1894.8 | 2305.9 | 2427.9 | 2444.5 |
| 30° | 800.1 | 759.4 | 739.1 | 717.8 | 810.2 | 1390.4 | 1990.9 | 2480.5 | 2634.8 | 2657.9 |
| 32.5° | 738.2 | 716.0 | 716.9 | 720.6 | 775.1 | 1364.5 | 2078.7 | 2674.5 | 2880.6 | 2917.5 |
| 35° | 680.9 | 674.4 | 692.9 | 711.4 | 724.3 | 1298.0 | 2155.3 | 2903.6 | 3184.5 | 3222.4 |
| 37.5° | 631.9 | 637.5 | 660.5 | 679.0 | 668.9 | 1203.8 | 2257.0 | 3190.0 | 3524.5 | 3556.8 |
| 40° | 584.8 | 598.7 | 625.4 | 633.8 | 626.4 | 1093.8 | 2378.9 | 3466.3 | 3819.2 | 3863.5 |
| 42.5° | 541.4 | 551.5 | 589.4 | 591.3 | 614.4 | 982.0 | 2496.2 | 3763.7 | 4158.2 | 4181.3 |
| 45° | 506.3 | 504.4 | 543.2 | 555.2 | 630.1 | 858.3 | 2610.8 | 4160.1 | 4601.7 | 4634.9 |
| 47.5° | 472.1 | 470.2 | 479.5 | 534.0 | 636.5 | 743.7 | 2724.4 | 4740.3 | 5244.7 | 5302.0 |
| 50° | 439.8 | 442.5 | 413.9 | 523.8 | 601.4 | 655.9 | 2776.2 | 5277.0 | 5829.5 | 5853.5 |
| 52.5° | 411.1 | 400.9 | 351.1 | 490.6 | 526.6 | 572.8 | 2629.3 | 5520.9 | 6191.6 | 6260.0 |
| 55° | 370.5 | 314.1 | 289.2 | 398.2 | 415.7 | 499.8 | 2153.5 | 5379.6 | 6223.0 | 6344.0 |
| 57.5° | *316.9* | *246.7* | *245.7* | *293.8* | *293.8* | *463.8* | *1379.3* | *4596.1* | *5362.9* | *5575.4* |
| 60° | 243.9 | 191.2 | 203.2 | 204.2 | 188.5 | 338.1 | 774.2 | 3329.5 | 3965.1 | 4176.7 |
| 62.5° | 173.7 | 146.0 | 153.4 | 121.9 | 108.1 | 169.1 | 371.4 | 1917.0 | 2447.3 | 2476.8 |
| 65° | 116.4 | 98.9 | 80.4 | 67.4 | 66.5 | 72.1 | 153.4 | 692.9 | 842.5 | 950.6 |
| 67.5° | 76.7 | 60.0 | 42.5 | 42.5 | 48.0 | 48.0 | 58.2 | 114.6 | 160.7 | 146.9 |
| 70° | 49.9 | 41.6 | 26.8 | 25.9 | 31.4 | 31.4 | 29.6 | 31.4 | 33.3 | 33.3 |
| 72.5° | 37.0 | 31.4 | 15.7 | 13.9 | 17.6 | 18.5 | 16.6 | 15.7 | 15.7 | 15.7 |
| 75° | 27.7 | 22.2 | 9.2 | 6.5 | 8.3 | 11.1 | 9.2 | 6.5 | 6.5 | 5.5 |
| 77.5° | 11.1 | 8.3 | 3.7 | 2.8 | 4.6 | 6.5 | 5.5 | 2.8 | 1.8 | 1.8 |
| 80° | 0.9 | 1.8 | 1.8 | 1.8 | 2.8 | 3.7 | 4.6 | 1.8 | 0.9 | 0.9 |
| 82.5° | 0.0 | 0.9 | 0.9 | 0.9 | 1.8 | 2.8 | 3.7 | 1.8 | 0.9 | 0.9 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 1.8 | 2.8 | 1.8 | 0.9 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 2.8 | 1.8 | 0.9 | 0.0 | 0.0 |
| 90° | 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

# LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

MCGRAW EDISON

Report Number: SP1-2408-195-9

Test Date: 08/07/2024

Luminaire Tested: GALN-SB1A-830-U-5WQ

Data in this report applies to families of products including GALN-SB1A-830-U-5WQ.

