

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: P632104

Luminaire Tested: GWS-SA2C-722-U-SLR-W-GRSWH

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P632104  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-43)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA2C-722-U-SLR-W-GRSWH  
Description: GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND  
SPILL LIGHT ELIMINATOR RIGHT OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH  
Light Source: (32) 2200K CCT, 70 CRI LEDS  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5333.9 lumens  
Efficiency: N/A  
Efficacy: 84.4 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B2 - U0 - G1

Input Watts (W): 63.2  
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



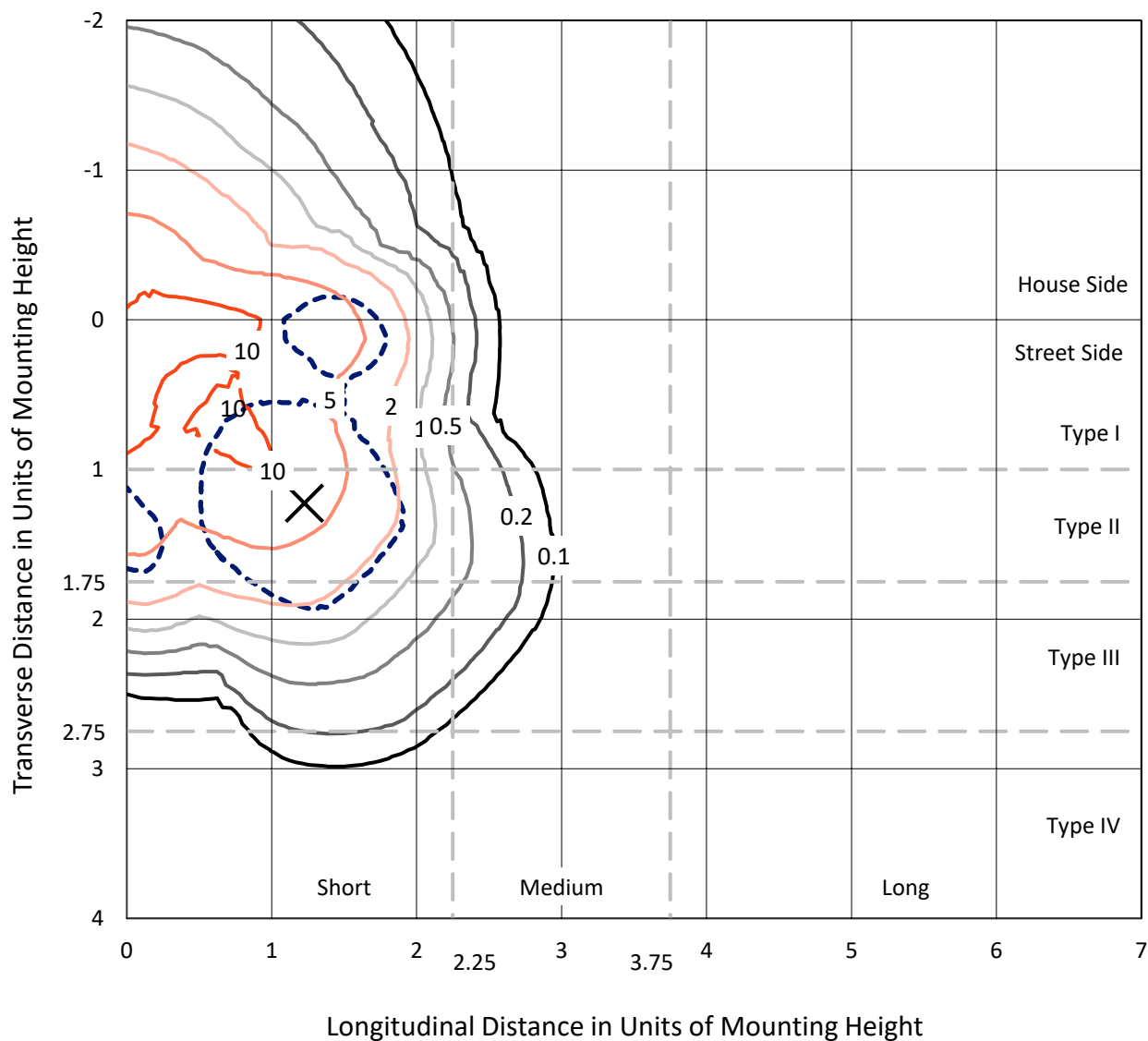
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## Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd

--- 1/2 Max cd

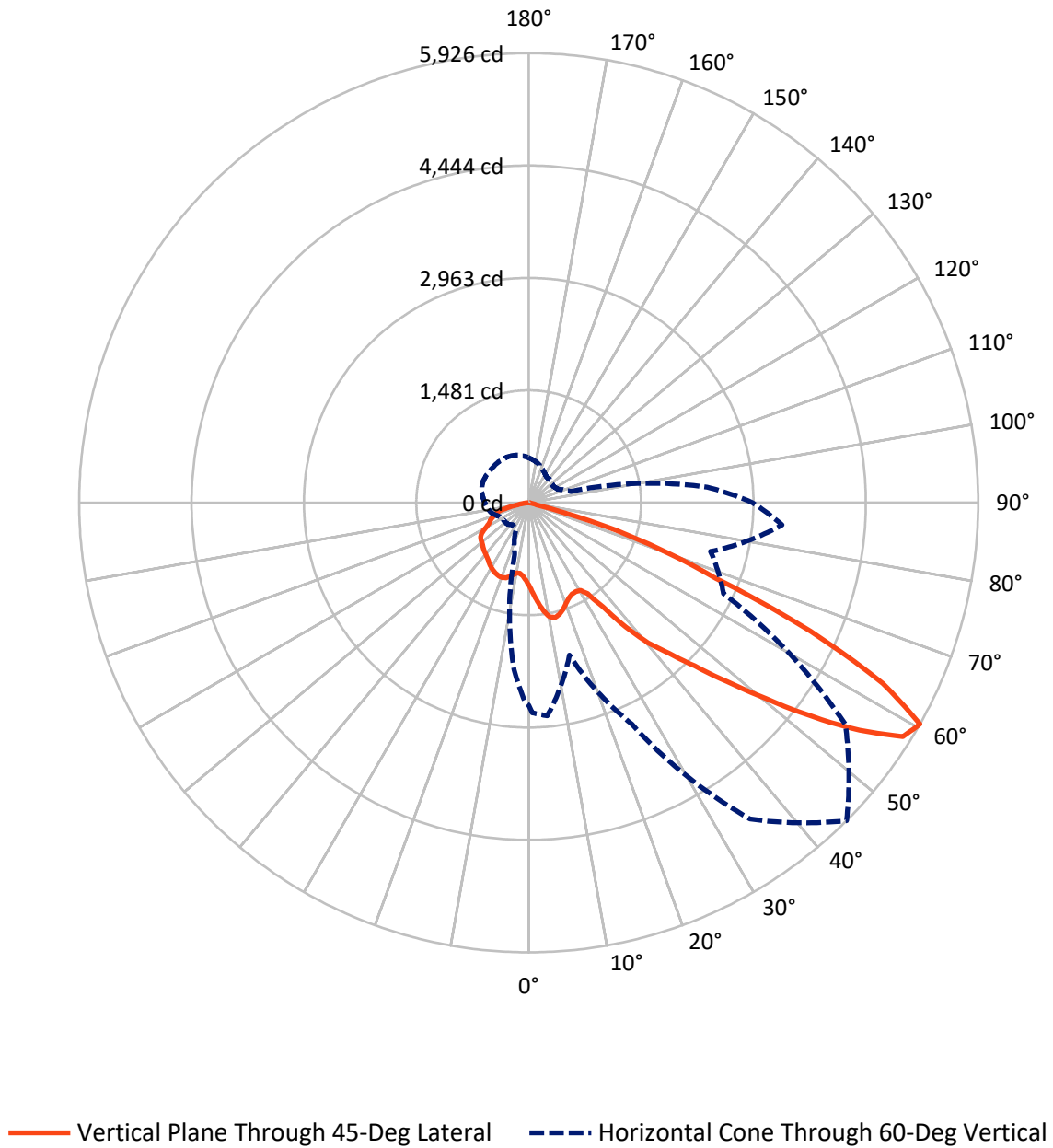


Based on 10 foot mounting height. Maximum calculated value = 14.6 fc  
 Type III - Short - N/A

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## Luminous Intensity Polar Plot



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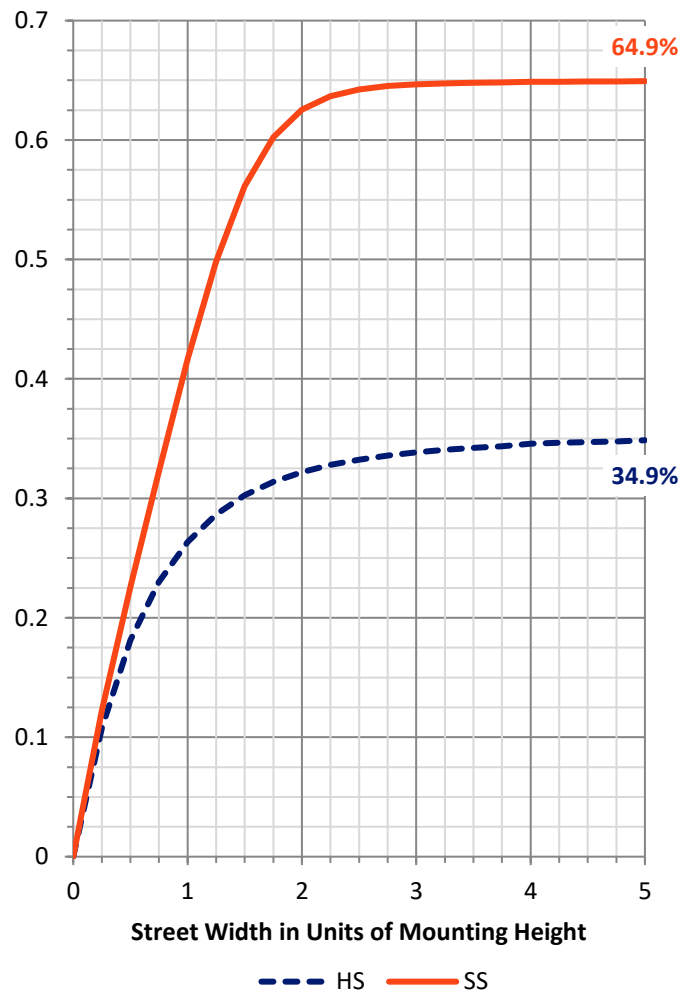
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1869.7   | 0.0    | 1869.7 |
|                    | % Fixture | 35.1     | 0.0    | 35.1   |
| <b>Street Side</b> | Lumens    | 3464.2   | 0.0    | 3464.2 |
|                    | % Fixture | 64.9     | 0.0    | 64.9   |
| <b>Total</b>       | Lumens    | 5333.9   | 0.0    | 5333.9 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 106.9  | 2.0       |
| 10°-20°   | 337.8  | 6.3       |
| 20°-30°   | 548.8  | 10.3      |
| 30°-40°   | 773.9  | 14.5      |
| 40°-50°   | 1069.5 | 20.1      |
| 50°-60°   | 1376.8 | 25.8      |
| 60°-70°   | 872.4  | 16.4      |
| 70°-80°   | 223.8  | 4.2       |
| 80°-90°   | 23.9   | 0.4       |
| 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°    | 5333.9 | 100.0     |
| 0°-180°   | 5333.9 | 100.0     |

