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

Cooper Lighting Solutions Photometric Lab
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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: P1198925

Luminaire Tested: GPC-SB1D-830-U-T3

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: | P1198925 |
| | TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2405-108-5) |
| Test Lab: | INNOVATION CENTER |
| Issue Date: | 3/15/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GPC-SB1D-830-U-T3 |
| Description: | GALLEON PEDESTRIAN LUMINAIRE |
| | (1) 80 CRI, 3000K, 900mA LIGHTSQUARE WITH 26 LEDS AND TYPE III OPTICS |
| Light Source: | - |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 9199 lumens |
| Efficiency: | N/A |
| Efficacy: | 115.6 lumens/watt |
| Luminous Opening: | Rectangular (W 0.5' x L: 0.5' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B2 - U0 - G2 |

| | |
|---|---|
| Input Watts (W): | 79.6 |
| Input Voltage (V): | 120.0 |
| Input Current (Ain): | 0.638 |
| Voltage Rise (V): | NR |
| Power Factor: | 0.997 |
| Total Harmonic Distortion (THDi): | 6.673 |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

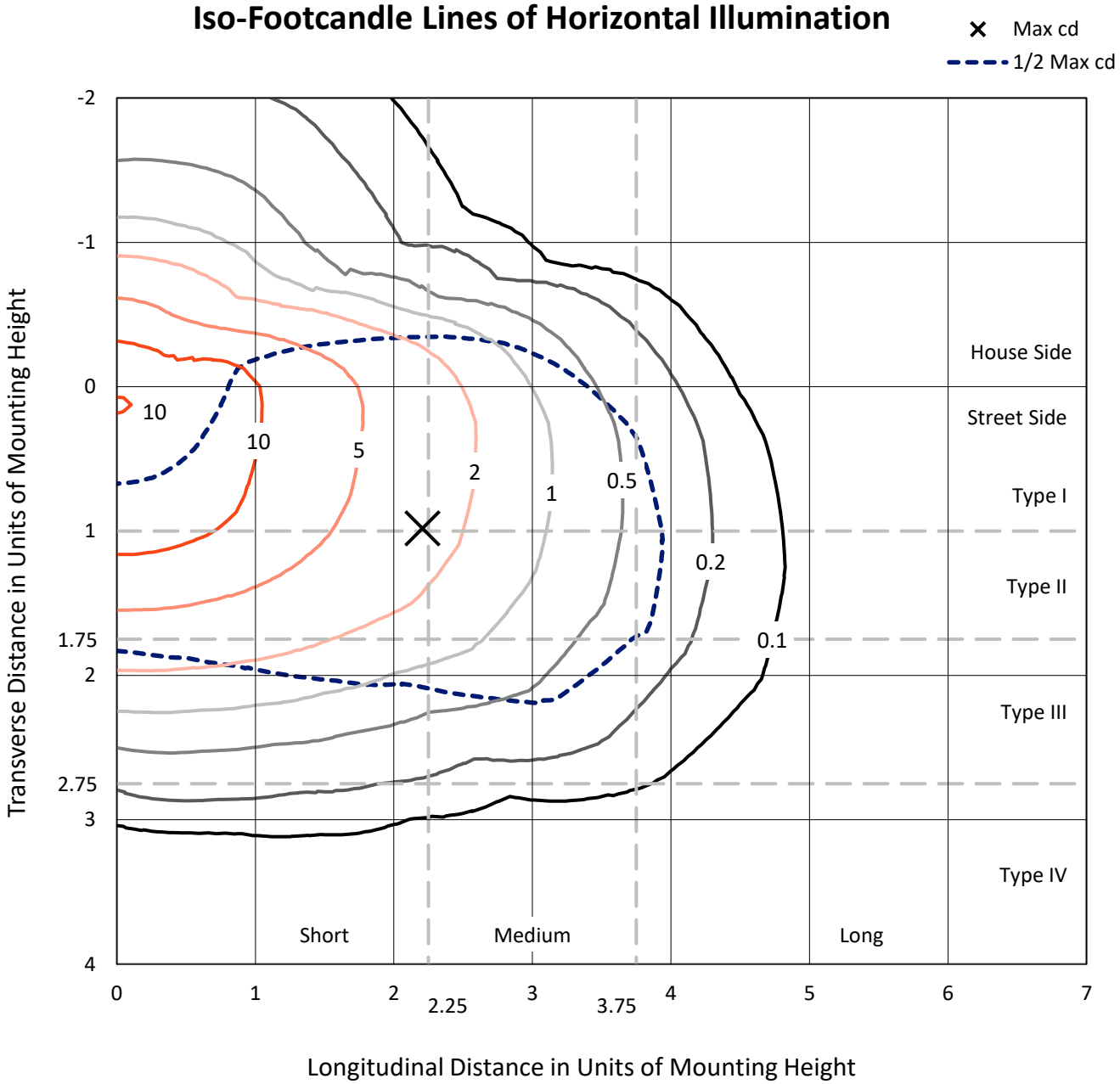


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Scaled Data Report

REPORT NUMBER: P1198925
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## Iso-Footcandle Lines of Horizontal Illumination



