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: P1502357

Luminaire Tested: GSS-SB1A-850-U-T3LG-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: | P1502357 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 7/20/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB1A-850-U-T3LG-HSS |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 1SQUARE 31W 80CRI 5000K FIXTURE w/ TYPE III 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: | 3260.6 lumens |
| Efficiency: | N/A |
| Efficacy: | 105.2 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 |

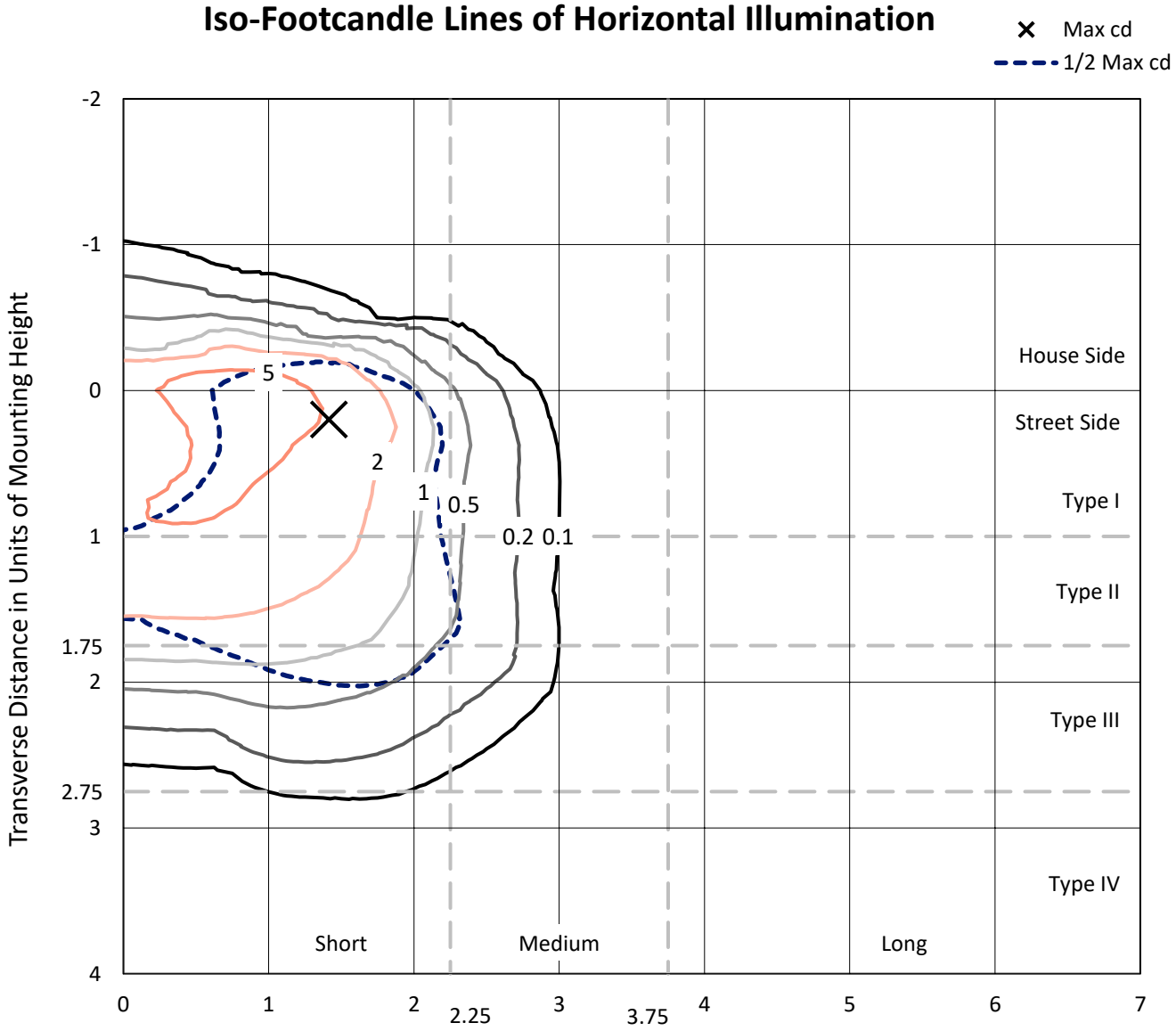
| | |
|---|---|
| Input Watts (W): | 31 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 6.4% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature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

