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: P1704730

Luminaire Tested: GSS-SB3A-AMB-U-T3LG-HSS

Issue Date: 10/28/2026

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: | P1704730 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 10/28/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB3A-AMB-U-T3LG-HSS |
| Description: | GALLEON SITE SLIM HIGH DENSITY LED ARRAYS 3SQUARE 101W 1590K FIXTURE w/ T3 LOW GLARE DISTRIBUTION AND HOUSE SIDE SHIELD |
| Light Source: | (78) 1590K CCT, 0 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 5181.3 lumens |
| Efficiency: | N/A |
| Efficacy: | 51.3 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 0.5' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B1 - U0 - G1 |

| | |
|---|---|
| Input Watts (W): | 101 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | NR |
| Total Harmonic Distortion (THDi): | NR |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

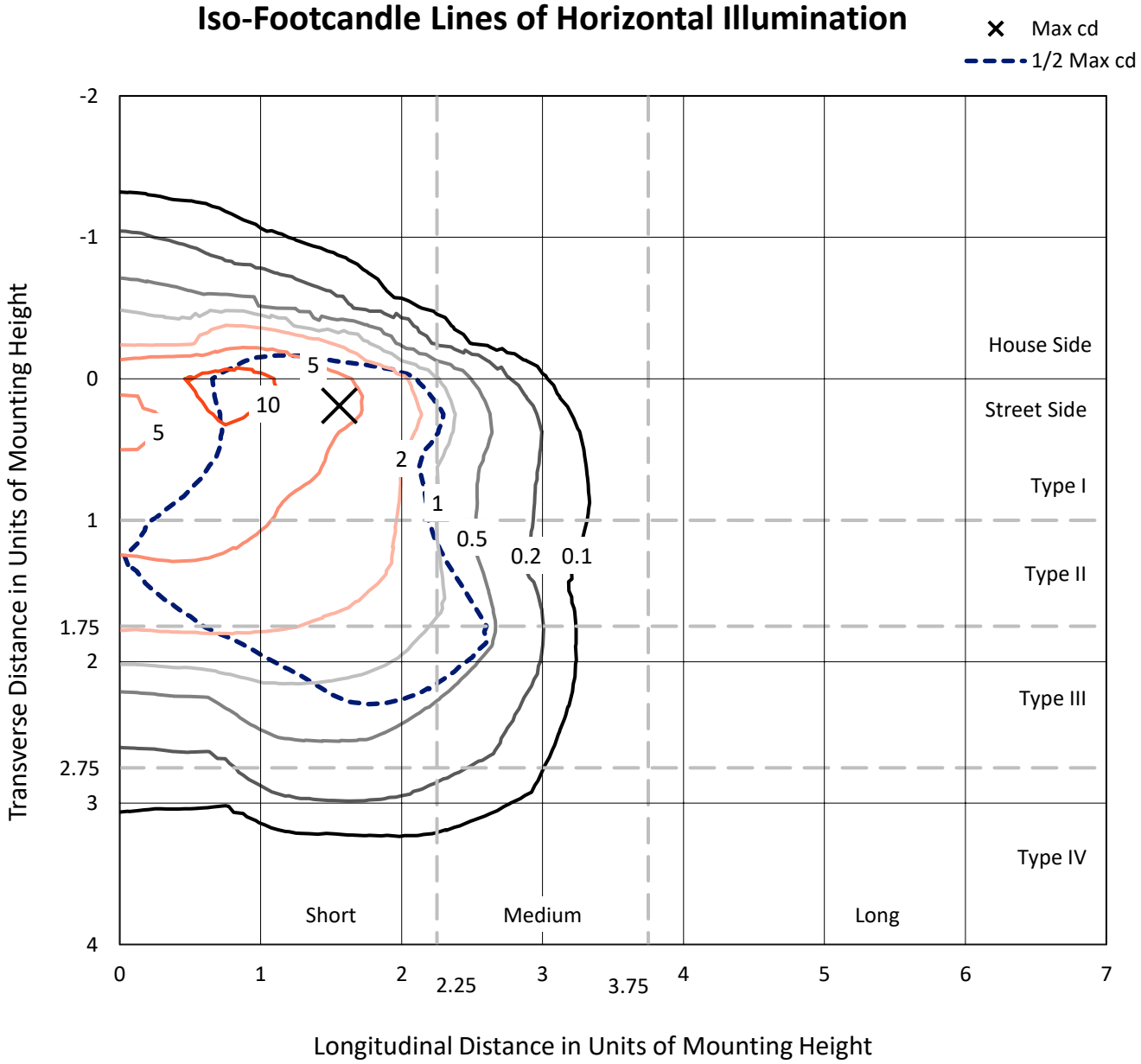


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REPORT NUMBER: P1704730
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## Iso-Footcandle Lines of Horizontal Illumination



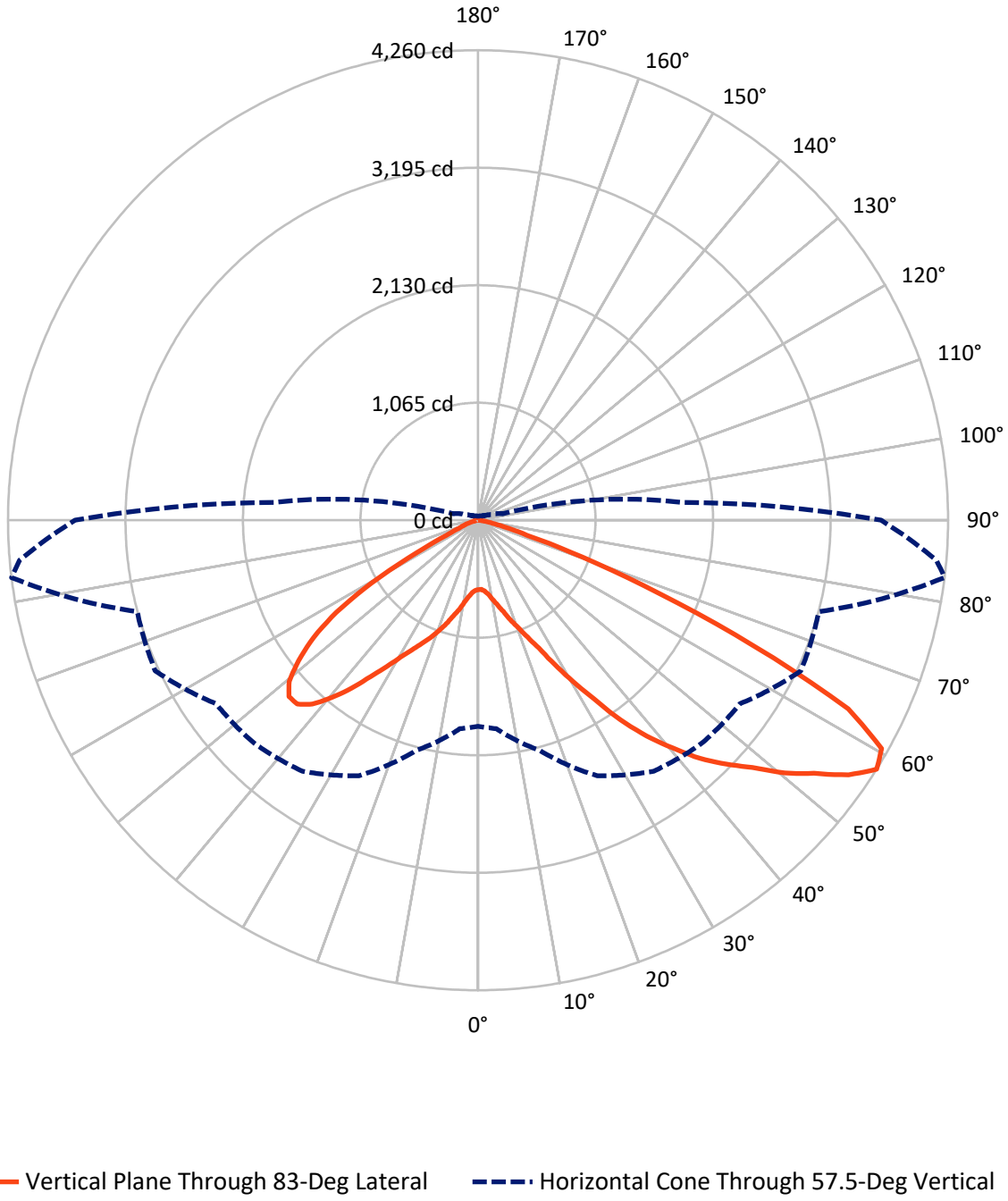

Based on 10 foot mounting height. Maximum calculated value = 12.5 fc
Type III - Short - N/A

