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: P1500614

Luminaire Tested: GSS-SB3B-727-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: | P1500614 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 7/20/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB3B-727-U-T4LG |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 3SQUARE 109W 70CRI 2700K FIXTURE w/ TYPE IV LOW GLARE DISTRIBUTION FIXTURE |
| Light Source: | (78) 2700K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 14681.3 lumens |
| Efficiency: | N/A |
| Efficacy: | 134.7 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 0.5' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B2 - U0 - G2 |

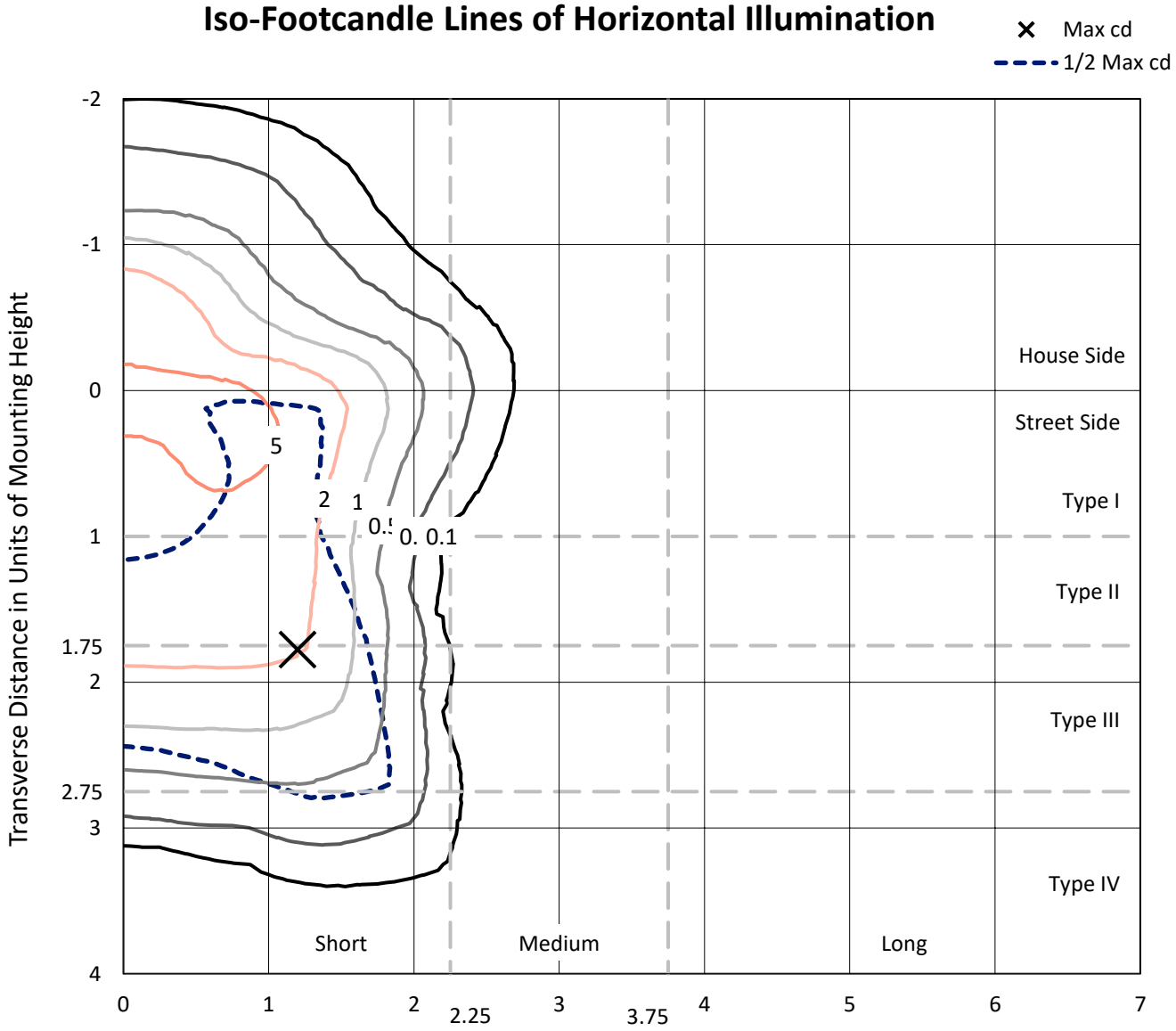
| | |
|---|---|
| Input Watts (W): | 109 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 8.7% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1500614
CATALOG NUMBER: GSS-SB3B-727-U-T4LG

## Iso-Footcandle Lines of Horizontal Illumination



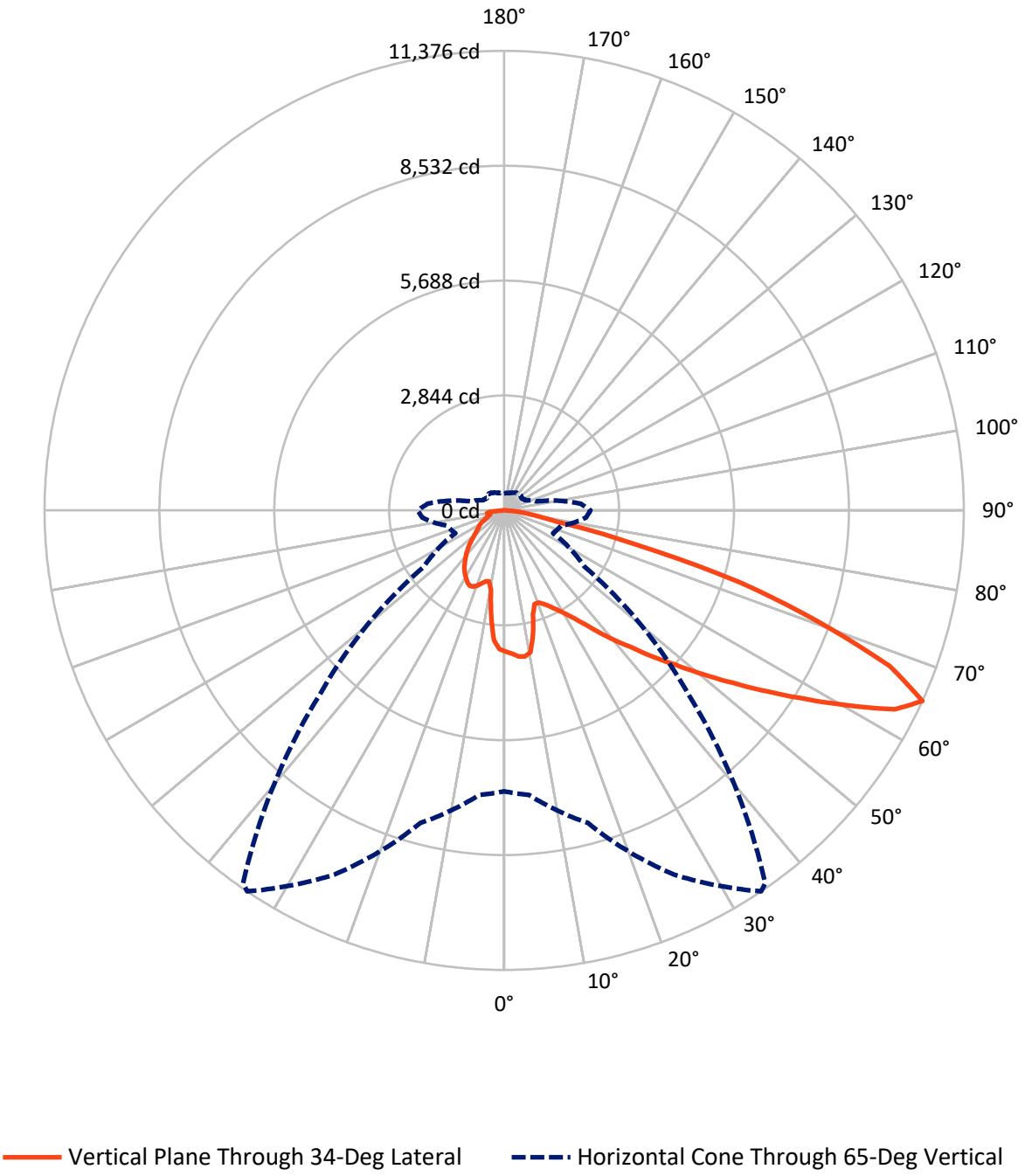

Based on 20 foot mounting height. Maximum calculated value = 9.3 fc
Type III - Short - N/A

