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

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Peachtree City, GA 30269

Scaled data based on original data using

LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P1201989

Luminaire Tested: GWC-SB1C-830-U-SL3

Issue Date: 10/30/2025

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2024 |
| Report Number: | P1201989 |
| | TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2411-289-12) |
| Test Lab: | INNOVATION CENTER |
| Issue Date: | 3/14/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GWC-SB1C-830-U-SL3 |
| Description: | GALLEON WALL LUMINAIRE |
| | (1) 80 CRI, 3000K, 615mA LIGHTSQUARE WITH 26 LEDS AND TYPE III SPILL LIGHT ELIMINATOR OPTICS |
| Light Source: | - |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 6612 lumens |
| Efficiency: | N/A |
| Efficacy: | 121.5 lumens/watt |
| Luminous Opening: | Rectangular (W 0.5' x L: 0.5' x H: 0') |
| IES Classification: | Type IV - Medium |
| BUG Rating: | B1 - U0 - G2 |

| | |
|---|---|
| Input Watts (W): | 54.4 |
| Input Voltage (V): | 120.0 |
| Input Current (Ain): | 0.437 |
| Voltage Rise (V): | NR |
| Power Factor: | 0.993 |
| Total Harmonic Distortion (THDi): | 9.314 |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

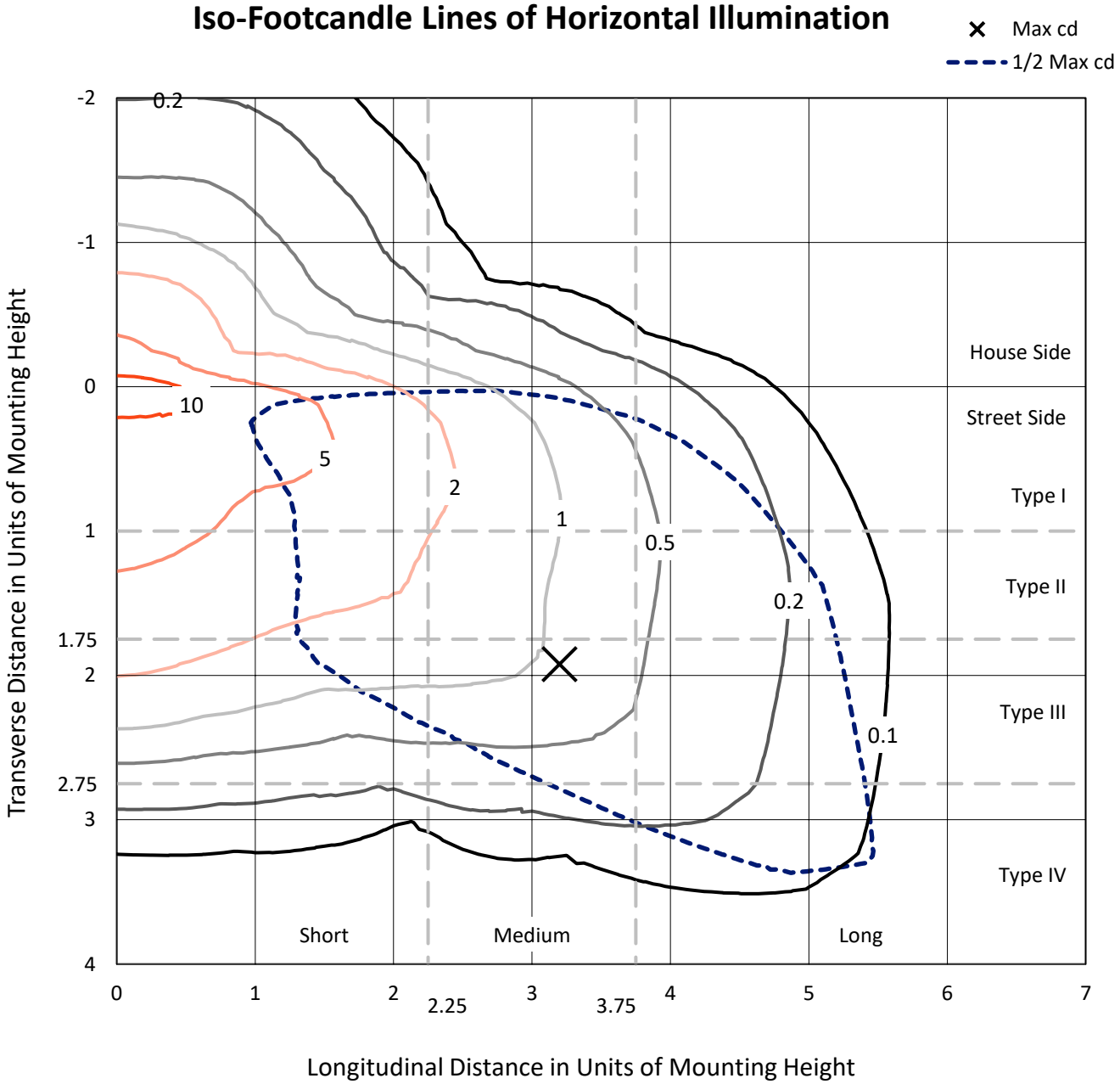