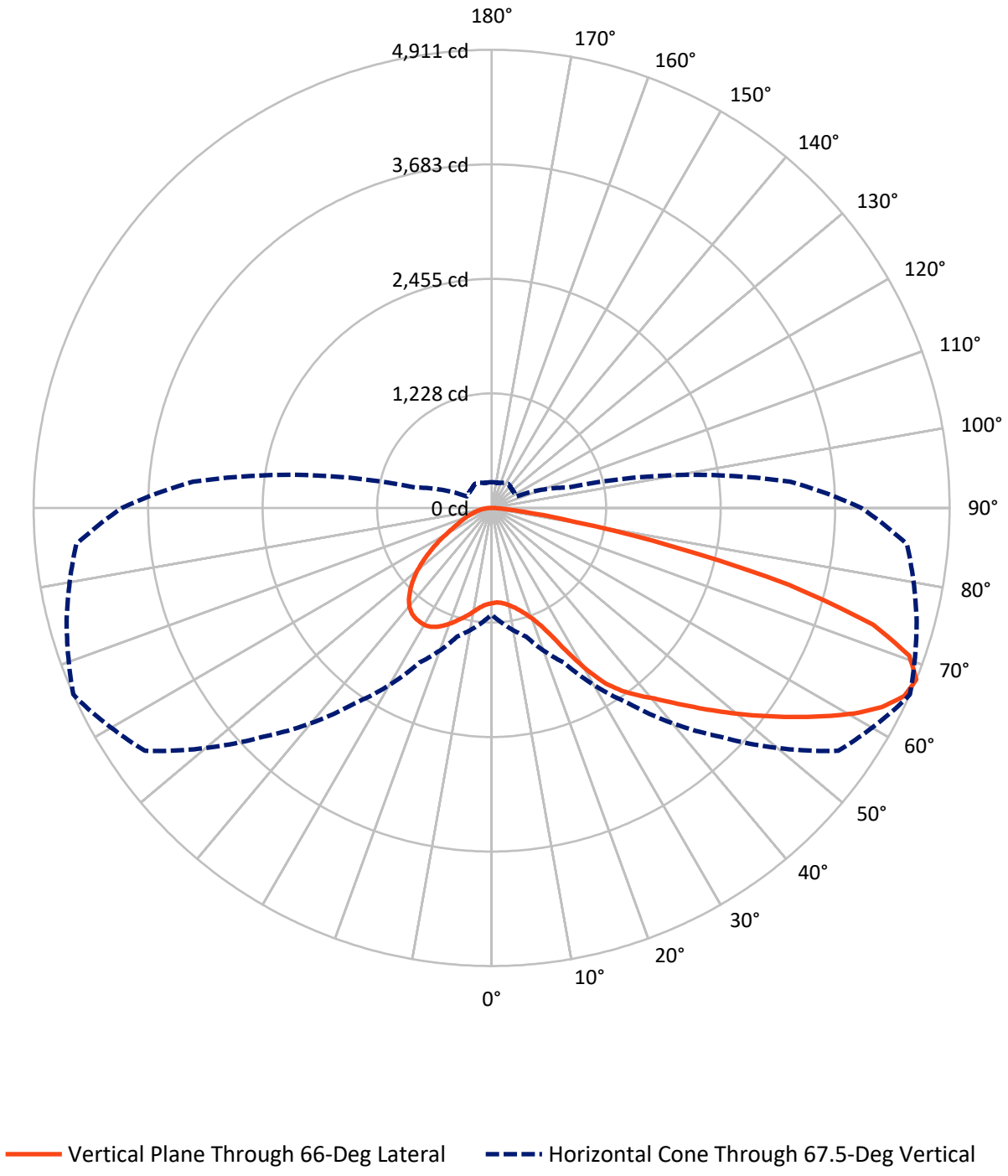

Based on 10 foot mounting height. Maximum calculated value = 14.5 fc
Type III - Short - N/A

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## Luminous Intensity Polar Plot



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Scaled Data Report

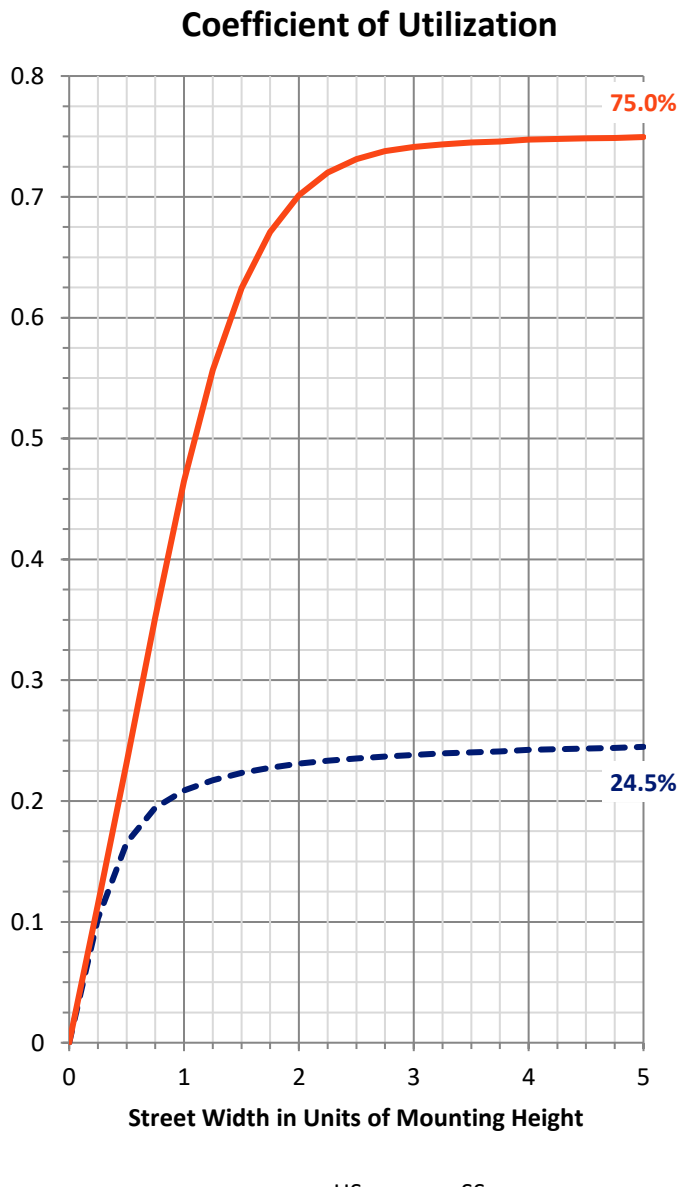
REPORT NUMBER: P1198925
CATALOG NUMBER: GPC-SB1D-830-U-T3

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 2287.3 | 0.0 | 2287.3 |
| | % Fixture | 24.9 | 0.0 | 24.9 |
| **Street Side** | Lumens | 6911.7 | 0.0 | 6911.7 |
| | % Fixture | 75.1 | 0.0 | 75.1 |
| **Total** | Lumens | 9199.0 | 0.0 | 9199.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 101.2 | 1.1 |
| 10°-20° | 334.2 | 3.6 |
| 20°-30° | 644.2 | 7.0 |
| 30°-40° | 1129.5 | 12.3 |
| 40°-50° | 1679.2 | 18.3 |
| 50°-60° | 2128.5 | 23.1 |
| 60°-70° | 2082.7 | 22.6 |
| 70°-80° | 993.5 | 10.8 |
| 80°-90° | 106.2 | 1.2 |
| 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° | 9199.0 | 100.0 |
| 0°-180° | 9199.0 | 100.0 |



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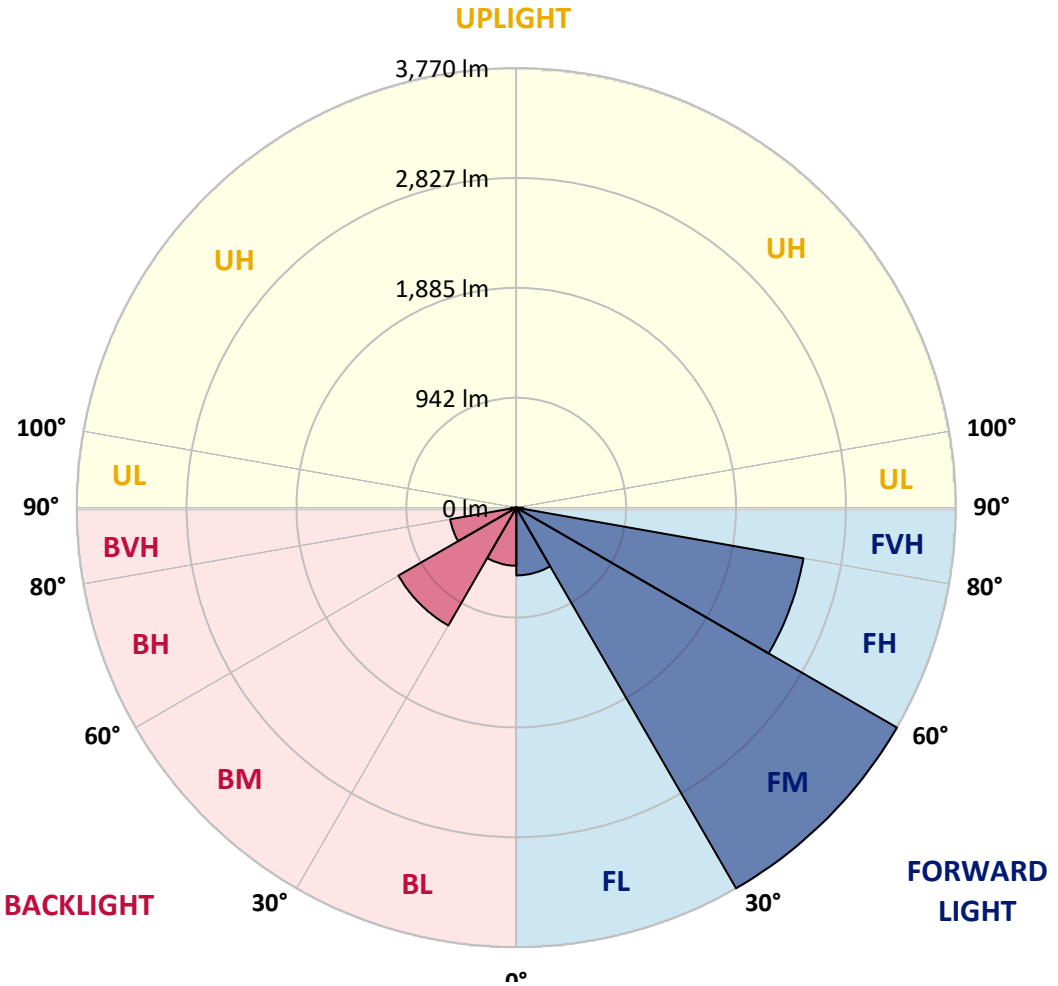
Scaled Data Report

