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: P1198451

Luminaire Tested: GPC-SB1C-830-U-T4FT

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: | P1198451 |
| | TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2405-108-24) |
| Test Lab: | INNOVATION CENTER |
| Issue Date: | 3/15/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GPC-SB1C-830-U-T4FT |
| Description: | GALLEON PEDESTRIAN LUMINAIRE |
| | (1) 80 CRI, 3000K, 615mA LIGHTSQUARE WITH 26 LEDS AND TYPE IV FORWARD THROW OPT |
| Light Source: | - |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 6686 lumens |
| Efficiency: | N/A |
| Efficacy: | 122.9 lumens/watt |
| Luminous Opening: | Rectangular (W 0.5' x L: 0.5' x H: 0') |
| IES Classification: | Type IV - Short |
| 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 |

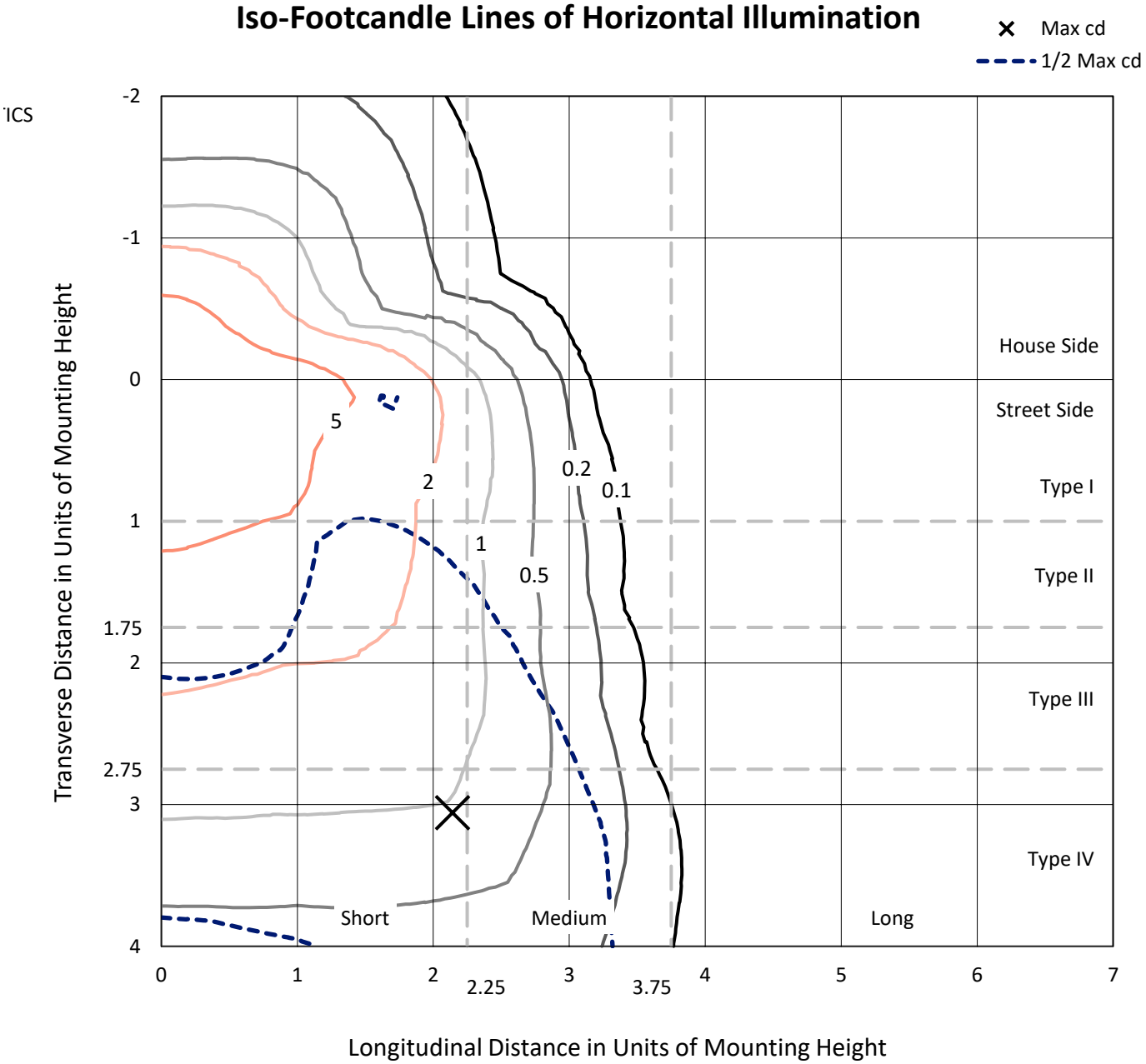


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REPORT NUMBER: P1198451
CATALOG NUMBER: GPC-SB1C-830-U-T4FT

## Iso-Footcandle Lines of Horizontal Illumination



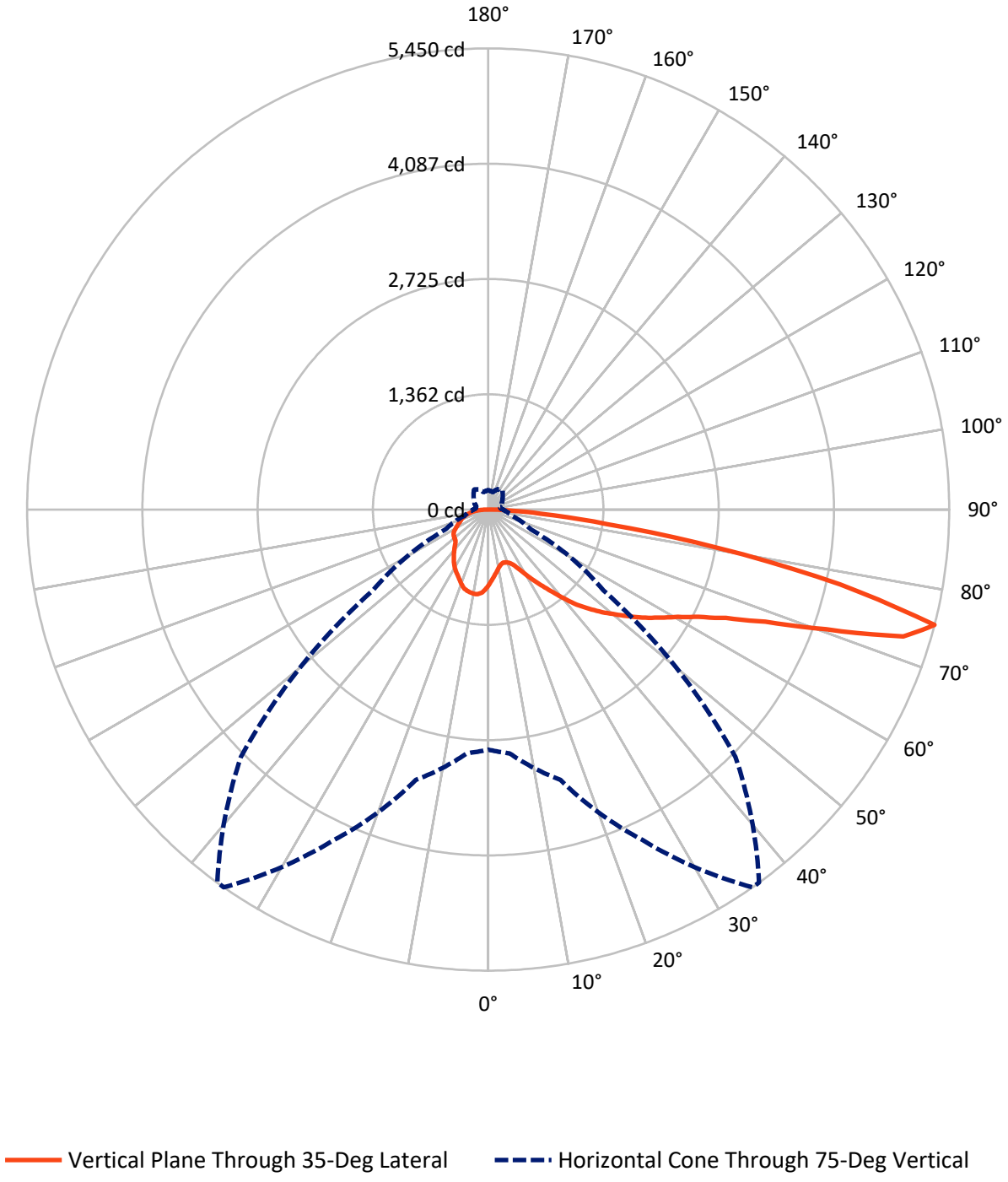