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Scaled Data Report

REPORT NUMBER: P1201989
CATALOG NUMBER: GWC-SB1C-830-U-SL3

## Iso-Footcandle Lines of Horizontal Illumination



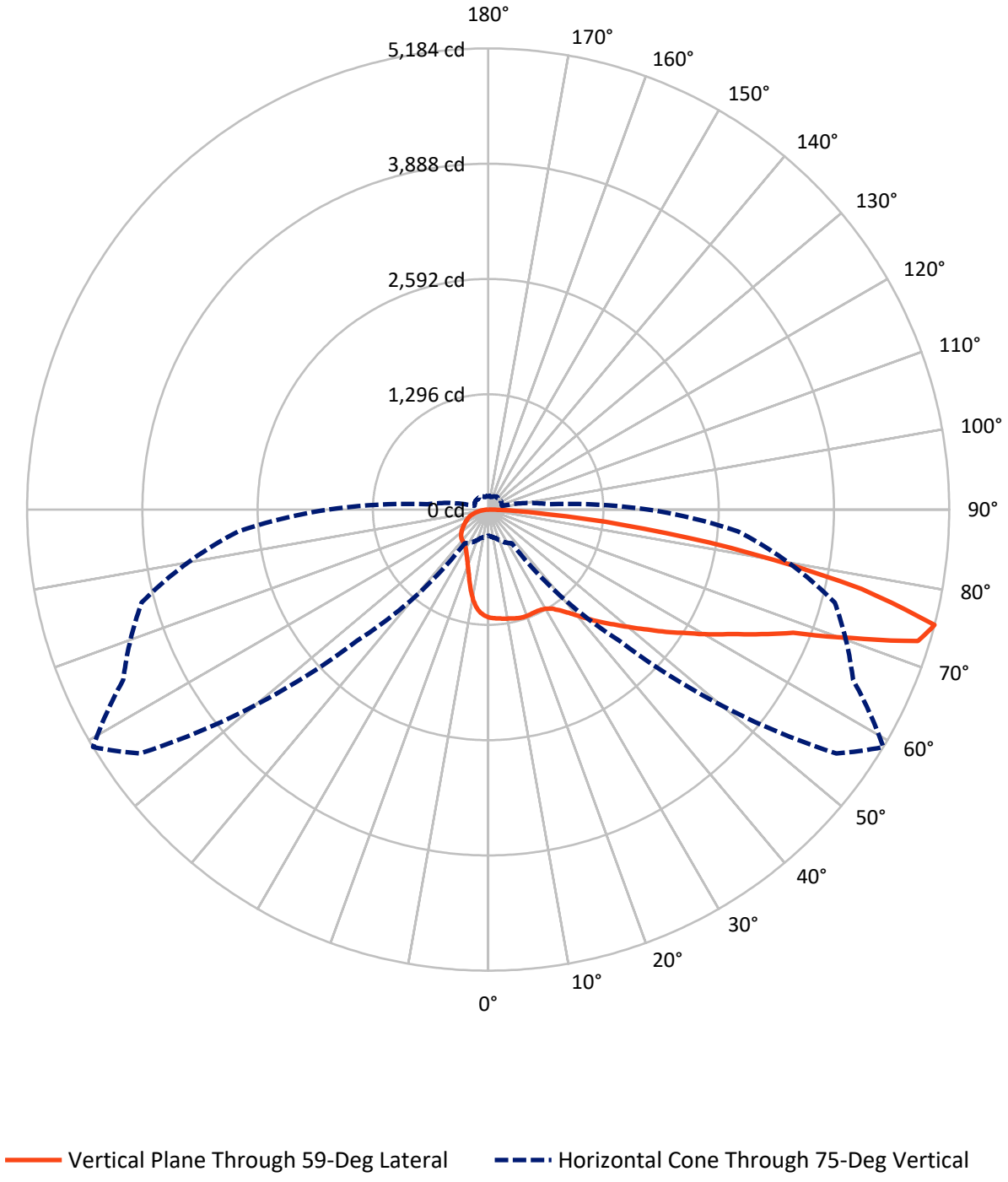

Based on 10 foot mounting height. Maximum calculated value = 10 fc
Type IV - Medium - N/A

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## Luminous Intensity Polar Plot



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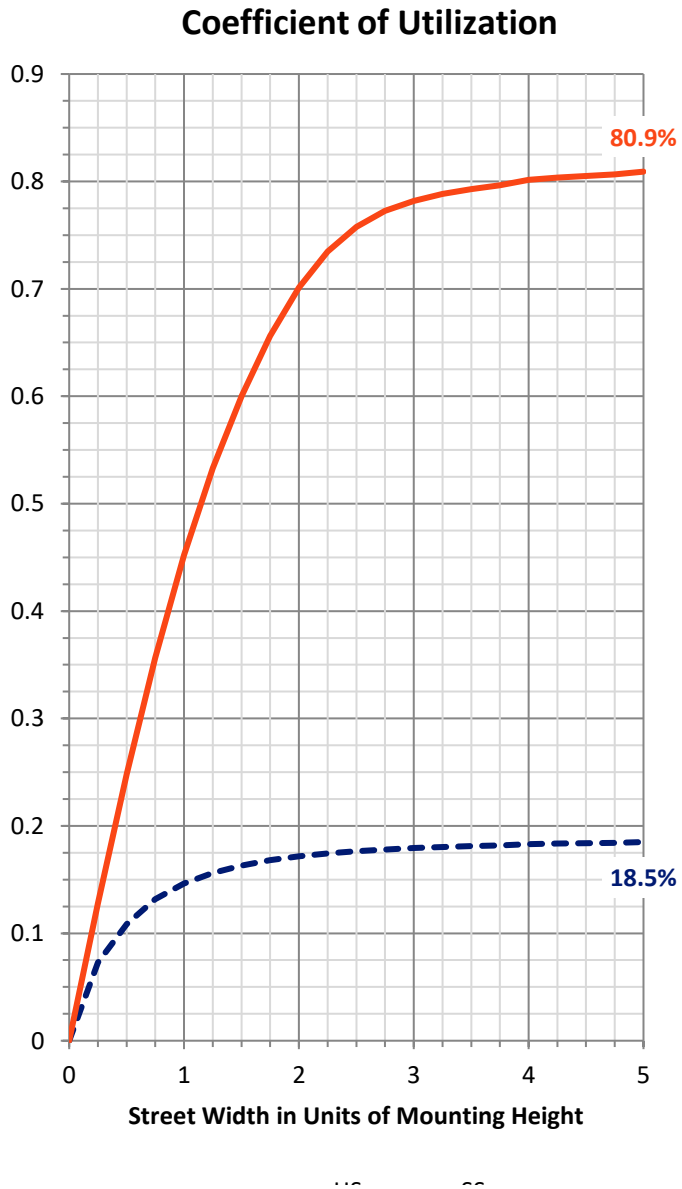
REPORT NUMBER: P1201989
CATALOG NUMBER: GWC-SB1C-830-U-SL3

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 1240.1 | 0.0 | 1240.1 |
| | % Fixture | 18.8 | 0.0 | 18.8 |
| **Street Side** | Lumens | 5371.9 | 0.0 | 5371.9 |
| | % Fixture | 81.2 | 0.0 | 81.2 |
| **Total** | Lumens | 6612.0 | 0.0 | 6612.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 108.8 | 1.6 |
| 10°-20° | 278.2 | 4.2 |
| 20°-30° | 422.5 | 6.4 |
| 30°-40° | 628.0 | 9.5 |
| 40°-50° | 934.0 | 14.1 |
| 50°-60° | 1267.8 | 19.2 |
| 60°-70° | 1547.7 | 23.4 |
| 70°-80° | 1214.6 | 18.4 |
| 80°-90° | 210.4 | 3.2 |
| 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° | 6612.0 | 100.0 |
| 0°-180° | 6612.0 | 100.0 |



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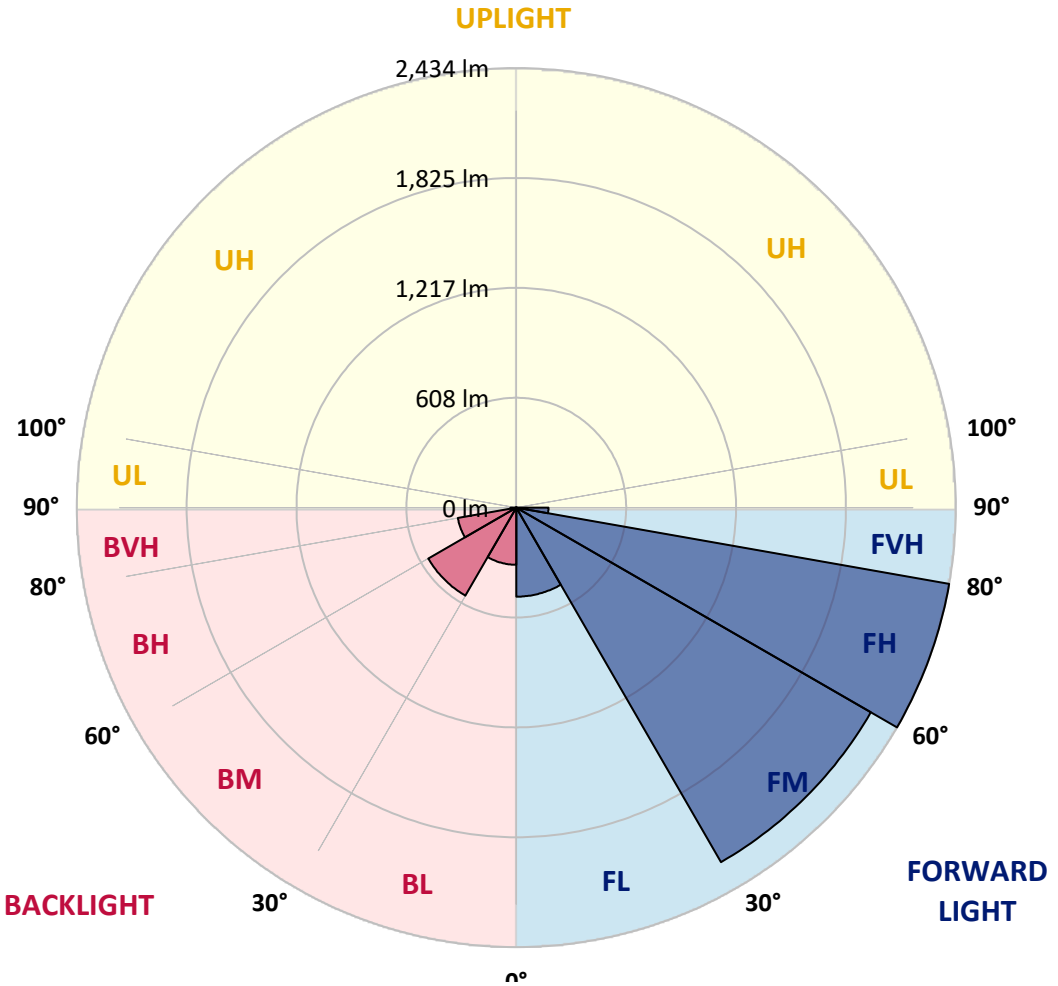
Scaled Data Report

