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: P1199387

Luminaire Tested: GPC-SB2A-830-U-SL3

Issue Date: 10/30/2025

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2024 |
| Report Number: | P1199387 |
| | TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2411-289-12) |
| Test Lab: | INNOVATION CENTER |
| Issue Date: | 3/15/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GPC-SB2A-830-U-SL3 |
| Description: | GALLEON PEDESTRIAN LUMINAIRE |
| | (2) 80 CRI, 3000K, 350mA LIGHTSQUARES WITH 26 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS |
| Light Source: | - |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 7876 lumens |
| Efficiency: | N/A |
| Efficacy: | 137.5 lumens/watt |
| Luminous Opening: | Rectangular (W 1' x L: 0.5' x H: 0') |
| IES Classification: | Type IV - Medium |
| BUG Rating: | B1 - U0 - G2 |

| | |
|---|---|
| Input Watts (W): | 57.3 |
| Input Voltage (V): | 120.0 |
| Input Current (Ain): | 0.484 |
| Voltage Rise (V): | NR |
| Power Factor: | 0.994 |
| Total Harmonic Distortion (THDi): | 9.038 |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

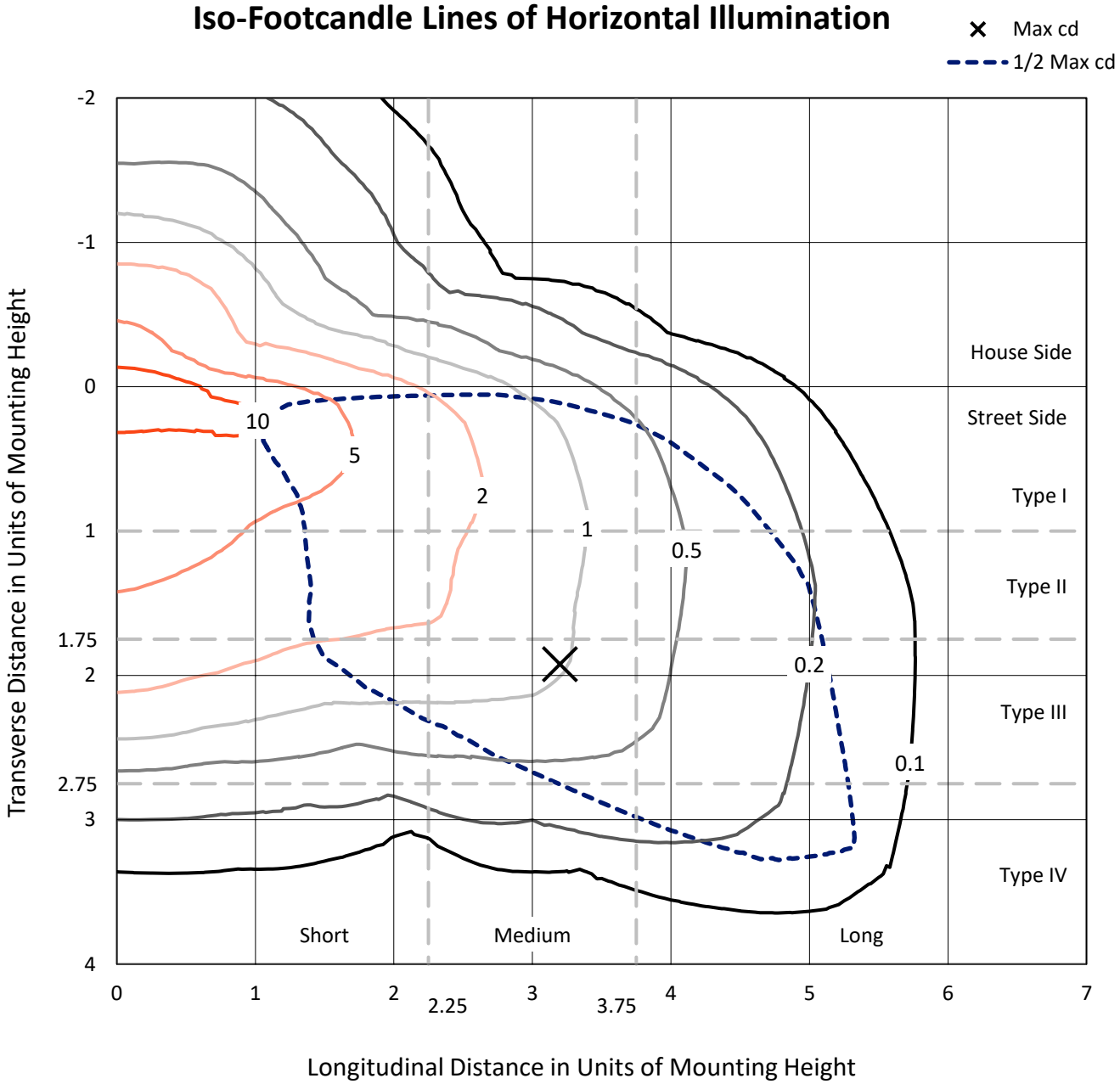


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REPORT NUMBER: P1199387
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## Iso-Footcandle Lines of Horizontal Illumination