**Coefficient of Utilization**



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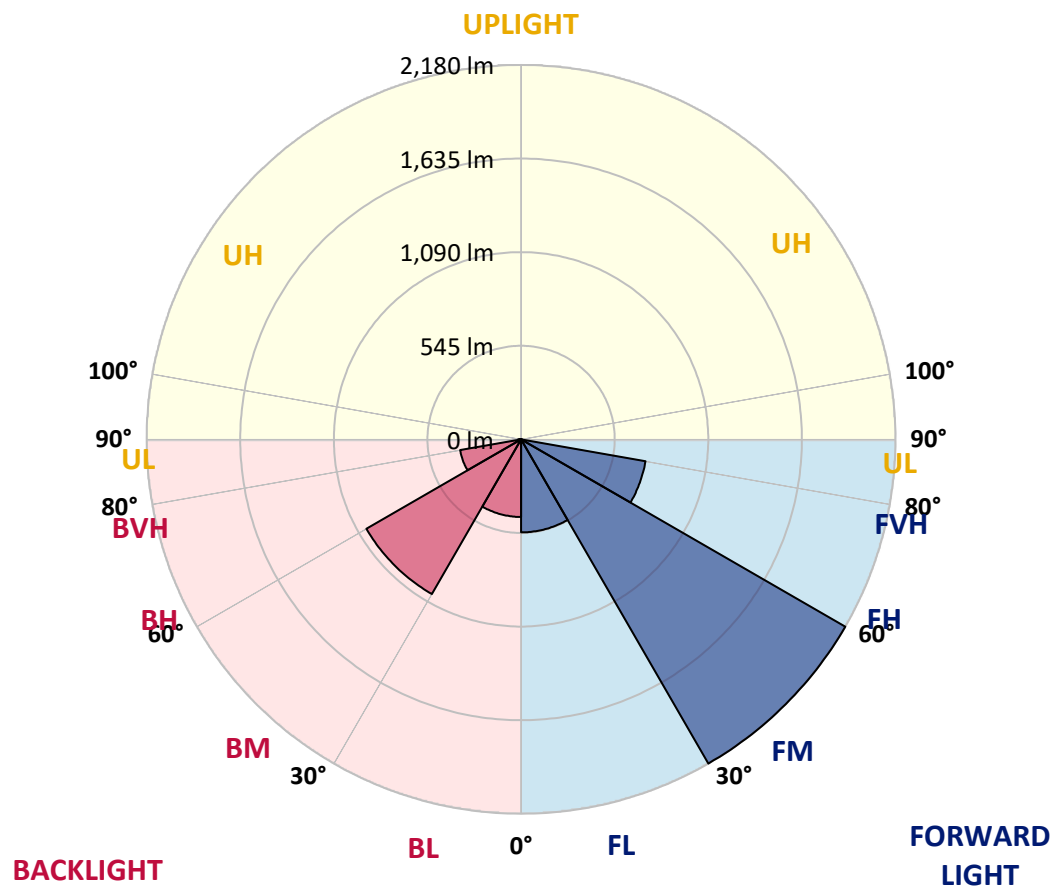
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 541.6  | 10.2      |                         |      |         |
| FM   | (30°-60°)   | 2180.2 | 40.9      |                         |      |         |
| FH   | (60°-80°)   | 735.9  | 13.8      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 6.5    | 0.1       |                         |      | G0/10   |
| BL   | (0°-30°)    | 451.9  | 8.5       | B1/500                  |      |         |
| BM   | (30°-60°)   | 1040.1 | 19.5      | B2/2500                 |      |         |
| BH   | (60°-80°)   | 360.3  | 6.8       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 17.4   | 0.3       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B2-U0-G1**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 1°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 |
| 2.5°  | 1146.1 | 1153.9 | 1158.8 | 1168.1 | 1184.7 | 1194.0 | 1204.2 | 1193.0 | 1195.9 | 1194.5 | 1176.4 |
| 5°    | 1214.0 | 1223.3 | 1236.0 | 1263.4 | 1294.2 | 1311.3 | 1327.4 | 1325.0 | 1309.8 | 1284.4 | 1266.3 |
| 7.5°  | 1277.5 | 1288.3 | 1310.3 | 1354.8 | 1400.2 | 1426.6 | 1446.2 | 1433.5 | 1420.7 | 1380.7 | 1335.2 |
| 10°   | 1327.4 | 1333.8 | 1363.6 | 1423.2 | 1476.0 | 1505.8 | 1529.7 | 1526.8 | 1509.2 | 1464.2 | 1403.2 |
| 12.5° | 1374.3 | 1378.7 | 1411.0 | 1470.6 | 1518.0 | 1531.2 | 1550.7 | 1557.1 | 1551.2 | 1517.5 | 1457.4 |
| 15°   | 1424.7 | 1433.0 | 1462.8 | 1508.2 | 1529.7 | 1516.0 | 1522.9 | 1540.5 | 1557.1 | 1557.1 | 1501.9 |
| 17.5° | 1471.6 | 1478.9 | 1509.2 | 1528.8 | 1508.2 | 1472.1 | 1474.0 | 1496.5 | 1536.1 | 1577.6 | 1542.4 |
| 20°   | 1513.1 | 1520.0 | 1549.8 | 1531.2 | 1466.2 | 1413.4 | 1411.9 | 1439.3 | 1503.3 | 1590.8 | 1585.9 |
| 22.5° | 1558.6 | 1568.3 | 1593.3 | 1533.2 | 1427.1 | 1360.1 | 1359.7 | 1388.0 | 1474.5 | 1604.0 | 1635.8 |
| 25°   | 1623.1 | 1638.2 | 1650.9 | 1550.3 | 1406.1 | 1325.4 | 1331.8 | 1358.7 | 1465.2 | 1625.5 | 1709.6 |
| 27.5° | 1718.9 | 1731.1 | 1730.1 | 1585.9 | 1405.1 | 1311.3 | 1324.5 | 1355.7 | 1481.8 | 1663.6 | 1787.3 |
| 30°   | 1822.5 | 1828.8 | 1818.6 | 1635.8 | 1427.6 | 1320.1 | 1339.6 | 1376.8 | 1523.9 | 1726.7 | 1901.7 |
| 32.5° | 1937.3 | 1945.2 | 1925.6 | 1710.6 | 1479.9 | 1385.1 | 1428.1 | 1446.2 | 1583.0 | 1817.6 | 2022.9 |
| 35°   | 2069.3 | 2084.4 | 2043.9 | 1809.3 | 1633.8 | 1622.1 | 1684.7 | 1661.2 | 1708.6 | 1925.1 | 2152.4 |
| 37.5° | 2208.1 | 2208.6 | 2150.4 | 1955.4 | 1935.9 | 1955.9 | 2081.0 | 2007.7 | 1975.0 | 2044.9 | 2284.3 |
| 40°   | 2325.9 | 2322.9 | 2233.5 | 2152.4 | 2198.8 | 2278.5 | 2429.5 | 2317.1 | 2231.1 | 2205.7 | 2393.8 |
| 42.5° | 2443.7 | 2432.9 | 2342.5 | 2277.5 | 2380.1 | 2543.9 | 2714.4 | 2576.6 | 2395.3 | 2351.8 | 2501.8 |
| 45°   | 2594.2 | 2590.8 | 2481.8 | 2327.3 | 2543.9 | 2841.0 | 3067.3 | 2843.9 | 2492.5 | 2436.8 | 2681.7 |
| 47.5° | 2837.1 | 2820.5 | 2617.7 | 2323.4 | 2697.3 | 3236.9 | 3522.8 | 3180.7 | 2560.5 | 2438.8 | 2972.0 |
| 50°   | 3074.6 | 3054.1 | 2779.9 | 2322.9 | 2855.7 | 3647.4 | 4060.4 | 3589.7 | 2629.9 | 2450.5 | 3267.2 |
| 52.5° | 3314.6 | 3314.6 | 3046.3 | 2378.2 | 3021.8 | 4105.8 | 4681.6 | 4099.5 | 2748.1 | 2604.0 | 3630.3 |
| 55°   | 3457.3 | 3495.4 | 3345.9 | 2471.5 | 3216.4 | 4645.4 | 5295.9 | 4649.8 | 2930.9 | 2881.1 | 3965.6 |
| 57.5° | 3276.0 | 3347.3 | 3325.8 | 2406.5 | 3331.2 | 5041.8 | 5816.9 | 5067.2 | 3021.3 | 2913.8 | 3915.2 |
| 60°   | 2669.5 | 2768.7 | 2818.0 | 2078.1 | 3217.8 | 5087.7 | 5925.9 | 5094.6 | 2834.7 | 2481.3 | 3353.7 |
| 62.5° | 1774.6 | 1856.2 | 1931.5 | 1484.8 | 2785.8 | 4577.0 | 5241.2 | 4578.5 | 2367.4 | 1851.8 | 2323.4 |
| 65°   | 870.4  | 931.0  | 1012.2 | 877.8  | 2176.3 | 3824.3 | 4086.3 | 3699.7 | 1712.5 | 1036.6 | 1185.2 |
| 67.5° | 227.7  | 244.9  | 256.1  | 340.6  | 1559.1 | 2747.7 | 2665.1 | 2706.1 | 1100.1 | 338.7  | 309.9  |
| 70°   | 118.3  | 119.3  | 118.8  | 140.8  | 1053.7 | 1746.2 | 1836.7 | 1699.3 | 767.8  | 141.7  | 122.2  |
| 72.5° | 84.6   | 85.0   | 83.6   | 94.8   | 508.8  | 1000.4 | 1036.6 | 1025.4 | 402.2  | 84.1   | 83.6   |
| 75°   | 55.2   | 55.7   | 54.7   | 55.7   | 76.7   | 113.9  | 105.1  | 110.5  | 67.0   | 53.3   | 53.3   |
| 77.5° | 32.7   | 33.2   | 32.7   | 33.7   | 32.7   | 32.7   | 30.3   | 30.3   | 28.8   | 28.8   | 29.3   |
| 80°   | 22.0   | 22.0   | 21.5   | 22.5   | 20.5   | 20.5   | 19.5   | 19.1   | 17.6   | 17.1   | 17.1   |
| 82.5° | 13.2   | 13.7   | 13.2   | 13.2   | 12.2   | 12.2   | 11.2   | 10.8   | 9.3    | 9.3    | 8.8    |
| 85°   | 6.8    | 6.8    | 6.4    | 6.4    | 5.4    | 4.9    | 3.9    | 3.9    | 2.9    | 2.4    | 2.4    |
| 87.5° | 1.0    | 1.0    | 0.5    | 0.5    | 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°    | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 |
| 2.5°  | 1171.5 | 1161.7 | 1147.1 | 1132.9 | 1119.7 | 1106.0 | 1090.4 | 1074.2 | 1060.6 | 1046.4 | 1039.0 |
| 5°    | 1242.4 | 1222.3 | 1184.2 | 1150.5 | 1120.2 | 1095.3 | 1068.4 | 1045.4 | 1023.9 | 1006.3 | 997.5  |
| 7.5°  | 1306.4 | 1275.1 | 1217.4 | 1164.2 | 1123.1 | 1088.9 | 1051.8 | 1017.5 | 988.7  | 967.2  | 958.9  |
| 10°   | 1365.5 | 1328.4 | 1252.6 | 1185.2 | 1137.3 | 1099.2 | 1053.7 | 1007.3 | 969.2  | 940.8  | 934.0  |
| 12.5° | 1413.4 | 1370.9 | 1280.5 | 1202.3 | 1145.6 | 1104.5 | 1064.5 | 1024.4 | 986.8  | 950.1  | 944.2  |
| 15°   | 1455.9 | 1405.6 | 1301.5 | 1213.0 | 1142.7 | 1090.4 | 1056.6 | 1051.8 | 1051.8 | 1010.2 | 998.5  |
| 17.5° | 1492.6 | 1437.4 | 1318.6 | 1217.9 | 1124.1 | 1048.3 | 1027.8 | 1070.3 | 1118.2 | 1088.4 | 1062.0 |
| 20°   | 1534.6 | 1467.7 | 1332.8 | 1217.9 | 1089.9 | 995.1  | 993.1  | 1065.4 | 1136.3 | 1136.8 | 1108.9 |
| 22.5° | 1577.1 | 1502.9 | 1349.4 | 1213.5 | 1043.0 | 933.5  | 969.6  | 1045.9 | 1108.9 | 1135.8 | 1116.8 |
| 25°   | 1646.1 | 1551.7 | 1375.8 | 1210.1 | 988.2  | 891.4  | 948.6  | 1020.0 | 1073.3 | 1101.6 | 1089.4 |
| 27.5° | 1733.5 | 1616.2 | 1415.9 | 1215.5 | 934.0  | 866.5  | 926.1  | 986.3  | 1034.6 | 1059.6 | 1050.8 |
| 30°   | 1831.3 | 1690.5 | 1458.9 | 1224.8 | 894.9  | 853.8  | 899.3  | 947.7  | 990.7  | 1015.6 | 1011.7 |
| 32.5° | 1955.9 | 1771.2 | 1496.0 | 1212.1 | 872.9  | 847.5  | 870.9  | 905.6  | 947.2  | 962.8  | 966.2  |
