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: P1500587

Luminaire Tested: GSS-SB2C-722-U-T4LG

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: | P1500587 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 7/20/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB2C-722-U-T4LG |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 2SQUARE 102W 70CRI 2200K FIXTURE w/ TYPE IV LOW GLARE DISTRIBUTION FIXTURE |
| Light Source: | (52) 2200K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 11445.2 lumens |
| Efficiency: | N/A |
| Efficacy: | 112.2 lumens/watt |
| Luminous Opening: | Rectangular (W 1' x L: 0.5' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B2 - U0 - G2 |

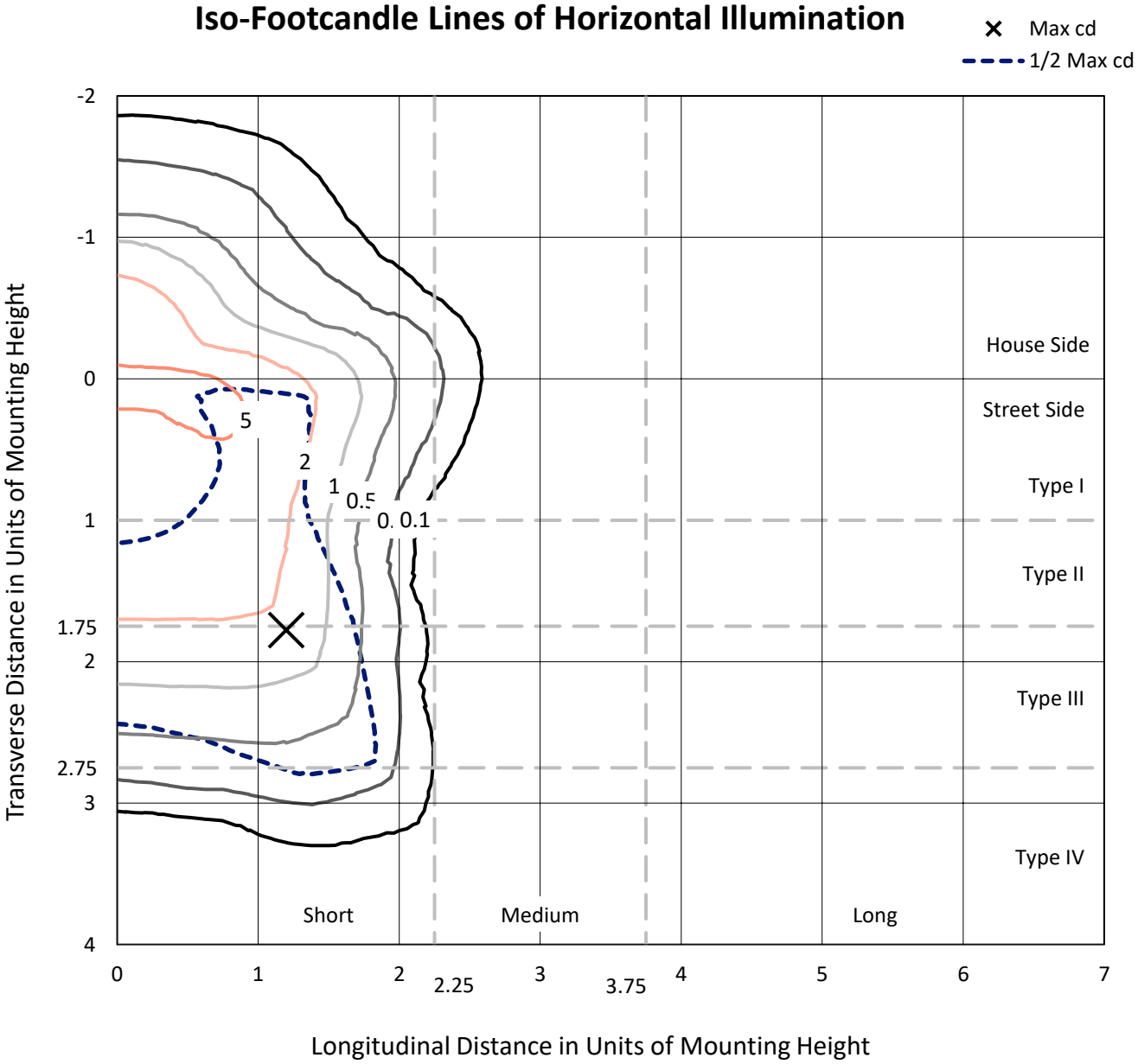
| | |
|---|---|
| Input Watts (W): | 102 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 9.5% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1500587
CATALOG NUMBER: GSS-SB2C-722-U-T4LG

## Iso-Footcandle Lines of Horizontal Illumination



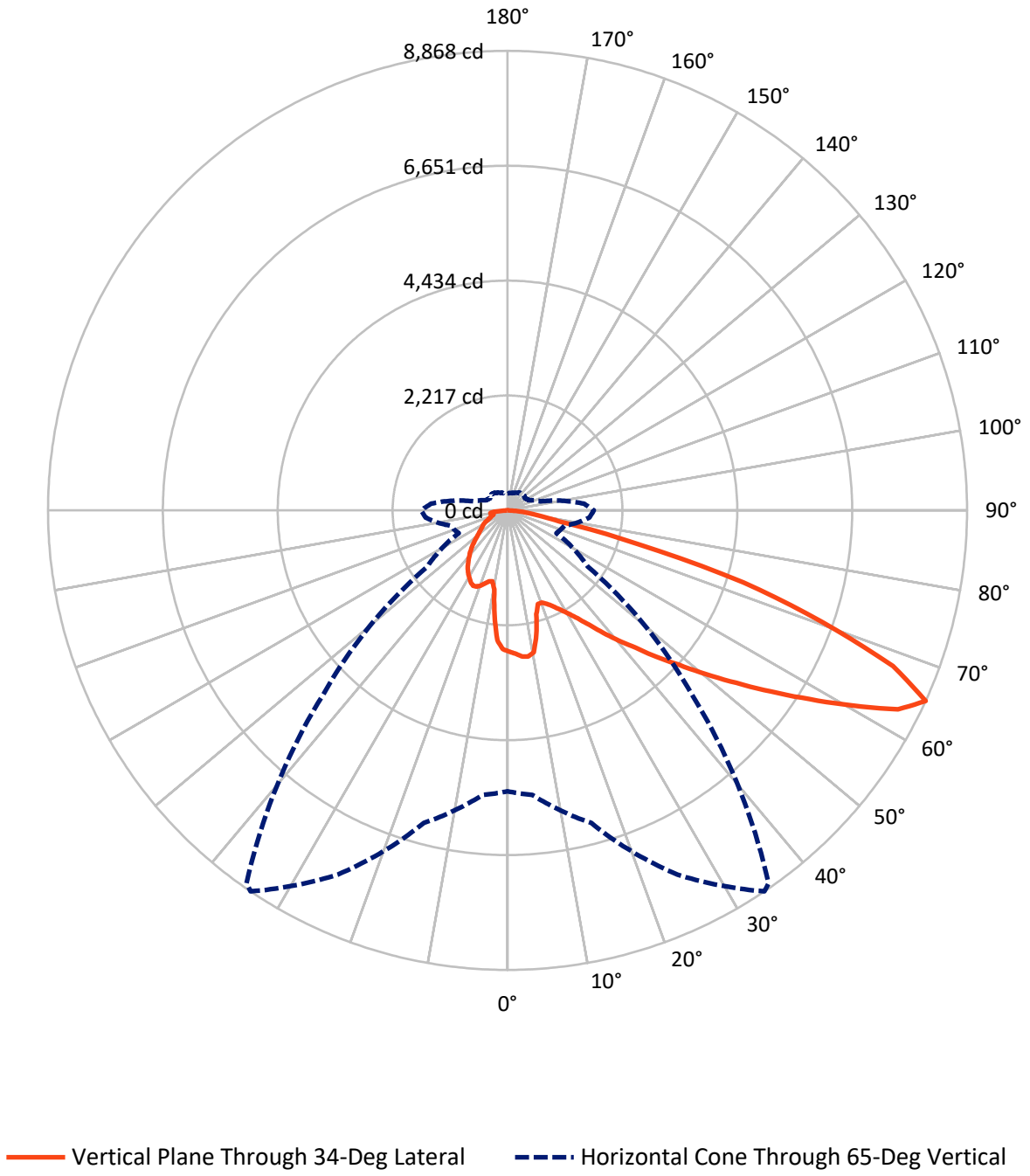

Based on 20 foot mounting height. Maximum calculated value = 7.2 fc
Type III - Short - N/A

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REPORT NUMBER: P1500587
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## Luminous Intensity Polar Plot