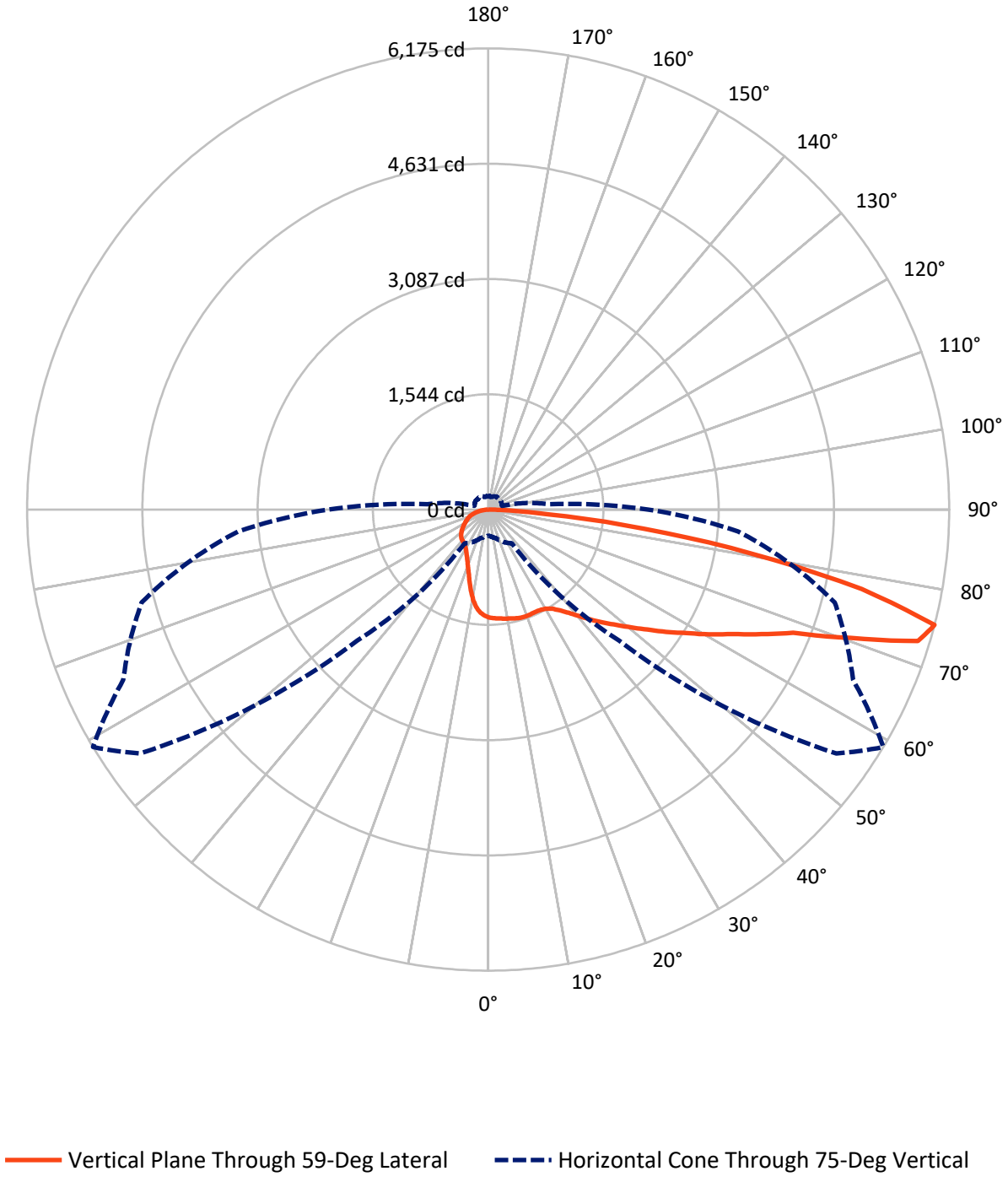

Based on 10 foot mounting height. Maximum calculated value = 14.5 fc
Type IV - Medium - N/A

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## Luminous Intensity Polar Plot



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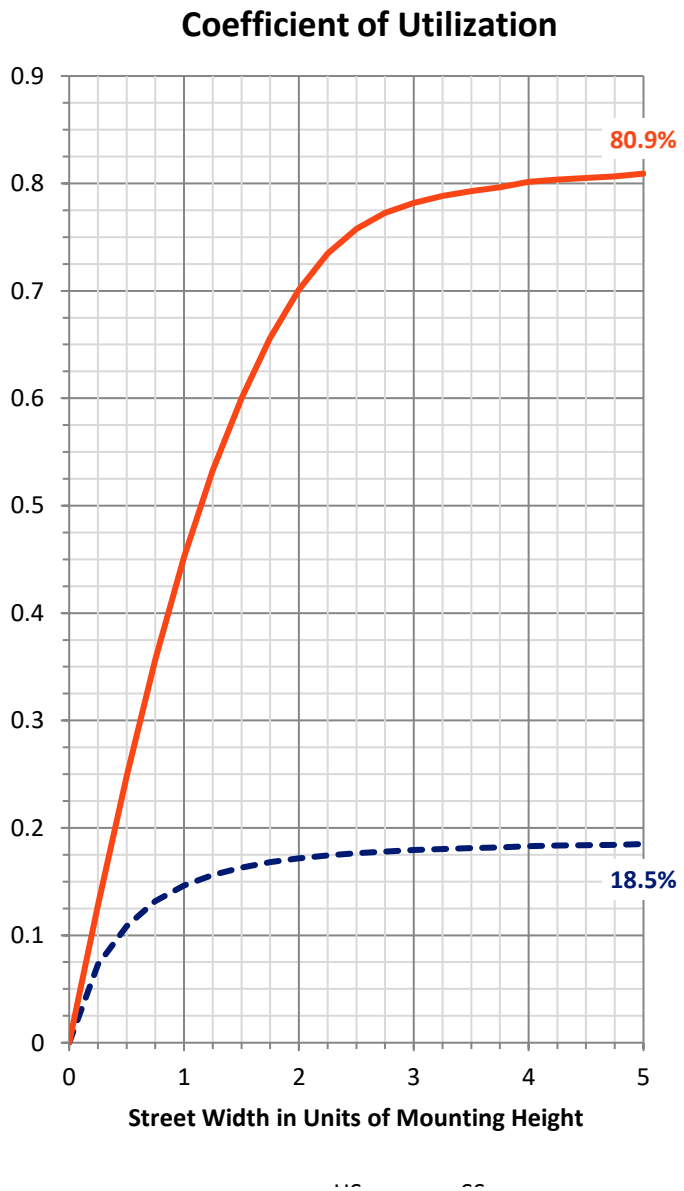
REPORT NUMBER: P1199387
CATALOG NUMBER: GPC-SB2A-830-U-SL3

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 1477.2 | 0.0 | 1477.2 |
| | % Fixture | 18.8 | 0.0 | 18.8 |
| **Street Side** | Lumens | 6398.8 | 0.0 | 6398.8 |
| | % Fixture | 81.2 | 0.0 | 81.2 |
| **Total** | Lumens | 7876.0 | 0.0 | 7876.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 129.6 | 1.6 |
| 10°-20° | 331.3 | 4.2 |
| 20°-30° | 503.3 | 6.4 |
| 30°-40° | 748.1 | 9.5 |
| 40°-50° | 1112.5 | 14.1 |
| 50°-60° | 1510.1 | 19.2 |
| 60°-70° | 1843.6 | 23.4 |
| 70°-80° | 1446.8 | 18.4 |
| 80°-90° | 250.6 | 3.2 |
| 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° | 7876.0 | 100.0 |
| 0°-180° | 7876.0 | 100.0 |



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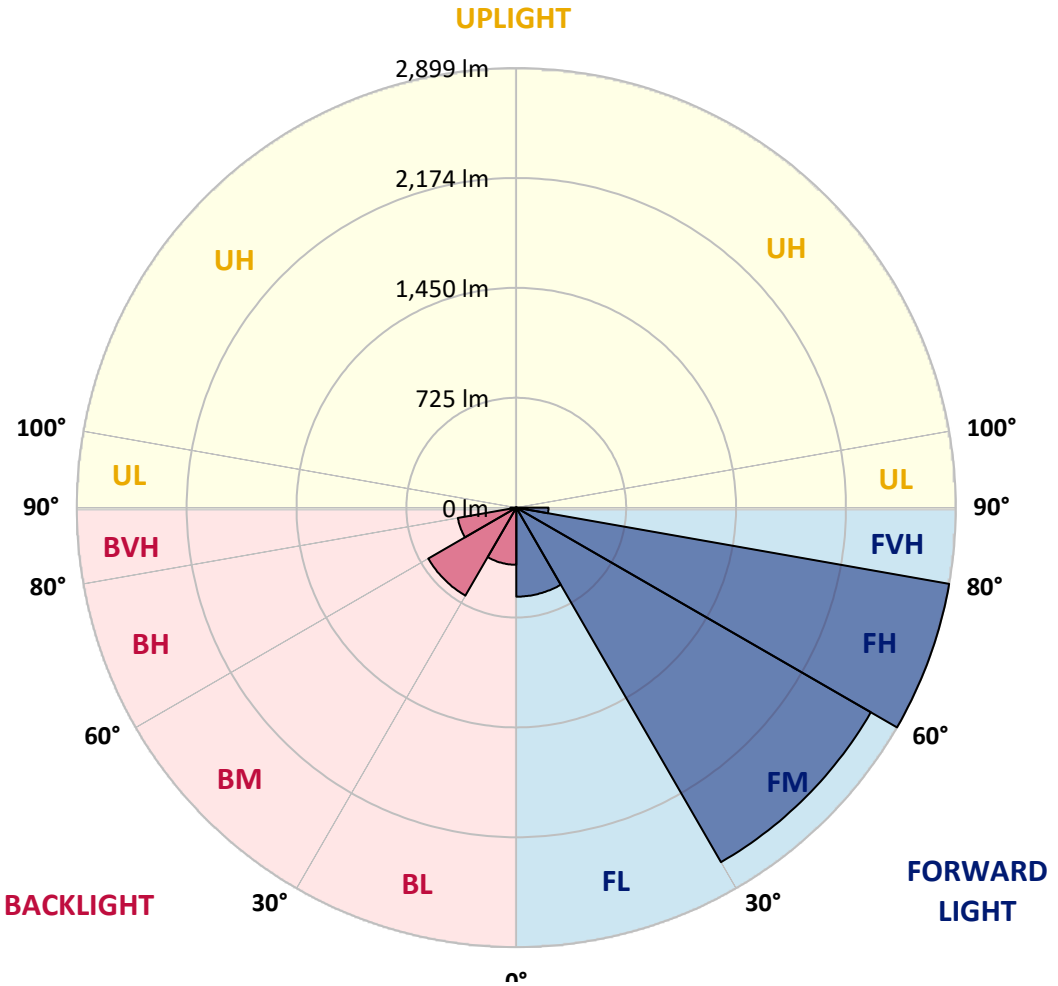
Scaled Data Report

