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

Scaled data based on original data using

LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P1358803

Luminaire Tested: **GSS-SB4A-727-U-SL4-HSS**

Issue Date: 02/18/2026

Report Generated By 670245763

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-08 |
| Report Number: | P1358803 |
| Test Lab: | INNOVATION CENTER(G3) |
| Issue Date: | 02/18/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB4A-727-U-SL4-HSS |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 4SQUARE 114W 70CRI 2700K FIXTURE w/ TYPE IV SPILL CONTROL DISTRIBUTION OPTIC AND HOUSE SIDE SHIELD |
| Light Source: | (104) 2700K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 10294.7 lumens |
| Efficiency: | N/A |
| Efficacy: | 90.3 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B1 - U0 - G2 |

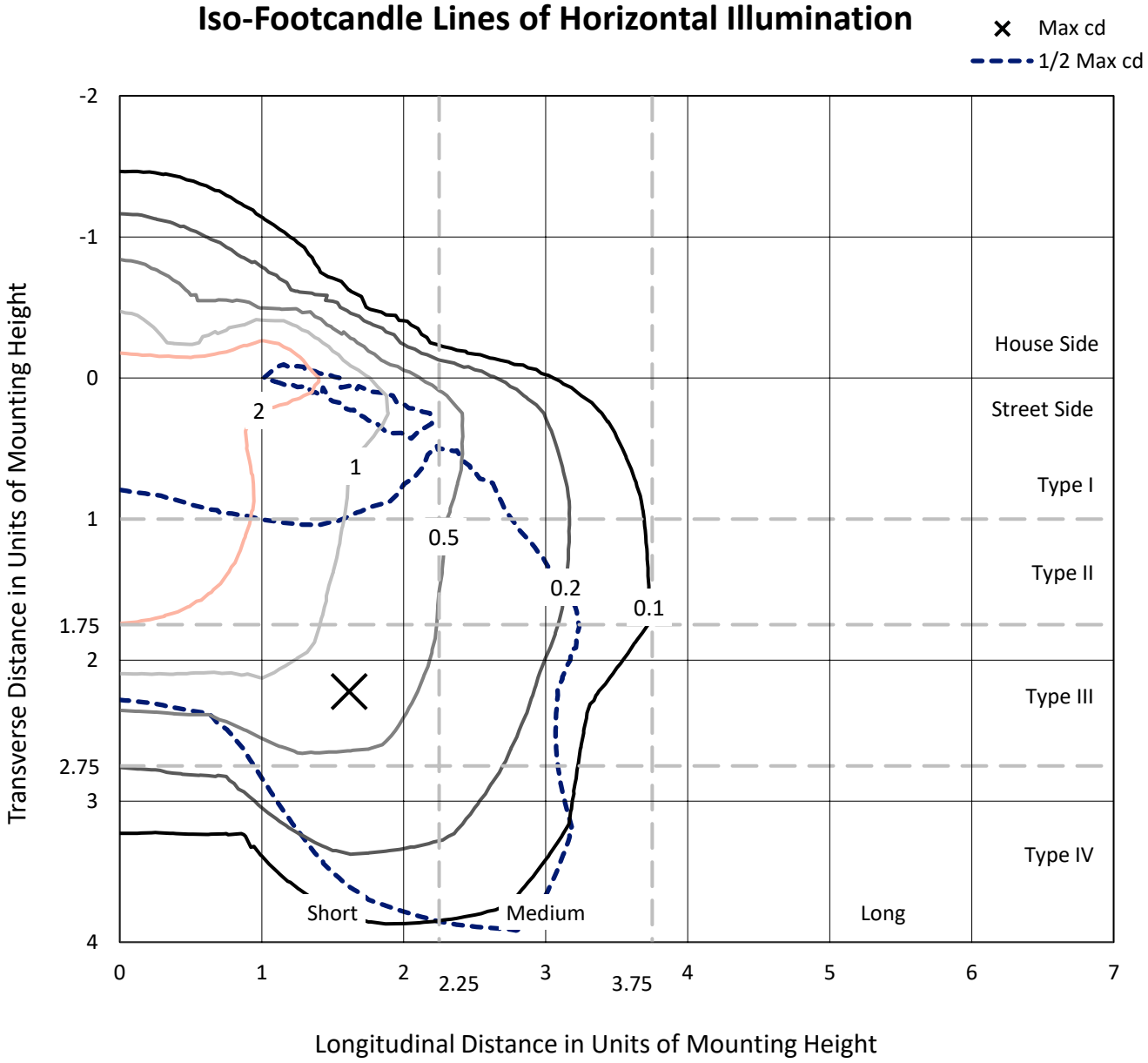
| | |
|---|---|
| Input Watts (W): | 114 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 8.2% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1358803
CATALOG NUMBER: GSS-SB4A-727-U-SL4-HSS