| 35°   | 2105.0 | 1860.1 | 1524.4 | 1162.2 | 852.8  | 840.6  | 840.1  | 861.6  | 891.0  | 915.9  | 918.3  |
| 37.5° | 2242.3 | 1964.2 | 1555.6 | 1076.7 | 816.7  | 823.5  | 804.0  | 816.7  | 845.5  | 870.4  | 880.2  |
| 40°   | 2378.2 | 2069.8 | 1599.1 | 967.7  | 769.3  | 785.4  | 762.4  | 771.2  | 794.2  | 826.9  | 842.6  |
| 42.5° | 2510.1 | 2165.1 | 1645.1 | 856.3  | 721.9  | 732.1  | 715.0  | 723.8  | 747.8  | 788.8  | 806.4  |
| 45°   | 2653.8 | 2294.1 | 1680.8 | 751.2  | 680.8  | 676.4  | 662.7  | 675.4  | 711.6  | 756.6  | 777.6  |
| 47.5° | 2925.6 | 2497.4 | 1704.2 | 681.3  | 658.8  | 627.0  | 611.4  | 638.8  | 679.8  | 725.3  | 750.7  |
| 50°   | 3257.4 | 2791.6 | 1697.4 | 636.8  | 639.8  | 576.2  | 570.8  | 607.0  | 651.0  | 698.4  | 726.3  |
| 52.5° | 3520.3 | 3080.5 | 1619.7 | 594.3  | 602.6  | 544.0  | 528.3  | 581.1  | 623.1  | 671.5  | 700.4  |
| 55°   | 3721.2 | 3177.7 | 1381.2 | 544.0  | 542.0  | 520.5  | 487.8  | 554.2  | 595.3  | 640.2  | 671.5  |
| 57.5° | 3557.5 | 2961.2 | 1023.9 | 474.6  | 462.8  | 474.1  | 442.3  | 508.8  | 561.1  | 605.5  | 633.4  |
| 60°   | 2952.4 | 2361.1 | 570.4  | 420.3  | 387.1  | 414.4  | 409.6  | 460.9  | 523.9  | 570.8  | 594.8  |
| 62.5° | 2004.3 | 1572.3 | 338.2  | 332.3  | 313.8  | 352.9  | 378.8  | 412.5  | 474.6  | 512.7  | 535.2  |
| 65°   | 999.0  | 763.9  | 224.8  | 248.8  | 251.2  | 290.3  | 339.2  | 376.3  | 428.1  | 467.2  | 489.7  |
| 67.5° | 289.8  | 237.5  | 171.1  | 190.1  | 216.5  | 247.8  | 286.9  | 330.9  | 381.2  | 427.6  | 454.0  |
| 70°   | 125.1  | 126.6  | 135.9  | 158.3  | 184.3  | 216.5  | 255.6  | 298.6  | 341.1  | 376.8  | 396.9  |
| 72.5° | 88.5   | 91.9   | 102.1  | 125.1  | 149.6  | 180.3  | 219.4  | 261.0  | 291.8  | 327.9  | 349.0  |
| 75°   | 56.7   | 59.1   | 67.4   | 85.0   | 103.1  | 132.9  | 170.1  | 208.2  | 240.0  | 265.9  | 285.9  |
| 77.5° | 31.3   | 31.8   | 38.6   | 48.9   | 61.1   | 80.2   | 107.5  | 137.3  | 160.8  | 175.5  | 193.5  |
| 80°   | 18.1   | 18.1   | 21.5   | 27.9   | 35.2   | 46.9   | 62.1   | 76.7   | 90.9   | 100.2  | 109.0  |
| 82.5° | 9.8    | 9.8    | 11.2   | 15.2   | 19.1   | 25.9   | 34.7   | 42.0   | 50.8   | 55.7   | 61.6   |
| 85°   | 2.9    | 2.9    | 3.9    | 5.4    | 6.8    | 9.8    | 13.7   | 17.6   | 21.5   | 24.9   | 28.3   |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.5    |
| 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°    | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 |
| 2.5°  | 1037.6 | 1030.7 | 1026.8 | 1021.9 | 1023.4 | 1019.0 | 1016.6 | 1018.0 | 1009.2 | 1018.0 | 1026.8 |
| 5°    | 994.1  | 984.3  | 976.5  | 970.1  | 967.2  | 961.3  | 957.9  | 957.9  | 952.5  | 961.3  | 972.1  |
| 7.5°  | 956.0  | 948.1  | 944.2  | 940.3  | 935.9  | 930.5  | 924.7  | 922.7  | 919.3  | 928.6  | 937.9  |
| 10°   | 930.5  | 931.5  | 934.0  | 939.3  | 938.4  | 934.9  | 926.1  | 921.3  | 921.3  | 932.0  | 946.2  |
| 12.5° | 942.3  | 952.5  | 958.4  | 968.2  | 970.1  | 967.2  | 958.4  | 954.5  | 964.3  | 980.4  | 1003.9 |
| 15°   | 987.7  | 994.6  | 999.5  | 1007.3 | 1006.8 | 1004.3 | 997.5  | 1000.4 | 1032.7 | 1064.0 | 1085.0 |
| 17.5° | 1037.1 | 1029.3 | 1028.3 | 1033.2 | 1034.6 | 1031.7 | 1027.8 | 1041.0 | 1094.3 | 1123.6 | 1134.3 |
| 20°   | 1072.8 | 1045.9 | 1040.0 | 1042.0 | 1045.9 | 1044.4 | 1044.4 | 1065.9 | 1121.2 | 1134.8 | 1121.2 |
| 22.5° | 1083.5 | 1045.4 | 1036.6 | 1037.1 | 1042.5 | 1043.0 | 1045.4 | 1067.9 | 1100.1 | 1100.6 | 1079.6 |
| 25°   | 1066.4 | 1029.8 | 1023.4 | 1024.4 | 1030.7 | 1030.2 | 1031.2 | 1043.9 | 1058.1 | 1052.2 | 1036.6 |
| 27.5° | 1034.2 | 1002.4 | 1000.4 | 1005.8 | 1014.1 | 1009.7 | 1006.8 | 1010.2 | 1017.1 | 1009.7 | 996.0  |
| 30°   | 997.5  | 970.6  | 971.6  | 981.9  | 990.7  | 983.3  | 976.0  | 978.0  | 978.4  | 970.6  | 955.0  |
| 32.5° | 958.9  | 938.9  | 942.3  | 953.0  | 963.3  | 955.5  | 947.7  | 946.7  | 937.4  | 928.1  | 913.0  |
| 35°   | 920.3  | 912.5  | 916.9  | 925.7  | 934.5  | 928.1  | 923.2  | 920.3  | 900.2  | 886.6  | 873.9  |
| 37.5° | 885.1  | 891.0  | 898.8  | 904.2  | 907.1  | 906.6  | 903.7  | 896.8  | 870.4  | 854.3  | 837.7  |
| 40°   | 853.8  | 871.9  | 880.2  | 882.7  | 887.1  | 886.1  | 885.6  | 875.8  | 841.1  | 824.0  | 804.9  |
| 42.5° | 825.5  | 850.9  | 865.1  | 867.5  | 869.9  | 870.4  | 869.0  | 854.8  | 815.2  | 795.2  | 777.1  |
| 45°   | 798.1  | 831.3  | 849.4  | 847.0  | 850.4  | 850.4  | 851.9  | 833.3  | 789.8  | 769.3  | 750.2  |
| 47.5° | 774.2  | 813.3  | 829.9  | 826.9  | 828.9  | 830.4  | 831.8  | 810.3  | 761.9  | 742.4  | 722.8  |
| 50°   | 752.2  | 793.7  | 807.9  | 808.9  | 808.9  | 812.3  | 811.8  | 790.8  | 738.5  | 717.5  | 697.9  |
| 52.5° | 728.7  | 773.7  | 788.8  | 795.2  | 797.1  | 798.6  | 791.7  | 767.3  | 714.5  | 689.1  | 671.0  |
| 55°   | 701.3  | 753.1  | 766.8  | 775.1  | 779.0  | 778.1  | 768.8  | 743.9  | 690.1  | 664.7  | 644.2  |
| 57.5° | 659.8  | 709.2  | 728.7  | 732.6  | 739.0  | 735.1  | 724.3  | 703.3  | 651.0  | 625.6  | 604.6  |
| 60°   | 614.3  | 650.0  | 665.7  | 669.1  | 664.2  | 665.7  | 664.2  | 644.2  | 598.7  | 578.7  | 557.2  |
| 62.5° | 554.7  | 586.5  | 603.1  | 607.5  | 599.2  | 604.6  | 602.6  | 577.7  | 532.2  | 511.2  | 492.2  |
| 65°   | 509.7  | 544.4  | 564.0  | 566.4  | 564.0  | 566.4  | 559.6  | 529.3  | 486.3  | 464.8  | 445.2  |
| 67.5° | 474.6  | 510.2  | 530.8  | 537.6  | 535.2  | 534.7  | 523.9  | 488.7  | 444.3  | 420.8  | 395.9  |
| 70°   | 414.0  | 445.2  | 471.6  | 488.2  | 488.2  | 479.0  | 458.4  | 425.7  | 390.0  | 370.0  | 350.4  |
| 72.5° | 366.5  | 406.1  | 432.0  | 449.1  | 452.6  | 447.2  | 418.4  | 383.7  | 342.6  | 322.6  | 302.0  |
| 75°   | 302.0  | 340.6  | 368.5  | 391.0  | 395.4  | 389.5  | 356.3  | 322.1  | 284.0  | 264.4  | 243.9  |
| 77.5° | 201.8  | 224.8  | 247.3  | 267.8  | 263.4  | 267.3  | 244.9  | 219.0  | 195.5  | 180.8  | 171.5  |
| 80°   | 113.9  | 129.0  | 135.9  | 147.1  | 147.1  | 147.1  | 132.4  | 120.2  | 107.0  | 98.7   | 89.4   |
| 82.5° | 64.5   | 74.3   | 77.2   | 86.5   | 88.9   | 89.4   | 79.7   | 71.8   | 63.5   | 59.1   | 52.8   |
| 85°   | 29.8   | 35.2   | 35.7   | 41.1   | 43.0   | 46.9   | 42.5   | 37.1   | 32.3   | 30.3   | 26.4   |
| 87.5° | 1.0    | 2.9    | 3.9    | 7.3    | 9.8    | 11.2   | 12.2   | 12.2   | 10.3   | 9.3    | 7.8    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