REPORT NUMBER: P1199387
CATALOG NUMBER: GPC-SB2A-830-U-SL3

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 587.2 | 7.5 | | | |
| FM | (30°-60°) | 2700.2 | 34.3 | | | |
| FH | (60°-80°) | 2899.1 | 36.8 | | | G2/5000 |
| FVH | (80°-90°) | 212.3 | 2.7 | | | G2/225 |
| BL | (0°-30°) | 377.0 | 4.8 | B1/500 | | |
| BM | (30°-60°) | 670.5 | 8.5 | B1/1000 | | |
| BH | (60°-80°) | 391.4 | 5.0 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 38.4 | 0.5 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B1-U0-G2**
Type IV Medium



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 59° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1445.6 | 1445.6 | 1445.6 | 1445.6 | 1445.6 | 1445.6 | 1445.6 | *1445.6* | 1445.6 | 1445.6 | 1445.6 |
| 2.5° | 1457.9 | 1452.8 | 1457.9 | 1455.8 | 1454.9 | 1453.2 | 1453.7 | *1456.6* | 1454.9 | 1457.1 | 1449.9 |
| 5° | 1448.2 | 1445.2 | 1450.3 | 1449.0 | 1454.5 | 1455.4 | 1460.9 | *1464.3* | 1466.4 | 1466.8 | 1461.3 |
| 7.5° | 1432.1 | 1429.1 | 1436.3 | 1442.2 | 1454.1 | 1457.5 | 1468.9 | *1474.4* | 1477.4 | 1482.5 | 1474.4 |
| 10° | 1373.2 | 1371.9 | 1389.7 | 1412.2 | 1440.1 | 1457.5 | 1474.9 | *1484.2* | 1488.8 | 1502.4 | 1493.1 |
| 12.5° | 1268.9 | 1270.6 | 1293.9 | 1337.2 | 1393.1 | 1449.0 | 1481.6 | *1495.2* | 1502.4 | 1519.3 | 1515.1 |
| 15° | 1169.4 | 1169.0 | 1194.4 | 1240.6 | 1318.9 | 1411.7 | 1485.0 | *1508.3* | 1520.6 | 1545.6 | 1542.2 |
| 17.5° | 1111.8 | 1110.1 | 1127.9 | 1163.0 | 1235.9 | 1354.5 | 1476.6 | *1515.5* | 1541.8 | 1573.2 | 1570.2 |
| 20° | 1101.2 | 1097.8 | 1107.1 | 1124.5 | 1176.2 | 1291.8 | 1454.5 | *1515.5* | 1558.7 | 1599.4 | 1597.7 |
| 22.5° | 1139.7 | 1134.2 | 1130.4 | 1128.3 | 1151.2 | 1240.1 | 1429.5 | *1510.4* | 1583.7 | 1637.1 | 1634.2 |
| 25° | 1217.3 | 1208.8 | 1189.3 | 1170.2 | 1163.4 | 1216.8 | 1407.5 | *1509.2* | 1621.0 | 1688.0 | 1677.0 |
| 27.5° | 1342.7 | 1332.1 | 1292.7 | 1246.9 | 1205.8 | 1228.7 | 1397.7 | *1516.8* | 1662.1 | 1741.8 | 1719.7 |
| 30° | 1498.2 | 1486.7 | 1437.1 | 1366.8 | 1293.1 | 1272.8 | 1410.0 | *1539.3* | 1714.7 | 1813.4 | 1770.2 |
| 32.5° | 1637.6 | 1624.8 | 1582.5 | 1510.9 | 1411.3 | 1349.0 | 1449.0 | *1582.0* | 1797.3 | 1912.9 | 1846.0 |
| 35° | 1761.3 | 1746.4 | 1708.3 | 1642.2 | 1556.2 | 1456.2 | 1519.3 | *1657.9* | 1914.6 | 2074.8 | 1949.0 |
| 37.5° | 1882.4 | 1865.1 | 1823.6 | 1753.6 | 1693.5 | 1599.0 | 1616.4 | *1755.3* | 2070.6 | 2271.4 | 2085.4 |
| 40° | 2018.0 | 1993.0 | 1942.6 | 1873.5 | 1815.1 | 1766.4 | 1743.9 | *1874.8* | 2229.0 | 2490.9 | 2255.7 |
| 42.5° | 2149.4 | 2125.6 | 2065.5 | 2006.6 | 1933.3 | 1919.3 | 1891.8 | *2014.6* | 2402.3 | 2731.9 | 2428.6 |
| 45° | 2290.9 | 2262.5 | 2189.6 | 2115.0 | 2068.9 | 2021.0 | 2035.0 | *2154.5* | 2572.2 | 2977.7 | 2609.9 |
| 47.5° | 2423.5 | 2391.7 | 2305.7 | 2222.7 | 2197.2 | 2106.6 | 2166.3 | *2308.3* | 2748.9 | 3226.8 | 2789.6 |
| 50° | 2495.1 | 2463.7 | 2392.1 | 2317.1 | 2297.2 | 2212.1 | 2308.7 | *2477.3* | 2934.0 | 3475.1 | 2962.0 |
| 52.5° | 2554.8 | 2520.9 | 2427.3 | 2385.8 | 2379.9 | 2326.9 | 2484.1 | *2670.5* | 3119.2 | 3694.6 | 3128.5 |
| 55° | 2618.4 | 2580.7 | 2461.2 | 2423.9 | 2451.0 | 2455.7 | 2692.1 | *2889.5* | 3314.9 | 3908.5 | 3285.7 |
| 57.5° | 2691.7 | 2643.8 | 2493.8 | 2456.1 | 2520.5 | 2606.5 | 2931.1 | *3116.6* | 3507.3 | 4106.8 | 3425.5 |
| 60° | 2760.7 | 2712.4 | 2556.5 | 2507.4 | 2595.5 | 2781.5 | 3205.2 | *3391.6* | 3725.1 | 4283.5 | 3557.7 |
| 62.5° | 2774.3 | 2734.5 | 2606.5 | 2606.1 | 2697.2 | 2985.7 | 3529.7 | *3669.1* | 3915.3 | 4458.0 | 3676.3 |
| 65° | 2539.6 | 2514.6 | 2438.7 | 2602.3 | 2842.9 | 3279.8 | 3891.1 | *4024.2* | 4157.2 | 4610.6 | 3780.6 |
| 67.5° | 1932.9 | 1936.3 | 1930.7 | 2246.4 | 2725.2 | 3702.2 | 4414.4 | *4404.2* | 4455.9 | 4781.7 | 3900.5 |
| 70° | 883.8 | 903.7 | 1033.4 | 1550.7 | 2183.3 | 3750.9 | 5279.6 | *5147.8* | 4830.9 | 5003.3 | 4004.3 |
| 72.5° | 477.5 | 492.7 | 545.7 | 751.2 | 1312.6 | 3334.8 | 5926.1 | *6019.8* | 5329.6 | 5152.5 | 3890.3 |
| 75° | *350.4* | *358.9* | *395.7* | *477.5* | *551.2* | *2478.6* | *5694.4* | *6174.8* | *5391.8* | *4804.6* | *3359.4* |
| 77.5° | 262.3 | 266.1 | 296.2 | 378.4 | 282.2 | 1306.7 | 4550.0 | *5113.9* | 4615.7 | 3947.5 | 2481.5 |
| 80° | 190.2 | 194.5 | 216.9 | 283.9 | 197.9 | 477.9 | 3124.3 | *3589.5* | 3161.1 | 2516.3 | 1236.7 |
| 82.5° | 131.3 | 133.0 | 142.8 | 193.2 | 138.1 | 185.6 | 1772.7 | *2104.9* | 1764.7 | 883.0 | 333.9 |
| 85° | 79.2 | 81.3 | 85.6 | 112.7 | 78.4 | 88.1 | 765.2 | *791.4* | 527.5 | 211.0 | 103.8 |
| 87.5° | 32.6 | 34.7 | 38.1 | 47.5 | 30.9 | 24.6 | 126.3 | *158.5* | 98.7 | 61.9 | 32.2 |
| 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: P1199387
CATALOG NUMBER: GPC-SB2A-830-U-SL3