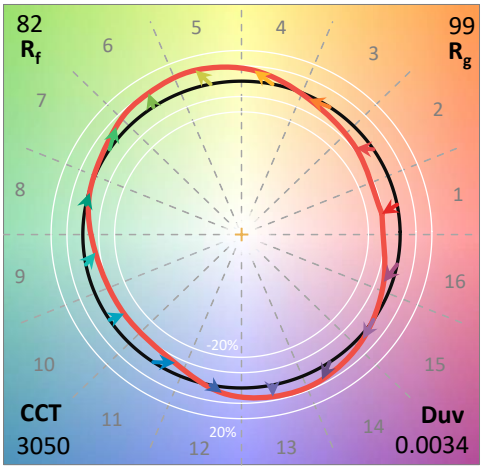
Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2408-195-9 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 08/07/2024 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | MCGRAW EDISON |
| Catalog Number: | **GALN-SB1A-830-U-5WQ** |
| Description: | GALLEON AREA AND ROADWAY LUMINAIRE. (1) 80 CRI, 3000K, 350MA HIGH DENSITY LIGHTSQUARE WITH 26 LEDS AND TYPE V WIDE OPTICS |

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 3050 | CRI (Ra): | 81.0 | | |
| CIE u': | 0.2476 | R1: | 79.6 | R9: | 7.1 |
| CIE v': | 0.5251 | R2: | 85.6 | R10: | 67.0 |
| Duv: | 0.0034 | R3: | 92.0 | R11: | 82.7 |
| CIE x: | 0.4383 | R4: | 82.6 | R12: | 63.2 |
| CIE y: | 0.4131 | R5: | 78.9 | R13: | 80.3 |
| CIE z: | 0.1487 | R6: | 81.7 | R14: | 95.0 |
| Peak Wavelength (nm): | 603 | R7: | 85.2 | R15: | 71.7 |
| Dominant Wavelength (nm): | 581 | R8: | 62.0 | | |
| Purity: | 55.55201 | | | | |
| Rf: | 81.5 | | | | |
| Rg: | 99.2 | | | | |




## Test Conditions

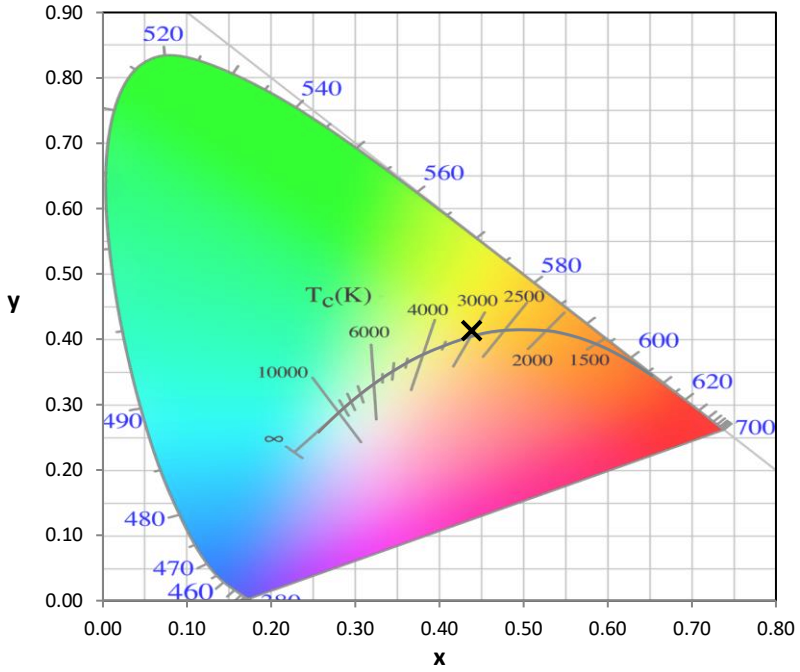
| | |
|---|---|
| Stabilization Time: | 20M |
| Operation Time: | 1H 20M |
| Sphere Temperature (°C): | 24.2 |