Based on 10 foot mounting height. Maximum calculated value = 9.8 fc
Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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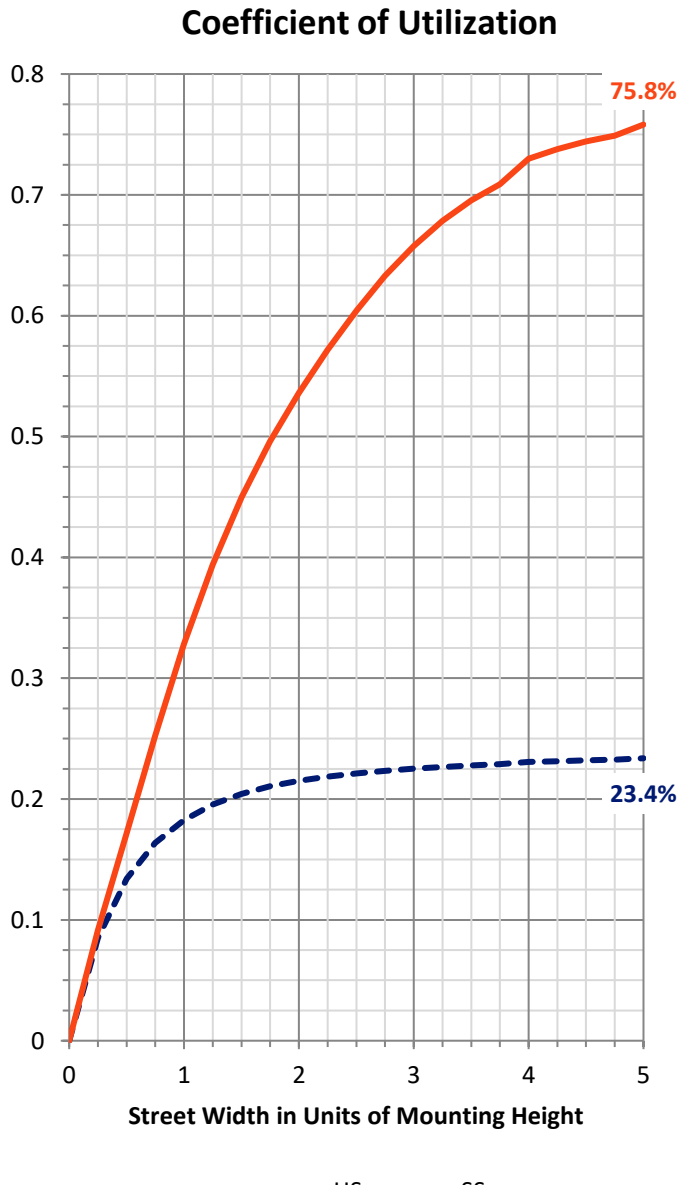
REPORT NUMBER: P1198451
CATALOG NUMBER: GPC-SB1C-830-U-T4FT

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 1591.1 | 0.0 | 1591.1 |
| | % Fixture | 23.8 | 0.0 | 23.8 |
| **Street Side** | Lumens | 5094.9 | 0.0 | 5094.9 |
| | % Fixture | 76.2 | 0.0 | 76.2 |
| **Total** | Lumens | 6686.0 | 0.0 | 6686.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 84.4 | 1.3 |
| 10°-20° | 243.3 | 3.6 |
| 20°-30° | 408.6 | 6.1 |
| 30°-40° | 635.0 | 9.5 |
| 40°-50° | 942.5 | 14.1 |
| 50°-60° | 1301.2 | 19.5 |
| 60°-70° | 1578.7 | 23.6 |
| 70°-80° | 1304.6 | 19.5 |
| 80°-90° | 187.7 | 2.8 |
| 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° | 6686.0 | 100.0 |
| 0°-180° | 6686.0 | 100.0 |



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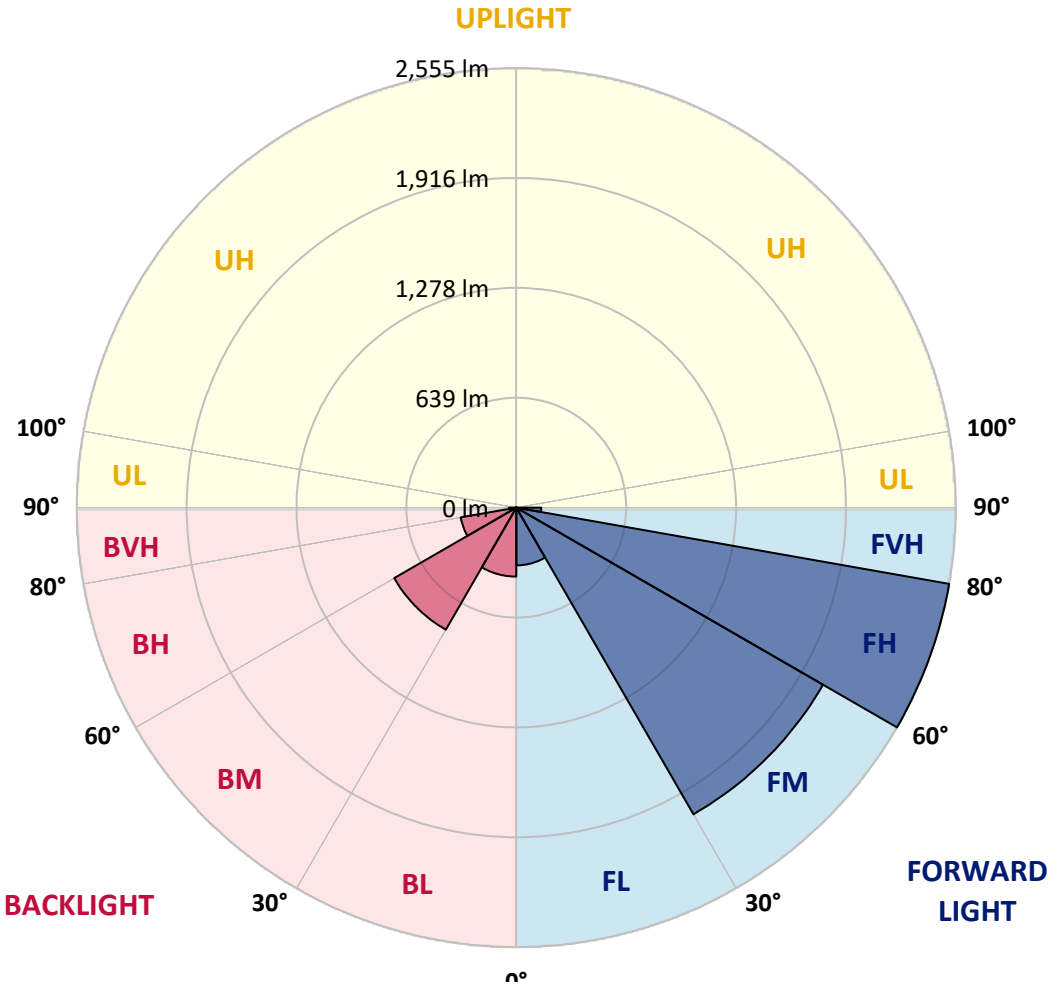
Scaled Data Report