REPORT NUMBER: P1198925
CATALOG NUMBER: GPC-SB1D-830-U-T3

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 581.3 | 6.3 | | | |
| FM | (30°-60°) | 3769.7 | 41.0 | | | |
| FH | (60°-80°) | 2500.5 | 27.2 | | | G2/5000 |
| FVH | (80°-90°) | 60.2 | 0.7 | | | G1/100 |
| BL | (0°-30°) | 498.3 | 5.4 | B1/500 | | |
| BM | (30°-60°) | 1167.5 | 12.7 | B2/2500 | | |
| BH | (60°-80°) | 575.6 | 6.3 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 46.0 | 0.5 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B2-U0-G2**
Type III Short



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 66° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1020.3 | 1020.3 | 1020.3 | 1020.3 | 1020.3 | 1020.3 | 1020.3 | 1020.3 | *1020.3* | 1020.3 | 1020.3 |
| 2.5° | 1009.7 | 1015.5 | 1014.0 | 1011.6 | 1011.1 | 1012.1 | 1013.5 | 1015.0 | *1014.5* | 1016.9 | 1020.8 |
| 5° | 1006.8 | 1012.6 | 1012.1 | 1012.1 | 1014.0 | 1017.9 | 1020.3 | 1022.7 | *1020.3* | 1023.2 | 1028.5 |
| 7.5° | 1008.7 | 1013.0 | 1015.0 | 1016.9 | 1021.7 | 1029.0 | 1034.8 | 1040.1 | *1037.2* | 1040.6 | 1047.4 |
| 10° | 1033.3 | 1036.7 | 1038.7 | 1038.7 | 1042.0 | 1050.3 | 1056.1 | 1065.7 | *1063.3* | 1068.6 | 1077.3 |
| 12.5° | 1078.3 | 1081.7 | 1081.7 | 1079.7 | 1082.2 | 1087.5 | 1089.4 | 1100.0 | *1095.7* | 1104.4 | 1113.1 |
| 15° | 1133.4 | 1140.2 | 1134.8 | 1131.5 | 1132.4 | 1137.7 | 1137.3 | 1145.5 | *1141.1* | 1148.4 | 1156.1 |
| 17.5° | 1194.3 | 1203.0 | 1194.3 | 1193.8 | 1191.9 | 1197.7 | 1198.2 | 1205.4 | *1197.7* | 1203.0 | 1208.3 |
| 20° | 1266.3 | 1278.4 | 1271.1 | 1273.6 | 1269.2 | 1271.6 | 1274.0 | 1284.7 | *1272.6* | 1276.5 | 1275.0 |
| 22.5° | 1367.8 | 1382.3 | 1374.6 | 1383.7 | 1380.8 | 1378.9 | 1378.4 | 1397.3 | *1378.4* | 1379.9 | 1365.9 |
| 25° | 1515.7 | 1533.1 | 1519.6 | 1532.1 | 1532.1 | 1538.4 | 1545.7 | 1569.8 | *1538.4* | 1529.2 | 1493.0 |
| 27.5° | 1734.2 | 1751.6 | 1725.0 | 1732.7 | 1730.3 | 1745.8 | 1738.0 | 1798.0 | *1764.1* | 1749.1 | 1676.2 |
| 30° | 1997.1 | 2028.0 | 1977.7 | 1975.8 | 1973.4 | 1998.0 | 2009.2 | 2048.8 | *2014.5* | 1999.5 | 1911.5 |
| 32.5° | 2281.3 | 2313.7 | 2253.7 | 2236.3 | 2227.1 | 2242.1 | 2232.9 | 2264.8 | *2241.2* | 2218.0 | 2109.2 |
| 35° | 2581.9 | 2613.8 | 2556.8 | 2522.9 | 2486.2 | 2454.8 | 2421.9 | 2430.1 | *2407.9* | 2372.6 | 2260.0 |
| 37.5° | 2866.1 | 2924.6 | 2864.2 | 2827.9 | 2760.2 | 2698.9 | 2607.0 | 2568.9 | *2548.1* | 2515.7 | 2402.1 |
| 40° | 3155.6 | 3189.0 | 3143.0 | 3112.1 | 3038.6 | 2942.5 | 2795.5 | 2714.8 | *2686.8* | 2655.4 | 2559.2 |
| 42.5° | 3368.7 | 3400.6 | 3376.0 | 3354.7 | 3297.2 | 3185.6 | 2995.6 | 2894.6 | *2854.0* | 2818.7 | 2737.0 |
| 45° | 3537.9 | 3561.6 | 3546.1 | 3553.9 | 3529.2 | 3420.9 | 3203.0 | 3087.5 | *3045.4* | 3002.4 | 2938.1 |
| 47.5° | 3606.1 | 3631.2 | 3655.8 | 3701.8 | 3743.8 | 3664.1 | 3425.8 | 3296.2 | *3251.8* | 3207.8 | 3144.5 |
| 50° | 3598.3 | 3623.9 | 3695.5 | 3793.1 | 3923.6 | 3897.0 | 3660.7 | 3518.6 | *3477.5* | 3427.2 | 3368.7 |
| 52.5° | 3536.5 | 3565.5 | 3657.3 | 3819.7 | 4027.5 | 4071.5 | 3899.9 | 3748.2 | *3709.5* | 3649.6 | 3591.1 |
| 55° | 3374.1 | 3391.5 | 3529.2 | 3759.3 | 4052.2 | 4193.3 | 4134.3 | 3992.7 | *3954.0* | 3870.4 | 3806.6 |
| 57.5° | 3073.0 | 3098.1 | 3298.7 | 3596.4 | 3990.3 | 4275.9 | 4340.2 | 4249.8 | *4212.6* | 4092.3 | 4025.6 |
| 60° | 2680.0 | 2720.1 | 2949.7 | 3322.8 | 3832.7 | 4275.5 | 4527.3 | 4502.6 | *4471.7* | 4310.7 | 4241.1 |
| 62.5° | 2235.4 | 2281.8 | 2502.6 | 2936.2 | 3557.2 | 4154.1 | 4644.2 | 4714.3 | *4698.4* | 4512.3 | 4423.4 |
| 65° | 1716.8 | 1748.7 | 1968.6 | 2435.9 | 3128.5 | 3893.6 | 4657.8 | 4858.8 | *4861.7* | 4665.5 | 4518.6 |
| 67.5° | *1143.1* | *1234.9* | *1425.8* | *1827.9* | *2554.4* | *3467.8* | *4538.9* | *4882.5* | *4910.5* | *4718.2* | *4470.7* |
| 70° | 557.8 | 678.6 | 865.6 | 1188.0 | 1827.9 | 2814.9 | 4228.1 | 4688.2 | *4750.6* | 4564.5 | 4185.6 |
| 72.5° | 231.5 | 270.7 | 372.6 | 586.3 | 1049.3 | 1899.5 | 3603.6 | 4161.4 | *4276.9* | 4044.4 | 3519.1 |
| 75° | 156.1 | 169.2 | 213.1 | 300.6 | 478.0 | 936.7 | 2598.8 | 3102.9 | *3289.0* | 3054.6 | 2496.8 |
| 77.5° | 120.3 | 128.6 | 155.1 | 210.2 | 284.2 | 354.3 | 1391.0 | 1870.0 | *1966.1* | 1820.2 | 1299.2 |
| 80° | 94.7 | 101.0 | 116.0 | 153.2 | 201.5 | 189.5 | 474.1 | 847.3 | *902.8* | 757.4 | 417.6 |
| 82.5° | 82.2 | 84.6 | 83.1 | 103.9 | 133.9 | 110.7 | 155.6 | 312.7 | *345.1* | 250.4 | 136.3 |
| 85° | 59.4 | 66.2 | 69.1 | 64.3 | 71.0 | 56.1 | 63.8 | 110.7 | *121.8* | 108.7 | 76.8 |
| 87.5° | 24.2 | 35.8 | 44.0 | 41.6 | 26.1 | 15.9 | 19.8 | 32.4 | *37.2* | 40.6 | 25.1 |
| 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: P1198925
CATALOG NUMBER: GPC-SB1D-830-U-T3

