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: P1502741

Luminaire Tested: GSS-SB1A-850-U-T4LG-HSS

Issue Date: 07/20/2026

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: | P1502741 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 7/20/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB1A-850-U-T4LG-HSS |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 1SQUARE 31W 80CRI 5000K FIXTURE w/ TYPE IV LOW GLARE DISTRIBUTION FIXTURE W/ HOUSE SIDE SHIELD |
| Light Source: | (26) 5000K CCT, 80 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 3140.5 lumens |
| Efficiency: | N/A |
| Efficacy: | 101.3 lumens/watt |
| Luminous Opening: | Rectangular (W 0.5' x L: 0.5' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B1 - U0 - G1 |

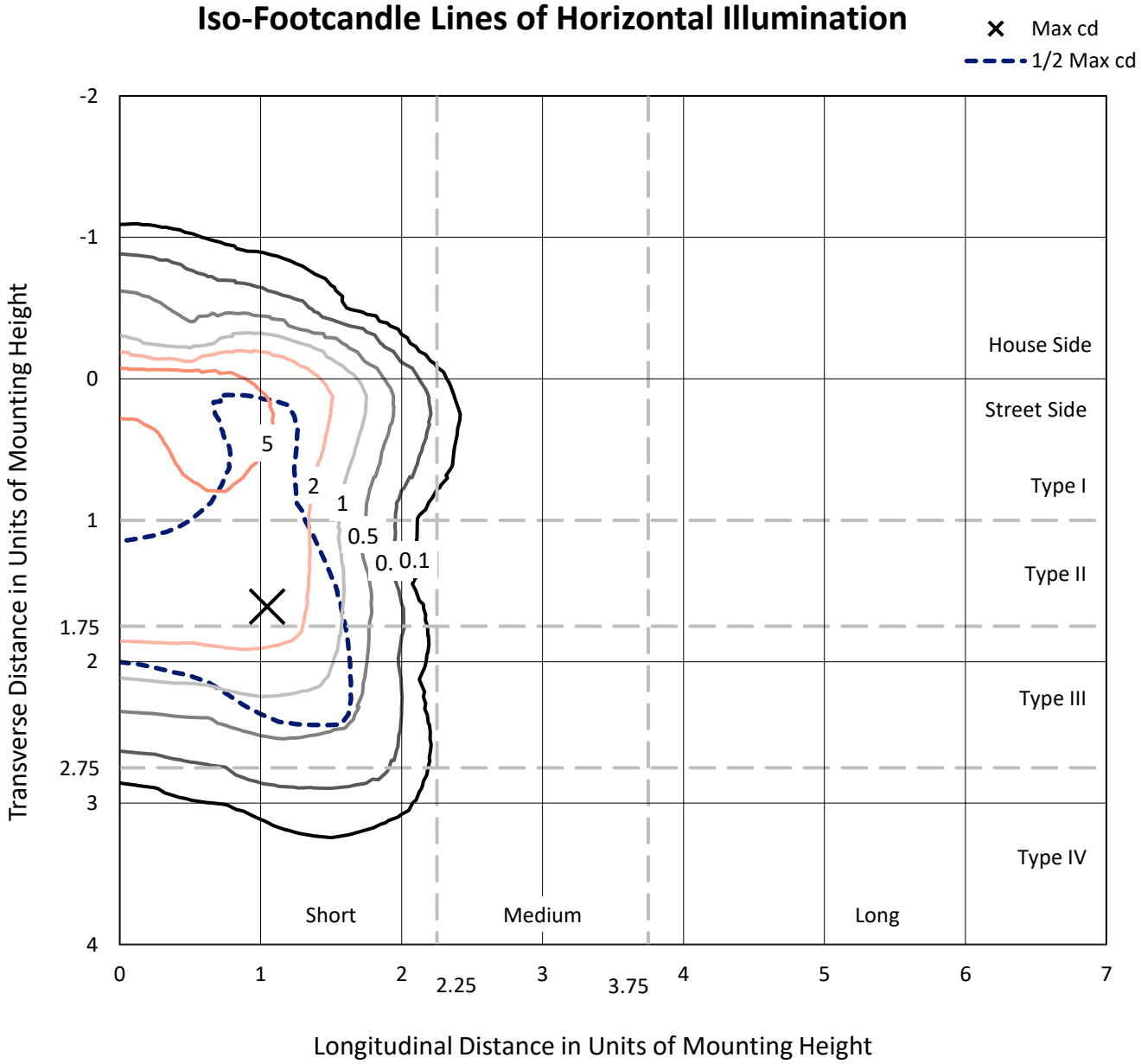
| | |
|---|---|
| Input Watts (W): | 31 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 6.4% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1502741
CATALOG NUMBER: GSS-SB1A-850-U-T4LG-HSS

## Iso-Footcandle Lines of Horizontal Illumination



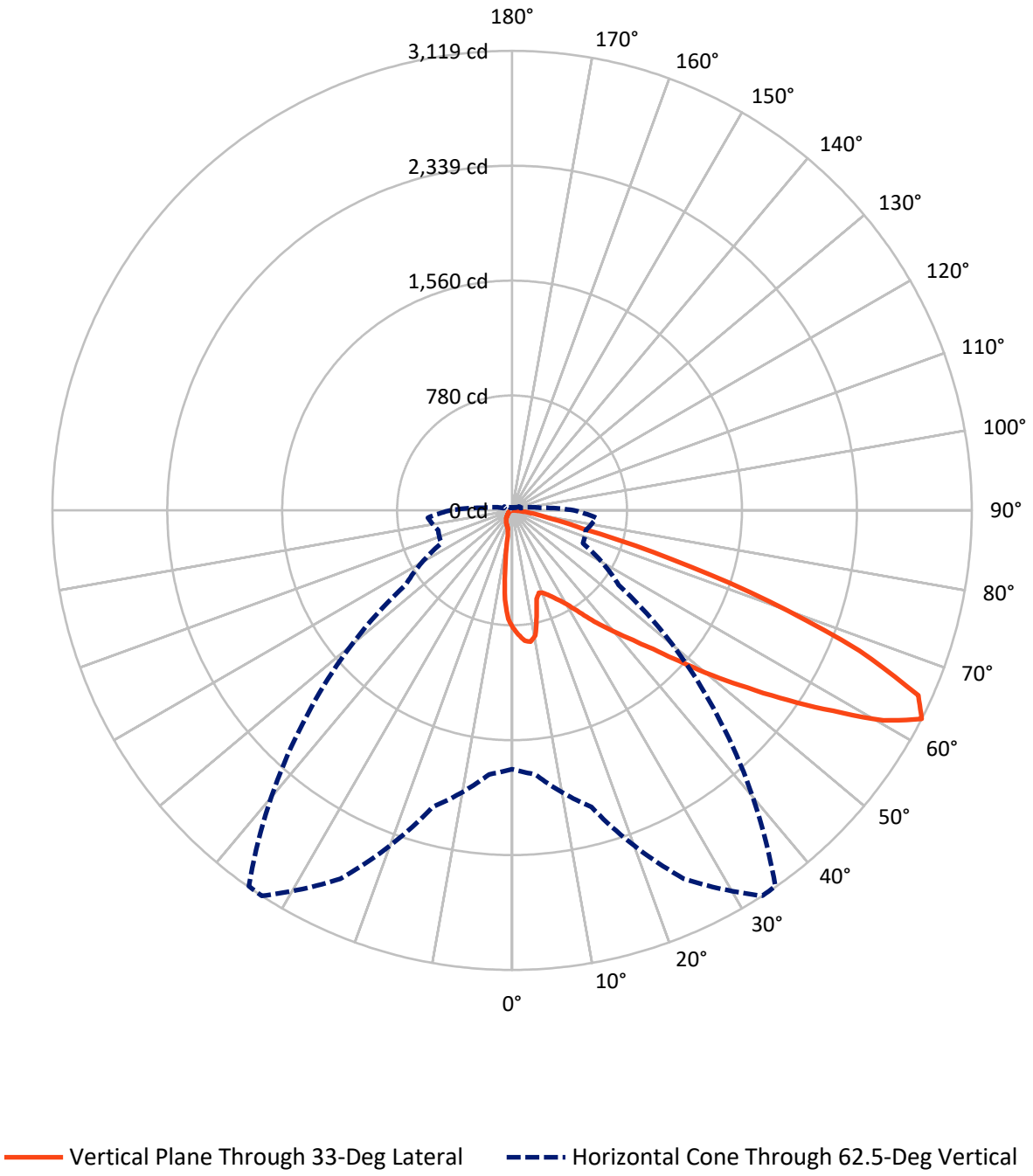

Based on 10 foot mounting height. Maximum calculated value = 9.5 fc
Type III - Short - N/A