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REPORT NUMBER: P1500614
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## Luminous Intensity Polar Plot



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Scaled Data Report

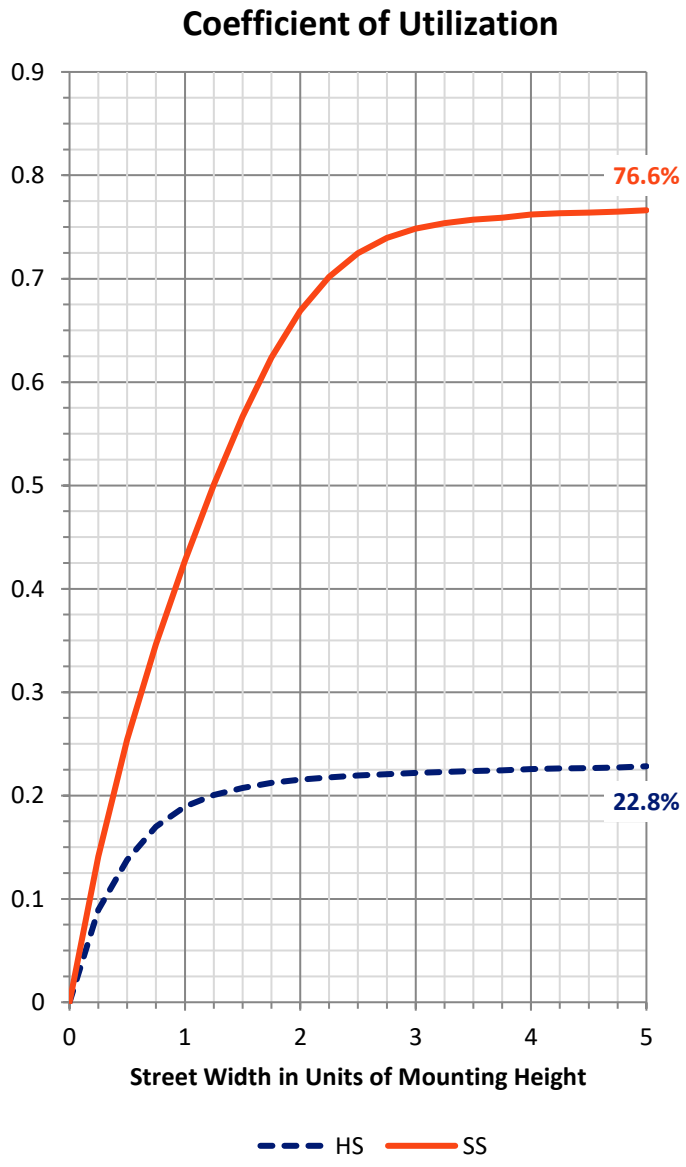
REPORT NUMBER: P1500614
CATALOG NUMBER: GSS-SB3B-727-U-T4LG

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 3415.7 | 0.0 | 3415.7 |
| | % Fixture | 23.3 | 0.0 | 23.3 |
| **Street Side** | Lumens | 11265.6 | 0.0 | 11265.6 |
| | % Fixture | 76.7 | 0.0 | 76.7 |
| **Total** | Lumens | 14681.3 | 0.0 | 14681.3 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 314.7 | 2.1 |
| 10°-20° | 792.0 | 5.4 |
| 20°-30° | 1312.8 | 8.9 |
| 30°-40° | 1974.4 | 13.4 |
| 40°-50° | 2766.1 | 18.8 |
| 50°-60° | 3487.6 | 23.8 |
| 60°-70° | 2999.6 | 20.4 |
| 70°-80° | 891.8 | 6.1 |
| 80°-90° | 142.3 | 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° | 14681.3 | 100.0 |
| 0°-180° | 14681.3 | 100.0 |



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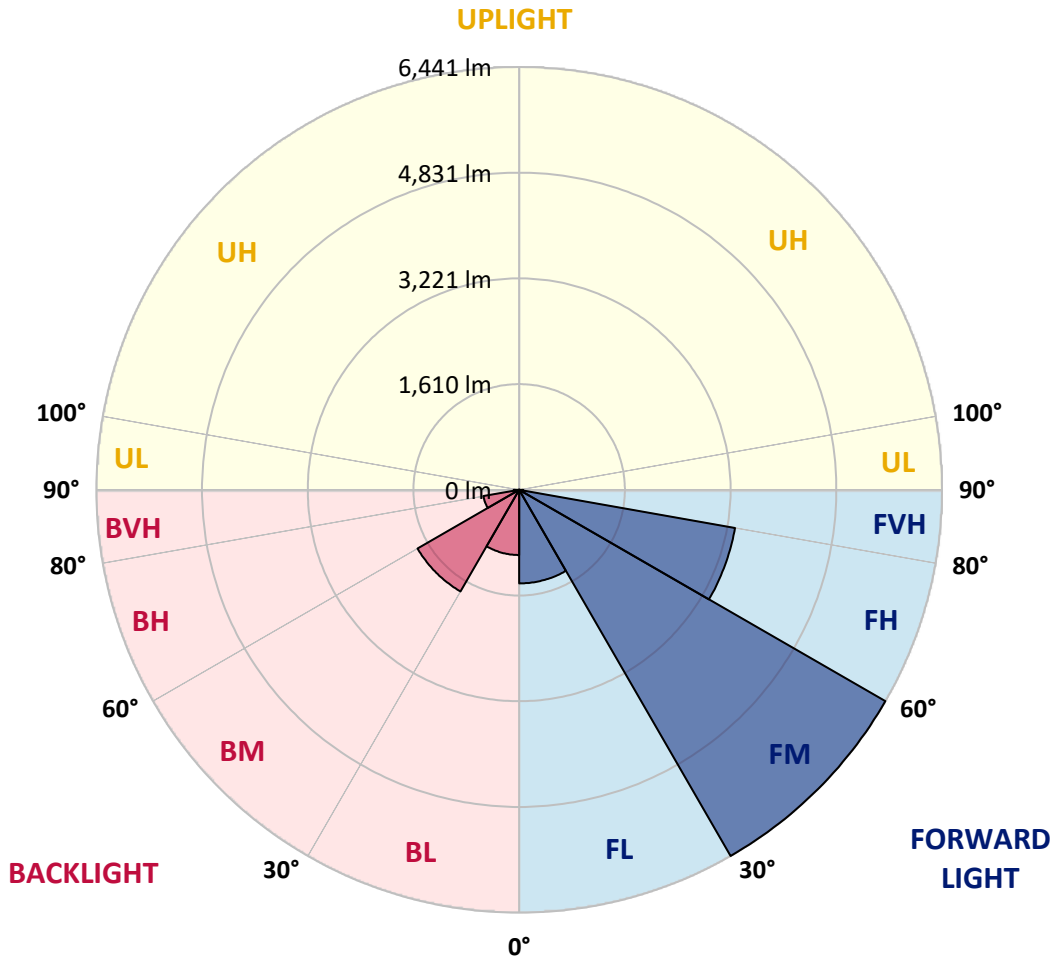
Scaled Data Report

REPORT NUMBER: P1500614
CATALOG NUMBER: GSS-SB3B-727-U-T4LG

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1425.7 | 9.7 | | | |
| FM | (30°-60°) | 6441.1 | 43.9 | | | |
| FH | (60°-80°) | 3338.6 | 22.7 | | | G2/5000 |
| FVH | (80°-90°) | 60.2 | 0.4 | | | G1/100 |
| BL | (0°-30°) | 993.8 | 6.8 | B2/1000 | | |
| BM | (30°-60°) | 1787.0 | 12.2 | B2/2500 | | |
| BH | (60°-80°) | 552.8 | 3.8 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 82.1 | 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: P1500614
CATALOG NUMBER: GSS-SB3B-727-U-T4LG