REPORT NUMBER: SP1-2408-195-9

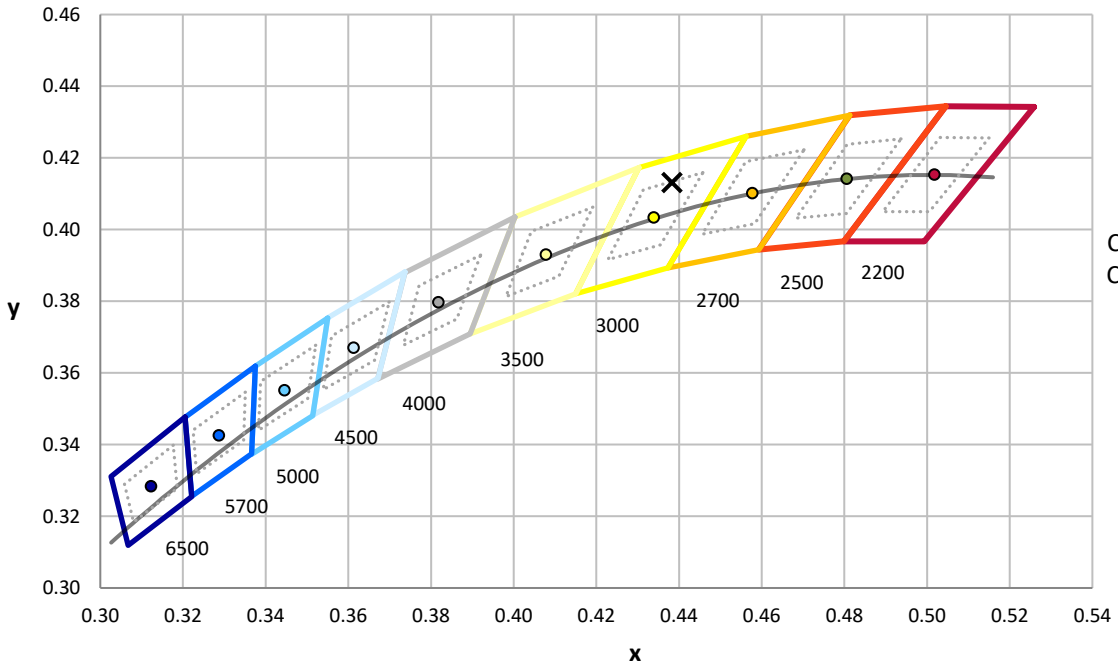
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC Power Source | IN0208 | 10/24/2023 | 10/24/2024 |
| Sphere Thermometer | IN0085 | 10/24/2023 | 10/24/2024 |
| Room Thermometer | IN0046 | 10/24/2023 | 10/24/2024 |