## Iso-Footcandle Lines of Horizontal Illumination



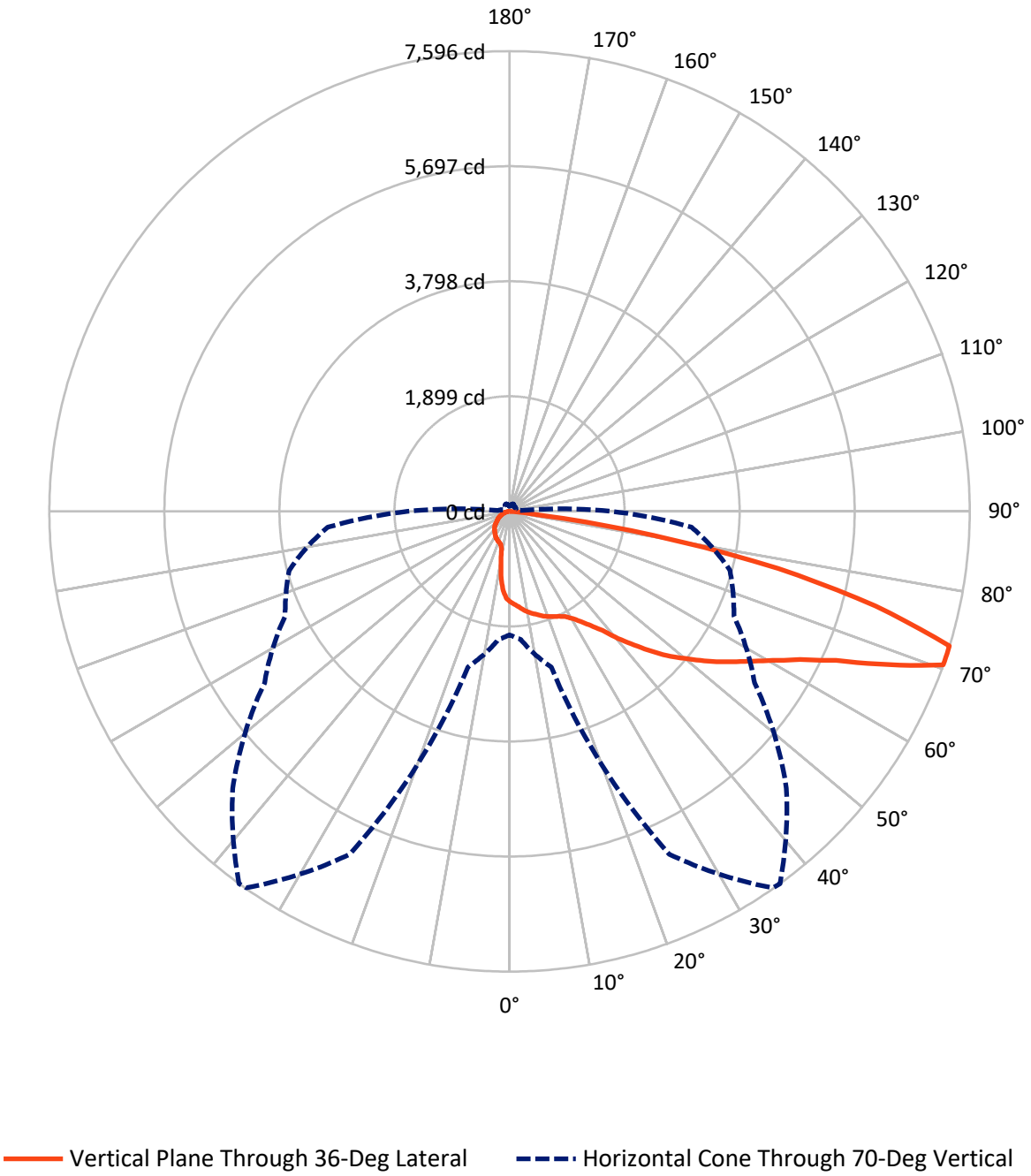

Based on 20 foot mounting height. Maximum calculated value = 4.6 fc
Type IV - Short - N/A

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Scaled Data Report

REPORT NUMBER: P1358803
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## Luminous Intensity Polar Plot



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Scaled Data Report

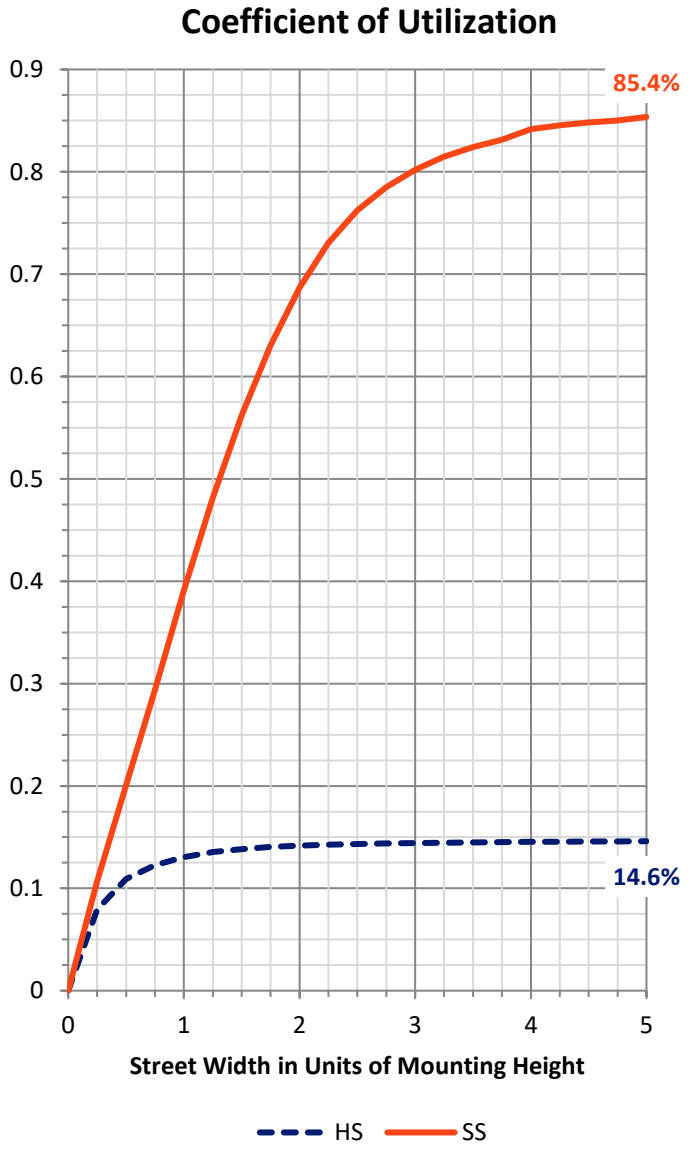
REPORT NUMBER: P1358803
CATALOG NUMBER: GSS-SB4A-727-U-SL4-HSS

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 1519.7 | 0.0 | 1519.7 |
| | % Fixture | 14.8 | 0.0 | 14.8 |
| **Street Side** | Lumens | 8775.0 | 0.0 | 8775.0 |
| | % Fixture | 85.2 | 0.0 | 85.2 |
| **Total** | Lumens | 10294.7 | 0.0 | 10294.7 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 136.1 | 1.3 |
| 10°-20° | 377.2 | 3.7 |
| 20°-30° | 635.9 | 6.2 |
| 30°-40° | 1015.6 | 9.9 |
| 40°-50° | 1659.7 | 16.1 |
| 50°-60° | 2239.4 | 21.8 |
| 60°-70° | 2487.0 | 24.2 |
| 70°-80° | 1646.5 | 16.0 |
| 80°-90° | 97.3 | 0.9 |
| 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° | 10294.7 | 100.0 |
| 0°-180° | 10294.7 | 100.0 |



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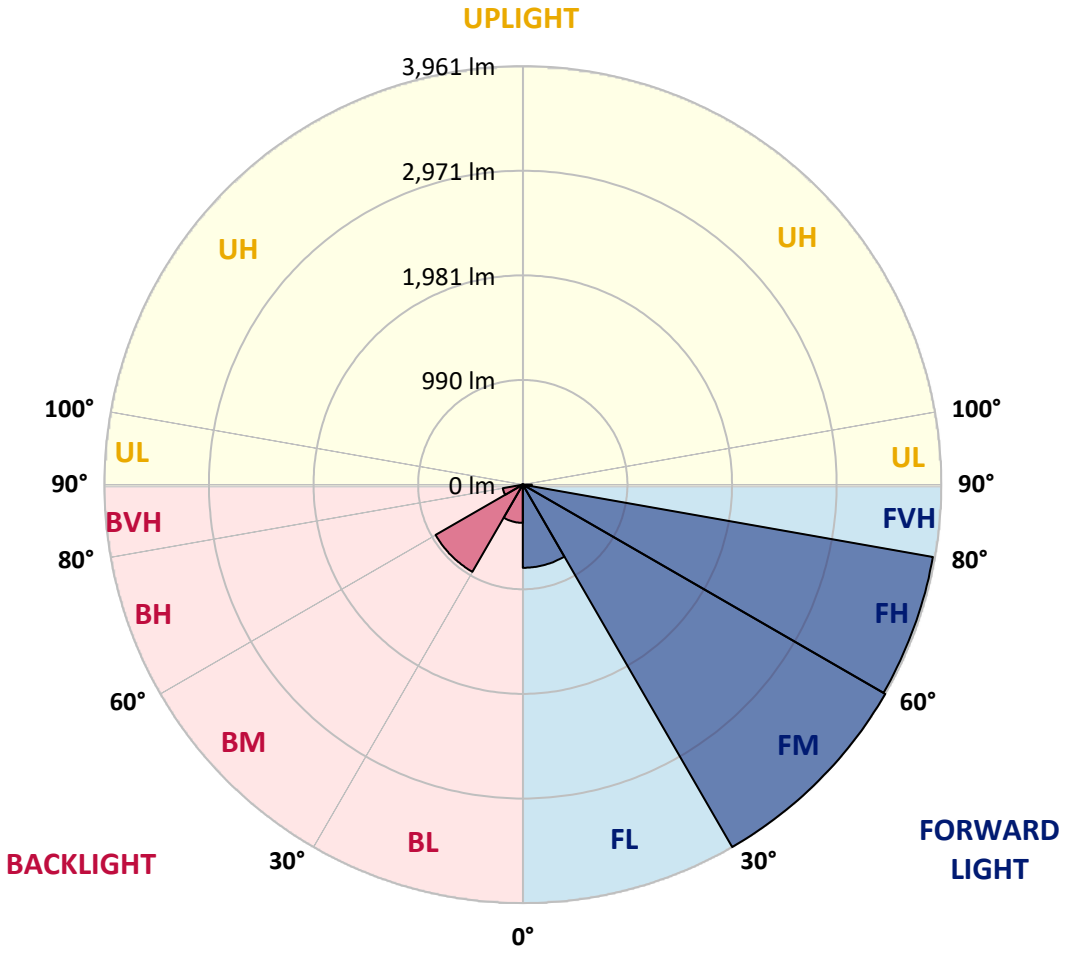
Scaled Data Report