REPORT NUMBER: P1198451
CATALOG NUMBER: GPC-SB1C-830-U-T4FT

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 335.3 | 5.0 | | | |
| FM | (30°-60°) | 2058.9 | 30.8 | | | |
| FH | (60°-80°) | 2555.3 | 38.2 | | | G2/5000 |
| FVH | (80°-90°) | 145.4 | 2.2 | | | G2/225 |
| BL | (0°-30°) | 401.0 | 6.0 | B1/500 | | |
| BM | (30°-60°) | 819.8 | 12.3 | B1/1000 | | |
| BH | (60°-80°) | 328.0 | 4.9 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 42.3 | 0.6 | | | 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 Short



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 36° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 891.0 | 891.0 | 891.0 | 891.0 | *891.0* | 891.0 | 891.0 | 891.0 | 891.0 | 891.0 | 891.0 |
| 2.5° | 821.6 | 826.6 | 828.8 | 827.7 | *833.1* | 832.4 | 840.0 | 849.4 | 862.4 | 875.1 | 893.5 |
| 5° | 758.3 | 763.7 | 768.4 | 772.8 | *783.2* | 786.5 | 798.4 | 816.5 | 840.4 | 864.6 | 894.9 |
| 7.5° | 699.4 | 704.1 | 711.3 | 719.3 | *737.0* | 740.2 | 760.1 | 788.3 | 821.6 | 857.0 | 898.9 |
| 10° | 651.3 | 656.0 | 663.6 | 672.6 | *694.7* | 698.7 | 724.0 | 761.6 | 804.9 | 849.8 | 903.2 |
| 12.5° | 630.7 | 632.2 | 636.5 | 645.5 | *664.7* | 667.2 | 695.1 | 738.1 | 788.7 | 844.3 | 909.7 |
| 15° | 629.6 | 632.5 | 632.9 | 637.6 | *653.5* | 654.6 | 680.2 | 722.9 | 778.5 | 843.2 | 919.5 |
| 17.5° | 640.5 | 642.6 | 639.4 | 642.3 | *655.7* | 657.5 | 677.7 | 715.7 | 775.3 | 847.9 | 936.1 |
| 20° | 669.4 | 671.2 | 661.4 | 657.5 | *667.2* | 668.7 | 688.5 | 720.4 | 778.5 | 857.7 | 958.9 |
| 22.5° | 730.8 | 731.9 | 708.1 | 691.8 | *692.5* | 693.2 | 710.6 | 739.5 | 791.2 | 875.4 | 987.8 |
| 25° | 826.6 | 825.9 | 787.9 | 756.5 | *738.4* | 734.5 | 746.0 | 770.6 | 812.5 | 898.9 | 1025.0 |
| 27.5° | 938.7 | 933.2 | 895.3 | 848.3 | *808.9* | 803.1 | 800.6 | 811.1 | 842.9 | 930.0 | 1070.6 |
| 30° | 1065.2 | 1060.1 | 1019.3 | 957.8 | *903.2* | 893.8 | 870.0 | 864.6 | 888.1 | 972.3 | 1133.8 |
| 32.5° | 1204.0 | 1200.7 | 1151.9 | 1077.5 | *1004.4* | 993.6 | 953.5 | 939.0 | 957.5 | 1036.3 | 1222.0 |
| 35° | 1320.3 | 1317.5 | 1277.0 | 1200.3 | *1111.1* | 1097.7 | 1056.9 | 1040.6 | 1050.0 | 1118.3 | 1337.3 |
| 37.5° | 1425.5 | 1424.1 | 1389.4 | 1329.0 | *1236.9* | 1220.6 | 1174.7 | 1169.3 | 1167.5 | 1226.4 | 1477.2 |
| 40° | 1523.1 | 1519.5 | 1483.4 | 1451.6 | *1383.2* | 1368.4 | 1327.9 | 1323.2 | 1309.5 | 1359.4 | 1635.5 |
| 42.5° | 1631.2 | 1621.8 | 1569.4 | 1554.6 | *1536.1* | 1523.8 | 1499.6 | 1500.3 | 1470.0 | 1509.4 | 1803.2 |
| 45° | 1719.4 | 1714.0 | 1660.1 | 1651.4 | *1671.3* | 1666.2 | 1687.2 | 1692.6 | 1633.7 | 1666.6 | 1977.4 |
| 47.5° | 1814.1 | 1809.0 | 1763.5 | 1757.3 | *1811.2* | 1812.6 | 1886.7 | 1888.5 | 1793.5 | 1830.0 | 2152.0 |
| 50° | 1930.8 | 1923.6 | 1878.4 | 1886.0 | *1946.4* | 1951.8 | 2087.3 | 2075.0 | 1940.6 | 1995.9 | 2325.2 |
| 52.5° | 2007.8 | 2012.1 | 2002.4 | 2014.7 | *2097.1* | 2102.1 | 2284.7 | 2253.2 | 2086.2 | 2159.6 | 2495.0 |
| 55° | 2064.6 | 2073.2 | 2103.6 | 2131.8 | *2256.1* | 2261.2 | 2470.8 | 2422.7 | 2207.0 | 2311.4 | 2654.8 |
| 57.5° | 2137.6 | 2125.3 | 2182.0 | 2237.0 | *2407.2* | 2420.6 | 2651.9 | 2586.1 | 2314.0 | 2442.3 | 2764.3 |
| 60° | 2242.4 | 2233.7 | 2277.8 | 2359.1 | *2576.4* | 2597.7 | 2843.5 | 2733.2 | 2392.4 | 2546.0 | 2785.6 |
| 62.5° | 2454.9 | 2433.2 | 2440.1 | 2512.0 | *2789.6* | 2817.8 | 3059.6 | 2861.5 | 2431.4 | 2586.5 | 2671.4 |
| 65° | 2772.6 | 2735.4 | 2700.7 | 2750.6 | *3090.0* | 3117.8 | 3303.6 | 2962.4 | 2417.0 | 2508.0 | 2368.2 |
| 67.5° | 3172.7 | 3135.9 | 3093.2 | 3140.2 | *3532.4* | 3554.4 | 3604.7 | 3019.1 | 2303.1 | 2205.9 | 1832.1 |
| 70° | 3502.7 | 3489.0 | 3540.0 | 3733.3 | *4239.0* | 4239.7 | 3990.7 | 2972.1 | 1991.2 | 1564.0 | 1060.1 |
| 72.5° | 3459.0 | 3450.7 | 3719.2 | 4317.1 | *5129.6* | 5110.4 | 4356.1 | 2616.5 | 1341.3 | 705.5 | 397.2 |
| 75° | *2837.7* | *2891.5* | *3307.6* | *4306.6* | *5449.5* | *5446.9* | *4132.4* | *1663.4* | *554.8* | *292.4* | *205.3* |
| 77.5° | 1521.7 | 1607.0 | 2147.3 | 3179.6 | *4254.2* | 4318.1 | 2905.3 | 581.9 | 238.2 | 187.2 | 142.0 |
| 80° | 496.3 | 570.7 | 855.9 | 1618.9 | *2764.3* | 2752.4 | 1245.2 | 228.4 | 163.0 | 132.6 | 98.3 |
| 82.5° | 210.7 | 219.4 | 382.4 | 764.5 | *1418.7* | 1396.6 | 396.5 | 131.2 | 114.6 | 90.7 | 60.7 |
| 85° | 82.4 | 92.2 | 168.8 | 353.5 | *614.5* | 601.1 | 143.1 | 65.1 | 73.4 | 59.3 | 36.1 |
| 87.5° | 27.1 | 32.9 | 60.4 | 121.1 | *191.2* | 184.3 | 35.1 | 22.4 | 31.8 | 27.1 | 13.0 |
| 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: P1198451
CATALOG NUMBER: GPC-SB1C-830-U-T4FT