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 34° | 35° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 3490.5 | 3490.5 | 3490.5 | 3490.5 | 3490.5 | 3490.5 | 3490.5 | 3490.5 | 3490.5 | 3490.5 | 3490.5 |
| 2.5° | 3557.0 | 3577.0 | 3553.7 | 3543.7 | 3547.1 | 3550.4 | 3533.8 | 3537.1 | 3517.1 | 3517.1 | 3500.5 |
| 5° | 3633.5 | 3636.8 | 3623.5 | 3633.5 | 3630.2 | 3626.8 | 3626.8 | 3623.5 | 3580.3 | 3570.3 | 3553.7 |
| 7.5° | 3590.3 | 3603.6 | 3610.2 | 3646.8 | 3656.8 | 3676.7 | 3690.0 | 3696.6 | 3663.4 | 3636.8 | 3593.6 |
| 10° | 3194.7 | 3204.6 | 3281.1 | 3447.3 | 3573.6 | 3596.9 | 3719.9 | 3789.7 | 3766.5 | 3753.2 | 3680.0 |
| 12.5° | 2553.1 | 2569.7 | 2656.1 | 2872.2 | 3168.1 | 3231.2 | 3623.5 | 3859.5 | 3912.7 | 3916.1 | 3809.7 |
| 15° | 2277.2 | 2277.2 | 2303.8 | 2426.8 | 2666.1 | 2716.0 | 3294.4 | 3879.5 | 4069.0 | 4092.2 | 3962.6 |
| 17.5° | 2220.6 | 2217.3 | 2233.9 | 2307.1 | 2433.4 | 2463.3 | 2915.4 | 3776.4 | 4255.1 | 4295.0 | 4128.8 |
| 20° | 2217.3 | 2207.4 | 2240.6 | 2323.7 | 2433.4 | 2460.0 | 2739.2 | 3596.9 | 4401.4 | 4527.7 | 4295.0 |
| 22.5° | 2220.6 | 2220.6 | 2267.2 | 2386.9 | 2513.2 | 2536.5 | 2772.5 | 3447.3 | 4521.1 | 4770.4 | 4471.2 |
| 25° | 2257.2 | 2250.6 | 2317.1 | 2463.3 | 2636.2 | 2652.8 | 2908.8 | 3440.7 | 4624.1 | 5043.0 | 4684.0 |
| 27.5° | 2317.1 | 2320.4 | 2410.1 | 2586.3 | 2782.5 | 2815.7 | 3098.3 | 3583.6 | 4750.5 | 5342.2 | 4890.1 |
| 30° | 2443.4 | 2446.7 | 2553.1 | 2732.6 | 2958.6 | 3001.9 | 3317.7 | 3796.4 | 4930.0 | 5664.6 | 5112.8 |
| 32.5° | 2586.3 | 2602.9 | 2732.6 | 2942.0 | 3184.7 | 3208.0 | 3586.9 | 4115.5 | 5199.2 | 5987.1 | 5352.2 |
| 35° | 2825.7 | 2842.3 | 2988.6 | 3208.0 | 3477.2 | 3510.5 | 3916.1 | 4484.5 | 5528.4 | 6312.9 | 5538.3 |
| 37.5° | 3134.8 | 3148.1 | 3291.1 | 3557.0 | 3842.9 | 3876.2 | 4281.7 | 4876.8 | 5860.8 | 6572.2 | 5704.5 |
| 40° | 3503.8 | 3533.8 | 3686.7 | 3946.0 | 4235.2 | 4255.1 | 4680.6 | 5255.8 | 6219.8 | 6751.7 | 5771.0 |
| 42.5° | 3906.1 | 3936.0 | 4092.2 | 4378.1 | 4644.1 | 4703.9 | 5112.8 | 5658.0 | 6512.4 | 6831.5 | 5717.8 |
| 45° | 4421.4 | 4414.7 | 4561.0 | 4860.2 | 5172.6 | 5195.9 | 5574.9 | 5990.4 | 6688.5 | 6765.0 | 5664.6 |
| 47.5° | 5046.3 | 5053.0 | 5146.1 | 5388.7 | 5711.2 | 5764.4 | 6056.9 | 6276.3 | 6791.6 | 6711.8 | 5604.8 |
| 50° | 5751.1 | 5767.7 | 5847.5 | 6023.7 | 6369.4 | 6406.0 | 6492.4 | 6475.8 | 6854.8 | 6598.8 | 5628.1 |
| 52.5° | 6455.8 | 6465.8 | 6572.2 | 6758.4 | 7094.1 | 7120.7 | 6931.2 | 6628.7 | 6618.7 | 6143.4 | 5578.2 |
| 55° | 7034.3 | 7030.9 | 7220.4 | 7506.3 | 7915.2 | 7898.6 | 7363.4 | 6512.4 | 5880.7 | 5435.3 | 5355.5 |
| 57.5° | 7536.2 | 7556.2 | 7802.2 | 8297.5 | 8812.8 | 8799.5 | 7825.5 | 5897.4 | 4803.6 | 4597.5 | 4993.1 |
| 60° | 7988.4 | 8034.9 | 8497.0 | 9238.3 | 9806.8 | 9727.0 | 7908.6 | 4969.9 | 3736.5 | 3600.2 | 4275.1 |
| 62.5° | 7792.2 | 7878.6 | 8620.0 | 10066.1 | 10847.3 | 10671.1 | 7396.6 | 3849.6 | 2529.8 | 2406.8 | 3021.8 |
| 65° | 6954.5 | 7070.8 | 8011.6 | 9946.4 | 11375.8 | 11266.1 | 6465.8 | 2420.1 | 1333.1 | 1462.7 | 2034.5 |
| 67.5° | 5840.8 | 5980.5 | 6997.7 | 8935.8 | 10292.1 | 10056.1 | 5023.1 | 1273.2 | 621.6 | 964.1 | 1263.2 |
| 70° | 3201.3 | 3547.1 | 5059.6 | 7599.4 | 8244.3 | 7915.2 | 2905.5 | 601.7 | 452.1 | 601.7 | 754.6 |
| 72.5° | 1203.4 | 1286.5 | 2194.1 | 5109.5 | 6106.8 | 5701.2 | 1103.7 | 388.9 | 379.0 | 445.5 | 545.2 |
| 75° | 578.4 | 618.3 | 954.1 | 2323.7 | 3334.3 | 3108.2 | 541.9 | 289.2 | 325.8 | 349.1 | 395.6 |
| 77.5° | 345.7 | 372.3 | 595.1 | 1349.7 | 1313.1 | 1206.7 | 332.4 | 222.7 | 262.6 | 249.3 | 232.7 |
| 80° | 206.1 | 229.4 | 362.4 | 767.9 | 791.2 | 701.4 | 202.8 | 156.2 | 182.8 | 159.6 | 142.9 |
| 82.5° | 119.7 | 129.6 | 189.5 | 345.7 | 502.0 | 462.1 | 116.4 | 93.1 | 133.0 | 106.4 | 79.8 |
| 85° | 59.8 | 63.2 | 86.4 | 149.6 | 249.3 | 189.5 | 49.9 | 43.2 | 63.2 | 46.5 | 26.6 |
| 87.5° | 13.3 | 13.3 | 13.3 | 16.6 | 23.3 | 23.3 | 6.6 | 3.3 | 3.3 | 3.3 | 3.3 |
| 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: P1500614
CATALOG NUMBER: GSS-SB3B-727-U-T4LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 3490.5 | 3490.5 | 3490.5 | 3490.5 | 3490.5 | 3490.5 | 3490.5 | 3490.5 | 3490.5 | 3490.5 | 3490.5 |
| 2.5° | 3497.2 | 3503.8 | 3480.6 | 3454.0 | 3447.3 | 3427.4 | 3434.0 | 3420.7 | 3400.8 | 3404.1 | 3407.4 |
| 5° | 3530.4 | 3517.1 | 3470.6 | 3410.8 | 3357.6 | 3297.7 | 3227.9 | 3148.1 | 3091.6 | 3068.4 | 3088.3 |
| 7.5° | 3560.4 | 3547.1 | 3467.3 | 3334.3 | 3154.8 | 2905.5 | 2646.2 | 2410.1 | 2247.2 | 2187.4 | 2200.7 |
| 10° | 3643.5 | 3590.3 | 3444.0 | 3154.8 | 2725.9 | 2253.9 | 1991.3 | 1845.0 | 1795.1 | 1768.5 | 1771.9 |
| 12.5° | 3753.2 | 3680.0 | 3400.8 | 2842.3 | 2194.1 | 1894.9 | 1801.8 | 1768.5 | 1751.9 | 1745.3 | 1751.9 |
| 15° | 3886.1 | 3773.1 | 3297.7 | 2450.0 | 1948.1 | 1831.7 | 1811.8 | 1815.1 | 1815.1 | 1818.4 | 1818.4 |
| 17.5° | 4002.5 | 3826.3 | 3111.6 | 2167.5 | 1898.2 | 1864.9 | 1884.9 | 1901.5 | 1901.5 | 1904.8 | 1901.5 |
| 20° | 4108.9 | 3852.9 | 2872.2 | 2047.8 | 1908.2 | 1924.8 | 1971.3 | 1987.9 | 1991.3 | 1987.9 | 1987.9 |
| 22.5° | 4221.9 | 3869.5 | 2632.9 | 1981.3 | 1931.4 | 1981.3 | 2031.2 | 2054.4 | 2061.1 | 2064.4 | 2067.7 |
| 25° | 4331.6 | 3836.3 | 2436.7 | 1928.1 | 1921.5 | 1991.3 | 2047.8 | 2077.7 | 2084.4 | 2084.4 | 2087.7 |
| 27.5° | 4441.3 | 3826.3 | 2303.8 | 1858.3 | 1874.9 | 1931.4 | 1997.9 | 2037.8 | 2064.4 | 2067.7 | 2071.1 |
| 30° | 4567.6 | 3796.4 | 2177.4 | 1765.2 | 1771.9 | 1841.7 | 1911.5 | 1981.3 | 2034.5 | 2057.8 | 2057.8 |
| 32.5° | 4654.1 | 3766.5 | 2064.4 | 1665.5 | 1665.5 | 1738.6 | 1825.1 | 1911.5 | 1987.9 | 2034.5 | 2044.5 |
| 35° | 4737.2 | 3739.9 | 1964.7 | 1565.8 | 1569.1 | 1638.9 | 1728.6 | 1821.7 | 1918.1 | 1974.6 | 2001.2 |
| 37.5° | 4780.4 | 3713.3 | 1894.9 | 1489.3 | 1476.0 | 1549.1 | 1609.0 | 1685.4 | 1788.5 | 1881.6 | 1904.8 |
| 40° | 4790.4 | 3713.3 | 1888.2 | 1436.1 | 1379.6 | 1462.7 | 1489.3 | 1542.5 | 1635.6 | 1735.3 | 1771.9 |
| 42.5° | 4723.9 | 3676.7 | 1921.5 | 1402.9 | 1279.9 | 1339.7 | 1369.6 | 1396.2 | 1456.1 | 1539.2 | 1569.1 |
| 45° | 4644.1 | 3626.8 | 1951.4 | 1356.3 | 1156.9 | 1203.4 | 1249.9 | 1253.3 | 1279.9 | 1299.8 | 1319.8 |
| 47.5° | 4577.6 | 3573.6 | 1898.2 | 1269.9 | 1030.5 | 1063.8 | 1113.6 | 1113.6 | 1100.4 | 1060.5 | 1047.2 |
| 50° | 4630.8 | 3590.3 | 1808.4 | 1146.9 | 914.2 | 937.5 | 990.6 | 960.7 | 930.8 | 847.7 | 837.7 |
| 52.5° | 4677.3 | 3653.4 | 1702.1 | 1027.2 | 814.5 | 837.7 | 890.9 | 844.4 | 784.5 | 718.1 | 708.1 |
| 55° | 4600.9 | 3656.8 | 1505.9 | 894.2 | 744.6 | 764.6 | 814.5 | 757.9 | 701.4 | 661.5 | 654.9 |
| 57.5° | 4371.5 | 3557.0 | 1299.8 | 791.2 | 684.8 | 704.8 | 751.3 | 694.8 | 641.6 | 638.3 | 654.9 |
| 60° | 3866.2 | 3208.0 | 1110.3 | 724.7 | 628.3 | 651.6 | 698.1 | 638.3 | 568.5 | 538.5 | 548.5 |
| 62.5° | 2918.8 | 2466.6 | 950.8 | 648.2 | 575.1 | 605.0 | 638.3 | 541.9 | 482.0 | 468.7 | 455.4 |
| 65° | *2134.2* | *1894.9* | *854.4* | *588.4* | *525.2* | *561.8* | *535.2* | *482.0* | *442.1* | *428.8* | *422.2* |
| 67.5° | 1379.6 | 1286.5 | 734.7 | 531.9 | 478.7 | 508.6 | 472.1 | 445.5 | 402.2 | 395.6 | 405.6 |
| 70° | 844.4 | 874.3 | 615.0 | 468.7 | 432.2 | 425.5 | 432.2 | 405.6 | 359.0 | 369.0 | 382.3 |
| 72.5° | 598.4 | 644.9 | 528.6 | 408.9 | 369.0 | 355.7 | 385.6 | 369.0 | 335.8 | 345.7 | 359.0 |
| 75° | 428.8 | 478.7 | 435.5 | 335.8 | 312.5 | 305.8 | 359.0 | 369.0 | 345.7 | 352.4 | 362.4 |
| 77.5° | 252.6 | 305.8 | 309.2 | 259.3 | 236.0 | 272.6 | 382.3 | 425.5 | 408.9 | 388.9 | 379.0 |
| 80° | 162.9 | 182.8 | 219.4 | 166.2 | 166.2 | 236.0 | 418.9 | 518.6 | 445.5 | 395.6 | 388.9 |
| 82.5° | 83.1 | 96.4 | 142.9 | 106.4 | 99.7 | 176.2 | 412.2 | 495.3 | 492.0 | 438.8 | 428.8 |
| 85° | 23.3 | 29.9 | 66.5 | 46.5 | 39.9 | 93.1 | 309.2 | 372.3 | 332.4 | 242.7 | 246.0 |
| 87.5° | 3.3 | 3.3 | 0.0 | 0.0 | 3.3 | 13.3 | 36.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| 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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# LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-3