REPORT NUMBER: P632104

CATALOG NUMBER: GWS-SA2C-722-U-SLR-W-GRSWH

**CANDELA DISTRIBUTION (continued):**

|       | 285°   | 295°   | 305°   | 315°   | 325°   | 335°   | 345°   | 355°   | 359°   | 360°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 | 1095.7 |
| 2.5°  | 1037.6 | 1049.3 | 1063.0 | 1072.8 | 1090.4 | 1105.0 | 1120.2 | 1136.8 | 1149.0 | 1146.1 |
| 5°    | 985.3  | 1004.8 | 1029.8 | 1052.7 | 1085.5 | 1118.7 | 1155.4 | 1193.0 | 1215.0 | 1214.0 |
| 7.5°  | 956.0  | 983.8  | 1014.1 | 1044.9 | 1083.5 | 1131.4 | 1187.6 | 1246.3 | 1276.1 | 1277.5 |
| 10°   | 971.6  | 1001.4 | 1021.9 | 1047.8 | 1088.4 | 1148.5 | 1216.0 | 1286.3 | 1320.6 | 1327.4 |
| 12.5° | 1021.0 | 1018.5 | 1017.1 | 1035.6 | 1084.5 | 1160.7 | 1243.3 | 1327.4 | 1366.0 | 1374.3 |
| 15°   | 1067.9 | 1017.5 | 987.2  | 999.9  | 1066.9 | 1168.6 | 1270.2 | 1372.4 | 1415.9 | 1424.7 |
| 17.5° | 1076.7 | 1000.4 | 944.2  | 953.0  | 1039.0 | 1171.0 | 1296.1 | 1416.3 | 1463.3 | 1471.6 |
| 20°   | 1052.2 | 978.4  | 913.0  | 900.7  | 1003.9 | 1164.7 | 1312.2 | 1453.0 | 1504.3 | 1513.1 |
| 22.5° | 1021.5 | 958.9  | 889.5  | 857.7  | 960.8  | 1158.3 | 1330.3 | 1491.6 | 1550.7 | 1558.6 |
| 25°   | 989.2  | 934.0  | 867.5  | 819.1  | 912.0  | 1154.4 | 1360.6 | 1542.4 | 1613.8 | 1623.1 |
| 27.5° | 955.0  | 903.7  | 848.4  | 800.5  | 867.0  | 1159.3 | 1403.6 | 1624.5 | 1705.7 | 1718.9 |
| 30°   | 918.3  | 873.4  | 836.2  | 794.2  | 836.2  | 1163.7 | 1451.0 | 1708.6 | 1803.9 | 1822.5 |
| 32.5° | 880.2  | 845.5  | 823.5  | 797.1  | 817.2  | 1153.4 | 1492.6 | 1802.9 | 1921.2 | 1937.3 |
| 35°   | 842.1  | 817.2  | 807.4  | 802.5  | 791.7  | 1115.8 | 1526.3 | 1898.2 | 2055.1 | 2069.3 |
| 37.5° | 806.4  | 787.8  | 784.9  | 790.3  | 752.6  | 1054.2 | 1565.4 | 2019.4 | 2186.6 | 2208.1 |
| 40°   | 773.2  | 756.1  | 755.6  | 754.6  | 709.6  | 970.1  | 1618.2 | 2142.6 | 2316.1 | 2325.9 |
| 42.5° | 742.4  | 720.9  | 724.8  | 713.1  | 674.5  | 879.2  | 1668.0 | 2247.7 | 2436.8 | 2443.7 |
| 45°   | 715.0  | 686.7  | 691.1  | 676.4  | 657.8  | 783.9  | 1712.0 | 2371.8 | 2589.8 | 2594.2 |
| 47.5° | 688.6  | 658.3  | 646.1  | 645.1  | 654.9  | 696.0  | 1755.0 | 2610.8 | 2829.3 | 2837.1 |
| 50°   | 664.2  | 631.4  | 596.7  | 618.2  | 636.8  | 630.0  | 1808.8 | 2866.9 | 3076.6 | 3074.6 |
| 52.5° | 640.7  | 597.7  | 548.4  | 589.9  | 589.9  | 581.1  | 1793.7 | 3022.3 | 3280.9 | 3314.6 |
| 55°   | 613.8  | 543.5  | 498.0  | 542.5  | 521.0  | 537.1  | 1525.3 | 3073.2 | 3409.4 | 3457.3 |
| 57.5° | 560.6  | 476.5  | 436.9  | 460.9  | 428.6  | 498.0  | 1095.7 | 2821.0 | 3190.9 | 3276.0 |
| 60°   | 509.3  | 427.2  | 401.2  | 396.9  | 354.8  | 406.1  | 710.1  | 2208.6 | 2626.5 | 2669.5 |
| 62.5° | 449.1  | 384.6  | 362.6  | 328.9  | 285.4  | 295.7  | 430.1  | 1453.5 | 1764.8 | 1774.6 |
| 65°   | 403.7  | 348.5  | 306.4  | 266.4  | 233.6  | 214.6  | 254.1  | 700.8  | 882.2  | 870.4  |
| 67.5° | 346.5  | 298.6  | 258.5  | 229.7  | 202.8  | 178.9  | 169.1  | 208.2  | 235.6  | 227.7  |
| 70°   | 308.4  | 262.4  | 223.8  | 196.5  | 171.5  | 147.6  | 130.5  | 122.7  | 120.2  | 118.3  |
| 72.5° | 265.9  | 225.8  | 185.7  | 159.3  | 135.9  | 113.9  | 98.2   | 88.9   | 86.5   | 84.6   |
| 75°   | 212.1  | 174.5  | 137.8  | 112.9  | 92.4   | 76.7   | 66.5   | 58.6   | 57.2   | 55.2   |
| 77.5° | 140.3  | 111.9  | 82.1   | 67.0   | 54.7   | 46.4   | 39.6   | 34.7   | 33.7   | 32.7   |
| 80°   | 77.2   | 64.5   | 50.3   | 40.6   | 32.7   | 28.3   | 25.9   | 23.0   | 22.5   | 22.0   |
| 82.5° | 45.9   | 38.6   | 28.8   | 23.0   | 19.1   | 17.1   | 15.6   | 14.2   | 13.7   | 13.2   |
| 85°   | 23.0   | 18.1   | 12.7   | 10.8   | 9.8    | 8.8    | 8.8    | 7.3    | 6.8    | 6.8    |
| 87.5° | 5.9    | 4.9    | 2.9    | 2.4    | 2.4    | 2.4    | 2.0    | 1.5    | 1.5    | 1.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-10-R4

Test Date: 10/25/2019

Luminaire Tested: SA1C-722-U-5WQ

Data in this report applies to families of products SA1C-722-U-5WQ.

