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

Cooper Lighting Solutions Photometric Lab
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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: P1500998

Luminaire Tested: GSS-SB3B-727-U-T3LG

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: | P1500998 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 7/20/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB3B-727-U-T3LG |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 3SQUARE 109W 70CRI 2700K FIXTURE w/ TYPE III LOW GLARE DISTRIBUTION FIXTURE |
| Light Source: | (78) 2700K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 14954.7 lumens |
| Efficiency: | N/A |
| Efficacy: | 137.2 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 |

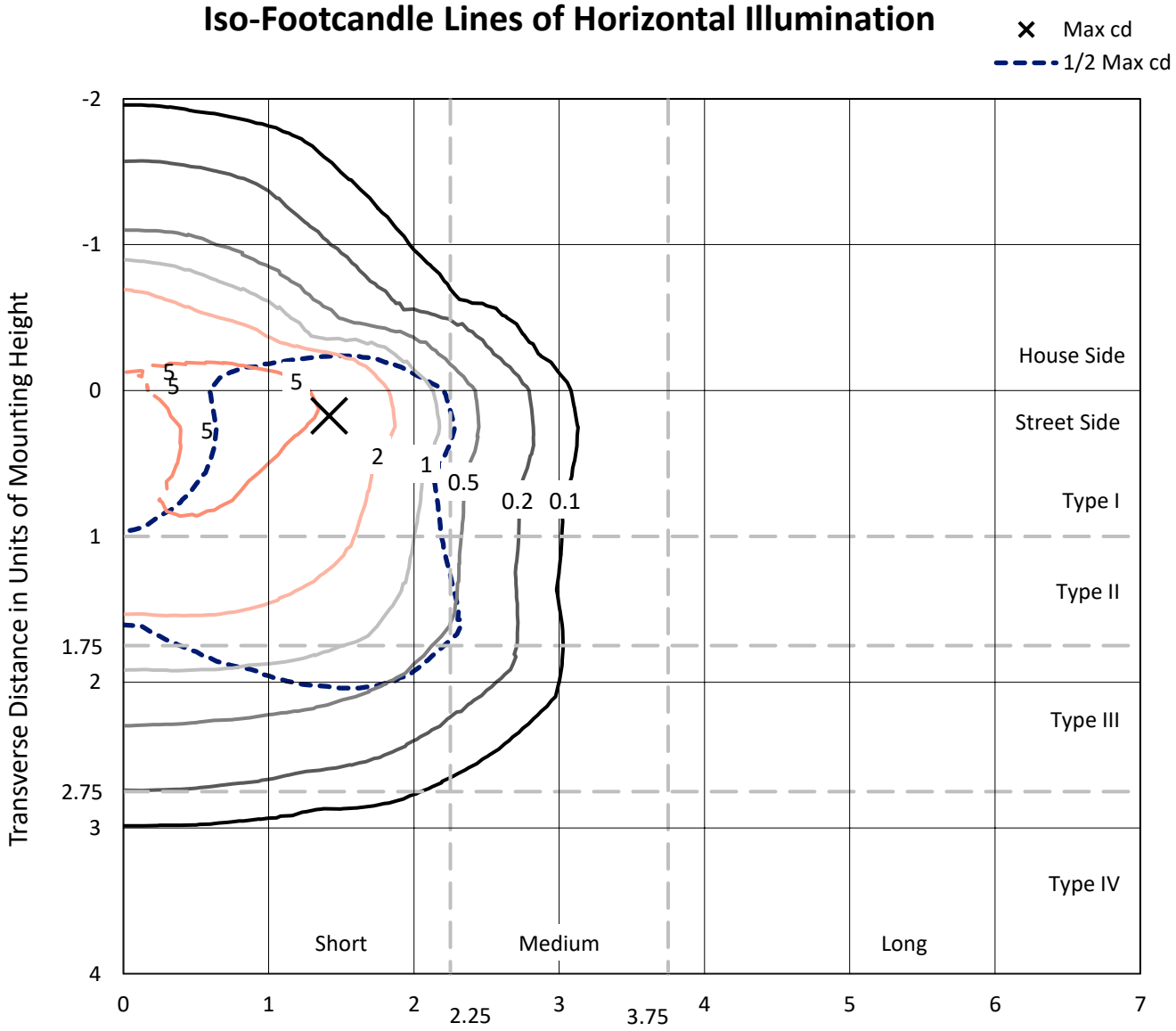
| | |
|---|---|
| Input Watts (W): | 109 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 8.7% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature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