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## Luminous Intensity Polar Plot



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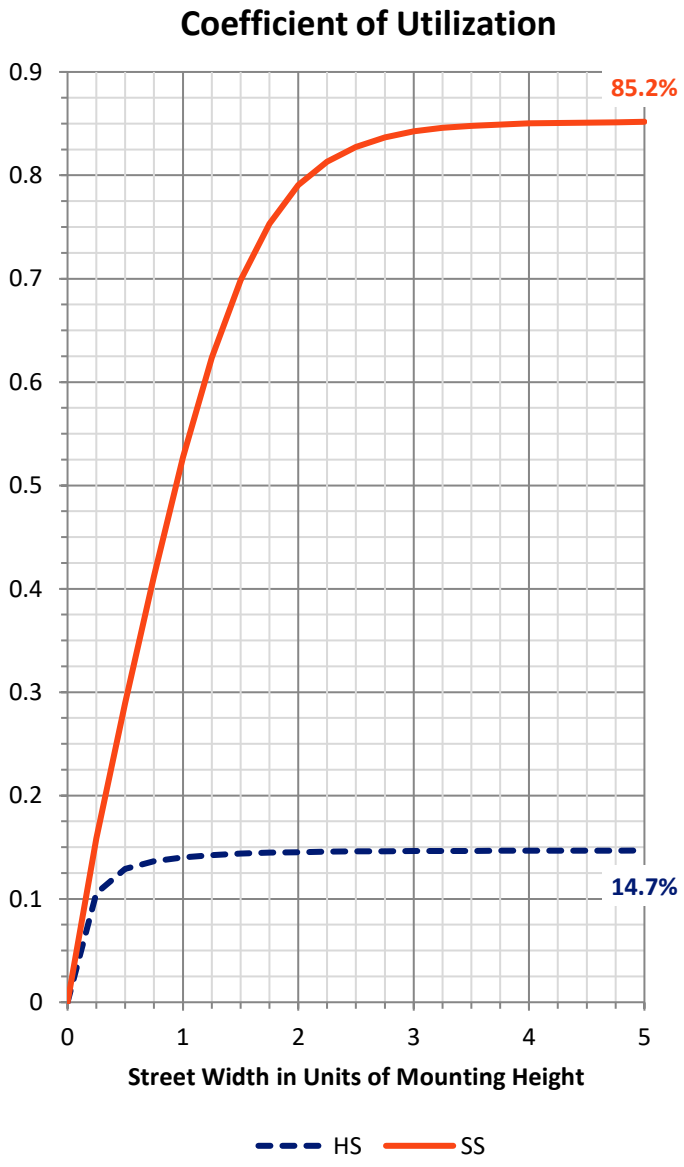
REPORT NUMBER: P1704730
CATALOG NUMBER: GSS-SB3A-AMB-U-T3LG-HSS

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 766.7 | 0.0 | 766.7 |
| | % Fixture | 14.8 | 0.0 | 14.8 |
| **Street Side** | Lumens | 4414.6 | 0.0 | 4414.6 |
| | % Fixture | 85.2 | 0.0 | 85.2 |
| **Total** | Lumens | 5181.3 | 0.0 | 5181.3 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 57.5 | 1.1 |
| 10°-20° | 152.3 | 2.9 |
| 20°-30° | 290.1 | 5.6 |
| 30°-40° | 630.0 | 12.2 |
| 40°-50° | 1110.9 | 21.4 |
| 50°-60° | 1416.4 | 27.3 |
| 60°-70° | 1181.3 | 22.8 |
| 70°-80° | 329.3 | 6.4 |
| 80°-90° | 13.5 | 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° | 5181.3 | 100.0 |
| 0°-180° | 5181.3 | 100.0 |



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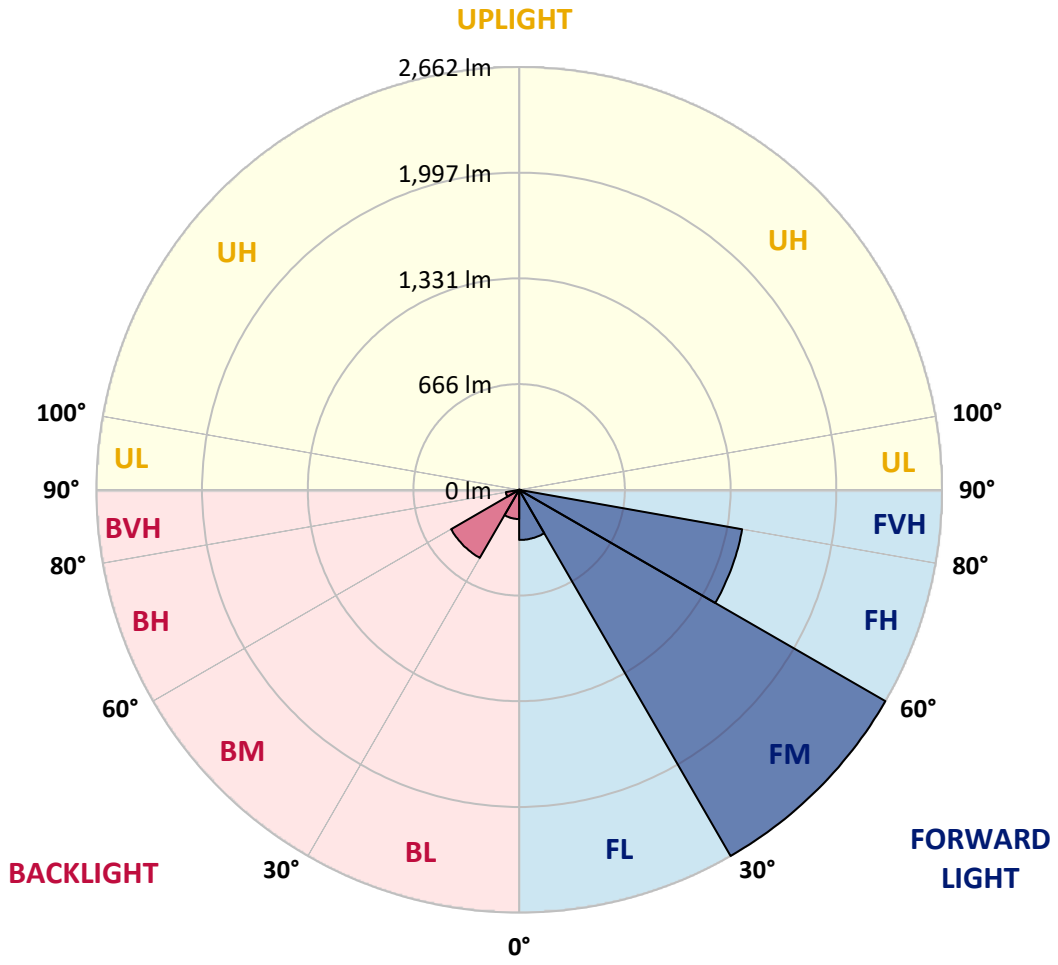
Scaled Data Report