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Scaled Data Report

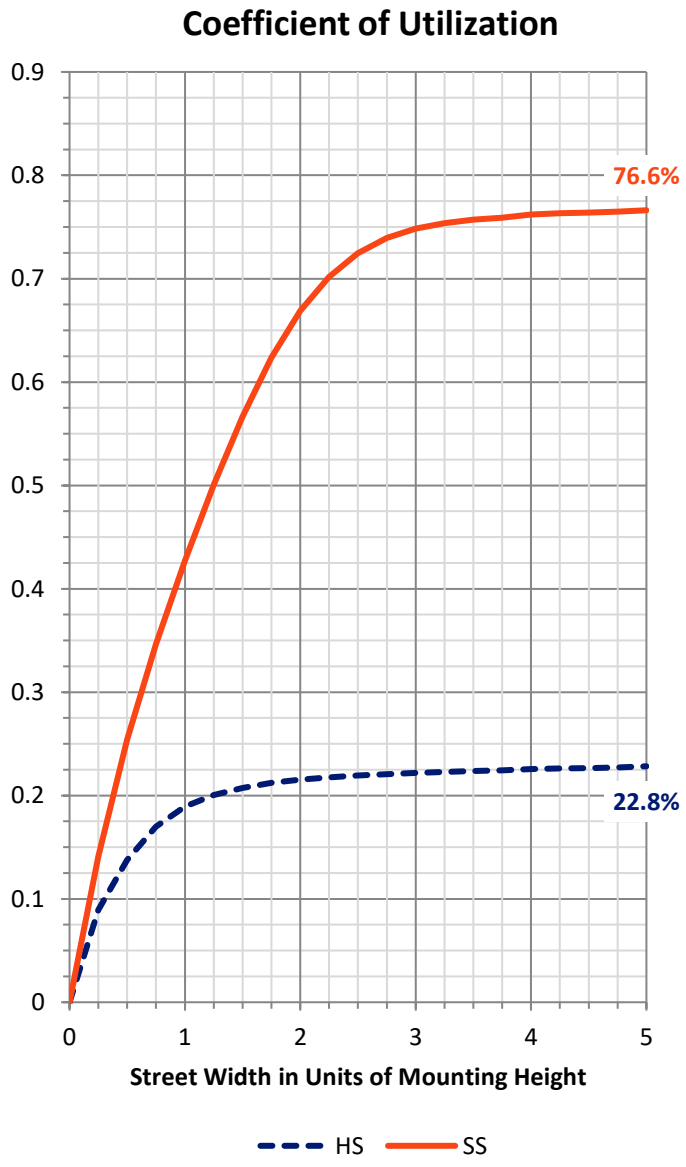
REPORT NUMBER: P1500587
CATALOG NUMBER: GSS-SB2C-722-U-T4LG

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 2662.8 | 0.0 | 2662.8 |
| | % Fixture | 23.3 | 0.0 | 23.3 |
| **Street Side** | Lumens | 8782.4 | 0.0 | 8782.4 |
| | % Fixture | 76.7 | 0.0 | 76.7 |
| **Total** | Lumens | 11445.2 | 0.0 | 11445.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 245.3 | 2.1 |
| 10°-20° | 617.4 | 5.4 |
| 20°-30° | 1023.4 | 8.9 |
| 30°-40° | 1539.2 | 13.4 |
| 40°-50° | 2156.4 | 18.8 |
| 50°-60° | 2718.8 | 23.8 |
| 60°-70° | 2338.4 | 20.4 |
| 70°-80° | 695.2 | 6.1 |
| 80°-90° | 110.9 | 1.0 |
| 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° | 11445.2 | 100.0 |
| 0°-180° | 11445.2 | 100.0 |



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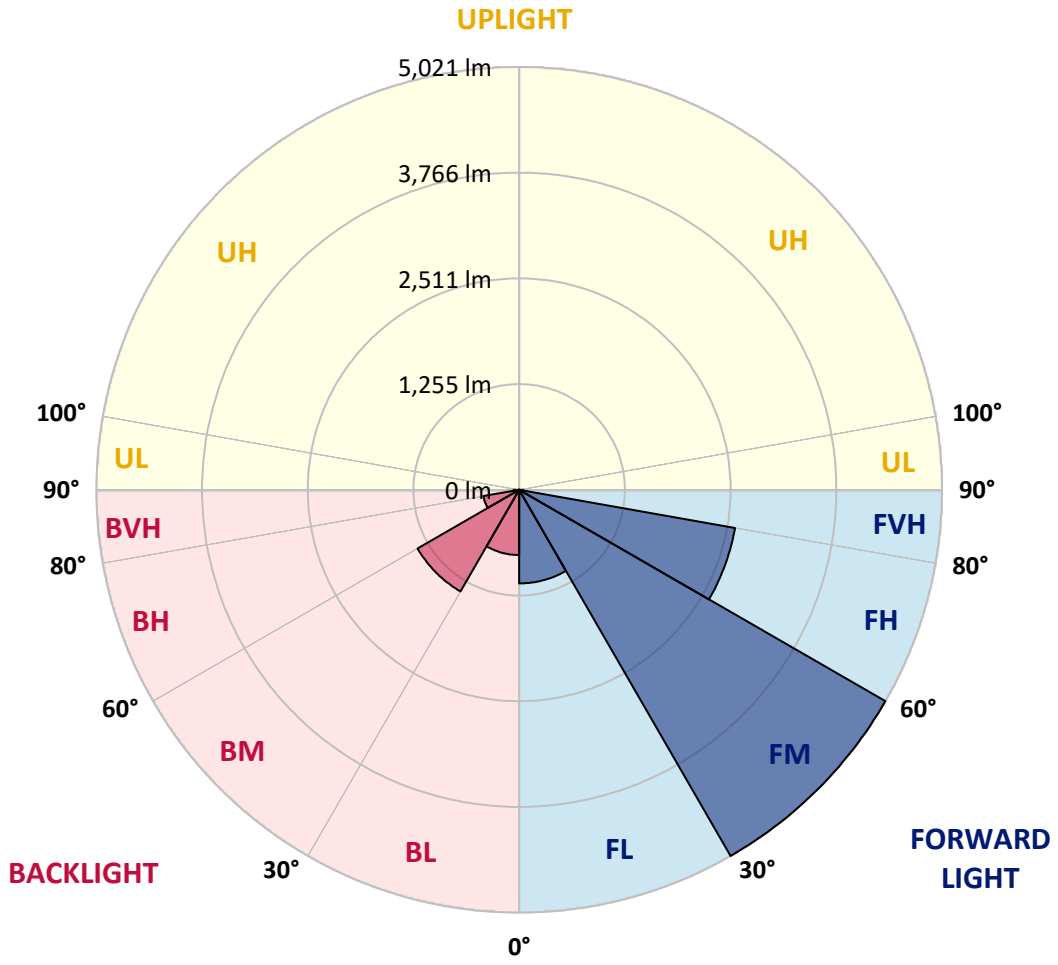
Scaled Data Report

REPORT NUMBER: P1500587
CATALOG NUMBER: GSS-SB2C-722-U-T4LG

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1111.4 | 9.7 | | | |
| FM | (30°-60°) | 5021.3 | 43.9 | | | |
| FH | (60°-80°) | 2602.7 | 22.7 | | | G2/5000 |
| FVH | (80°-90°) | 46.9 | 0.4 | | | G1/100 |
| BL | (0°-30°) | 774.8 | 6.8 | B2/1000 | | |
| BM | (30°-60°) | 1393.1 | 12.2 | B2/2500 | | |
| BH | (60°-80°) | 431.0 | 3.8 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 64.0 | 0.6 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B2-U0-G2**
Type III Short