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Scaled Data Report

REPORT NUMBER: P1500998
CATALOG NUMBER: GSS-SB3B-727-U-T3LG

## Iso-Footcandle Lines of Horizontal Illumination



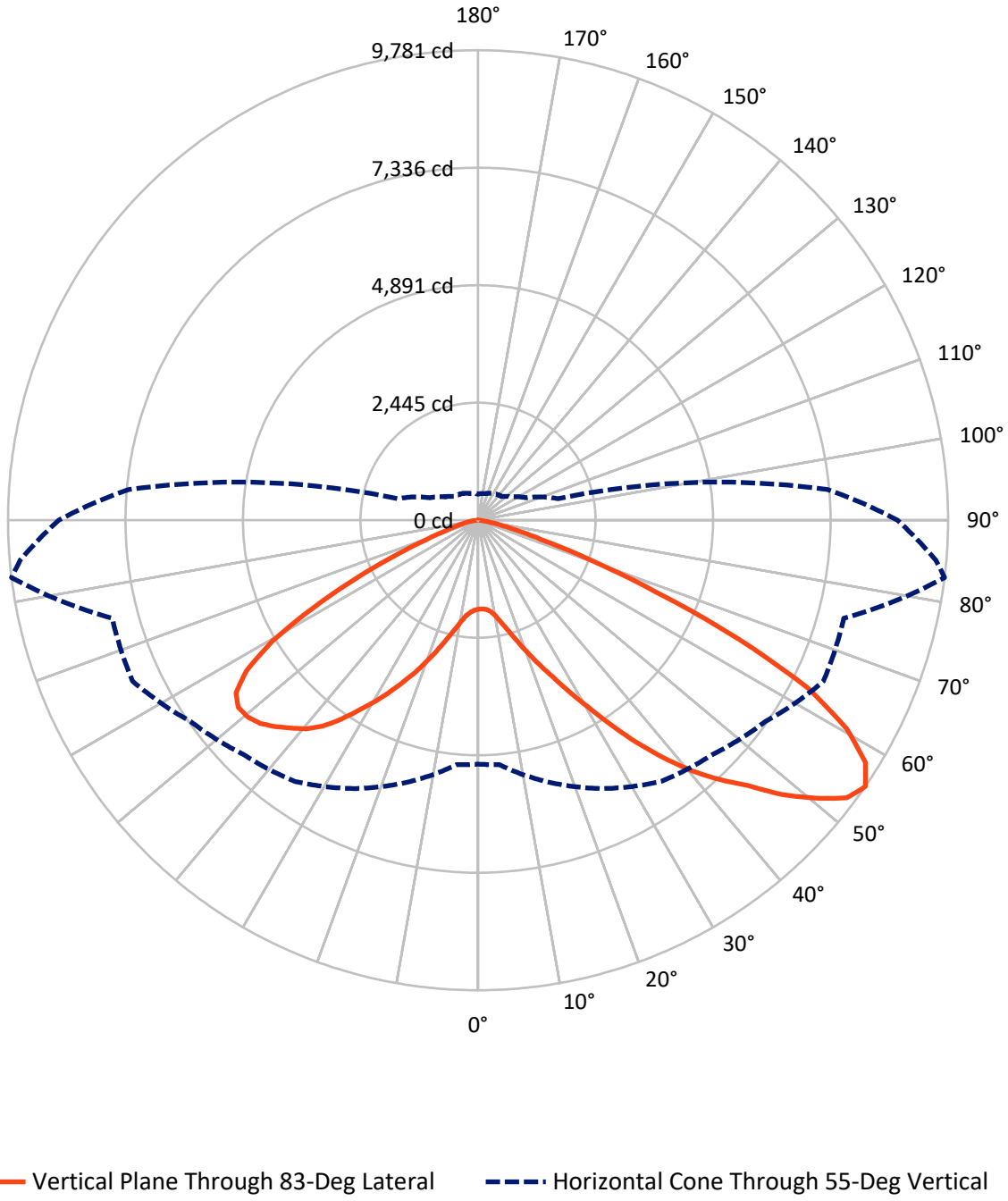

Based on 20 foot mounting height. Maximum calculated value = 7.8 fc
Type III - Short - N/A

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REPORT NUMBER: P1500998
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## Luminous Intensity Polar Plot



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Scaled Data Report

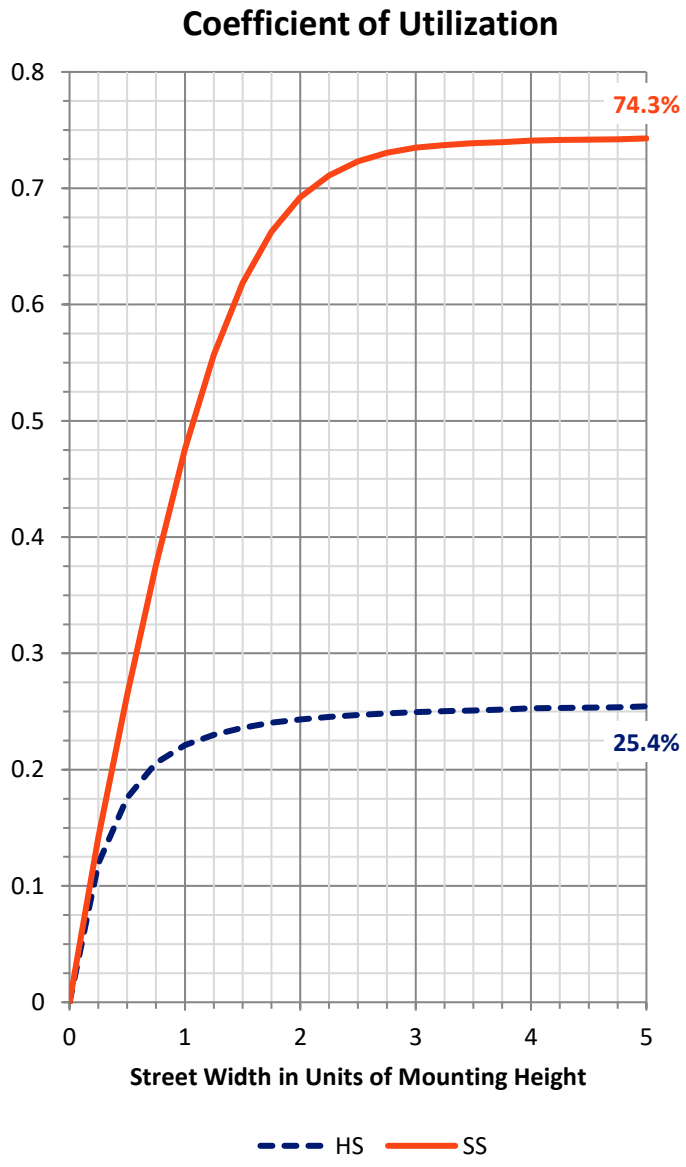
REPORT NUMBER: P1500998
CATALOG NUMBER: GSS-SB3B-727-U-T3LG

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 3837.7 | 0.0 | 3837.7 |
| | % Fixture | 25.7 | 0.0 | 25.7 |
| **Street Side** | Lumens | 11117.0 | 0.0 | 11117.0 |
| | % Fixture | 74.3 | 0.0 | 74.3 |
| **Total** | Lumens | 14954.7 | 0.0 | 14954.7 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 178.9 | 1.2 |
| 10°-20° | 582.7 | 3.9 |
| 20°-30° | 1166.6 | 7.8 |
| 30°-40° | 2075.5 | 13.9 |
| 40°-50° | 3127.7 | 20.9 |
| 50°-60° | 3811.3 | 25.5 |
| 60°-70° | 3082.0 | 20.6 |
| 70°-80° | 844.1 | 5.6 |
| 80°-90° | 86.0 | 0.6 |
| 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° | 14954.7 | 100.0 |
| 0°-180° | 14954.7 | 100.0 |



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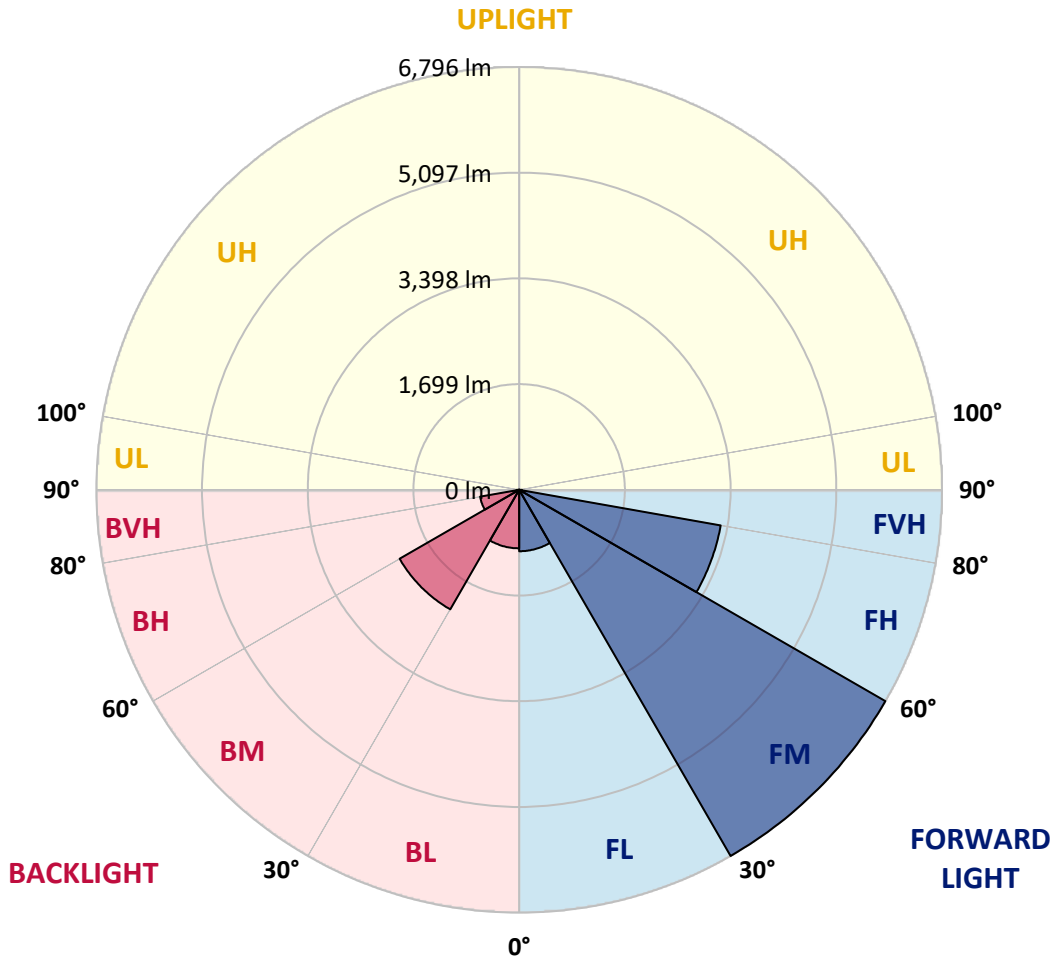
Scaled Data Report