REPORT NUMBER: P1358803
CATALOG NUMBER: GSS-SB4A-727-U-SL4-HSS

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 787.3 | 7.6 | | | |
| FM | (30°-60°) | 3961.4 | 38.5 | | | |
| FH | (60°-80°) | 3941.4 | 38.3 | | | G2/5000 |
| FVH | (80°-90°) | 84.9 | 0.8 | | | G1/100 |
| BL | (0°-30°) | 361.9 | 3.5 | B1/500 | | |
| BM | (30°-60°) | 953.3 | 9.3 | B1/1000 | | |
| BH | (60°-80°) | 192.1 | 1.9 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 12.4 | 0.1 | | | 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 Short



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REPORT NUMBER: P1358803
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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 36° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1493.3 | 1493.3 | 1493.3 | 1493.3 | 1493.3 | *1493.3* | 1493.3 | 1493.3 | 1493.3 | 1493.3 | 1493.3 |
| 2.5° | 1546.0 | 1531.9 | 1538.9 | 1542.4 | 1531.9 | *1535.4* | 1528.4 | 1524.9 | 1510.8 | 1521.4 | 1507.3 |
| 5° | 1602.2 | 1598.7 | 1595.1 | 1595.1 | 1584.6 | *1581.1* | 1570.5 | 1563.5 | 1549.5 | 1538.9 | 1521.4 |
| 7.5° | 1668.9 | 1647.8 | 1644.3 | 1651.4 | 1630.3 | *1640.8* | 1630.3 | 1619.7 | 1595.1 | 1567.0 | 1538.9 |
| 10° | 1721.6 | 1711.1 | 1697.0 | 1693.5 | 1697.0 | *1690.0* | 1679.5 | 1668.9 | 1654.9 | 1619.7 | 1588.1 |
| 12.5° | 1781.4 | 1774.3 | 1760.3 | 1753.3 | 1728.7 | *1732.2* | 1732.2 | 1718.1 | 1697.0 | 1676.0 | 1640.8 |
| 15° | 1848.1 | 1820.0 | 1813.0 | 1795.4 | 1781.4 | *1770.8* | 1774.3 | 1777.8 | 1753.3 | 1732.2 | 1697.0 |
| 17.5° | 1879.7 | 1872.7 | 1855.1 | 1834.1 | 1834.1 | *1820.0* | 1816.5 | 1816.5 | 1806.0 | 1798.9 | 1756.8 |
| 20° | 1928.9 | 1921.9 | 1890.3 | 1872.7 | 1855.1 | *1851.6* | 1862.2 | 1862.2 | 1844.6 | 1841.1 | 1834.1 |
| 22.5° | 2002.7 | 1981.6 | 1939.5 | 1911.4 | 1890.3 | *1886.8* | 1900.8 | 1897.3 | 1897.3 | 1900.8 | 1914.9 |
| 25° | 2073.0 | 2048.4 | 2002.7 | 1957.0 | 1911.4 | *1918.4* | 1936.0 | 1939.5 | 1925.4 | 1946.5 | 1999.2 |
| 27.5° | 2178.4 | 2174.9 | 2104.6 | 2013.3 | 1971.1 | *1967.6* | 1974.6 | 1967.6 | 1953.5 | 1978.1 | 2076.5 |
| 30° | 2456.0 | 2424.3 | 2308.4 | 2139.7 | 2044.9 | *2051.9* | 2041.4 | 1999.2 | 1964.1 | 1992.2 | 2150.3 |
| 32.5° | 2726.5 | 2652.7 | 2533.3 | 2340.0 | 2164.3 | *2167.8* | 2094.1 | 2013.3 | 1974.6 | 2006.2 | 2224.1 |
| 35° | 3120.0 | 3042.7 | 2863.5 | 2526.2 | 2347.0 | *2315.4* | 2164.3 | 2066.0 | 1995.7 | 2030.8 | 2308.4 |
| 37.5° | 3675.2 | 3562.7 | 3320.3 | 2895.1 | 2508.7 | *2494.6* | 2287.3 | 2111.6 | 2013.3 | 2027.3 | 2420.8 |
| 40° | 4103.8 | 3994.9 | 3798.1 | 3285.2 | 2786.2 | *2758.1* | 2480.6 | 2199.5 | 2016.8 | 2044.9 | 2526.2 |
| 42.5° | 4476.2 | 4420.0 | 4156.5 | 3629.5 | 3074.3 | *3014.6* | 2666.8 | 2308.4 | 2090.6 | 2090.6 | 2701.9 |
| 45° | 4975.2 | 4869.8 | 4571.1 | 3952.7 | 3362.4 | *3295.7* | 2912.7 | 2480.6 | 2181.9 | 2143.3 | 2884.6 |
| 47.5° | 5414.3 | 5326.5 | 4978.7 | 4258.4 | 3636.5 | *3580.3* | 3148.1 | 2666.8 | 2297.8 | 2238.1 | 3098.9 |
| 50° | 5895.7 | 5804.4 | 5403.8 | 4623.8 | 3907.0 | *3826.2* | 3408.1 | 2838.9 | 2438.4 | 2385.7 | 3355.4 |
| 52.5° | 6229.5 | 6152.2 | 5751.6 | 4954.1 | 4167.0 | *4110.8* | 3618.9 | 3014.6 | 2603.5 | 2550.8 | 3601.4 |
| 55° | 6450.8 | 6327.9 | 5937.9 | 5242.2 | 4455.2 | *4384.9* | 3808.7 | 3211.4 | 2789.7 | 2772.2 | 3812.2 |
| 57.5° | 6556.2 | 6433.3 | 6103.0 | 5495.2 | 4739.8 | *4662.5* | 4044.1 | 3425.7 | 3032.2 | 3046.2 | 4037.0 |
| 60° | 6500.0 | 6408.7 | 6166.2 | 5734.1 | 5056.0 | *4992.7* | 4268.9 | 3671.6 | 3281.6 | 3341.4 | 4142.5 |
| 62.5° | 6085.4 | 6106.5 | 6173.3 | 6088.9 | 5460.0 | *5382.7* | 4595.7 | 3984.3 | 3622.4 | 3633.0 | 4131.9 |
| 65° | 4708.1 | 4796.0 | 5561.9 | 6500.0 | 6025.7 | *5923.8* | 5045.4 | 4377.9 | 3854.3 | 3734.9 | 3857.9 |
| 67.5° | 2993.5 | 3179.7 | 4023.0 | 6728.4 | 6816.2 | *6753.0* | 5639.2 | 4701.1 | 3910.6 | 3886.0 | 3608.4 |
| 70° | *2037.8* | *2122.2* | *2659.7* | *6243.5* | *7585.7* | *7596.3* | *6461.4* | *4936.5* | *4086.2* | *3766.5* | *3014.6* |
| 72.5° | 1602.2 | 1609.2 | 1879.7 | 5625.2 | 7554.1 | *7592.7* | 6401.7 | 5182.5 | 3963.3 | 3355.4 | 2297.8 |
| 75° | 1075.1 | 1103.2 | 1282.4 | 4588.7 | 6275.2 | *6243.5* | 5228.1 | 3980.8 | 3615.4 | 2652.7 | 1489.7 |
| 77.5° | 302.2 | 312.7 | 534.1 | 2923.3 | 4398.9 | *4532.5* | 3794.6 | 1366.8 | 2515.7 | 1215.7 | 562.2 |