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1445.6 | 1445.6 | 1445.6 | 1445.6 | 1445.6 | 1445.6 | 1445.6 | 1445.6 | 1445.6 | 1445.6 | 1445.6 |
| 2.5° | 1447.7 | 1444.8 | 1436.7 | 1425.7 | 1415.5 | 1402.8 | 1397.3 | 1392.7 | 1388.4 | 1380.4 | 1376.6 |
| 5° | 1456.6 | 1448.6 | 1427.0 | 1399.0 | 1367.2 | 1332.5 | 1298.6 | 1275.3 | 1255.4 | 1240.6 | 1228.3 |
| 7.5° | 1470.2 | 1454.9 | 1415.5 | 1358.3 | 1285.5 | 1210.9 | 1143.5 | 1095.7 | 1059.6 | 1046.5 | 1023.6 |
| 10° | 1484.2 | 1466.0 | 1397.3 | 1296.5 | 1170.6 | 1055.8 | 966.4 | 917.3 | 888.5 | 879.2 | 864.7 |
| 12.5° | 1500.7 | 1474.0 | 1368.9 | 1210.5 | 1042.3 | 916.4 | 838.5 | 809.7 | 794.8 | 789.8 | 791.0 |
| 15° | 1524.9 | 1480.8 | 1326.1 | 1102.9 | 919.8 | 814.8 | 764.3 | 744.4 | 736.8 | 736.4 | 738.1 |
| 17.5° | 1543.1 | 1482.1 | 1259.6 | 987.6 | 825.8 | 753.3 | 711.8 | 704.2 | 709.3 | 716.9 | 719.8 |
| 20° | 1563.4 | 1470.6 | 1172.3 | 882.5 | 759.7 | 699.5 | 682.1 | 687.2 | 699.5 | 710.5 | 714.3 |
| 22.5° | 1577.8 | 1449.9 | 1066.8 | 800.8 | 702.5 | 668.6 | 667.7 | 678.3 | 685.1 | 690.6 | 693.6 |
| 25° | 1590.5 | 1414.7 | 955.0 | 732.1 | 655.4 | 649.9 | 659.3 | 655.9 | 651.2 | 655.9 | 658.8 |
| 27.5° | 1599.8 | 1359.2 | 855.0 | 672.0 | 622.4 | 637.2 | 631.7 | 624.1 | 623.7 | 626.2 | 630.4 |
| 30° | 1596.9 | 1285.0 | 772.8 | 614.8 | 599.1 | 613.5 | 600.4 | 599.1 | 597.8 | 599.1 | 603.8 |
| 32.5° | 1596.9 | 1200.7 | 709.7 | 575.4 | 584.3 | 578.8 | 577.5 | 574.5 | 569.4 | 569.0 | 574.5 |
| 35° | 1605.8 | 1116.4 | 655.4 | 554.2 | 572.0 | 558.8 | 559.7 | 552.5 | 541.9 | 536.8 | 541.9 |
| 37.5° | 1624.0 | 1048.6 | 601.6 | 544.0 | 550.4 | 549.9 | 546.6 | 534.3 | 515.6 | 499.5 | 505.0 |
| 40° | 1668.1 | 1028.7 | 564.8 | 539.4 | 540.2 | 545.3 | 536.4 | 512.7 | 470.3 | 444.0 | 447.4 |
| 42.5° | 1737.1 | 1062.2 | 556.7 | 527.9 | 533.4 | 538.5 | 521.1 | 466.1 | 436.0 | 420.3 | 420.3 |
| 45° | 1824.8 | 1120.7 | 574.1 | 511.4 | 517.3 | 526.2 | 474.5 | 448.3 | 434.7 | 435.1 | 437.2 |
| 47.5° | 1935.8 | 1182.1 | 606.3 | 497.0 | 494.0 | 499.1 | 443.6 | 427.5 | 408.9 | 413.5 | 425.4 |
| 50° | 2064.2 | 1244.4 | 636.8 | 477.5 | 468.2 | 451.7 | 423.7 | 408.4 | 384.7 | 373.7 | 376.7 |
| 52.5° | 2203.2 | 1304.5 | 649.1 | 453.8 | 440.2 | 421.1 | 410.1 | 391.5 | 362.7 | 344.5 | 344.0 |
| 55° | 2334.9 | 1359.2 | 635.5 | 425.4 | 412.2 | 397.4 | 395.7 | 384.3 | 353.4 | 327.9 | 327.9 |
| 57.5° | 2459.5 | 1404.9 | 601.6 | 396.6 | 383.9 | 375.0 | 386.4 | 380.9 | 341.9 | 309.3 | 307.6 |
| 60° | 2565.0 | 1436.3 | 552.5 | 367.3 | 358.4 | 353.8 | 371.2 | 369.5 | 325.8 | 289.4 | 288.1 |
| 62.5° | 2648.9 | 1448.6 | 498.3 | 339.4 | 337.3 | 328.8 | 350.0 | 350.0 | 305.5 | 269.9 | 268.6 |
| 65° | 2714.6 | 1436.7 | 443.2 | 311.8 | 316.1 | 303.4 | 324.1 | 321.6 | 283.9 | 252.5 | 250.8 |
| 67.5° | 2772.6 | 1397.7 | 382.2 | 284.7 | 294.5 | 278.4 | 297.0 | 291.1 | 260.1 | 235.1 | 233.5 |
| 70° | 2798.5 | 1307.1 | 312.7 | 257.6 | 269.5 | 253.8 | 269.9 | 258.9 | 233.5 | 216.5 | 213.1 |
| 72.5° | 2590.8 | 1086.3 | 246.2 | 229.2 | 239.4 | 226.7 | 240.7 | 227.9 | 204.6 | 197.0 | 190.7 |
| 75° | *2143.4* | *815.2* | *189.4* | *198.3* | *205.9* | *196.2* | *205.5* | *196.2* | *175.0* | *180.5* | *164.8* |
| 77.5° | 1556.6 | 550.4 | 144.9 | 165.7 | 169.1 | 164.0 | 172.0 | 161.4 | 142.4 | 141.1 | 134.7 |
| 80° | 774.1 | 322.4 | 113.5 | 130.9 | 129.6 | 126.3 | 135.6 | 130.5 | 114.4 | 121.2 | 119.9 |
| 82.5° | 224.1 | 138.1 | 82.6 | 91.9 | 89.4 | 90.2 | 97.0 | 99.6 | 149.1 | 147.9 | 151.3 |
| 85° | 70.3 | 54.2 | 49.6 | 51.3 | 48.7 | 50.0 | 57.2 | 113.5 | 105.1 | 61.4 | 66.5 |
| 87.5° | 18.2 | 18.6 | 12.3 | 13.1 | 13.6 | 16.1 | 18.2 | 69.1 | 33.0 | 21.6 | 22.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |


HS
SS

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Peachtree City, GA 30269

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

Report Prepared for

Cooper Lighting Solutions

MCGRAW EDISON

Report Number: SP1-2408-195-9

Test Date: 08/07/2024

Luminaire Tested: GALN-SB1A-830-U-5WQ

Data in this report applies to families of products including GALN-SB1A-830-U-5WQ.