REPORT NUMBER: P1500998
CATALOG NUMBER: GSS-SB3B-727-U-T3LG

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 987.4 | 6.6 | | | |
| FM | (30°-60°) | 6795.9 | 45.4 | | | |
| FH | (60°-80°) | 3288.9 | 22.0 | | | G2/5000 |
| FVH | (80°-90°) | 44.8 | 0.3 | | | G1/100 |
| BL | (0°-30°) | 940.7 | 6.3 | B2/1000 | | |
| BM | (30°-60°) | 2218.6 | 14.8 | B2/2500 | | |
| BH | (60°-80°) | 637.2 | 4.3 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 41.2 | 0.3 | | | 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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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 83° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1851.2 | 1851.2 | 1851.2 | 1851.2 | 1851.2 | 1851.2 | 1851.2 | 1851.2 | 1851.2 | *1851.2* | 1851.2 |
| 2.5° | 1798.1 | 1794.7 | 1791.4 | 1788.1 | 1794.7 | 1804.7 | 1814.7 | 1821.3 | 1837.9 | *1851.2* | 1844.6 |
| 5° | 1655.1 | 1648.5 | 1655.1 | 1681.7 | 1705.0 | 1744.9 | 1784.8 | 1811.4 | 1847.9 | *1864.5* | 1871.2 |
| 7.5° | 1528.8 | 1522.2 | 1528.8 | 1562.1 | 1602.0 | 1665.1 | 1748.2 | 1814.7 | 1881.1 | *1921.0* | 1927.7 |
| 10° | 1528.8 | 1532.2 | 1532.2 | 1545.5 | 1565.4 | 1628.6 | 1728.3 | 1854.6 | 1970.9 | *2027.4* | 2040.7 |
| 12.5° | 1578.7 | 1578.7 | 1578.7 | 1595.3 | 1608.6 | 1658.5 | 1771.5 | 1927.7 | 2113.8 | *2196.9* | 2206.9 |
| 15° | 1645.2 | 1641.8 | 1651.8 | 1661.8 | 1685.1 | 1734.9 | 1847.9 | 2034.0 | 2270.0 | *2396.3* | 2409.6 |
| 17.5° | 1738.2 | 1731.6 | 1741.6 | 1764.8 | 1798.1 | 1854.6 | 1967.6 | 2180.3 | 2486.0 | *2645.6* | 2665.5 |
| 20° | 1841.3 | 1837.9 | 1857.9 | 1894.4 | 1941.0 | 2010.8 | 2140.4 | 2356.4 | 2732.0 | *2934.7* | 2971.3 |
| 22.5° | 1964.2 | 1957.6 | 1994.1 | 2060.6 | 2123.8 | 2203.5 | 2359.7 | 2585.7 | 3014.5 | *3257.1* | 3293.7 |
| 25° | 2103.8 | 2103.8 | 2153.7 | 2233.4 | 2329.8 | 2472.7 | 2629.0 | 2878.2 | 3346.8 | *3606.1* | 3662.6 |
| 27.5° | 2333.2 | 2349.8 | 2369.7 | 2452.8 | 2589.1 | 2781.8 | 2948.0 | 3230.5 | 3709.1 | *4034.8* | 4054.8 |
| 30° | 2705.4 | 2698.7 | 2732.0 | 2788.5 | 2901.5 | 3104.2 | 3353.5 | 3655.9 | 4167.8 | *4510.1* | 4559.9 |
| 32.5° | 3041.1 | 3051.0 | 3097.6 | 3203.9 | 3340.2 | 3513.0 | 3812.1 | 4184.4 | 4666.3 | *5061.8* | 5085.1 |
| 35° | 3380.1 | 3386.7 | 3476.5 | 3636.0 | 3838.7 | 4031.5 | 4357.2 | 4722.8 | 5208.0 | *5676.7* | 5739.8 |
| 37.5° | 3855.4 | 3848.7 | 3938.4 | 4074.7 | 4347.2 | 4646.4 | 4908.9 | 5257.9 | 5726.5 | *6274.9* | 6348.0 |
| 40° | 4211.0 | 4247.5 | 4417.0 | 4589.9 | 4845.8 | 5154.9 | 5377.6 | 5706.6 | 6151.9 | *6859.9* | 6926.3 |
| 42.5° | 4576.6 | 4606.5 | 4832.5 | 5091.7 | 5360.9 | 5570.3 | 5743.1 | 6048.9 | 6490.9 | *7378.3* | 7414.9 |
| 45° | 4879.0 | 4918.9 | 5178.1 | 5507.2 | 5786.4 | 5999.1 | 6058.9 | 6344.7 | 6836.6 | *7876.9* | 7933.4 |
| 47.5° | 5071.8 | 5115.0 | 5420.8 | 5806.3 | 6092.1 | 6318.1 | 6298.2 | 6700.3 | 7205.5 | *8538.3* | 8518.3 |
| 50° | 5204.7 | 5231.3 | 5563.7 | 5975.8 | 6348.0 | 6497.6 | 6584.0 | 7102.5 | 7584.4 | *9093.3* | 9020.2 |
| 52.5° | 5301.1 | 5344.3 | 5646.8 | 6098.8 | 6490.9 | 6687.0 | 6919.7 | 7567.8 | 7847.0 | *9601.8* | 9439.0 |
| 55° | *5075.1* | *5108.3* | *5640.1* | *6161.9* | *6637.2* | *6896.4* | *7301.9* | *7930.1* | *7880.2* | *9781.3* | *9561.9* |
| 57.5° | 4842.5 | 4869.0 | 5360.9 | 6145.3 | 6796.7 | 7155.7 | 7737.3 | 7976.6 | 7584.4 | *9505.4* | 9229.6 |
| 60° | 4550.0 | 4569.9 | 5061.8 | 5969.1 | 6800.0 | 7358.4 | 7960.0 | 7637.6 | 7036.0 | *8810.8* | 8548.2 |
| 62.5° | 4011.6 | 4011.6 | 4553.3 | 5493.9 | 6633.9 | 7461.4 | 7900.1 | 6996.1 | 6301.5 | *7717.3* | 7355.1 |
| 65° | 3479.8 | 3456.5 | 3822.1 | 4646.4 | 6191.8 | 7434.8 | 7451.5 | 6185.2 | 5161.5 | *5952.5* | 5670.0 |
| 67.5° | 2901.5 | 2904.8 | 3120.8 | 3772.3 | 5015.3 | 6879.8 | 6504.2 | 4779.3 | 3596.1 | *4008.2* | 3862.0 |
| 70° | 1964.2 | 2014.1 | 2233.4 | 2738.6 | 3782.2 | 4875.7 | 5178.1 | 3237.2 | 2243.4 | *2489.4* | 2369.7 |
| 72.5° | 747.8 | 757.8 | 1013.7 | 1435.8 | 2389.7 | 2931.4 | 3612.7 | 1811.4 | 1312.8 | *1372.6* | 1379.3 |
| 75° | 315.7 | 329.0 | 432.1 | 604.9 | 1060.2 | 1598.6 | 1901.1 | 917.3 | 797.7 | *820.9* | 814.3 |
| 77.5° | 212.7 | 219.4 | 262.6 | 325.7 | 478.6 | 641.5 | 794.3 | 518.5 | 488.6 | *458.7* | 445.4 |
| 80° | 159.5 | 159.5 | 189.4 | 219.4 | 269.2 | 329.0 | 345.7 | 262.6 | 292.5 | *242.6* | 236.0 |