| 80° | 91.4 | 98.4 | 217.8 | 839.7 | 2104.6 | *2410.3* | 1974.6 | 411.1 | 607.8 | 288.1 | 112.4 |
| 82.5° | 38.6 | 42.2 | 130.0 | 193.2 | 481.4 | *520.0* | 463.8 | 108.9 | 189.7 | 91.4 | 38.6 |
| 85° | 14.1 | 17.6 | 42.2 | 45.7 | 73.8 | *66.8* | 52.7 | 35.1 | 49.2 | 42.2 | 21.1 |
| 87.5° | 0.0 | 3.5 | 3.5 | 7.0 | 10.5 | *10.5* | 14.1 | 14.1 | 14.1 | 14.1 | 14.1 |
| 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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Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P1358803
CATALOG NUMBER: GSS-SB4A-727-U-SL4-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1493.3 | 1493.3 | 1493.3 | 1493.3 | 1493.3 | 1493.3 | 1493.3 | 1493.3 | 1493.3 | 1493.3 | 1493.3 |
| 2.5° | 1496.8 | 1493.3 | 1479.2 | 1461.6 | 1451.1 | 1447.6 | 1437.0 | 1416.0 | 1423.0 | 1426.5 | 1408.9 |
| 5° | 1510.8 | 1486.2 | 1458.1 | 1423.0 | 1384.3 | 1352.7 | 1310.5 | 1278.9 | 1257.8 | 1254.3 | 1250.8 |
| 7.5° | 1524.9 | 1503.8 | 1454.6 | 1377.3 | 1300.0 | 1219.2 | 1110.3 | 1033.0 | 976.8 | 948.7 | 959.2 |
| 10° | 1570.5 | 1535.4 | 1451.1 | 1331.6 | 1166.5 | 990.8 | 832.7 | 741.4 | 688.7 | 664.1 | 653.5 |
| 12.5° | 1616.2 | 1567.0 | 1451.1 | 1250.8 | 969.7 | 748.4 | 621.9 | 593.8 | 593.8 | 600.8 | 597.3 |
| 15° | 1676.0 | 1619.7 | 1461.6 | 1127.8 | 769.5 | 586.8 | 565.7 | 569.2 | 579.7 | 586.8 | 586.8 |
| 17.5° | 1742.7 | 1700.5 | 1461.6 | 973.2 | 600.8 | 544.6 | 548.1 | 558.7 | 569.2 | 572.7 | 576.2 |
| 20° | 1837.6 | 1777.8 | 1416.0 | 794.1 | 527.0 | 527.0 | 534.1 | 541.1 | 555.1 | 562.2 | 565.7 |
| 22.5° | 1925.4 | 1858.7 | 1331.6 | 632.4 | 505.9 | 509.5 | 523.5 | 530.5 | 544.6 | 551.6 | 548.1 |
| 25° | 2034.3 | 1971.1 | 1240.3 | 513.0 | 484.9 | 491.9 | 502.4 | 513.0 | 534.1 | 541.1 | 541.1 |
| 27.5° | 2153.8 | 2097.6 | 1170.0 | 502.4 | 463.8 | 474.3 | 491.9 | 505.9 | 523.5 | 530.5 | 530.5 |
| 30° | 2283.8 | 2227.6 | 1127.8 | 541.1 | 453.2 | 449.7 | 470.8 | 481.4 | 502.4 | 520.0 | 523.5 |
| 32.5° | 2420.8 | 2333.0 | 1113.8 | 618.4 | 460.3 | 432.2 | 449.7 | 463.8 | 491.9 | 513.0 | 513.0 |
| 35° | 2617.6 | 2491.1 | 1113.8 | 702.7 | 488.4 | 414.6 | 428.7 | 446.2 | 477.8 | 498.9 | 498.9 |
| 37.5° | 2860.0 | 2740.6 | 1222.7 | 762.4 | 513.0 | 400.5 | 407.6 | 425.1 | 449.7 | 477.8 | 481.4 |
| 40° | 3148.1 | 3091.9 | 1510.8 | 801.1 | 527.0 | 386.5 | 393.5 | 400.5 | 414.6 | 442.7 | 449.7 |
| 42.5° | 3457.3 | 3397.6 | 1921.9 | 839.7 | 520.0 | 375.9 | 372.4 | 372.4 | 379.5 | 397.0 | 400.5 |
| 45° | 3756.0 | 3671.6 | 2290.8 | 825.7 | 488.4 | 354.9 | 347.8 | 337.3 | 337.3 | 351.4 | 351.4 |
| 47.5° | 4019.5 | 3868.4 | 2470.0 | 730.8 | 449.7 | 333.8 | 319.7 | 302.2 | 302.2 | 309.2 | 309.2 |
| 50° | 4188.1 | 3861.4 | 2357.6 | 579.7 | 393.5 | 312.7 | 291.6 | 277.6 | 274.1 | 277.6 | 274.1 |
| 52.5° | 4212.7 | 3615.4 | 1939.5 | 449.7 | 340.8 | 288.1 | 263.5 | 256.5 | 253.0 | 253.0 | 253.0 |
| 55° | 4047.6 | 3162.2 | 1363.2 | 344.3 | 298.7 | 260.0 | 242.4 | 238.9 | 235.4 | 231.9 | 228.4 |
| 57.5° | 3763.0 | 2505.1 | 832.7 | 277.6 | 270.5 | 235.4 | 224.9 | 221.4 | 214.3 | 203.8 | 200.3 |
| 60° | 3383.5 | 1844.6 | 439.2 | 235.4 | 235.4 | 207.3 | 207.3 | 207.3 | 189.7 | 175.7 | 168.6 |
| 62.5° | 2961.9 | 1243.8 | 245.9 | 200.3 | 196.8 | 186.2 | 189.7 | 186.2 | 168.6 | 144.1 | 140.5 |
| 65° | 2491.1 | 706.2 | 165.1 | 165.1 | 168.6 | 161.6 | 168.6 | 165.1 | 140.5 | 115.9 | 108.9 |
| 67.5° | 2150.3 | 368.9 | 130.0 | 140.5 | 140.5 | 133.5 | 144.1 | 147.6 | 126.5 | 101.9 | 94.9 |
| 70° | *1683.0* | *186.2* | *105.4* | *115.9* | *115.9* | *105.4* | *126.5* | *137.0* | *115.9* | *87.8* | *84.3* |
| 72.5° | 1187.6 | 115.9 | 87.8 | 91.4 | 87.8 | 80.8 | 108.9 | 123.0 | 101.9 | 73.8 | 70.3 |
| 75° | 723.8 | 77.3 | 66.8 | 73.8 | 63.2 | 63.2 | 94.9 | 108.9 | 87.8 | 59.7 | 56.2 |
| 77.5° | 337.3 | 56.2 | 49.2 | 52.7 | 45.7 | 49.2 | 77.3 | 84.3 | 63.2 | 49.2 | 45.7 |
| 80° | 84.3 | 38.6 | 38.6 | 35.1 | 35.1 | 38.6 | 56.2 | 52.7 | 45.7 | 42.2 | 38.6 |
| 82.5° | 35.1 | 28.1 | 24.6 | 24.6 | 24.6 | 28.1 | 35.1 | 35.1 | 38.6 | 35.1 | 35.1 |
| 85° | 17.6 | 17.6 | 17.6 | 17.6 | 21.1 | 21.1 | 28.1 | 31.6 | 31.6 | 31.6 | 28.1 |
| 87.5° | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 14.1 | 17.6 | 21.1 | 24.6 | 14.1 | 10.5 |
| 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