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-727-U-5WQ

Data in this report applies to families of products including GSS-SB1A-727-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

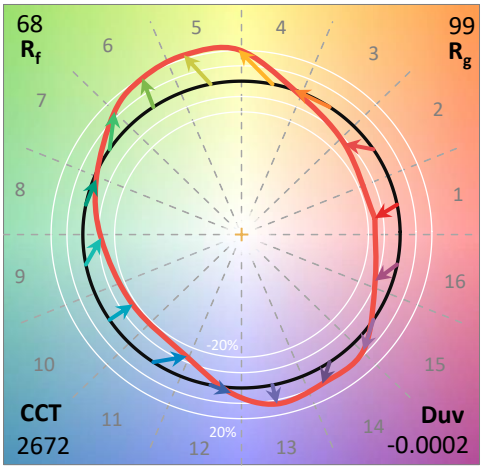
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-3 |
| 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-727-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 2700K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 2672 |
| CIE u': | 0.2638 |
| CIE v': | 0.5276 |
| Duv: | -0.0002 |
| CIE x: | 0.4619 |
| CIE y: | 0.4106 |
| CIE z: | 0.1275 |
| Peak Wavelength (nm): | 601 |
| Dominant Wavelength (nm): | 584 |
| Purity: | 61.88407 |
| Rf: | 67.9 |
| Rg: | 98.6 |

| | |
|---|---|
| CRI (Ra): | 71.1 |
| R1: | 68.3 |
| R2: | 79.8 |
| R3: | 91.2 |
| R4: | 69.4 |
| R5: | 66.5 |
| R6: | 72.6 |
| R7: | 77.0 |
| R8: | 44.1 |
| R9: | -27.8 |
| R10: | 54.4 |
| R11: | 65.8 |
| R12: | 45.6 |
| R13: | 69.8 |
| R14: | 94.5 |
| R15: | 60.1 |




## Test Conditions

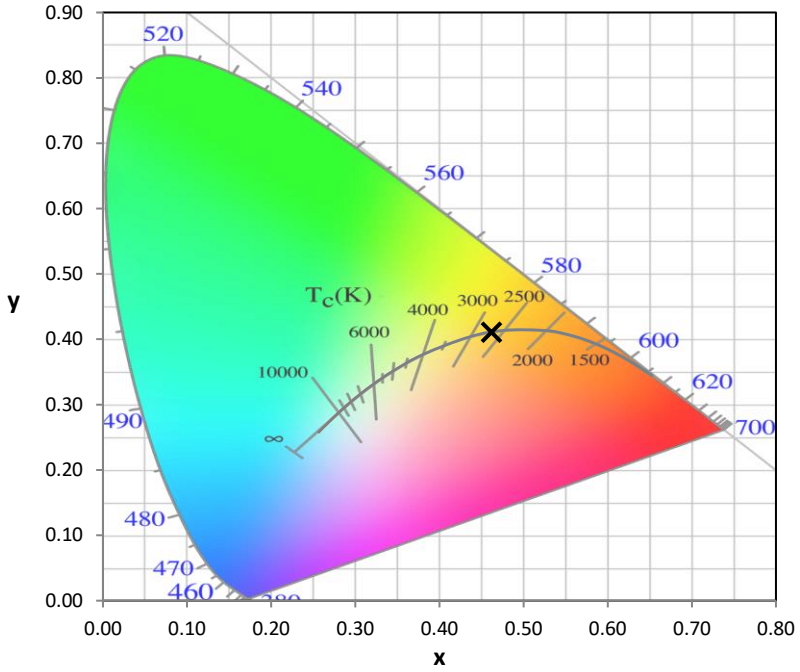
| | |
|---|---|
| Stabilization Time: | 21M |
| Operation Time: | 1H 21M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-3