| 82.5° | 103.0 | 109.7 | 119.6 | 129.6 | 152.9 | 162.9 | 139.6 | 142.9 | 169.5 | *126.3* | 119.6 |
| 85° | 49.9 | 53.2 | 56.5 | 59.8 | 59.8 | 56.5 | 49.9 | 63.1 | 86.4 | *53.2* | 49.9 |
| 87.5° | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 3.3 | 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: P1500998
CATALOG NUMBER: GSS-SB3B-727-U-T3LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1851.2 | 1851.2 | 1851.2 | 1851.2 | 1851.2 | 1851.2 | 1851.2 | 1851.2 | 1851.2 | 1851.2 | 1851.2 |
| 2.5° | 1854.6 | 1867.9 | 1877.8 | 1884.5 | 1901.1 | 1897.8 | 1907.7 | 1914.4 | 1921.0 | 1931.0 | 1917.7 |
| 5° | 1887.8 | 1911.1 | 1937.6 | 1957.6 | 1977.5 | 1987.5 | 1990.8 | 1997.5 | 2000.8 | 2007.4 | 2004.1 |
| 7.5° | 1960.9 | 1987.5 | 2027.4 | 2047.3 | 2063.9 | 2063.9 | 2054.0 | 2050.6 | 2040.7 | 2047.3 | 2047.3 |
| 10° | 2083.9 | 2123.8 | 2167.0 | 2170.3 | 2150.4 | 2127.1 | 2090.5 | 2070.6 | 2044.0 | 2037.4 | 2030.7 |
| 12.5° | 2263.4 | 2316.5 | 2349.8 | 2326.5 | 2256.7 | 2170.3 | 2073.9 | 1984.2 | 1914.4 | 1884.5 | 1877.8 |
| 15° | 2466.1 | 2532.6 | 2539.2 | 2472.7 | 2346.4 | 2137.1 | 1934.3 | 1834.6 | 1798.1 | 1798.1 | 1794.7 |
| 17.5° | 2745.3 | 2791.8 | 2765.2 | 2605.7 | 2323.2 | 1980.9 | 1834.6 | 1818.0 | 1828.0 | 1841.3 | 1841.3 |
| 20° | 3037.8 | 3090.9 | 2981.2 | 2698.7 | 2180.3 | 1887.8 | 1844.6 | 1857.9 | 1881.1 | 1894.4 | 1891.1 |
| 22.5° | 3386.7 | 3413.3 | 3200.6 | 2702.1 | 2027.4 | 1864.5 | 1864.5 | 1881.1 | 1897.8 | 1917.7 | 1917.7 |
| 25° | 3745.7 | 3735.7 | 3403.3 | 2579.1 | 1941.0 | 1857.9 | 1851.2 | 1864.5 | 1871.2 | 1881.1 | 1877.8 |
| 27.5° | 4147.8 | 4094.6 | 3559.6 | 2383.0 | 1914.4 | 1837.9 | 1804.7 | 1791.4 | 1798.1 | 1808.0 | 1811.4 |
| 30° | 4609.8 | 4483.5 | 3685.8 | 2260.0 | 1904.4 | 1791.4 | 1711.6 | 1675.1 | 1668.4 | 1681.7 | 1681.7 |
| 32.5° | 5144.9 | 4872.4 | 3762.3 | 2243.4 | 1894.4 | 1708.3 | 1602.0 | 1532.2 | 1518.9 | 1525.5 | 1542.1 |
| 35° | 5693.3 | 5341.0 | 3742.3 | 2286.6 | 1897.8 | 1641.8 | 1485.6 | 1392.6 | 1379.3 | 1385.9 | 1402.6 |
| 37.5° | 6268.3 | 5786.4 | 3665.9 | 2353.1 | 1871.2 | 1552.1 | 1379.3 | 1266.3 | 1246.3 | 1259.6 | 1266.3 |
| 40° | 6713.6 | 6161.9 | 3476.5 | 2379.7 | 1824.6 | 1439.1 | 1256.3 | 1159.9 | 1106.8 | 1103.4 | 1120.0 |
| 42.5° | 7125.8 | 6457.7 | 3270.4 | 2336.5 | 1728.3 | 1319.5 | 1130.0 | 1033.6 | 950.5 | 887.4 | 887.4 |
| 45° | 7537.9 | 6756.8 | 3061.0 | 2213.5 | 1568.7 | 1193.2 | 997.1 | 867.5 | 771.1 | 724.5 | 727.9 |
| 47.5° | 7950.0 | 7046.0 | 2811.7 | 2027.4 | 1409.2 | 1060.2 | 854.2 | 751.1 | 684.7 | 648.1 | 648.1 |
| 50° | 8332.2 | 7255.4 | 2492.7 | 1731.6 | 1226.4 | 927.3 | 754.5 | 694.6 | 644.8 | 611.5 | 604.9 |
| 52.5° | 8667.9 | 7395.0 | 2060.6 | 1372.6 | 1027.0 | 777.7 | 701.3 | 654.7 | 618.2 | 581.6 | 571.7 |
| 55° | *8727.7* | *7301.9* | *1724.9* | *1103.4* | *847.5* | *698.0* | *661.4* | *621.5* | *571.7* | *555.0* | *545.1* |
| 57.5° | 8358.8 | 6810.0 | 1455.7 | 930.6 | 724.5 | 641.5 | 628.2 | 581.6 | 541.7 | 525.1 | 515.2 |
| 60° | 7730.6 | 5916.0 | 1203.1 | 797.7 | 644.8 | 588.3 | 604.9 | 558.4 | 495.2 | 485.2 | 475.3 |
| 62.5° | 6600.6 | 4616.5 | 960.5 | 671.4 | 584.9 | 548.4 | 565.0 | 498.5 | 445.4 | 432.1 | 428.7 |
| 65° | 5131.6 | 3303.6 | 807.6 | 591.6 | 538.4 | 508.5 | 501.9 | 442.0 | 402.2 | 392.2 | 392.2 |
| 67.5° | 3582.8 | 2100.5 | 674.7 | 541.7 | 478.6 | 458.7 | 455.3 | 415.4 | 388.9 | 378.9 | 378.9 |
| 70° | 2193.6 | 1272.9 | 568.3 | 495.2 | 422.1 | 385.5 | 408.8 | 402.2 | 362.3 | 352.3 | 349.0 |
| 72.5° | 1140.0 | 761.1 | 498.5 | 455.3 | 355.6 | 329.0 | 365.6 | 368.9 | 335.7 | 349.0 | 345.7 |
| 75° | 661.4 | 528.4 | 435.4 | 402.2 | 282.5 | 275.9 | 319.1 | 352.3 | 325.7 | 335.7 | 329.0 |
| 77.5° | 378.9 | 339.0 | 335.7 | 329.0 | 222.7 | 226.0 | 285.8 | 315.7 | 279.2 | 289.2 | 265.9 |
| 80° | 209.4 | 219.4 | 232.7 | 206.1 | 156.2 | 176.1 | 229.3 | 252.6 | 212.7 | 209.4 | 192.8 |
| 82.5° | 109.7 | 136.3 | 156.2 | 132.9 | 89.7 | 106.4 | 156.2 | 156.2 | 136.3 | 129.6 | 126.3 |
| 85° | 49.9 | 56.5 | 73.1 | 66.5 | 33.2 | 39.9 | 73.1 | 79.8 | 69.8 | 63.1 | 59.8 |
| 87.5° | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 6.6 | 10.0 | 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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# 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

