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: P1704728

Luminaire Tested: GSS-SB1A-AMB-U-AFL

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: | P1704728 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 10/28/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB1A-AMB-U-AFL |
| Description: | GALLEON SITE SLIM HIGH DENSITY LED ARRAYS 1SQUARE 36W 1590K FIXTURE w/ AUTOMOTIVE FRONTLINE DISTRIBUTION |
| Light Source: | (26) 1590K CCT, 0 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 2212.4 lumens |
| Efficiency: | N/A |
| Efficacy: | 61.6 lumens/watt |
| Luminous Opening: | Rectangular (W 0.5' x L: 0.5' x H: 0') |
| IES Classification: | Type II - Short |
| BUG Rating: | B1 - U0 - G0 |

| | |
|---|---|
| Input Watts (W): | 35.9 |
| 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 |

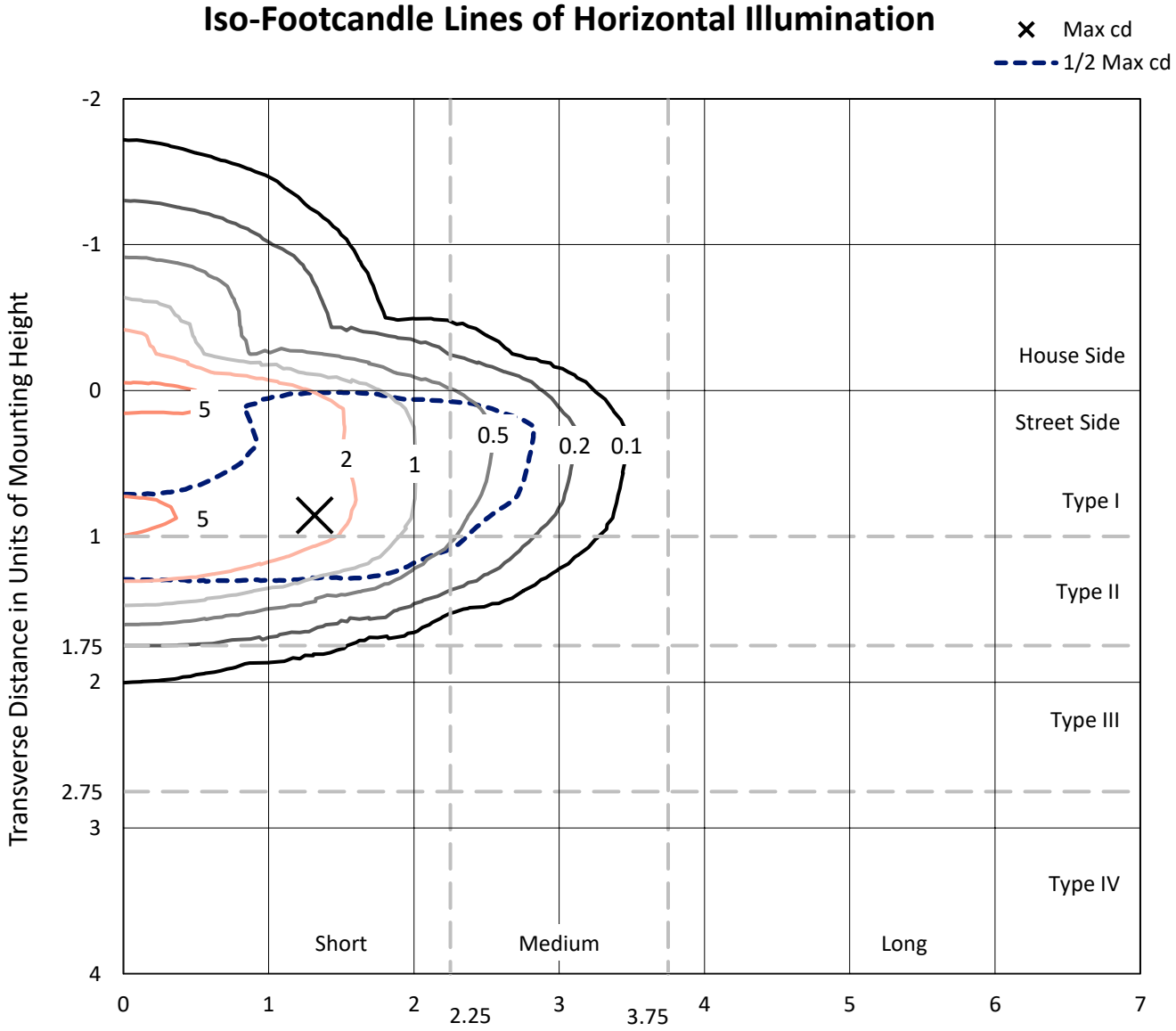


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REPORT NUMBER: P1704728
CATALOG NUMBER: GSS-SB1A-AMB-U-AFL

## Iso-Footcandle Lines of Horizontal Illumination



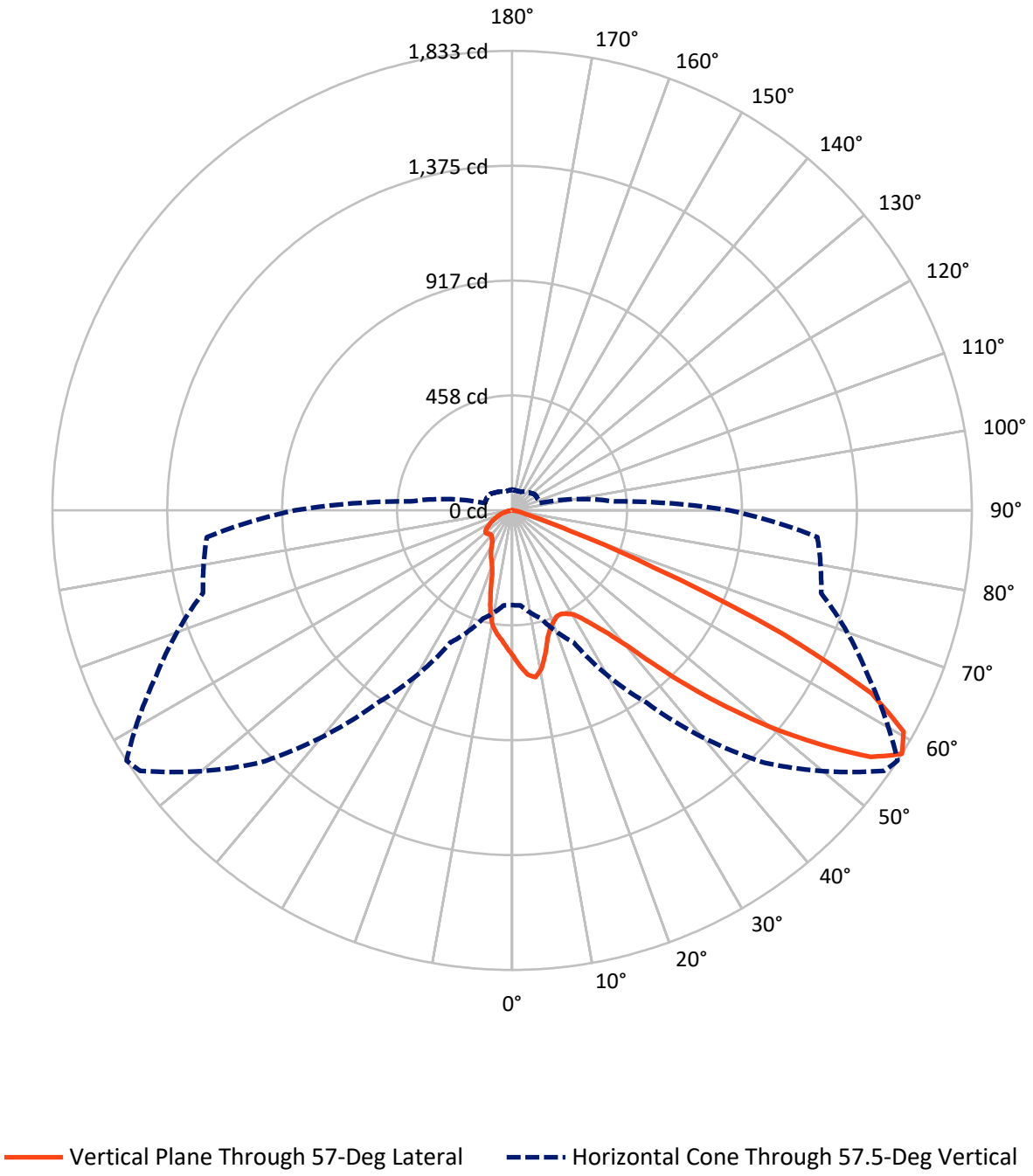