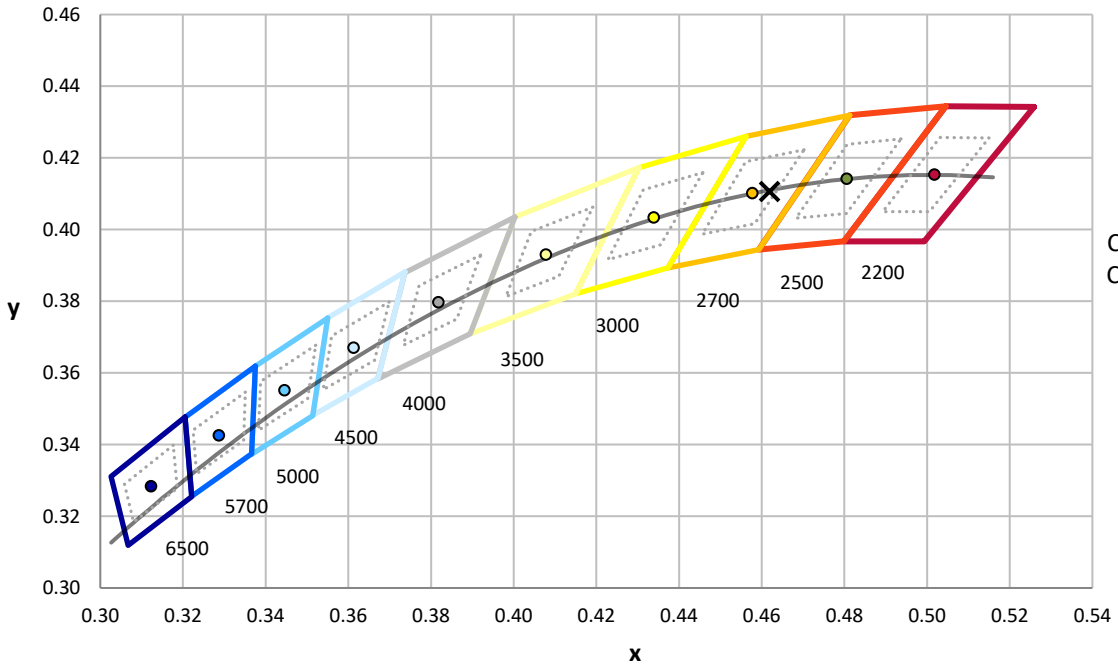
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

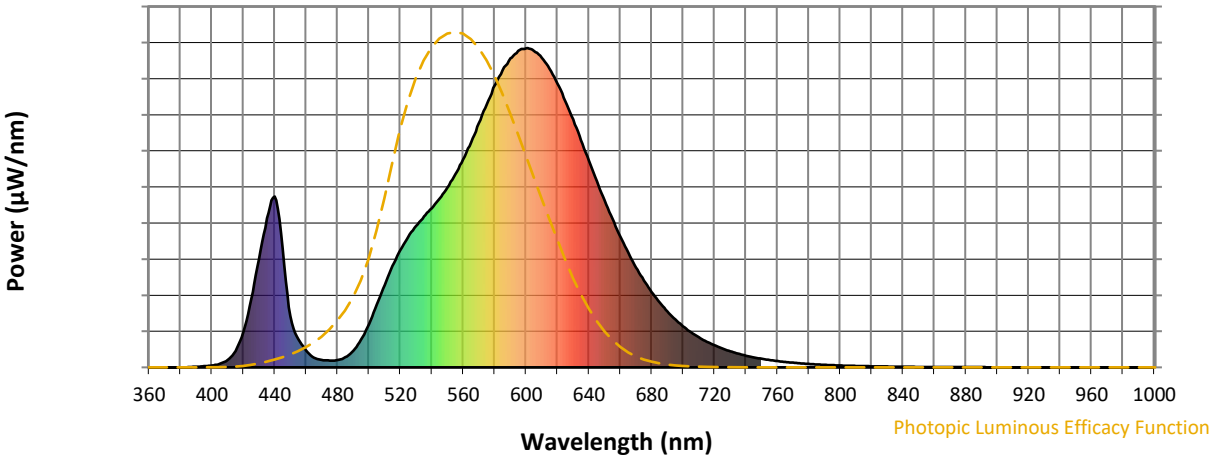



CCT = 2672K
CIE x = 0.4619
CIE y = 0.4106
Duv = -0.0002

Point lies inside the ANSI 2700K 4-step quadrangle

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## Photopic Flux vs. Wavelength

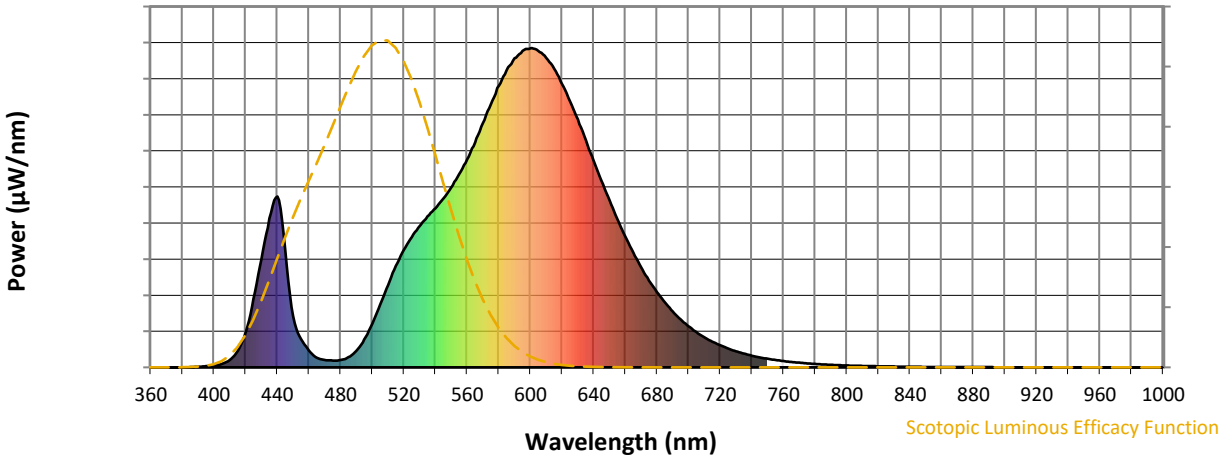



## Photopic Lumens: NR

| 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 | 52 | NR | 620 | 888 | NR | 750 | 27 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 87 | NR | 625 | 834 | NR | 755 | 23 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 135 | NR | 630 | 776 | NR | 760 | 20 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 196 | NR | 635 | 712 | NR | 765 | 17 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 258 | NR | 640 | 648 | NR | 770 | 15 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 317 | NR | 645 | 583 | NR | 775 | 12 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 368 | NR | 650 | 523 | NR | 780 | 11 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 408 | NR | 655 | 465 | NR | 785 | 9 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 443 | NR | 660 | 410 | NR | 790 | 8 | NR | 920 | 0 | NR |
| 405 | 11 | NR | 535 | 473 | NR | 665 | 360 | NR | 795 | 7 | NR | 925 | 0 | NR |
| 410 | 23 | NR | 540 | 498 | NR | 670 | 313 | NR | 800 | 6 | NR | 930 | 0 | NR |
| 415 | 51 | NR | 545 | 530 | NR | 675 | 272 | NR | 805 | 5 | NR | 935 | 0 | NR |
| 420 | 111 | NR | 550 | 563 | NR | 680 | 236 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 214 | NR | 555 | 605 | NR | 685 | 203 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 339 | NR | 560 | 651 | NR | 690 | 175 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 467 | NR | 565 | 705 | NR | 695 | 150 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 535 | NR | 570 | 765 | NR | 700 | 128 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 372 | NR | 575 | 824 | NR | 705 | 110 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 160 | NR | 580 | 882 | NR | 710 | 94 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 89 | NR | 585 | 930 | NR | 715 | 80 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 53 | NR | 590 | 968 | NR | 720 | 69 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 31 | NR | 595 | 991 | NR | 725 | 59 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 23 | NR | 600 | 999 | NR | 730 | 50 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 21 | NR | 605 | 992 | NR | 735 | 43 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 23 | NR | 610 | 969 | NR | 740 | 36 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 32 | NR | 615 | 935 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