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## Luminous Intensity Polar Plot



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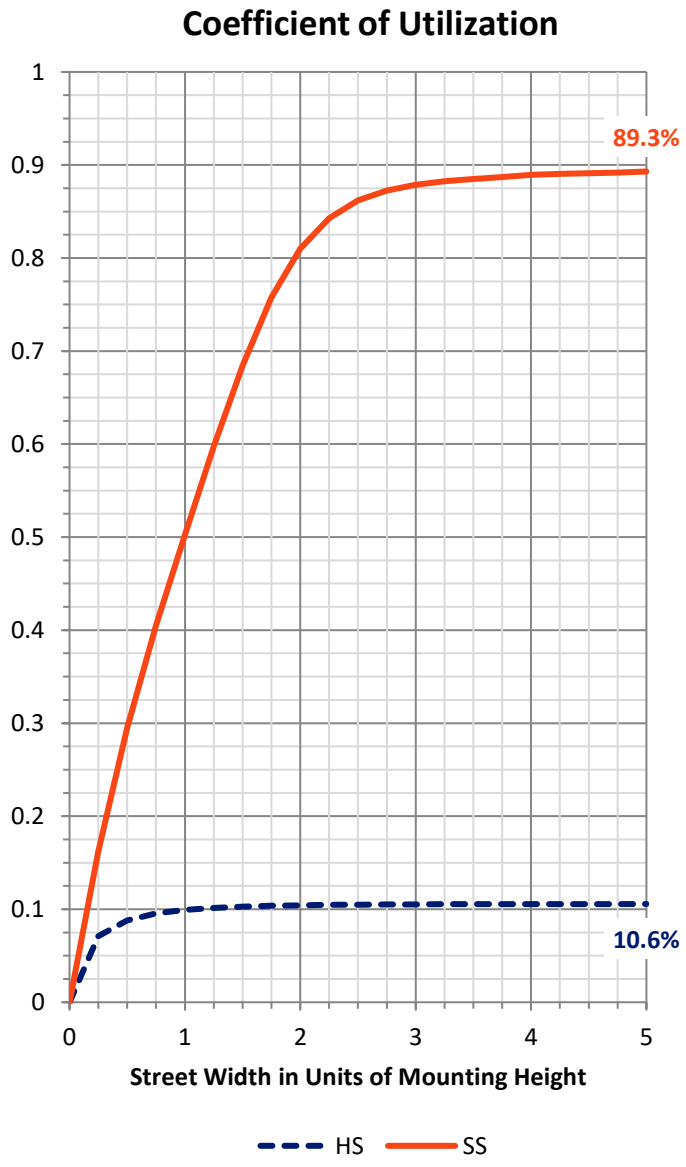
REPORT NUMBER: P1502741
CATALOG NUMBER: GSS-SB1A-850-U-T4LG-HSS

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 334.2 | 0.0 | 334.2 |
| | % Fixture | 10.6 | 0.0 | 10.6 |
| **Street Side** | Lumens | 2806.3 | 0.0 | 2806.3 |
| | % Fixture | 89.4 | 0.0 | 89.4 |
| **Total** | Lumens | 3140.5 | 0.0 | 3140.5 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 67.8 | 2.2 |
| 10°-20° | 151.3 | 4.8 |
| 20°-30° | 243.9 | 7.8 |
| 30°-40° | 405.8 | 12.9 |
| 40°-50° | 641.4 | 20.4 |
| 50°-60° | 861.6 | 27.4 |
| 60°-70° | 632.5 | 20.1 |
| 70°-80° | 125.2 | 4.0 |
| 80°-90° | 10.9 | 0.3 |
| 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° | 3140.5 | 100.0 |
| 0°-180° | 3140.5 | 100.0 |



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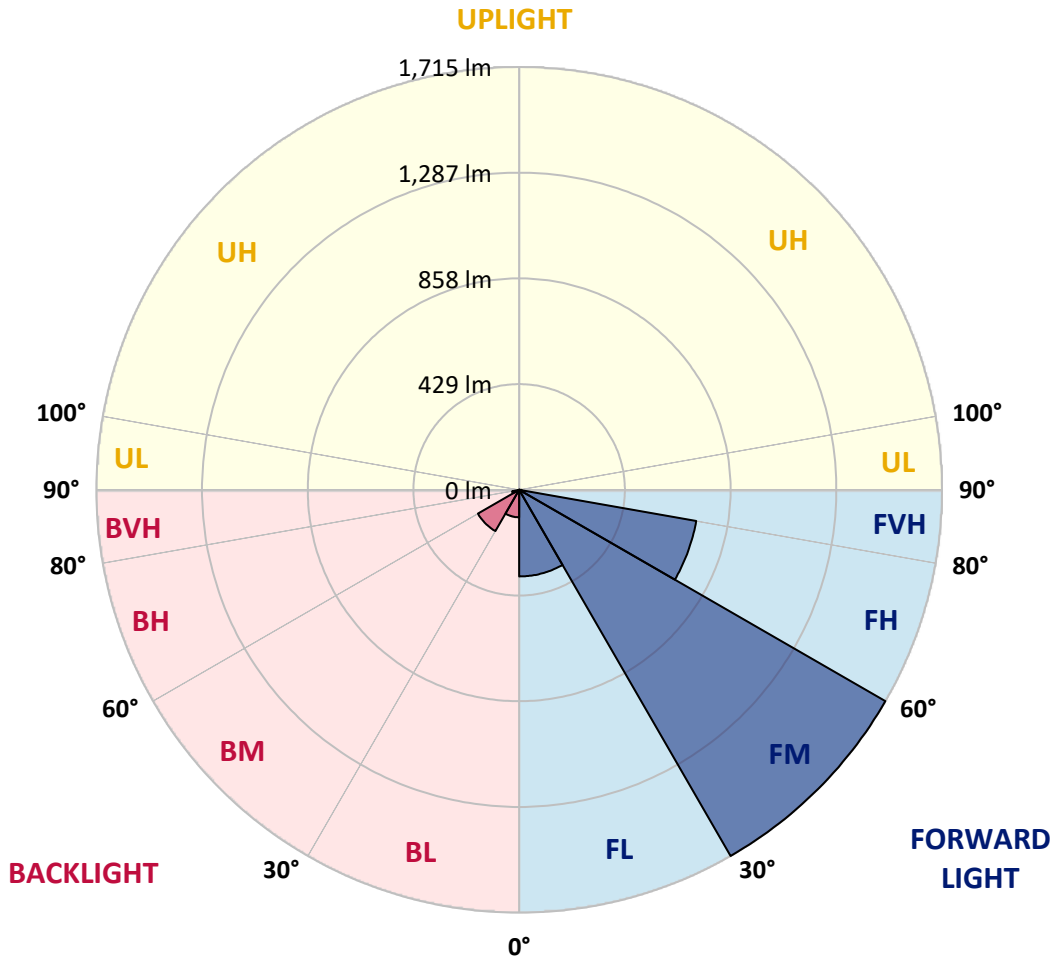
Scaled Data Report

REPORT NUMBER: P1502741
CATALOG NUMBER: GSS-SB1A-850-U-T4LG-HSS

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 351.6 | 11.2 | | | |
| FM | (30°-60°) | 1715.5 | 54.6 | | | |
| FH | (60°-80°) | 729.2 | 23.2 | | | G1/1800 |
| FVH | (80°-90°) | 10.1 | 0.3 | | | G1/100 |
| BL | (0°-30°) | 111.5 | 3.6 | B1/500 | | |
| BM | (30°-60°) | 193.3 | 6.2 | B0/220 | | |
| BH | (60°-80°) | 28.6 | 0.9 | B0/110 | | G0/110 |
| BVH | (80°-90°) | 0.8 | 0.0 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