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

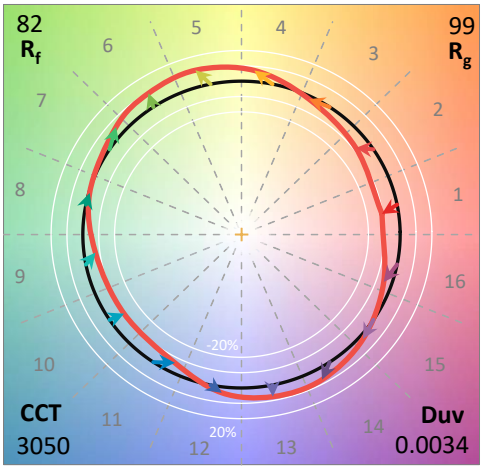
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2408-195-9 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 08/07/2024 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | MCGRAW EDISON |
| Catalog Number: | **GALN-SB1A-830-U-5WQ** |
| Description: | GALLEON AREA AND ROADWAY LUMINAIRE. (1) 80 CRI, 3000K, 350MA HIGH DENSITY LIGHTSQUARE WITH 26 LEDS AND TYPE V WIDE OPTICS |

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 3050 | CRI (Ra): | 81.0 | | |
| CIE u': | 0.2476 | R1: | 79.6 | R9: | 7.1 |
| CIE v': | 0.5251 | R2: | 85.6 | R10: | 67.0 |
| Duv: | 0.0034 | R3: | 92.0 | R11: | 82.7 |
| CIE x: | 0.4383 | R4: | 82.6 | R12: | 63.2 |
| CIE y: | 0.4131 | R5: | 78.9 | R13: | 80.3 |
| CIE z: | 0.1487 | R6: | 81.7 | R14: | 95.0 |
| Peak Wavelength (nm): | 603 | R7: | 85.2 | R15: | 71.7 |
| Dominant Wavelength (nm): | 581 | R8: | 62.0 | | |
| Purity: | 55.55201 | | | | |

| | |
|---|---|
| Rf: | 81.5 |
| Rg: | 99.2 |




## Test Conditions

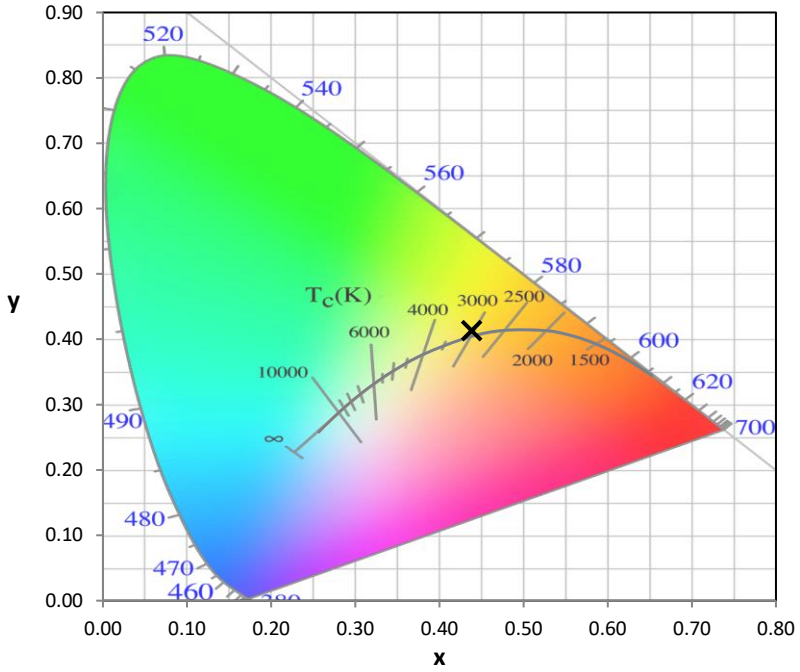
| | |
|---|---|
| Stabilization Time: | 20M |
| Operation Time: | 1H 20M |
| Sphere Temperature (°C): | 24.2 |

REPORT NUMBER: SP1-2408-195-9

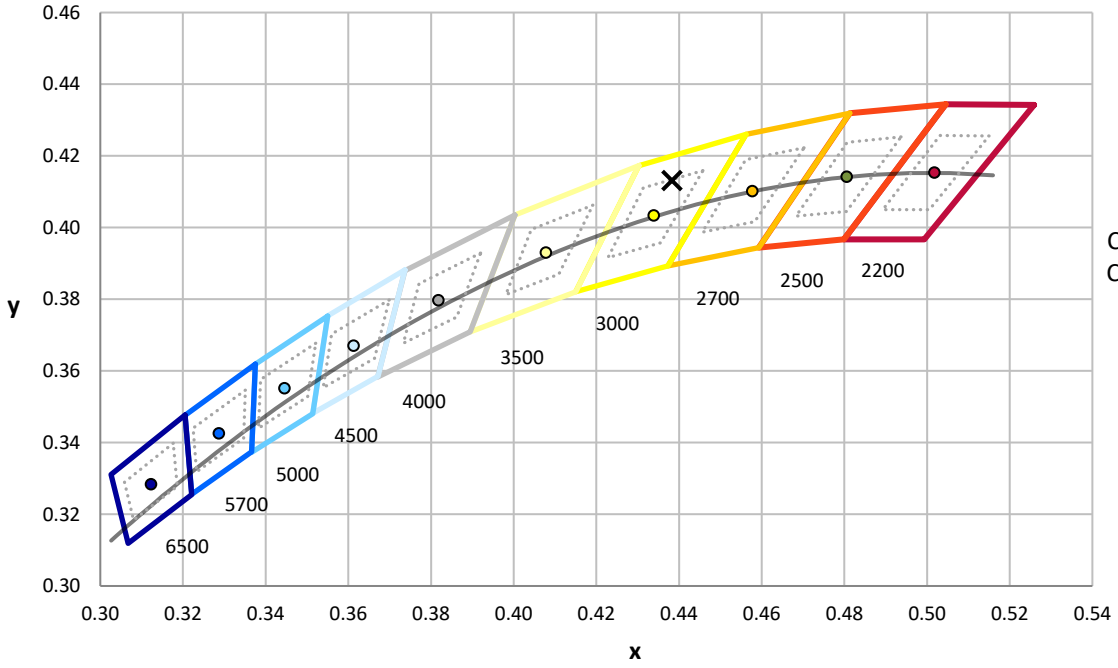
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC Power Source | IN0208 | 10/24/2023 | 10/24/2024 |
| Sphere Thermometer | IN0085 | 10/24/2023 | 10/24/2024 |
| Room Thermometer | IN0046 | 10/24/2023 | 10/24/2024 |

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## CIE 1931 Chromaticity Diagram