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## Scotopic Flux vs. Wavelength

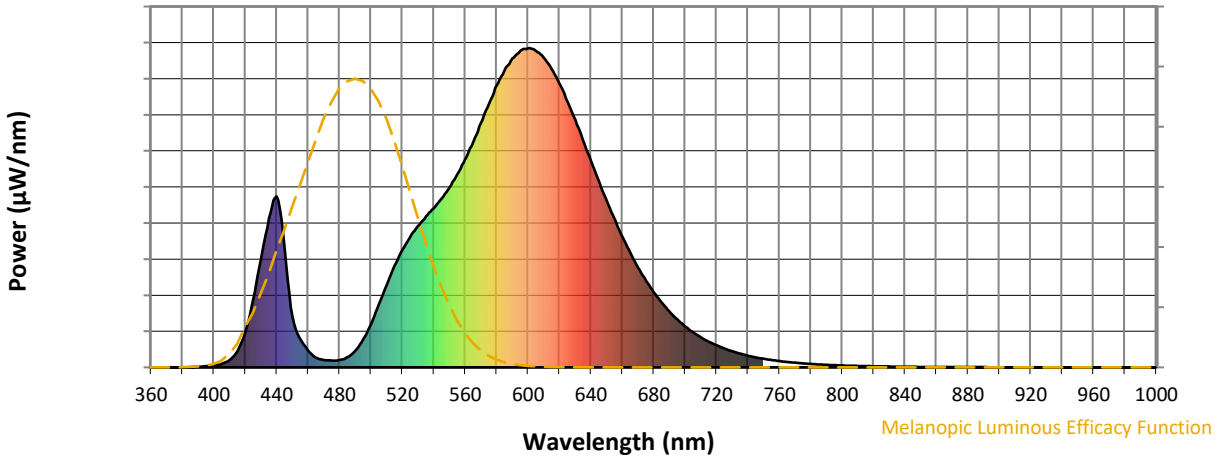



**Scotopic Lumens: NR** **S/P: 1.02**

| 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 | 52 | NR | 620 | 888 | NR | 750 | 27 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 87 | NR | 625 | 834 | NR | 755 | 23 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 135 | NR | 630 | 776 | NR | 760 | 20 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 196 | NR | 635 | 712 | NR | 765 | 17 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 258 | NR | 640 | 648 | NR | 770 | 15 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 317 | NR | 645 | 583 | NR | 775 | 12 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 368 | NR | 650 | 523 | NR | 780 | 11 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 408 | NR | 655 | 465 | NR | 785 | 9 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 443 | NR | 660 | 410 | NR | 790 | 8 | NR | 920 | 0 | NR |
| 405 | 11 | NR | 535 | 473 | NR | 665 | 360 | NR | 795 | 7 | NR | 925 | 0 | NR |
| 410 | 23 | NR | 540 | 498 | NR | 670 | 313 | NR | 800 | 6 | NR | 930 | 0 | NR |
| 415 | 51 | NR | 545 | 530 | NR | 675 | 272 | NR | 805 | 5 | NR | 935 | 0 | NR |
| 420 | 111 | NR | 550 | 563 | NR | 680 | 236 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 214 | NR | 555 | 605 | NR | 685 | 203 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 339 | NR | 560 | 651 | NR | 690 | 175 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 467 | NR | 565 | 705 | NR | 695 | 150 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 535 | NR | 570 | 765 | NR | 700 | 128 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 372 | NR | 575 | 824 | NR | 705 | 110 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 160 | NR | 580 | 882 | NR | 710 | 94 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 89 | NR | 585 | 930 | NR | 715 | 80 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 53 | NR | 590 | 968 | NR | 720 | 69 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 31 | NR | 595 | 991 | NR | 725 | 59 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 23 | NR | 600 | 999 | NR | 730 | 50 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 21 | NR | 605 | 992 | NR | 735 | 43 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 23 | NR | 610 | 969 | NR | 740 | 36 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 32 | NR | 615 | 935 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 1.71**

| 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 | 52 | NR | 620 | 888 | NR | 750 | 27 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 87 | NR | 625 | 834 | NR | 755 | 23 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 135 | NR | 630 | 776 | NR | 760 | 20 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 196 | NR | 635 | 712 | NR | 765 | 17 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 258 | NR | 640 | 648 | NR | 770 | 15 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 317 | NR | 645 | 583 | NR | 775 | 12 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 368 | NR | 650 | 523 | NR | 780 | 11 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 408 | NR | 655 | 465 | NR | 785 | 9 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 443 | NR | 660 | 410 | NR | 790 | 8 | NR | 920 | 0 | NR |
| 405 | 11 | NR | 535 | 473 | NR | 665 | 360 | NR | 795 | 7 | NR | 925 | 0 | NR |
| 410 | 23 | NR | 540 | 498 | NR | 670 | 313 | NR | 800 | 6 | NR | 930 | 0 | NR |
| 415 | 51 | NR | 545 | 530 | NR | 675 | 272 | NR | 805 | 5 | NR | 935 | 0 | NR |
| 420 | 111 | NR | 550 | 563 | NR | 680 | 236 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 214 | NR | 555 | 605 | NR | 685 | 203 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 339 | NR | 560 | 651 | NR | 690 | 175 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 467 | NR | 565 | 705 | NR | 695 | 150 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 535 | NR | 570 | 765 | NR | 700 | 128 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 372 | NR | 575 | 824 | NR | 705 | 110 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 160 | NR | 580 | 882 | NR | 710 | 94 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 89 | NR | 585 | 930 | NR | 715 | 80 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 53 | NR | 590 | 968 | NR | 720 | 69 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 31 | NR | 595 | 991 | NR | 725 | 59 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 23 | NR | 600 | 999 | NR | 730 | 50 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 21 | NR | 605 | 992 | NR | 735 | 43 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 23 | NR | 610 | 969 | NR | 740 | 36 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 32 | NR | 615 | 935 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

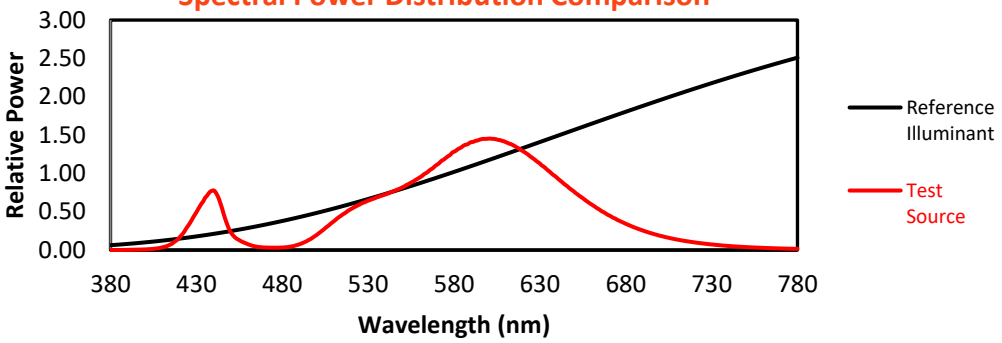
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# TM-30-18