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1020.3 | 1020.3 | 1020.3 | 1020.3 | 1020.3 | 1020.3 | 1020.3 | 1020.3 | 1020.3 | 1020.3 | 1020.3 |
| 2.5° | 1021.3 | 1024.6 | 1027.1 | 1030.0 | 1031.9 | 1034.8 | 1040.6 | 1044.0 | 1044.5 | 1046.9 | 1046.4 |
| 5° | 1030.4 | 1035.3 | 1040.6 | 1048.3 | 1057.0 | 1064.3 | 1075.4 | 1083.1 | 1086.0 | 1088.4 | 1088.0 |
| 7.5° | 1050.3 | 1057.0 | 1066.7 | 1080.2 | 1092.8 | 1102.5 | 1116.0 | 1125.2 | 1134.4 | 1137.7 | 1138.2 |
| 10° | 1079.7 | 1089.4 | 1103.4 | 1121.8 | 1135.3 | 1147.9 | 1161.9 | 1169.6 | 1178.8 | 1182.7 | 1184.6 |
| 12.5° | 1116.5 | 1126.6 | 1145.0 | 1170.6 | 1183.2 | 1191.9 | 1196.7 | 1194.8 | 1196.7 | 1200.1 | 1201.1 |
| 15° | 1158.5 | 1169.6 | 1190.4 | 1218.0 | 1226.7 | 1218.9 | 1208.3 | 1198.6 | 1197.2 | 1198.2 | 1201.5 |
| 17.5° | 1208.3 | 1216.5 | 1240.7 | 1263.9 | 1257.6 | 1225.7 | 1202.5 | 1187.0 | 1179.3 | 1176.9 | 1180.3 |
| 20° | 1277.9 | 1277.9 | 1297.7 | 1312.2 | 1270.2 | 1216.0 | 1179.8 | 1154.7 | 1138.7 | 1131.9 | 1130.5 |
| 22.5° | 1362.5 | 1354.7 | 1367.3 | 1357.2 | 1267.8 | 1189.0 | 1138.7 | 1095.2 | 1071.0 | 1061.4 | 1059.9 |
| 25° | 1469.8 | 1460.6 | 1457.2 | 1394.4 | 1250.4 | 1146.0 | 1064.3 | 1011.6 | 990.3 | 985.0 | 986.0 |
| 27.5° | 1631.7 | 1608.5 | 1564.5 | 1414.7 | 1218.5 | 1078.3 | 977.3 | 928.5 | 916.4 | 916.9 | 918.3 |
| 30° | 1847.3 | 1800.9 | 1693.1 | 1418.1 | 1166.3 | 982.6 | 888.3 | 853.5 | 847.7 | 850.2 | 858.4 |
| 32.5° | 2046.9 | 2002.9 | 1824.5 | 1402.6 | 1086.0 | 888.8 | 808.6 | 785.4 | 776.7 | 779.6 | 783.5 |
| 35° | 2203.5 | 2191.4 | 1946.3 | 1380.8 | 987.4 | 800.9 | 737.1 | 717.2 | 700.3 | 696.5 | 699.4 |
| 37.5° | 2351.4 | 2346.5 | 2037.7 | 1350.4 | 889.8 | 738.5 | 679.5 | 653.5 | 628.8 | 615.3 | 615.8 |
| 40° | 2513.8 | 2508.9 | 2097.6 | 1303.5 | 803.3 | 684.4 | 627.8 | 593.5 | 563.1 | 538.4 | 540.8 |
| 42.5° | 2696.4 | 2667.9 | 2126.1 | 1236.3 | 729.8 | 638.5 | 585.8 | 539.4 | 499.3 | 476.6 | 478.0 |
| 45° | 2896.1 | 2831.8 | 2125.6 | 1150.8 | 667.9 | 596.4 | 540.8 | 475.1 | 437.9 | 416.6 | 415.7 |
| 47.5° | 3107.8 | 2988.4 | 2099.5 | 1056.1 | 608.0 | 550.0 | 471.2 | 421.0 | 396.3 | 383.3 | 380.4 |
| 50° | 3326.2 | 3134.8 | 2055.1 | 947.3 | 546.6 | 497.3 | 427.7 | 393.4 | 374.6 | 362.5 | 358.1 |
| 52.5° | 3531.6 | 3267.7 | 2001.4 | 824.1 | 484.3 | 446.1 | 408.4 | 381.8 | 362.0 | 348.5 | 342.7 |
| 55° | 3722.5 | 3382.3 | 1925.6 | 697.9 | 433.5 | 411.8 | 399.2 | 377.0 | 354.3 | 338.3 | 332.0 |
| 57.5° | 3892.2 | 3456.7 | 1794.6 | 579.5 | 397.3 | 388.1 | 389.6 | 368.8 | 342.7 | 329.1 | 320.4 |
| 60° | 4033.3 | 3511.3 | 1600.8 | 469.8 | 367.8 | 364.9 | 374.6 | 353.3 | 322.9 | 307.4 | 300.6 |
| 62.5° | 4117.9 | 3510.4 | 1363.0 | 384.7 | 342.7 | 343.6 | 354.8 | 334.0 | 303.0 | 288.5 | 284.2 |
| 65° | 4110.6 | 3424.3 | 1102.0 | 329.1 | 318.5 | 319.5 | 334.0 | 312.7 | 286.6 | 277.9 | 277.4 |
| 67.5° | *3965.2* | *3214.6* | *845.3* | *292.9* | *291.9* | *296.3* | *313.2* | *298.2* | *276.5* | *275.5* | *276.9* |
| 70° | 3571.3 | 2779.1 | 609.0 | 263.9 | 264.4 | 270.7 | 292.9 | 289.0 | 271.1 | 273.1 | 272.6 |
| 72.5° | 2863.7 | 2118.9 | 408.9 | 233.4 | 233.9 | 244.1 | 273.6 | 281.8 | 265.8 | 291.4 | 295.3 |
| 75° | 1907.2 | 1321.4 | 262.9 | 201.1 | 201.5 | 214.6 | 256.6 | 267.8 | 251.3 | 290.5 | 292.9 |
| 77.5° | 916.4 | 594.0 | 190.4 | 169.2 | 169.2 | 181.2 | 221.8 | 239.7 | 214.1 | 225.7 | 206.9 |
| 80° | 316.6 | 223.3 | 149.8 | 136.3 | 133.4 | 141.6 | 187.0 | 207.8 | 184.6 | 170.1 | 159.5 |
| 82.5° | 124.7 | 116.0 | 120.3 | 105.8 | 96.2 | 101.5 | 145.5 | 171.6 | 135.8 | 122.8 | 122.3 |
| 85° | 71.5 | 75.4 | 85.1 | 70.1 | 55.6 | 62.3 | 106.8 | 123.2 | 102.5 | 90.4 | 92.3 |
| 87.5° | 19.3 | 26.6 | 39.1 | 36.2 | 25.1 | 26.6 | 50.7 | 68.1 | 59.0 | 45.4 | 46.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |


HS
SS

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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

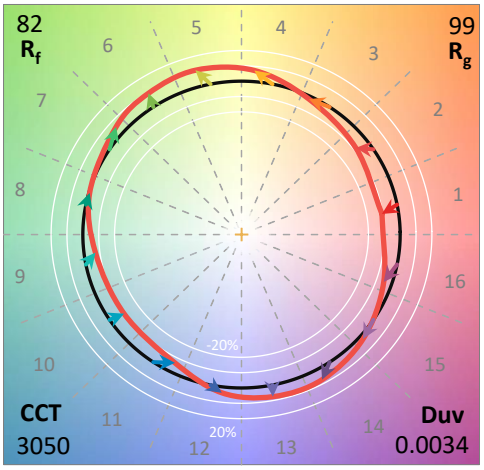
## Test Information

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

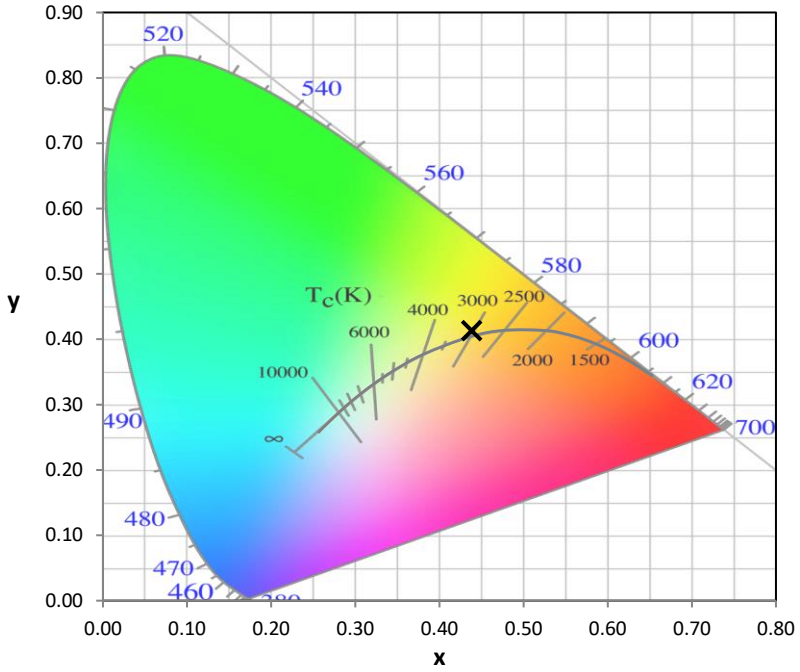
| | |
|---|---|
| Stabilization Time: | 20M |
| Operation Time: | 1H 20M |
| Sphere Temperature (°C): | 24.2 |

REPORT NUMBER: SP1-2408-195-9

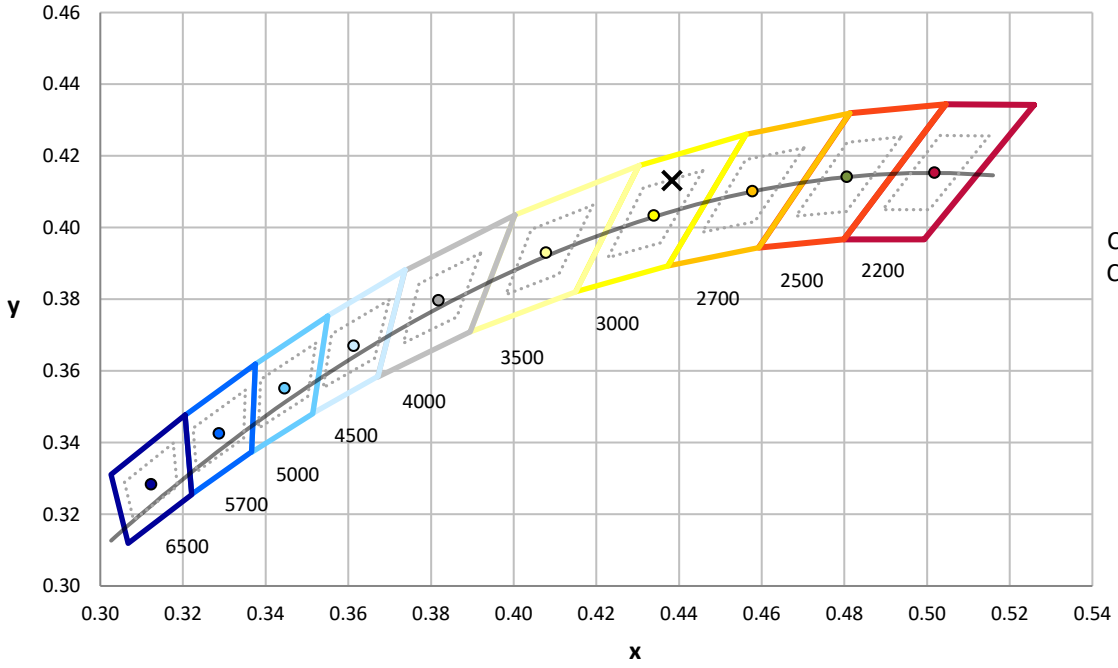
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