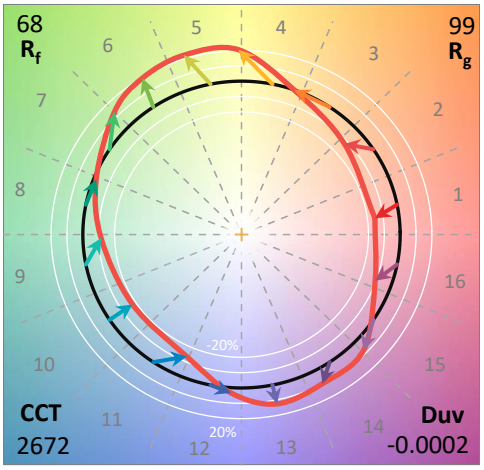
## Test Information

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

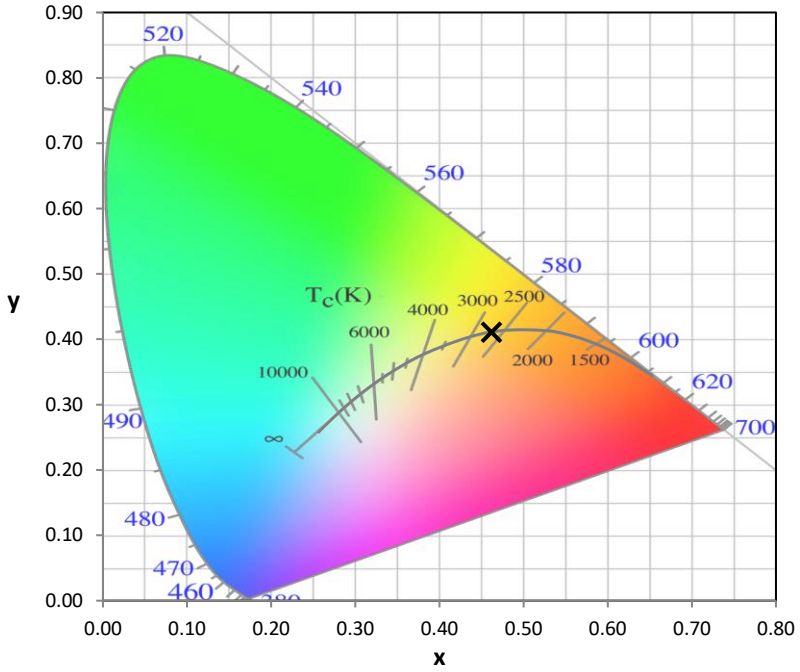
| | |
|---|---|
| Stabilization Time: | 21M |
| Operation Time: | 1H 21M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-3

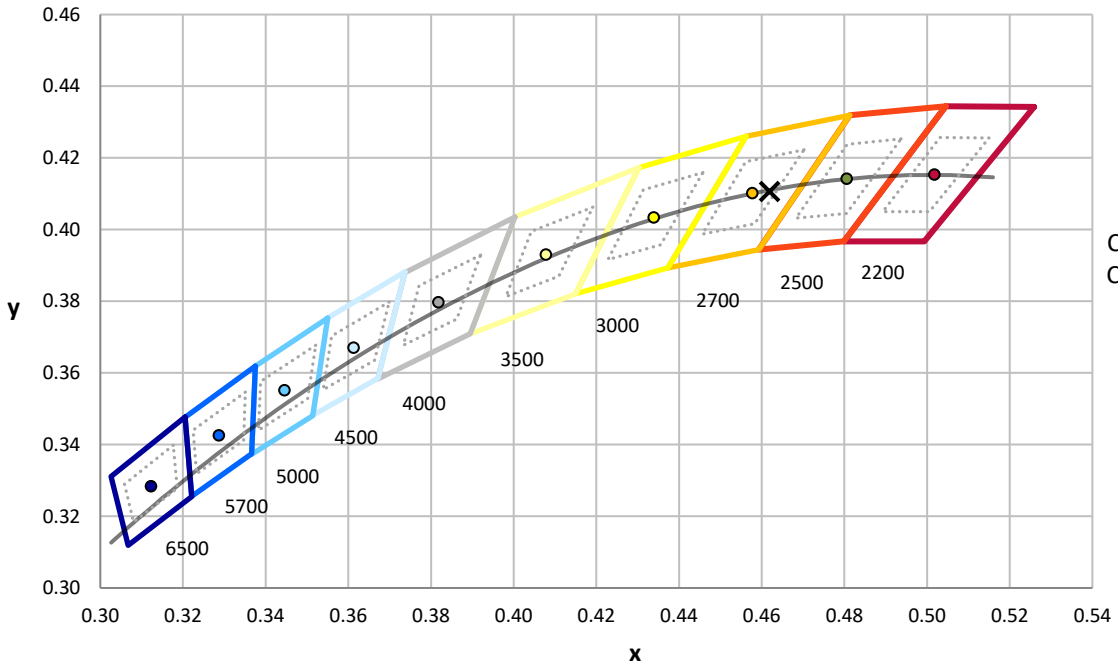
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