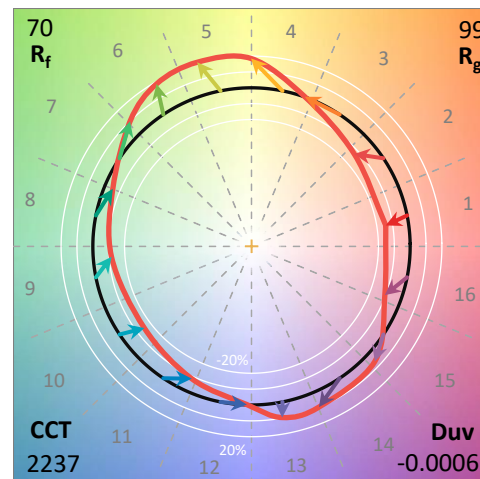
### Test Information

Test Method: LM-79-2008 Report  
 Number: SP1-1908-441-10-R4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 10/28/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: MCGRAW-EDISON  
 Catalog Number: **SA1C-722-U-5WQ**  
 Description: MCGRAW EDISON ROADWAY AND AREA LUMINAIRE

\*\*\*THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.\*\*\*TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

### Spectral Parameters

|                           |         |           |      |      |       |
|---------------------------|---------|-----------|------|------|-------|
| CCT (K):                  | 2237    | CRI (Ra): | 72.0 |      |       |
| CIE u':                   | 0.2876  | R1:       | 68.9 | R9:  | -17.4 |
| CIE v':                   | 0.5346  | R2:       | 83.0 | R10: | 61.3  |
| Duv:                      | -0.0006 | R3:       | 95.2 | R11: | 59.8  |
| CIE x:                    | 0.5005  | R4:       | 66.2 | R12: | 50.5  |
| CIE y:                    | 0.4134  | R5:       | 65.9 | R13: | 71.1  |
| CIE z:                    | 0.0860  | R6:       | 76.3 | R14: | 96.9  |
| Peak Wavelength (nm):     | 603     | R7:       | 76.7 |      |       |
| Dominant Wavelength (nm): | 587     | R8:       | 43.8 |      |       |
| Purity:                   | 74.5    |           |      |      |       |
| Rf:                       | 69.8    |           |      |      |       |
| Rg:                       | 99.2    |           |      |      |       |



### Test Conditions

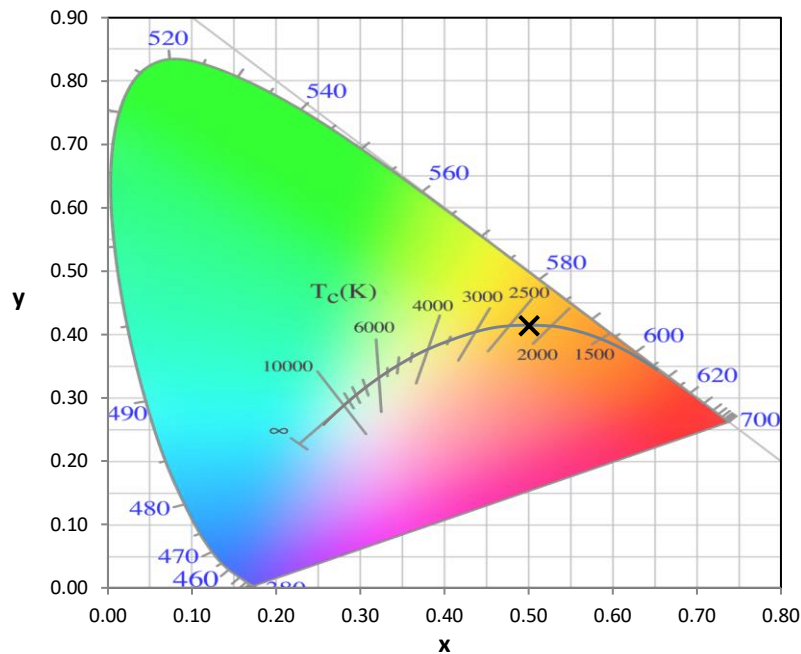
Stabilization Time: 71M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 24.7/41%  
 Sphere Temperature (°C): 25.6

REPORT NUMBER: SP1-1908-441-10-R4

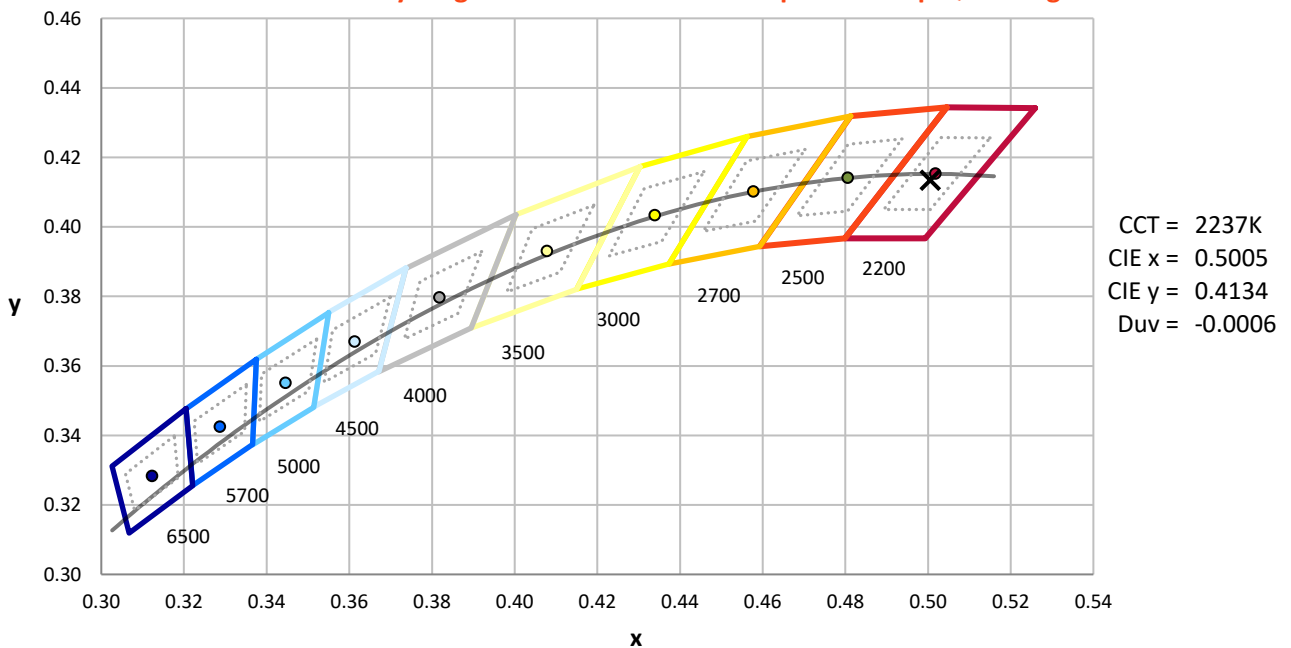
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 6/28/2019        | 12/28/2019           |
| Power Meter                    | IN0071                | 12/5/2018        | 12/5/2019            |
| AC Power Source                | IN0063                | 12/5/2018        | 12/5/2019            |
| DC Power Source                | IN0208                | 12/5/2018        | 12/5/2019            |
| Sphere Thermometer             | IN0085                | 12/5/2018        | 12/5/2019            |
| Room Thermometer               | IN0046                | 12/5/2018        | 12/5/2019            |

REPORT NUMBER: SP1-1908-441-10-R4

CIE 1931 Chromaticity Diagram



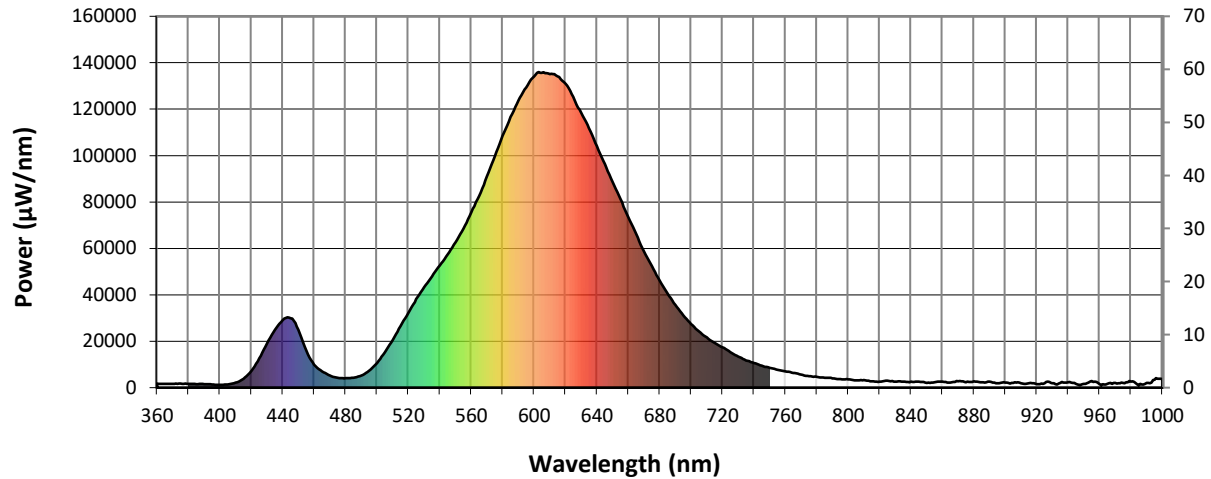
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 2200K 4-step quadrangle

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**Photopic Flux vs. Wavelength**