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REPORT NUMBER: P1500587
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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 34° | 35° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2721.1 | 2721.1 | 2721.1 | 2721.1 | 2721.1 | 2721.1 | 2721.1 | 2721.1 | 2721.1 | 2721.1 | 2721.1 |
| 2.5° | 2773.0 | 2788.5 | 2770.4 | 2762.6 | 2765.2 | 2767.8 | 2754.8 | 2757.4 | 2741.9 | 2741.9 | 2728.9 |
| 5° | 2832.6 | 2835.2 | 2824.8 | 2832.6 | 2830.0 | 2827.4 | 2827.4 | 2824.8 | 2791.1 | 2783.3 | 2770.4 |
| 7.5° | 2798.9 | 2809.3 | 2814.4 | 2842.9 | 2850.7 | 2866.3 | 2876.6 | 2881.8 | 2855.9 | 2835.2 | 2801.5 |
| 10° | 2490.5 | 2498.3 | 2557.9 | 2687.4 | 2785.9 | 2804.1 | 2900.0 | 2954.4 | 2936.2 | 2925.9 | 2868.9 |
| 12.5° | 1990.3 | 2003.3 | 2070.7 | 2239.1 | 2469.8 | 2519.0 | 2824.8 | 3008.8 | 3050.3 | 3052.9 | 2969.9 |
| 15° | 1775.2 | 1775.2 | 1796.0 | 1891.8 | 2078.4 | 2117.3 | 2568.2 | 3024.4 | 3172.1 | 3190.2 | 3089.1 |
| 17.5° | 1731.2 | 1728.6 | 1741.5 | 1798.5 | 1897.0 | 1920.3 | 2272.8 | 2944.0 | 3317.2 | 3348.3 | 3218.7 |
| 20° | 1728.6 | 1720.8 | 1746.7 | 1811.5 | 1897.0 | 1917.8 | 2135.4 | 2804.1 | 3431.2 | 3529.7 | 3348.3 |
| 22.5° | 1731.2 | 1731.2 | 1767.4 | 1860.7 | 1959.2 | 1977.4 | 2161.4 | 2687.4 | 3524.5 | 3718.9 | 3485.6 |
| 25° | 1759.7 | 1754.5 | 1806.3 | 1920.3 | 2055.1 | 2068.1 | 2267.6 | 2682.3 | 3604.9 | 3931.4 | 3651.5 |
| 27.5° | 1806.3 | 1808.9 | 1878.9 | 2016.2 | 2169.1 | 2195.1 | 2415.3 | 2793.7 | 3703.3 | 4164.6 | 3812.2 |
| 30° | 1904.8 | 1907.4 | 1990.3 | 2130.3 | 2306.5 | 2340.2 | 2586.4 | 2959.6 | 3843.3 | 4416.0 | 3985.8 |
| 32.5° | 2016.2 | 2029.2 | 2130.3 | 2293.5 | 2482.7 | 2500.9 | 2796.3 | 3208.4 | 4053.2 | 4667.4 | 4172.4 |
| 35° | 2202.8 | 2215.8 | 2329.8 | 2500.9 | 2710.8 | 2736.7 | 3052.9 | 3496.0 | 4309.8 | 4921.4 | 4317.5 |
| 37.5° | 2443.8 | 2454.2 | 2565.6 | 2773.0 | 2995.8 | 3021.8 | 3337.9 | 3801.8 | 4568.9 | 5123.5 | 4447.1 |
| 40° | 2731.5 | 2754.8 | 2874.0 | 3076.2 | 3301.6 | 3317.2 | 3648.9 | 4097.3 | 4848.8 | 5263.5 | 4498.9 |
| 42.5° | 3045.1 | 3068.4 | 3190.2 | 3413.1 | 3620.4 | 3667.1 | 3985.8 | 4410.8 | 5076.9 | 5325.7 | 4457.5 |
| 45° | 3446.8 | 3441.6 | 3555.6 | 3788.9 | 4032.5 | 4050.6 | 4346.0 | 4670.0 | 5214.2 | 5273.8 | 4416.0 |
| 47.5° | 3934.0 | 3939.2 | 4011.7 | 4200.9 | 4452.3 | 4493.8 | 4721.8 | 4892.9 | 5294.6 | 5232.4 | 4369.4 |
| 50° | 4483.4 | 4496.4 | 4558.6 | 4695.9 | 4965.4 | 4993.9 | 5061.3 | 5048.4 | 5343.8 | 5144.2 | 4387.5 |
| 52.5° | 5032.8 | 5040.6 | 5123.5 | 5268.6 | 5530.4 | 5551.1 | 5403.4 | 5167.6 | 5159.8 | 4789.2 | 4348.6 |
| 55° | 5483.7 | 5481.2 | 5628.9 | 5851.7 | 6170.5 | 6157.5 | 5740.3 | 5076.9 | 4584.5 | 4237.2 | 4175.0 |
| 57.5° | 5875.1 | 5890.6 | 6082.4 | 6468.5 | 6870.2 | 6859.9 | 6100.5 | 4597.4 | 3744.8 | 3584.1 | 3892.5 |
| 60° | 6227.5 | 6263.8 | 6624.0 | 7201.9 | 7645.1 | 7582.9 | 6165.3 | 3874.4 | 2912.9 | 2806.7 | 3332.7 |
| 62.5° | 6074.6 | 6142.0 | 6719.9 | 7847.2 | 8456.3 | 8318.9 | 5766.2 | 3001.0 | 1972.2 | 1876.3 | 2355.7 |
| 65° | 5421.5 | 5512.2 | 6245.7 | 7753.9 | 8868.3 | 8782.8 | 5040.6 | 1886.7 | 1039.2 | 1140.3 | 1586.0 |
| 67.5° | 4553.4 | 4662.2 | 5455.2 | 6966.1 | 8023.5 | 7839.5 | 3915.8 | 992.6 | 484.6 | 751.6 | 984.8 |
| 70° | 2495.7 | 2765.2 | 3944.4 | 5924.3 | 6427.1 | 6170.5 | 2265.0 | 469.1 | 352.5 | 469.1 | 588.3 |
| 72.5° | 938.1 | 1002.9 | 1710.4 | 3983.2 | 4760.7 | 4444.5 | 860.4 | 303.2 | 295.4 | 347.3 | 425.0 |
| 75° | 450.9 | 482.0 | 743.8 | 1811.5 | 2599.3 | 2423.1 | 422.4 | 225.5 | 254.0 | 272.1 | 308.4 |
| 77.5° | 269.5 | 290.3 | 463.9 | 1052.2 | 1023.7 | 940.7 | 259.2 | 173.6 | 204.7 | 194.4 | 181.4 |
| 80° | 160.7 | 178.8 | 282.5 | 598.7 | 616.8 | 546.8 | 158.1 | 121.8 | 142.5 | 124.4 | 111.4 |
| 82.5° | 93.3 | 101.1 | 147.7 | 269.5 | 391.3 | 360.2 | 90.7 | 72.6 | 103.7 | 82.9 | 62.2 |
| 85° | 46.6 | 49.2 | 67.4 | 116.6 | 194.4 | 147.7 | 38.9 | 33.7 | 49.2 | 36.3 | 20.7 |
| 87.5° | 10.4 | 10.4 | 10.4 | 13.0 | 18.1 | 18.1 | 5.2 | 2.6 | 2.6 | 2.6 | 2.6 |
| 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: P1500587
CATALOG NUMBER: GSS-SB2C-722-U-T4LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2721.1 | 2721.1 | 2721.1 | 2721.1 | 2721.1 | 2721.1 | 2721.1 | 2721.1 | 2721.1 | 2721.1 | 2721.1 |
| 2.5° | 2726.3 | 2731.5 | 2713.4 | 2692.6 | 2687.4 | 2671.9 | 2677.1 | 2666.7 | 2651.2 | 2653.8 | 2656.3 |
| 5° | 2752.2 | 2741.9 | 2705.6 | 2658.9 | 2617.5 | 2570.8 | 2516.4 | 2454.2 | 2410.2 | 2392.0 | 2407.6 |
| 7.5° | 2775.6 | 2765.2 | 2703.0 | 2599.3 | 2459.4 | 2265.0 | 2062.9 | 1878.9 | 1751.9 | 1705.2 | 1715.6 |
| 10° | 2840.4 | 2798.9 | 2684.9 | 2459.4 | 2125.1 | 1757.1 | 1552.3 | 1438.3 | 1399.4 | 1378.7 | 1381.3 |
| 12.5° | 2925.9 | 2868.9 | 2651.2 | 2215.8 | 1710.4 | 1477.2 | 1404.6 | 1378.7 | 1365.8 | 1360.6 | 1365.8 |
| 15° | 3029.5 | 2941.4 | 2570.8 | 1910.0 | 1518.7 | 1427.9 | 1412.4 | 1415.0 | 1415.0 | 1417.6 | 1417.6 |
| 17.5° | 3120.2 | 2982.9 | 2425.7 | 1689.7 | 1479.8 | 1453.9 | 1469.4 | 1482.4 | 1482.4 | 1485.0 | 1482.4 |
| 20° | 3203.2 | 3003.6 | 2239.1 | 1596.4 | 1487.6 | 1500.5 | 1536.8 | 1549.8 | 1552.3 | 1549.8 | 1549.8 |
| 22.5° | 3291.3 | 3016.6 | 2052.5 | 1544.6 | 1505.7 | 1544.6 | 1583.4 | 1601.6 | 1606.8 | 1609.4 | 1612.0 |
| 25° | 3376.8 | 2990.7 | 1899.6 | 1503.1 | 1497.9 | 1552.3 | 1596.4 | 1619.7 | 1624.9 | 1624.9 | 1627.5 |
| 27.5° | 3462.3 | 2982.9 | 1796.0 | 1448.7 | 1461.6 | 1505.7 | 1557.5 | 1588.6 | 1609.4 | 1612.0 | 1614.5 |
| 30° | 3560.8 | 2959.6 | 1697.5 | 1376.1 | 1381.3 | 1435.7 | 1490.1 | 1544.6 | 1586.0 | 1604.2 | 1604.2 |
| 32.5° | 3628.2 | 2936.2 | 1609.4 | 1298.4 | 1298.4 | 1355.4 | 1422.8 | 1490.1 | 1549.8 | 1586.0 | 1593.8 |
| 35° | 3693.0 | 2915.5 | 1531.6 | 1220.6 | 1223.2 | 1277.6 | 1347.6 | 1420.2 | 1495.3 | 1539.4 | 1560.1 |
| 37.5° | 3726.7 | 2894.8 | 1477.2 | 1161.0 | 1150.7 | 1207.7 | 1254.3 | 1313.9 | 1394.3 | 1466.8 | 1485.0 |
| 40° | 3734.4 | 2894.8 | 1472.0 | 1119.6 | 1075.5 | 1140.3 | 1161.0 | 1202.5 | 1275.0 | 1352.8 | 1381.3 |
| 42.5° | 3682.6 | 2866.3 | 1497.9 | 1093.6 | 997.8 | 1044.4 | 1067.7 | 1088.5 | 1135.1 | 1199.9 | 1223.2 |
| 45° | 3620.4 | 2827.4 | 1521.2 | 1057.4 | 901.9 | 938.1 | 974.4 | 977.0 | 997.8 | 1013.3 | 1028.8 |
| 47.5° | 3568.6 | 2785.9 | 1479.8 | 990.0 | 803.4 | 829.3 | 868.2 | 868.2 | 857.8 | 826.7 | 816.3 |
| 50° | 3610.0 | 2798.9 | 1409.8 | 894.1 | 712.7 | 730.8 | 772.3 | 749.0 | 725.6 | 660.8 | 653.1 |
| 52.5° | 3646.3 | 2848.1 | 1326.9 | 800.8 | 634.9 | 653.1 | 694.5 | 658.3 | 611.6 | 559.8 | 552.0 |
| 55° | 3586.7 | 2850.7 | 1174.0 | 697.1 | 580.5 | 596.1 | 634.9 | 590.9 | 546.8 | 515.7 | 510.5 |
| 57.5° | 3407.9 | 2773.0 | 1013.3 | 616.8 | 533.9 | 549.4 | 585.7 | 541.6 | 500.2 | 497.6 | 510.5 |
| 60° | 3014.0 | 2500.9 | 865.6 | 565.0 | 489.8 | 507.9 | 544.2 | 497.6 | 443.2 | 419.8 | 427.6 |
| 62.5° | 2275.4 | 1922.9 | 741.2 | 505.4 | 448.3 | 471.7 | 497.6 | 422.4 | 375.8 | 365.4 | 355.0 |
| 65° | *1663.8* | *1477.2* | *666.0* | *458.7* | *409.5* | *438.0* | *417.2* | *375.8* | *344.7* | *334.3* | *329.1* |
| 67.5° | 1075.5 | 1002.9 | 572.7 | 414.6 | 373.2 | 396.5 | 368.0 | 347.3 | 313.6 | 308.4 | 316.2 |
| 70° | 658.3 | 681.6 | 479.4 | 365.4 | 336.9 | 331.7 | 336.9 | 316.2 | 279.9 | 287.7 | 298.0 |
| 72.5° | 466.5 | 502.8 | 412.1 | 318.8 | 287.7 | 277.3 | 300.6 | 287.7 | 261.7 | 269.5 | 279.9 |
| 75° | 334.3 | 373.2 | 339.5 | 261.7 | 243.6 | 238.4 | 279.9 | 287.7 | 269.5 | 274.7 | 282.5 |
| 77.5° | 197.0 | 238.4 | 241.0 | 202.1 | 184.0 | 212.5 | 298.0 | 331.7 | 318.8 | 303.2 | 295.4 |
| 80° | 127.0 | 142.5 | 171.0 | 129.6 | 129.6 | 184.0 | 326.5 | 404.3 | 347.3 | 308.4 | 303.2 |
| 82.5° | 64.8 | 75.2 | 111.4 | 82.9 | 77.7 | 137.4 | 321.4 | 386.1 | 383.6 | 342.1 | 334.3 |
| 85° | 18.1 | 23.3 | 51.8 | 36.3 | 31.1 | 72.6 | 241.0 | 290.3 | 259.2 | 189.2 | 191.8 |
| 87.5° | 2.6 | 2.6 | 0.0 | 0.0 | 2.6 | 10.4 | 28.5 | 5.2 | 5.2 | 5.2 | 5.2 |
| 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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# LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-2