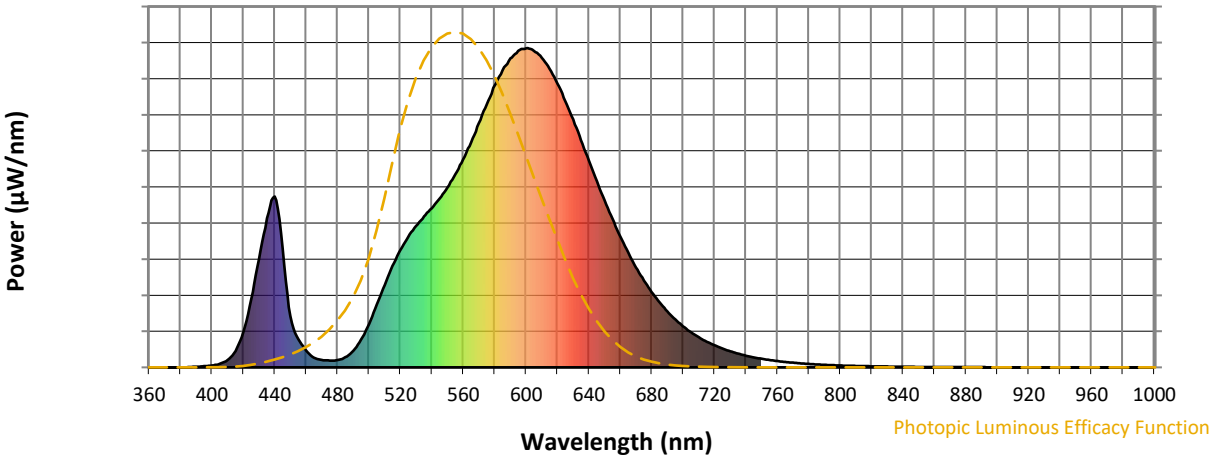



CCT = 2672K
CIE x = 0.4619
CIE y = 0.4106
Duv = -0.0002

Point lies inside the ANSI 2700K 4-step quadrangle

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## Photopic Flux vs. Wavelength

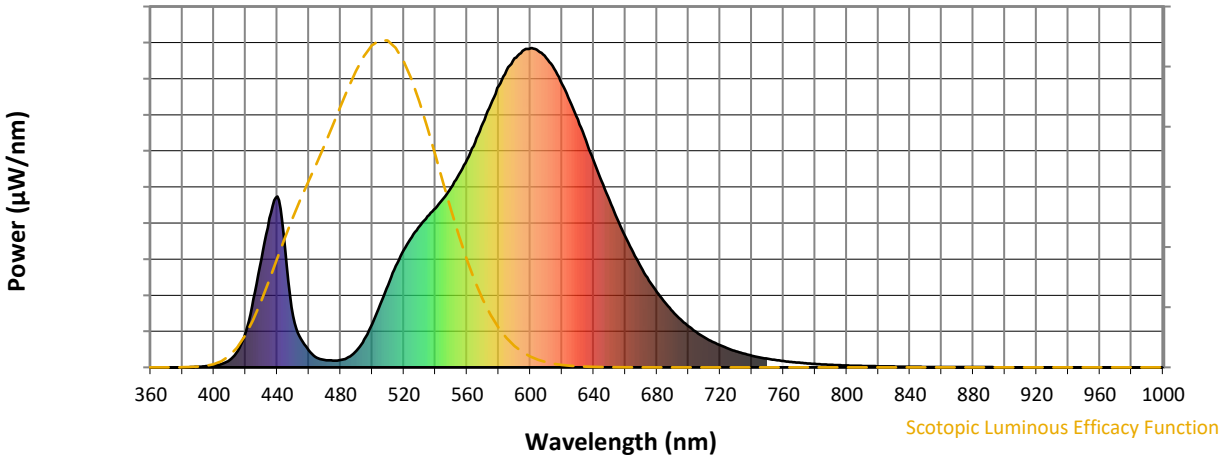



## Photopic Lumens: NR

| 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

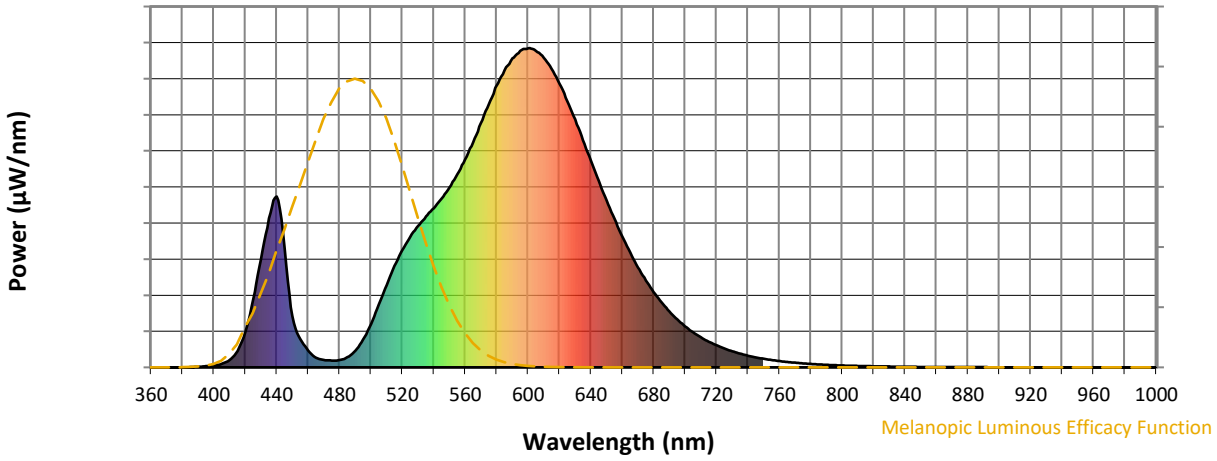



**Scotopic Lumens: NR** **S/P: 1.02**

| 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 | | | |

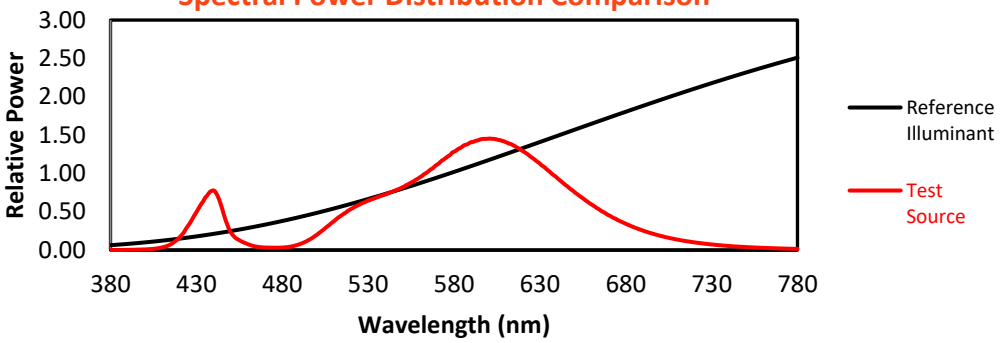
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# TM-30-18