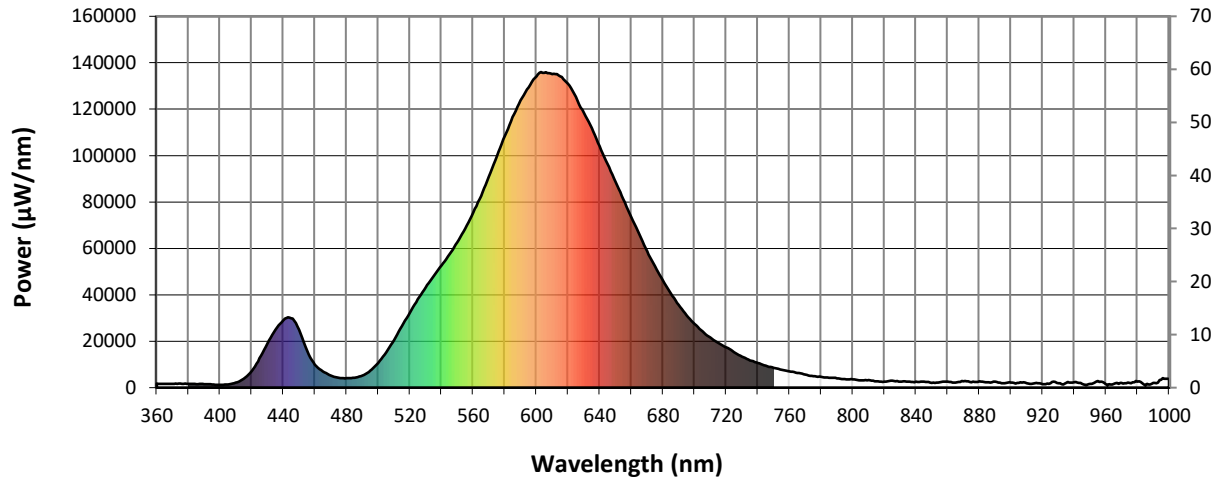


#####

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 1768             | NR               | 490       | 5206             | NR               | 620       | 130919           | NR               | 750       | 8553             | NR               | 880       | 2713             | NR               |
| 365       | 1569             | NR               | 495       | 7286             | NR               | 625       | 125335           | NR               | 755       | 7696             | NR               | 885       | 2316             | NR               |
| 370       | 1594             | NR               | 500       | 10654            | NR               | 630       | 118388           | NR               | 760       | 6978             | NR               | 890       | 2539             | NR               |
| 375       | 1744             | NR               | 505       | 15189            | NR               | 635       | 111855           | NR               | 765       | 6377             | NR               | 895       | 1933             | NR               |
| 380       | 1659             | NR               | 510       | 20541            | NR               | 640       | 104062           | NR               | 770       | 5600             | NR               | 900       | 2216             | NR               |
| 385       | 1504             | NR               | 515       | 26492            | NR               | 645       | 96365            | NR               | 775       | 5000             | NR               | 905       | 2067             | NR               |
| 390       | 1541             | NR               | 520       | 32294            | NR               | 650       | 88651            | NR               | 780       | 4709             | NR               | 910       | 1959             | NR               |
| 395       | 1355             | NR               | 525       | 38123            | NR               | 655       | 81152            | NR               | 785       | 4305             | NR               | 915       | 1874             | NR               |
| 400       | 1243             | NR               | 530       | 43232            | NR               | 660       | 73523            | NR               | 790       | 4040             | NR               | 920       | 1484             | NR               |
| 405       | 1417             | NR               | 535       | 48012            | NR               | 665       | 66123            | NR               | 795       | 3642             | NR               | 925       | 1914             | NR               |
| 410       | 2147             | NR               | 540       | 52623            | NR               | 670       | 58677            | NR               | 800       | 3594             | NR               | 930       | 1948             | NR               |
| 415       | 3837             | NR               | 545       | 57516            | NR               | 675       | 52349            | NR               | 805       | 3190             | NR               | 935       | 2079             | NR               |
| 420       | 7159             | NR               | 550       | 62613            | NR               | 680       | 46159            | NR               | 810       | 3241             | NR               | 940       | 2263             | NR               |
| 425       | 12599            | NR               | 555       | 68554            | NR               | 685       | 40525            | NR               | 815       | 2732             | NR               | 945       | 1688             | NR               |
| 430       | 19019            | NR               | 560       | 75325            | NR               | 690       | 35615            | NR               | 820       | 2612             | NR               | 950       | 1560             | NR               |
| 435       | 24875            | NR               | 565       | 82533            | NR               | 695       | 31158            | NR               | 825       | 2966             | NR               | 955       | 2826             | NR               |
| 440       | 29103            | NR               | 570       | 90909            | NR               | 700       | 27409            | NR               | 830       | 2574             | NR               | 960       | 1477             | NR               |
| 445       | 29901            | NR               | 575       | 99621            | NR               | 705       | 24204            | NR               | 835       | 2633             | NR               | 965       | 1568             | NR               |
| 450       | 24862            | NR               | 580       | 108484           | NR               | 710       | 21558            | NR               | 840       | 2526             | NR               | 970       | 2030             | NR               |
| 455       | 15942            | NR               | 585       | 116679           | NR               | 715       | 19222            | NR               | 845       | 2631             | NR               | 975       | 1986             | NR               |
| 460       | 9916             | NR               | 590       | 123752           | NR               | 720       | 17310            | NR               | 850       | 2079             | NR               | 980       | 2540             | NR               |
| 465       | 7051             | NR               | 595       | 129324           | NR               | 725       | 15280            | NR               | 855       | 2309             | NR               | 985       | 1139             | NR               |
| 470       | 5227             | NR               | 600       | 134082           | NR               | 730       | 13282            | NR               | 860       | 2528             | NR               | 990       | 2018             | NR               |
| 475       | 4257             | NR               | 605       | 135698           | NR               | 735       | 11753            | NR               | 865       | 2121             | NR               | 995       | 3445             | NR               |
| 480       | 4052             | NR               | 610       | 135144           | NR               | 740       | 10654            | NR               | 870       | 2751             | NR               | 1000      | 3704             | NR               |
| 485       | 4298             | NR               | 615       | 134180           | NR               | 745       | 9451             | NR               | 875       | 2317             | NR               |           |                  |                  |

REPORT NUMBER: SP1-1908-441-10-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 4696.9

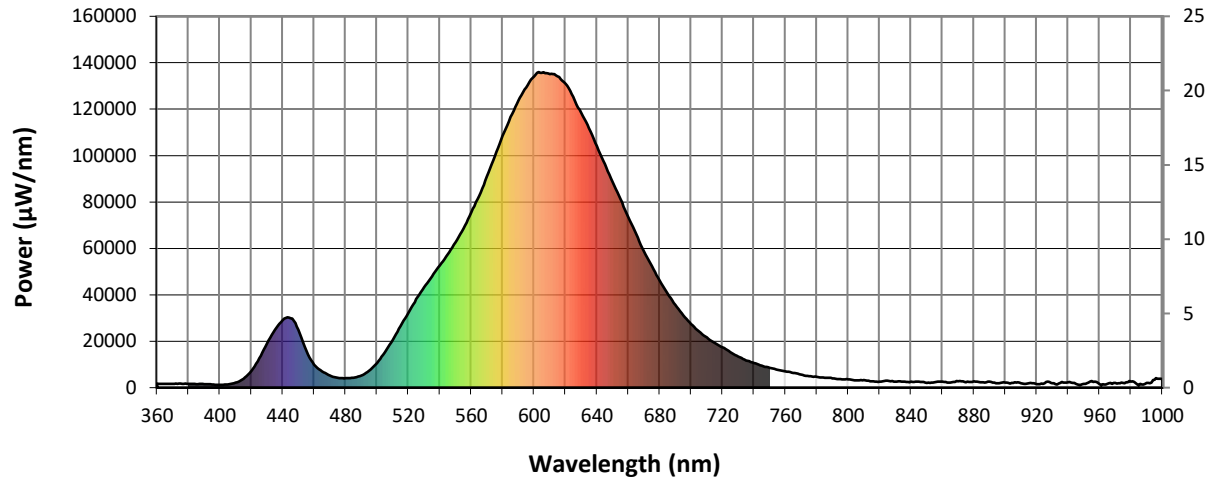
S/P: 0.85

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 1768             | NR               | 490       | 5206             | NR               | 620       | 130919           | NR               | 750       | 8553             | NR               | 880       | 2713             | NR               |
| 365       | 1569             | NR               | 495       | 7286             | NR               | 625       | 125335           | NR               | 755       | 7696             | NR               | 885       | 2316             | NR               |
| 370       | 1594             | NR               | 500       | 10654            | NR               | 630       | 118388           | NR               | 760       | 6978             | NR               | 890       | 2539             | NR               |
| 375       | 1744             | NR               | 505       | 15189            | NR               | 635       | 111855           | NR               | 765       | 6377             | NR               | 895       | 1933             | NR               |
| 380       | 1659             | NR               | 510       | 20541            | NR               | 640       | 104062           | NR               | 770       | 5600             | NR               | 900       | 2216             | NR               |
| 385       | 1504             | NR               | 515       | 26492            | NR               | 645       | 96365            | NR               | 775       | 5000             | NR               | 905       | 2067             | NR               |
| 390       | 1541             | NR               | 520       | 32294            | NR               | 650       | 88651            | NR               | 780       | 4709             | NR               | 910       | 1959             | NR               |
| 395       | 1355             | NR               | 525       | 38123            | NR               | 655       | 81152            | NR               | 785       | 4305             | NR               | 915       | 1874             | NR               |
| 400       | 1243             | NR               | 530       | 43232            | NR               | 660       | 73523            | NR               | 790       | 4040             | NR               | 920       | 1484             | NR               |
| 405       | 1417             | NR               | 535       | 48012            | NR               | 665       | 66123            | NR               | 795       | 3642             | NR               | 925       | 1914             | NR               |
| 410       | 2147             | NR               | 540       | 52623            | NR               | 670       | 58677            | NR               | 800       | 3594             | NR               | 930       | 1948             | NR               |
| 415       | 3837             | NR               | 545       | 57516            | NR               | 675       | 52349            | NR               | 805       | 3190             | NR               | 935       | 2079             | NR               |
| 420       | 7159             | NR               | 550       | 62613            | NR               | 680       | 46159            | NR               | 810       | 3241             | NR               | 940       | 2263             | NR               |
| 425       | 12599            | NR               | 555       | 68554            | NR               | 685       | 40525            | NR               | 815       | 2732             | NR               | 945       | 1688             | NR               |
| 430       | 19019            | NR               | 560       | 75325            | NR               | 690       | 35615            | NR               | 820       | 2612             | NR               | 950       | 1560             | NR               |
| 435       | 24875            | NR               | 565       | 82533            | NR               | 695       | 31158            | NR               | 825       | 2966             | NR               | 955       | 2826             | NR               |
| 440       | 29103            | NR               | 570       | 90909            | NR               | 700       | 27409            | NR               | 830       | 2574             | NR               | 960       | 1477             | NR               |
| 445       | 29901            | NR               | 575       | 99621            | NR               | 705       | 24204            | NR               | 835       | 2633             | NR               | 965       | 1568             | NR               |
| 450       | 24862            | NR               | 580       | 108484           | NR               | 710       | 21558            | NR               | 840       | 2526             | NR               | 970       | 2030             | NR               |
| 455       | 15942            | NR               | 585       | 116679           | NR               | 715       | 19222            | NR               | 845       | 2631             | NR               | 975       | 1986             | NR               |
| 460       | 9916             | NR               | 590       | 123752           | NR               | 720       | 17310            | NR               | 850       | 2079             | NR               | 980       | 2540             | NR               |
| 465       | 7051             | NR               | 595       | 129324           | NR               | 725       | 15280            | NR               | 855       | 2309             | NR               | 985       | 1139             | NR               |
| 470       | 5227             | NR               | 600       | 134082           | NR               | 730       | 13282            | NR               | 860       | 2528             | NR               | 990       | 2018             | NR               |
| 475       | 4257             | NR               | 605       | 135698           | NR               | 735       | 11753            | NR               | 865       | 2121             | NR               | 995       | 3445             | NR               |
| 480       | 4052             | NR               | 610       | 135144           | NR               | 740       | 10654            | NR               | 870       | 2751             | NR               | 1000      | 3704             | NR               |
| 485       | 4298             | NR               | 615       | 134180           | NR               | 745       | 9451             | NR               | 875       | 2317             | NR               |           |                  |                  |



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**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 1470.8**