REPORT NUMBER: P1704730
CATALOG NUMBER: GSS-SB3A-AMB-U-T3LG-HSS

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 315.8 | 6.1 | | | |
| FM | (30°-60°) | 2662.0 | 51.4 | | | |
| FH | (60°-80°) | 1425.1 | 27.5 | | | G1/1800 |
| FVH | (80°-90°) | 11.7 | 0.2 | | | G1/100 |
| BL | (0°-30°) | 184.1 | 3.6 | B1/500 | | |
| BM | (30°-60°) | 495.3 | 9.6 | B1/1000 | | |
| BH | (60°-80°) | 85.5 | 1.7 | B0/110 | | G0/110 |
| BVH | (80°-90°) | 1.8 | 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° | 35° | 45° | 55° | 65° | 75° | 83° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 628.2 | 628.2 | 628.2 | 628.2 | 628.2 | 628.2 | 628.2 | 628.2 | 628.2 | *628.2* | 628.2 |
| 2.5° | 619.2 | 616.2 | 610.3 | 613.2 | 616.2 | 616.2 | 619.2 | 622.2 | 628.2 | *628.2* | 634.2 |
| 5° | 535.5 | 535.5 | 538.5 | 553.4 | 568.4 | 586.3 | 607.3 | 625.2 | 640.2 | *646.2* | 646.2 |
| 7.5° | 490.6 | 487.6 | 490.6 | 493.6 | 511.5 | 544.4 | 586.3 | 628.2 | 664.1 | *676.1* | 688.0 |
| 10° | 490.6 | 490.6 | 490.6 | 496.6 | 502.6 | 520.5 | 565.4 | 631.2 | 700.0 | *729.9* | 735.9 |
| 12.5° | 493.6 | 493.6 | 493.6 | 499.6 | 508.5 | 526.5 | 556.4 | 649.1 | 744.9 | *786.8* | 798.7 |
| 15° | 499.6 | 496.6 | 499.6 | 508.5 | 514.5 | 529.5 | 574.4 | 667.1 | 795.7 | *858.5* | 873.5 |
| 17.5° | 511.5 | 511.5 | 508.5 | 514.5 | 529.5 | 553.4 | 592.3 | 691.0 | 867.5 | *948.3* | 960.3 |
| 20° | 532.5 | 529.5 | 529.5 | 535.5 | 553.4 | 589.3 | 637.2 | 735.9 | 945.3 | *1038.0* | 1059.0 |
| 22.5° | 565.4 | 562.4 | 559.4 | 571.4 | 598.3 | 637.2 | 697.0 | 798.7 | 1038.0 | *1151.7* | 1172.7 |
| 25° | 625.2 | 622.2 | 616.2 | 628.2 | 652.1 | 712.0 | 780.8 | 903.4 | 1157.7 | *1283.3* | 1304.3 |
| 27.5° | 735.9 | 735.9 | 720.9 | 718.0 | 741.9 | 813.7 | 915.4 | 1062.0 | 1322.2 | *1477.8* | 1495.7 |
| 30° | 942.3 | 927.4 | 909.4 | 870.5 | 870.5 | 942.3 | 1070.9 | 1247.4 | 1528.6 | *1696.2* | 1708.1 |
| 32.5° | 1082.9 | 1085.9 | 1082.9 | 1070.9 | 1068.0 | 1115.8 | 1268.4 | 1477.8 | 1753.0 | *1929.5* | 1956.4 |
| 35° | 1220.5 | 1223.5 | 1232.5 | 1268.4 | 1307.3 | 1355.1 | 1507.7 | 1726.1 | 1989.3 | *2222.7* | 2225.6 |
| 37.5° | 1432.9 | 1412.0 | 1418.0 | 1453.9 | 1543.6 | 1645.3 | 1741.0 | 1962.4 | 2237.6 | *2482.9* | 2527.8 |
| 40° | 1609.4 | 1612.4 | 1654.3 | 1666.2 | 1776.9 | 1908.6 | 1974.4 | 2165.8 | 2399.2 | *2713.3* | 2767.1 |
| 42.5° | 1776.9 | 1785.9 | 1869.7 | 1941.5 | 2046.2 | 2129.9 | 2210.7 | 2315.4 | 2563.7 | *2952.6* | 3018.4 |
| 45° | 1905.6 | 1923.5 | 2040.2 | 2171.8 | 2303.4 | 2333.3 | 2384.2 | 2462.0 | 2677.4 | *3153.0* | 3236.8 |
| 47.5° | 1959.4 | 1989.3 | 2165.8 | 2375.2 | 2500.9 | 2527.8 | 2503.9 | 2554.7 | 2779.1 | *3347.4* | 3419.2 |
| 50° | 2004.3 | 2028.2 | 2243.6 | 2494.9 | 2650.4 | 2671.4 | 2551.7 | 2659.4 | 2889.8 | *3601.7* | 3658.6 |
| 52.5° | 2061.1 | 2100.0 | 2312.4 | 2560.7 | 2725.2 | 2725.2 | 2563.7 | 2788.0 | 3006.4 | *3811.1* | 3862.0 |
| 55° | 1983.3 | 2004.3 | 2312.4 | 2578.6 | 2731.2 | 2782.1 | 2659.4 | 3015.4 | 3141.0 | *4074.4* | 4053.4 |
| 57.5° | *1866.7* | *1896.6* | *2159.8* | *2554.7* | *2776.1* | *2862.8* | *2898.7* | *3227.8* | *3197.9* | *4259.8* | *4170.1* |
| 60° | 1776.9 | 1770.9 | 2004.3 | 2470.9 | 2841.9 | 2967.5 | 3165.0 | 3338.5 | 3096.2 | *4203.0* | 4107.3 |
| 62.5° | 1420.9 | 1453.9 | 1791.9 | 2273.5 | 2826.9 | 3054.3 | 3395.3 | 3233.8 | 2788.0 | *3766.3* | 3559.8 |
| 65° | 789.7 | 831.6 | 1178.6 | 1953.4 | 2683.3 | 3108.1 | 3482.1 | 2889.8 | 2156.8 | *2752.1* | 2491.9 |
| 67.5° | 460.7 | 481.6 | 622.2 | 1645.3 | 2327.4 | 3129.1 | 3257.7 | 2040.2 | 1409.0 | *1762.0* | 1588.5 |
| 70° | 415.8 | 421.8 | 475.6 | 1403.0 | 2079.1 | 2698.3 | 2767.1 | 1262.4 | 912.4 | *1002.1* | 882.5 |
| 72.5° | 308.1 | 296.2 | 335.0 | 936.3 | 1687.2 | 1932.5 | 2159.8 | 709.0 | 562.4 | *463.7* | 403.8 |
| 75° | 74.8 | 77.8 | 101.7 | 305.1 | 819.7 | 1181.6 | 816.7 | 329.1 | 376.9 | *248.3* | 221.4 |
| 77.5° | 44.9 | 47.9 | 56.8 | 101.7 | 233.3 | 430.8 | 200.4 | 179.5 | 227.4 | *131.6* | 116.7 |
| 80° | 29.9 | 32.9 | 38.9 | 56.8 | 89.7 | 122.6 | 53.8 | 92.7 | 116.7 | *74.8* | 68.8 |
| 82.5° | 9.0 | 9.0 | 20.9 | 29.9 | 41.9 | 38.9 | 26.9 | 41.9 | 62.8 | *38.9* | 32.9 |
| 85° | 6.0 | 6.0 | 12.0 | 15.0 | 17.9 | 15.0 | 9.0 | 17.9 | 32.9 | *20.9* | 15.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |

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Scaled Data Report

REPORT NUMBER: P1704730
CATALOG NUMBER: GSS-SB3A-AMB-U-T3LG-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 628.2 | 628.2 | 628.2 | 628.2 | 628.2 | 628.2 | 628.2 | 628.2 | 628.2 | 628.2 | 628.2 |
| 2.5° | 631.2 | 634.2 | 637.2 | 637.2 | 643.2 | 643.2 | 643.2 | 646.2 | 646.2 | 646.2 | 652.1 |
| 5° | 655.1 | 655.1 | 664.1 | 664.1 | 664.1 | 652.1 | 640.2 | 631.2 | 628.2 | 628.2 | 625.2 |
| 7.5° | 691.0 | 697.0 | 706.0 | 694.0 | 676.1 | 646.2 | 601.3 | 568.4 | 541.5 | 535.5 | 526.5 |
| 10° | 747.9 | 753.8 | 756.8 | 723.9 | 667.1 | 595.3 | 508.5 | 424.8 | 373.9 | 353.0 | 353.0 |
| 12.5° | 813.7 | 831.6 | 816.7 | 744.9 | 628.2 | 463.7 | 311.1 | 242.3 | 209.4 | 197.4 | 194.4 |
| 15° | 894.4 | 900.4 | 873.5 | 738.9 | 508.5 | 275.2 | 197.4 | 182.5 | 176.5 | 176.5 | 176.5 |
| 17.5° | 993.2 | 996.2 | 921.4 | 688.0 | 311.1 | 197.4 | 179.5 | 173.5 | 170.5 | 170.5 | 170.5 |
| 20° | 1091.9 | 1088.9 | 942.3 | 535.5 | 218.4 | 185.5 | 173.5 | 164.5 | 161.5 | 161.5 | 161.5 |
| 22.5° | 1205.6 | 1196.6 | 954.3 | 353.0 | 197.4 | 179.5 | 167.5 | 155.6 | 152.6 | 152.6 | 152.6 |
| 25° | 1337.2 | 1301.3 | 930.3 | 266.2 | 194.4 | 170.5 | 158.5 | 143.6 | 143.6 | 140.6 | 143.6 |
| 27.5° | 1519.7 | 1438.9 | 837.6 | 260.3 | 194.4 | 167.5 | 149.6 | 131.6 | 128.6 | 128.6 | 128.6 |
| 30° | 1735.0 | 1597.4 | 741.9 | 287.2 | 197.4 | 161.5 | 137.6 | 119.7 | 116.7 | 113.7 | 113.7 |
| 32.5° | 1962.4 | 1782.9 | 682.1 | 332.1 | 203.4 | 149.6 | 125.6 | 107.7 | 104.7 | 101.7 | 101.7 |
| 35° | 2240.6 | 1968.4 | 718.0 | 391.9 | 212.4 | 140.6 | 113.7 | 98.7 | 92.7 | 89.7 | 92.7 |
| 37.5° | 2503.9 | 2177.8 | 831.6 | 457.7 | 218.4 | 125.6 | 101.7 | 89.7 | 83.8 | 80.8 | 83.8 |
| 40° | 2725.2 | 2363.3 | 960.3 | 496.6 | 200.4 | 107.7 | 89.7 | 77.8 | 71.8 | 74.8 | 77.8 |
| 42.5° | 2922.7 | 2539.8 | 1053.0 | 460.7 | 155.6 | 95.7 | 77.8 | 68.8 | 65.8 | 68.8 | 68.8 |
| 45° | 3096.2 | 2662.4 | 1032.1 | 341.0 | 125.6 | 80.8 | 68.8 | 62.8 | 59.8 | 62.8 | 62.8 |
| 47.5° | 3254.7 | 2704.3 | 897.4 | 200.4 | 110.7 | 71.8 | 62.8 | 56.8 | 56.8 | 56.8 | 56.8 |
| 50° | 3401.3 | 2638.5 | 703.0 | 158.5 | 98.7 | 65.8 | 56.8 | 53.8 | 50.9 | 50.9 | 50.9 |
| 52.5° | 3550.9 | 2459.0 | 484.6 | 134.6 | 89.7 | 62.8 | 53.8 | 50.9 | 44.9 | 44.9 | 44.9 |
| 55° | 3649.6 | 2210.7 | 317.1 | 125.6 | 83.8 | 56.8 | 50.9 | 47.9 | 41.9 | 41.9 | 41.9 |
| 57.5° | *3652.6* | *1857.7* | *227.4* | *116.7* | *71.8* | *53.8* | *47.9* | *44.9* | *38.9* | *35.9* | *35.9* |
| 60° | 3467.1 | 1355.1 | 167.5 | 104.7 | 65.8 | 50.9 | 44.9 | 41.9 | 35.9 | 32.9 | 32.9 |
| 62.5° | 2904.7 | 747.9 | 131.6 | 92.7 | 59.8 | 44.9 | 41.9 | 38.9 | 32.9 | 29.9 | 26.9 |
| 65° | 1875.6 | 370.9 | 101.7 | 77.8 | 56.8 | 41.9 | 38.9 | 32.9 | 26.9 | 23.9 | 20.9 |
| 67.5° | 1112.8 | 218.4 | 77.8 | 59.8 | 44.9 | 35.9 | 32.9 | 26.9 | 23.9 | 20.9 | 17.9 |
| 70° | 526.5 | 164.5 | 56.8 | 44.9 | 35.9 | 26.9 | 26.9 | 23.9 | 20.9 | 17.9 | 15.0 |
| 72.5° | 236.3 | 125.6 | 38.9 | 35.9 | 26.9 | 17.9 | 20.9 | 20.9 | 17.9 | 12.0 | 12.0 |
| 75° | 161.5 | 83.8 | 26.9 | 26.9 | 17.9 | 15.0 | 15.0 | 15.0 | 12.0 | 12.0 | 12.0 |
| 77.5° | 98.7 | 53.8 | 17.9 | 17.9 | 12.0 | 9.0 | 12.0 | 12.0 | 9.0 | 6.0 | 6.0 |
| 80° | 50.9 | 32.9 | 12.0 | 12.0 | 6.0 | 6.0 | 9.0 | 6.0 | 6.0 | 3.0 | 3.0 |
| 82.5° | 20.9 | 17.9 | 6.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| 85° | 9.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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# LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP3-2509-541-1

Test Date: 09/16/2025

Luminaire Tested: GALN-SA1A-AMB-U-T3BC

Data in this report applies to families of products including GALN-SA1A*

Report Generated By FNC07603 / LDUCLS01DT01661
Version: v7.05

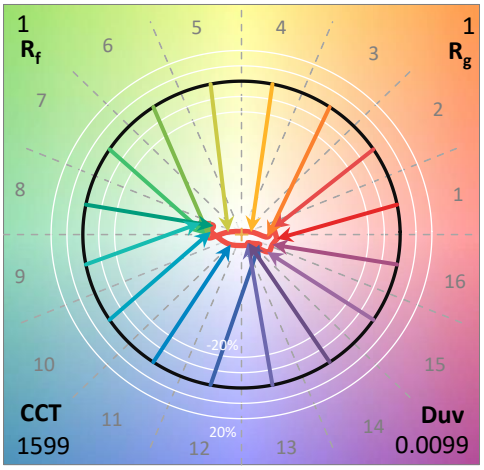
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP3-2509-541-1 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP3 - 3M SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 10/02/2025 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGraw-Edison |
| Catalog Number: | **GALN-SA1A-AMB-U-T3BC** |
| Description: | GALLEON AREA AND ROADWAY LUMINAIRE. (1) AMBER, 615MA LIGHTSQUARES TYPE III ROADWAY OPTICS WITH ANGLED BACKLIGHT CONTROL HEATSINK |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 1599 |
| CIE u': | 0.3452 |
| CIE v': | 0.5480 |
| Duv: | 0.0099 |
| CIE x: | 0.5859 |
| CIE y: | 0.4133 |
| CIE z: | 0.0008 |
| Peak Wavelength (nm): | 596 |
| Dominant Wavelength (nm): | 591 |
| Purity: | 99.94224 |
| Rf: | 1.2 |
| Rg: | 0.9 |

| | | | | | |
|---|---|---|---|---|---|
| CRI (Ra): | -22.7 | | | | |
| R1: | -36.4 | R9: | -395.3 | | |
| R2: | 50.8 | R10: | 26.0 | | |
| R3: | 18.3 | R11: | -97.2 | | |
| R4: | -69.1 | R12: | -14.1 | | |
| R5: | -41.9 | R13: | -17.6 | | |
| R6: | 38.5 | R14: | 46.4 | | |
| R7: | -6.7 | R15: | -69.4 | | |
| R8: | -135.4 | | | | |




## Test Conditions

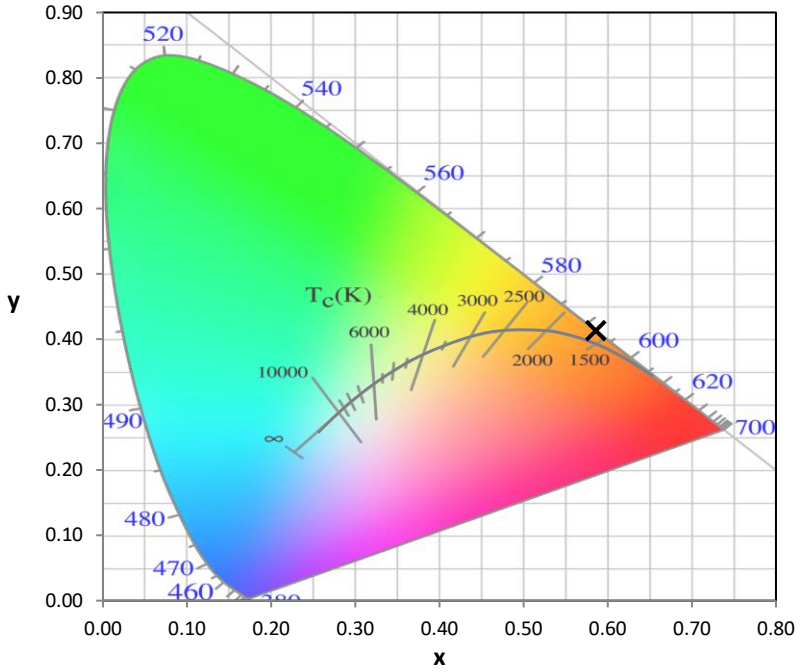
| | |
|---|---|
| Stabilization Time: | 64M |
| Operation Time: | 2H 4M |
| Sphere Temperature (°C): | 25.0 |