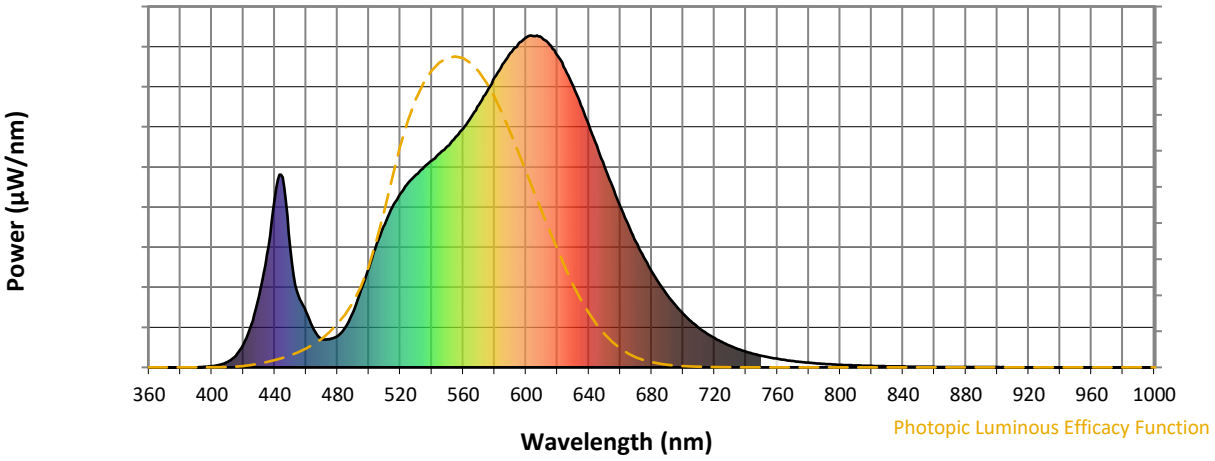



CCT = 3050K
CIE x = 0.4383
CIE y = 0.4131
Duv = 0.0034

Point lies inside the ANSI 3000K 4-step quadrangle

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## Photopic Flux vs. Wavelength

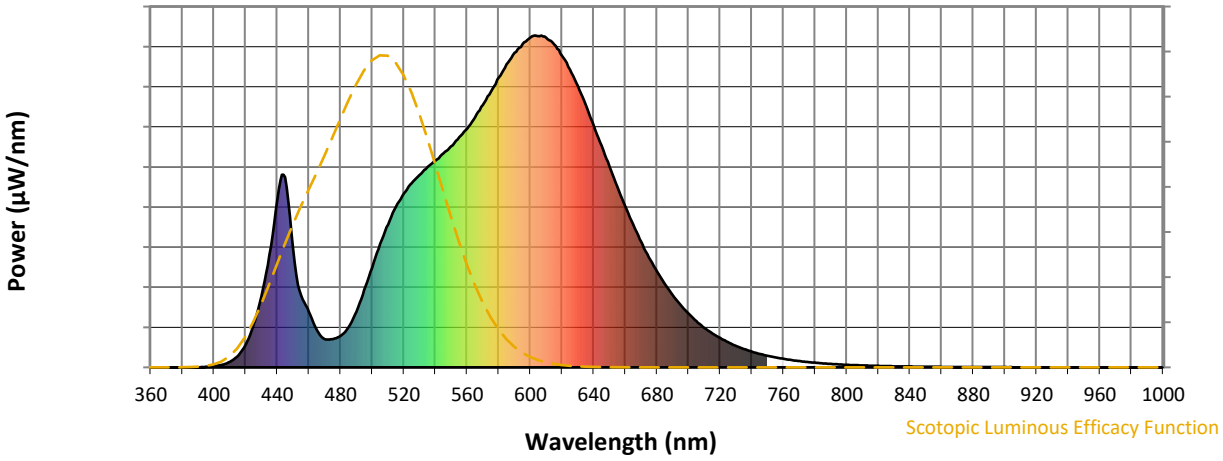



## Photopic Lumens: NR

| 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

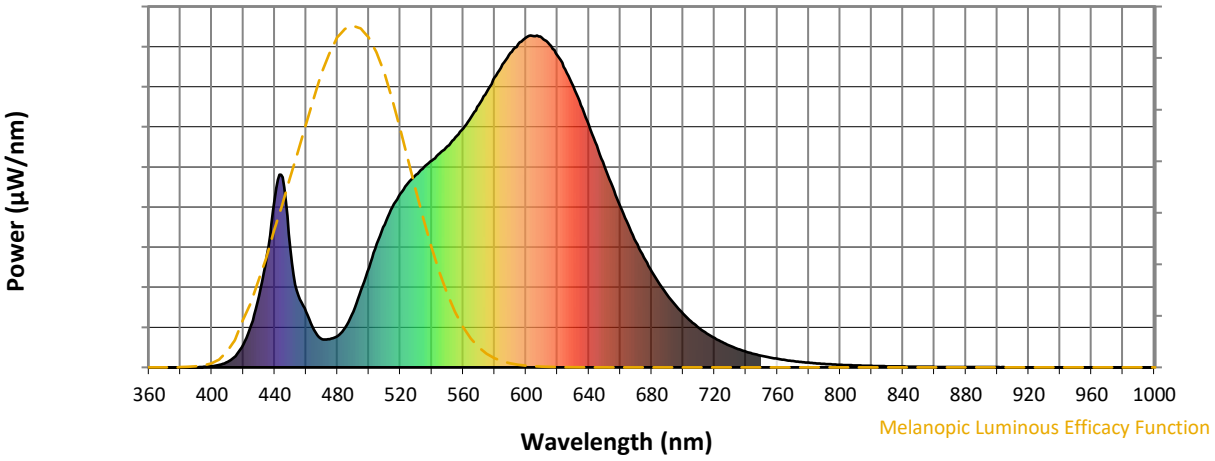



**Scotopic Lumens: NR** **S/P: 1.27**

| 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 | | | |

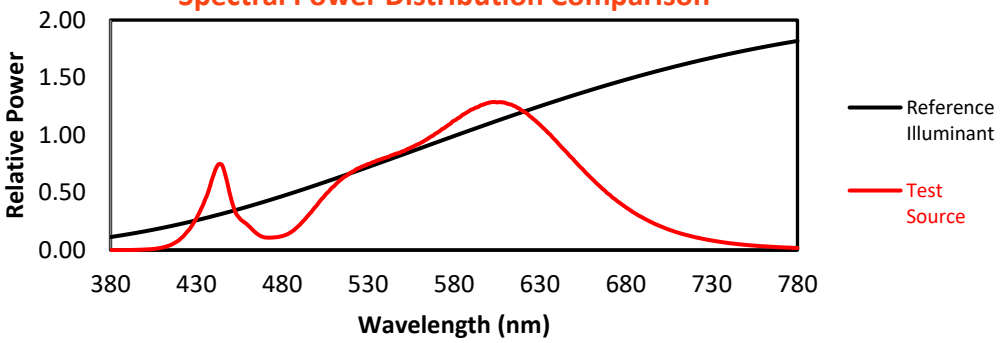
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# TM-30-18