**M/P: 0.27**

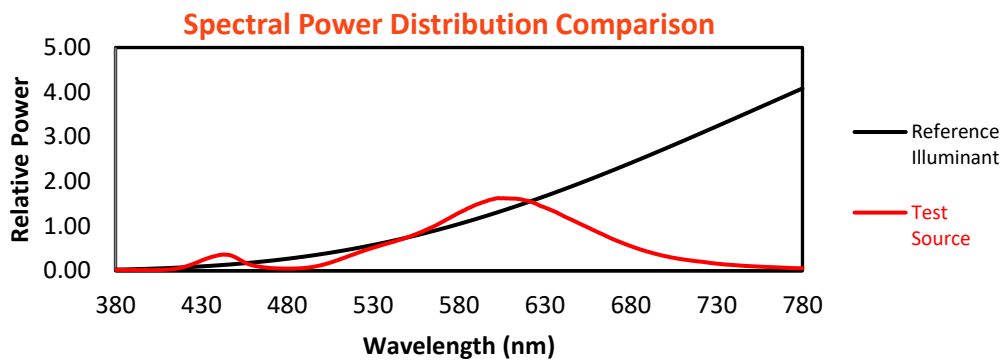
| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 1768             | NR               | 490       | 5206             | NR               | 620       | 130919           | NR               | 750       | 8553             | NR               | 880       | 2713             | NR               |
| 365       | 1569             | NR               | 495       | 7286             | NR               | 625       | 125335           | NR               | 755       | 7696             | NR               | 885       | 2316             | NR               |
| 370       | 1594             | NR               | 500       | 10654            | NR               | 630       | 118388           | NR               | 760       | 6978             | NR               | 890       | 2539             | NR               |
| 375       | 1744             | NR               | 505       | 15189            | NR               | 635       | 111855           | NR               | 765       | 6377             | NR               | 895       | 1933             | NR               |
| 380       | 1659             | NR               | 510       | 20541            | NR               | 640       | 104062           | NR               | 770       | 5600             | NR               | 900       | 2216             | NR               |
| 385       | 1504             | NR               | 515       | 26492            | NR               | 645       | 96365            | NR               | 775       | 5000             | NR               | 905       | 2067             | NR               |
| 390       | 1541             | NR               | 520       | 32294            | NR               | 650       | 88651            | NR               | 780       | 4709             | NR               | 910       | 1959             | NR               |
| 395       | 1355             | NR               | 525       | 38123            | NR               | 655       | 81152            | NR               | 785       | 4305             | NR               | 915       | 1874             | NR               |
| 400       | 1243             | NR               | 530       | 43232            | NR               | 660       | 73523            | NR               | 790       | 4040             | NR               | 920       | 1484             | NR               |
| 405       | 1417             | NR               | 535       | 48012            | NR               | 665       | 66123            | NR               | 795       | 3642             | NR               | 925       | 1914             | NR               |
| 410       | 2147             | NR               | 540       | 52623            | NR               | 670       | 58677            | NR               | 800       | 3594             | NR               | 930       | 1948             | NR               |
| 415       | 3837             | NR               | 545       | 57516            | NR               | 675       | 52349            | NR               | 805       | 3190             | NR               | 935       | 2079             | NR               |
| 420       | 7159             | NR               | 550       | 62613            | NR               | 680       | 46159            | NR               | 810       | 3241             | NR               | 940       | 2263             | NR               |
| 425       | 12599            | NR               | 555       | 68554            | NR               | 685       | 40525            | NR               | 815       | 2732             | NR               | 945       | 1688             | NR               |
| 430       | 19019            | NR               | 560       | 75325            | NR               | 690       | 35615            | NR               | 820       | 2612             | NR               | 950       | 1560             | NR               |
| 435       | 24875            | NR               | 565       | 82533            | NR               | 695       | 31158            | NR               | 825       | 2966             | NR               | 955       | 2826             | NR               |
| 440       | 29103            | NR               | 570       | 90909            | NR               | 700       | 27409            | NR               | 830       | 2574             | NR               | 960       | 1477             | NR               |
| 445       | 29901            | NR               | 575       | 99621            | NR               | 705       | 24204            | NR               | 835       | 2633             | NR               | 965       | 1568             | NR               |
| 450       | 24862            | NR               | 580       | 108484           | NR               | 710       | 21558            | NR               | 840       | 2526             | NR               | 970       | 2030             | NR               |
| 455       | 15942            | NR               | 585       | 116679           | NR               | 715       | 19222            | NR               | 845       | 2631             | NR               | 975       | 1986             | NR               |
| 460       | 9916             | NR               | 590       | 123752           | NR               | 720       | 17310            | NR               | 850       | 2079             | NR               | 980       | 2540             | NR               |
| 465       | 7051             | NR               | 595       | 129324           | NR               | 725       | 15280            | NR               | 855       | 2309             | NR               | 985       | 1139             | NR               |
| 470       | 5227             | NR               | 600       | 134082           | NR               | 730       | 13282            | NR               | 860       | 2528             | NR               | 990       | 2018             | NR               |
| 475       | 4257             | NR               | 605       | 135698           | NR               | 735       | 11753            | NR               | 865       | 2121             | NR               | 995       | 3445             | NR               |
| 480       | 4052             | NR               | 610       | 135144           | NR               | 740       | 10654            | NR               | 870       | 2751             | NR               | 1000      | 3704             | NR               |
| 485       | 4298             | NR               | 615       | 134180           | NR               | 745       | 9451             | NR               | 875       | 2317             | NR               |           |                  |                  |

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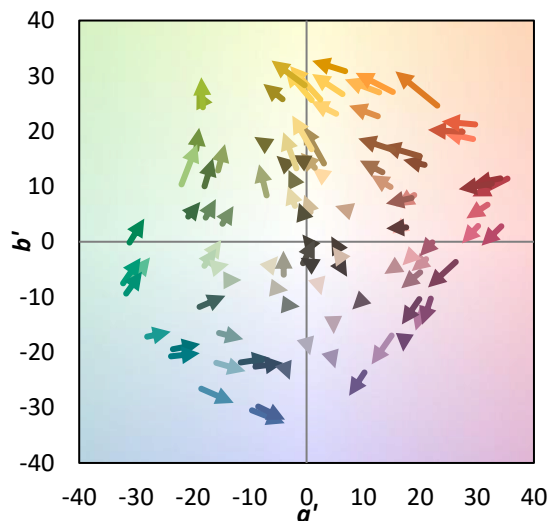
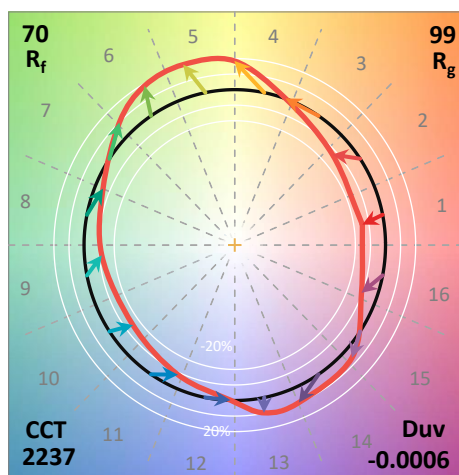
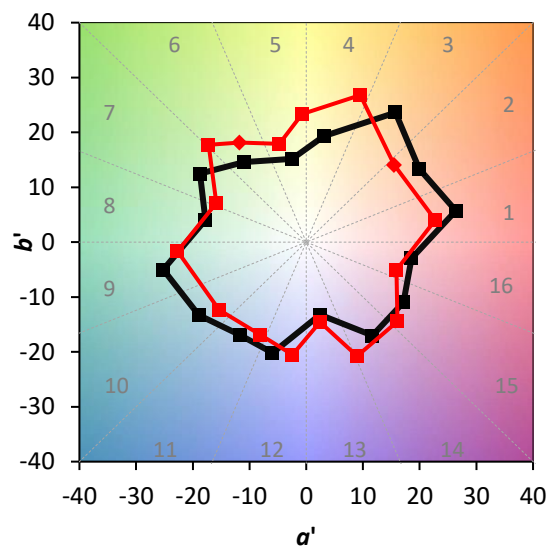
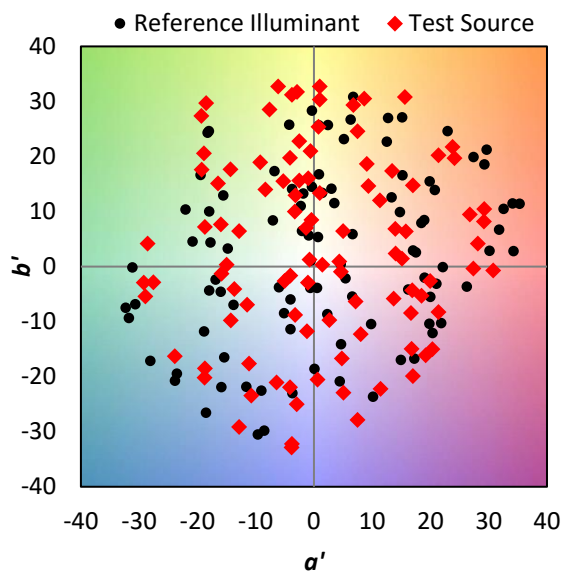
**TM-30-18**

### Summary

$R_f = 69.8$   
 $R_g = 99.2$   
 CIE  $R_a = 72.0$   
 $R_g = -17.4$



### Color Vector Graphics

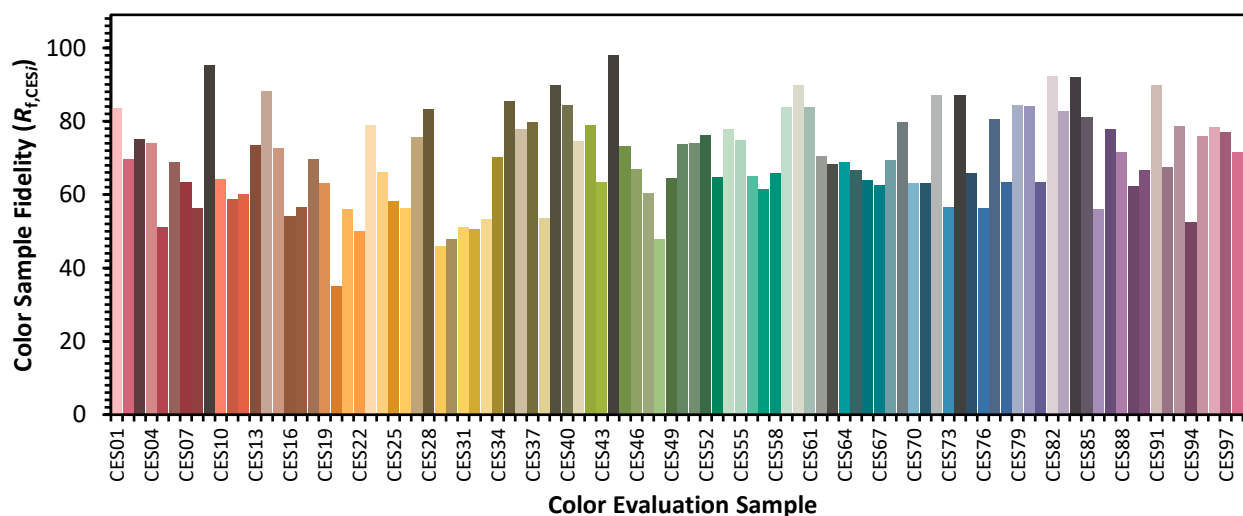


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**Individual Sample Fidelity Index ( $R_{f,i}$ )**