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



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 33° | 35° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 797.7 | 797.7 | 797.7 | 797.7 | 797.7 | 797.7 | 797.7 | 797.7 | 797.7 | 797.7 | 797.7 |
| 2.5° | 849.9 | 853.4 | 853.4 | 846.4 | 844.6 | 841.0 | 837.5 | 836.6 | 825.1 | 816.3 | 807.4 |
| 5° | 893.2 | 892.3 | 891.5 | 887.9 | 888.8 | 884.4 | 881.7 | 877.3 | 857.9 | 844.6 | 820.7 |
| 7.5° | 874.7 | 882.6 | 886.2 | 895.9 | 900.3 | 899.4 | 906.5 | 908.3 | 891.5 | 872.9 | 836.6 |
| 10° | 753.5 | 749.1 | 780.9 | 822.5 | 864.0 | 873.8 | 911.8 | 932.1 | 926.0 | 909.1 | 862.3 |
| 12.5° | 597.0 | 601.4 | 623.5 | 672.1 | 740.2 | 761.5 | 871.1 | 951.6 | 969.3 | 958.7 | 897.7 |
| 15° | 546.5 | 546.5 | 558.0 | 581.0 | 621.7 | 642.1 | 777.4 | 948.9 | 1015.3 | 1016.2 | 941.9 |
| 17.5° | 535.9 | 537.7 | 547.4 | 562.5 | 589.0 | 597.8 | 692.5 | 910.0 | 1060.4 | 1076.3 | 991.4 |
| 20° | 537.7 | 540.4 | 551.0 | 572.2 | 597.8 | 608.5 | 670.4 | 860.5 | 1098.4 | 1141.7 | 1043.6 |
| 22.5° | 543.9 | 543.0 | 561.6 | 589.9 | 622.6 | 632.3 | 688.9 | 840.2 | 1130.2 | 1216.9 | 1104.6 |
| 25° | 551.0 | 551.9 | 575.7 | 615.5 | 655.3 | 666.8 | 730.5 | 858.7 | 1153.2 | 1297.4 | 1166.5 |
| 27.5° | 572.2 | 574.9 | 604.0 | 647.4 | 694.2 | 709.3 | 784.4 | 907.4 | 1193.0 | 1375.2 | 1233.7 |
| 30° | 604.9 | 607.6 | 641.2 | 693.4 | 743.8 | 766.8 | 851.7 | 968.4 | 1252.3 | 1465.4 | 1302.7 |
| 32.5° | 642.9 | 646.5 | 689.8 | 750.0 | 811.0 | 833.1 | 928.6 | 1061.3 | 1331.0 | 1557.4 | 1374.3 |
| 35° | 690.7 | 700.4 | 747.3 | 818.9 | 901.2 | 922.4 | 1023.2 | 1166.5 | 1433.6 | 1639.6 | 1435.4 |
| 37.5° | 756.1 | 764.1 | 821.6 | 910.9 | 994.0 | 1022.3 | 1129.4 | 1277.1 | 1526.4 | 1713.1 | 1484.9 |
| 40° | 835.7 | 842.8 | 907.4 | 1004.7 | 1091.3 | 1115.2 | 1240.8 | 1388.5 | 1626.4 | 1753.7 | 1495.5 |
| 42.5° | 968.4 | 987.9 | 1028.5 | 1110.8 | 1203.6 | 1233.7 | 1364.6 | 1496.4 | 1698.9 | 1761.7 | 1478.7 |
| 45° | 1200.1 | 1206.3 | 1215.1 | 1254.1 | 1343.4 | 1369.9 | 1495.5 | 1590.1 | 1742.2 | 1763.5 | 1463.7 |
| 47.5° | 1422.1 | 1443.3 | 1455.7 | 1473.4 | 1527.3 | 1537.1 | 1632.6 | 1674.1 | 1776.7 | 1757.3 | 1463.7 |
| 50° | 1644.1 | 1660.0 | 1681.2 | 1702.4 | 1759.9 | 1763.5 | 1777.6 | 1730.7 | 1778.5 | 1706.9 | 1454.8 |
| 52.5° | 1845.7 | 1851.0 | 1887.3 | 1928.0 | 1999.6 | 2019.1 | 1912.0 | 1772.3 | 1671.5 | 1547.7 | 1413.2 |
| 55° | 2026.1 | 2033.2 | 2088.0 | 2171.2 | 2273.8 | 2299.4 | 2076.5 | 1691.8 | 1442.4 | 1341.6 | 1316.8 |
| 57.5° | 2142.9 | 2159.7 | 2269.3 | 2452.4 | 2568.3 | 2556.8 | 2203.9 | 1503.5 | 1158.5 | 1097.5 | 1146.2 |
| 60° | 2084.5 | 2107.5 | 2338.3 | 2688.5 | 2894.6 | 2861.0 | 2168.5 | 1237.3 | 856.1 | 811.9 | 907.4 |
| 62.5° | 1756.4 | 1798.8 | 2084.5 | 2758.4 | 3119.2 | 3113.9 | 1968.6 | 882.6 | 530.6 | 519.1 | 573.1 |
| 65° | 1221.3 | 1294.7 | 1633.5 | 2524.9 | 3029.0 | 3037.0 | 1657.3 | 513.8 | 245.9 | 305.1 | 335.2 |
| 67.5° | 719.9 | 772.1 | 1052.4 | 2061.5 | 2541.7 | 2468.3 | 1126.7 | 237.9 | 122.9 | 185.7 | 177.8 |
| 70° | 316.6 | 352.0 | 603.2 | 1428.3 | 1851.9 | 1733.4 | 550.1 | 115.9 | 93.7 | 112.3 | 98.2 |
| 72.5° | 174.2 | 190.1 | 317.5 | 754.4 | 1126.7 | 1071.0 | 185.7 | 76.9 | 80.5 | 84.0 | 70.8 |
| 75° | 97.3 | 104.4 | 167.1 | 436.0 | 495.3 | 460.8 | 90.2 | 50.4 | 68.1 | 68.1 | 52.2 |
| 77.5° | 56.6 | 62.8 | 104.4 | 271.5 | 271.5 | 219.3 | 54.8 | 31.8 | 51.3 | 46.0 | 28.3 |
| 80° | 26.5 | 30.1 | 57.5 | 150.3 | 171.6 | 141.5 | 31.0 | 22.1 | 33.6 | 29.2 | 18.6 |
| 82.5° | 8.0 | 9.7 | 28.3 | 58.4 | 97.3 | 83.1 | 15.9 | 14.2 | 24.8 | 18.6 | 10.6 |
| 85° | 5.3 | 6.2 | 14.2 | 23.9 | 47.8 | 41.6 | 5.3 | 4.4 | 10.6 | 8.8 | 4.4 |
| 87.5° | 0.9 | 0.9 | 1.8 | 1.8 | 1.8 | 1.8 | 0.9 | 0.9 | 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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Scaled Data Report