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Scaled Data Report

REPORT NUMBER: P1502357
CATALOG NUMBER: GSS-SB1A-850-U-T3LG-HSS

## Iso-Footcandle Lines of Horizontal Illumination



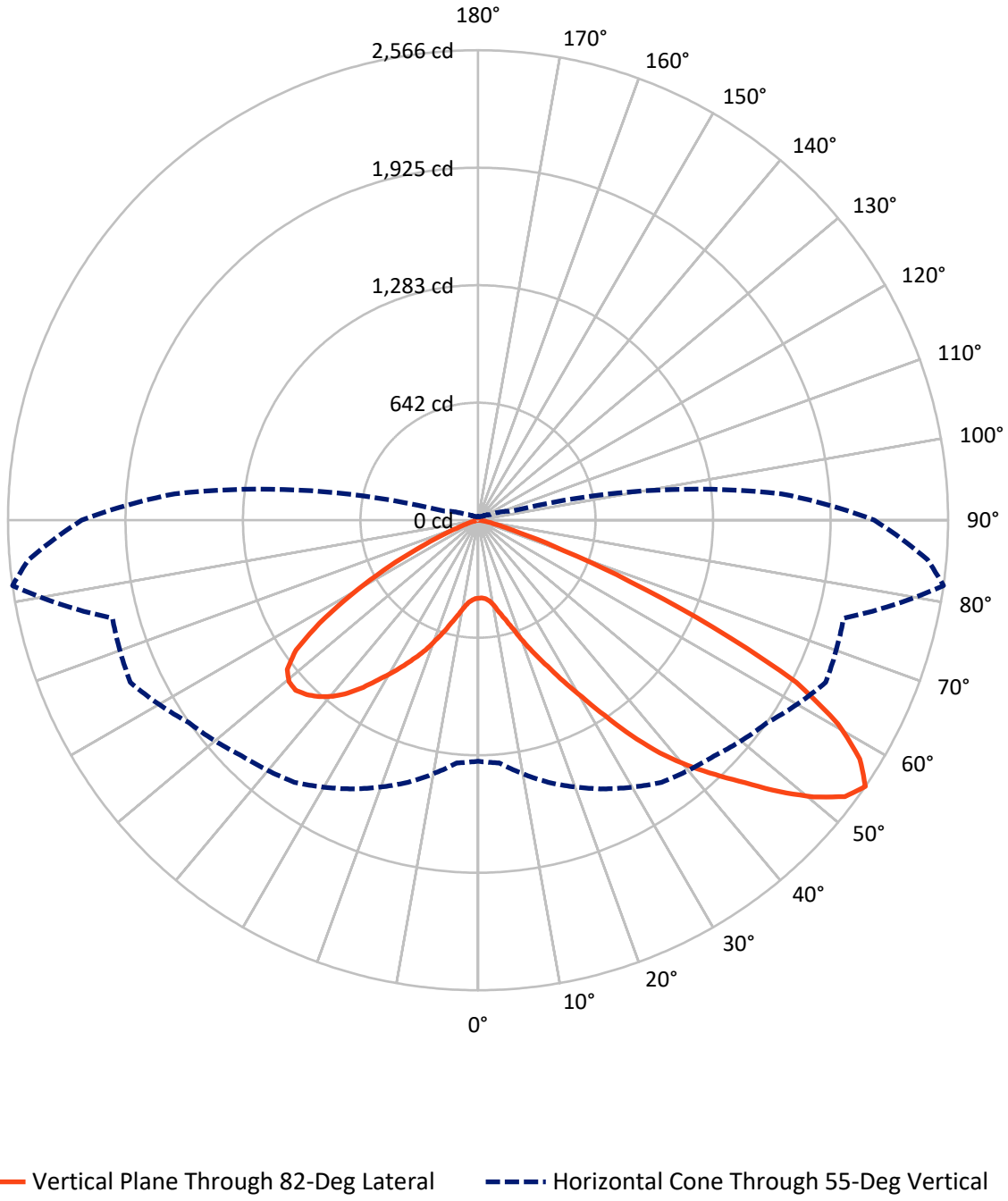

Based on 10 foot mounting height. Maximum calculated value = 8 fc
Type III - Short - N/A

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## Luminous Intensity Polar Plot



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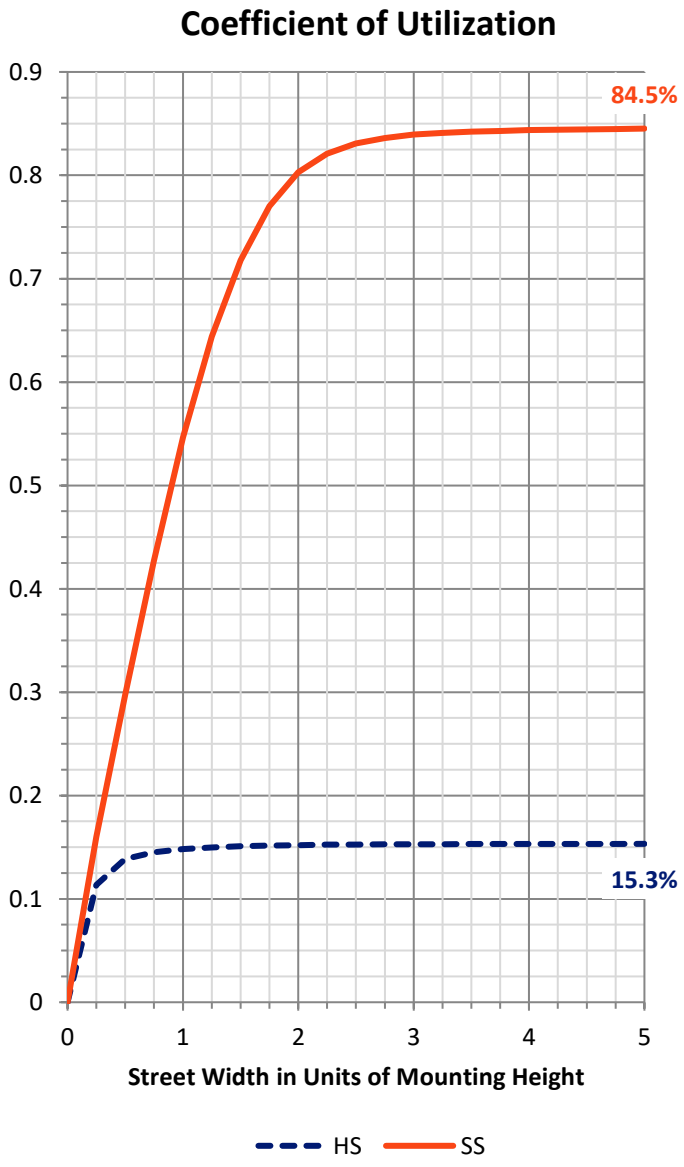
REPORT NUMBER: P1502357
CATALOG NUMBER: GSS-SB1A-850-U-T3LG-HSS

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 504.0 | 0.0 | 504.0 |
| | % Fixture | 15.5 | 0.0 | 15.5 |
| **Street Side** | Lumens | 2756.6 | 0.0 | 2756.6 |
| | % Fixture | 84.5 | 0.0 | 84.5 |
| **Total** | Lumens | 3260.6 | 0.0 | 3260.6 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 38.6 | 1.2 |
| 10°-20° | 104.5 | 3.2 |
| 20°-30° | 208.8 | 6.4 |
| 30°-40° | 432.4 | 13.3 |
| 40°-50° | 722.4 | 22.2 |
| 50°-60° | 916.2 | 28.1 |
| 60°-70° | 684.9 | 21.0 |
| 70°-80° | 145.1 | 4.4 |
| 80°-90° | 7.8 | 0.2 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 3260.6 | 100.0 |
| 0°-180° | 3260.6 | 100.0 |



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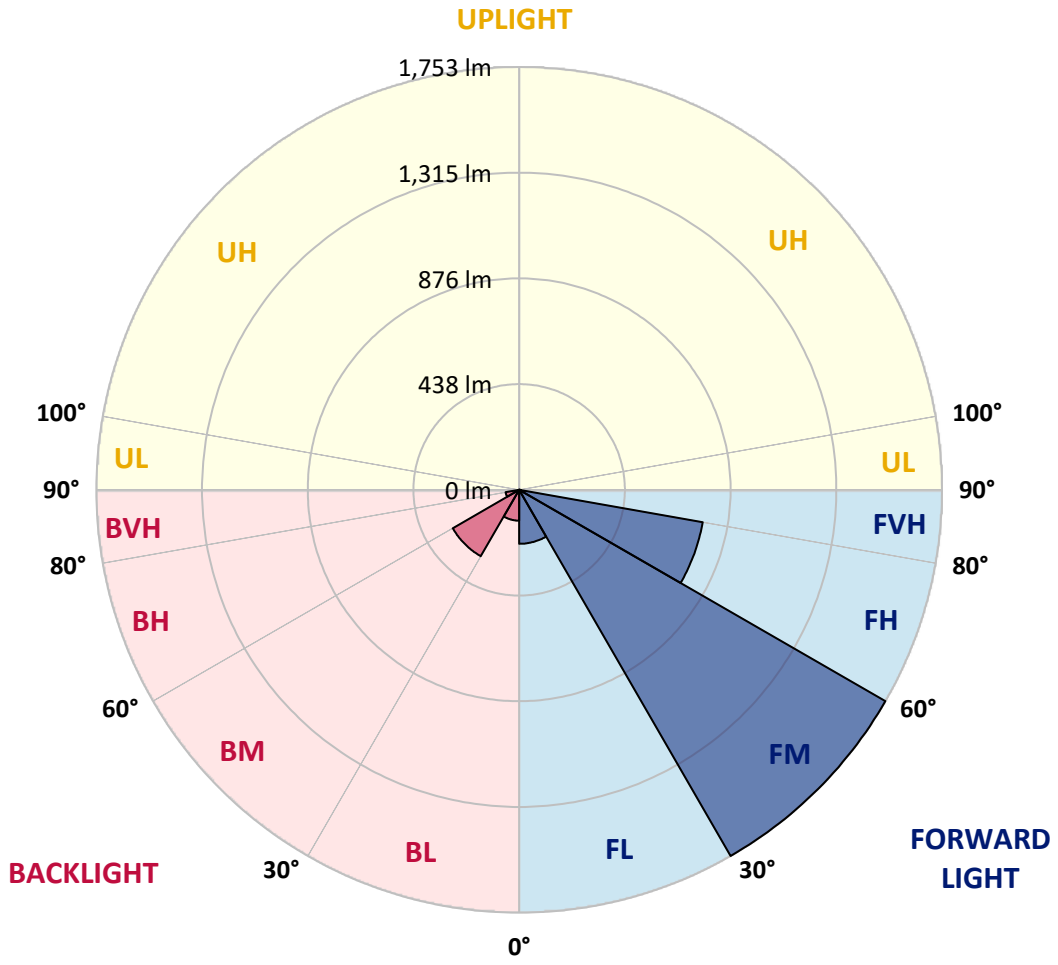
Scaled Data Report