REPORT NUMBER: SP3-2509-541-1

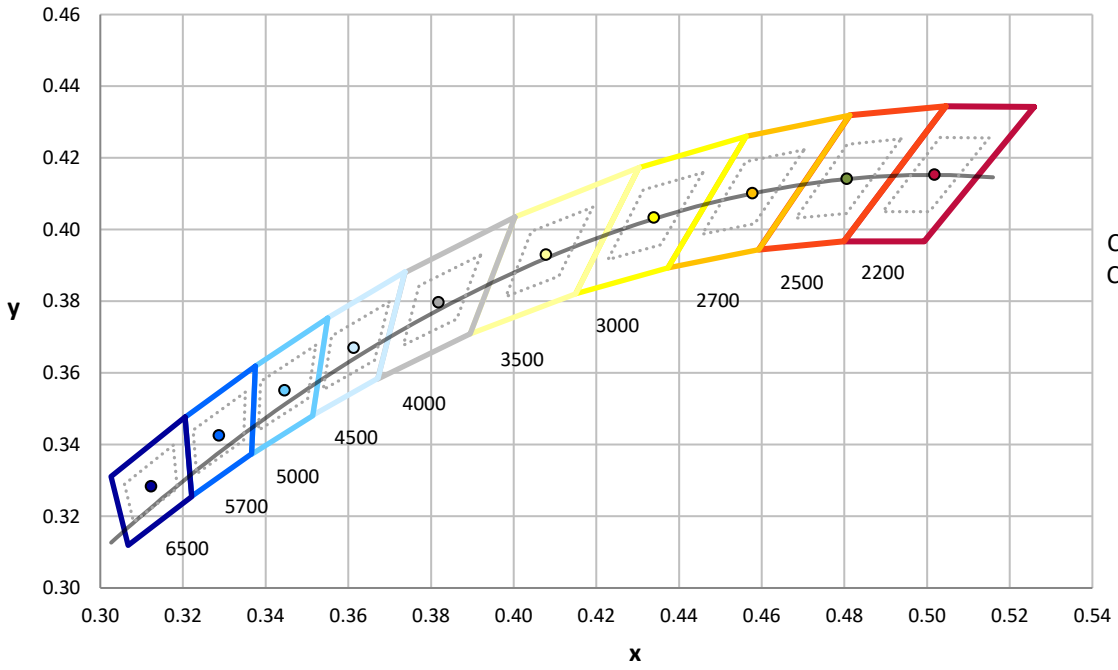
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 3M SPHERE IN02505 | 7/1/2025 | 1/1/2026 |
| Power Meter | XITRON INXT2011006 | 1/20/2025 | 1/20/2026 |
| AC Power Source | CHROMA 61604 IN6064A | 10/22/2024 | 10/22/2025 |
| DC Power Source | EYSIGHT N5770A IN0534 | 10/22/2024 | 10/22/2025 |
| Sphere Thermometer | TANDD IN4036E | 10/22/2024 | 10/22/2025 |
| | | | |

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## CIE 1931 Chromaticity Diagram




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

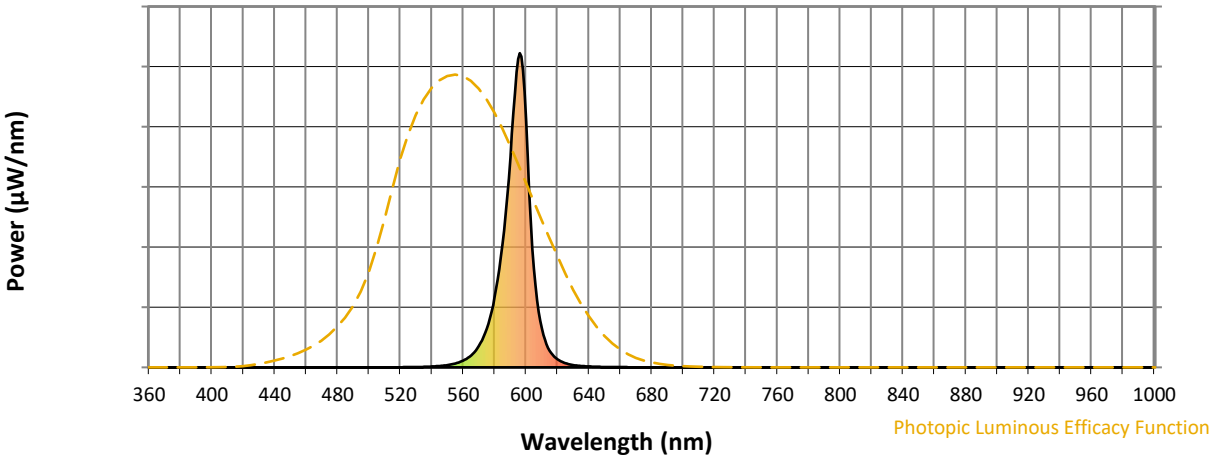



CCT = 1599K
CIE x = 0.5859
CIE y = 0.4133
Duv = 0.0099

Point lies outside the range

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## Photopic Flux vs. Wavelength

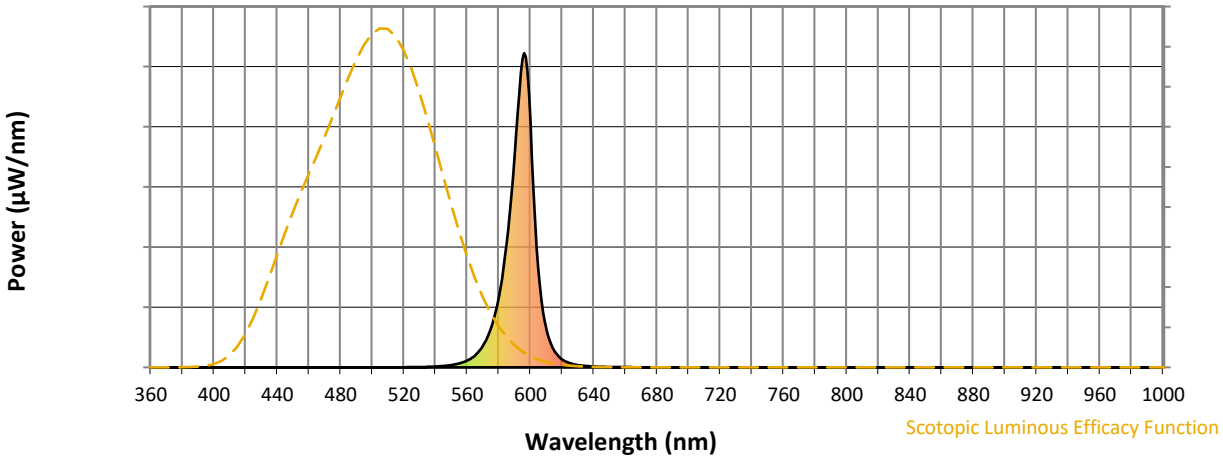



## Photopic Lumens: NR

| 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 | 0 | NR | 620 | 26 | NR | 750 | 0 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 0 | NR | 625 | 13 | NR | 755 | 0 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 0 | NR | 630 | 8 | NR | 760 | 0 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 0 | NR | 635 | 4 | NR | 765 | 0 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 0 | NR | 640 | 3 | NR | 770 | 0 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 0 | NR | 645 | 2 | NR | 775 | 0 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 1 | NR | 650 | 1 | NR | 780 | 0 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 1 | NR | 655 | 1 | NR | 785 | 0 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 1 | NR | 660 | 1 | NR | 790 | 0 | NR | 920 | 0 | NR |
| 405 | 0 | NR | 535 | 2 | NR | 665 | 1 | NR | 795 | 0 | NR | 925 | 0 | NR |
| 410 | 0 | NR | 540 | 3 | NR | 670 | 0 | NR | 800 | 0 | NR | 930 | 0 | NR |
| 415 | 0 | NR | 545 | 4 | NR | 675 | 0 | NR | 805 | 0 | NR | 935 | 0 | NR |
| 420 | 0 | NR | 550 | 7 | NR | 680 | 0 | NR | 810 | 0 | NR | 940 | 0 | NR |
| 425 | 0 | NR | 555 | 12 | NR | 685 | 0 | NR | 815 | 0 | NR | 945 | 0 | NR |
| 430 | 0 | NR | 560 | 22 | NR | 690 | 0 | NR | 820 | 0 | NR | 950 | 0 | NR |
| 435 | 0 | NR | 565 | 38 | NR | 695 | 0 | NR | 825 | 0 | NR | 955 | 0 | NR |
| 440 | 0 | NR | 570 | 68 | NR | 700 | 0 | NR | 830 | 0 | NR | 960 | 0 | NR |
| 445 | 0 | NR | 575 | 123 | NR | 705 | 0 | NR | 835 | 0 | NR | 965 | 0 | NR |
| 450 | 0 | NR | 580 | 223 | NR | 710 | 0 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 0 | NR | 585 | 392 | NR | 715 | 0 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 0 | NR | 590 | 669 | NR | 720 | 0 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 0 | NR | 595 | 982 | NR | 725 | 0 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 0 | NR | 600 | 783 | NR | 730 | 0 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 0 | NR | 605 | 315 | NR | 735 | 0 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 0 | NR | 610 | 124 | NR | 740 | 0 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 0 | NR | 615 | 53 | NR | 745 | 0 | NR | 875 | 0 | NR | | | |