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 891.0 | 891.0 | 891.0 | 891.0 | 891.0 | 891.0 | 891.0 | 891.0 | 891.0 | 891.0 | 891.0 |
| 2.5° | 898.5 | 904.3 | 911.2 | 921.3 | 930.0 | 937.2 | 944.8 | 949.5 | 951.3 | 956.7 | 956.4 |
| 5° | 905.1 | 917.7 | 934.7 | 951.3 | 967.6 | 977.3 | 986.0 | 990.4 | 994.3 | 997.2 | 997.9 |
| 7.5° | 915.9 | 932.2 | 958.9 | 980.6 | 994.3 | 1002.3 | 1008.1 | 1006.6 | 1008.1 | 1008.8 | 1009.9 |
| 10° | 925.3 | 948.1 | 979.9 | 1000.5 | 1011.0 | 1011.3 | 1009.9 | 1004.8 | 1002.3 | 1002.6 | 1003.4 |
| 12.5° | 936.5 | 961.8 | 996.1 | 1013.5 | 1016.4 | 1008.4 | 1002.3 | 993.6 | 990.4 | 988.9 | 988.2 |
| 15° | 951.7 | 980.6 | 1013.8 | 1020.4 | 1013.1 | 1003.0 | 992.5 | 978.4 | 971.2 | 965.4 | 967.2 |
| 17.5° | 970.1 | 1001.9 | 1027.6 | 1022.9 | 1007.3 | 990.7 | 973.7 | 952.4 | 937.6 | 931.4 | 931.8 |
| 20° | 995.8 | 1024.3 | 1038.1 | 1017.5 | 994.0 | 968.7 | 939.7 | 913.7 | 900.0 | 893.8 | 893.1 |
| 22.5° | 1026.9 | 1054.3 | 1048.2 | 1008.1 | 974.8 | 934.3 | 898.2 | 879.0 | 872.2 | 867.8 | 868.5 |
| 25° | 1064.1 | 1087.6 | 1055.4 | 994.3 | 943.4 | 888.8 | 861.0 | 854.8 | 851.6 | 848.3 | 848.3 |
| 27.5° | 1112.5 | 1125.2 | 1060.8 | 974.1 | 894.2 | 840.4 | 830.2 | 831.3 | 830.2 | 824.8 | 825.9 |
| 30° | 1176.5 | 1174.0 | 1065.9 | 941.2 | 837.8 | 796.6 | 797.3 | 802.0 | 802.8 | 799.1 | 801.0 |
| 32.5° | 1260.7 | 1235.0 | 1068.4 | 898.5 | 784.0 | 758.3 | 759.0 | 764.1 | 767.7 | 761.6 | 764.5 |
| 35° | 1362.6 | 1306.3 | 1064.4 | 845.1 | 742.4 | 721.8 | 716.4 | 717.8 | 718.9 | 713.1 | 717.1 |
| 37.5° | 1481.6 | 1386.1 | 1046.7 | 785.8 | 708.1 | 686.0 | 674.5 | 664.7 | 658.9 | 653.5 | 657.1 |
| 40° | 1612.0 | 1473.2 | 1014.2 | 727.9 | 669.8 | 648.1 | 630.7 | 612.3 | 592.8 | 585.5 | 588.8 |
| 42.5° | 1748.7 | 1562.9 | 974.8 | 672.6 | 625.7 | 607.9 | 589.5 | 562.8 | 533.5 | 518.7 | 520.5 |
| 45° | 1890.3 | 1654.7 | 936.1 | 618.1 | 580.5 | 572.9 | 551.6 | 519.4 | 487.6 | 468.8 | 467.3 |
| 47.5° | 2029.1 | 1741.4 | 879.4 | 563.1 | 538.2 | 546.5 | 529.9 | 500.2 | 464.8 | 435.2 | 431.9 |
| 50° | 2161.8 | 1822.8 | 786.5 | 507.5 | 503.9 | 538.5 | 522.6 | 480.0 | 439.5 | 401.6 | 398.3 |
| 52.5° | 2293.4 | 1888.5 | 667.6 | 456.9 | 485.4 | 536.4 | 513.2 | 466.3 | 416.7 | 377.0 | 372.6 |
| 55° | 2405.0 | 1922.5 | 553.0 | 413.5 | 458.7 | 517.9 | 502.0 | 450.0 | 384.6 | 342.3 | 338.7 |
| 57.5° | 2468.6 | 1895.0 | 457.6 | 370.8 | 421.8 | 487.6 | 482.9 | 415.3 | 346.3 | 313.7 | 309.4 |
| 60° | 2441.2 | 1783.7 | 379.5 | 333.6 | 386.7 | 454.7 | 449.6 | 381.0 | 317.0 | 286.3 | 281.9 |
| 62.5° | 2289.7 | 1571.6 | 317.7 | 301.1 | 354.9 | 421.1 | 416.4 | 354.6 | 294.6 | 264.9 | 260.2 |
| 65° | 1984.7 | 1278.4 | 269.6 | 274.0 | 322.8 | 380.6 | 387.5 | 332.5 | 276.9 | 247.9 | 243.3 |
| 67.5° | 1513.7 | 926.0 | 232.0 | 250.5 | 291.3 | 340.8 | 360.7 | 316.6 | 262.0 | 234.6 | 230.2 |
| 70° | 862.8 | 525.9 | 200.2 | 227.7 | 263.5 | 304.0 | 340.1 | 304.0 | 246.1 | 223.4 | 220.5 |
| 72.5° | 327.1 | 241.4 | 173.1 | 204.9 | 236.7 | 272.9 | 317.3 | 284.1 | 227.7 | 210.7 | 207.8 |
| 75° | *174.6* | *147.1* | *145.7* | *178.2* | *206.0* | *242.5* | *288.8* | *264.6* | *214.0* | *222.6* | *229.9* |
| 77.5° | 118.9 | 104.1 | 121.8 | 152.5 | 172.4 | 208.9 | 258.4 | 234.9 | 185.4 | 184.7 | 170.2 |
| 80° | 82.4 | 73.7 | 99.0 | 122.9 | 133.4 | 175.7 | 225.5 | 201.7 | 151.1 | 141.0 | 134.8 |
| 82.5° | 49.5 | 48.1 | 74.1 | 91.8 | 94.3 | 135.5 | 186.9 | 169.2 | 123.6 | 107.7 | 108.4 |
| 85° | 27.1 | 28.6 | 47.3 | 53.9 | 54.9 | 94.7 | 146.4 | 130.8 | 95.1 | 79.9 | 80.6 |
| 87.5° | 7.6 | 9.8 | 17.3 | 21.3 | 26.4 | 49.2 | 87.1 | 77.7 | 47.7 | 33.3 | 33.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |


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SS

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# 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

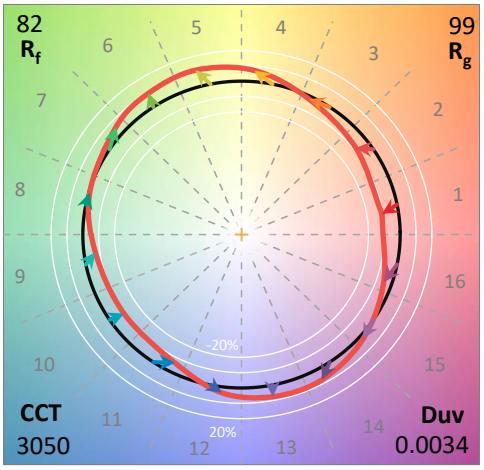
## Test Information

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

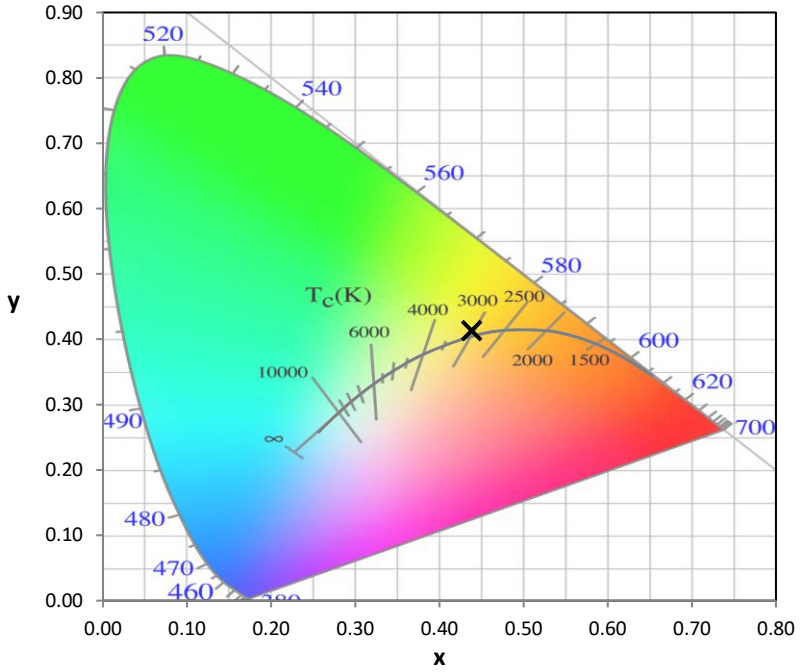
| | |
|---|---|
| Stabilization Time: | 20M |
| Operation Time: | 1H 20M |
| Sphere Temperature (°C): | 24.2 |

REPORT NUMBER: SP1-2408-195-9

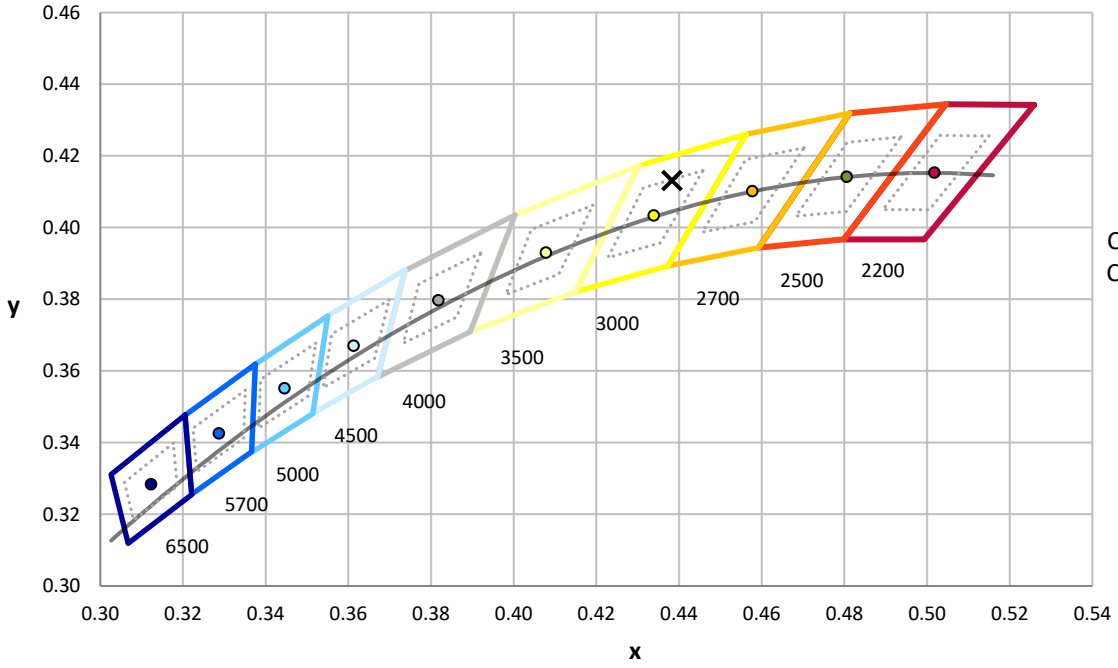
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