REPORT NUMBER: P1502357
CATALOG NUMBER: GSS-SB1A-850-U-T3LG-HSS

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 223.9 | 6.9 | | | |
| FM | (30°-60°) | 1752.9 | 53.8 | | | |
| FH | (60°-80°) | 772.7 | 23.7 | | | G1/1800 |
| FVH | (80°-90°) | 7.0 | 0.2 | | | G0/10 |
| BL | (0°-30°) | 127.9 | 3.9 | B1/500 | | |
| BM | (30°-60°) | 318.0 | 9.8 | B1/1000 | | |
| BH | (60°-80°) | 57.2 | 1.8 | 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° | 35° | 45° | 55° | 65° | 75° | 82° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 425.7 | 425.7 | 425.7 | 425.7 | 425.7 | 425.7 | 425.7 | 425.7 | 425.7 | *425.7* | 425.7 |
| 2.5° | 414.2 | 415.0 | 413.3 | 414.2 | 415.9 | 415.0 | 418.6 | 421.2 | 423.9 | *424.8* | 425.7 |
| 5° | 377.9 | 378.8 | 379.6 | 386.7 | 391.2 | 401.8 | 411.5 | 417.7 | 426.6 | *431.0* | 431.9 |
| 7.5° | 334.5 | 334.5 | 338.1 | 346.9 | 358.4 | 378.8 | 400.9 | 418.6 | 435.4 | *444.3* | 446.0 |
| 10° | 326.6 | 327.4 | 327.4 | 333.6 | 343.4 | 363.7 | 392.0 | 427.4 | 457.5 | *470.8* | 475.2 |
| 12.5° | 328.3 | 329.2 | 330.1 | 336.3 | 346.0 | 363.7 | 400.0 | 446.0 | 492.9 | *515.0* | 517.7 |
| 15° | 332.7 | 334.5 | 337.2 | 345.1 | 355.8 | 378.8 | 416.8 | 472.6 | 535.4 | *563.7* | 570.8 |
| 17.5° | 346.0 | 346.9 | 351.3 | 360.2 | 377.0 | 400.0 | 441.6 | 507.1 | 594.7 | *625.7* | 638.9 |
| 20° | 366.4 | 368.1 | 374.3 | 386.7 | 406.2 | 435.4 | 481.4 | 552.2 | 658.4 | *706.2* | 716.8 |
| 22.5° | 392.0 | 392.0 | 400.9 | 420.4 | 447.8 | 480.5 | 536.3 | 612.4 | 736.3 | *792.0* | 809.7 |
| 25° | 434.5 | 433.6 | 440.7 | 462.8 | 495.6 | 543.4 | 600.0 | 684.1 | 817.7 | *884.1* | 902.7 |
| 27.5° | 531.9 | 529.2 | 526.6 | 527.4 | 555.8 | 616.8 | 682.3 | 774.3 | 918.6 | *996.5* | 1010.6 |
| 30° | 645.1 | 648.7 | 645.1 | 636.3 | 640.7 | 697.3 | 778.8 | 885.0 | 1031.9 | *1119.5* | 1138.1 |
| 32.5° | 744.3 | 746.0 | 761.1 | 770.8 | 774.3 | 800.9 | 890.3 | 1018.6 | 1176.1 | *1271.7* | 1295.6 |
| 35° | 852.2 | 854.9 | 871.7 | 892.0 | 923.9 | 947.8 | 1030.1 | 1173.5 | 1323.0 | *1443.4* | 1461.1 |
| 37.5° | 977.9 | 982.3 | 1004.4 | 1033.6 | 1077.9 | 1132.8 | 1177.0 | 1314.2 | 1472.6 | *1611.5* | 1630.1 |
| 40° | 1088.5 | 1102.7 | 1140.7 | 1177.9 | 1224.8 | 1286.7 | 1315.9 | 1437.2 | 1583.2 | *1760.2* | 1791.2 |
| 42.5° | 1192.9 | 1200.9 | 1262.0 | 1319.5 | 1375.2 | 1425.7 | 1454.0 | 1533.6 | 1681.4 | *1898.2* | 1932.8 |
| 45° | 1279.7 | 1285.8 | 1354.0 | 1430.1 | 1499.1 | 1549.6 | 1554.0 | 1627.4 | 1778.8 | *2044.3* | 2070.8 |
| 47.5° | 1332.8 | 1342.5 | 1430.1 | 1516.8 | 1592.9 | 1639.8 | 1632.8 | 1746.9 | 1885.0 | *2214.2* | 2217.7 |
| 50° | 1364.6 | 1370.8 | 1460.2 | 1572.6 | 1666.4 | 1699.1 | 1714.2 | 1861.1 | 1981.4 | *2375.2* | 2354.0 |
| 52.5° | 1387.6 | 1397.4 | 1485.0 | 1604.4 | 1709.7 | 1754.0 | 1808.0 | 1989.4 | 2057.5 | *2507.1* | 2450.5 |
| 55° | *1315.9* | *1330.1* | *1481.4* | *1618.6* | *1746.9* | *1821.2* | *1927.4* | *2094.7* | *2066.4* | *2566.4* | *2462.8* |
| 57.5° | 1235.4 | 1238.1 | 1387.6 | 1614.2 | 1788.5 | 1892.0 | 2037.2 | 2102.7 | 1984.1 | *2458.4* | 2337.2 |
| 60° | 1116.8 | 1132.8 | 1285.8 | 1556.6 | 1795.6 | 1948.7 | 2111.5 | 2006.2 | 1833.6 | *2258.4* | 2076.1 |
| 62.5° | 784.1 | 808.9 | 1008.9 | 1405.3 | 1745.1 | 1979.7 | 2099.1 | 1838.1 | 1645.1 | *1949.6* | 1745.1 |
| 65° | 438.9 | 460.2 | 623.9 | 1133.6 | 1606.2 | 1972.6 | 1971.7 | 1613.3 | 1342.5 | *1408.9* | 1247.8 |
| 67.5° | 240.7 | 257.5 | 323.9 | 853.1 | 1274.3 | 1821.2 | 1703.5 | 1231.0 | 900.0 | *894.7* | 778.8 |
| 70° | 168.1 | 169.0 | 204.4 | 576.1 | 915.9 | 1270.8 | 1331.9 | 825.7 | 558.4 | *493.8* | 416.8 |
| 72.5° | 82.3 | 83.2 | 101.8 | 271.7 | 560.2 | 704.4 | 913.3 | 429.2 | 313.3 | *245.1* | 208.9 |
| 75° | 41.6 | 40.7 | 55.8 | 101.8 | 231.9 | 343.4 | 402.7 | 215.0 | 182.3 | *134.5* | 119.5 |
| 77.5° | 26.5 | 27.4 | 32.7 | 55.8 | 104.4 | 133.6 | 123.9 | 116.8 | 107.1 | *78.8* | 68.1 |