REPORT NUMBER: P1201989
CATALOG NUMBER: GWC-SB1C-830-U-SL3

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 493.0 | 7.5 | | | |
| FM | (30°-60°) | 2266.9 | 34.3 | | | |
| FH | (60°-80°) | 2433.8 | 36.8 | | | G2/5000 |
| FVH | (80°-90°) | 178.2 | 2.7 | | | G2/225 |
| BL | (0°-30°) | 316.5 | 4.8 | B1/500 | | |
| BM | (30°-60°) | 562.9 | 8.5 | B1/1000 | | |
| BH | (60°-80°) | 328.6 | 5.0 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 32.2 | 0.5 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B1-U0-G2**
Type IV Medium



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 59° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1213.6 | 1213.6 | 1213.6 | 1213.6 | 1213.6 | 1213.6 | 1213.6 | *1213.6* | 1213.6 | 1213.6 | 1213.6 |
| 2.5° | 1223.9 | 1219.7 | 1223.9 | 1222.2 | 1221.4 | 1220.0 | 1220.4 | *1222.9* | 1221.4 | 1223.2 | 1217.2 |
| 5° | 1215.8 | 1213.3 | 1217.5 | 1216.5 | 1221.1 | 1221.8 | 1226.4 | *1229.3* | 1231.0 | 1231.4 | 1226.8 |
| 7.5° | 1202.2 | 1199.7 | 1205.8 | 1210.8 | 1220.7 | 1223.6 | 1233.2 | *1237.8* | 1240.3 | 1244.6 | 1237.8 |
| 10° | 1152.8 | 1151.7 | 1166.7 | 1185.5 | 1209.0 | 1223.6 | 1238.2 | *1246.0* | 1249.9 | 1261.3 | 1253.5 |
| 12.5° | 1065.3 | 1066.7 | 1086.3 | 1122.6 | 1169.5 | 1216.5 | 1243.9 | *1255.2* | 1261.3 | 1275.5 | 1272.0 |
| 15° | 981.7 | 981.4 | 1002.7 | 1041.5 | 1107.3 | 1185.2 | 1246.7 | *1266.3* | 1276.6 | 1297.6 | 1294.7 |
| 17.5° | 933.3 | 931.9 | 946.8 | 976.4 | 1037.6 | 1137.1 | 1239.6 | *1272.3* | 1294.4 | 1320.7 | 1318.2 |
| 20° | 924.4 | 921.6 | 929.4 | 944.0 | 987.4 | 1084.5 | 1221.1 | *1272.3* | 1308.6 | 1342.7 | 1341.3 |
| 22.5° | 956.8 | 952.2 | 949.0 | 947.2 | 966.4 | 1041.1 | 1200.1 | *1268.0* | 1329.6 | 1374.4 | 1371.9 |
| 25° | 1021.9 | 1014.8 | 998.4 | 982.4 | 976.7 | 1021.5 | 1181.6 | *1267.0* | 1360.9 | 1417.1 | 1407.8 |
| 27.5° | 1127.2 | 1118.3 | 1085.2 | 1046.8 | 1012.3 | 1031.5 | 1173.4 | *1273.4* | 1395.4 | 1462.2 | 1443.7 |
| 30° | 1257.7 | 1248.1 | 1206.5 | 1147.5 | 1085.6 | 1068.5 | 1183.7 | *1292.2* | 1439.5 | 1522.4 | 1486.1 |
| 32.5° | 1374.7 | 1364.1 | 1328.5 | 1268.4 | 1184.8 | 1132.5 | 1216.5 | *1328.2* | 1508.8 | 1605.9 | 1549.7 |
| 35° | 1478.6 | 1466.2 | 1434.1 | 1378.7 | 1306.5 | 1222.5 | 1275.5 | *1391.8* | 1607.4 | 1741.8 | 1636.2 |
| 37.5° | 1580.3 | 1565.8 | 1530.9 | 1472.2 | 1421.7 | 1342.4 | 1357.0 | *1473.6* | 1738.3 | 1906.9 | 1750.7 |
| 40° | 1694.2 | 1673.2 | 1630.8 | 1572.9 | 1523.8 | 1482.9 | 1464.0 | *1573.9* | 1871.3 | 2091.1 | 1893.7 |
| 42.5° | 1804.4 | 1784.5 | 1734.0 | 1684.6 | 1623.0 | 1611.3 | 1588.2 | *1691.3* | 2016.8 | 2293.5 | 2038.8 |
| 45° | 1923.2 | 1899.4 | 1838.2 | 1775.6 | 1736.8 | 1696.6 | 1708.4 | *1808.7* | 2159.4 | 2499.8 | 2191.1 |
| 47.5° | 2034.6 | 2007.9 | 1935.7 | 1866.0 | 1844.6 | 1768.5 | 1818.6 | *1937.8* | 2307.7 | 2708.9 | 2341.9 |
| 50° | 2094.7 | 2068.3 | 2008.2 | 1945.3 | 1928.6 | 1857.1 | 1938.2 | *2079.7* | 2463.2 | 2917.4 | 2486.6 |
| 52.5° | 2144.8 | 2116.4 | 2037.8 | 2002.9 | 1997.9 | 1953.5 | 2085.4 | *2241.9* | 2618.6 | 3101.6 | 2626.4 |
| 55° | 2198.2 | 2166.5 | 2066.2 | 2034.9 | 2057.7 | 2061.6 | 2260.1 | *2425.8* | 2782.9 | 3281.2 | 2758.4 |
| 57.5° | 2259.7 | 2219.5 | 2093.6 | 2061.9 | 2116.0 | 2188.2 | 2460.7 | *2616.5* | 2944.4 | 3447.7 | 2875.8 |
| 60° | 2317.7 | 2277.1 | 2146.2 | 2105.0 | 2179.0 | 2335.1 | 2690.8 | *2847.3* | 3127.2 | 3596.0 | 2986.7 |
| 62.5° | 2329.1 | 2295.6 | 2188.2 | 2187.9 | 2264.3 | 2506.6 | 2963.3 | *3080.3* | 3286.9 | 3742.6 | 3086.3 |
| 65° | 2132.0 | 2111.0 | 2047.4 | 2184.7 | 2386.7 | 2753.4 | 3266.7 | *3378.4* | 3490.0 | 3870.6 | 3173.8 |
| 67.5° | 1622.7 | 1625.5 | 1620.9 | 1885.9 | 2287.8 | 3108.0 | 3705.9 | *3697.4* | 3740.8 | 4014.3 | 3274.5 |
| 70° | 742.0 | 758.7 | 867.5 | 1301.8 | 1832.9 | 3148.9 | 4432.3 | *4321.6* | 4055.6 | 4200.4 | 3361.6 |
| 72.5° | 400.9 | 413.7 | 458.1 | 630.6 | 1101.9 | 2799.6 | 4975.1 | *5053.7* | 4474.2 | 4325.6 | 3266.0 |
| 75° | *294.2* | *301.3* | *332.2* | *400.9* | *462.8* | *2080.8* | *4780.5* | *5183.8* | *4526.5* | *4033.5* | *2820.3* |
| 77.5° | 220.2 | 223.4 | 248.6 | 317.6 | 236.9 | 1097.0 | 3819.8 | *4293.2* | 3874.9 | 3314.0 | 2083.3 |
| 80° | 159.7 | 163.3 | 182.1 | 238.3 | 166.1 | 401.2 | 2622.9 | *3013.4* | 2653.8 | 2112.4 | 1038.3 |
| 82.5° | 110.3 | 111.7 | 119.9 | 162.2 | 116.0 | 155.8 | 1488.2 | *1767.1* | 1481.5 | 741.3 | 280.3 |
| 85° | 66.5 | 68.3 | 71.8 | 94.6 | 65.8 | 74.0 | 642.4 | *664.4* | 442.8 | 177.1 | 87.1 |
| 87.5° | 27.4 | 29.2 | 32.0 | 39.8 | 26.0 | 20.6 | 106.0 | *133.0* | 82.9 | 51.9 | 27.0 |
| 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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Scaled Data Report