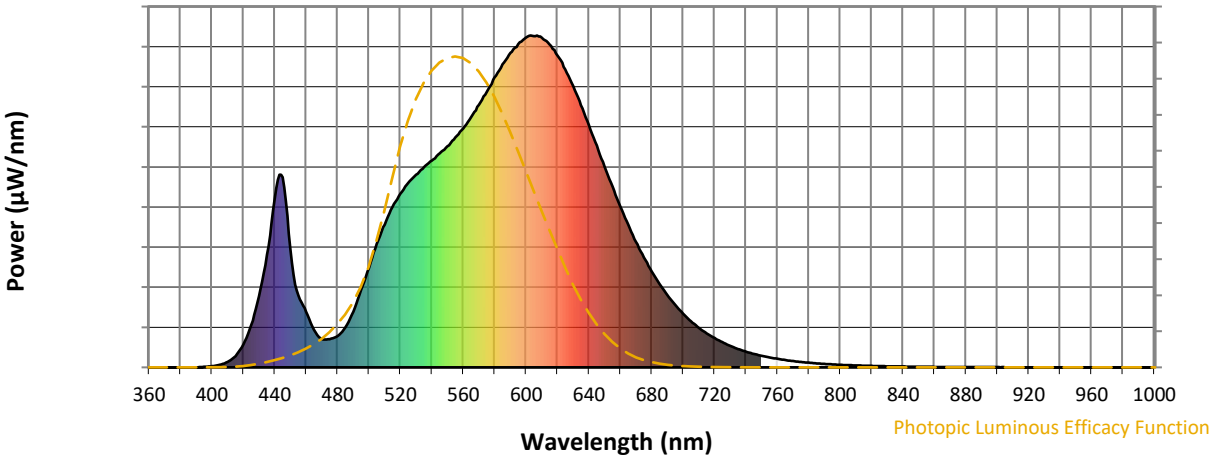



CCT = 3050K
CIE x = 0.4383
CIE y = 0.4131
Duv = 0.0034

Point lies inside the ANSI 3000K 4-step quadrangle

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## Photopic Flux vs. Wavelength

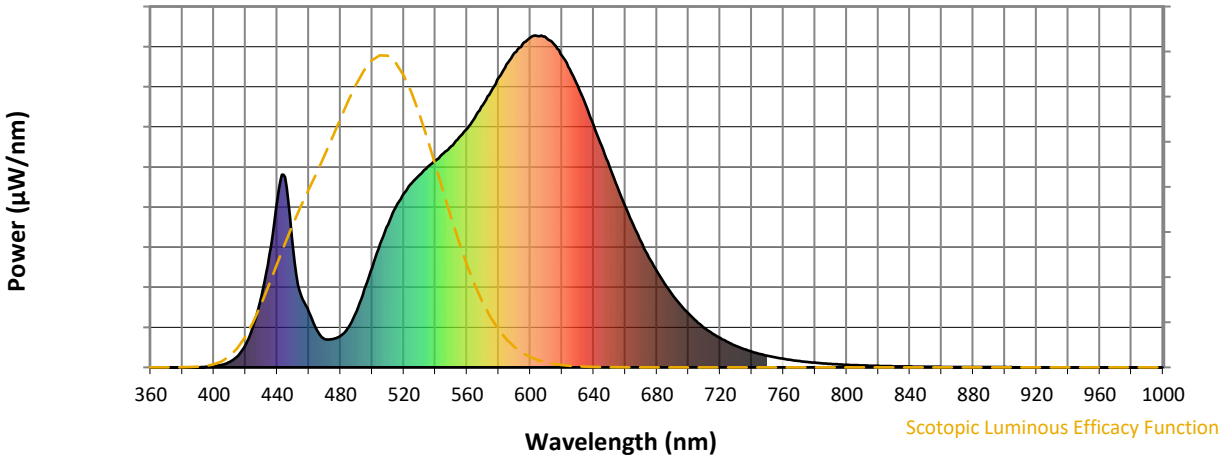



## Photopic Lumens: NR

| 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

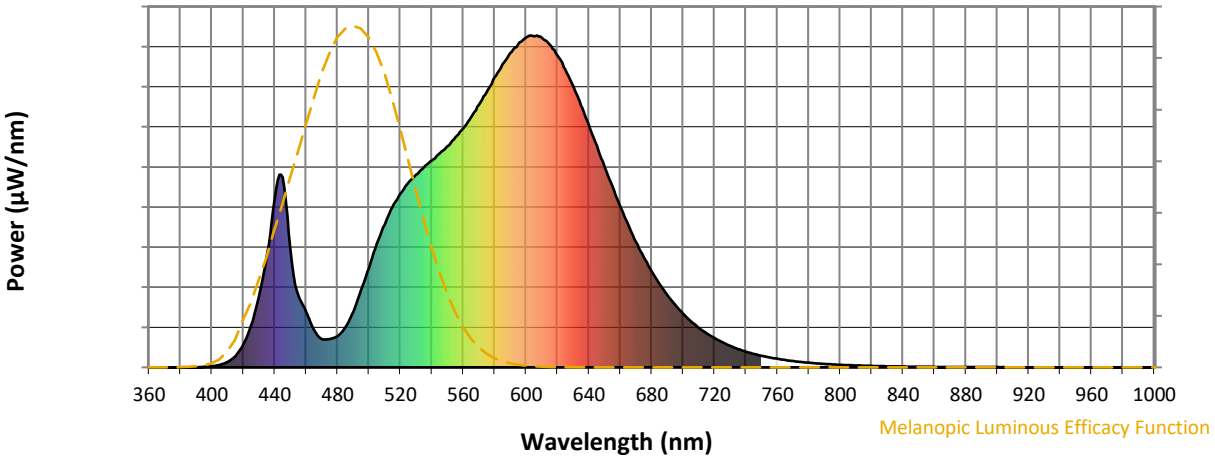



**Scotopic Lumens: NR** **S/P: 1.27**

| 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 | | | |

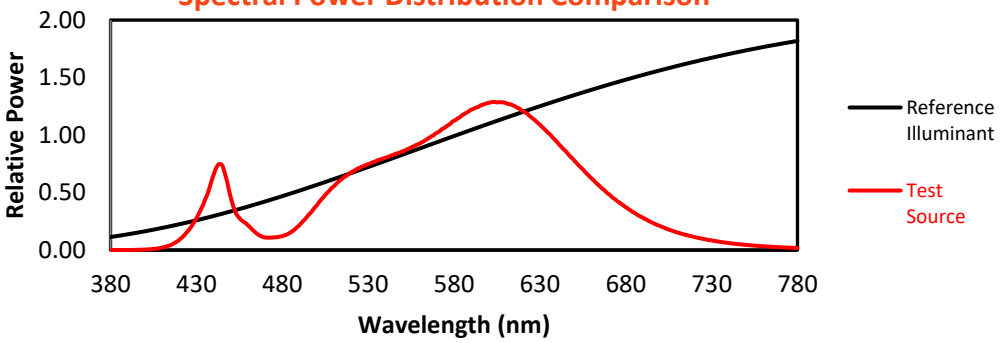
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# TM-30-18