| 80° | 17.7 | 17.7 | 22.1 | 35.4 | 51.3 | 63.7 | 38.1 | 54.0 | 62.8 | *46.0* | 39.8 |
| 82.5° | 5.3 | 5.3 | 13.3 | 19.5 | 24.8 | 25.7 | 16.8 | 24.8 | 35.4 | *25.7* | 19.5 |
| 85° | 3.5 | 3.5 | 7.1 | 9.7 | 10.6 | 8.8 | 5.3 | 10.6 | 16.8 | *11.5* | 9.7 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | *0.9* | 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: P1502357
CATALOG NUMBER: GSS-SB1A-850-U-T3LG-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 425.7 | 425.7 | 425.7 | 425.7 | 425.7 | 425.7 | 425.7 | 425.7 | 425.7 | 425.7 | 425.7 |
| 2.5° | 426.6 | 427.4 | 430.1 | 431.0 | 432.7 | 433.6 | 433.6 | 433.6 | 432.7 | 433.6 | 435.4 |
| 5° | 433.6 | 438.1 | 441.6 | 440.7 | 440.7 | 436.3 | 432.7 | 425.7 | 422.1 | 421.2 | 422.1 |
| 7.5° | 451.3 | 454.9 | 458.4 | 453.1 | 439.8 | 419.5 | 397.3 | 379.6 | 364.6 | 357.5 | 360.2 |
| 10° | 483.2 | 487.6 | 487.6 | 462.8 | 425.7 | 377.9 | 338.1 | 305.3 | 280.5 | 267.3 | 273.5 |
| 12.5° | 529.2 | 532.7 | 523.9 | 471.7 | 400.9 | 322.1 | 255.8 | 200.9 | 169.0 | 153.1 | 149.6 |
| 15° | 582.3 | 587.6 | 557.5 | 469.9 | 361.9 | 240.7 | 159.3 | 119.5 | 108.0 | 104.4 | 105.3 |
| 17.5° | 650.4 | 653.1 | 594.7 | 455.8 | 294.7 | 157.5 | 113.3 | 101.8 | 99.1 | 97.3 | 97.3 |
| 20° | 734.5 | 726.6 | 624.8 | 431.9 | 215.0 | 123.9 | 104.4 | 95.6 | 92.9 | 92.0 | 92.9 |
| 22.5° | 824.8 | 812.4 | 649.6 | 386.7 | 162.8 | 116.8 | 100.0 | 90.3 | 86.7 | 85.8 | 85.8 |
| 25° | 919.5 | 891.2 | 669.0 | 320.4 | 152.2 | 115.0 | 94.7 | 82.3 | 78.8 | 77.0 | 77.0 |
| 27.5° | 1027.4 | 978.8 | 679.7 | 268.1 | 154.9 | 112.4 | 88.5 | 75.2 | 69.9 | 68.1 | 68.1 |
| 30° | 1146.9 | 1076.1 | 680.5 | 257.5 | 160.2 | 108.9 | 82.3 | 67.3 | 61.9 | 59.3 | 60.2 |
| 32.5° | 1292.0 | 1175.2 | 677.9 | 274.3 | 163.7 | 106.2 | 75.2 | 59.3 | 54.9 | 52.2 | 52.2 |
| 35° | 1442.5 | 1295.6 | 667.3 | 306.2 | 165.5 | 98.2 | 66.4 | 52.2 | 46.9 | 46.0 | 46.9 |
| 37.5° | 1592.0 | 1409.7 | 652.2 | 323.9 | 156.6 | 80.5 | 54.0 | 45.1 | 41.6 | 41.6 | 41.6 |
| 40° | 1728.3 | 1508.9 | 631.9 | 308.9 | 124.8 | 58.4 | 44.2 | 38.9 | 37.2 | 36.3 | 37.2 |
| 42.5° | 1830.1 | 1597.4 | 594.7 | 260.2 | 88.5 | 46.9 | 38.9 | 34.5 | 32.7 | 32.7 | 33.6 |
| 45° | 1941.6 | 1682.3 | 523.0 | 191.2 | 67.3 | 40.7 | 33.6 | 30.1 | 29.2 | 29.2 | 30.1 |
| 47.5° | 2054.0 | 1750.5 | 454.0 | 127.4 | 58.4 | 36.3 | 30.1 | 27.4 | 26.5 | 25.7 | 26.5 |
| 50° | 2139.8 | 1783.2 | 363.7 | 92.9 | 53.1 | 32.7 | 27.4 | 25.7 | 23.9 | 23.0 | 23.0 |
| 52.5° | 2200.9 | 1774.3 | 266.4 | 79.6 | 48.7 | 30.1 | 25.7 | 23.9 | 21.2 | 21.2 | 21.2 |
| 55° | *2163.7* | *1661.1* | *192.0* | *71.7* | *45.1* | *28.3* | *24.8* | *22.1* | *20.4* | *19.5* | *19.5* |
| 57.5° | 1983.2 | 1415.9 | 138.9 | 64.6 | 39.8 | 26.5 | 23.9 | 21.2 | 18.6 | 17.7 | 17.7 |
| 60° | 1723.9 | 1102.7 | 103.5 | 56.6 | 34.5 | 25.7 | 21.2 | 20.4 | 17.7 | 15.9 | 15.9 |
| 62.5° | 1408.9 | 802.7 | 80.5 | 48.7 | 31.0 | 22.1 | 20.4 | 18.6 | 15.9 | 14.2 | 13.3 |
| 65° | 977.9 | 512.4 | 61.9 | 39.8 | 29.2 | 19.5 | 18.6 | 15.9 | 13.3 | 10.6 | 10.6 |
| 67.5° | 603.5 | 304.4 | 47.8 | 31.0 | 23.0 | 16.8 | 15.9 | 14.2 | 11.5 | 8.8 | 8.8 |
| 70° | 333.6 | 161.1 | 32.7 | 23.0 | 17.7 | 13.3 | 12.4 | 12.4 | 9.7 | 8.0 | 7.1 |
| 72.5° | 160.2 | 87.6 | 22.1 | 19.5 | 13.3 | 8.8 | 9.7 | 9.7 | 8.0 | 6.2 | 6.2 |
| 75° | 96.5 | 52.2 | 15.0 | 15.0 | 8.8 | 7.1 | 7.1 | 8.0 | 6.2 | 4.4 | 4.4 |
| 77.5° | 54.9 | 31.0 | 8.8 | 11.5 | 6.2 | 4.4 | 5.3 | 4.4 | 3.5 | 2.7 | 2.7 |
| 80° | 31.0 | 17.7 | 5.3 | 8.0 | 3.5 | 2.7 | 2.7 | 1.8 | 1.8 | 0.9 | 0.9 |
| 82.5° | 15.0 | 9.7 | 2.7 | 2.7 | 1.8 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 |
| 85° | 7.1 | 1.8 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 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: 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