REPORT NUMBER: P1201989
CATALOG NUMBER: GWC-SB1C-830-U-SL3

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1213.6 | 1213.6 | 1213.6 | 1213.6 | 1213.6 | 1213.6 | 1213.6 | 1213.6 | 1213.6 | 1213.6 | 1213.6 |
| 2.5° | 1215.4 | 1212.9 | 1206.1 | 1196.9 | 1188.4 | 1177.7 | 1173.1 | 1169.2 | 1165.6 | 1158.8 | 1155.6 |
| 5° | 1222.9 | 1216.1 | 1198.0 | 1174.5 | 1147.8 | 1118.6 | 1090.2 | 1070.6 | 1053.9 | 1041.5 | 1031.1 |
| 7.5° | 1234.2 | 1221.4 | 1188.4 | 1140.3 | 1079.2 | 1016.6 | 960.0 | 919.8 | 889.6 | 878.6 | 859.3 |
| 10° | 1246.0 | 1230.7 | 1173.1 | 1088.4 | 982.8 | 886.4 | 811.3 | 770.1 | 745.9 | 738.1 | 726.0 |
| 12.5° | 1259.9 | 1237.4 | 1149.2 | 1016.2 | 875.0 | 769.4 | 703.9 | 679.7 | 667.3 | 663.0 | 664.1 |
| 15° | 1280.1 | 1243.1 | 1113.3 | 925.9 | 772.2 | 684.0 | 641.7 | 624.9 | 618.5 | 618.2 | 619.6 |
| 17.5° | 1295.4 | 1244.2 | 1057.5 | 829.1 | 693.2 | 632.4 | 597.6 | 591.2 | 595.4 | 601.8 | 604.3 |
| 20° | 1312.5 | 1234.6 | 984.2 | 740.9 | 637.8 | 587.2 | 572.7 | 576.9 | 587.2 | 596.5 | 599.7 |
| 22.5° | 1324.6 | 1217.2 | 895.6 | 672.3 | 589.7 | 561.3 | 560.6 | 569.5 | 575.2 | 579.8 | 582.3 |
| 25° | 1335.3 | 1187.7 | 801.7 | 614.6 | 550.3 | 545.6 | 553.5 | 550.6 | 546.7 | 550.6 | 553.1 |
| 27.5° | 1343.1 | 1141.1 | 717.8 | 564.1 | 522.5 | 535.0 | 530.3 | 523.9 | 523.6 | 525.7 | 529.3 |
| 30° | 1340.6 | 1078.8 | 648.8 | 516.1 | 502.9 | 515.0 | 504.0 | 502.9 | 501.9 | 502.9 | 506.9 |
| 32.5° | 1340.6 | 1008.0 | 595.8 | 483.0 | 490.5 | 485.9 | 484.8 | 482.3 | 478.0 | 477.7 | 482.3 |
| 35° | 1348.1 | 937.2 | 550.3 | 465.2 | 480.2 | 469.2 | 469.9 | 463.8 | 454.9 | 450.7 | 454.9 |
| 37.5° | 1363.4 | 880.3 | 505.1 | 456.7 | 462.0 | 461.7 | 458.8 | 448.5 | 432.9 | 419.4 | 424.0 |
| 40° | 1400.4 | 863.6 | 474.1 | 452.8 | 453.5 | 457.8 | 450.3 | 430.4 | 394.8 | 372.8 | 375.6 |
| 42.5° | 1458.3 | 891.7 | 467.4 | 443.2 | 447.8 | 452.1 | 437.5 | 391.3 | 366.0 | 352.8 | 352.8 |
| 45° | 1532.0 | 940.8 | 482.0 | 429.3 | 434.3 | 441.8 | 398.4 | 376.3 | 364.9 | 365.3 | 367.1 |
| 47.5° | 1625.2 | 992.4 | 509.0 | 417.2 | 414.7 | 419.0 | 372.4 | 358.9 | 343.2 | 347.2 | 357.1 |
| 50° | 1732.9 | 1044.7 | 534.6 | 400.9 | 393.0 | 379.2 | 355.7 | 342.9 | 323.0 | 313.7 | 316.2 |
| 52.5° | 1849.6 | 1095.2 | 544.9 | 380.9 | 369.6 | 353.6 | 344.3 | 328.7 | 304.5 | 289.2 | 288.8 |
| 55° | 1960.2 | 1141.1 | 533.5 | 357.1 | 346.1 | 333.6 | 332.2 | 322.6 | 296.6 | 275.3 | 275.3 |
| 57.5° | 2064.8 | 1179.5 | 505.1 | 332.9 | 322.3 | 314.8 | 324.4 | 319.8 | 287.0 | 259.7 | 258.2 |
| 60° | 2153.4 | 1205.8 | 463.8 | 308.4 | 300.9 | 297.0 | 311.6 | 310.2 | 273.5 | 242.9 | 241.9 |
| 62.5° | 2223.8 | 1216.1 | 418.3 | 284.9 | 283.1 | 276.0 | 293.8 | 293.8 | 256.5 | 226.6 | 225.5 |
| 65° | 2278.9 | 1206.1 | 372.1 | 261.8 | 265.3 | 254.7 | 272.1 | 270.0 | 238.3 | 212.0 | 210.6 |
| 67.5° | 2327.6 | 1173.4 | 320.8 | 239.0 | 247.2 | 233.7 | 249.3 | 244.4 | 218.4 | 197.4 | 196.0 |
| 70° | 2349.3 | 1097.3 | 262.5 | 216.3 | 226.2 | 213.1 | 226.6 | 217.3 | 196.0 | 181.8 | 178.9 |
| 72.5° | 2175.1 | 912.0 | 206.7 | 192.4 | 201.0 | 190.3 | 202.0 | 191.4 | 171.8 | 165.4 | 160.1 |
| 75° | *1799.4* | *684.3* | *159.0* | *166.5* | *172.9* | *164.7* | *172.5* | *164.7* | *146.9* | *151.5* | *138.4* |
| 77.5° | 1306.8 | 462.0 | 121.6 | 139.1 | 141.9 | 137.7 | 144.4 | 135.5 | 119.5 | 118.4 | 113.1 |
| 80° | 649.8 | 270.7 | 95.3 | 109.9 | 108.8 | 106.0 | 113.8 | 109.6 | 96.0 | 101.7 | 100.7 |
| 82.5° | 188.2 | 116.0 | 69.4 | 77.2 | 75.1 | 75.8 | 81.5 | 83.6 | 125.2 | 124.1 | 127.0 |
| 85° | 59.0 | 45.5 | 41.6 | 43.0 | 40.9 | 42.0 | 48.0 | 95.3 | 88.2 | 51.6 | 55.8 |
| 87.5° | 15.3 | 15.7 | 10.3 | 11.0 | 11.4 | 13.5 | 15.3 | 58.0 | 27.7 | 18.1 | 19.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |


HS
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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

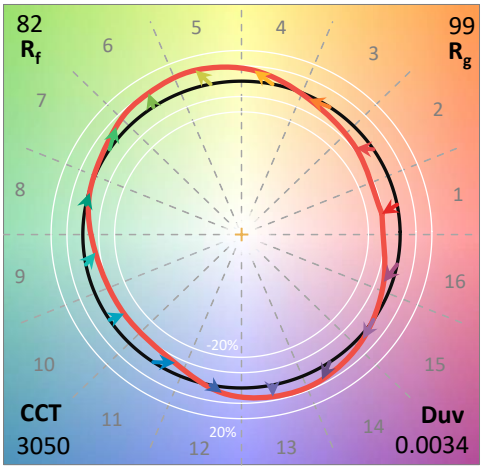
## Test Information

| | |
|---|---|
| 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

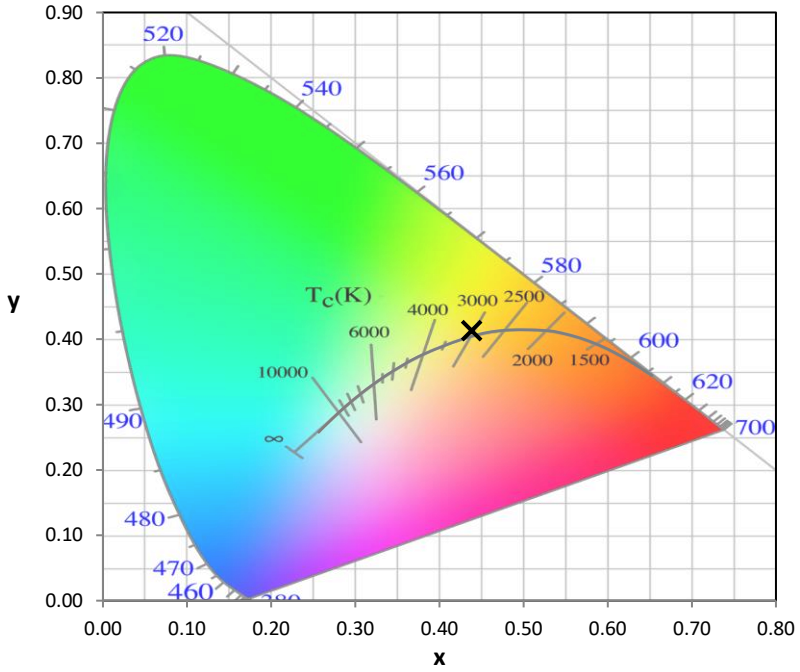
| | |
|---|---|
| Stabilization Time: | 20M |
| Operation Time: | 1H 20M |
| Sphere Temperature (°C): | 24.2 |

REPORT NUMBER: SP1-2408-195-9

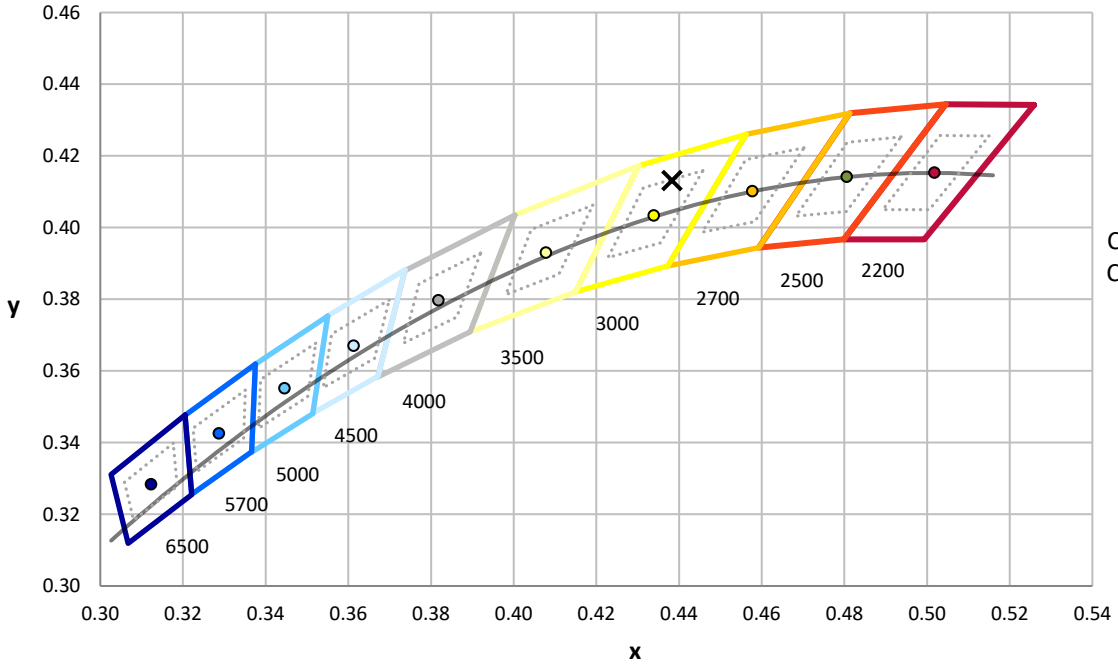
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

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## CIE 1931 Chromaticity Diagram