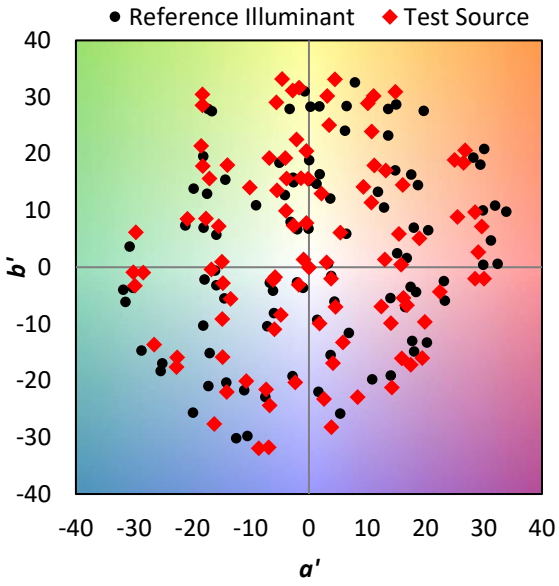
## Summary

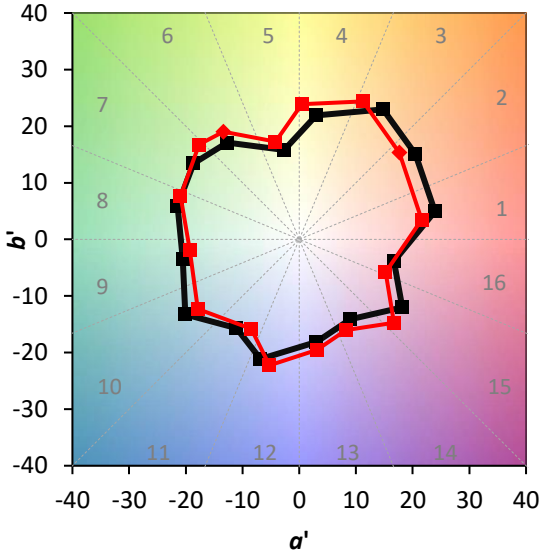
$R_f$ = 81.5
$R_g$ = 99.2
CIE $R_a$ = 81.0
$R_9$ = 7.1

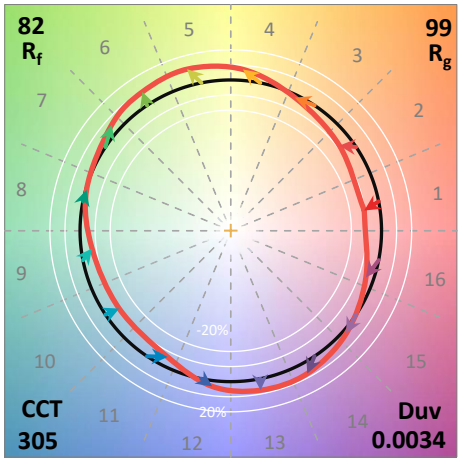
## Spectral Power Distribution Comparison

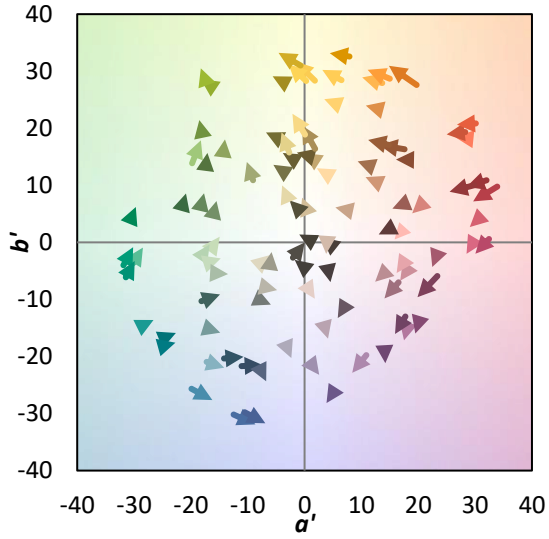



## Color Vector Graphics



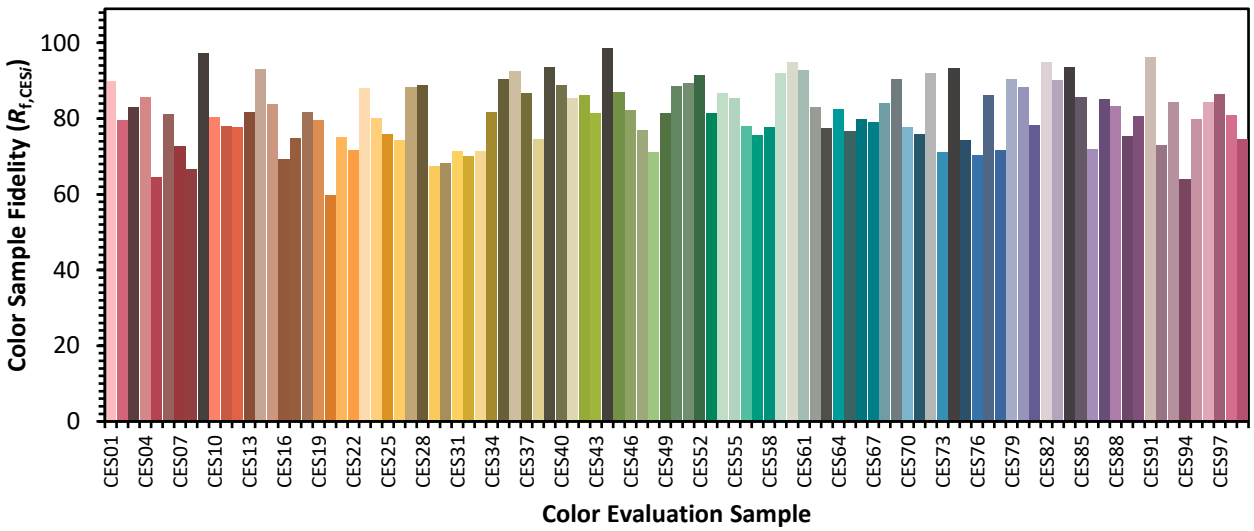



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# TM-30-18

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

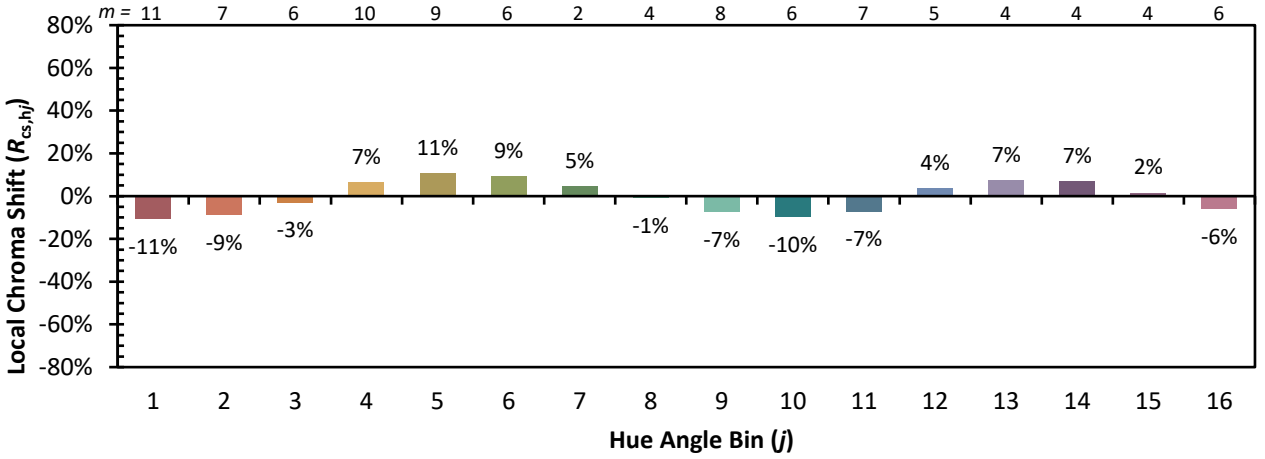
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 74 | CES51 = 89 | CES76 = 70 |
| CES02 = 63 | CES27 = 88 | CES52 = 92 | CES77 = 86 |
| CES03 = 31 | CES28 = 89 | CES53 = 81 | CES78 = 72 |
| CES04 = 70 | CES29 = 67 | CES54 = 87 | CES79 = 90 |
| CES05 = 50 | CES30 = 68 | CES55 = 85 | CES80 = 88 |
| CES06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