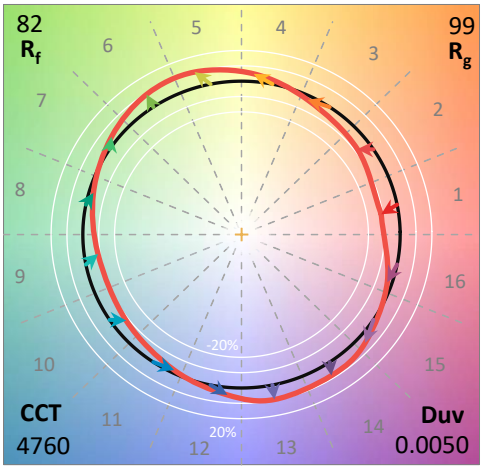
## Test Information

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

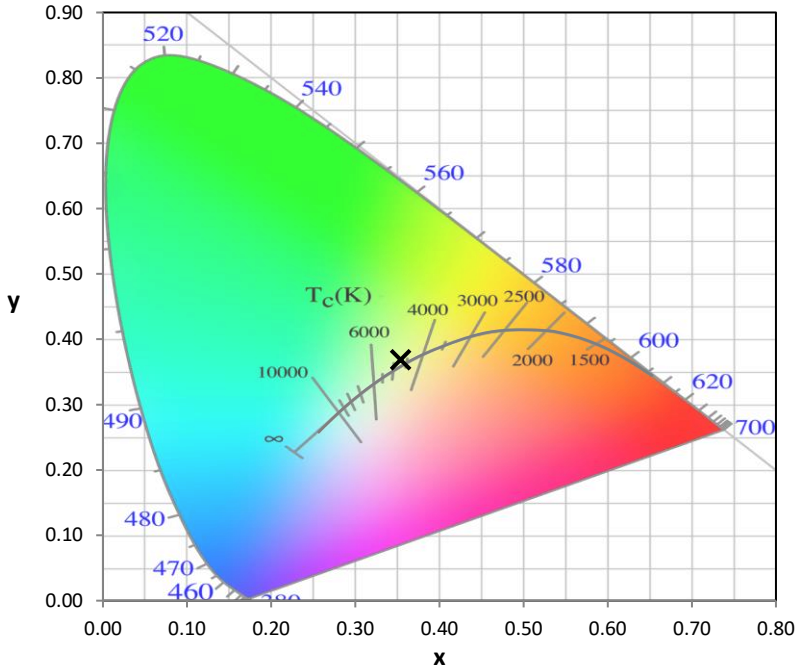
| | |
|---|---|
| Stabilization Time: | 21M |
| Operation Time: | 1H 21M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-12

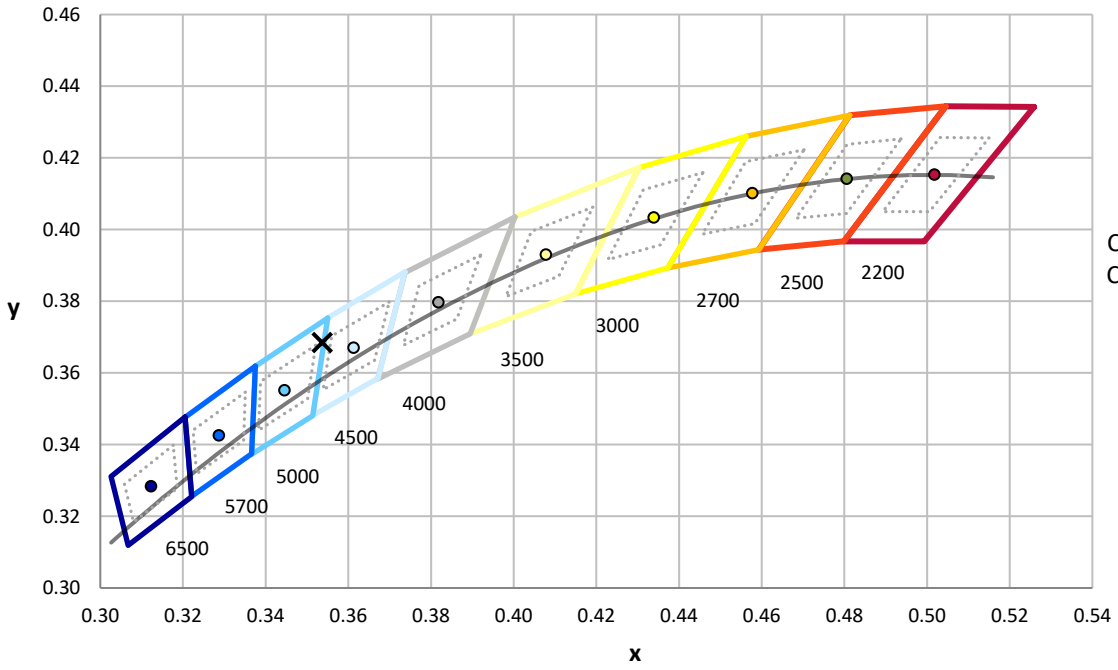
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

REPORT NUMBER: SP1-2407-184-12

## CIE 1931 Chromaticity Diagram




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

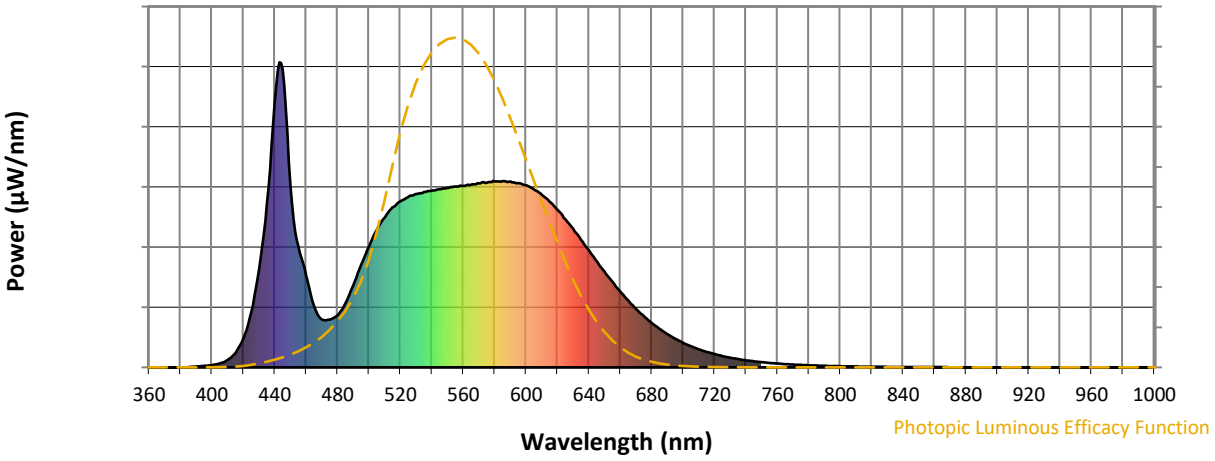



CCT = 4760K
CIE x = 0.3537
CIE y = 0.3685
Duv = 0.0050

Point lies inside the ANSI 5000K 7-step quadrangle

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## Photopic Flux vs. Wavelength