REPORT NUMBER: P1502741
CATALOG NUMBER: GSS-SB1A-850-U-T4LG-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 797.7 | 797.7 | 797.7 | 797.7 | 797.7 | 797.7 | 797.7 | 797.7 | 797.7 | 797.7 | 797.7 |
| 2.5° | 802.1 | 795.9 | 781.8 | 768.5 | 761.5 | 745.5 | 739.3 | 732.3 | 728.7 | 727.8 | 722.5 |
| 5° | 805.7 | 794.2 | 758.8 | 723.4 | 686.3 | 650.9 | 614.6 | 582.8 | 557.2 | 558.0 | 558.9 |
| 7.5° | 816.3 | 793.3 | 731.4 | 660.6 | 581.0 | 489.1 | 390.9 | 317.5 | 270.6 | 260.9 | 252.0 |
| 10° | 830.4 | 796.8 | 697.8 | 566.9 | 410.4 | 258.2 | 182.2 | 155.7 | 144.2 | 141.5 | 142.4 |
| 12.5° | 857.0 | 805.7 | 655.3 | 437.8 | 227.3 | 148.6 | 131.8 | 127.4 | 125.6 | 125.6 | 125.6 |
| 15° | 889.7 | 818.1 | 589.0 | 286.5 | 148.6 | 123.8 | 120.3 | 119.4 | 117.6 | 117.6 | 118.5 |
| 17.5° | 917.1 | 818.1 | 501.4 | 186.6 | 122.0 | 115.0 | 112.3 | 111.4 | 111.4 | 112.3 | 111.4 |
| 20° | 947.2 | 811.9 | 403.3 | 140.6 | 113.2 | 107.0 | 105.2 | 105.2 | 105.2 | 106.1 | 106.1 |
| 22.5° | 978.1 | 801.3 | 312.2 | 120.3 | 105.2 | 99.9 | 99.1 | 99.9 | 100.8 | 101.7 | 101.7 |
| 25° | 1012.6 | 788.0 | 246.7 | 111.4 | 98.2 | 93.7 | 93.7 | 93.7 | 94.6 | 96.4 | 97.3 |
| 27.5° | 1050.6 | 776.5 | 211.4 | 106.1 | 92.0 | 87.6 | 87.6 | 88.4 | 90.2 | 91.1 | 92.0 |
| 30° | 1086.0 | 776.5 | 199.9 | 108.8 | 89.3 | 84.0 | 82.2 | 83.1 | 84.9 | 86.7 | 86.7 |
| 32.5° | 1130.2 | 785.3 | 206.1 | 120.3 | 88.4 | 78.7 | 76.9 | 76.9 | 78.7 | 79.6 | 79.6 |
| 35° | 1167.4 | 802.1 | 227.3 | 136.2 | 92.0 | 74.3 | 70.8 | 69.9 | 71.6 | 70.8 | 71.6 |
| 37.5° | 1197.5 | 825.1 | 266.2 | 157.4 | 99.1 | 69.0 | 64.6 | 61.9 | 61.9 | 61.9 | 61.9 |
| 40° | 1206.3 | 848.1 | 315.7 | 171.6 | 98.2 | 62.8 | 56.6 | 53.9 | 53.1 | 52.2 | 52.2 |
| 42.5° | 1193.9 | 858.7 | 355.5 | 170.7 | 87.6 | 58.4 | 50.4 | 46.9 | 44.2 | 43.3 | 43.3 |
| 45° | 1184.2 | 864.0 | 369.7 | 148.6 | 79.6 | 53.1 | 45.1 | 40.7 | 38.0 | 37.1 | 36.3 |
| 47.5° | 1185.1 | 869.4 | 348.4 | 121.2 | 72.5 | 48.6 | 40.7 | 36.3 | 33.6 | 32.7 | 31.8 |
| 50° | 1188.6 | 860.5 | 295.4 | 100.8 | 66.3 | 44.2 | 36.3 | 32.7 | 30.1 | 29.2 | 28.3 |
| 52.5° | 1151.5 | 813.6 | 207.8 | 88.4 | 61.0 | 41.6 | 32.7 | 30.1 | 27.4 | 26.5 | 26.5 |
| 55° | 1054.2 | 701.3 | 140.6 | 78.7 | 56.6 | 38.0 | 30.1 | 28.3 | 25.6 | 23.9 | 23.9 |
| 57.5° | 898.5 | 528.9 | 97.3 | 71.6 | 49.5 | 34.5 | 28.3 | 25.6 | 23.0 | 21.2 | 21.2 |
| 60° | 687.2 | 344.9 | 70.8 | 65.4 | 40.7 | 31.8 | 26.5 | 24.8 | 21.2 | 19.5 | 18.6 |
| 62.5° | *418.3* | *193.7* | *57.5* | *57.5* | *34.5* | *30.1* | *23.9* | *22.1* | *18.6* | *15.9* | *15.0* |
| 65° | 242.3 | 114.1 | 46.9 | 48.6 | 30.1 | 27.4 | 21.2 | 18.6 | 15.0 | 12.4 | 11.5 |
| 67.5° | 116.7 | 66.3 | 37.1 | 34.5 | 26.5 | 23.0 | 18.6 | 15.9 | 13.3 | 10.6 | 9.7 |
| 70° | 71.6 | 51.3 | 28.3 | 24.8 | 21.2 | 17.7 | 15.0 | 14.2 | 11.5 | 8.8 | 8.8 |
| 72.5° | 58.4 | 41.6 | 22.1 | 17.7 | 15.9 | 12.4 | 12.4 | 11.5 | 8.8 | 7.1 | 6.2 |
| 75° | 46.0 | 31.0 | 16.8 | 12.4 | 9.7 | 9.7 | 8.8 | 8.0 | 7.1 | 5.3 | 5.3 |
| 77.5° | 24.8 | 21.2 | 12.4 | 7.1 | 5.3 | 6.2 | 6.2 | 5.3 | 4.4 | 3.5 | 3.5 |
| 80° | 15.9 | 12.4 | 7.1 | 3.5 | 3.5 | 3.5 | 3.5 | 2.7 | 2.7 | 1.8 | 1.8 |
| 82.5° | 8.0 | 6.2 | 3.5 | 0.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 0.9 | 0.9 |
| 85° | 1.8 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 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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# LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-12

Test Date: 10/11/2024

Luminaire Tested: GSS-SB1A-850-U-5WQ

Data in this report applies to families of products including GSS-SB1A-850-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

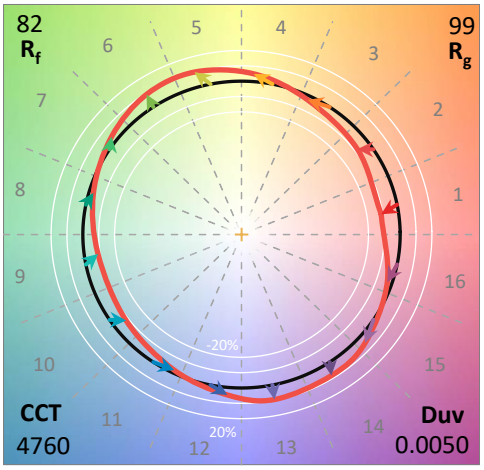
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-12 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 10/15/2024 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGraw-Edison |
| Catalog Number: | **GSS-SB1A-850-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 80 CRI 5000K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 4760 |
| CIE u': | 0.2107 |
| CIE v': | 0.4939 |
| Duv: | 0.0050 |
| CIE x: | 0.3537 |
| CIE y: | 0.3685 |
| CIE z: | 0.2779 |
| Peak Wavelength (nm): | 443 |
| Dominant Wavelength (nm): | 571 |
| Purity: | 16.69598 |
| Rf: | 82 |
| Rg: | 99.4 |

| | | | | | |
|---|---|---|---|---|---|
| CRI (Ra): | 81.1 | | | | |
| R1: | 79.8 | R9: | 8.7 | | |
| R2: | 83.5 | R10: | 62.4 | | |
| R3: | 87.9 | R11: | 83.8 | | |
| R4: | 83.1 | R12: | 63.0 | | |
| R5: | 80.5 | R13: | 79.9 | | |
| R6: | 79.1 | R14: | 93.3 | | |
| R7: | 86.1 | R15: | 72.7 | | |
| R8: | 69.0 | | | | |




## Test Conditions

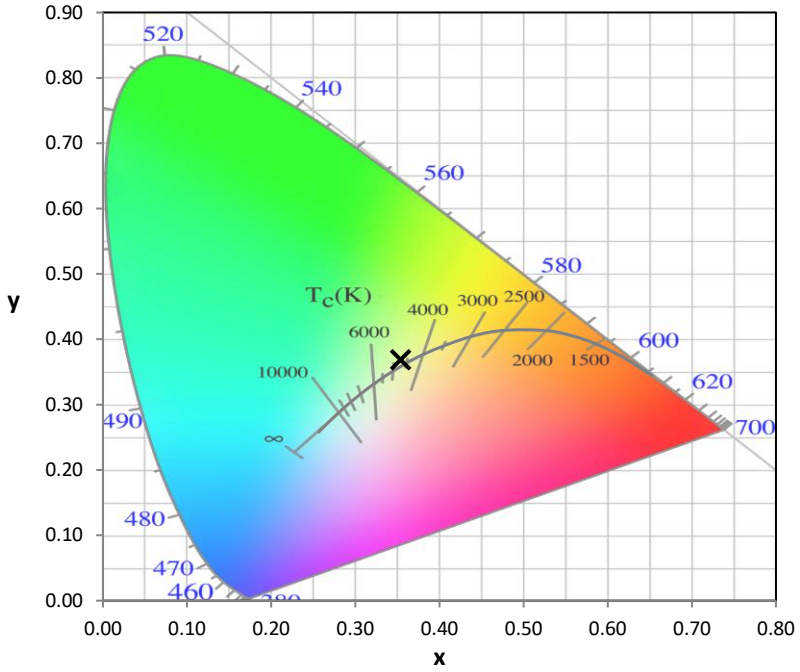
| | |
|---|---|
| Stabilization Time: | 21M |
| Operation Time: | 1H 21M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-12