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## Scotopic Flux vs. Wavelength

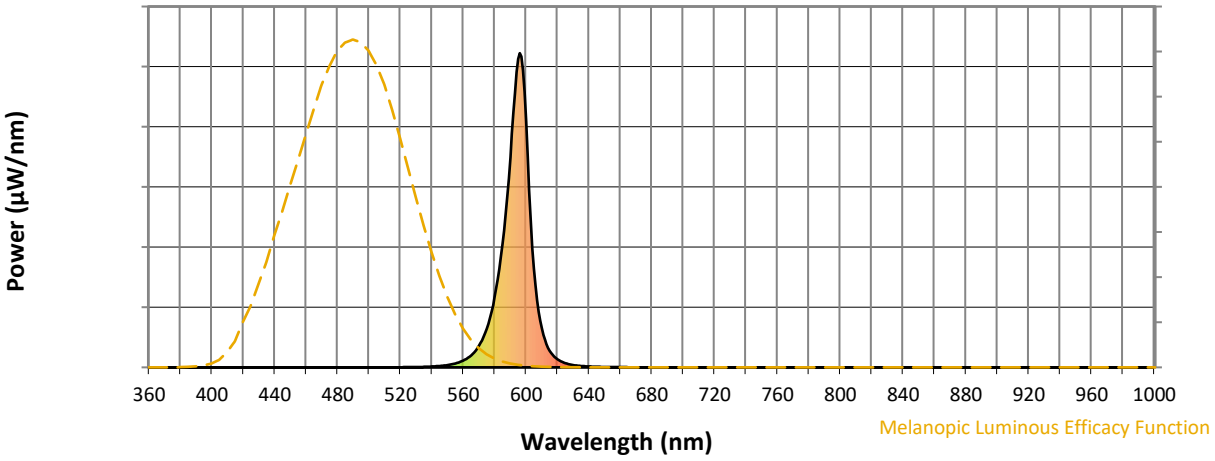



**Scotopic Lumens: NR** **S/P: 0.23**

| 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 | 0 | NR | 620 | 26 | NR | 750 | 0 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 0 | NR | 625 | 13 | NR | 755 | 0 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 0 | NR | 630 | 8 | NR | 760 | 0 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 0 | NR | 635 | 4 | NR | 765 | 0 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 0 | NR | 640 | 3 | NR | 770 | 0 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 0 | NR | 645 | 2 | NR | 775 | 0 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 1 | NR | 650 | 1 | NR | 780 | 0 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 1 | NR | 655 | 1 | NR | 785 | 0 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 1 | NR | 660 | 1 | NR | 790 | 0 | NR | 920 | 0 | NR |
| 405 | 0 | NR | 535 | 2 | NR | 665 | 1 | NR | 795 | 0 | NR | 925 | 0 | NR |
| 410 | 0 | NR | 540 | 3 | NR | 670 | 0 | NR | 800 | 0 | NR | 930 | 0 | NR |
| 415 | 0 | NR | 545 | 4 | NR | 675 | 0 | NR | 805 | 0 | NR | 935 | 0 | NR |
| 420 | 0 | NR | 550 | 7 | NR | 680 | 0 | NR | 810 | 0 | NR | 940 | 0 | NR |
| 425 | 0 | NR | 555 | 12 | NR | 685 | 0 | NR | 815 | 0 | NR | 945 | 0 | NR |
| 430 | 0 | NR | 560 | 22 | NR | 690 | 0 | NR | 820 | 0 | NR | 950 | 0 | NR |
| 435 | 0 | NR | 565 | 38 | NR | 695 | 0 | NR | 825 | 0 | NR | 955 | 0 | NR |
| 440 | 0 | NR | 570 | 68 | NR | 700 | 0 | NR | 830 | 0 | NR | 960 | 0 | NR |
| 445 | 0 | NR | 575 | 123 | NR | 705 | 0 | NR | 835 | 0 | NR | 965 | 0 | NR |
| 450 | 0 | NR | 580 | 223 | NR | 710 | 0 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 0 | NR | 585 | 392 | NR | 715 | 0 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 0 | NR | 590 | 669 | NR | 720 | 0 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 0 | NR | 595 | 982 | NR | 725 | 0 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 0 | NR | 600 | 783 | NR | 730 | 0 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 0 | NR | 605 | 315 | NR | 735 | 0 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 0 | NR | 610 | 124 | NR | 740 | 0 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 0 | NR | 615 | 53 | NR | 745 | 0 | NR | 875 | 0 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 0.13**

| 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 | 0 | NR | 620 | 26 | NR | 750 | 0 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 0 | NR | 625 | 13 | NR | 755 | 0 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 0 | NR | 630 | 8 | NR | 760 | 0 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 0 | NR | 635 | 4 | NR | 765 | 0 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 0 | NR | 640 | 3 | NR | 770 | 0 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 0 | NR | 645 | 2 | NR | 775 | 0 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 1 | NR | 650 | 1 | NR | 780 | 0 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 1 | NR | 655 | 1 | NR | 785 | 0 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 1 | NR | 660 | 1 | NR | 790 | 0 | NR | 920 | 0 | NR |
| 405 | 0 | NR | 535 | 2 | NR | 665 | 1 | NR | 795 | 0 | NR | 925 | 0 | NR |
| 410 | 0 | NR | 540 | 3 | NR | 670 | 0 | NR | 800 | 0 | NR | 930 | 0 | NR |
| 415 | 0 | NR | 545 | 4 | NR | 675 | 0 | NR | 805 | 0 | NR | 935 | 0 | NR |
| 420 | 0 | NR | 550 | 7 | NR | 680 | 0 | NR | 810 | 0 | NR | 940 | 0 | NR |
| 425 | 0 | NR | 555 | 12 | NR | 685 | 0 | NR | 815 | 0 | NR | 945 | 0 | NR |
| 430 | 0 | NR | 560 | 22 | NR | 690 | 0 | NR | 820 | 0 | NR | 950 | 0 | NR |
| 435 | 0 | NR | 565 | 38 | NR | 695 | 0 | NR | 825 | 0 | NR | 955 | 0 | NR |
| 440 | 0 | NR | 570 | 68 | NR | 700 | 0 | NR | 830 | 0 | NR | 960 | 0 | NR |
| 445 | 0 | NR | 575 | 123 | NR | 705 | 0 | NR | 835 | 0 | NR | 965 | 0 | NR |
| 450 | 0 | NR | 580 | 223 | NR | 710 | 0 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 0 | NR | 585 | 392 | NR | 715 | 0 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 0 | NR | 590 | 669 | NR | 720 | 0 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 0 | NR | 595 | 982 | NR | 725 | 0 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 0 | NR | 600 | 783 | NR | 730 | 0 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 0 | NR | 605 | 315 | NR | 735 | 0 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 0 | NR | 610 | 124 | NR | 740 | 0 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 0 | NR | 615 | 53 | NR | 745 | 0 | NR | 875 | 0 | NR | | | |

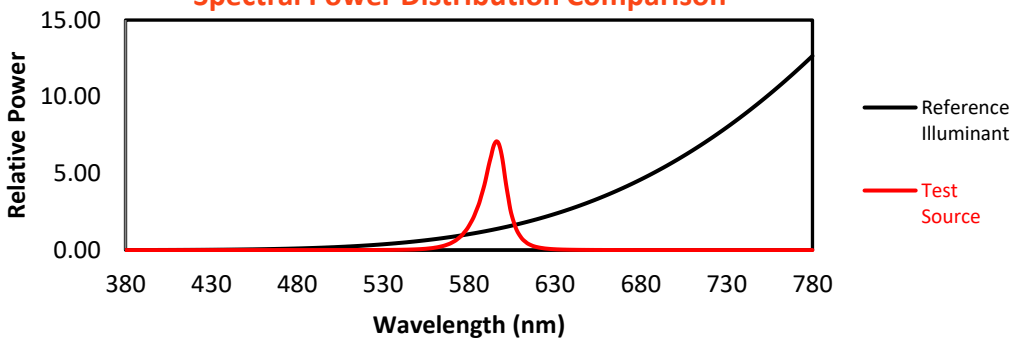
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# TM-30-18