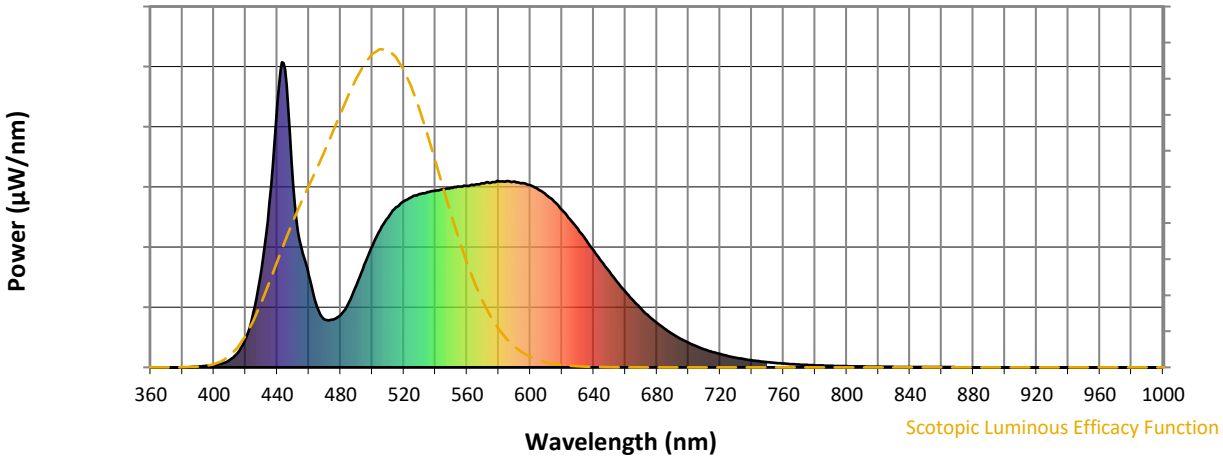



## Photopic Lumens: NR

| 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

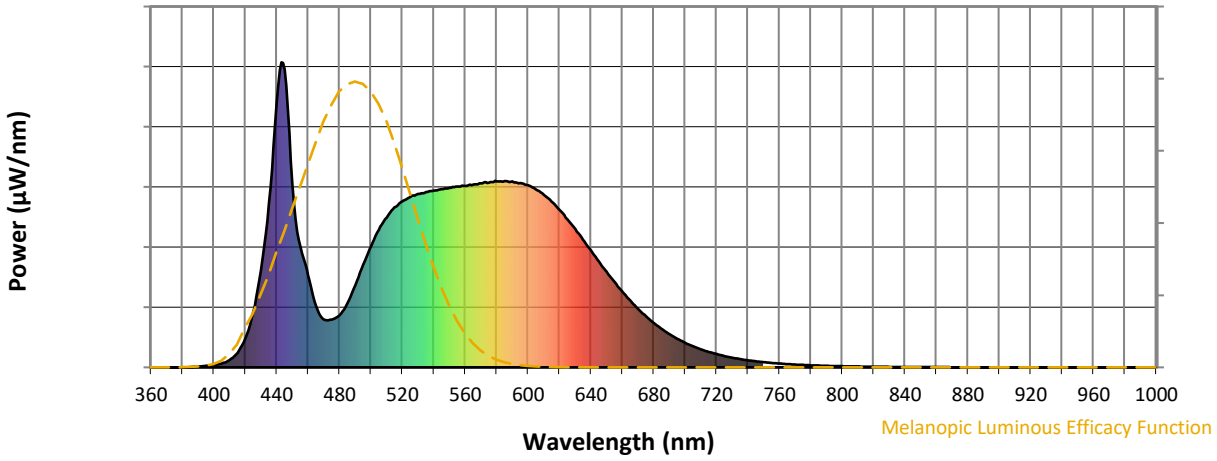



**Scotopic Lumens: NR** **S/P: 1.83**

| 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 | | | |

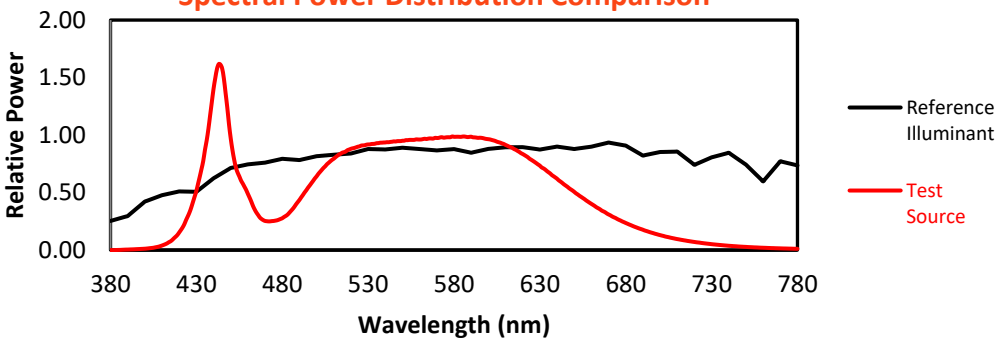
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# TM-30-18

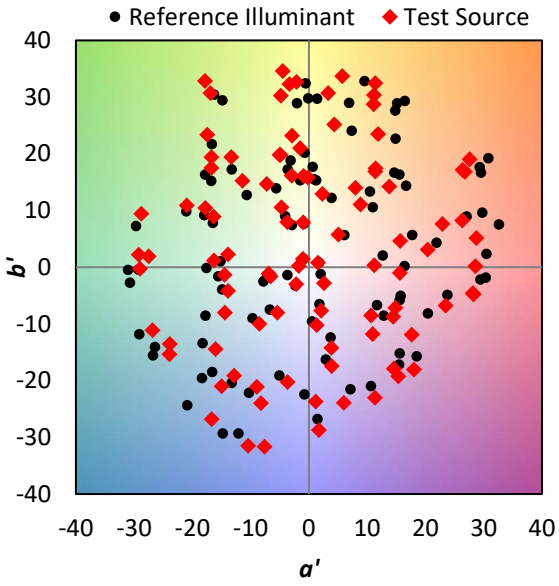
## Summary

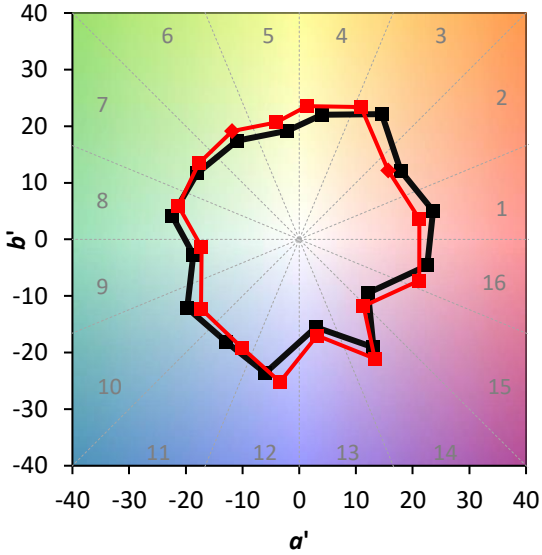
$R_f$ = 82
$R_g$ = 99.4
CIE $R_a$ = 81.1
$R_9$ = 8.7