Based on 10 foot mounting height. Maximum calculated value = 5.9 fc
Type II - Short - N/A

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## Luminous Intensity Polar Plot



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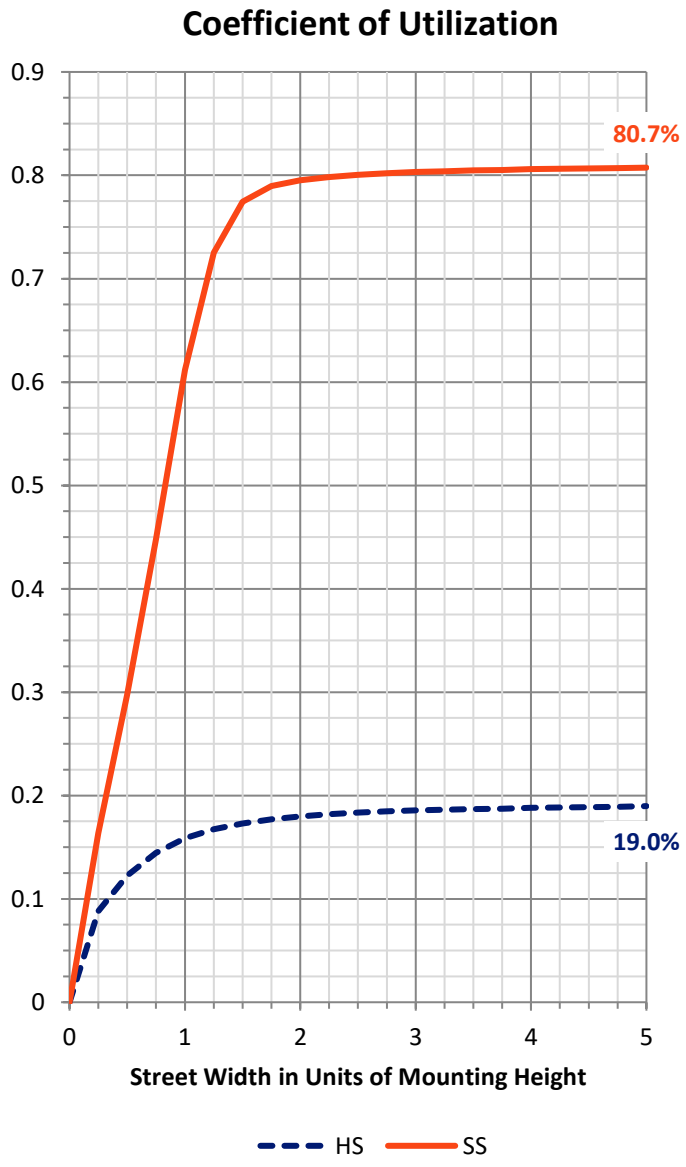
REPORT NUMBER: P1704728
CATALOG NUMBER: GSS-SB1A-AMB-U-AFL

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 423.6 | 0.0 | 423.6 |
| | % Fixture | 19.1 | 0.0 | 19.1 |
| **Street Side** | Lumens | 1788.8 | 0.0 | 1788.8 |
| | % Fixture | 80.9 | 0.0 | 80.9 |
| **Total** | Lumens | 2212.4 | 0.0 | 2212.4 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 52.2 | 2.4 |
| 10°-20° | 121.7 | 5.5 |
| 20°-30° | 179.7 | 8.1 |
| 30°-40° | 291.2 | 13.2 |
| 40°-50° | 514.2 | 23.2 |
| 50°-60° | 582.0 | 26.3 |
| 60°-70° | 359.2 | 16.2 |
| 70°-80° | 101.9 | 4.6 |
| 80°-90° | 10.2 | 0.5 |
| 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° | 2212.4 | 100.0 |
| 0°-180° | 2212.4 | 100.0 |



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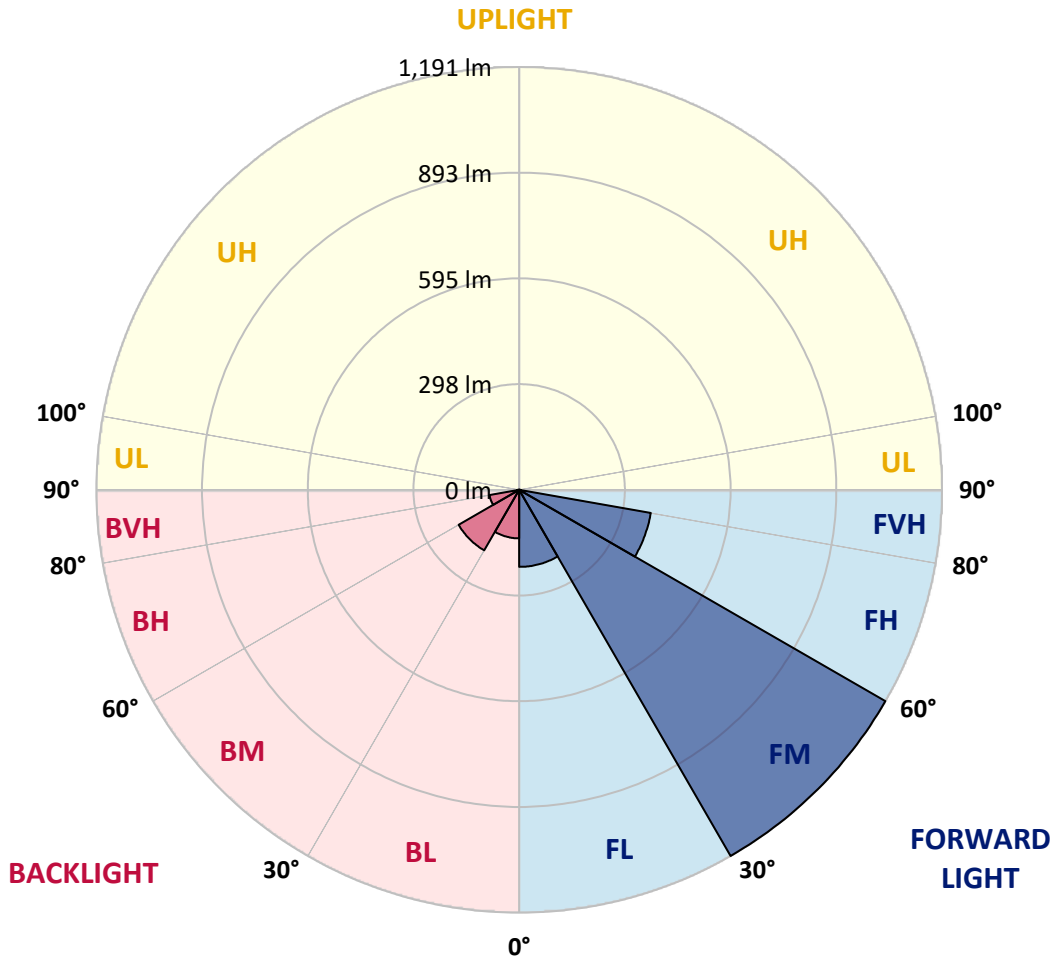
Scaled Data Report