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-722-U-5WQ

Data in this report applies to families of products including GSS-SB1A-722-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

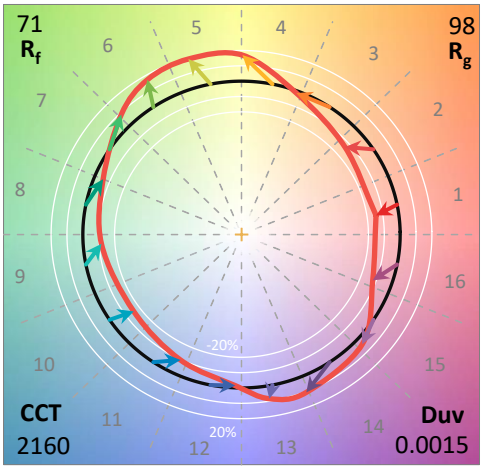
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-2 |
| 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-722-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 2200K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 2160 |
| CIE u': | 0.2927 |
| CIE v': | 0.5388 |
| Duv: | 0.0015 |
| CIE x: | 0.5130 |
| CIE y: | 0.4197 |
| CIE z: | 0.0674 |
| Peak Wavelength (nm): | 609 |
| Dominant Wavelength (nm): | 587 |
| Purity: | 79.96089 |
| Rf: | 70.6 |
| Rg: | 97.6 |

| | |
|---|---|
| CRI (Ra): | 71.9 |
| R1: | 68.7 |
| R2: | 82.6 |
| R3: | 95.5 |
| R4: | 66.4 |
| R5: | 65.4 |
| R6: | 75.9 |
| R7: | 77.2 |
| R8: | 43.5 |
| R9: | -17.8 |
| R10: | 60.5 |
| R11: | 60.2 |
| R12: | 48.2 |
| R13: | 70.7 |
| R14: | 96.8 |
| R15: | 61.8 |




## Test Conditions

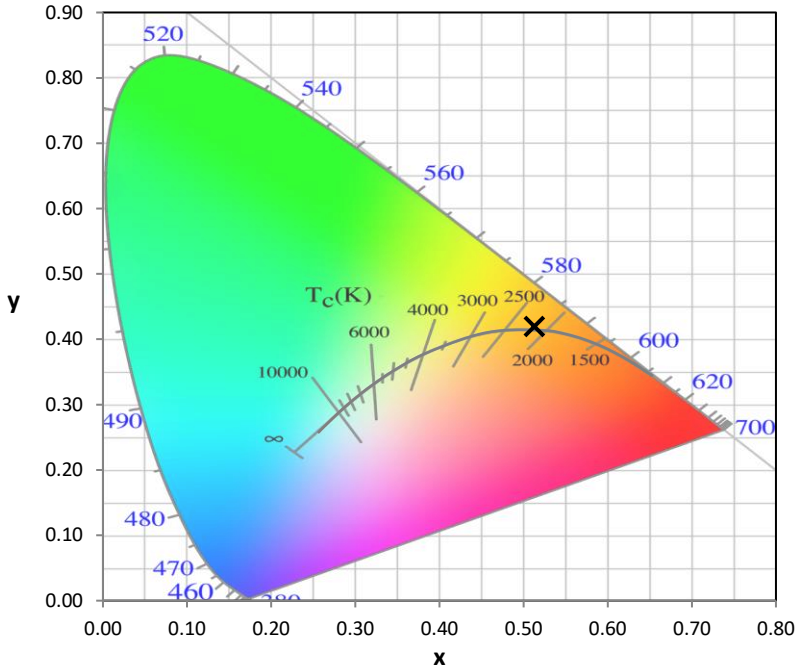
| | |
|---|---|
| Stabilization Time: | 21M |
| Operation Time: | 1H 21M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-2