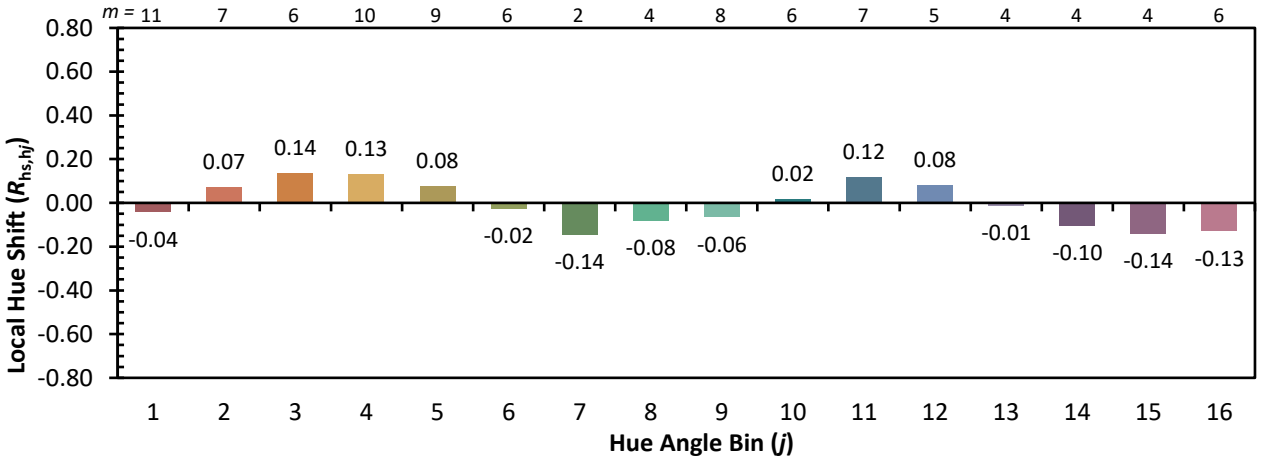


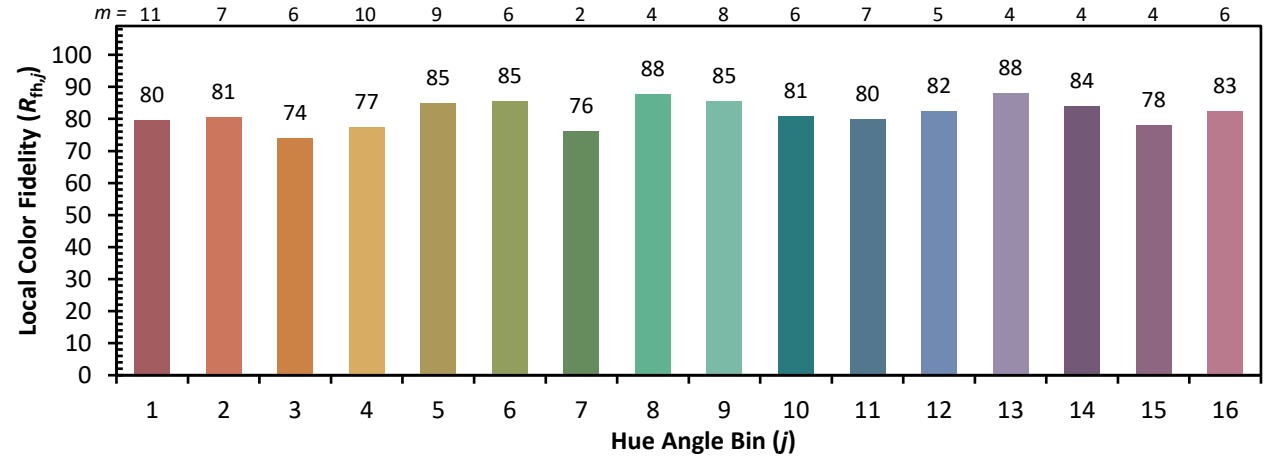
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## Color Rendition by Hue-Angle Bin



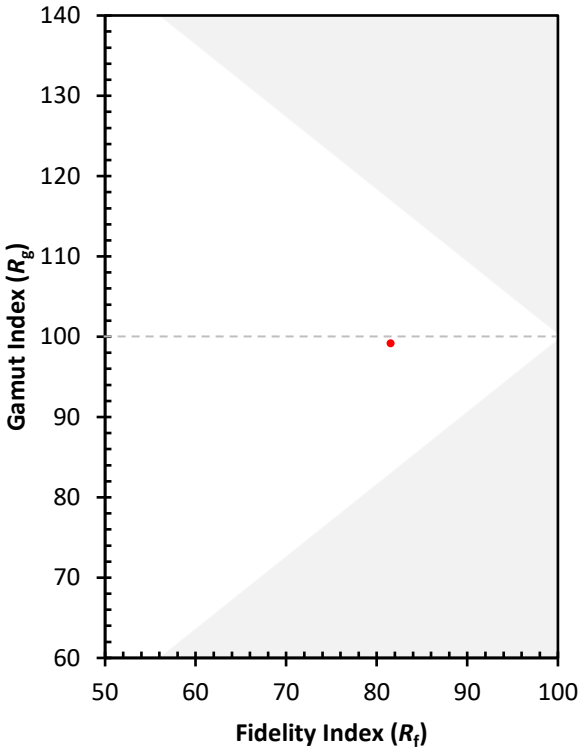



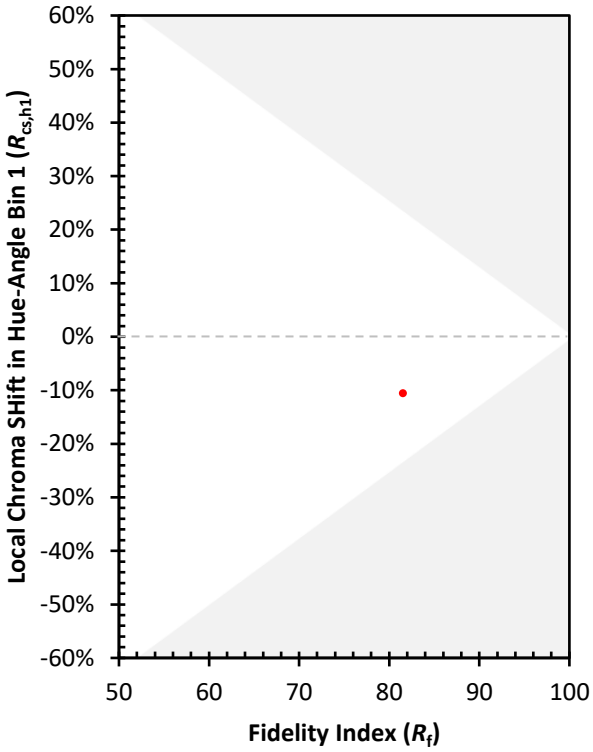



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## Measure Comparisons




(END OF REPORT)