REPORT NUMBER: SP1-2408-195-9

## CIE 1931 Chromaticity Diagram




## CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles

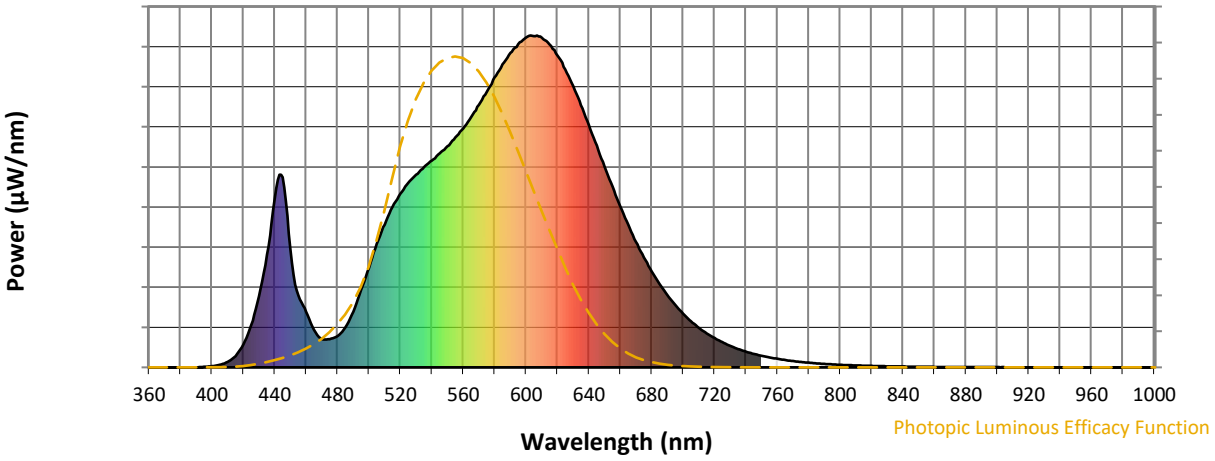



CCT = 3050K
CIE x = 0.4383
CIE y = 0.4131
Duv = 0.0034

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2408-195-9

## Photopic Flux vs. Wavelength

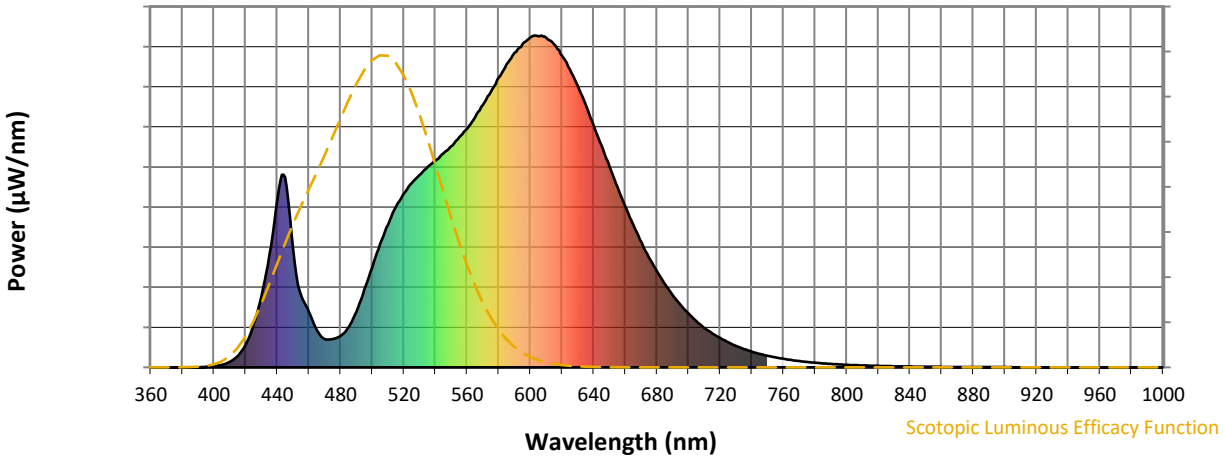



## Photopic Lumens: NR

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2408-195-9

## Scotopic Flux vs. Wavelength

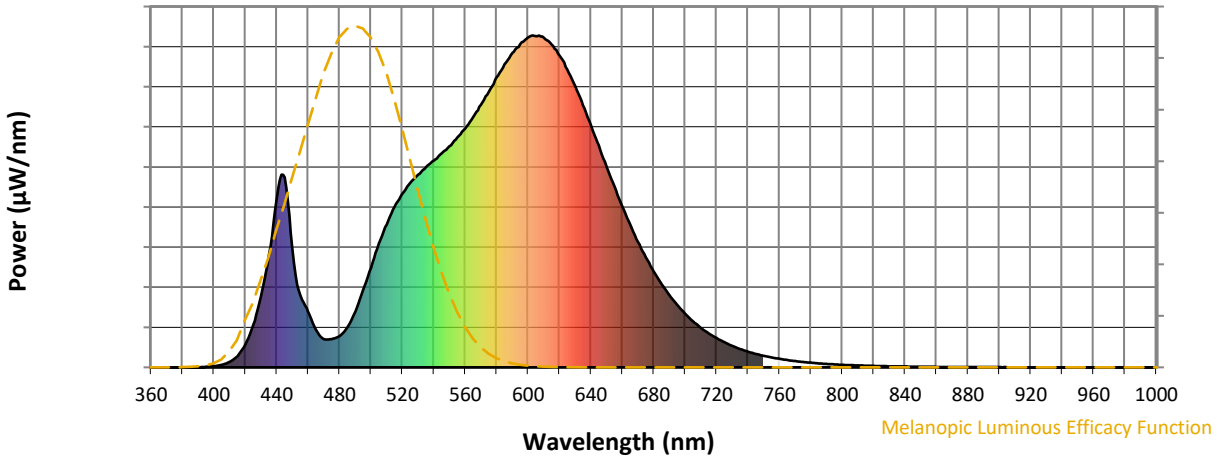



**Scotopic Lumens: NR** **S/P: 1.27**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2408-195-9

## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.32**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