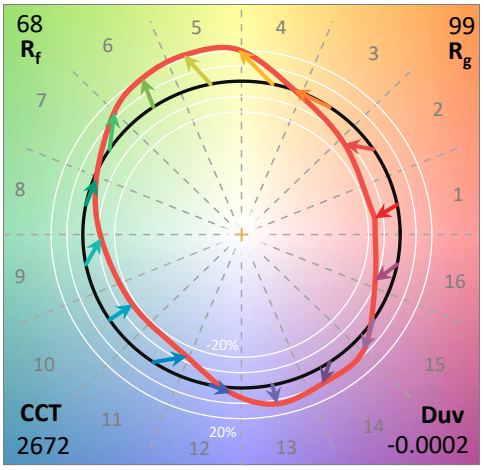
## Test Information

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

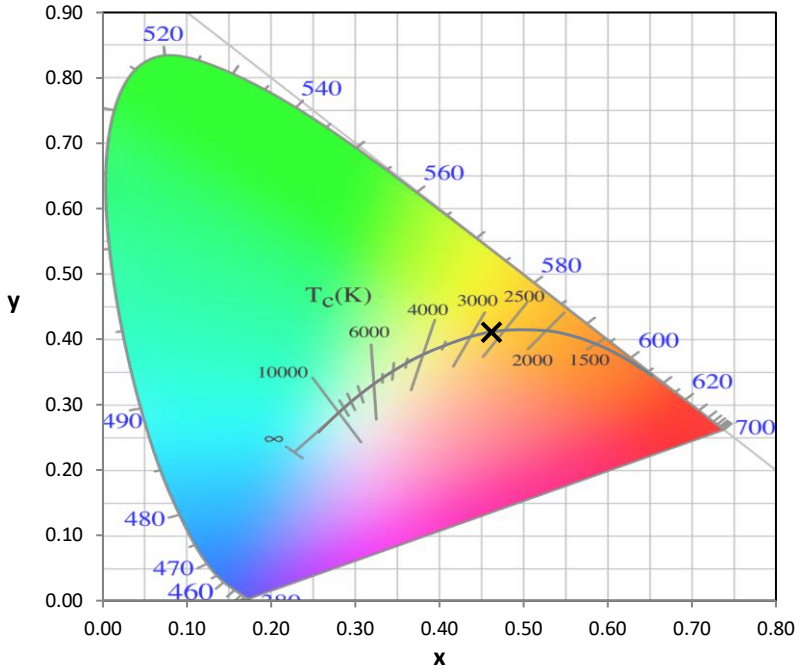
| | |
|---|---|
| Stabilization Time: | 21M |
| Operation Time: | 1H 21M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-3

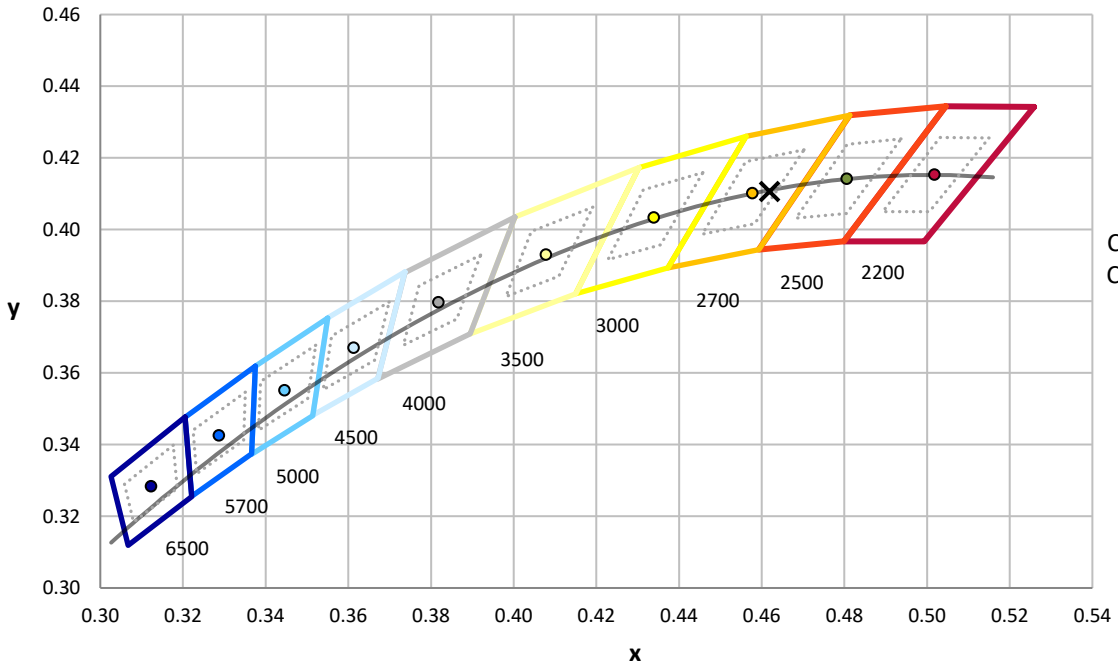
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