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

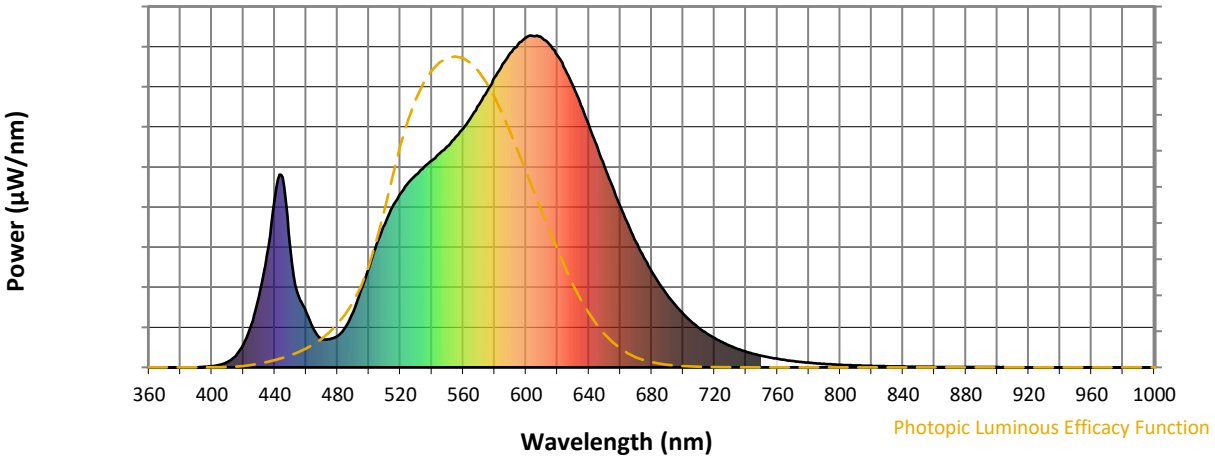



CCT = 3050K
CIE x = 0.4383
CIE y = 0.4131
Duv = 0.0034

Point lies inside the ANSI 3000K 4-step quadrangle

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## Photopic Flux vs. Wavelength

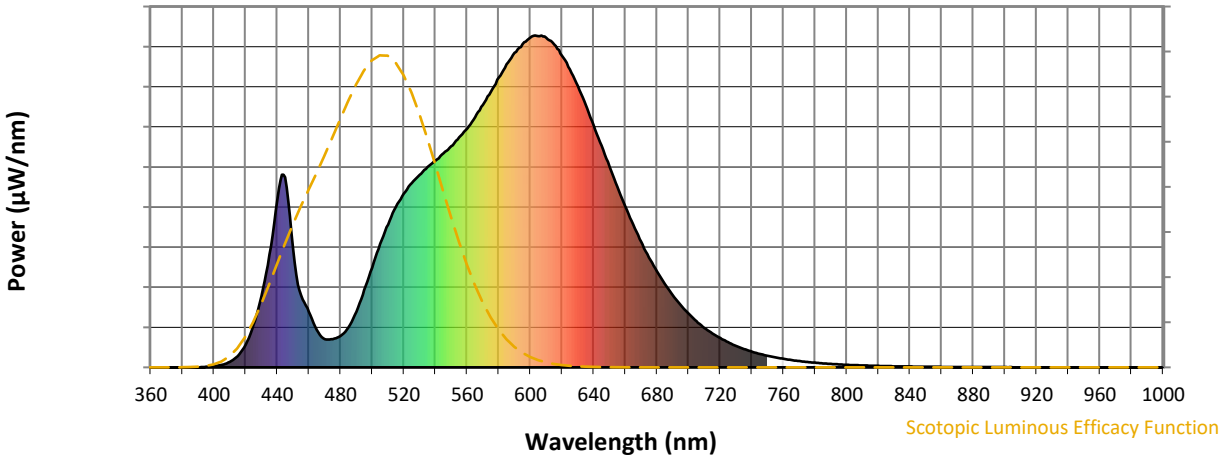



## Photopic Lumens: NR

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

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## Scotopic Flux vs. Wavelength

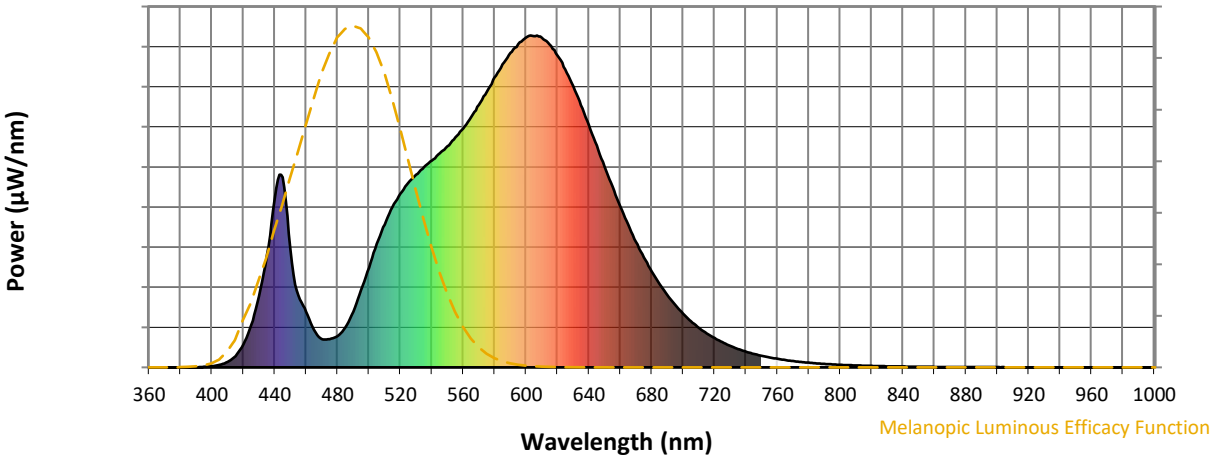



**Scotopic Lumens: NR** **S/P: 1.27**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.32**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

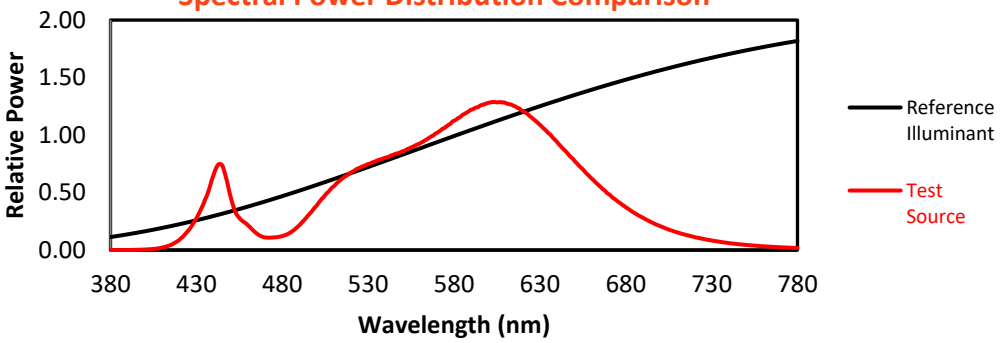
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# TM-30-18

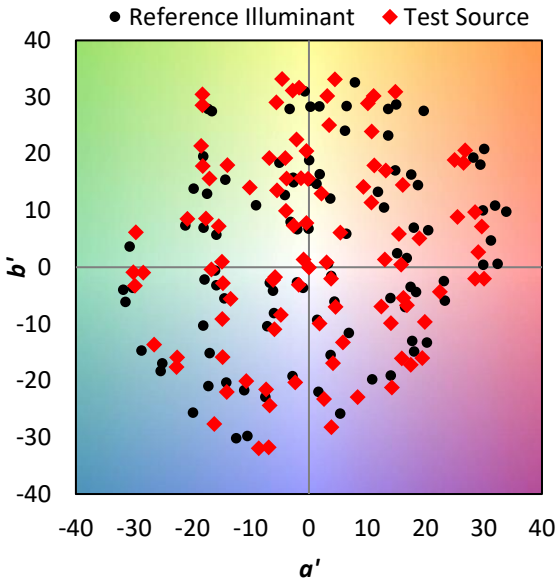
## Summary

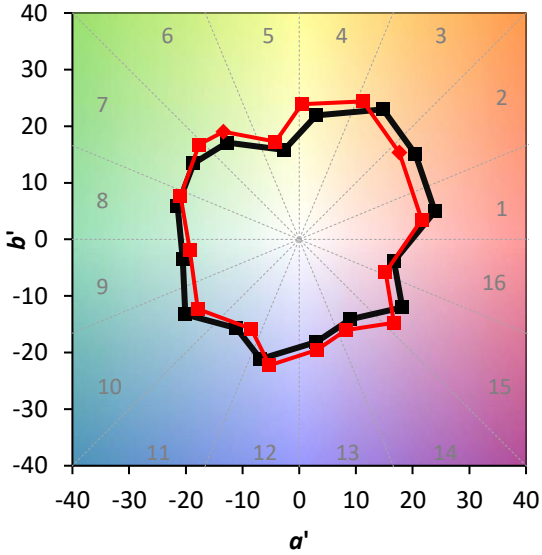
$R_f$ = 81.5
$R_g$ = 99.2
CIE $R_a$ = 81.0
$R_9$ = 7.1