REPORT NUMBER: P1704728
CATALOG NUMBER: GSS-SB1A-AMB-U-AFL

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 217.0 | 9.8 | | | |
| FM | (30°-60°) | 1190.6 | 53.8 | | | |
| FH | (60°-80°) | 376.3 | 17.0 | | | G0/660 |
| FVH | (80°-90°) | 4.9 | 0.2 | | | G0/10 |
| BL | (0°-30°) | 136.7 | 6.2 | B1/500 | | |
| BM | (30°-60°) | 196.8 | 8.9 | B0/220 | | |
| BH | (60°-80°) | 84.8 | 3.8 | B0/110 | | G0/110 |
| BVH | (80°-90°) | 5.3 | 0.2 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B1-U0-G0**
Type II Short



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 57° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 581.1 | 581.1 | 581.1 | 581.1 | 581.1 | 581.1 | 581.1 | *581.1* | 581.1 | 581.1 | 581.1 |
| 2.5° | 656.1 | 651.1 | 646.1 | 639.1 | 634.1 | 630.1 | 621.1 | *622.1* | 609.1 | 601.1 | 588.1 |
| 5° | 653.1 | 647.1 | 650.1 | 655.1 | 660.1 | 660.1 | 662.1 | *659.1* | 651.1 | 630.1 | 606.1 |
| 7.5° | 546.1 | 542.1 | 554.1 | 571.1 | 603.1 | 639.1 | 667.1 | *672.1* | 679.1 | 666.1 | 627.1 |
| 10° | 457.1 | 454.1 | 458.1 | 479.1 | 511.1 | 567.1 | 630.1 | *643.1* | 682.1 | 693.1 | 653.1 |
| 12.5° | 401.0 | 399.0 | 402.0 | 417.0 | 444.1 | 490.1 | 570.1 | *588.1* | 669.1 | 712.1 | 674.1 |
| 15° | 375.0 | 374.0 | 376.0 | 387.0 | 403.0 | 440.1 | 511.1 | *528.1* | 634.1 | 731.1 | 696.1 |
| 17.5° | 358.0 | 357.0 | 360.0 | 367.0 | 385.0 | 414.0 | 478.1 | *494.1* | 597.1 | 743.1 | 720.1 |
| 20° | 351.0 | 349.0 | 347.0 | 357.0 | 373.0 | 402.0 | 455.1 | *473.1* | 564.1 | 755.1 | 740.1 |
| 22.5° | 358.0 | 355.0 | 354.0 | 360.0 | 374.0 | 403.0 | 447.1 | *458.1* | 544.1 | 757.1 | 763.1 |
| 25° | 379.0 | 380.0 | 373.0 | 374.0 | 383.0 | 405.0 | 446.1 | *457.1* | 539.1 | 752.1 | 780.1 |
| 27.5° | 424.1 | 421.1 | 414.0 | 409.0 | 409.0 | 421.1 | 454.1 | *467.1* | 533.1 | 748.1 | 797.1 |
| 30° | 511.1 | 503.1 | 485.1 | 464.1 | 450.1 | 455.1 | 475.1 | *481.1* | 541.1 | 753.1 | 812.1 |
| 32.5° | 648.1 | 648.1 | 609.1 | 559.1 | 518.1 | 501.1 | 509.1 | *514.1* | 561.1 | 754.1 | 828.1 |
| 35° | 857.1 | 856.1 | 799.1 | 705.1 | 626.1 | 574.1 | 557.1 | *562.1* | 593.1 | 770.1 | 852.1 |
| 37.5° | 1089.1 | 1073.1 | 1005.1 | 902.1 | 780.1 | 682.1 | 630.1 | *624.1* | 641.1 | 801.1 | 893.1 |
| 40° | 1245.1 | 1232.1 | 1178.1 | 1095.1 | 981.1 | 832.1 | 727.1 | *714.1* | 704.1 | 840.1 | 935.1 |
| 42.5° | 1373.2 | 1364.2 | 1315.2 | 1254.2 | 1155.1 | 1027.1 | 874.1 | *854.1* | 788.1 | 904.1 | 995.1 |
| 45° | 1408.2 | 1395.2 | 1389.2 | 1364.2 | 1301.2 | 1201.1 | 1045.1 | *1019.1* | 907.1 | 970.1 | 1040.1 |
| 47.5° | 1358.2 | 1356.2 | 1366.2 | 1419.2 | 1410.2 | 1363.2 | 1245.1 | *1195.1* | 1038.1 | 1044.1 | 1091.1 |
| 50° | 1111.1 | 1116.1 | 1247.1 | 1380.2 | 1461.2 | 1503.2 | 1414.2 | *1381.2* | 1185.1 | 1122.1 | 1141.1 |
| 52.5° | 891.1 | 904.1 | 966.1 | 1217.1 | 1413.2 | 1584.2 | 1602.2 | *1557.2* | 1322.2 | 1196.1 | 1187.1 |
| 55° | 646.1 | 658.1 | 722.1 | 931.1 | 1247.1 | 1569.2 | 1748.2 | *1736.2* | 1431.2 | 1248.1 | 1209.1 |
| 57.5° | *378.0* | *380.0* | *447.1* | *581.1* | *938.1* | *1424.2* | *1811.2* | *1833.2* | *1567.2* | *1276.2* | *1222.1* |
| 60° | 167.0 | 171.0 | 198.0 | 313.0 | 567.1 | 1117.1 | 1738.2 | *1794.2* | 1690.2 | 1296.2 | 1221.1 |
| 62.5° | 121.0 | 120.0 | 124.0 | 145.0 | 289.0 | 634.1 | 1482.2 | *1609.2* | 1656.2 | 1255.2 | 1126.1 |
| 65° | 99.0 | 97.0 | 97.0 | 105.0 | 151.0 | 304.0 | 1005.1 | *1183.1* | 1407.2 | 1206.1 | 1100.1 |
| 67.5° | 84.0 | 83.0 | 83.0 | 84.0 | 103.0 | 147.0 | 459.1 | *612.1* | 1058.1 | 1162.1 | 1097.1 |
| 70° | 69.0 | 69.0 | 70.0 | 69.0 | 77.0 | 92.0 | 180.0 | *246.0* | 655.1 | 955.1 | 972.1 |
| 72.5° | 58.0 | 57.0 | 58.0 | 58.0 | 59.0 | 63.0 | 73.0 | *92.0* | 322.0 | 669.1 | 689.1 |
| 75° | 43.0 | 44.0 | 45.0 | 46.0 | 44.0 | 46.0 | 45.0 | *49.0* | 122.0 | 334.0 | 331.0 |
| 77.5° | 33.0 | 33.0 | 36.0 | 35.0 | 30.0 | 32.0 | 32.0 | *33.0* | 48.0 | 81.0 | 97.0 |
| 80° | 27.0 | 26.0 | 28.0 | 26.0 | 22.0 | 21.0 | 21.0 | *21.0* | 24.0 | 35.0 | 35.0 |
| 82.5° | 12.0 | 14.0 | 19.0 | 16.0 | 14.0 | 12.0 | 12.0 | *12.0* | 15.0 | 19.0 | 13.0 |
| 85° | 4.0 | 5.0 | 7.0 | 8.0 | 6.0 | 5.0 | 5.0 | *6.0* | 8.0 | 8.0 | 5.0 |
| 87.5° | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | *1.0* | 2.0 | 2.0 | 2.0 |
| 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: P1704728
CATALOG NUMBER: GSS-SB1A-AMB-U-AFL