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

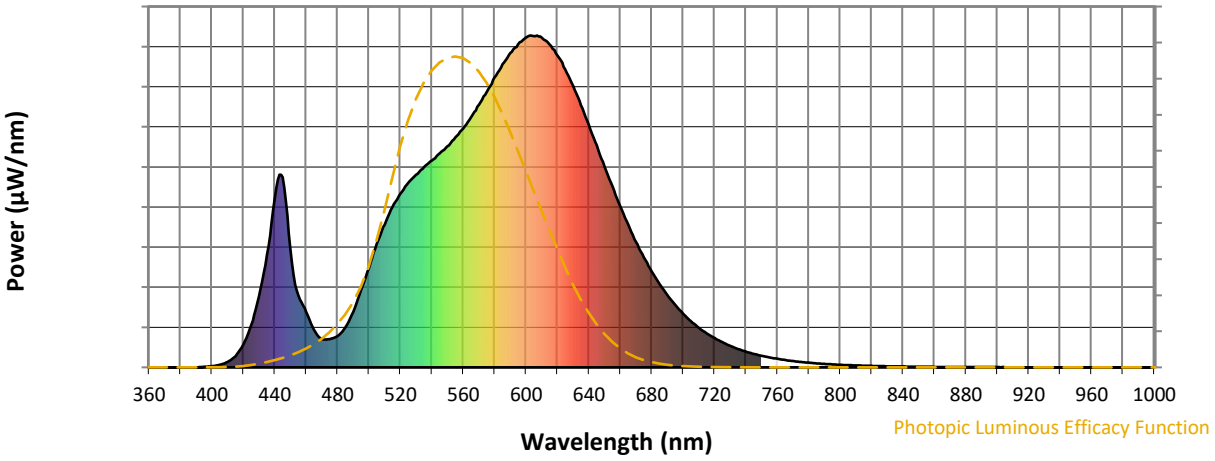



CCT = 3050K
CIE x = 0.4383
CIE y = 0.4131
Duv = 0.0034

Point lies inside the ANSI 3000K 4-step quadrangle

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## Photopic Flux vs. Wavelength

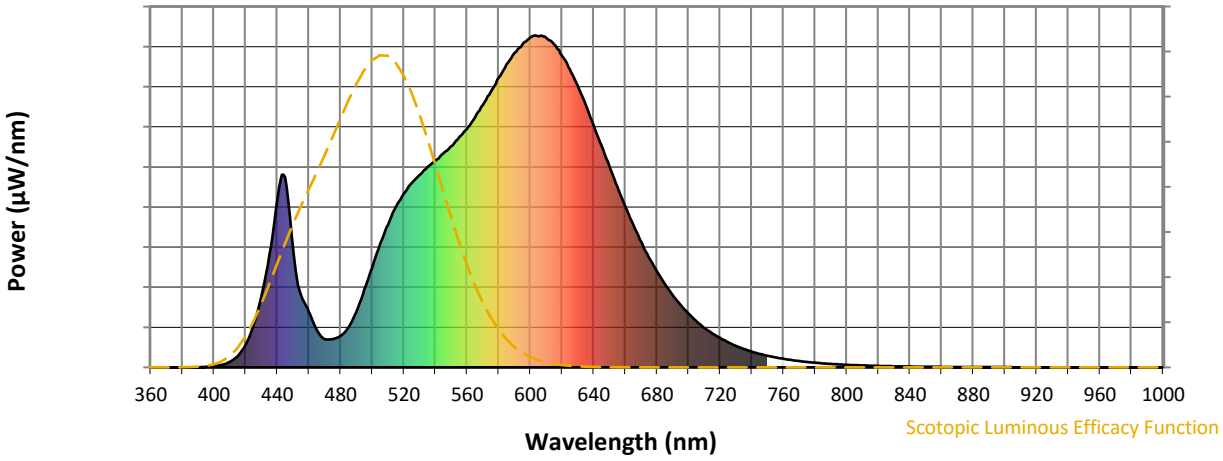



## Photopic Lumens: NR

| 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 | | | |

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## Scotopic Flux vs. Wavelength

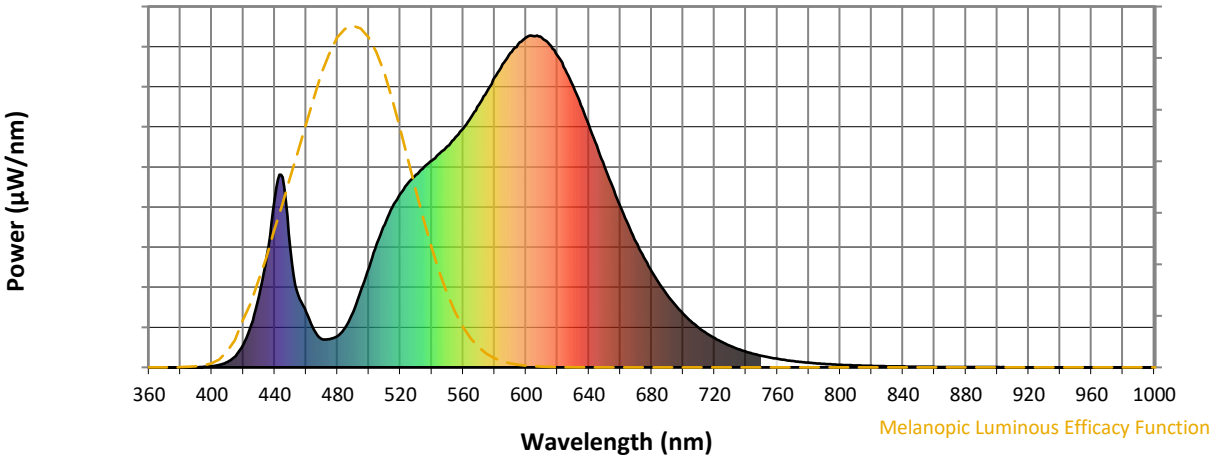



**Scotopic Lumens: NR** **S/P: 1.27**

| 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 | | | |

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## 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 | | | |

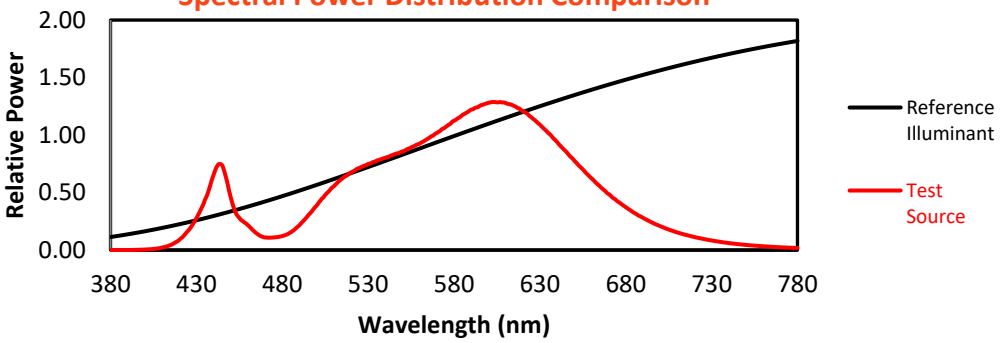
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# TM-30-18