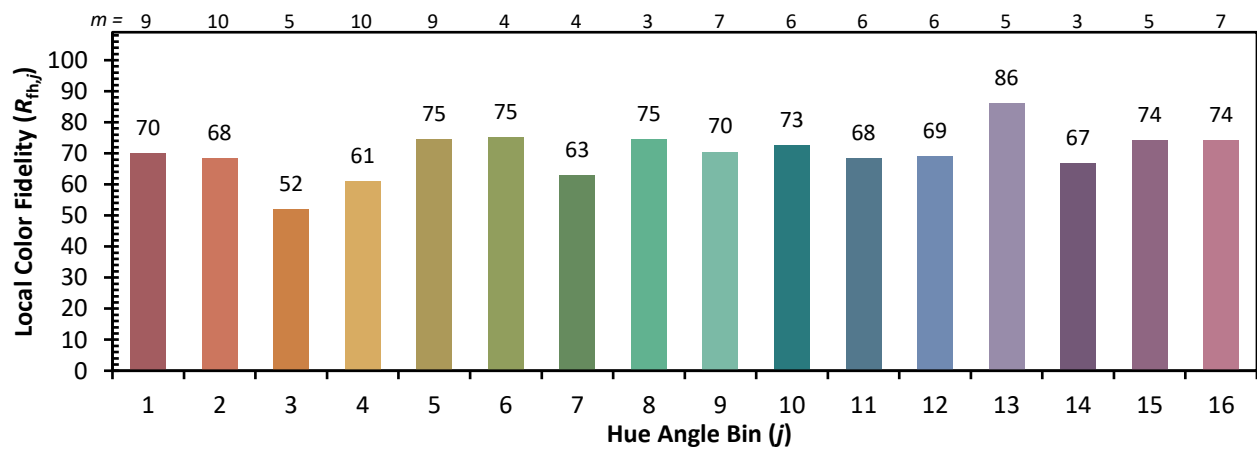
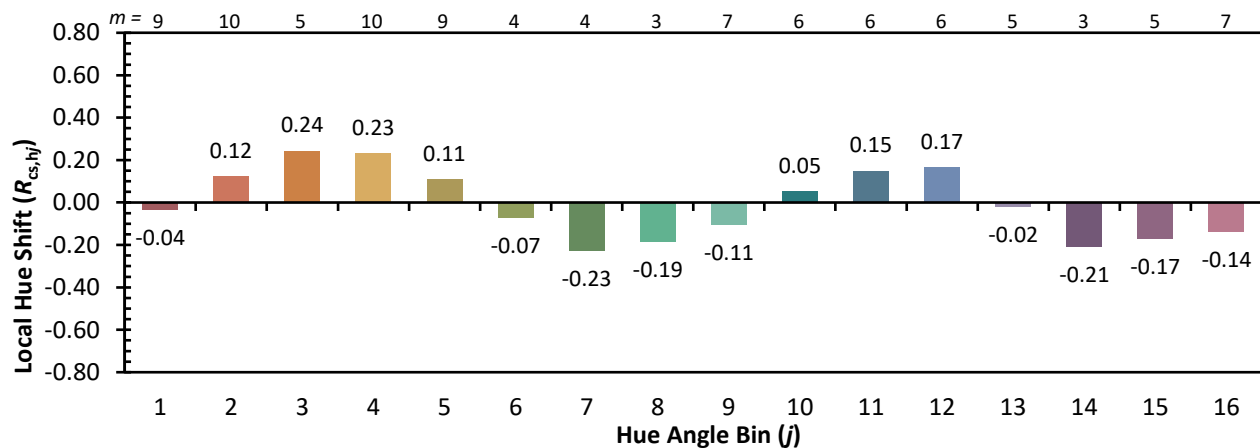
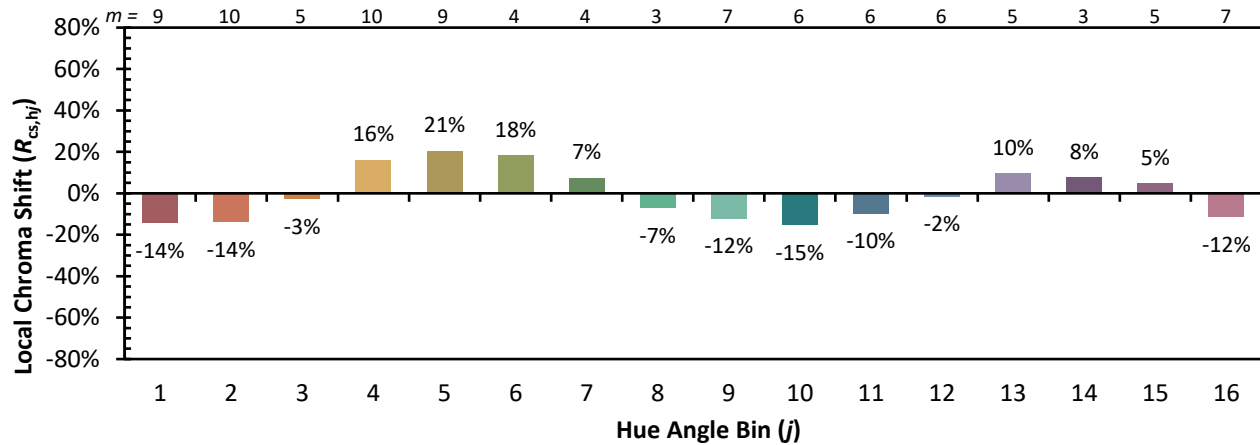
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|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 56 | CES51 = 74 | CES76 = 56 |
| CES02 = 65 | CES27 = 76 | CES52 = 76 | CES77 = 81 |
| CES03 = 32 | CES28 = 83 | CES53 = 65 | CES78 = 63 |
| CES04 = 72 | CES29 = 46 | CES54 = 78 | CES79 = 84 |
| CES05 = 52 | CES30 = 48 | CES55 = 75 | CES80 = 84 |
| CES06 = 52 | CES31 = 51 | CES56 = 65 | CES81 = 63 |
| CES07 = 44 | CES32 = 51 | CES57 = 62 | CES82 = 92 |
| CES08 = 42 | CES33 = 53 | CES58 = 66 | CES83 = 83 |
| CES09 = 29 | CES34 = 70 | CES59 = 84 | CES84 = 92 |
| CES10 = 78 | CES35 = 85 | CES60 = 90 | CES85 = 81 |
| CES11 = 61 | CES36 = 78 | CES61 = 84 | CES86 = 56 |
| CES12 = 68 | CES37 = 80 | CES62 = 70 | CES87 = 78 |
| CES13 = 45 | CES38 = 53 | CES63 = 68 | CES88 = 72 |
| CES14 = 75 | CES39 = 90 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 84 | CES65 = 67 | CES90 = 67 |
| CES16 = 49 | CES41 = 75 | CES66 = 64 | CES91 = 90 |
| CES17 = 51 | CES42 = 79 | CES67 = 63 | CES92 = 67 |
| CES18 = 57 | CES43 = 64 | CES68 = 69 | CES93 = 79 |
| CES19 = 74 | CES44 = 98 | CES69 = 80 | CES94 = 52 |
| CES20 = 68 | CES45 = 73 | CES70 = 63 | CES95 = 76 |
| CES21 = 89 | CES46 = 67 | CES71 = 63 | CES96 = 78 |
| CES22 = 81 | CES47 = 60 | CES72 = 87 | CES97 = 77 |
| CES23 = 92 | CES48 = 48 | CES73 = 56 | CES98 = 71 |
| CES24 = 92 | CES49 = 64 | CES74 = 87 | CES99 = 65 |
| CES25 = 74 | CES50 = 74 | CES75 = 66 |            |



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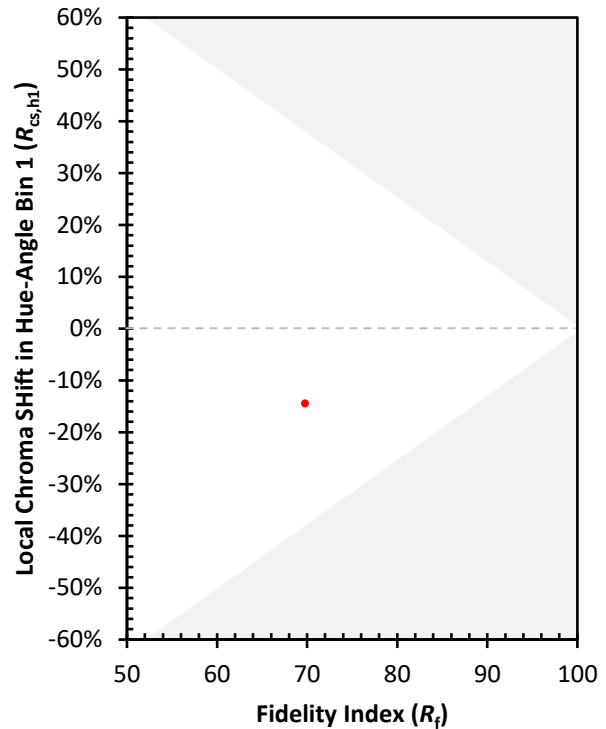
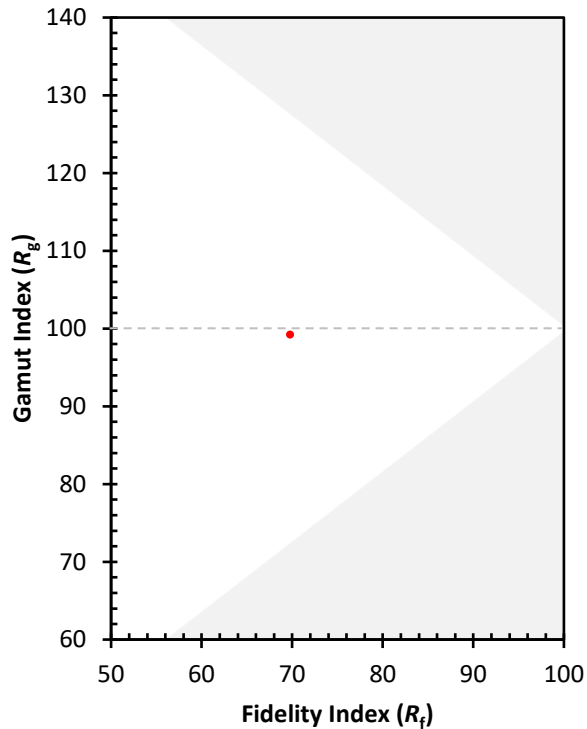
Color Rendition by Hue-Angle Bin



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**Measure Comparisons**



(END OF REPORT)