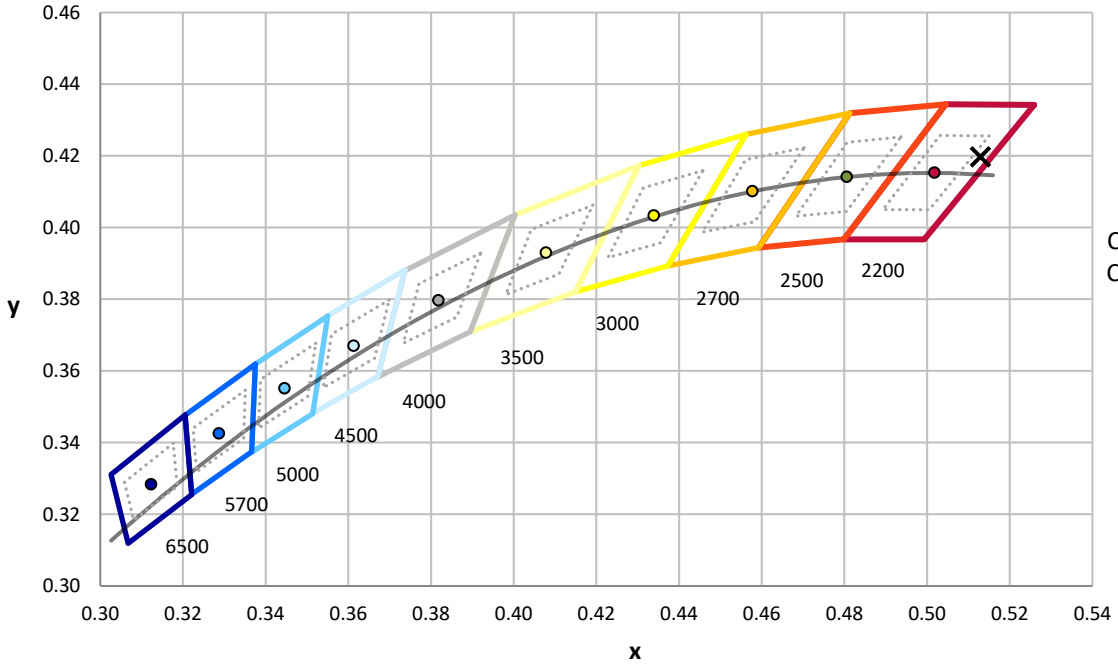
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

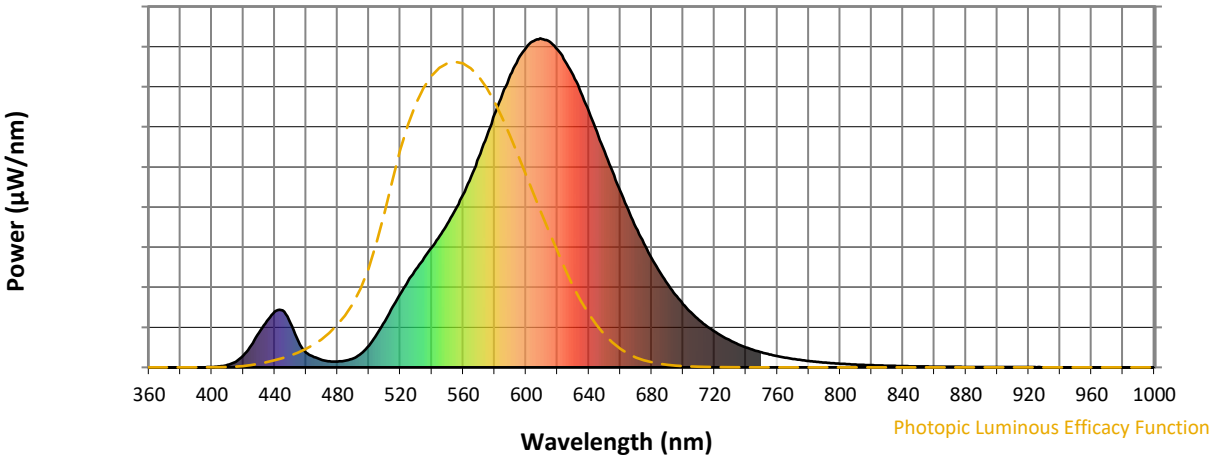



CCT = 2160K
CIE x = 0.5130
CIE y = 0.4197
Duv = 0.0015

Point lies inside the ANSI 2200K 7-step quadrangle

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## Photopic Flux vs. Wavelength

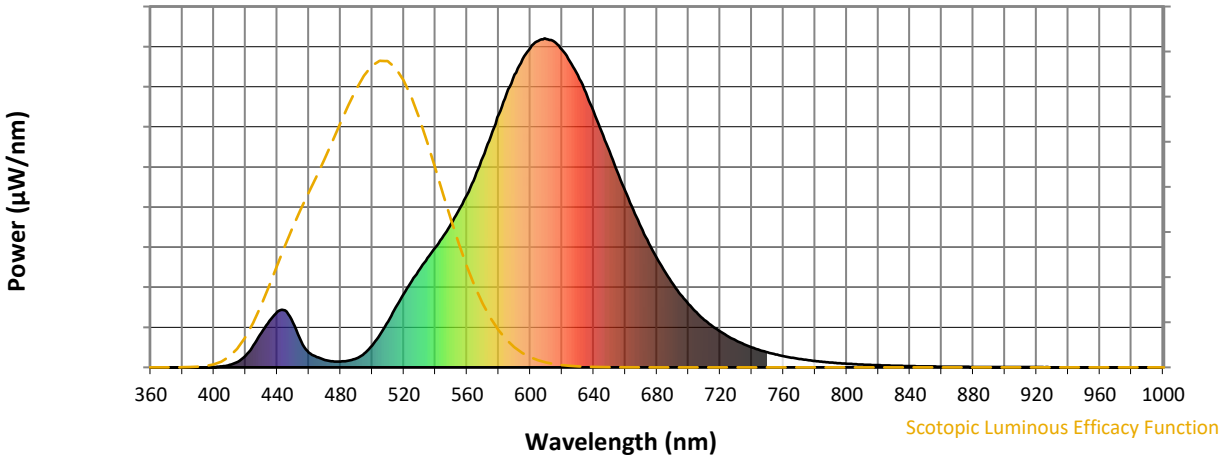



## Photopic Lumens: NR

| 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 | 27 | NR | 620 | 966 | NR | 750 | 46 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 42 | NR | 625 | 930 | NR | 755 | 39 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 67 | NR | 630 | 888 | NR | 760 | 34 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 101 | NR | 635 | 835 | NR | 765 | 30 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 139 | NR | 640 | 778 | NR | 770 | 26 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 183 | NR | 645 | 717 | NR | 775 | 22 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 224 | NR | 650 | 656 | NR | 780 | 19 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 262 | NR | 655 | 595 | NR | 785 | 17 | NR | 915 | 1 | NR |
| 400 | 1 | NR | 530 | 299 | NR | 660 | 536 | NR | 790 | 15 | NR | 920 | 1 | NR |
| 405 | 3 | NR | 535 | 332 | NR | 665 | 480 | NR | 795 | 13 | NR | 925 | 1 | NR |
| 410 | 7 | NR | 540 | 365 | NR | 670 | 425 | NR | 800 | 11 | NR | 930 | 1 | NR |
| 415 | 17 | NR | 545 | 400 | NR | 675 | 376 | NR | 805 | 10 | NR | 935 | 0 | NR |
| 420 | 36 | NR | 550 | 437 | NR | 680 | 332 | NR | 810 | 8 | NR | 940 | 0 | NR |
| 425 | 67 | NR | 555 | 479 | NR | 685 | 291 | NR | 815 | 8 | NR | 945 | 0 | NR |
| 430 | 105 | NR | 560 | 525 | NR | 690 | 255 | NR | 820 | 7 | NR | 950 | 0 | NR |
| 435 | 141 | NR | 565 | 579 | NR | 695 | 221 | NR | 825 | 6 | NR | 955 | 0 | NR |
| 440 | 169 | NR | 570 | 639 | NR | 700 | 192 | NR | 830 | 5 | NR | 960 | 0 | NR |
| 445 | 173 | NR | 575 | 703 | NR | 705 | 167 | NR | 835 | 4 | NR | 965 | 0 | NR |
| 450 | 136 | NR | 580 | 769 | NR | 710 | 144 | NR | 840 | 4 | NR | 970 | 0 | NR |
| 455 | 80 | NR | 585 | 832 | NR | 715 | 125 | NR | 845 | 3 | NR | 975 | 0 | NR |
| 460 | 45 | NR | 590 | 890 | NR | 720 | 109 | NR | 850 | 3 | NR | 980 | 0 | NR |
| 465 | 32 | NR | 595 | 937 | NR | 725 | 94 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 23 | NR | 600 | 972 | NR | 730 | 81 | NR | 860 | 2 | NR | 990 | 0 | NR |
| 475 | 18 | NR | 605 | 992 | NR | 735 | 70 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 18 | NR | 610 | 998 | NR | 740 | 61 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 20 | NR | 615 | 990 | NR | 745 | 53 | NR | 875 | 2 | NR | | | |