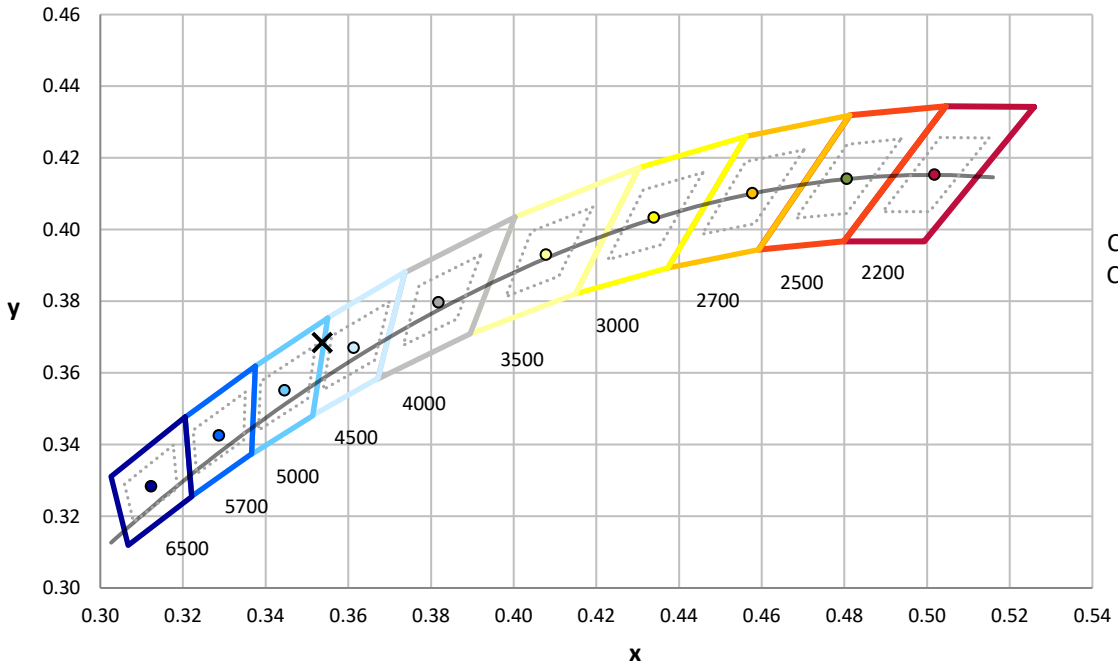
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

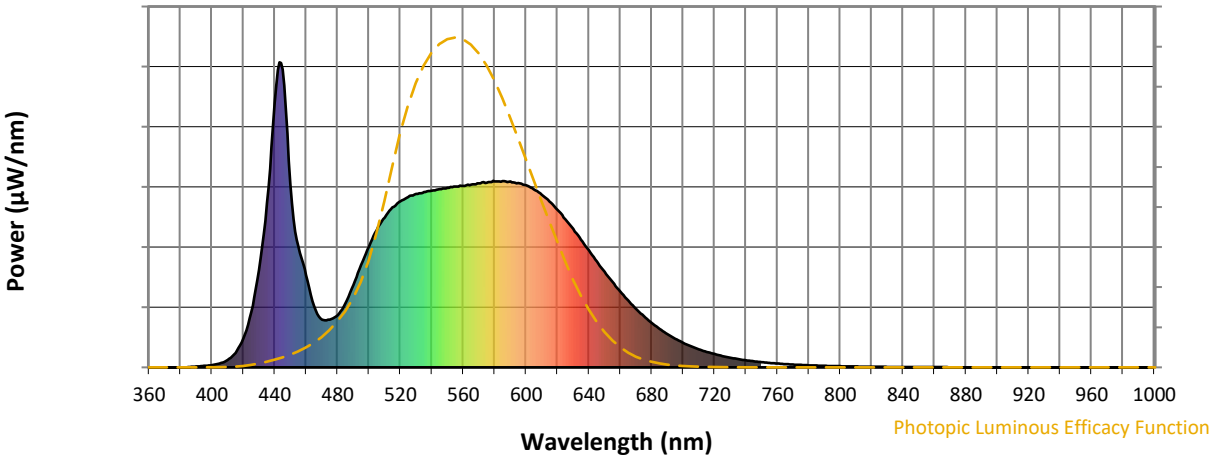



CCT = 4760K
CIE x = 0.3537
CIE y = 0.3685
Duv = 0.0050

Point lies inside the ANSI 5000K 7-step quadrangle

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## Photopic Flux vs. Wavelength

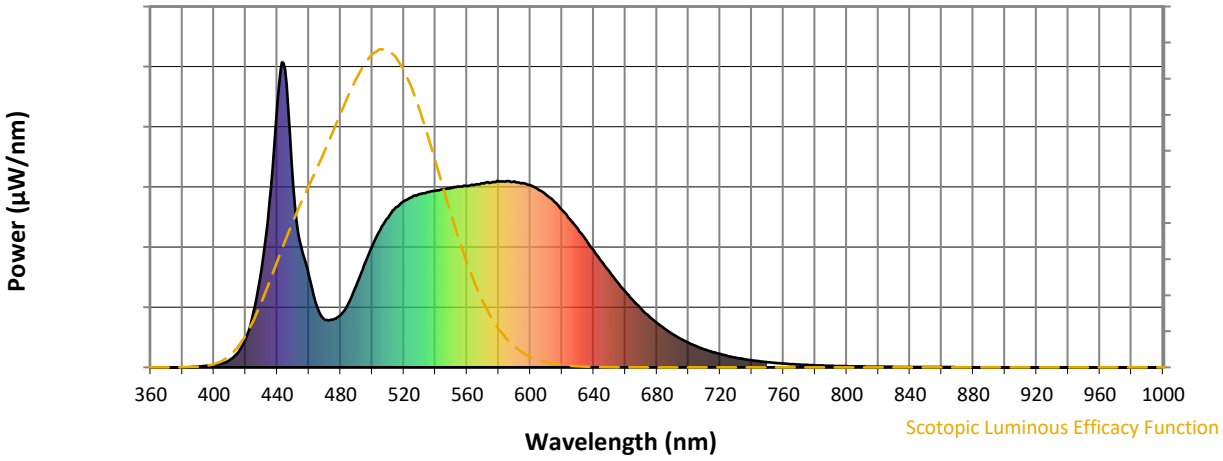



## Photopic Lumens: NR

| 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 | 270 | NR | 620 | 517 | NR | 750 | 17 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 335 | NR | 625 | 486 | NR | 755 | 15 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 397 | NR | 630 | 454 | NR | 760 | 12 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 451 | NR | 635 | 419 | NR | 765 | 11 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 492 | NR | 640 | 384 | NR | 770 | 9 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 524 | NR | 645 | 347 | NR | 775 | 8 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 545 | NR | 650 | 313 | NR | 780 | 7 | NR | 910 | 0 | NR |
| 395 | 5 | NR | 525 | 558 | NR | 655 | 280 | NR | 785 | 6 | NR | 915 | 0 | NR |
| 400 | 7 | NR | 530 | 568 | NR | 660 | 248 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 13 | NR | 535 | 575 | NR | 665 | 219 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 24 | NR | 540 | 579 | NR | 670 | 192 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 47 | NR | 545 | 585 | NR | 675 | 167 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 95 | NR | 550 | 588 | NR | 680 | 146 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 181 | NR | 555 | 593 | NR | 685 | 126 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 319 | NR | 560 | 595 | NR | 690 | 109 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 539 | NR | 565 | 600 | NR | 695 | 94 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 868 | NR | 570 | 603 | NR | 700 | 80 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 977 | NR | 575 | 606 | NR | 705 | 69 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 601 | NR | 580 | 609 | NR | 710 | 59 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 397 | NR | 585 | 611 | NR | 715 | 51 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 302 | NR | 590 | 610 | NR | 720 | 44 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 201 | NR | 595 | 604 | NR | 725 | 37 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 157 | NR | 600 | 596 | NR | 730 | 32 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 157 | NR | 605 | 583 | NR | 735 | 27 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 171 | NR | 610 | 566 | NR | 740 | 23 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 210 | NR | 615 | 543 | NR | 745 | 20 | NR | 875 | 0 | NR | | | |