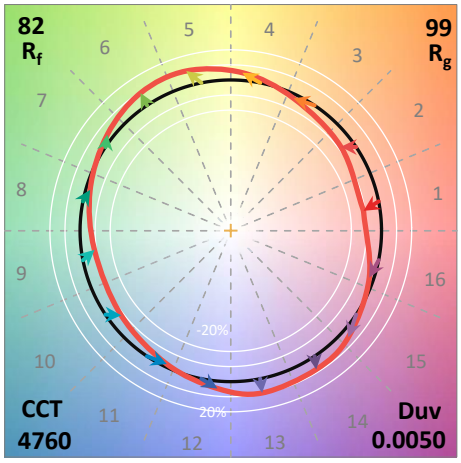
## Spectral Power Distribution Comparison

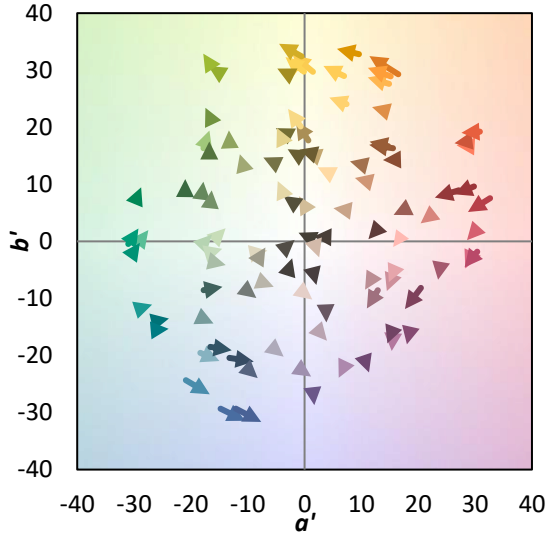



## Color Vector Graphics



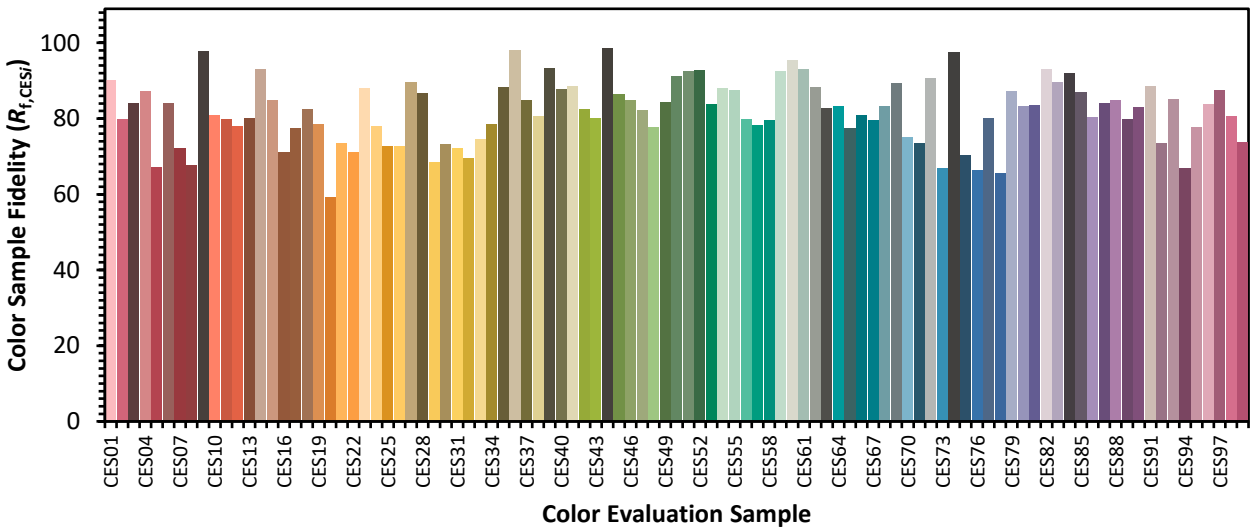



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**Individual Sample Fidelity Index ($R_{f,i}$)**

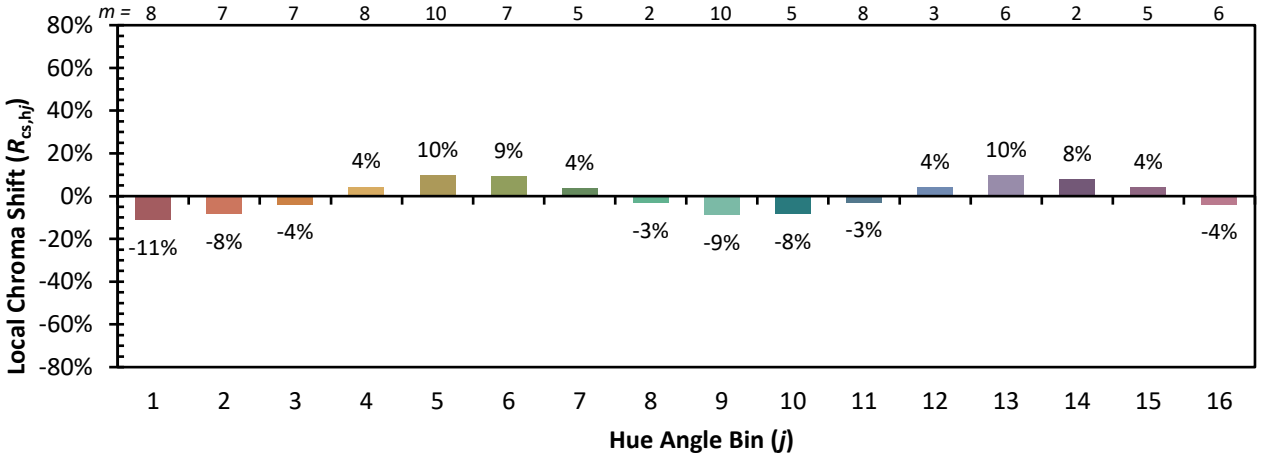
| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 73 | CES51 = 92 | CES76 = 66 |
| CES02 = 60 | CES27 = 90 | CES52 = 93 | CES77 = 80 |
| CES03 = 30 | CES28 = 87 | CES53 = 84 | CES78 = 65 |
| CES04 = 69 | CES29 = 69 | CES54 = 88 | CES79 = 87 |
| CES05 = 47 | CES30 = 73 | CES55 = 88 | CES80 = 83 |
| CES06 = 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 | |