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## Scotopic Flux vs. Wavelength

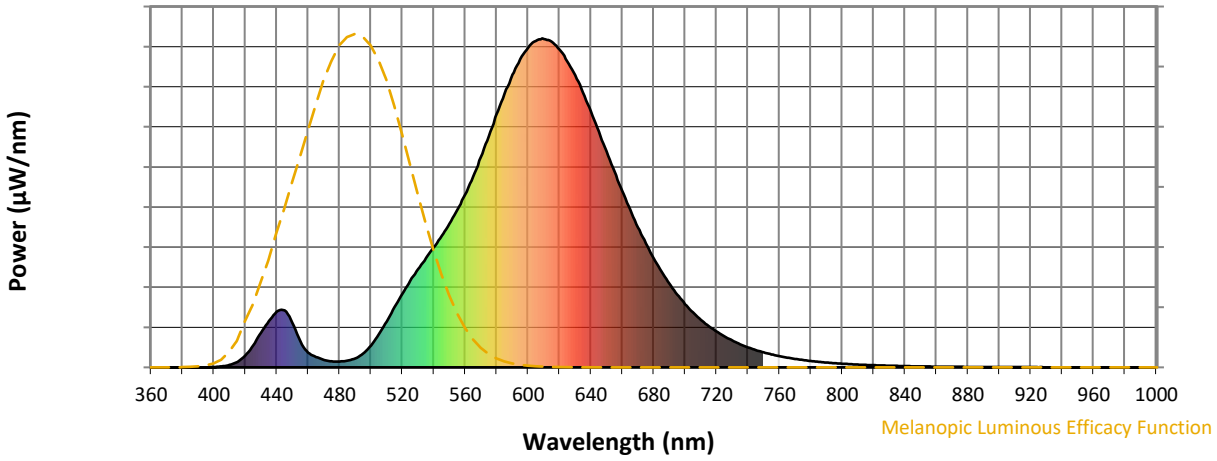



**Scotopic Lumens: NR** **S/P: 0.8**

| 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 | 27 | NR | 620 | 966 | NR | 750 | 46 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 42 | NR | 625 | 930 | NR | 755 | 39 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 67 | NR | 630 | 888 | NR | 760 | 34 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 101 | NR | 635 | 835 | NR | 765 | 30 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 139 | NR | 640 | 778 | NR | 770 | 26 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 183 | NR | 645 | 717 | NR | 775 | 22 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 224 | NR | 650 | 656 | NR | 780 | 19 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 262 | NR | 655 | 595 | NR | 785 | 17 | NR | 915 | 1 | NR |
| 400 | 1 | NR | 530 | 299 | NR | 660 | 536 | NR | 790 | 15 | NR | 920 | 1 | NR |
| 405 | 3 | NR | 535 | 332 | NR | 665 | 480 | NR | 795 | 13 | NR | 925 | 1 | NR |
| 410 | 7 | NR | 540 | 365 | NR | 670 | 425 | NR | 800 | 11 | NR | 930 | 1 | NR |
| 415 | 17 | NR | 545 | 400 | NR | 675 | 376 | NR | 805 | 10 | NR | 935 | 0 | NR |
| 420 | 36 | NR | 550 | 437 | NR | 680 | 332 | NR | 810 | 8 | NR | 940 | 0 | NR |
| 425 | 67 | NR | 555 | 479 | NR | 685 | 291 | NR | 815 | 8 | NR | 945 | 0 | NR |
| 430 | 105 | NR | 560 | 525 | NR | 690 | 255 | NR | 820 | 7 | NR | 950 | 0 | NR |
| 435 | 141 | NR | 565 | 579 | NR | 695 | 221 | NR | 825 | 6 | NR | 955 | 0 | NR |
| 440 | 169 | NR | 570 | 639 | NR | 700 | 192 | NR | 830 | 5 | NR | 960 | 0 | NR |
| 445 | 173 | NR | 575 | 703 | NR | 705 | 167 | NR | 835 | 4 | NR | 965 | 0 | NR |
| 450 | 136 | NR | 580 | 769 | NR | 710 | 144 | NR | 840 | 4 | NR | 970 | 0 | NR |
| 455 | 80 | NR | 585 | 832 | NR | 715 | 125 | NR | 845 | 3 | NR | 975 | 0 | NR |
| 460 | 45 | NR | 590 | 890 | NR | 720 | 109 | NR | 850 | 3 | NR | 980 | 0 | NR |
| 465 | 32 | NR | 595 | 937 | NR | 725 | 94 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 23 | NR | 600 | 972 | NR | 730 | 81 | NR | 860 | 2 | NR | 990 | 0 | NR |
| 475 | 18 | NR | 605 | 992 | NR | 735 | 70 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 18 | NR | 610 | 998 | NR | 740 | 61 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 20 | NR | 615 | 990 | NR | 745 | 53 | NR | 875 | 2 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 1.21**

| 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 | 27 | NR | 620 | 966 | NR | 750 | 46 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 42 | NR | 625 | 930 | NR | 755 | 39 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 67 | NR | 630 | 888 | NR | 760 | 34 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 101 | NR | 635 | 835 | NR | 765 | 30 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 139 | NR | 640 | 778 | NR | 770 | 26 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 183 | NR | 645 | 717 | NR | 775 | 22 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 224 | NR | 650 | 656 | NR | 780 | 19 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 262 | NR | 655 | 595 | NR | 785 | 17 | NR | 915 | 1 | NR |
| 400 | 1 | NR | 530 | 299 | NR | 660 | 536 | NR | 790 | 15 | NR | 920 | 1 | NR |
| 405 | 3 | NR | 535 | 332 | NR | 665 | 480 | NR | 795 | 13 | NR | 925 | 1 | NR |
| 410 | 7 | NR | 540 | 365 | NR | 670 | 425 | NR | 800 | 11 | NR | 930 | 1 | NR |
| 415 | 17 | NR | 545 | 400 | NR | 675 | 376 | NR | 805 | 10 | NR | 935 | 0 | NR |
| 420 | 36 | NR | 550 | 437 | NR | 680 | 332 | NR | 810 | 8 | NR | 940 | 0 | NR |
| 425 | 67 | NR | 555 | 479 | NR | 685 | 291 | NR | 815 | 8 | NR | 945 | 0 | NR |
| 430 | 105 | NR | 560 | 525 | NR | 690 | 255 | NR | 820 | 7 | NR | 950 | 0 | NR |
| 435 | 141 | NR | 565 | 579 | NR | 695 | 221 | NR | 825 | 6 | NR | 955 | 0 | NR |
| 440 | 169 | NR | 570 | 639 | NR | 700 | 192 | NR | 830 | 5 | NR | 960 | 0 | NR |
| 445 | 173 | NR | 575 | 703 | NR | 705 | 167 | NR | 835 | 4 | NR | 965 | 0 | NR |
| 450 | 136 | NR | 580 | 769 | NR | 710 | 144 | NR | 840 | 4 | NR | 970 | 0 | NR |
| 455 | 80 | NR | 585 | 832 | NR | 715 | 125 | NR | 845 | 3 | NR | 975 | 0 | NR |
| 460 | 45 | NR | 590 | 890 | NR | 720 | 109 | NR | 850 | 3 | NR | 980 | 0 | NR |
| 465 | 32 | NR | 595 | 937 | NR | 725 | 94 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 23 | NR | 600 | 972 | NR | 730 | 81 | NR | 860 | 2 | NR | 990 | 0 | NR |
| 475 | 18 | NR | 605 | 992 | NR | 735 | 70 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 18 | NR | 610 | 998 | NR | 740 | 61 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 20 | NR | 615 | 990 | NR | 745 | 53 | NR | 875 | 2 | NR | | | |