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 581.1 | 581.1 | 581.1 | 581.1 | 581.1 | 581.1 | 581.1 | 581.1 | 581.1 | 581.1 | 581.1 |
| 2.5° | 584.1 | 577.1 | 567.1 | 556.1 | 548.1 | 540.1 | 532.1 | 528.1 | 524.1 | 526.1 | 527.1 |
| 5° | 593.1 | 577.1 | 553.1 | 531.1 | 516.1 | 502.1 | 488.1 | 475.1 | 465.1 | 467.1 | 469.1 |
| 7.5° | 604.1 | 584.1 | 548.1 | 519.1 | 489.1 | 460.1 | 435.1 | 412.0 | 396.0 | 388.0 | 388.0 |
| 10° | 621.1 | 591.1 | 543.1 | 502.1 | 457.1 | 400.0 | 351.0 | 308.0 | 288.0 | 277.0 | 273.0 |
| 12.5° | 634.1 | 597.1 | 538.1 | 476.1 | 398.0 | 316.0 | 260.0 | 250.0 | 250.0 | 252.0 | 253.0 |
| 15° | 649.1 | 600.1 | 525.1 | 432.1 | 320.0 | 246.0 | 241.0 | 247.0 | 256.0 | 259.0 | 259.0 |
| 17.5° | 660.1 | 604.1 | 502.1 | 369.0 | 247.0 | 233.0 | 244.0 | 256.0 | 264.0 | 267.0 | 269.0 |
| 20° | 673.1 | 604.1 | 477.1 | 295.0 | 224.0 | 232.0 | 246.0 | 257.0 | 268.0 | 272.0 | 272.0 |
| 22.5° | 686.1 | 601.1 | 429.1 | 232.0 | 214.0 | 227.0 | 241.0 | 253.0 | 261.0 | 265.0 | 265.0 |
| 25° | 692.1 | 595.1 | 372.0 | 201.0 | 203.0 | 216.0 | 226.0 | 233.0 | 240.0 | 241.0 | 241.0 |
| 27.5° | 700.1 | 585.1 | 304.0 | 180.0 | 187.0 | 196.0 | 201.0 | 202.0 | 204.0 | 205.0 | 205.0 |
| 30° | 700.1 | 568.1 | 235.0 | 162.0 | 164.0 | 172.0 | 177.0 | 176.0 | 176.0 | 176.0 | 176.0 |
| 32.5° | 703.1 | 551.1 | 185.0 | 147.0 | 149.0 | 158.0 | 165.0 | 165.0 | 163.0 | 163.0 | 165.0 |
| 35° | 712.1 | 532.1 | 158.0 | 134.0 | 142.0 | 153.0 | 160.0 | 159.0 | 160.0 | 159.0 | 161.0 |
| 37.5° | 727.1 | 515.1 | 141.0 | 126.0 | 136.0 | 149.0 | 156.0 | 158.0 | 160.0 | 159.0 | 160.0 |
| 40° | 754.1 | 496.1 | 129.0 | 120.0 | 133.0 | 147.0 | 154.0 | 159.0 | 151.0 | 143.0 | 142.0 |
| 42.5° | 784.1 | 477.1 | 122.0 | 118.0 | 132.0 | 146.0 | 151.0 | 144.0 | 126.0 | 118.0 | 117.0 |
| 45° | 807.1 | 456.1 | 120.0 | 120.0 | 134.0 | 143.0 | 139.0 | 120.0 | 113.0 | 106.0 | 107.0 |
| 47.5° | 836.1 | 432.1 | 120.0 | 126.0 | 139.0 | 140.0 | 116.0 | 111.0 | 103.0 | 98.0 | 98.0 |
| 50° | 853.1 | 415.0 | 121.0 | 130.0 | 139.0 | 124.0 | 110.0 | 102.0 | 96.0 | 92.0 | 91.0 |
| 52.5° | 859.1 | 405.0 | 121.0 | 129.0 | 136.0 | 111.0 | 103.0 | 95.0 | 89.0 | 88.0 | 88.0 |
| 55° | 868.1 | 404.0 | 119.0 | 123.0 | 126.0 | 106.0 | 97.0 | 87.0 | 84.0 | 84.0 | 85.0 |
| 57.5° | *866.1* | *407.0* | *112.0* | *112.0* | *111.0* | *99.0* | *91.0* | *82.0* | *80.0* | *81.0* | *83.0* |
| 60° | 849.1 | 403.0 | 103.0 | 102.0 | 100.0 | 89.0 | 86.0 | 78.0 | 76.0 | 78.0 | 78.0 |
| 62.5° | 780.1 | 364.0 | 91.0 | 90.0 | 88.0 | 79.0 | 80.0 | 77.0 | 72.0 | 73.0 | 74.0 |
| 65° | 789.1 | 357.0 | 87.0 | 79.0 | 75.0 | 71.0 | 73.0 | 71.0 | 66.0 | 67.0 | 68.0 |
| 67.5° | 760.1 | 296.0 | 80.0 | 66.0 | 65.0 | 64.0 | 61.0 | 63.0 | 59.0 | 60.0 | 62.0 |
| 70° | 647.1 | 230.0 | 69.0 | 55.0 | 55.0 | 54.0 | 54.0 | 55.0 | 52.0 | 55.0 | 58.0 |
| 72.5° | 417.0 | 165.0 | 59.0 | 45.0 | 47.0 | 43.0 | 47.0 | 47.0 | 45.0 | 49.0 | 50.0 |
| 75° | 217.0 | 121.0 | 48.0 | 36.0 | 36.0 | 35.0 | 38.0 | 38.0 | 38.0 | 42.0 | 43.0 |
| 77.5° | 92.0 | 70.0 | 35.0 | 26.0 | 26.0 | 28.0 | 29.0 | 30.0 | 35.0 | 61.0 | 69.0 |
| 80° | 42.0 | 35.0 | 22.0 | 16.0 | 17.0 | 19.0 | 21.0 | 22.0 | 52.0 | 49.0 | 48.0 |
| 82.5° | 18.0 | 19.0 | 14.0 | 11.0 | 10.0 | 10.0 | 12.0 | 32.0 | 28.0 | 23.0 | 23.0 |
| 85° | 5.0 | 7.0 | 6.0 | 4.0 | 4.0 | 4.0 | 6.0 | 11.0 | 9.0 | 9.0 | 8.0 |
| 87.5° | 2.0 | 2.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 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