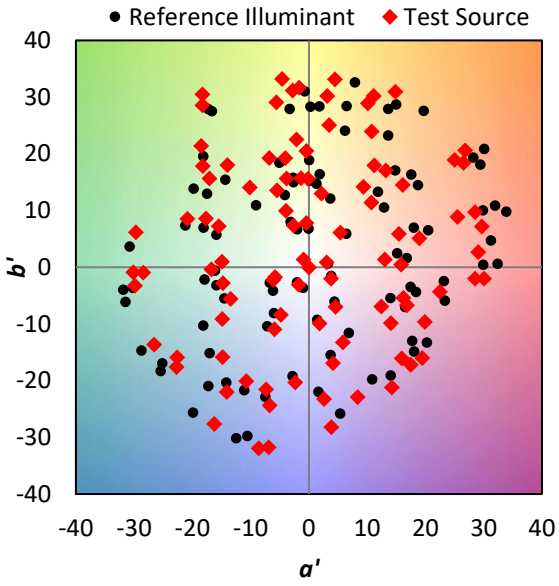
## Summary

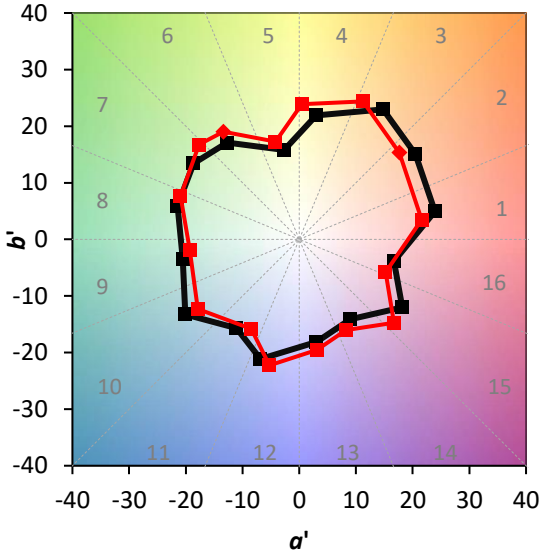
$R_f$ = 81.5
$R_g$ = 99.2
CIE $R_a$ = 81.0
$R_9$ = 7.1

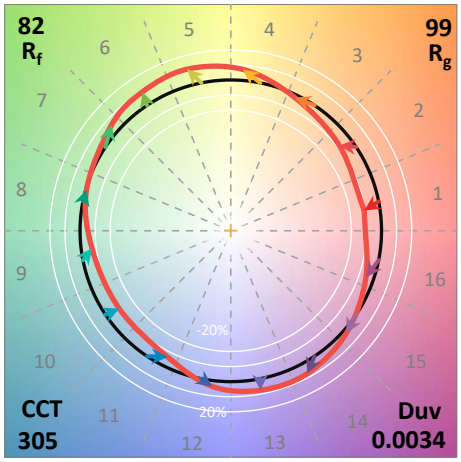
## Spectral Power Distribution Comparison

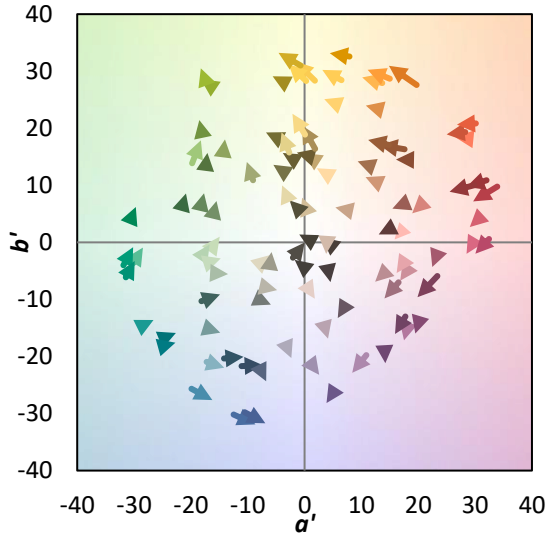



## Color Vector Graphics



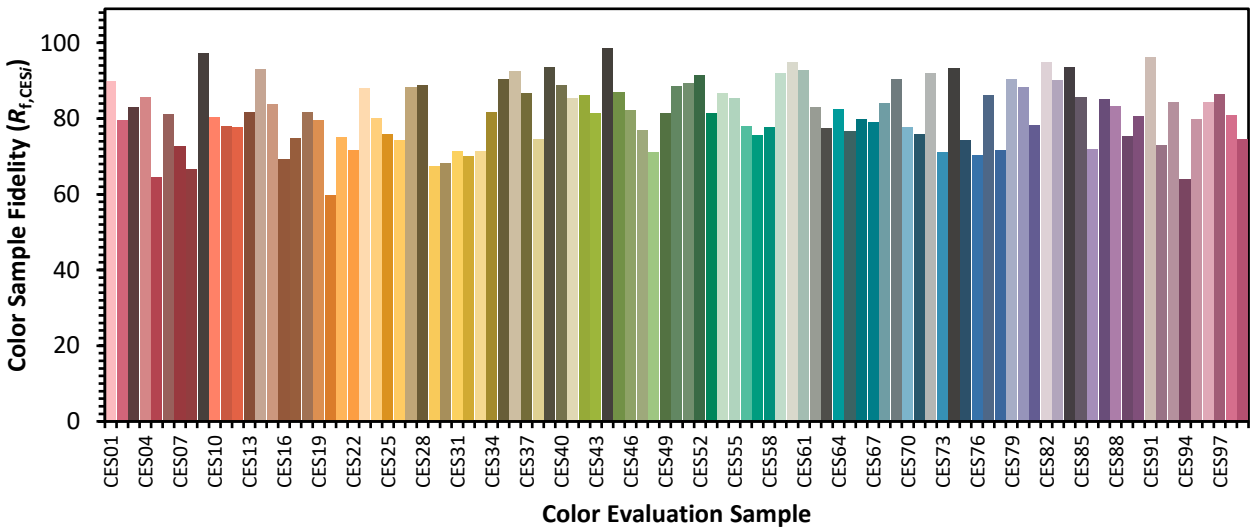



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# TM-30-18

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

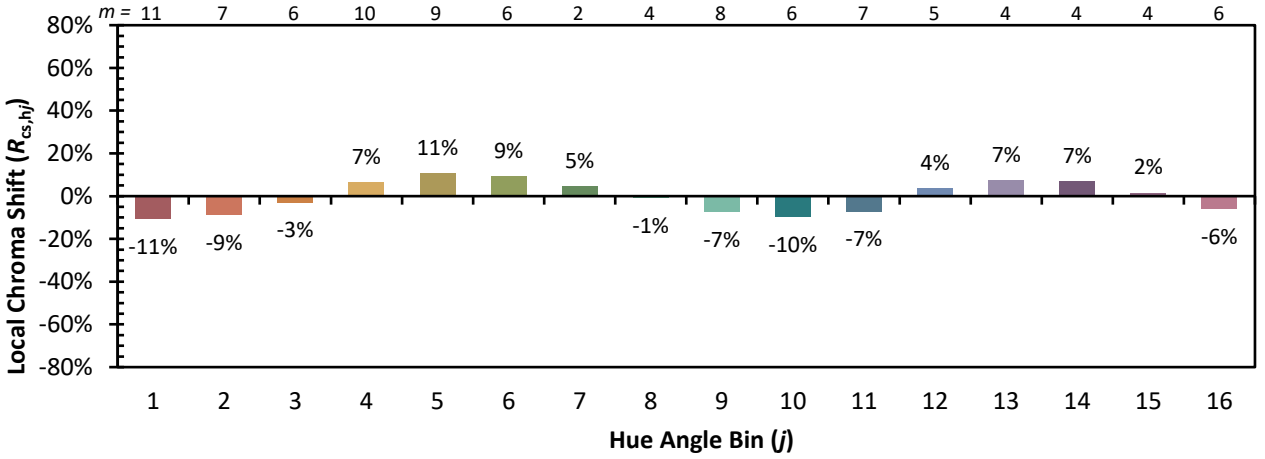
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 74 | CES51 = 89 | CES76 = 70 |
| CES02 = 63 | CES27 = 88 | CES52 = 92 | CES77 = 86 |
| CES03 = 31 | CES28 = 89 | CES53 = 81 | CES78 = 72 |
| CES04 = 70 | CES29 = 67 | CES54 = 87 | CES79 = 90 |
| CES05 = 50 | CES30 = 68 | CES55 = 85 | CES80 = 88 |
| CES06 = 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 | |