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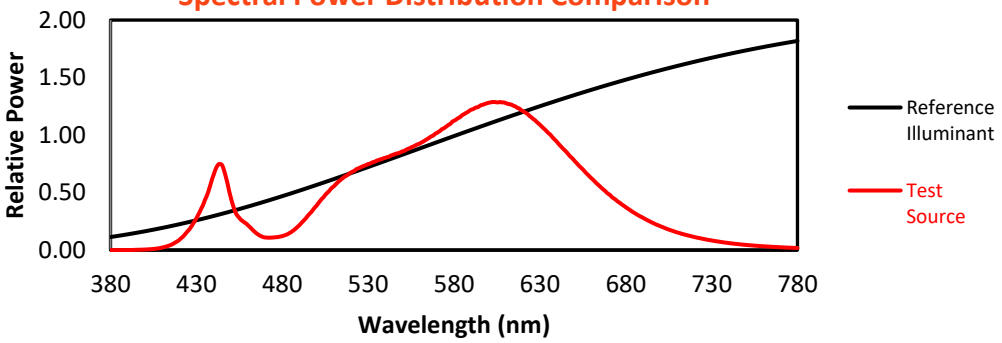
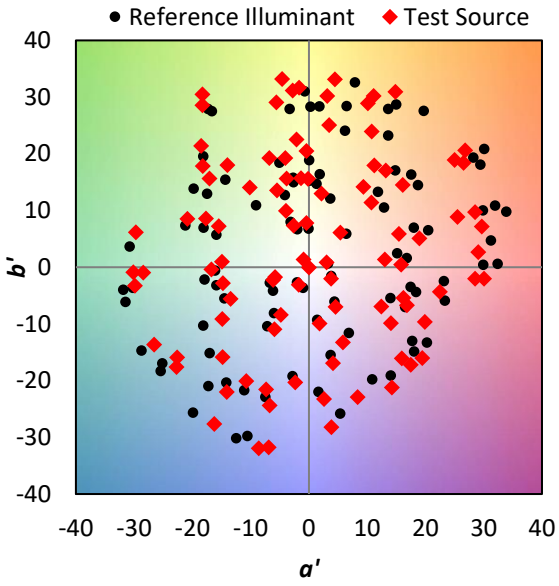
## Summary

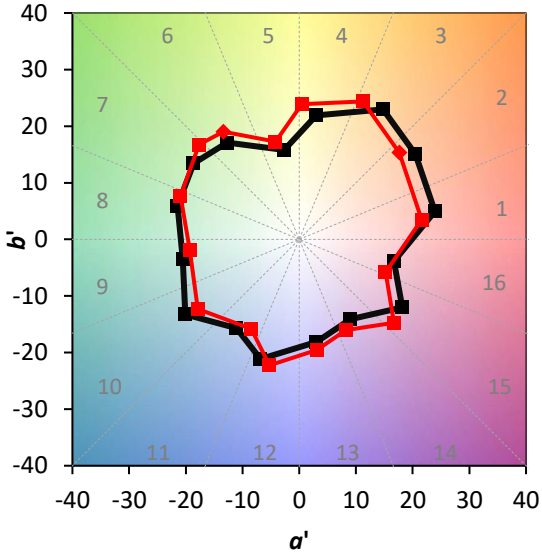
$R_f$ = 81.5
$R_g$ = 99.2
CIE $R_a$ = 81.0
$R_9$ = 7.1

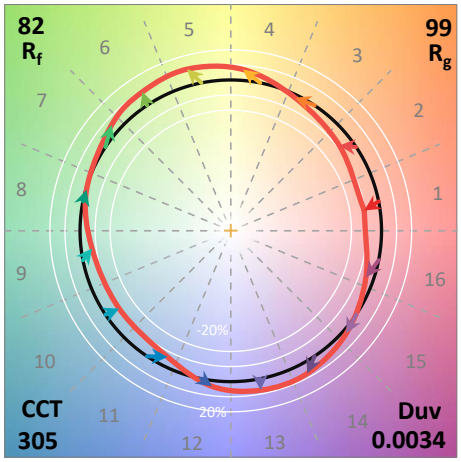
## Spectral Power Distribution Comparison