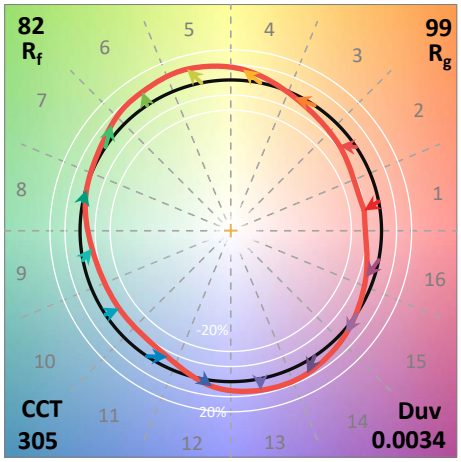
## Spectral Power Distribution Comparison

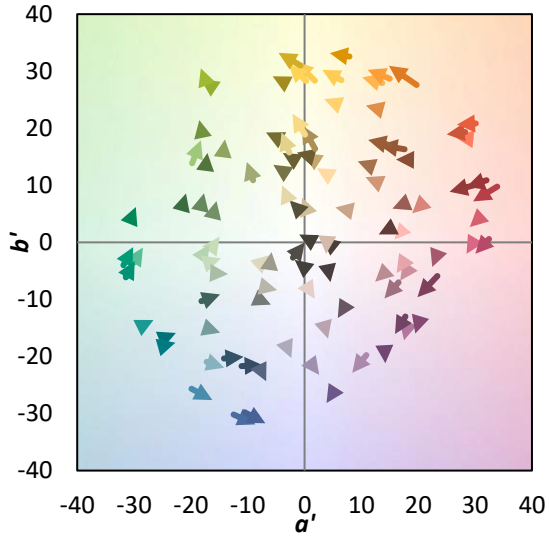



## Color Vector Graphics



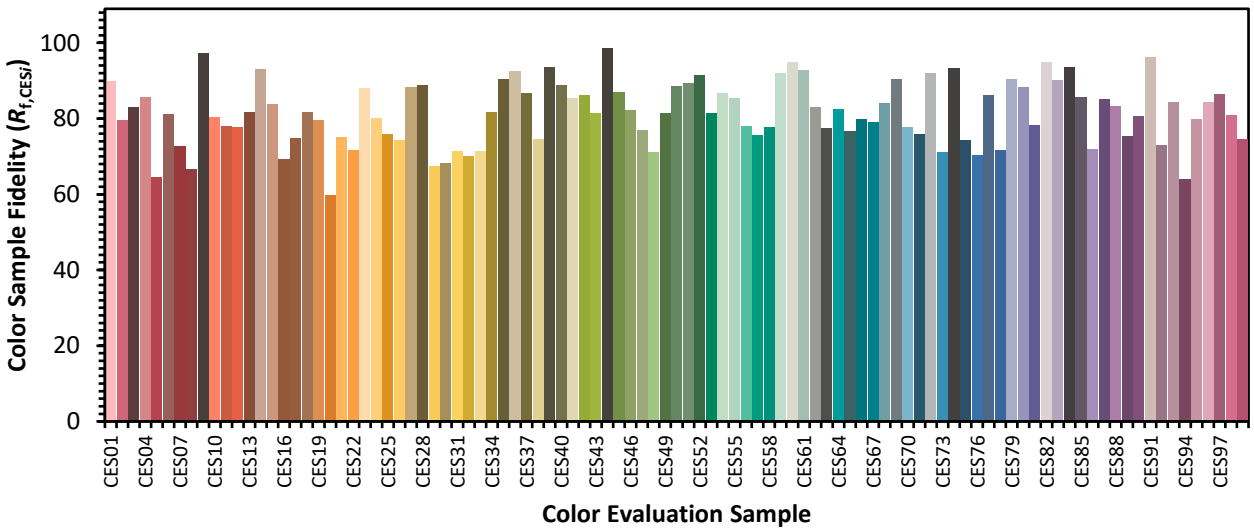



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# TM-30-18

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

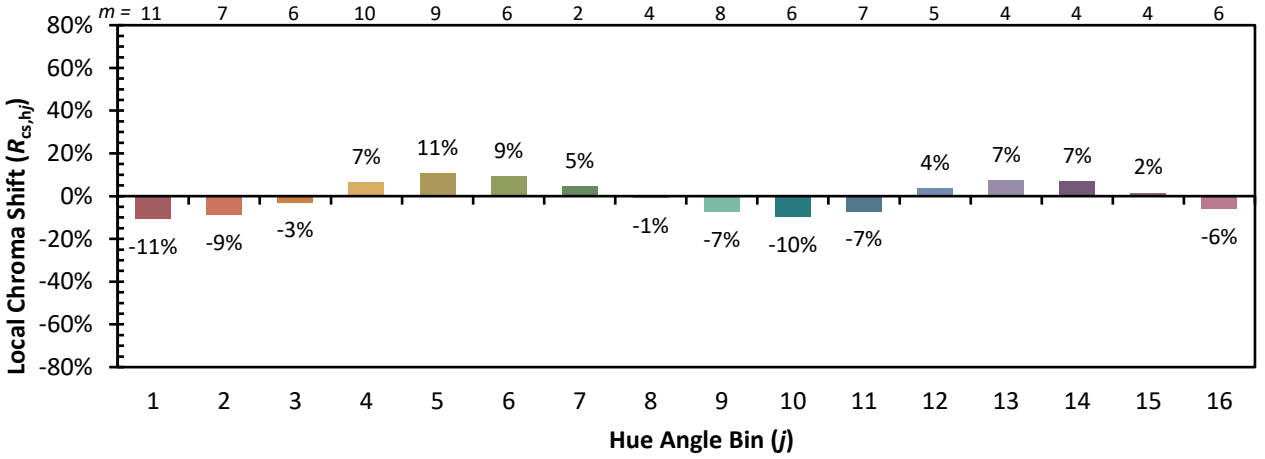
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 74 | CES51 = 89 | CES76 = 70 |
| CES02 = 63 | CES27 = 88 | CES52 = 92 | CES77 = 86 |
| CES03 = 31 | CES28 = 89 | CES53 = 81 | CES78 = 72 |
| CES04 = 70 | CES29 = 67 | CES54 = 87 | CES79 = 90 |
| CES05 = 50 | CES30 = 68 | CES55 = 85 | CES80 = 88 |
| CES06 = 51 | CES31 = 71 | CES56 = 78 | CES81 = 78 |
| CES07 = 42 | CES32 = 70 | CES57 = 76 | CES82 = 95 |
| CES08 = 41 | CES33 = 71 | CES58 = 78 | CES83 = 90 |
| CES09 = 29 | CES34 = 82 | CES59 = 92 | CES84 = 94 |
| CES10 = 76 | CES35 = 90 | CES60 = 95 | CES85 = 86 |
| CES11 = 59 | CES36 = 93 | CES61 = 93 | CES86 = 72 |
| CES12 = 65 | CES37 = 87 | CES62 = 83 | CES87 = 85 |
| CES13 = 43 | CES38 = 75 | CES63 = 77 | CES88 = 83 |
| CES14 = 74 | CES39 = 94 | CES64 = 83 | CES89 = 75 |
| CES15 = 71 | CES40 = 89 | CES65 = 77 | CES90 = 81 |
| CES16 = 47 | CES41 = 85 | CES66 = 80 | CES91 = 96 |
| CES17 = 50 | CES42 = 86 | CES67 = 79 | CES92 = 73 |
| CES18 = 56 | CES43 = 81 | CES68 = 84 | CES93 = 84 |
| CES19 = 72 | CES44 = 99 | CES69 = 91 | CES94 = 64 |
| CES20 = 66 | CES45 = 87 | CES70 = 78 | CES95 = 80 |
| CES21 = 87 | CES46 = 82 | CES71 = 76 | CES96 = 84 |
| CES22 = 79 | CES47 = 77 | CES72 = 92 | CES97 = 87 |
| CES23 = 92 | CES48 = 71 | CES73 = 71 | CES98 = 81 |
| CES24 = 91 | CES49 = 81 | CES74 = 93 | CES99 = 74 |
| CES25 = 72 | CES50 = 89 | CES75 = 74 | |