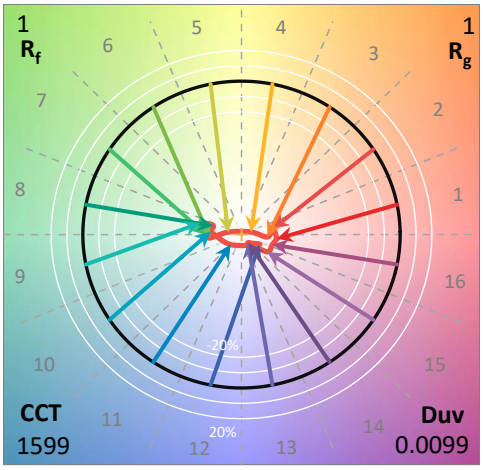
## Test Information

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

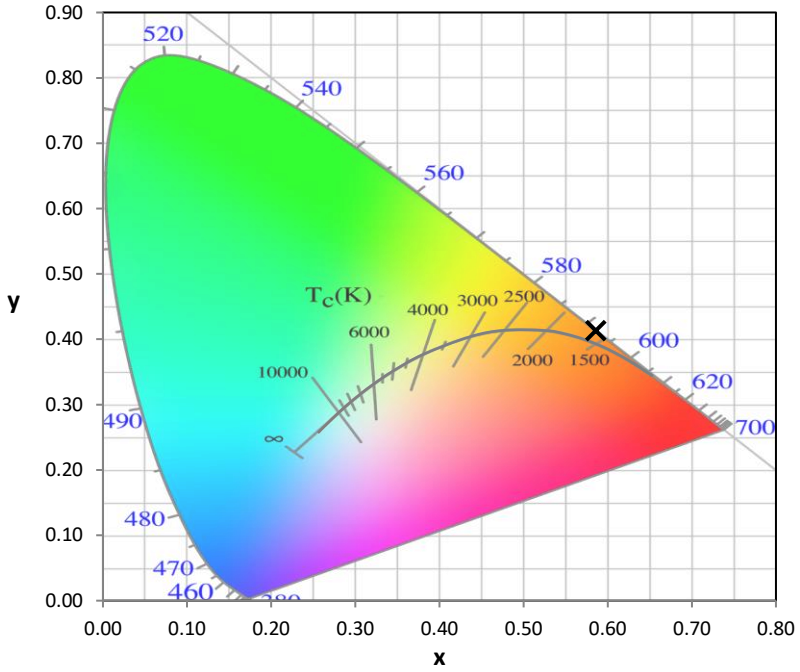
| | |
|---|---|
| Stabilization Time: | 64M |
| Operation Time: | 2H 4M |
| Sphere Temperature (°C): | 25.0 |

REPORT NUMBER: SP3-2509-541-1

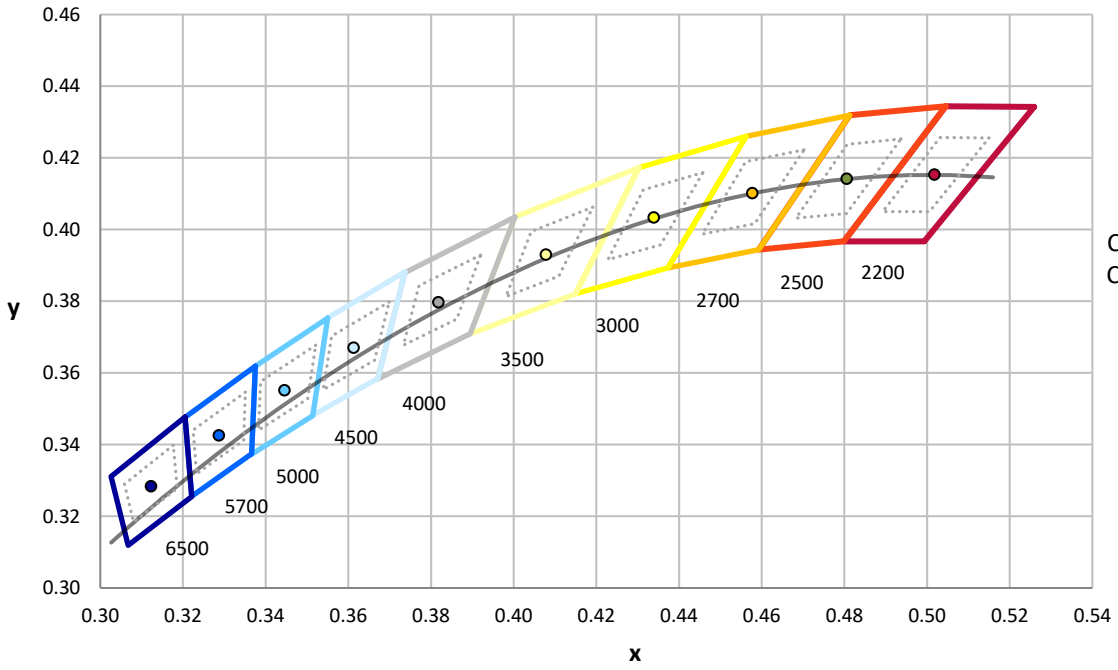
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 3M SPHERE IN02505 | 7/1/2025 | 1/1/2026 |
| Power Meter | XITRON INXT2011006 | 1/20/2025 | 1/20/2026 |
| AC Power Source | CHROMA 61604 IN6064A | 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 |
| | | | |

REPORT NUMBER: SP3-2509-541-1

## CIE 1931 Chromaticity Diagram




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

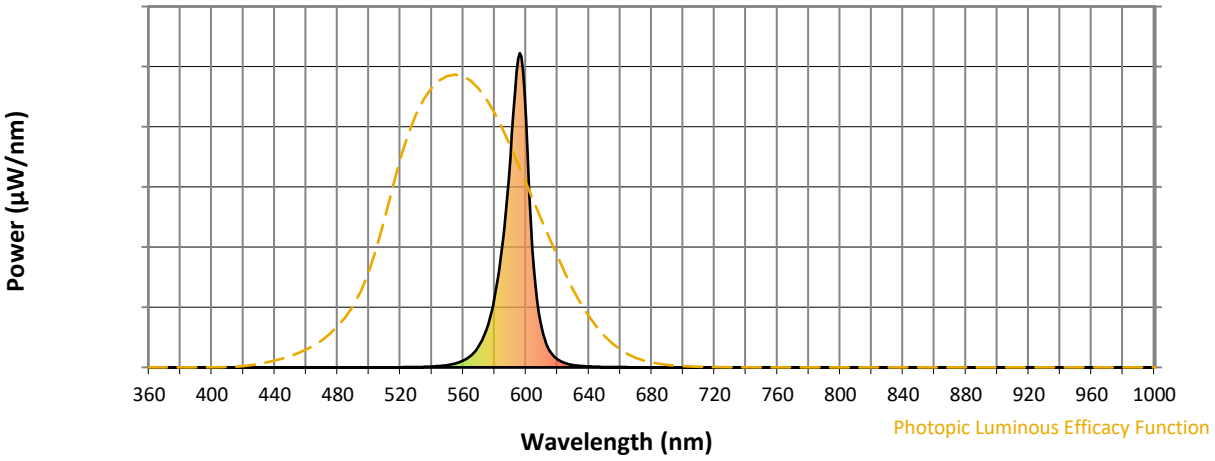



CCT = 1599K
CIE x = 0.5859
CIE y = 0.4133
Duv = 0.0099

Point lies outside the range

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## Photopic Flux vs. Wavelength