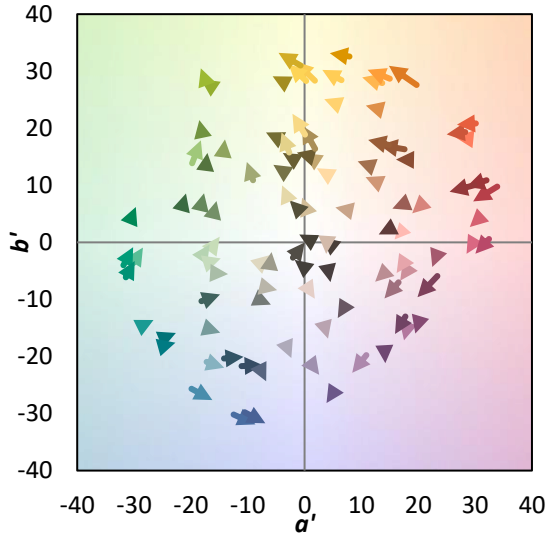



## Color Vector Graphics



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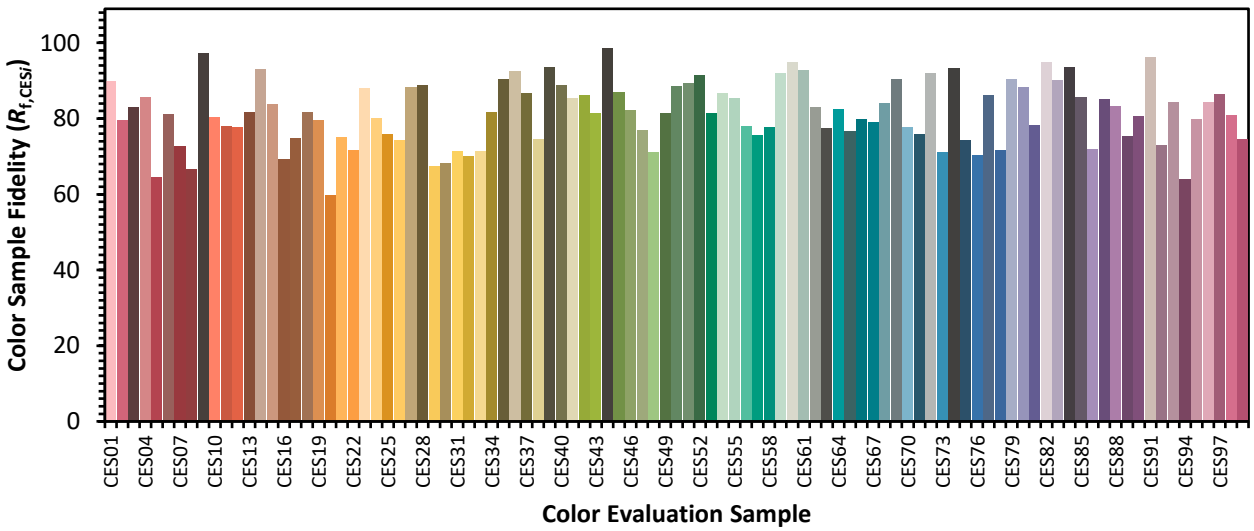
**Individual Sample Fidelity Index ($R_{f,i}$)**

| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 74 | CES51 = 89 | CES76 = 70 |
| CES02 = 63 | CES27 = 88 | CES52 = 92 | CES77 = 86 |
| CES03 = 31 | CES28 = 89 | CES53 = 81 | CES78 = 72 |
| CES04 = 70 | CES29 = 67 | CES54 = 87 | CES79 = 90 |
| CES05 = 50 | CES30 = 68 | CES55 = 85 | CES80 = 88 |
| CES06 = 51 | CES31 = 71 | CES56 = 78 | CES81 = 78 |
| CES07 = 42 | CES32 = 70 | CES57 = 76 | CES82 = 95 |
| CES08 = 41 | CES33 = 71 | CES58 = 78 | CES83 = 90 |
| CES09 = 29 | CES34 = 82 | CES59 = 92 | CES84 = 94 |
| CES10 = 76 | CES35 = 90 | CES60 = 95 | CES85 = 86 |
| CES11 = 59 | CES36 = 93 | CES61 = 93 | CES86 = 72 |
| CES12 = 65 | CES37 = 87 | CES62 = 83 | CES87 = 85 |
| CES13 = 43 | CES38 = 75 | CES63 = 77 | CES88 = 83 |
| CES14 = 74 | CES39 = 94 | CES64 = 83 | CES89 = 75 |
| CES15 = 71 | CES40 = 89 | CES65 = 77 | CES90 = 81 |
| CES16 = 47 | CES41 = 85 | CES66 = 80 | CES91 = 96 |
| CES17 = 50 | CES42 = 86 | CES67 = 79 | CES92 = 73 |
| CES18 = 56 | CES43 = 81 | CES68 = 84 | CES93 = 84 |
| CES19 = 72 | CES44 = 99 | CES69 = 91 | CES94 = 64 |
| CES20 = 66 | CES45 = 87 | CES70 = 78 | CES95 = 80 |
| CES21 = 87 | CES46 = 82 | CES71 = 76 | CES96 = 84 |
| CES22 = 79 | CES47 = 77 | CES72 = 92 | CES97 = 87 |
| CES23 = 92 | CES48 = 71 | CES73 = 71 | CES98 = 81 |
| CES24 = 91 | CES49 = 81 | CES74 = 93 | CES99 = 74 |
| CES25 = 72 | CES50 = 89 | CES75 = 74 | |