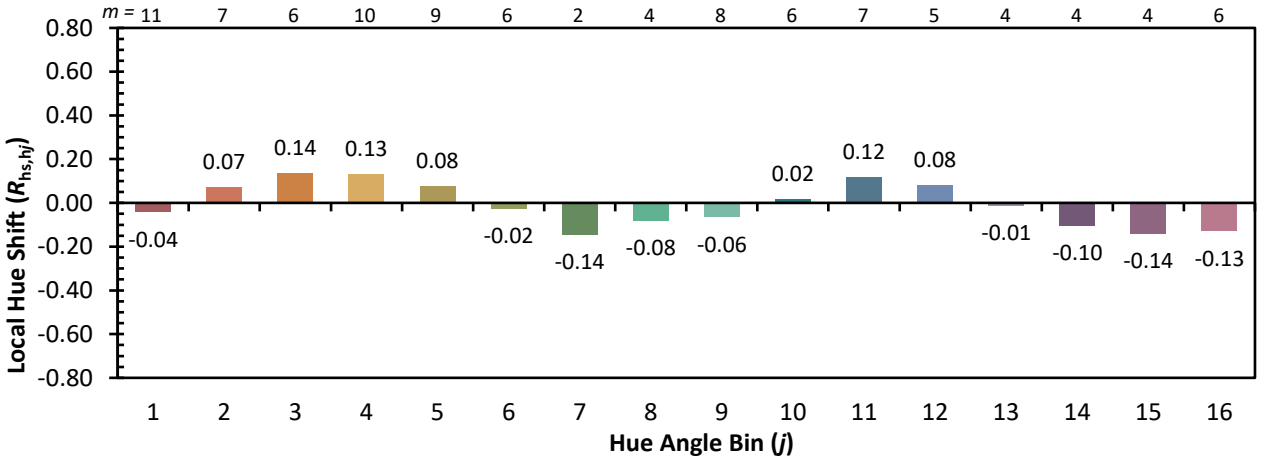


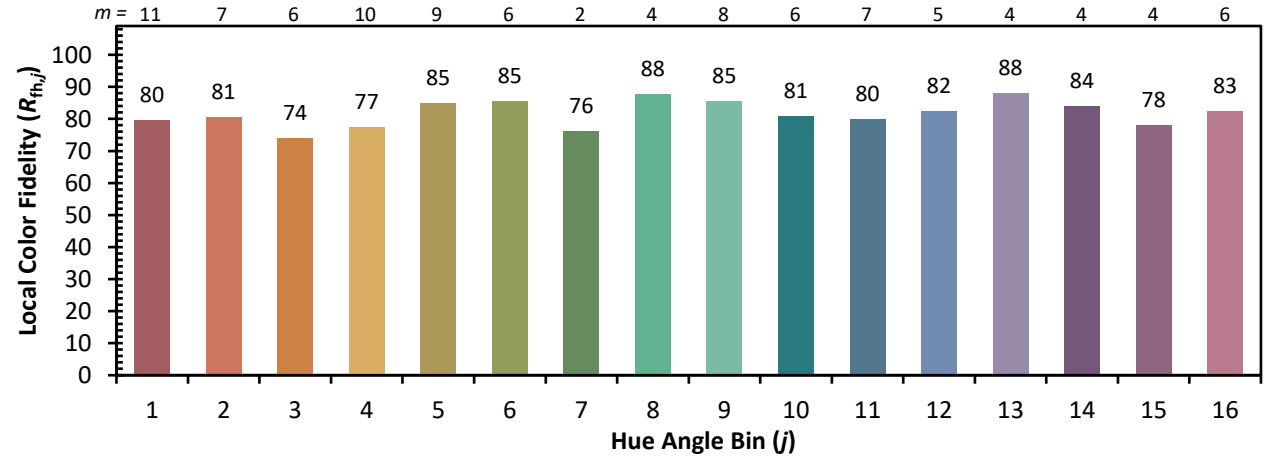
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**TM-30-18**

## Color Rendition by Hue-Angle Bin



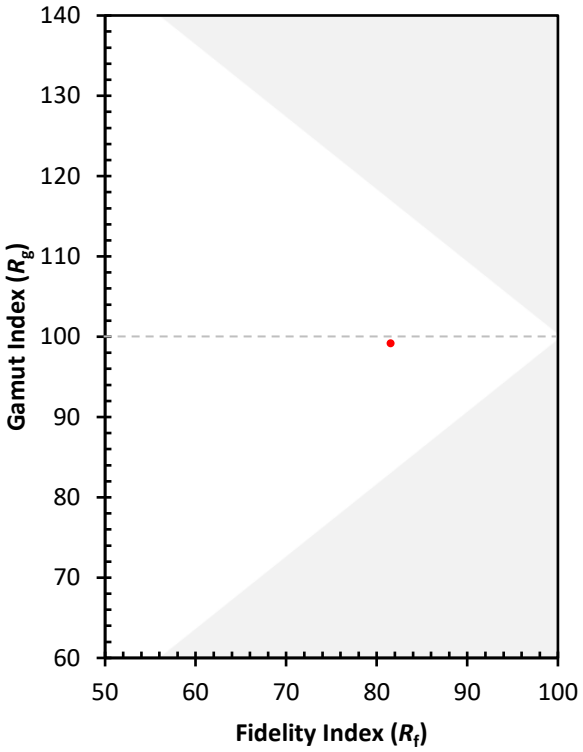



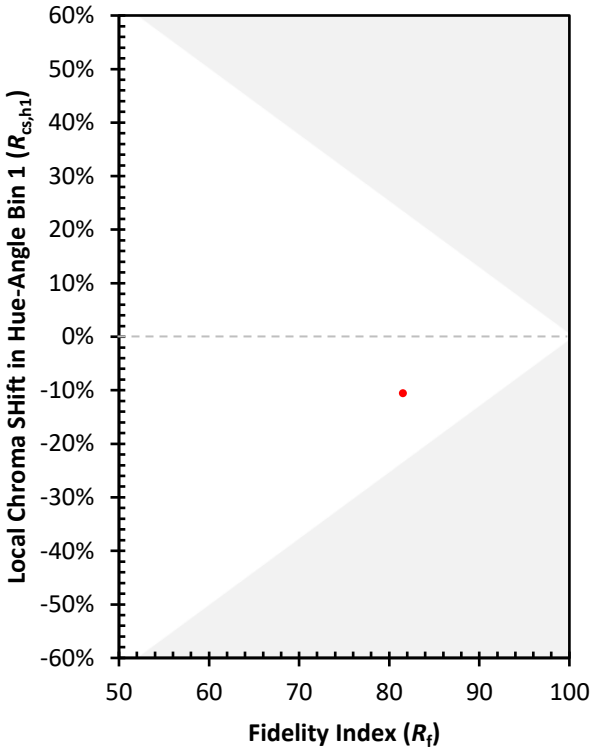



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## Measure Comparisons




(END OF REPORT)