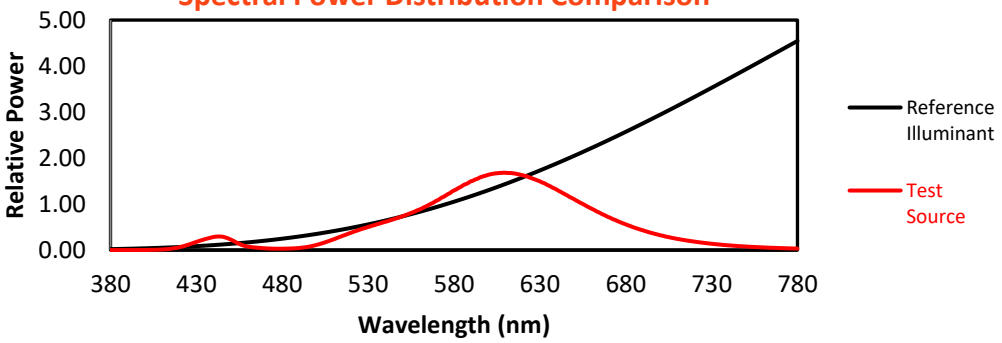
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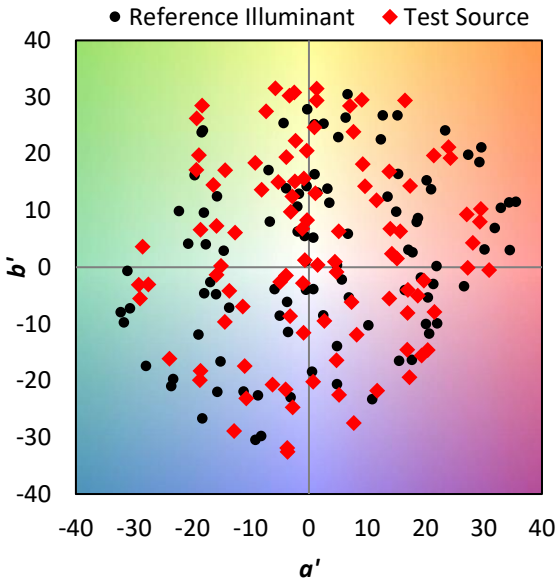
## Summary

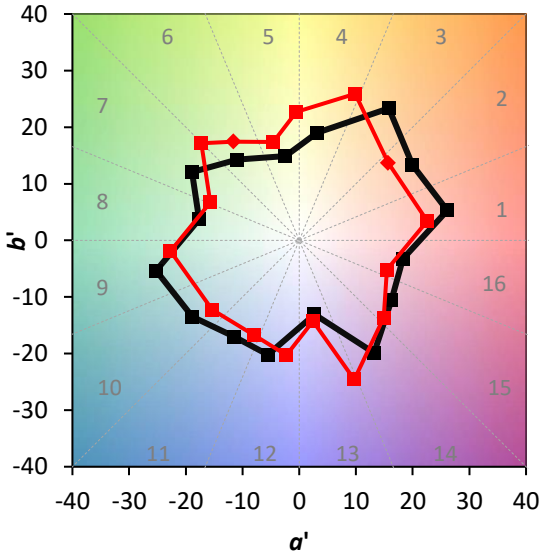
$R_f$ = 70.6
$R_g$ = 97.6
CIE $R_a$ = 71.9
$R_9$ = -17.8

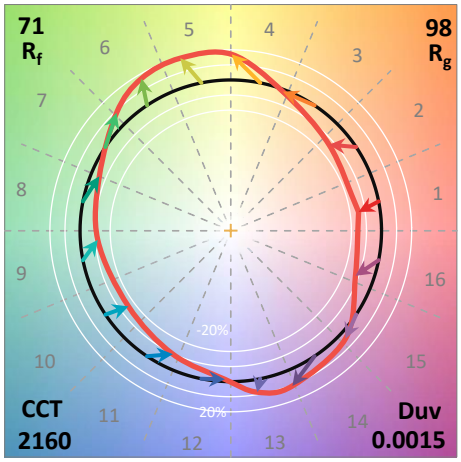
## Spectral Power Distribution Comparison

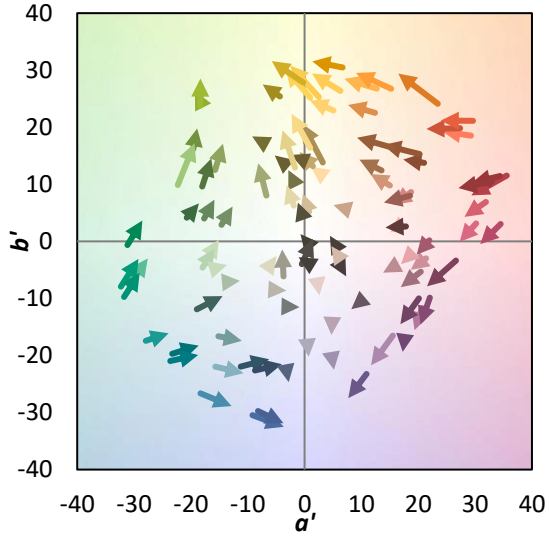



## Color Vector Graphics



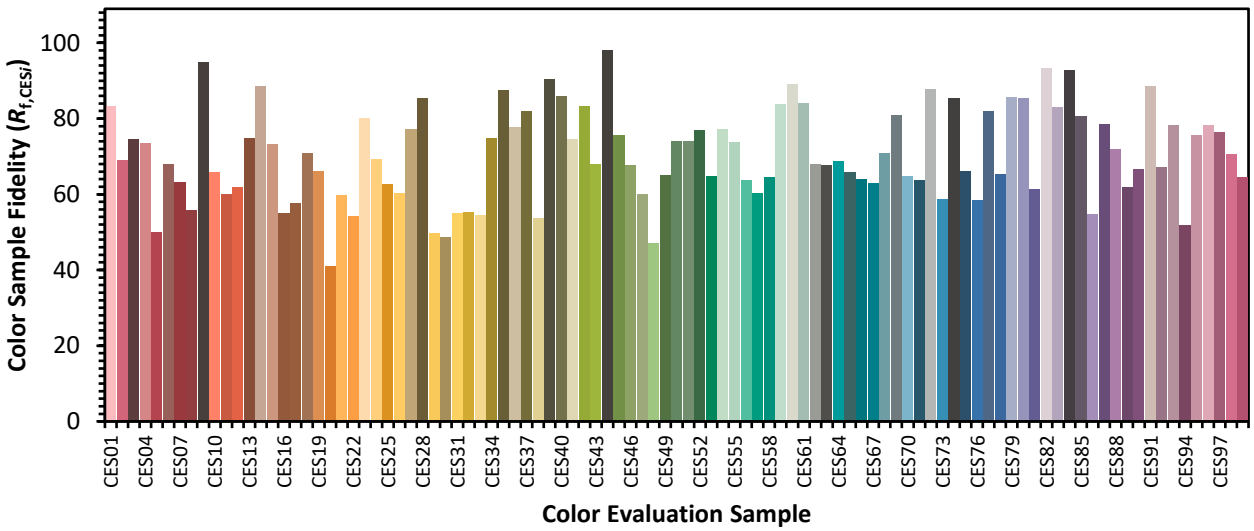



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**Individual Sample Fidelity Index ($R_{f,i}$)**

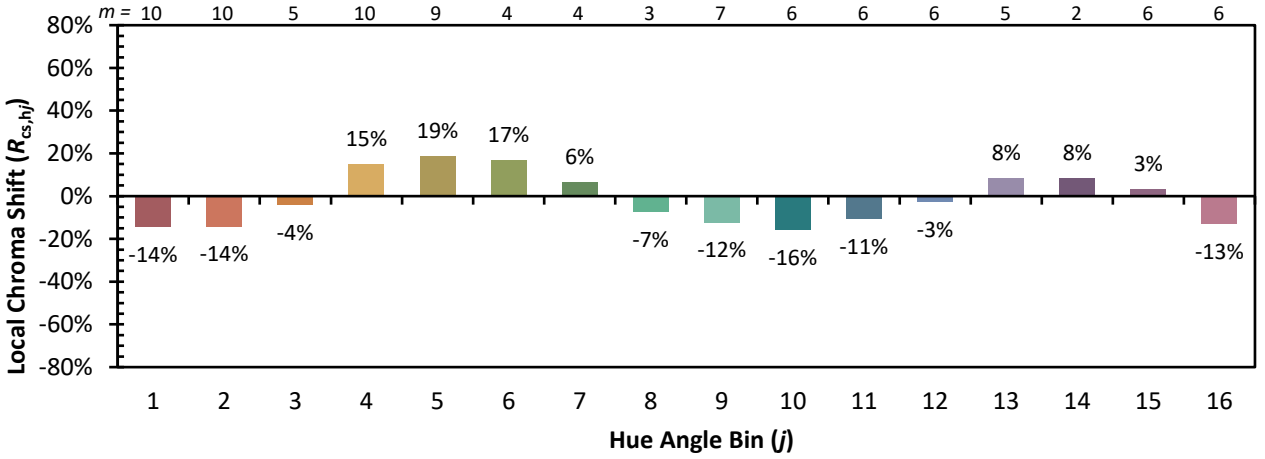
| | | | |
|---|---|---|---|
| CES01 = 87 | CES26 = 60 | CES51 = 74 | CES76 = 58 |
| CES02 = 65 | CES27 = 77 | CES52 = 77 | CES77 = 82 |
| CES03 = 32 | CES28 = 85 | CES53 = 65 | CES78 = 65 |
| CES04 = 72 | CES29 = 50 | CES54 = 77 | CES79 = 86 |
| CES05 = 52 | CES30 = 49 | CES55 = 74 | CES80 = 85 |
| CES06 = 53 | CES31 = 55 | CES56 = 64 | CES81 = 61 |
| CES07 = 44 | CES32 = 55 | CES57 = 60 | CES82 = 93 |
| CES08 = 43 | CES33 = 55 | CES58 = 64 | CES83 = 83 |
| CES09 = 29 | CES34 = 75 | CES59 = 84 | CES84 = 93 |
| CES10 = 79 | CES35 = 88 | CES60 = 89 | CES85 = 81 |
| CES11 = 62 | CES36 = 78 | CES61 = 84 | CES86 = 55 |
| CES12 = 68 | CES37 = 82 | CES62 = 68 | CES87 = 79 |
| CES13 = 45 | CES38 = 54 | CES63 = 68 | CES88 = 72 |
| CES14 = 75 | CES39 = 90 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 86 | CES65 = 66 | CES90 = 67 |
| CES16 = 49 | CES41 = 75 | CES66 = 64 | CES91 = 89 |
| CES17 = 51 | CES42 = 83 | CES67 = 63 | CES92 = 67 |
| CES18 = 57 | CES43 = 68 | CES68 = 71 | CES93 = 78 |
| CES19 = 74 | CES44 = 98 | CES69 = 81 | CES94 = 52 |
| CES20 = 68 | CES45 = 76 | CES70 = 65 | CES95 = 76 |
| CES21 = 89 | CES46 = 68 | CES71 = 64 | CES96 = 78 |
| CES22 = 81 | CES47 = 60 | CES72 = 88 | CES97 = 76 |
| CES23 = 92 | CES48 = 47 | CES73 = 59 | CES98 = 71 |
| CES24 = 92 | CES49 = 65 | CES74 = 85 | CES99 = 65 |
| CES25 = 74 | CES50 = 74 | CES75 = 66 | |