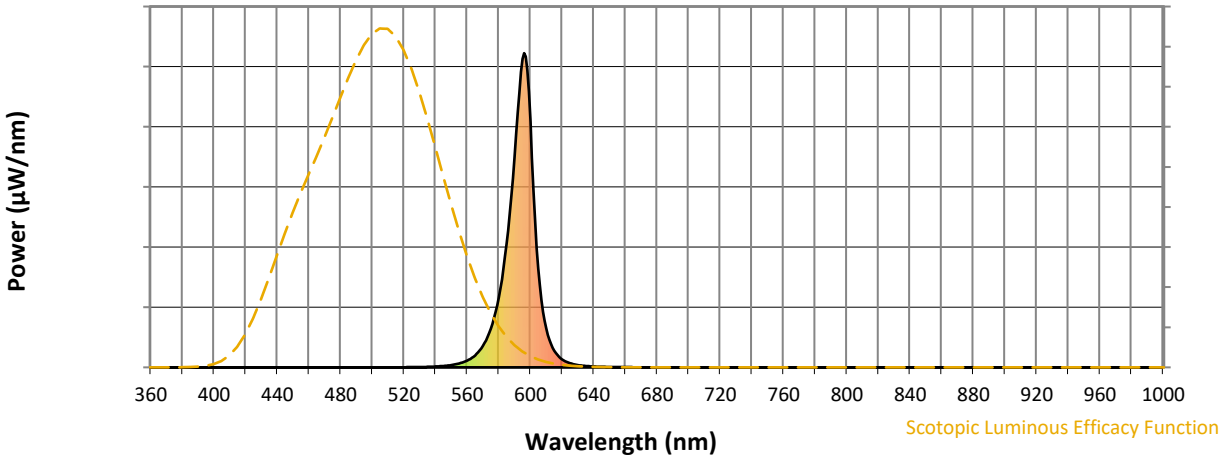



## Photopic Lumens: NR

| 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

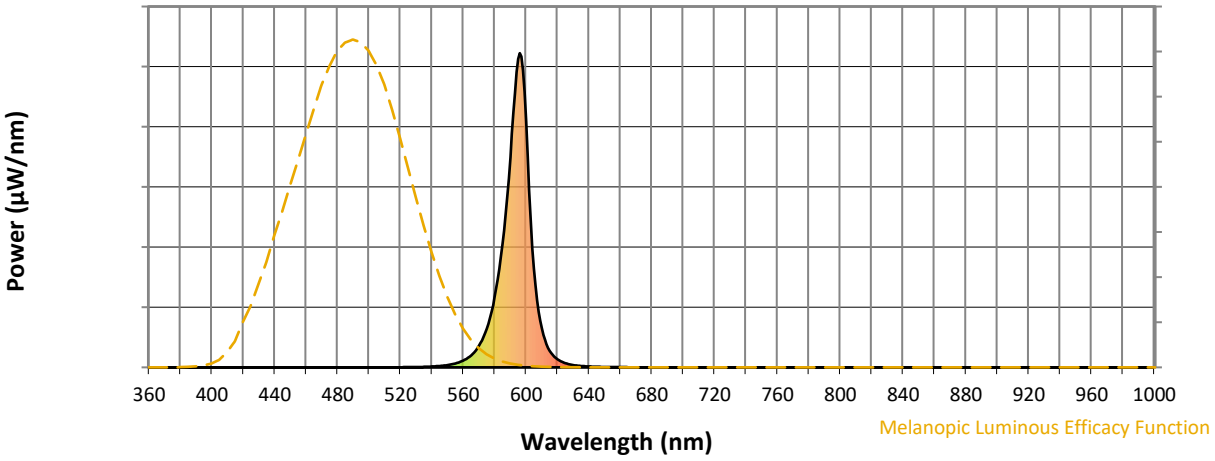



**Scotopic Lumens: NR** **S/P: 0.23**

| 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 | | | |

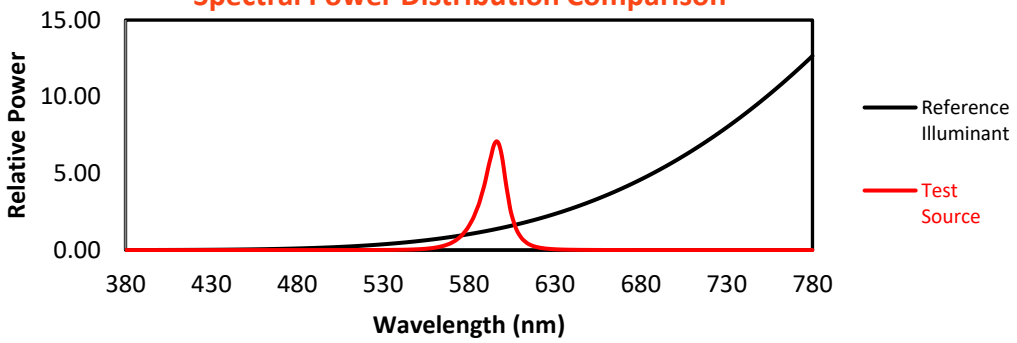
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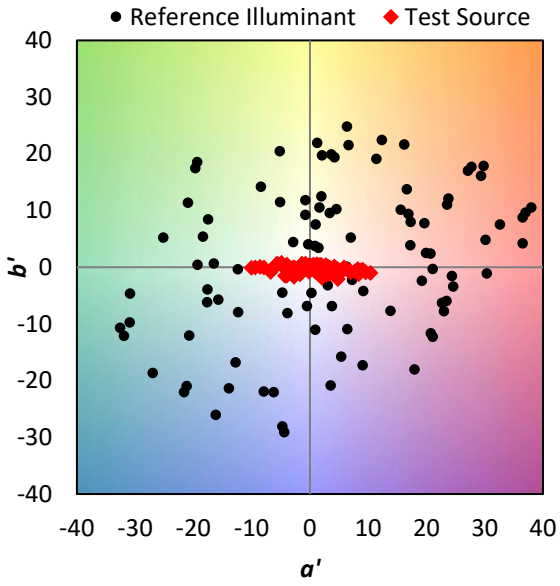
## Summary