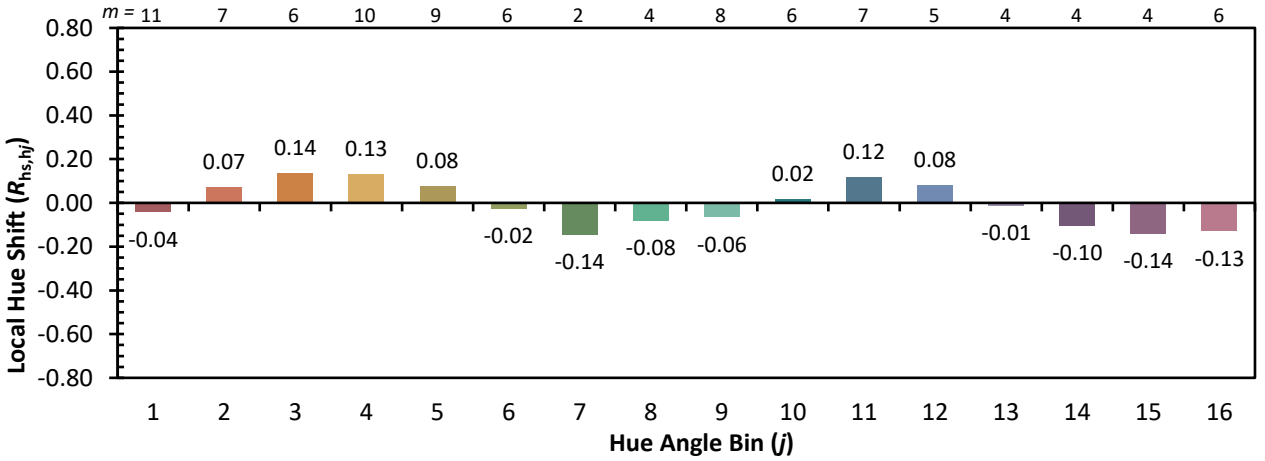


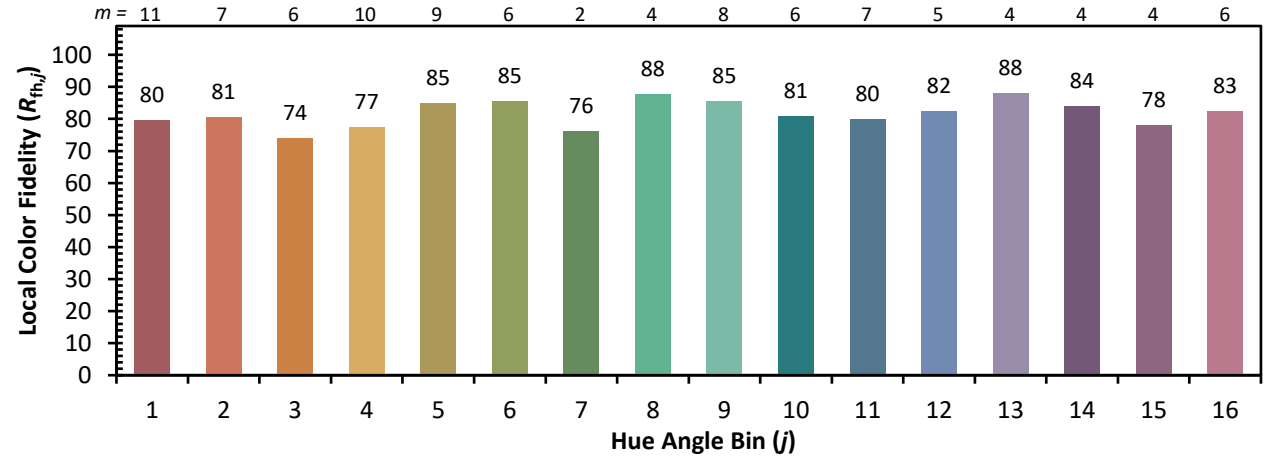
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## Color Rendition by Hue-Angle Bin



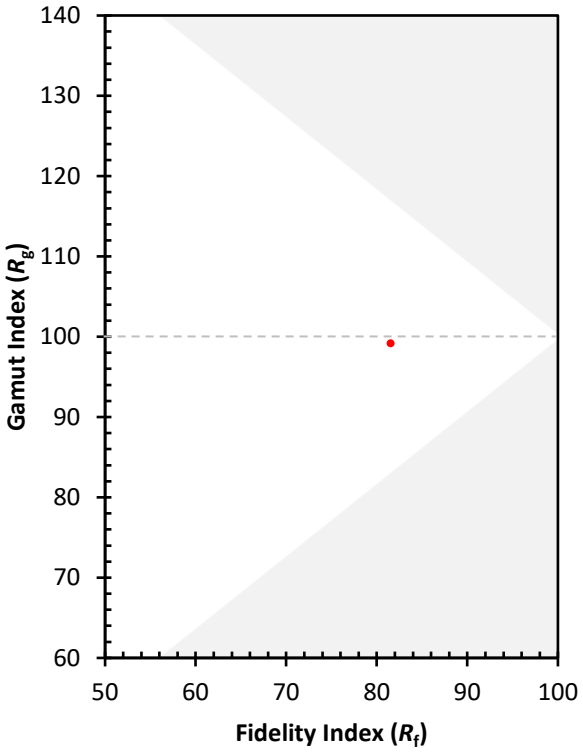



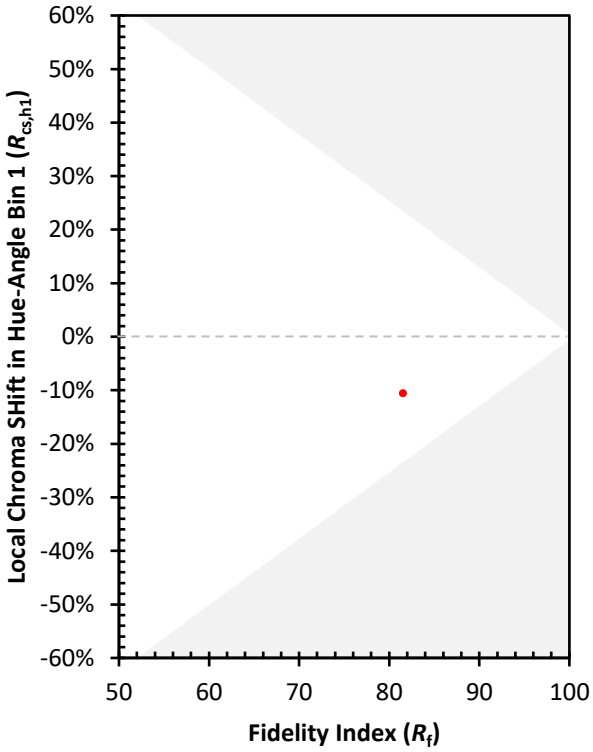



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## Measure Comparisons




(END OF REPORT)