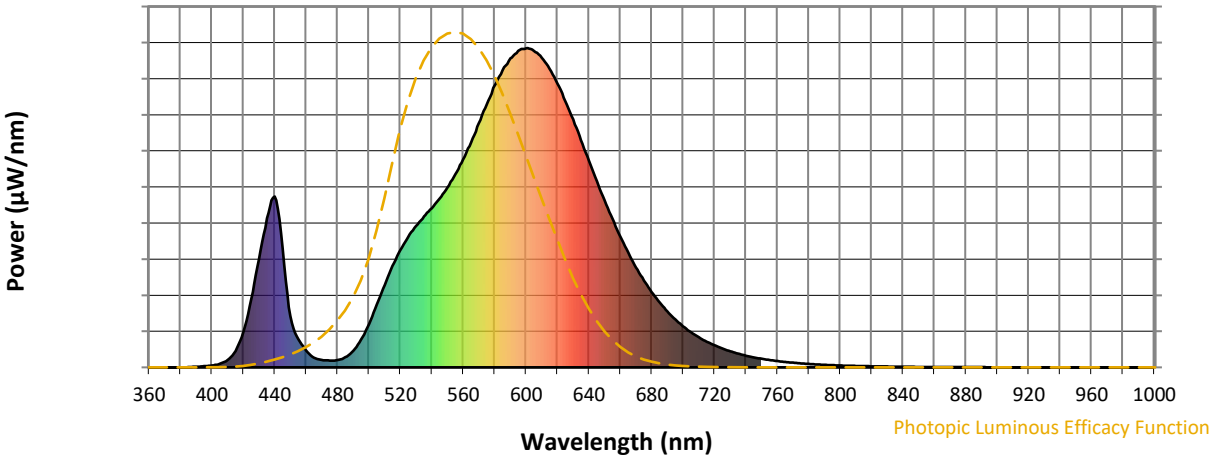



CCT = 2672K
CIE x = 0.4619
CIE y = 0.4106
Duv = -0.0002

Point lies inside the ANSI 2700K 4-step quadrangle

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## Photopic Flux vs. Wavelength

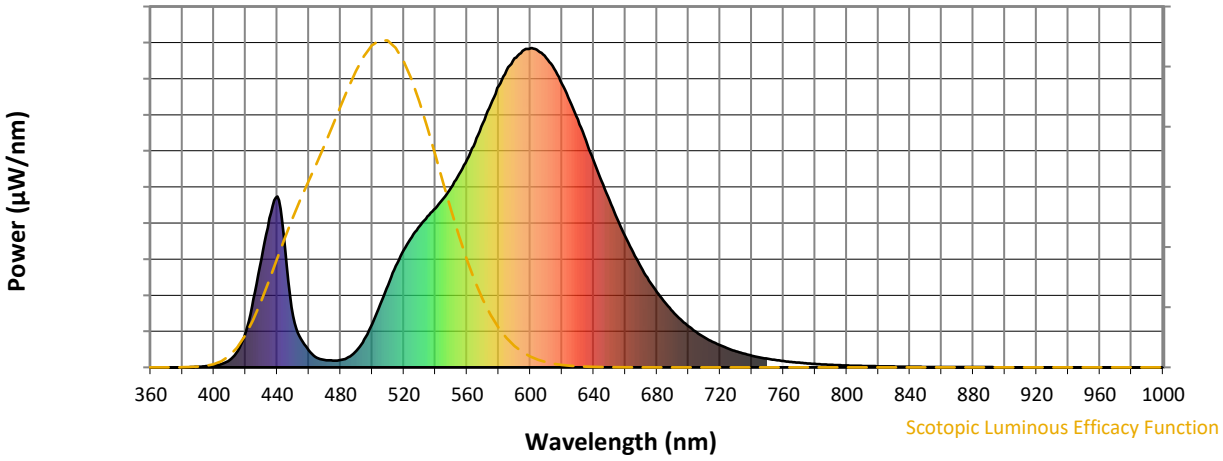



## Photopic Lumens: NR

| 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

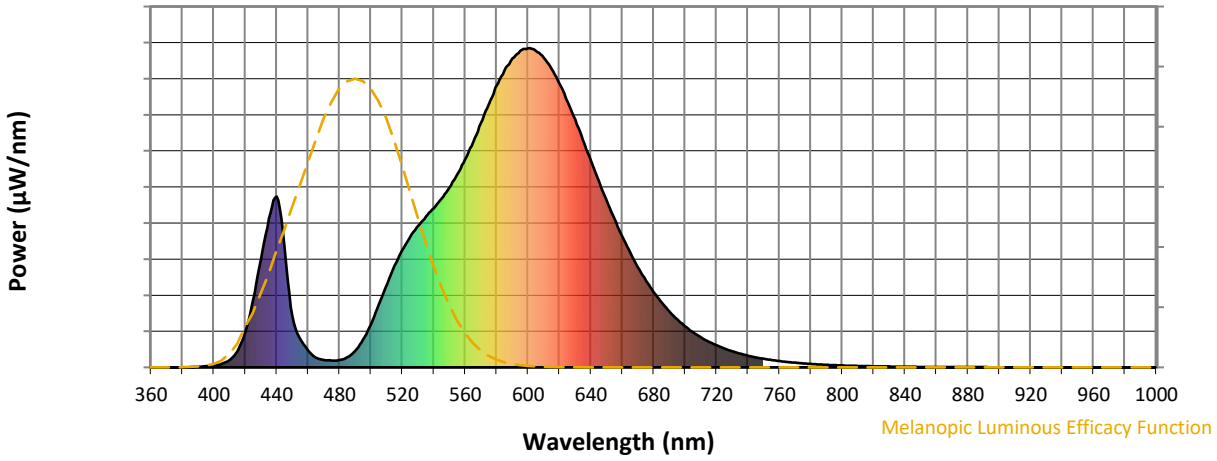



**Scotopic Lumens: NR** **S/P: 1.02**

| 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 | | | |

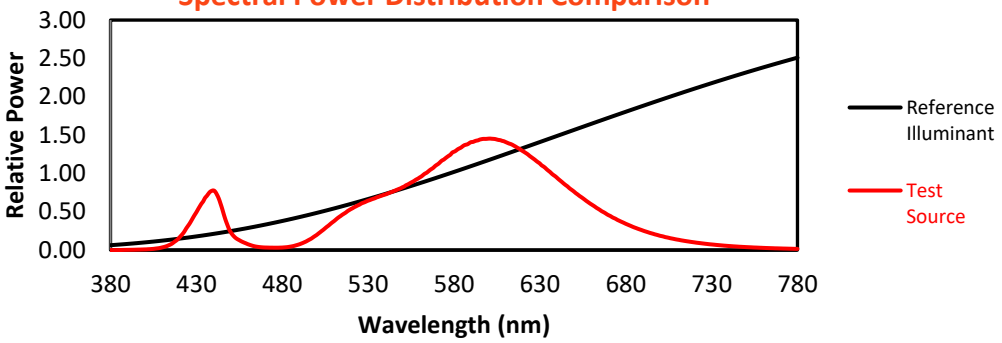
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# TM-30-18