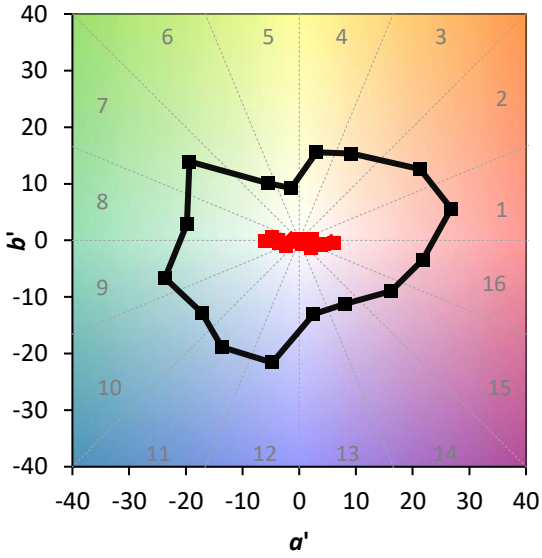
$R_f$ = 1.2
$R_g$ = 0.9
CIE $R_a$ = -22.7
$R_9$ = -395.3

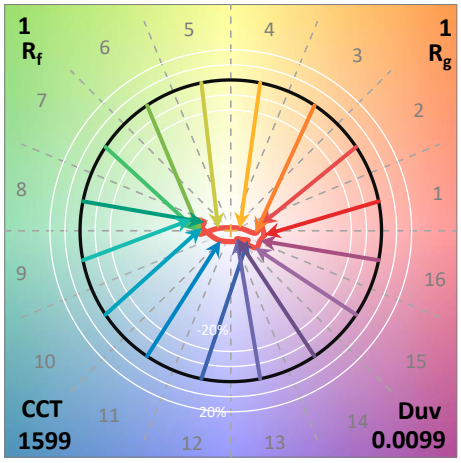
## Spectral Power Distribution Comparison

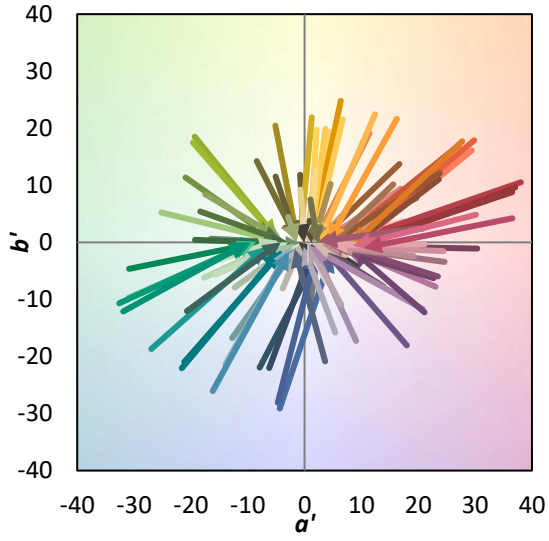



## Color Vector Graphics



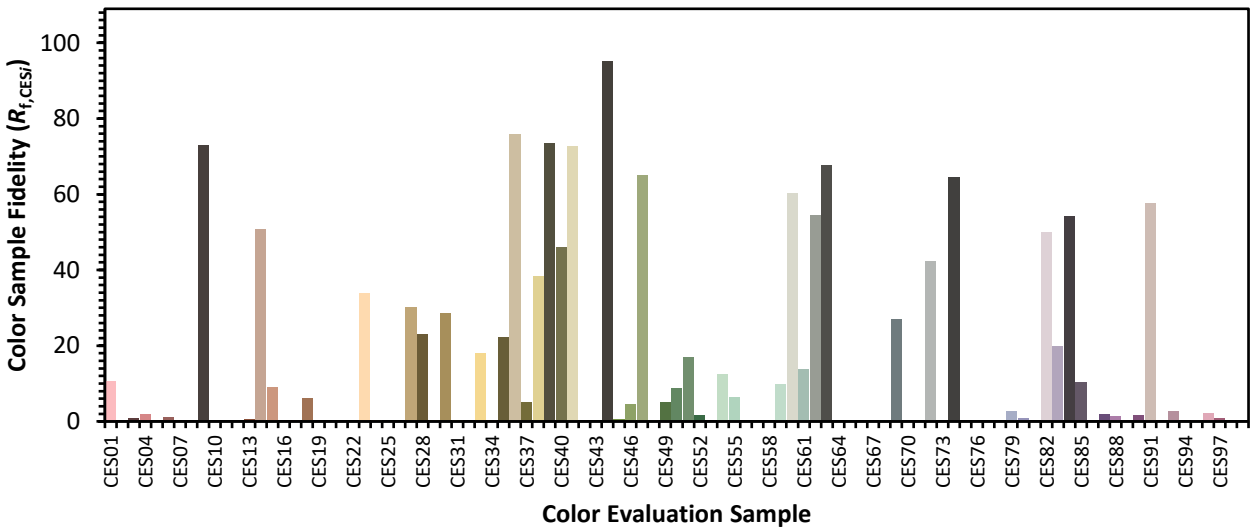



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**Individual Sample Fidelity Index ($R_{f,i}$)**

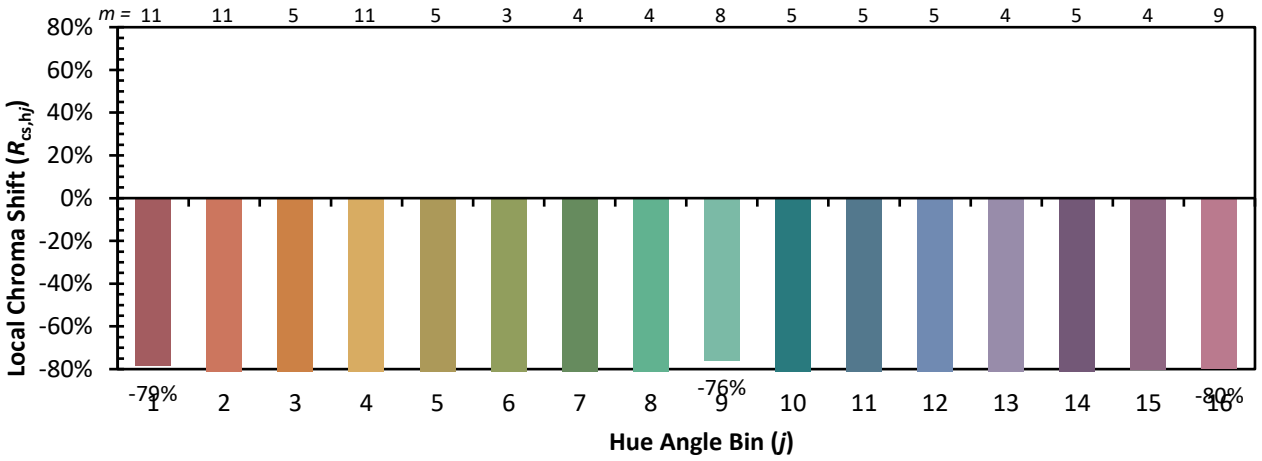
| | | | |
|---|---|---|---|
| CES01 = 90 | CES26 = 0 | CES51 = 17 | CES76 = 0 |
| CES02 = 69 | CES27 = 30 | CES52 = 2 | CES77 = 0 |
| CES03 = 30 | CES28 = 23 | CES53 = 0 | CES78 = 0 |
| CES04 = 77 | CES29 = 0 | CES54 = 12 | CES79 = 3 |
| CES05 = 51 | CES30 = 29 | CES55 = 6 | CES80 = 1 |
| CES06 = 56 | 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 | |