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## Scotopic Flux vs. Wavelength

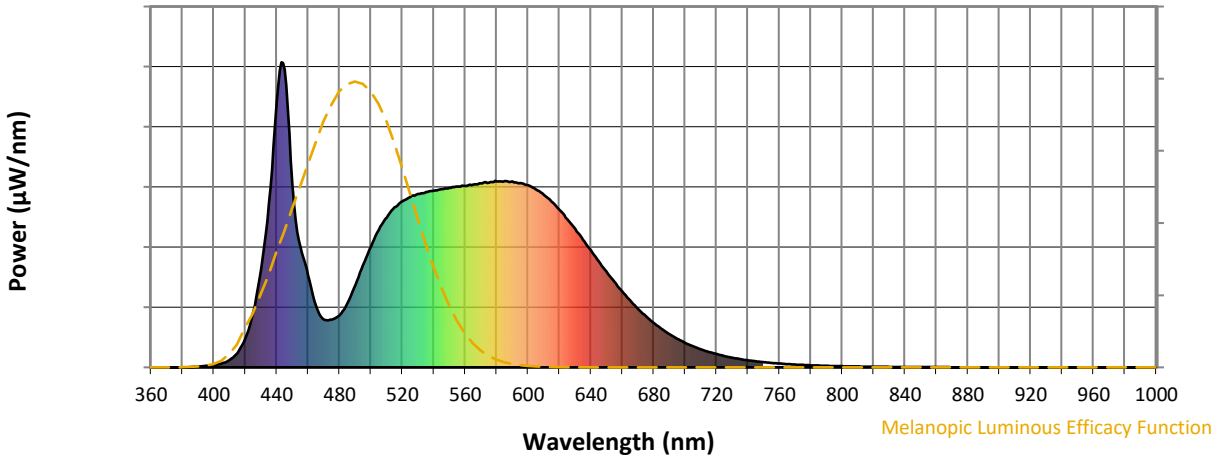



**Scotopic Lumens: NR** **S/P: 1.83**

| 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 | 270 | NR | 620 | 517 | NR | 750 | 17 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 335 | NR | 625 | 486 | NR | 755 | 15 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 397 | NR | 630 | 454 | NR | 760 | 12 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 451 | NR | 635 | 419 | NR | 765 | 11 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 492 | NR | 640 | 384 | NR | 770 | 9 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 524 | NR | 645 | 347 | NR | 775 | 8 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 545 | NR | 650 | 313 | NR | 780 | 7 | NR | 910 | 0 | NR |
| 395 | 5 | NR | 525 | 558 | NR | 655 | 280 | NR | 785 | 6 | NR | 915 | 0 | NR |
| 400 | 7 | NR | 530 | 568 | NR | 660 | 248 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 13 | NR | 535 | 575 | NR | 665 | 219 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 24 | NR | 540 | 579 | NR | 670 | 192 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 47 | NR | 545 | 585 | NR | 675 | 167 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 95 | NR | 550 | 588 | NR | 680 | 146 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 181 | NR | 555 | 593 | NR | 685 | 126 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 319 | NR | 560 | 595 | NR | 690 | 109 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 539 | NR | 565 | 600 | NR | 695 | 94 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 868 | NR | 570 | 603 | NR | 700 | 80 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 977 | NR | 575 | 606 | NR | 705 | 69 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 601 | NR | 580 | 609 | NR | 710 | 59 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 397 | NR | 585 | 611 | NR | 715 | 51 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 302 | NR | 590 | 610 | NR | 720 | 44 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 201 | NR | 595 | 604 | NR | 725 | 37 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 157 | NR | 600 | 596 | NR | 730 | 32 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 157 | NR | 605 | 583 | NR | 735 | 27 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 171 | NR | 610 | 566 | NR | 740 | 23 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 210 | NR | 615 | 543 | NR | 745 | 20 | NR | 875 | 0 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 3.74**

| 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 | 270 | NR | 620 | 517 | NR | 750 | 17 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 335 | NR | 625 | 486 | NR | 755 | 15 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 397 | NR | 630 | 454 | NR | 760 | 12 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 451 | NR | 635 | 419 | NR | 765 | 11 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 492 | NR | 640 | 384 | NR | 770 | 9 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 524 | NR | 645 | 347 | NR | 775 | 8 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 545 | NR | 650 | 313 | NR | 780 | 7 | NR | 910 | 0 | NR |
| 395 | 5 | NR | 525 | 558 | NR | 655 | 280 | NR | 785 | 6 | NR | 915 | 0 | NR |
| 400 | 7 | NR | 530 | 568 | NR | 660 | 248 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 13 | NR | 535 | 575 | NR | 665 | 219 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 24 | NR | 540 | 579 | NR | 670 | 192 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 47 | NR | 545 | 585 | NR | 675 | 167 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 95 | NR | 550 | 588 | NR | 680 | 146 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 181 | NR | 555 | 593 | NR | 685 | 126 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 319 | NR | 560 | 595 | NR | 690 | 109 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 539 | NR | 565 | 600 | NR | 695 | 94 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 868 | NR | 570 | 603 | NR | 700 | 80 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 977 | NR | 575 | 606 | NR | 705 | 69 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 601 | NR | 580 | 609 | NR | 710 | 59 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 397 | NR | 585 | 611 | NR | 715 | 51 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 302 | NR | 590 | 610 | NR | 720 | 44 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 201 | NR | 595 | 604 | NR | 725 | 37 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 157 | NR | 600 | 596 | NR | 730 | 32 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 157 | NR | 605 | 583 | NR | 735 | 27 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 171 | NR | 610 | 566 | NR | 740 | 23 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 210 | NR | 615 | 543 | NR | 745 | 20 | NR | 875 | 0 | NR | | | |

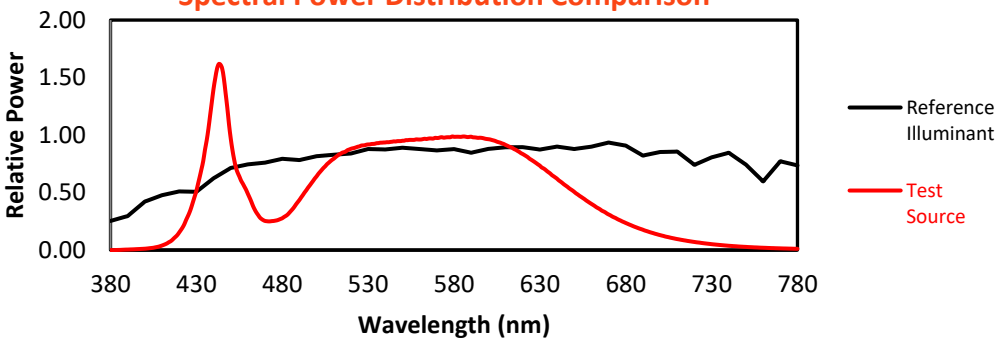
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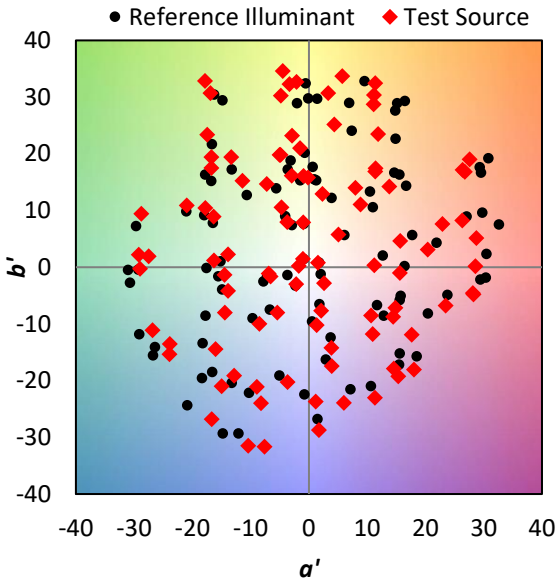
## Summary