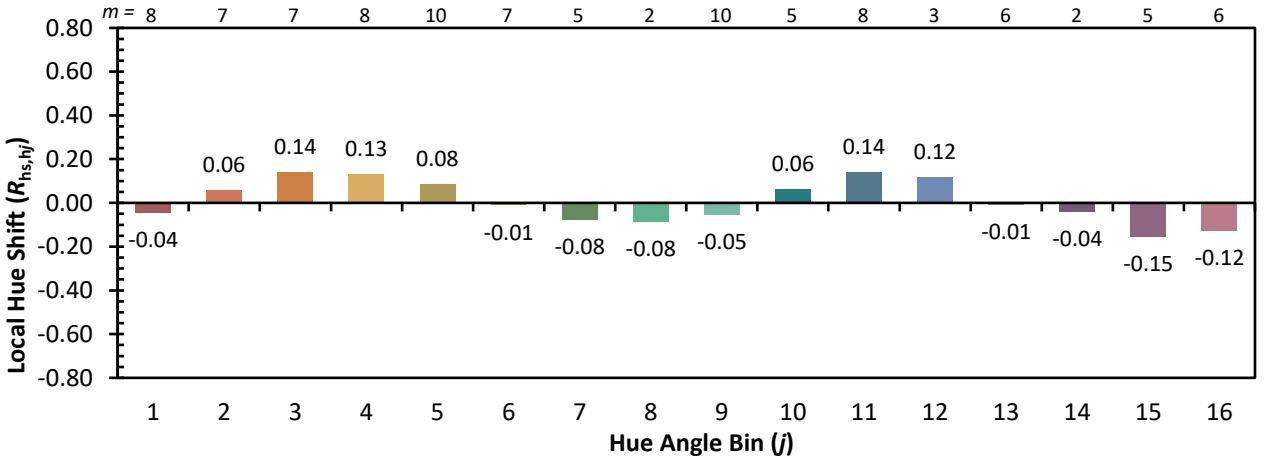


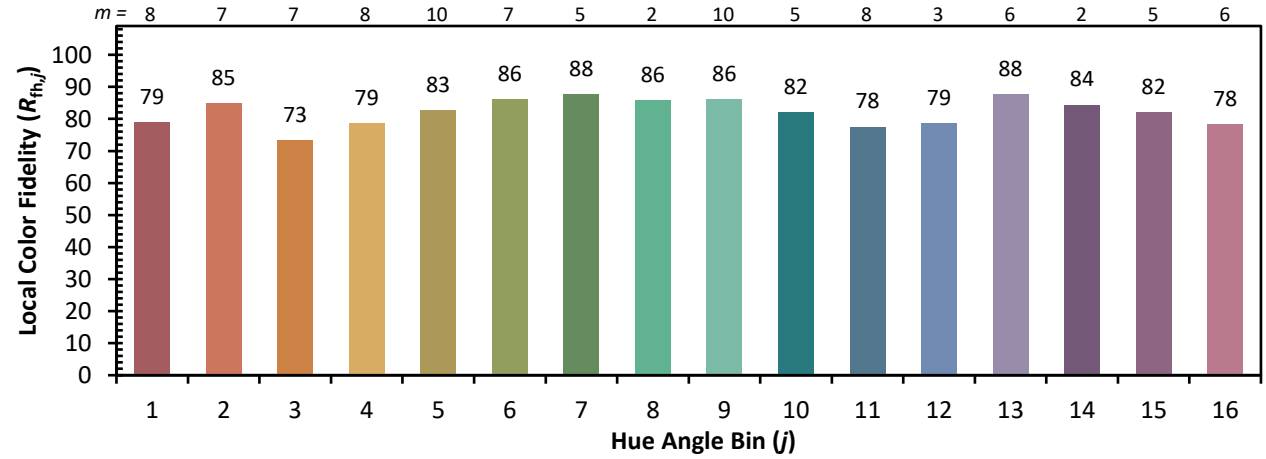
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## Color Rendition by Hue-Angle Bin



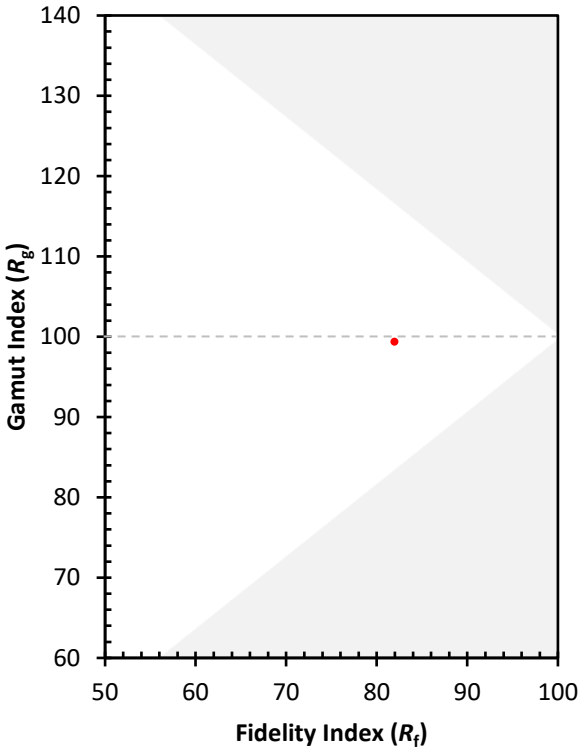



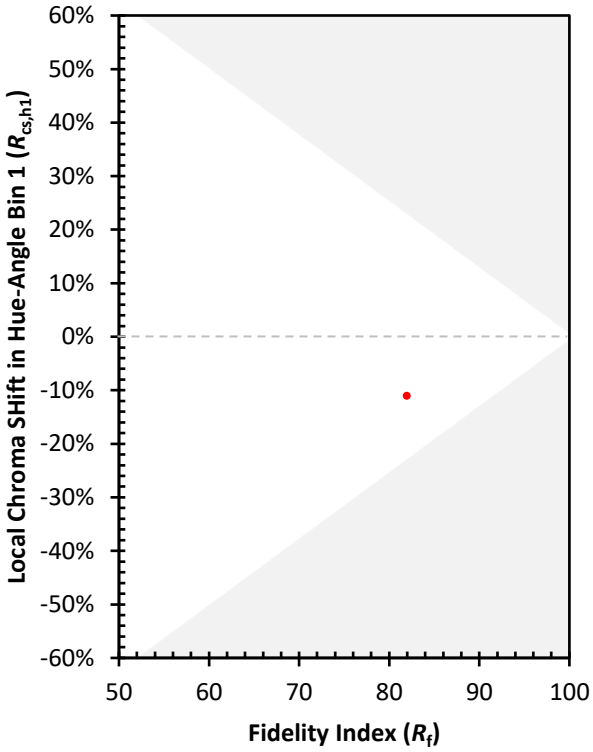



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## Measure Comparisons




(END OF REPORT)