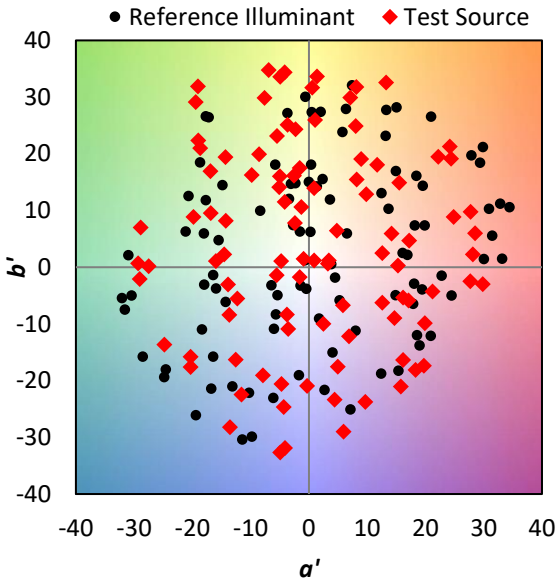
## Summary

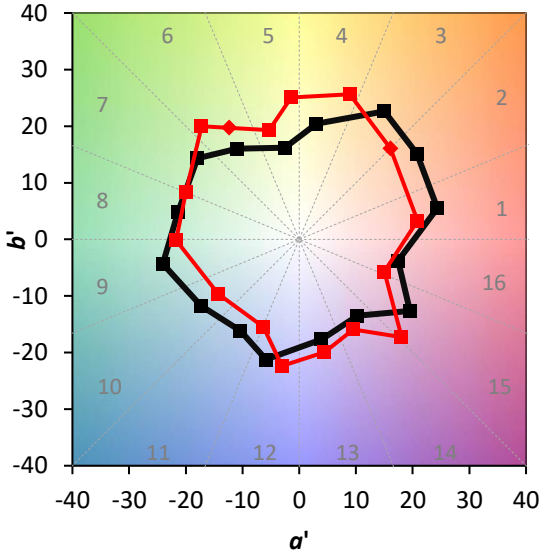
$R_f$ = 67.9
$R_g$ = 98.6
CIE $R_a$ = 71.1
$R_9$ = -27.8

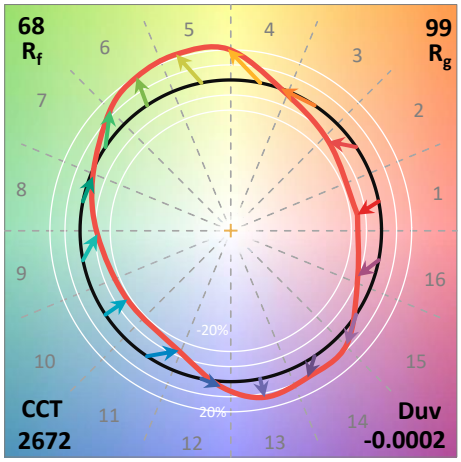
## Spectral Power Distribution Comparison

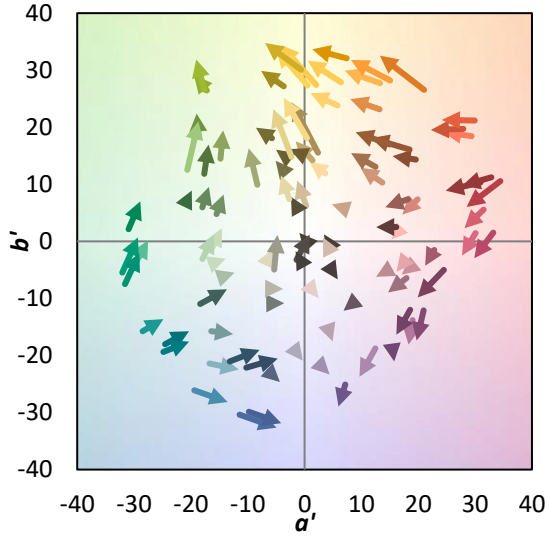



## Color Vector Graphics



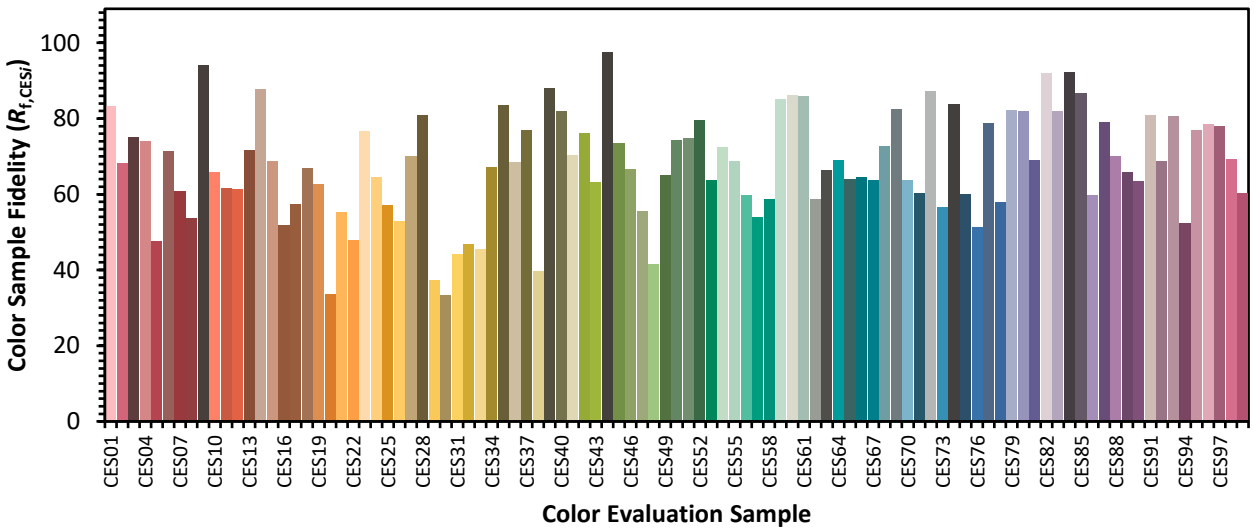



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# TM-30-18

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

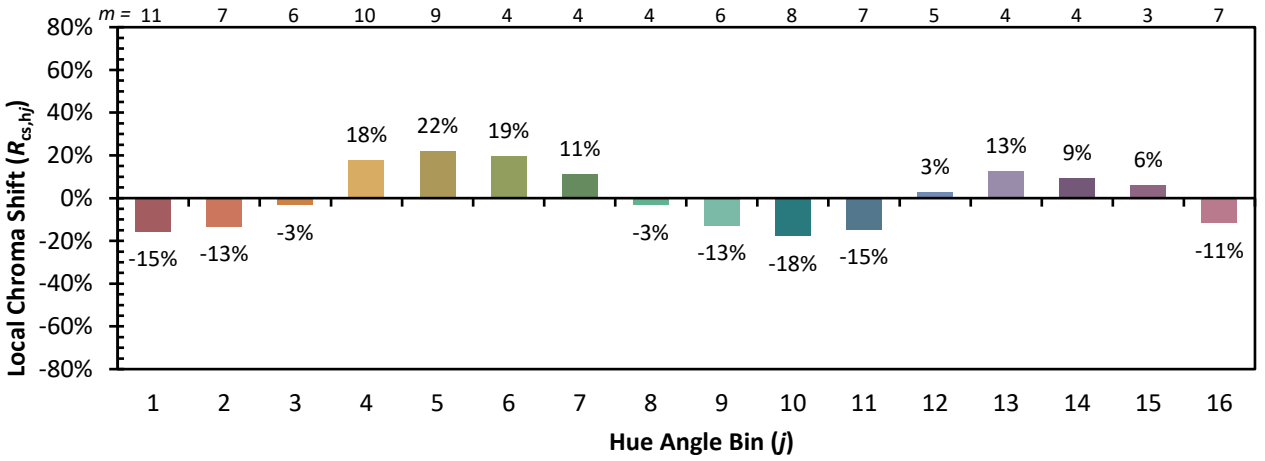
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 53 | CES51 = 75 | CES76 = 51 |
| CES02 = 63 | CES27 = 70 | CES52 = 80 | CES77 = 79 |
| CES03 = 31 | CES28 = 81 | CES53 = 64 | CES78 = 58 |
| CES04 = 71 | CES29 = 37 | CES54 = 73 | CES79 = 82 |
| CES05 = 50 | CES30 = 33 | CES55 = 69 | CES80 = 82 |
| CES06 = 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 | |