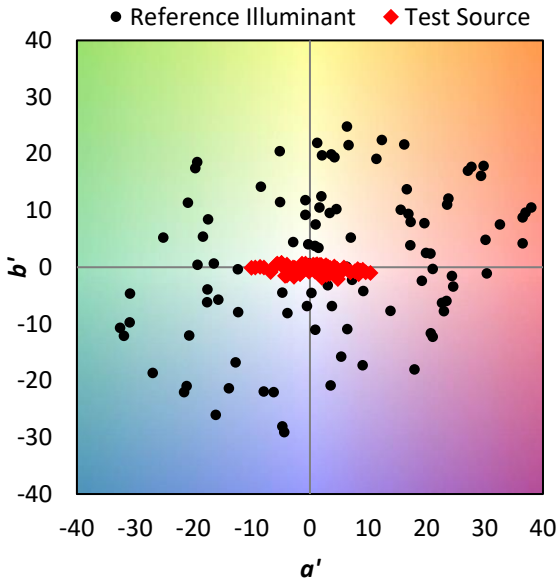
## Summary

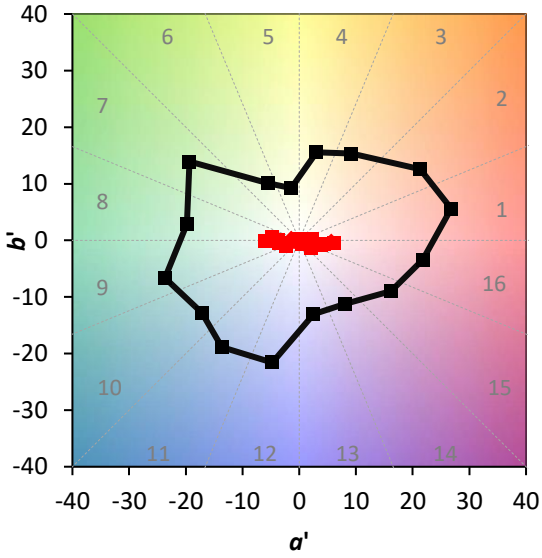
$R_f$ = 1.2
$R_g$ = 0.9
CIE $R_a$ = -22.7
$R_9$ = -395.3

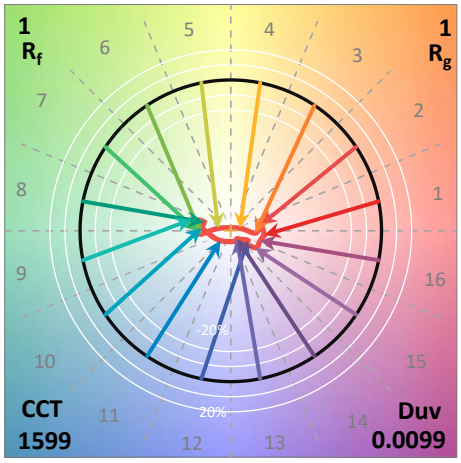
## Spectral Power Distribution Comparison

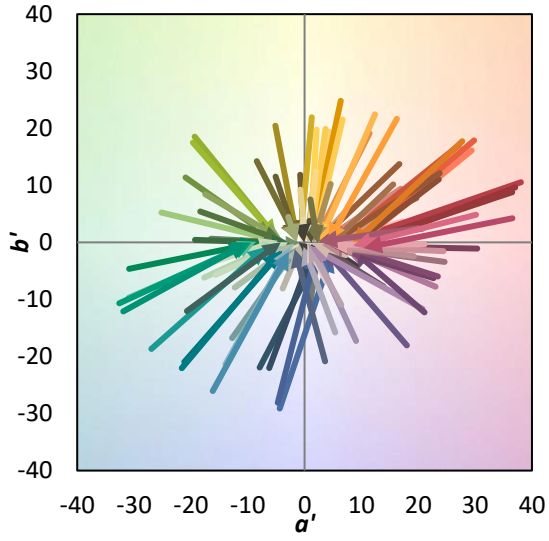



## Color Vector Graphics



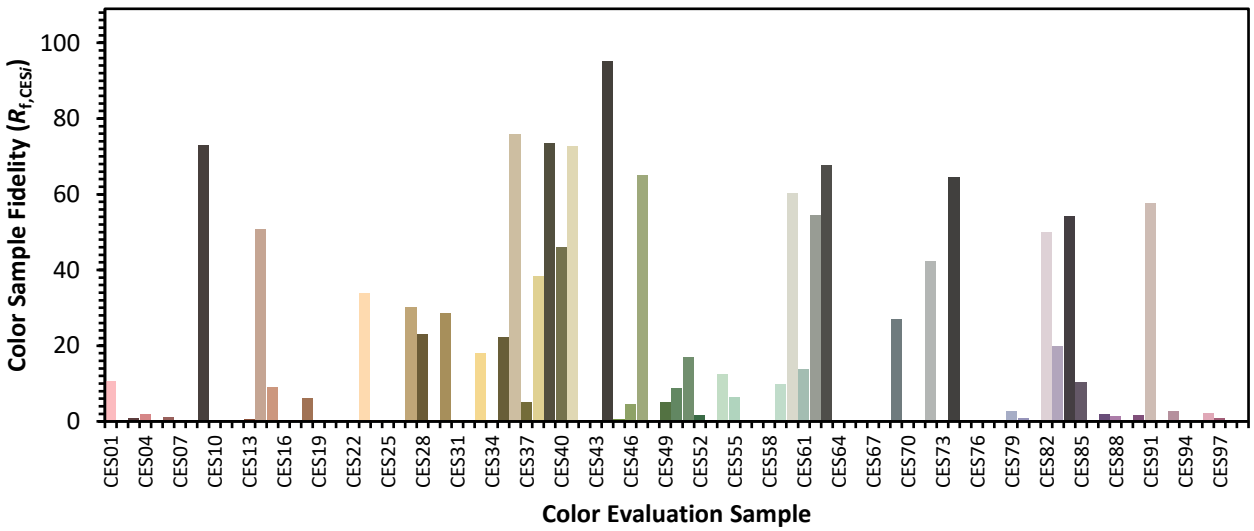



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# TM-30-18

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

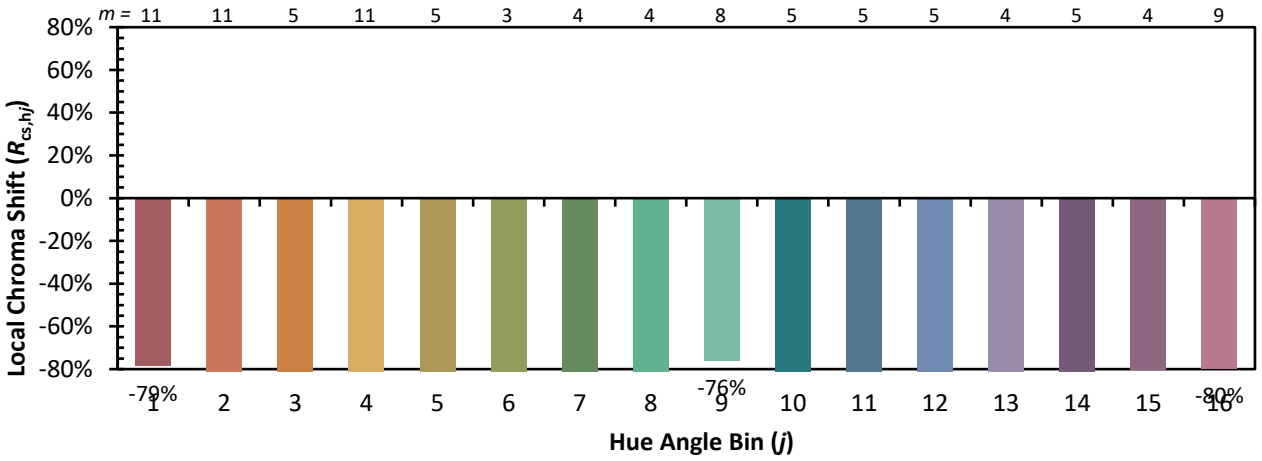
| | | | |
|---|---|---|---|
| CES01 = 90 | CES26 = 0 | CES51 = 17 | CES76 = 0 |
| CES02 = 69 | CES27 = 30 | CES52 = 2 | CES77 = 0 |
| CES03 = 30 | CES28 = 23 | CES53 = 0 | CES78 = 0 |
| CES04 = 77 | CES29 = 0 | CES54 = 12 | CES79 = 3 |
| CES05 = 51 | CES30 = 29 | CES55 = 6 | CES80 = 1 |
| CES06 = 56 | CES31 = 0 | CES56 = 0 | CES81 = 0 |
| CES07 = 40 | CES32 = 0 | CES57 = 0 | CES82 = 50 |
| CES08 = 38 | CES33 = 18 | CES58 = 0 | CES83 = 20 |
| CES09 = 29 | CES34 = 0 | CES59 = 10 | CES84 = 54 |
| CES10 = 87 | CES35 = 22 | CES60 = 60 | CES85 = 10 |
| CES11 = 70 | CES36 = 76 | CES61 = 14 | CES86 = 0 |
| CES12 = 75 | CES37 = 5 | CES62 = 55 | CES87 = 2 |
| CES13 = 46 | CES38 = 38 | CES63 = 68 | CES88 = 1 |
| CES14 = 76 | CES39 = 73 | CES64 = 0 | CES89 = 0 |
| CES15 = 74 | CES40 = 46 | CES65 = 0 | CES90 = 2 |
| CES16 = 49 | CES41 = 73 | CES66 = 0 | CES91 = 58 |
| CES17 = 56 | CES42 = 0 | CES67 = 0 | CES92 = 0 |
| CES18 = 59 | CES43 = 0 | CES68 = 0 | CES93 = 3 |
| CES19 = 80 | CES44 = 95 | CES69 = 27 | CES94 = 0 |
| CES20 = 71 | CES45 = 1 | CES70 = 0 | CES95 = 0 |
| CES21 = 94 | CES46 = 5 | CES71 = 0 | CES96 = 2 |
| CES22 = 86 | CES47 = 65 | CES72 = 42 | CES97 = 1 |
| CES23 = 94 | CES48 = 0 | CES73 = 0 | CES98 = 0 |
| CES24 = 95 | CES49 = 5 | CES74 = 65 | CES99 = 0 |
| CES25 = 79 | CES50 = 9 | CES75 = 0 | |