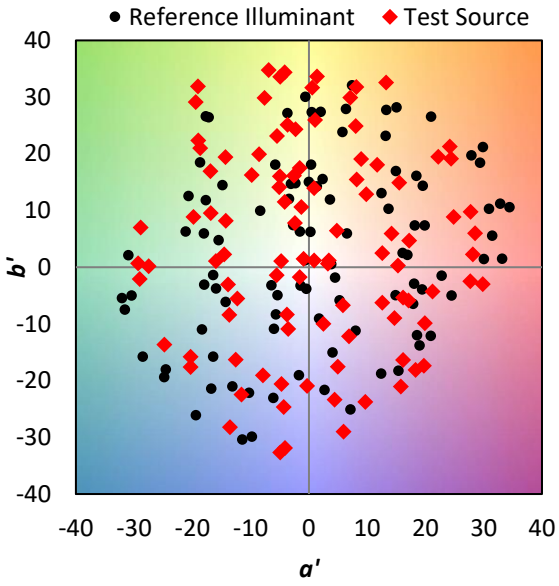
## Summary

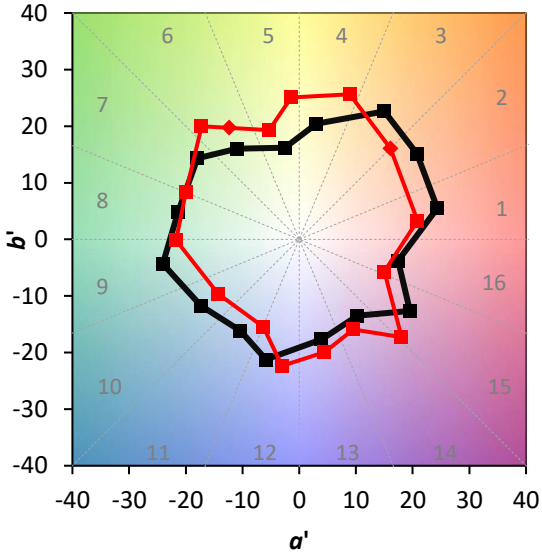
$R_f$ = 67.9
$R_g$ = 98.6
CIE $R_a$ = 71.1
$R_9$ = -27.8

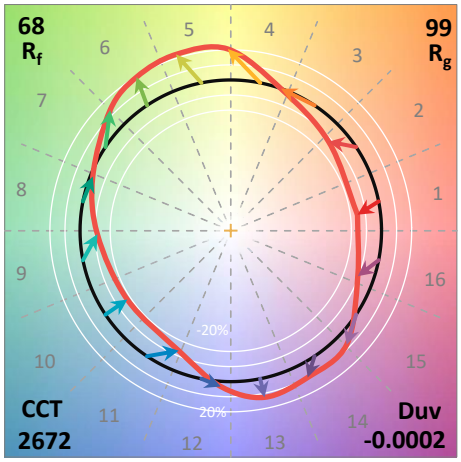
## Spectral Power Distribution Comparison

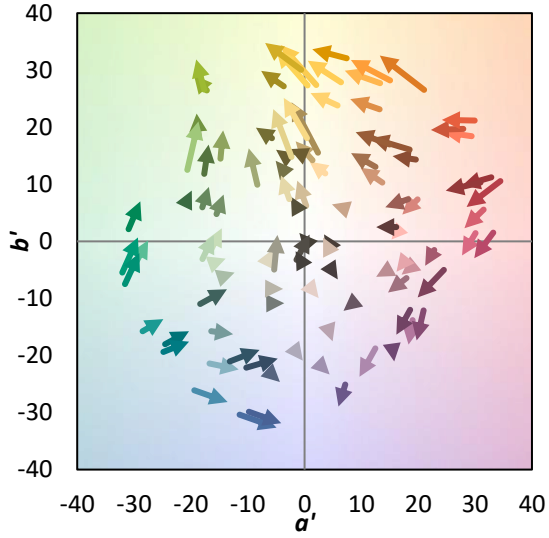



## Color Vector Graphics



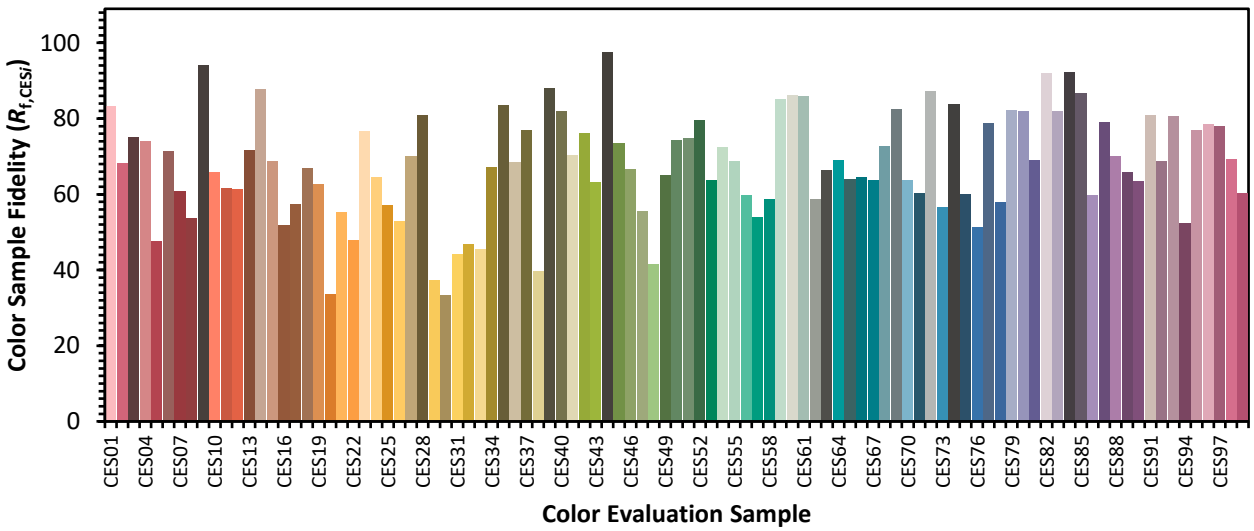



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**Individual Sample Fidelity Index ($R_{f,i}$)**

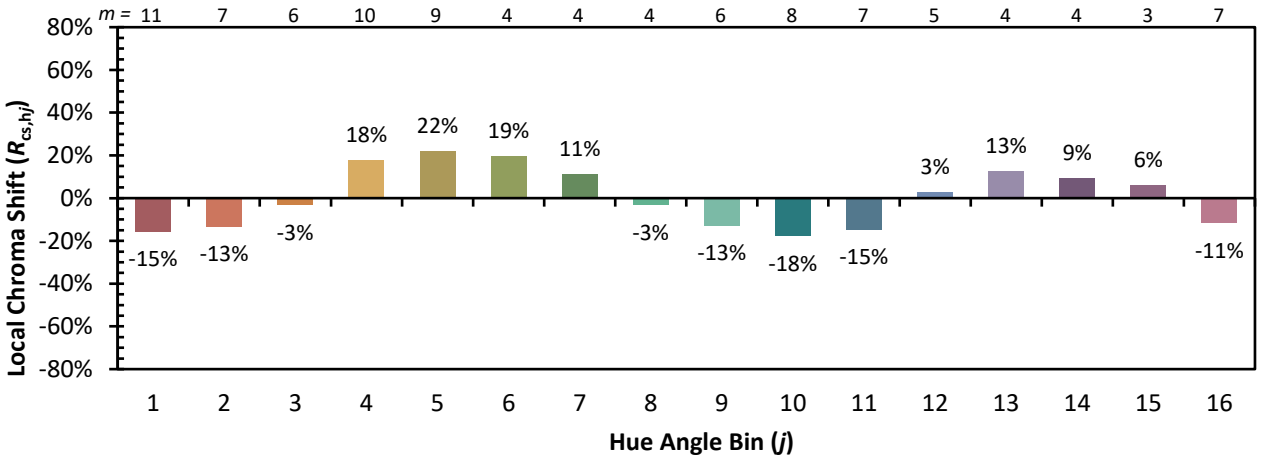
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 53 | CES51 = 75 | CES76 = 51 |
| CES02 = 63 | CES27 = 70 | CES52 = 80 | CES77 = 79 |
| CES03 = 31 | CES28 = 81 | CES53 = 64 | CES78 = 58 |
| CES04 = 71 | CES29 = 37 | CES54 = 73 | CES79 = 82 |
| CES05 = 50 | CES30 = 33 | CES55 = 69 | CES80 = 82 |
| CES06 = 52 | CES31 = 44 | CES56 = 60 | CES81 = 69 |
| CES07 = 42 | CES32 = 47 | CES57 = 54 | CES82 = 92 |
| CES08 = 41 | CES33 = 45 | CES58 = 59 | CES83 = 82 |
| CES09 = 29 | CES34 = 67 | CES59 = 85 | CES84 = 92 |
| CES10 = 77 | CES35 = 84 | CES60 = 86 | CES85 = 87 |
| CES11 = 60 | CES36 = 68 | CES61 = 86 | CES86 = 60 |
| CES12 = 66 | CES37 = 77 | CES62 = 59 | CES87 = 79 |
| CES13 = 44 | CES38 = 40 | CES63 = 66 | CES88 = 70 |
| CES14 = 74 | CES39 = 88 | CES64 = 69 | CES89 = 66 |
| CES15 = 72 | CES40 = 82 | CES65 = 64 | CES90 = 64 |
| CES16 = 48 | CES41 = 70 | CES66 = 65 | CES91 = 81 |
| CES17 = 51 | CES42 = 76 | CES67 = 64 | CES92 = 69 |
| CES18 = 57 | CES43 = 63 | CES68 = 73 | CES93 = 81 |
| CES19 = 73 | CES44 = 97 | CES69 = 83 | CES94 = 53 |
| CES20 = 67 | CES45 = 74 | CES70 = 64 | CES95 = 77 |
| CES21 = 88 | CES46 = 67 | CES71 = 60 | CES96 = 79 |
| CES22 = 80 | CES47 = 55 | CES72 = 87 | CES97 = 78 |
| CES23 = 92 | CES48 = 42 | CES73 = 57 | CES98 = 69 |
| CES24 = 92 | CES49 = 65 | CES74 = 84 | CES99 = 60 |
| CES25 = 73 | CES50 = 74 | CES75 = 60 | |