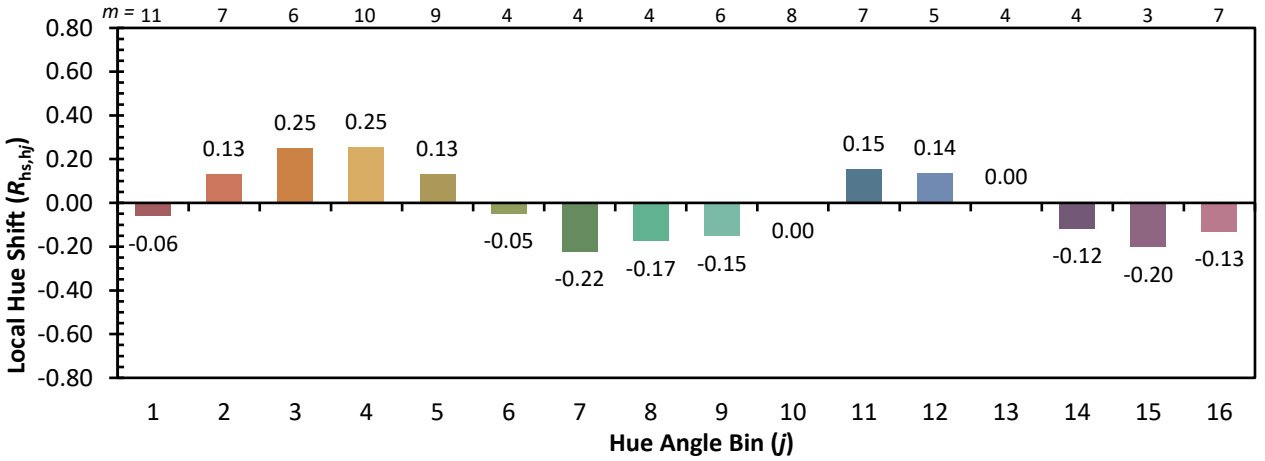


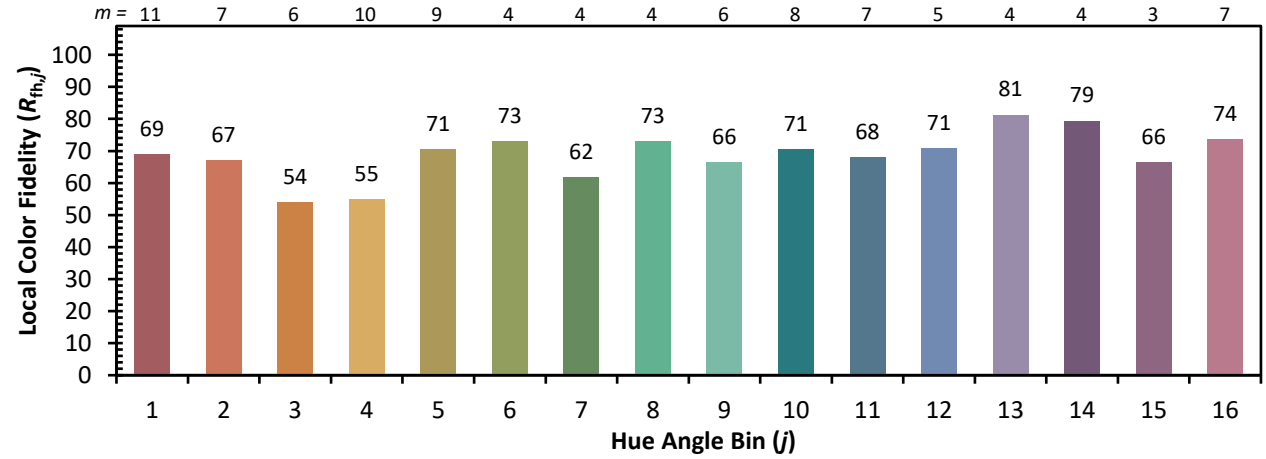
REPORT NUMBER: SP1-2407-184-3

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## Color Rendition by Hue-Angle Bin



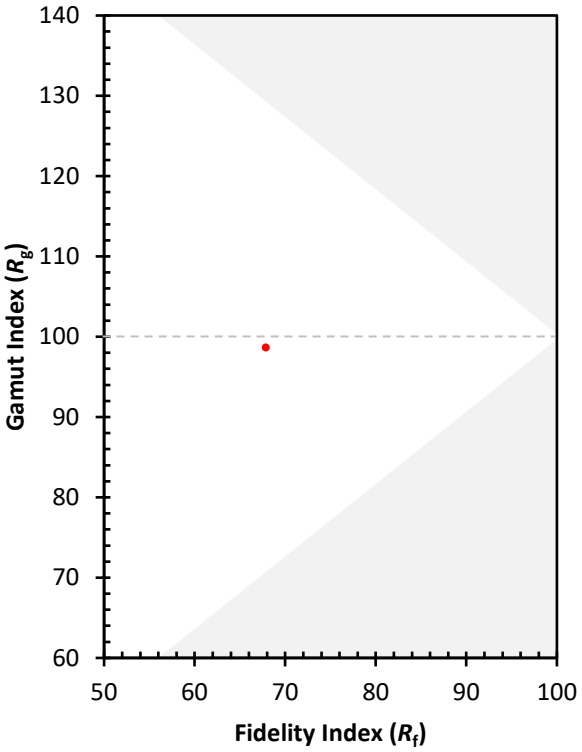



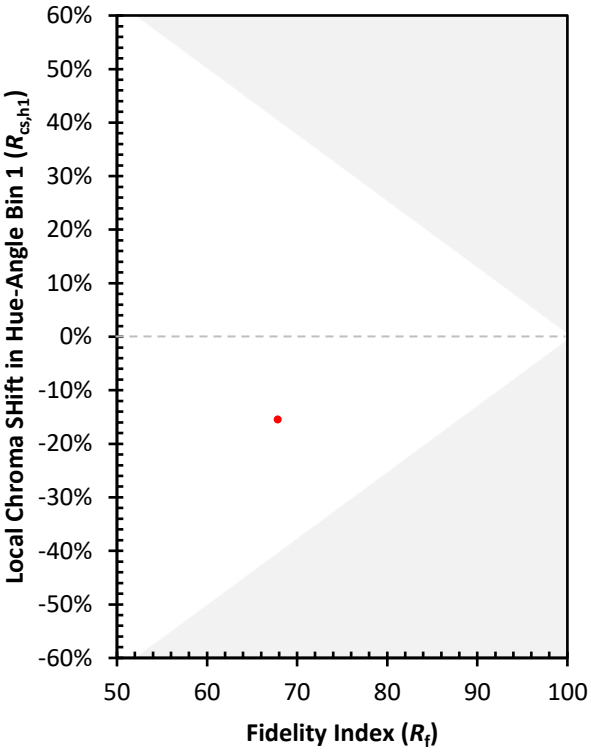



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## Measure Comparisons




(END OF REPORT)