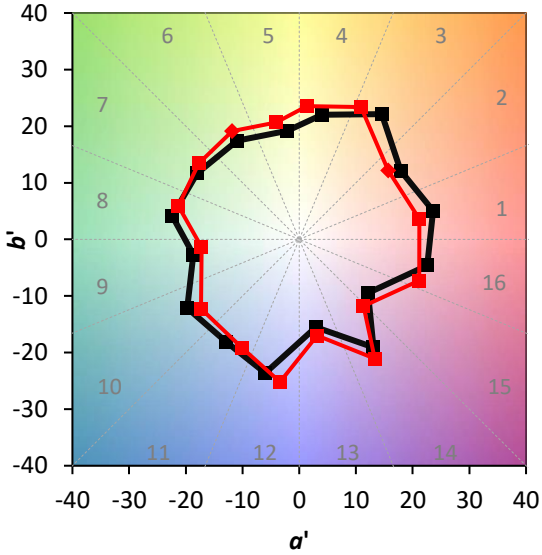
$R_f$ = 82
$R_g$ = 99.4
CIE $R_a$ = 81.1
$R_9$ = 8.7

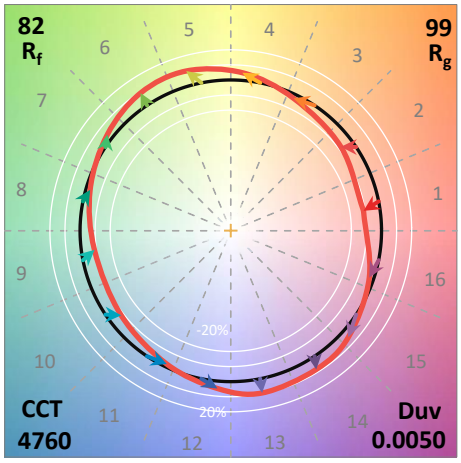
## Spectral Power Distribution Comparison

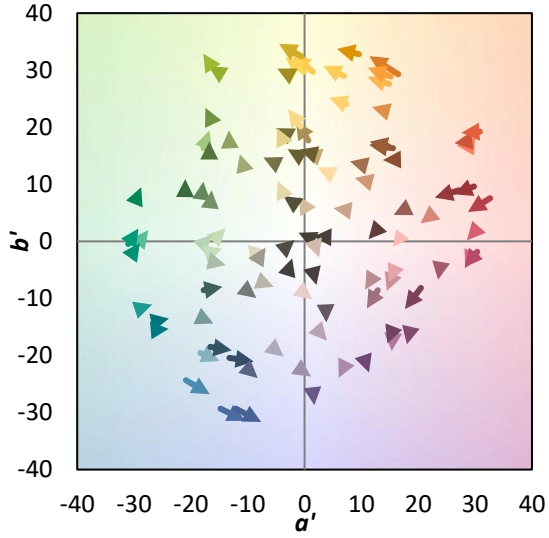



## Color Vector Graphics



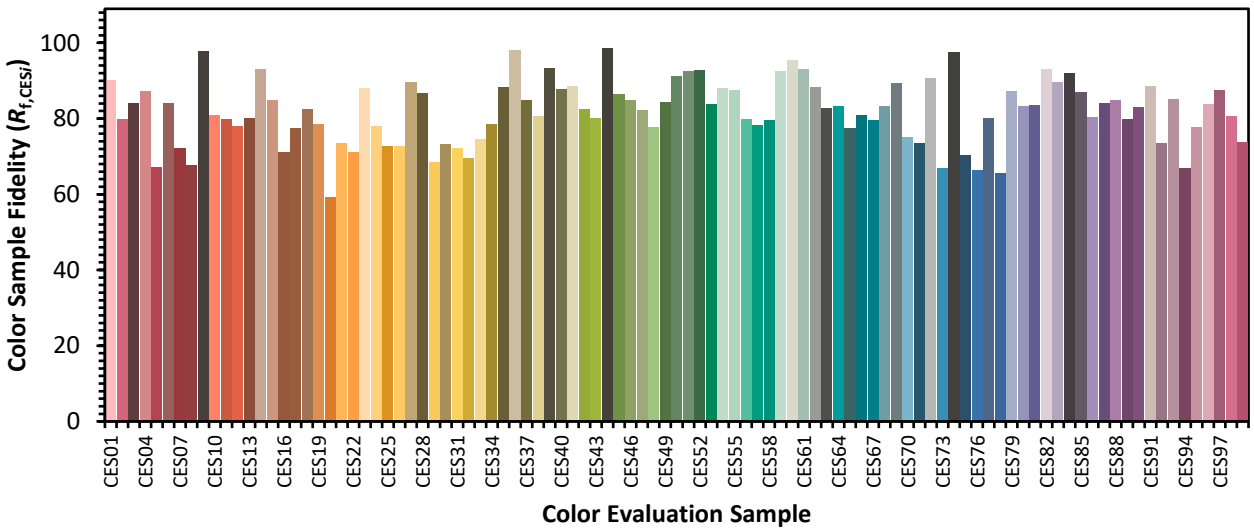



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**Individual Sample Fidelity Index ($R_{f,i}$)**

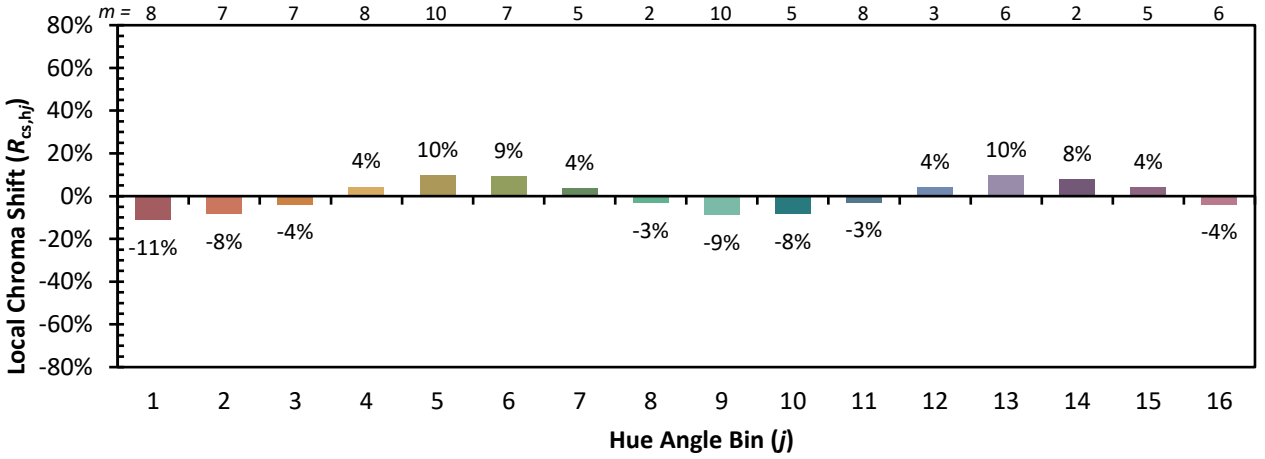
| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 73 | CES51 = 92 | CES76 = 66 |
| CES02 = 60 | CES27 = 90 | CES52 = 93 | CES77 = 80 |
| CES03 = 30 | CES28 = 87 | CES53 = 84 | CES78 = 65 |
| CES04 = 69 | CES29 = 69 | CES54 = 88 | CES79 = 87 |
| CES05 = 47 | CES30 = 73 | CES55 = 88 | CES80 = 83 |
| CES06 = 50 | CES31 = 72 | CES56 = 80 | CES81 = 84 |
| CES07 = 40 | CES32 = 69 | CES57 = 78 | CES82 = 93 |
| CES08 = 39 | CES33 = 75 | CES58 = 80 | CES83 = 90 |
| CES09 = 29 | CES34 = 78 | CES59 = 93 | CES84 = 92 |
| CES10 = 73 | CES35 = 88 | CES60 = 95 | CES85 = 87 |
| CES11 = 56 | CES36 = 98 | CES61 = 93 | CES86 = 80 |
| CES12 = 62 | CES37 = 85 | CES62 = 88 | CES87 = 84 |
| CES13 = 42 | CES38 = 81 | CES63 = 83 | CES88 = 85 |
| CES14 = 74 | CES39 = 93 | CES64 = 83 | CES89 = 80 |
| CES15 = 71 | CES40 = 88 | CES65 = 77 | CES90 = 83 |
| CES16 = 46 | CES41 = 89 | CES66 = 81 | CES91 = 89 |
| CES17 = 48 | CES42 = 82 | CES67 = 80 | CES92 = 73 |
| CES18 = 55 | CES43 = 80 | CES68 = 83 | CES93 = 85 |
| CES19 = 70 | CES44 = 99 | CES69 = 89 | CES94 = 67 |
| CES20 = 64 | CES45 = 87 | CES70 = 75 | CES95 = 78 |
| CES21 = 85 | CES46 = 85 | CES71 = 73 | CES96 = 84 |
| CES22 = 77 | CES47 = 82 | CES72 = 91 | CES97 = 87 |
| CES23 = 91 | CES48 = 78 | CES73 = 67 | CES98 = 81 |
| CES24 = 90 | CES49 = 84 | CES74 = 98 | CES99 = 74 |
| CES25 = 71 | CES50 = 91 | CES75 = 70 | |