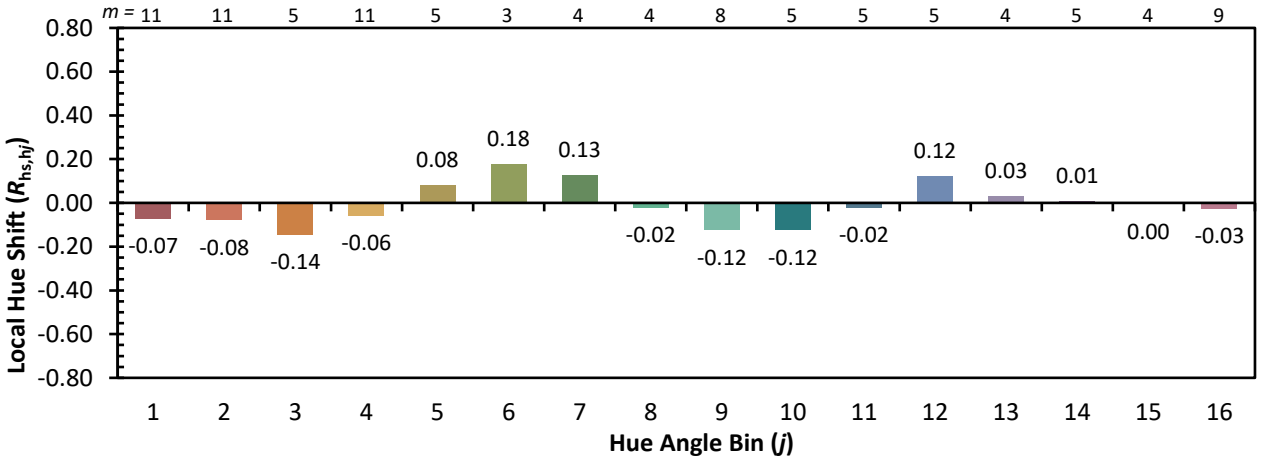


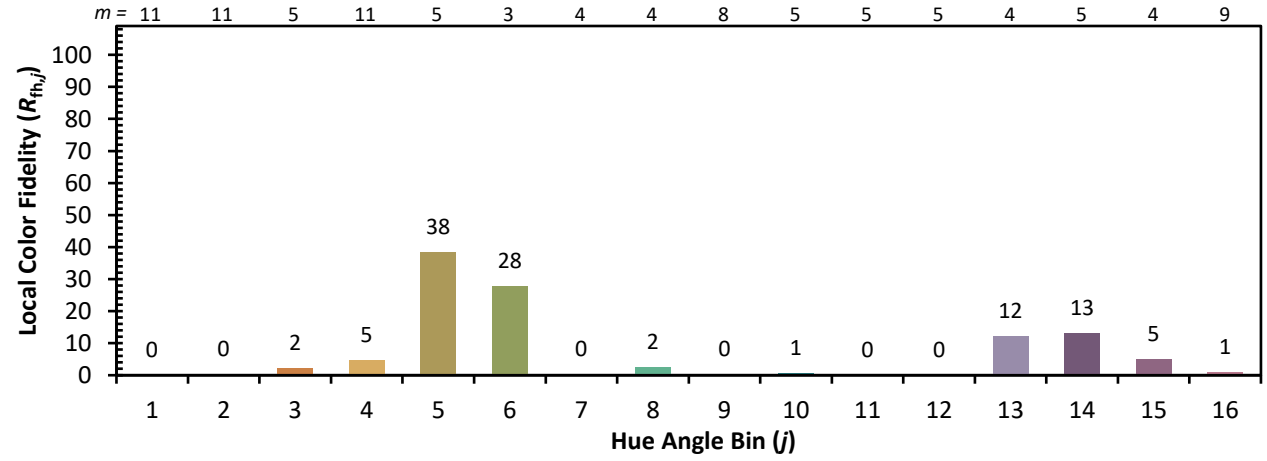
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## Color Rendition by Hue-Angle Bin



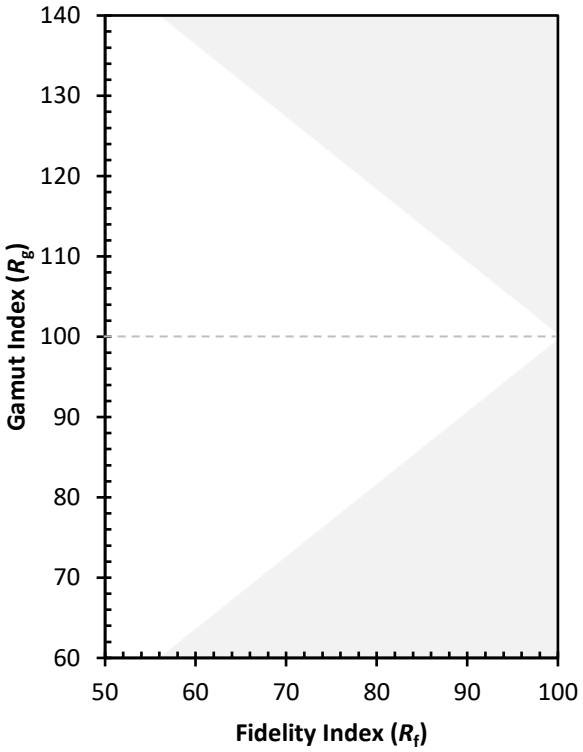



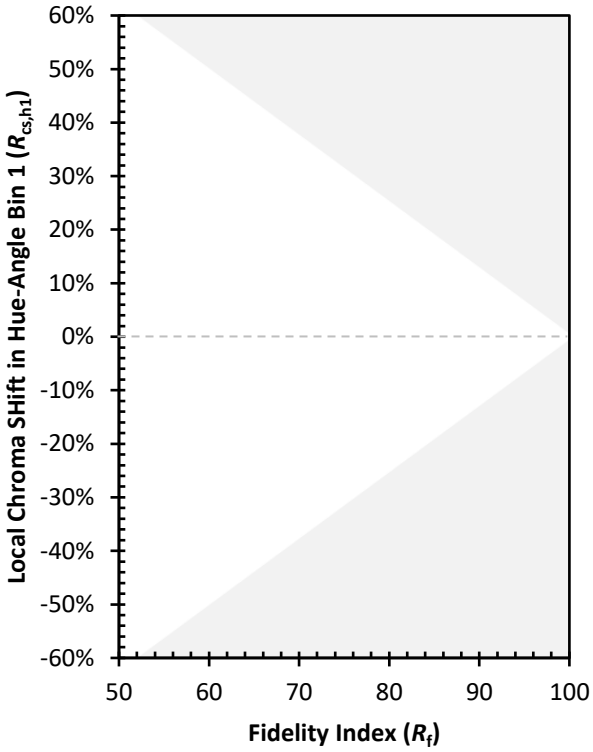



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## Measure Comparisons




(END OF REPORT)