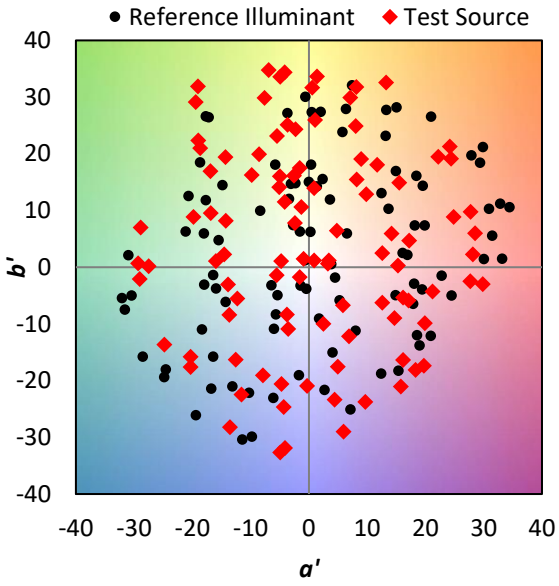
## Summary

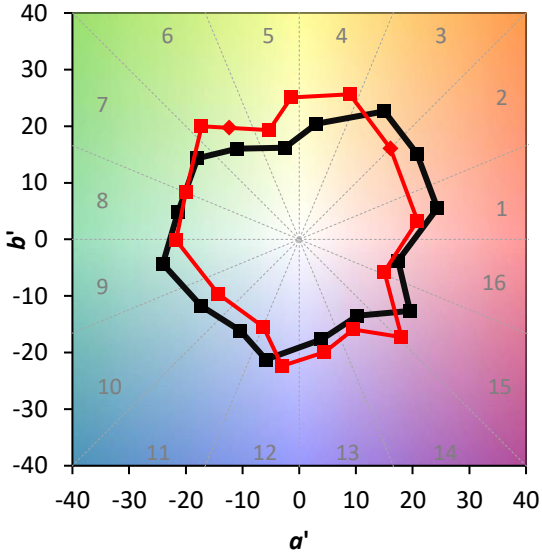
$R_f$ = 67.9
$R_g$ = 98.6
CIE $R_a$ = 71.1
$R_9$ = -27.8

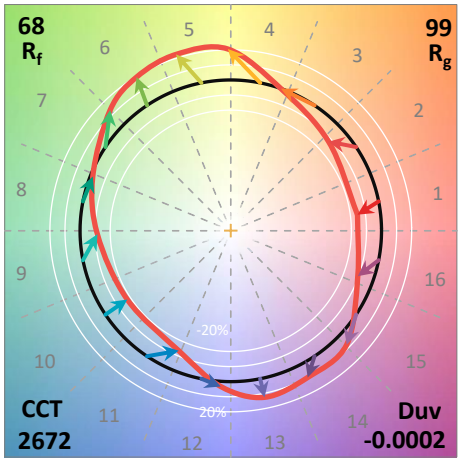
## Spectral Power Distribution Comparison

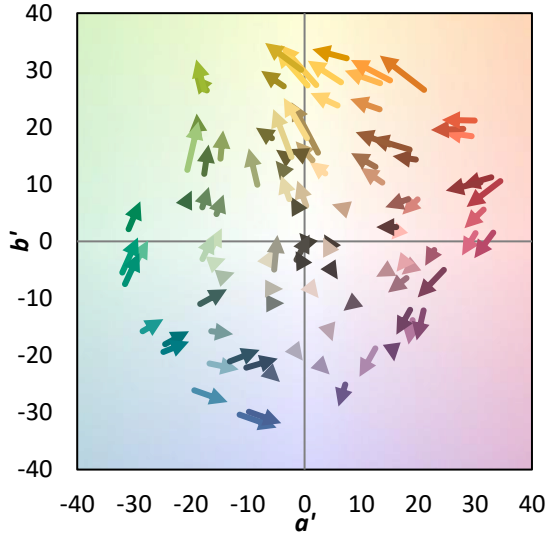



## Color Vector Graphics



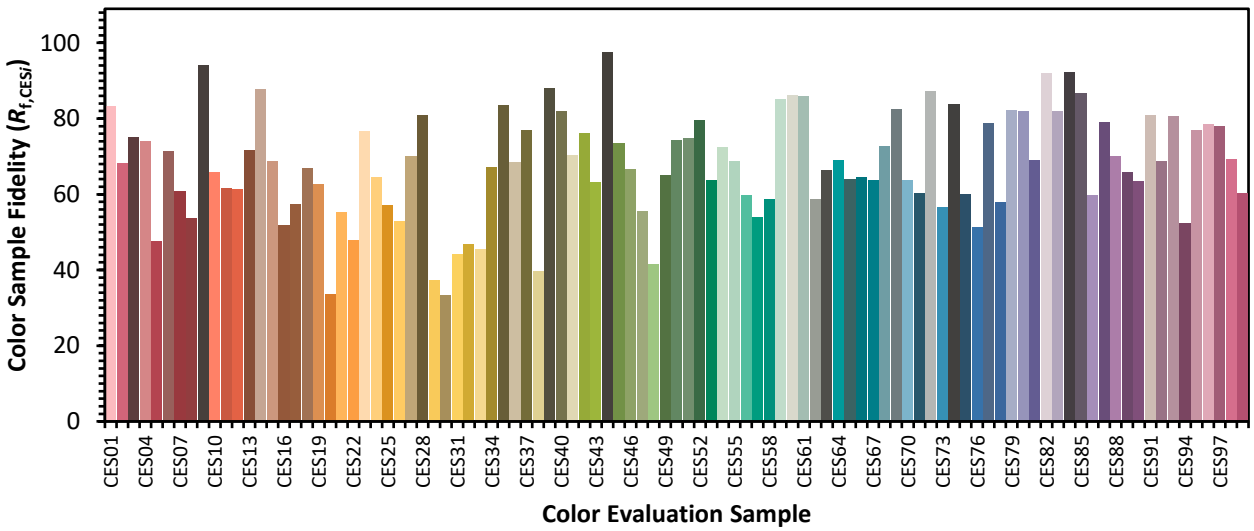



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**Individual Sample Fidelity Index ($R_{f,i}$)**

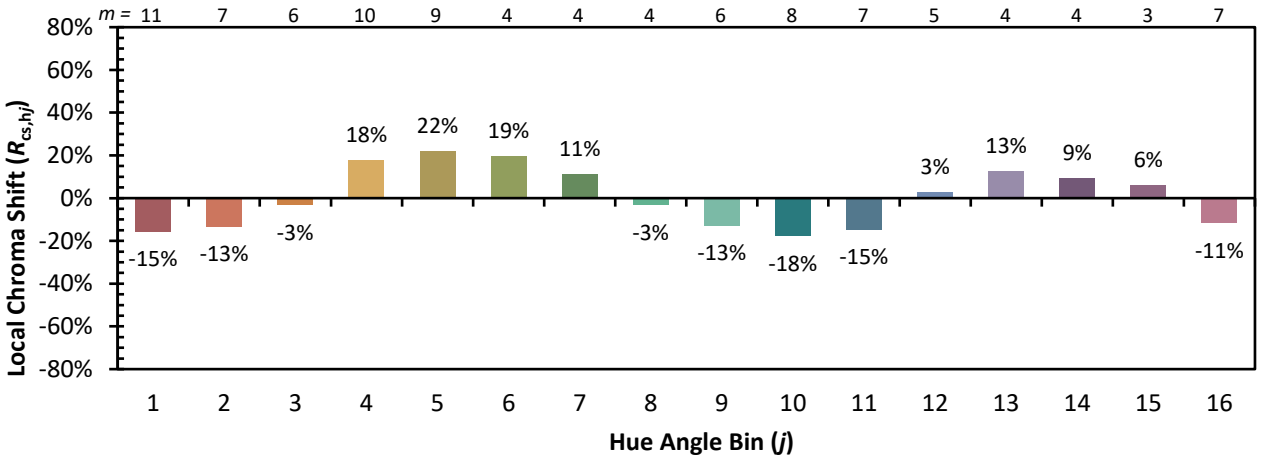
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 53 | CES51 = 75 | CES76 = 51 |
| CES02 = 63 | CES27 = 70 | CES52 = 80 | CES77 = 79 |
| CES03 = 31 | CES28 = 81 | CES53 = 64 | CES78 = 58 |
| CES04 = 71 | CES29 = 37 | CES54 = 73 | CES79 = 82 |
| CES05 = 50 | CES30 = 33 | CES55 = 69 | CES80 = 82 |
| CES06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