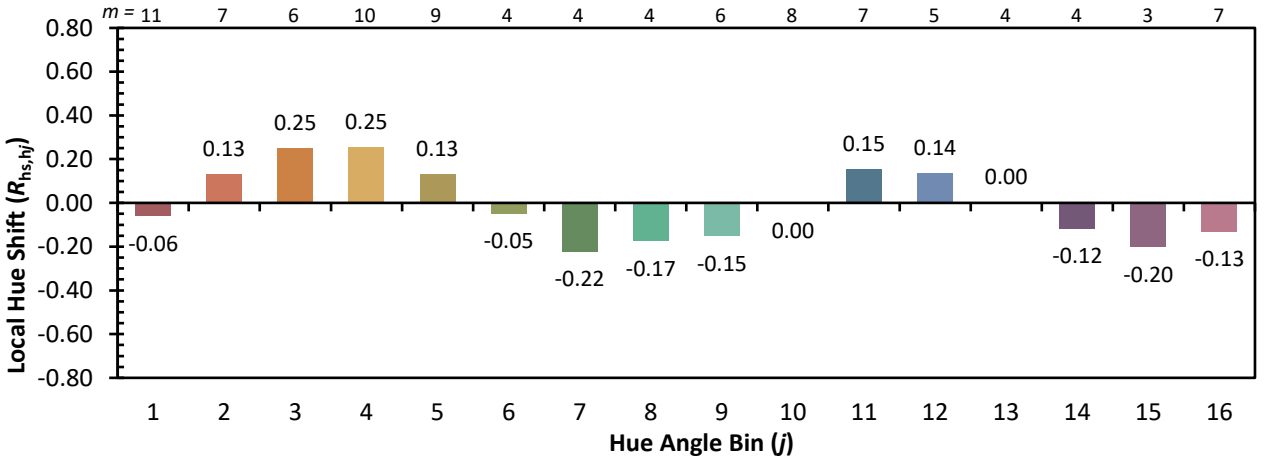


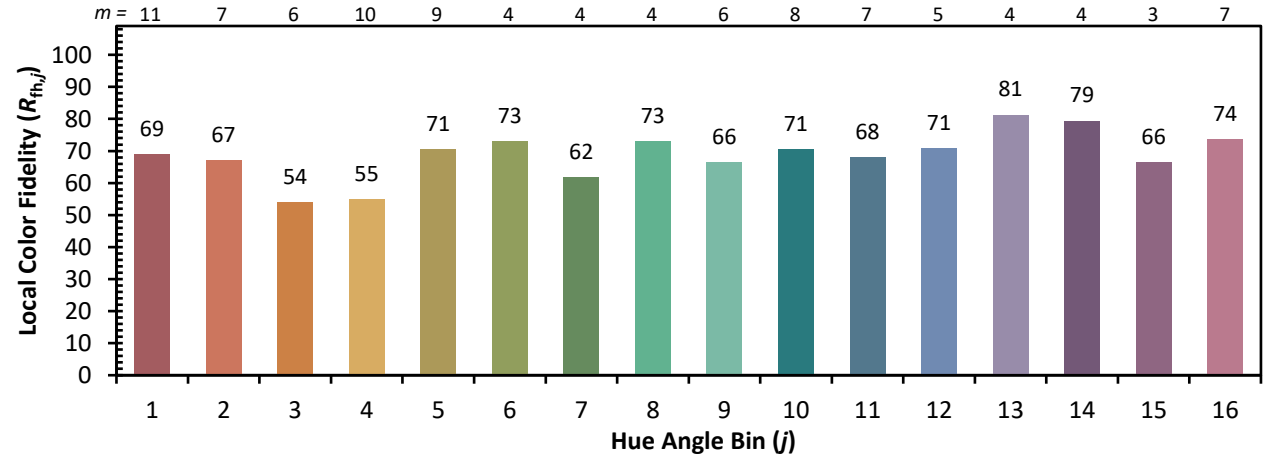
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## Color Rendition by Hue-Angle Bin



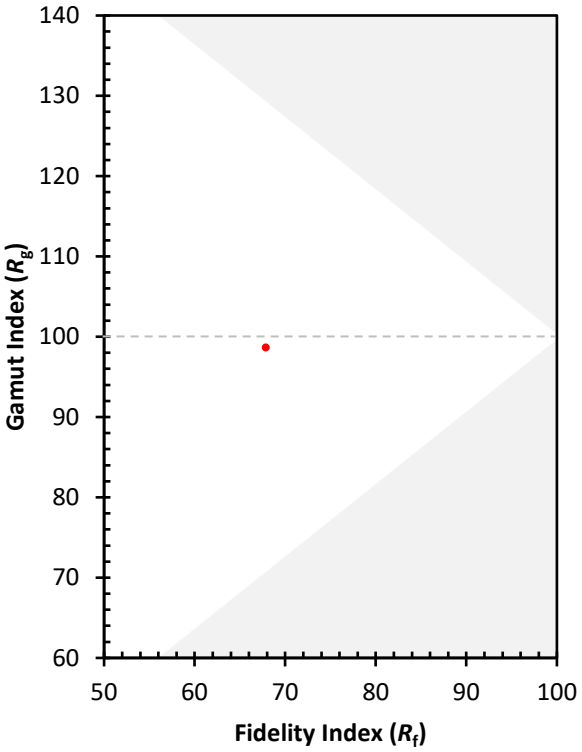



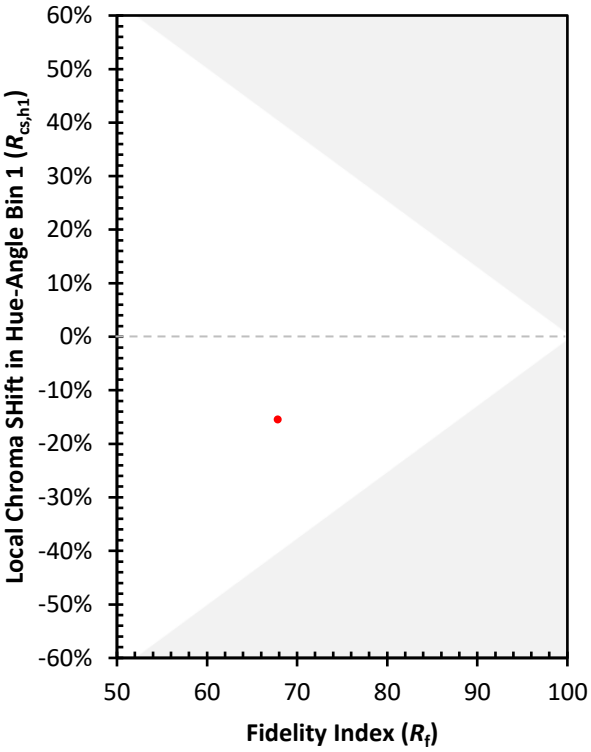



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## Measure Comparisons




(END OF REPORT)