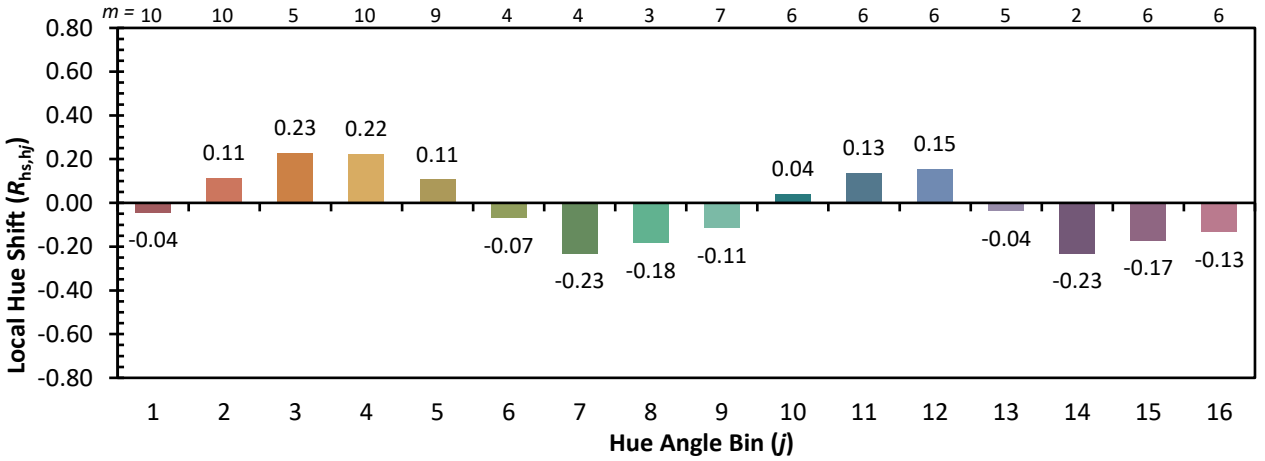


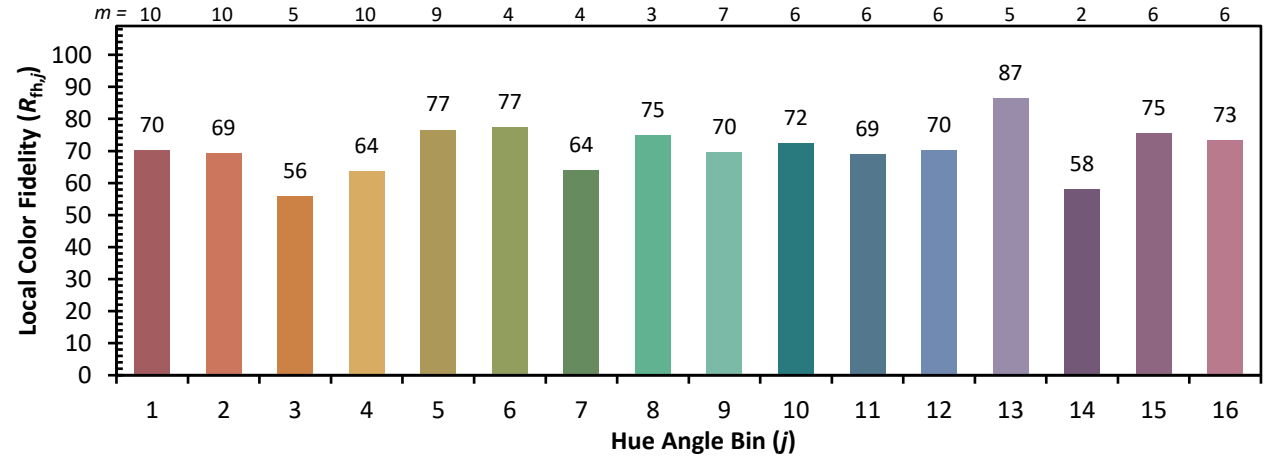
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## Color Rendition by Hue-Angle Bin



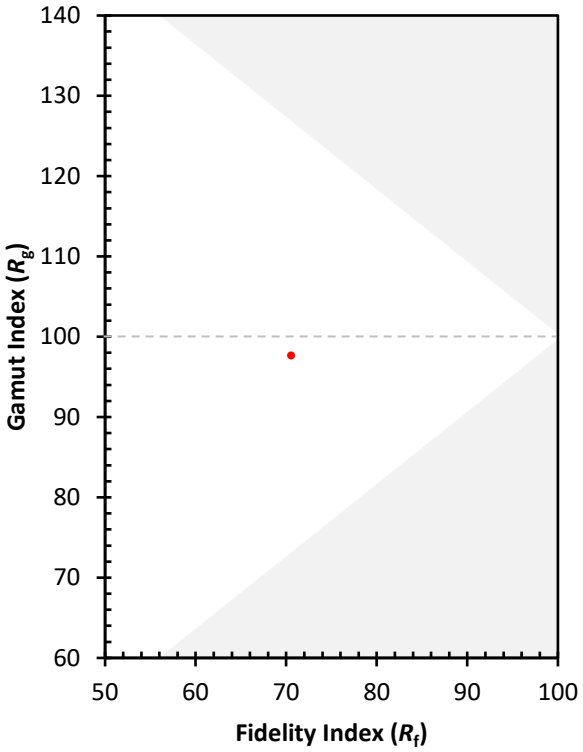



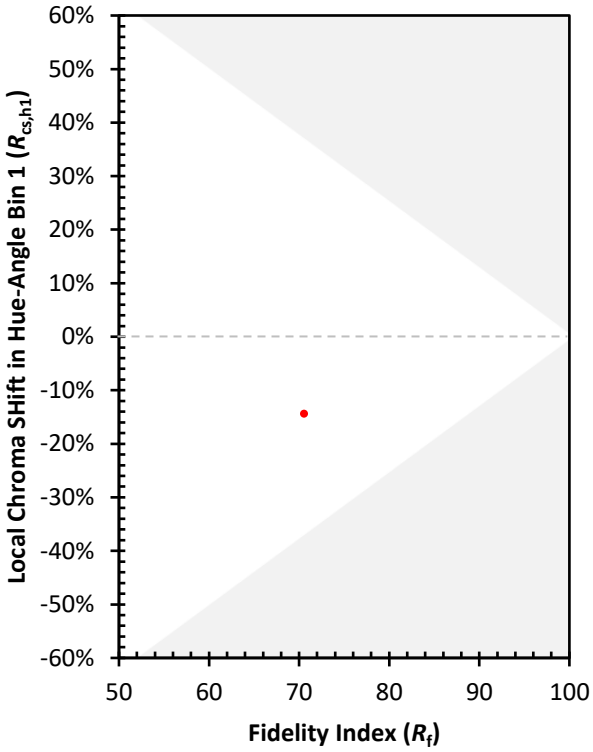



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## Measure Comparisons




(END OF REPORT)