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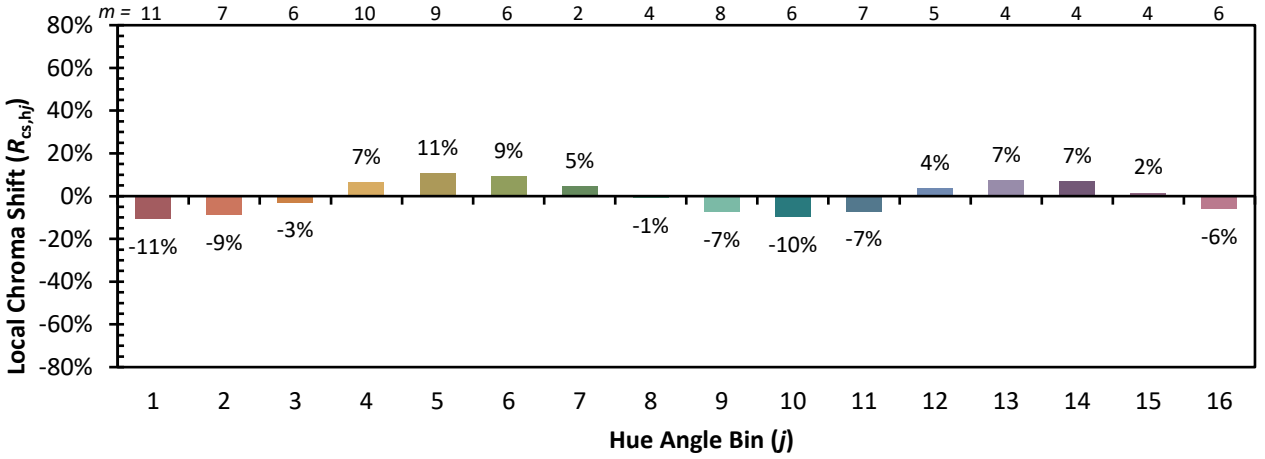
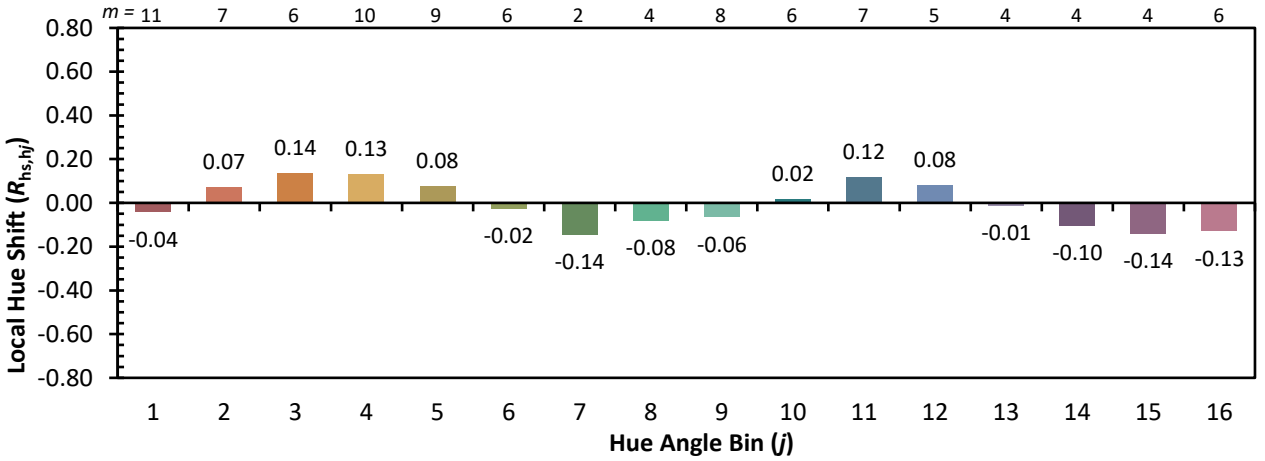
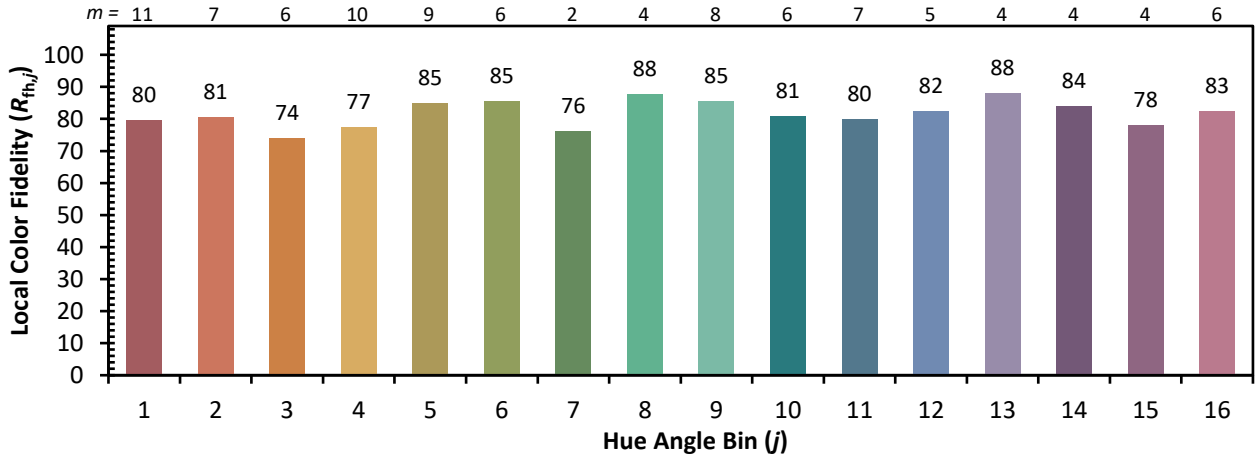
## Color Rendition by Hue-Angle Bin