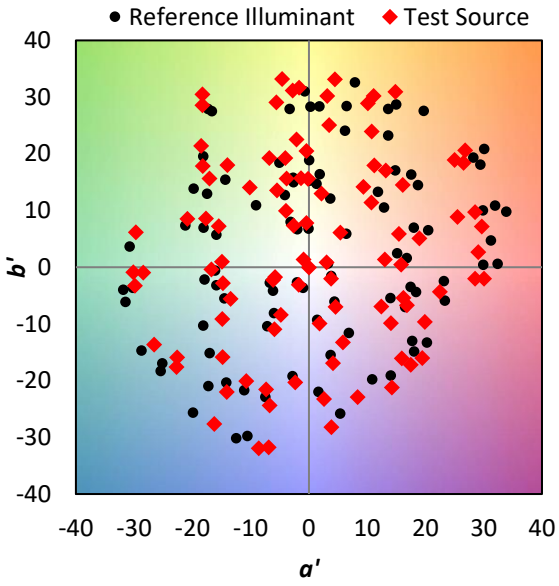
## Summary

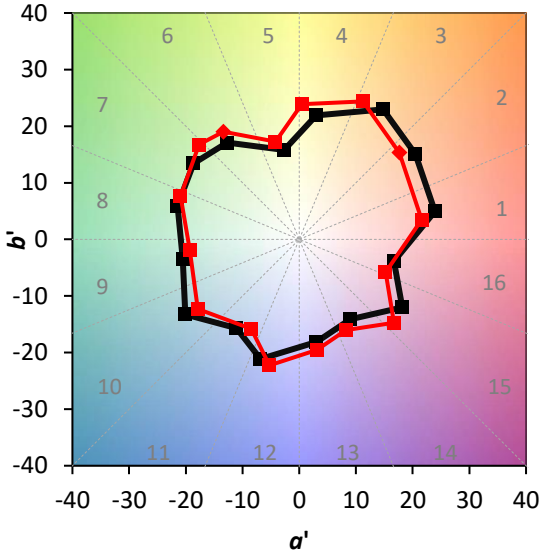
$R_f$ = 81.5
$R_g$ = 99.2
CIE $R_a$ = 81.0
$R_9$ = 7.1

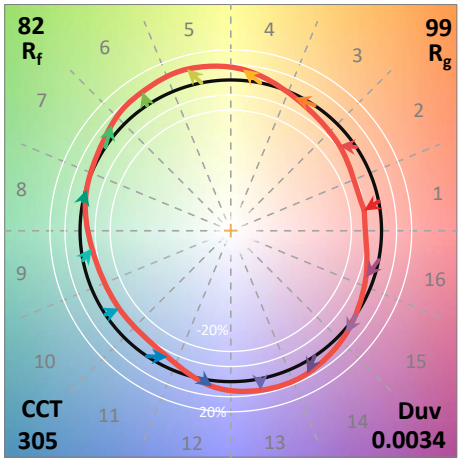
## Spectral Power Distribution Comparison

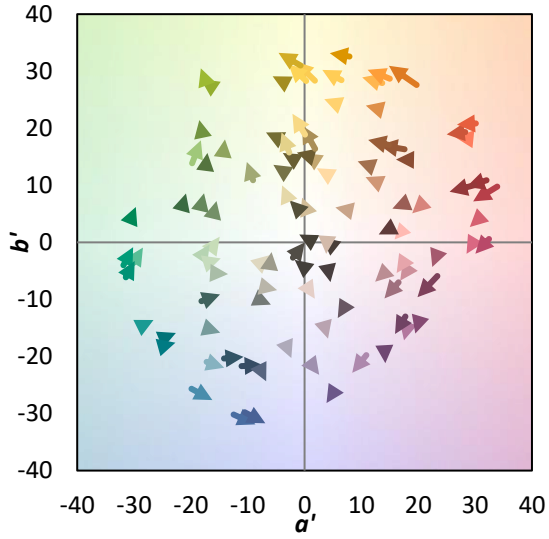



## Color Vector Graphics



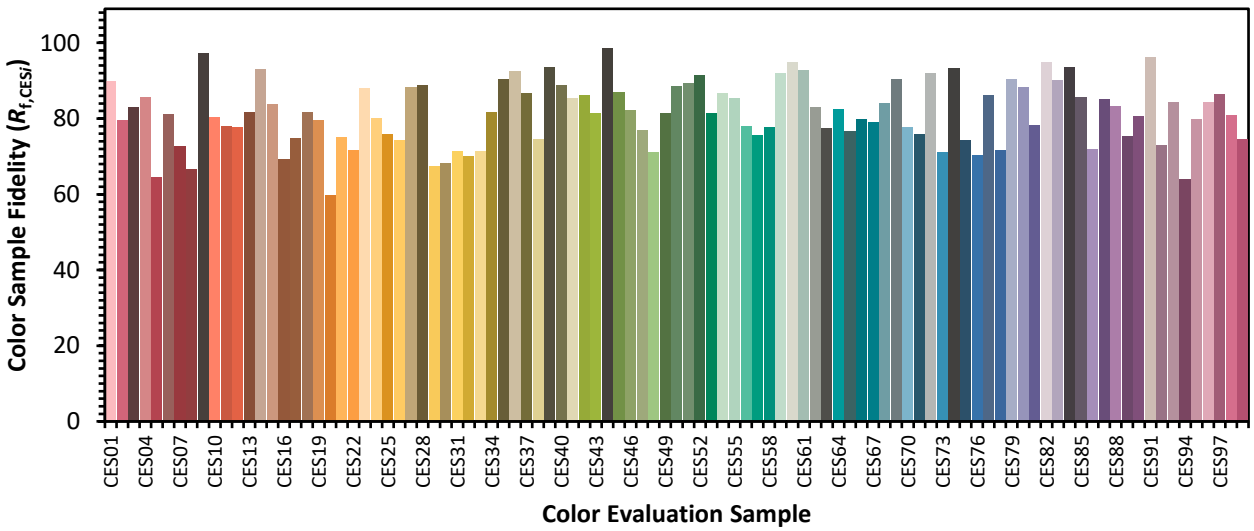



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# TM-30-18

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

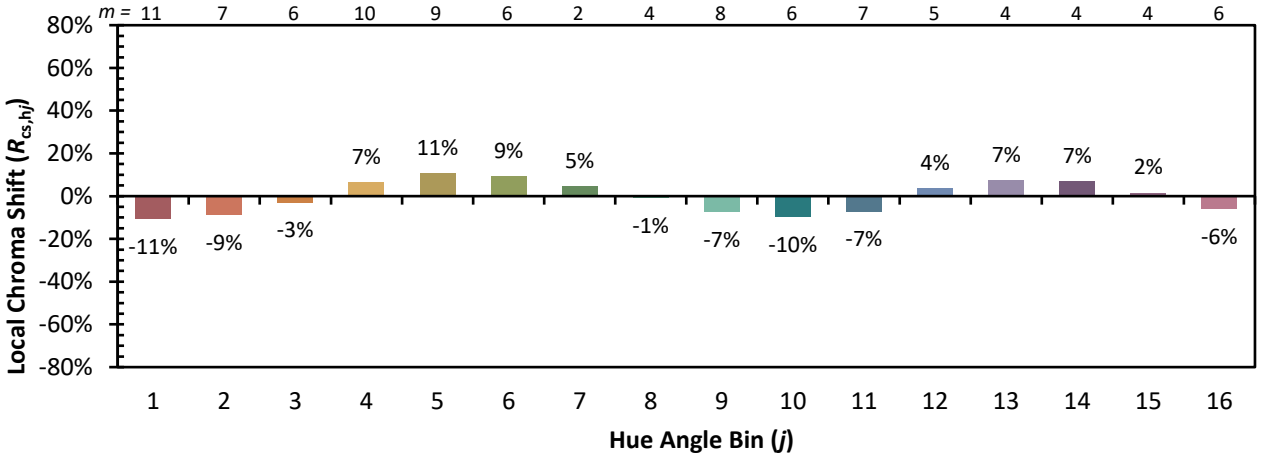
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 74 | CES51 = 89 | CES76 = 70 |
| CES02 = 63 | CES27 = 88 | CES52 = 92 | CES77 = 86 |
| CES03 = 31 | CES28 = 89 | CES53 = 81 | CES78 = 72 |
| CES04 = 70 | CES29 = 67 | CES54 = 87 | CES79 = 90 |
| CES05 = 50 | CES30 = 68 | CES55 = 85 | CES80 = 88 |
| CES06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