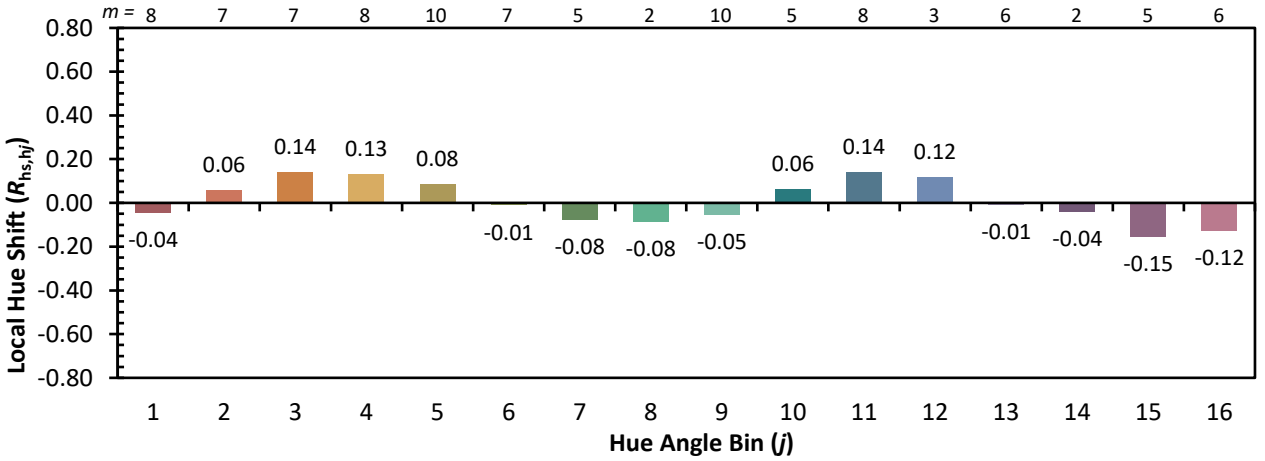


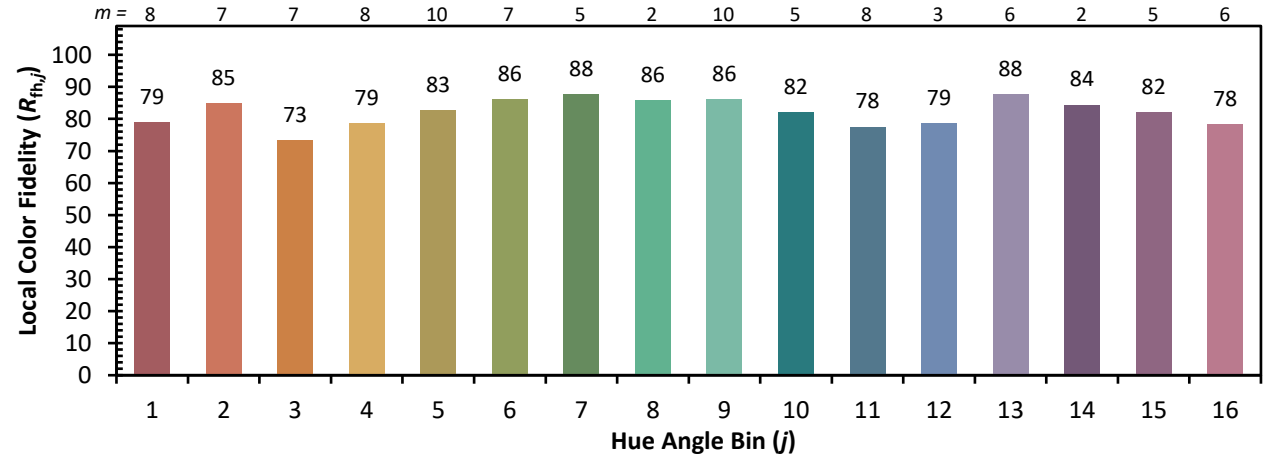
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## Color Rendition by Hue-Angle Bin



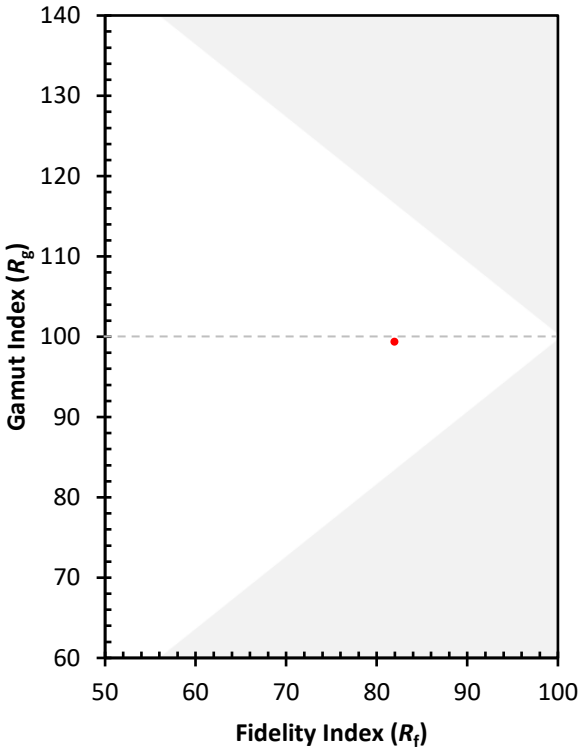



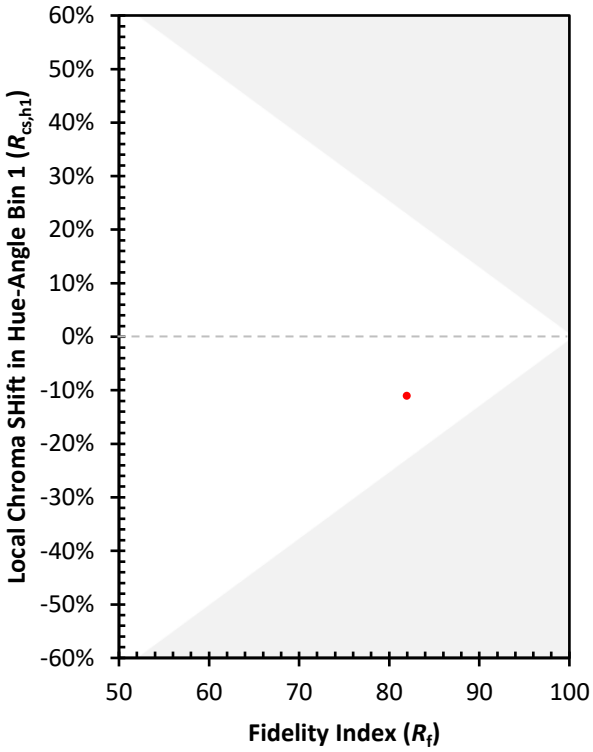



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## Measure Comparisons




(END OF REPORT)