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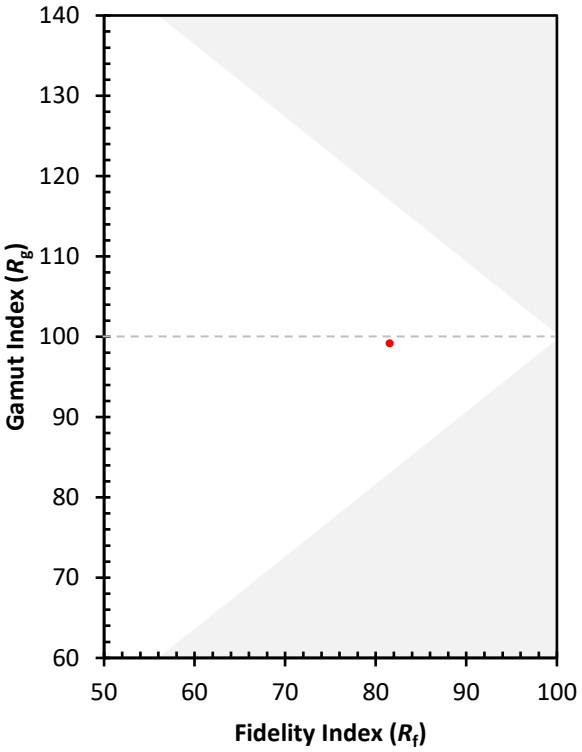
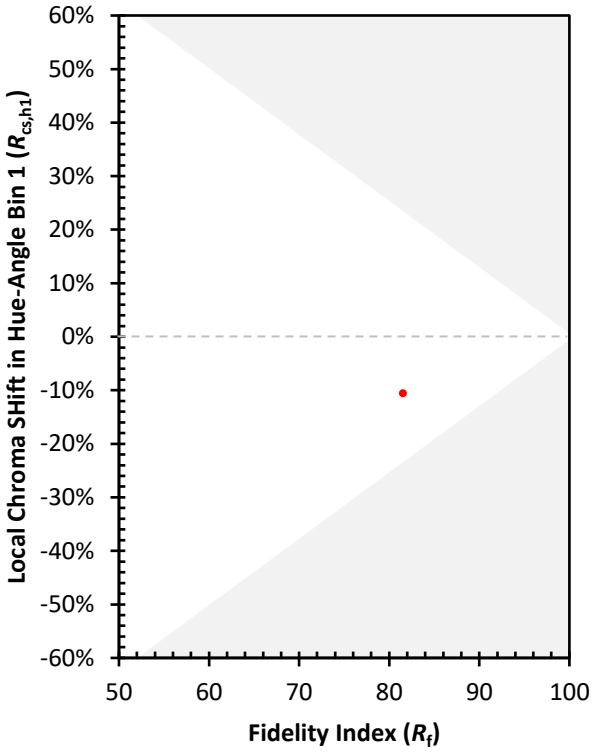
## Measure Comparisons




(END OF REPORT)