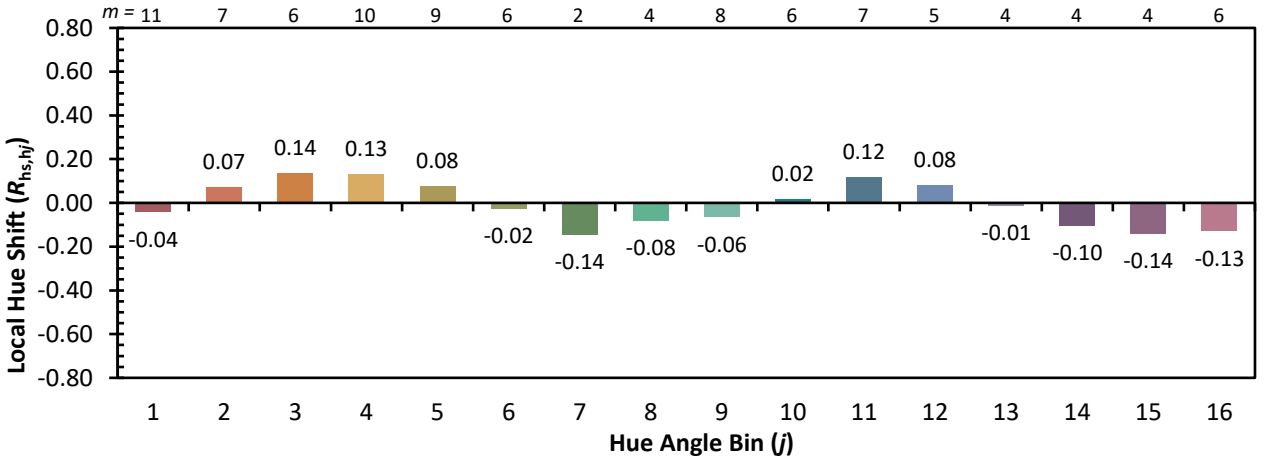


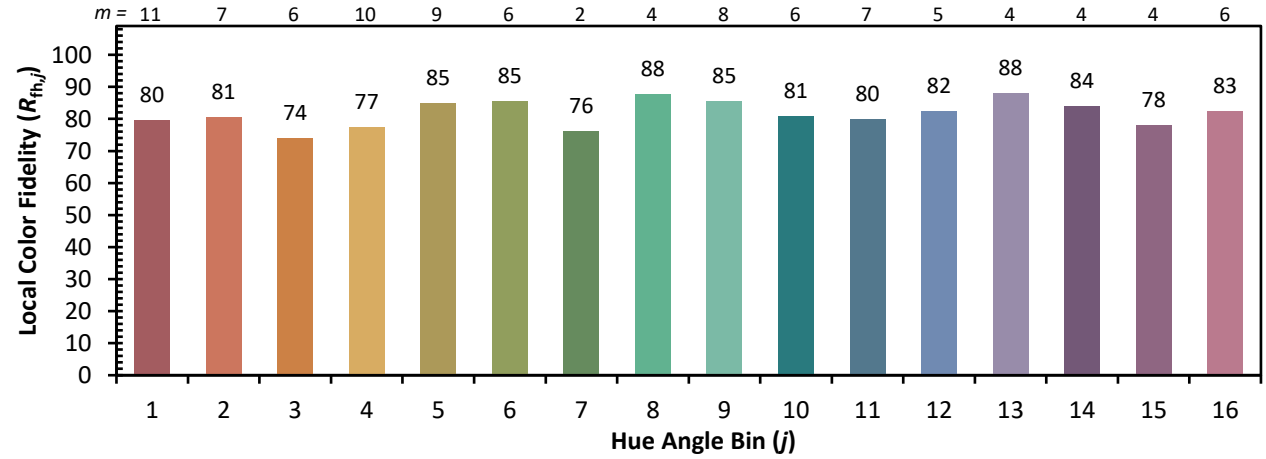
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## Color Rendition by Hue-Angle Bin



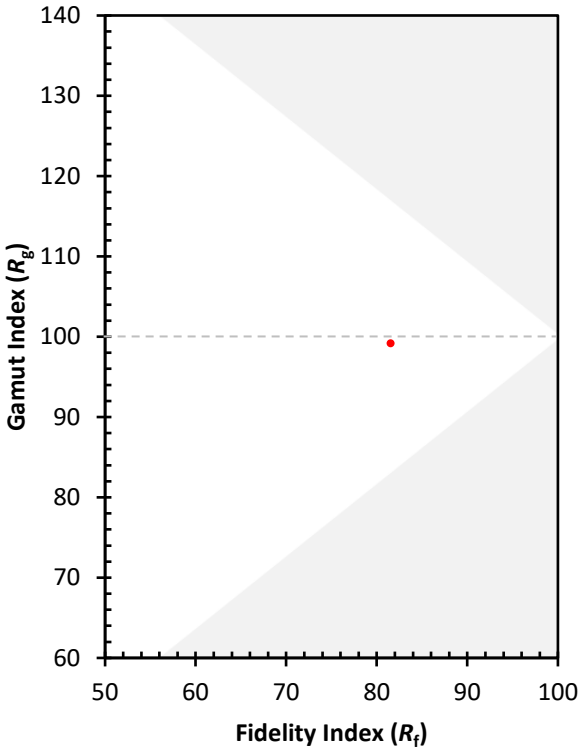



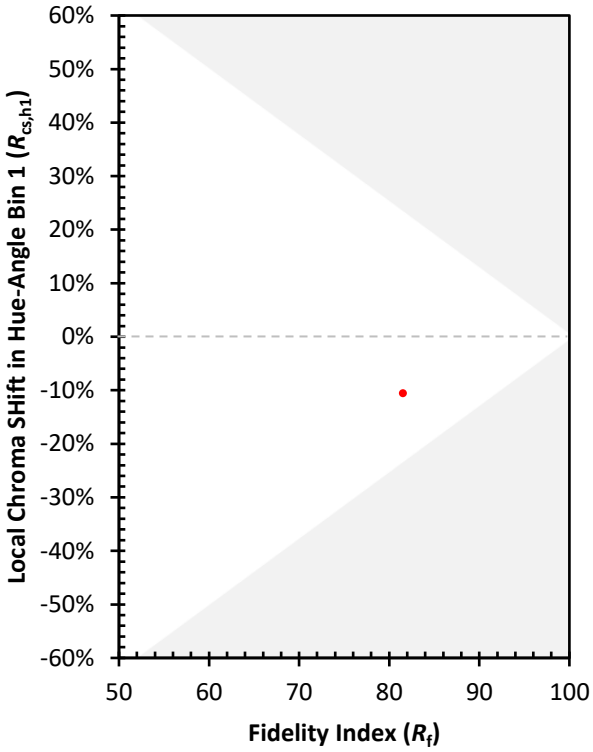



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## Measure Comparisons




(END OF REPORT)