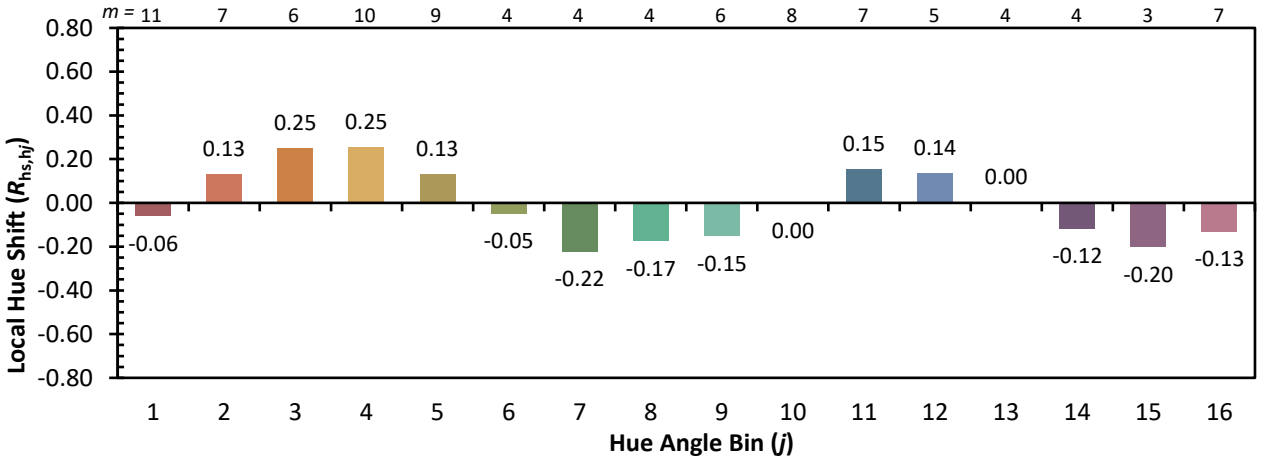


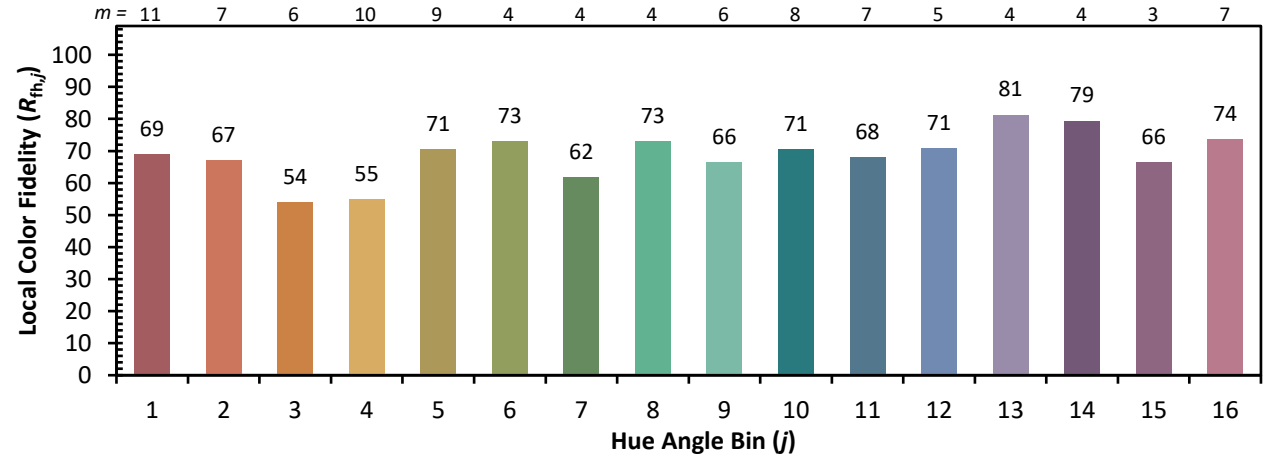
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## Color Rendition by Hue-Angle Bin



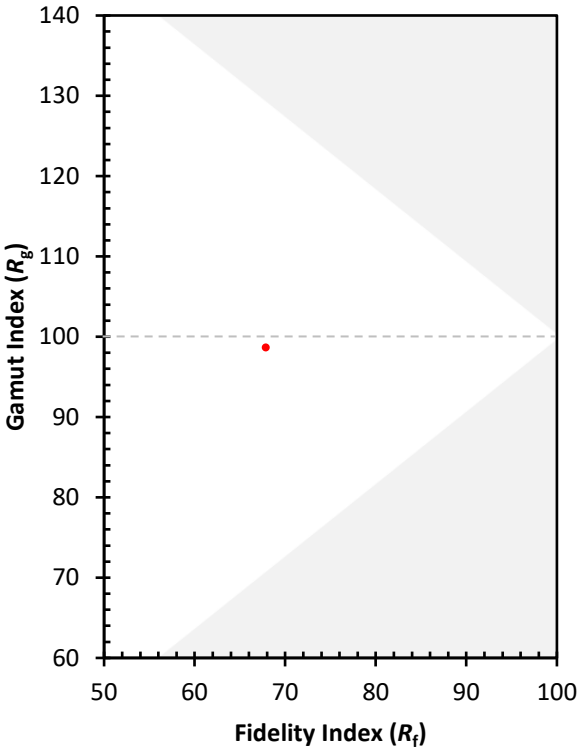



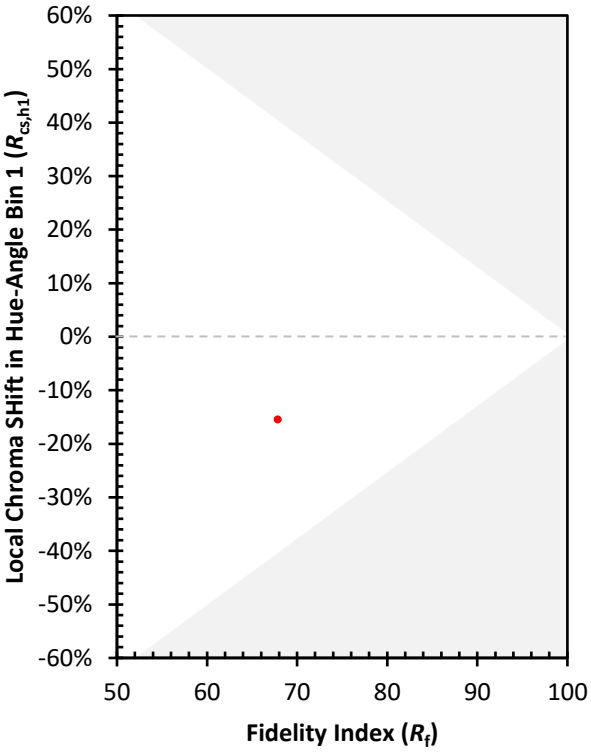



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## Measure Comparisons




(END OF REPORT)