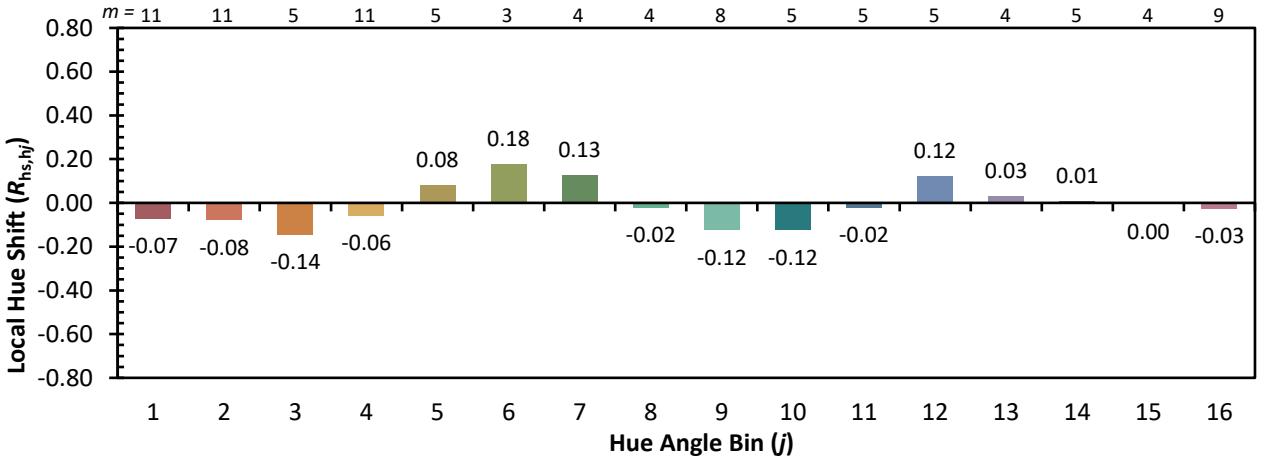


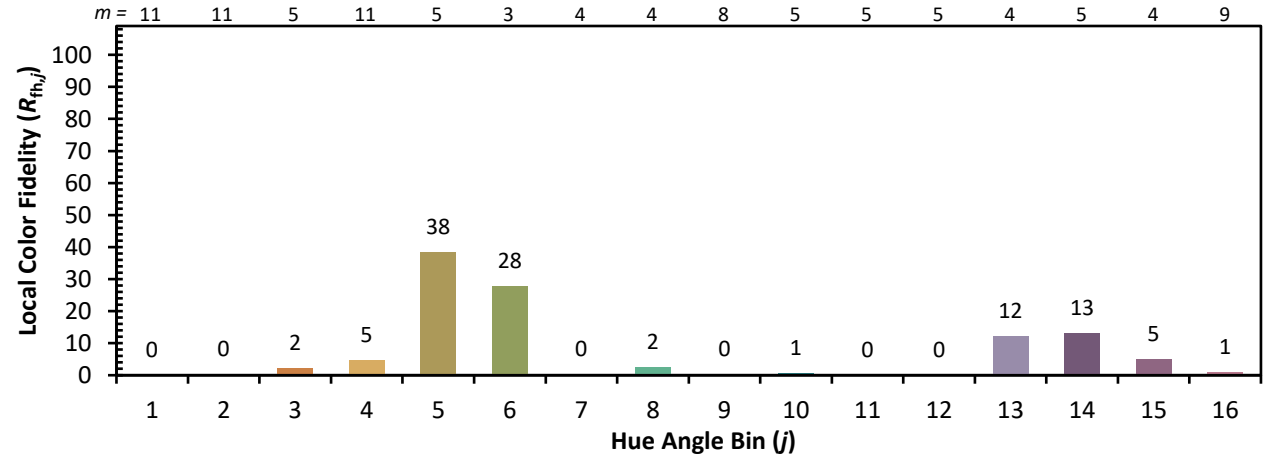
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## Color Rendition by Hue-Angle Bin



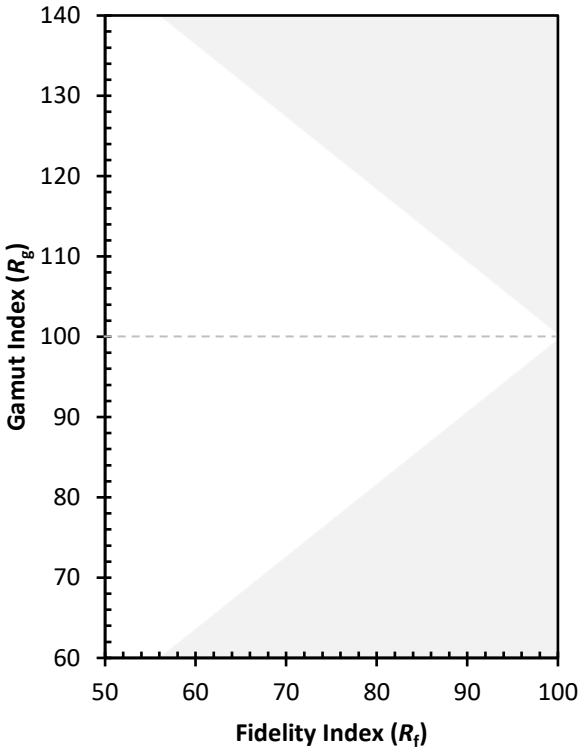



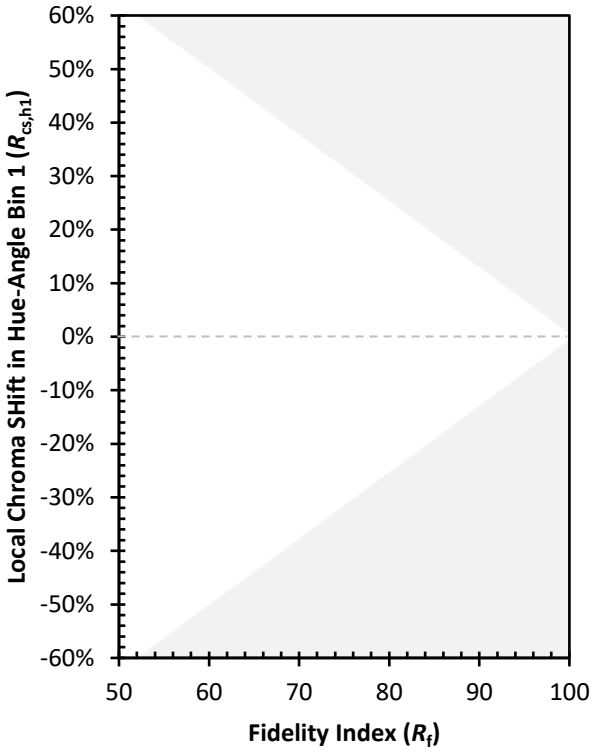



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## Measure Comparisons




(END OF REPORT)