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: P1502157

Luminaire Tested: GSS-SB5A-727-U-T3LG-HSS

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: | P1502157 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 7/20/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB5A-727-U-T3LG-HSS |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 5SQUARE 143W 70CRI 2700K FIXTURE w/ TYPE III LOW GLARE DISTRIBUTION FIXTURE W/ HOUSE SIDE SHIELD |
| Light Source: | (130) 2700K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 16896.7 lumens |
| Efficiency: | N/A |
| Efficacy: | 118.2 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B2 - U0 - G2 |

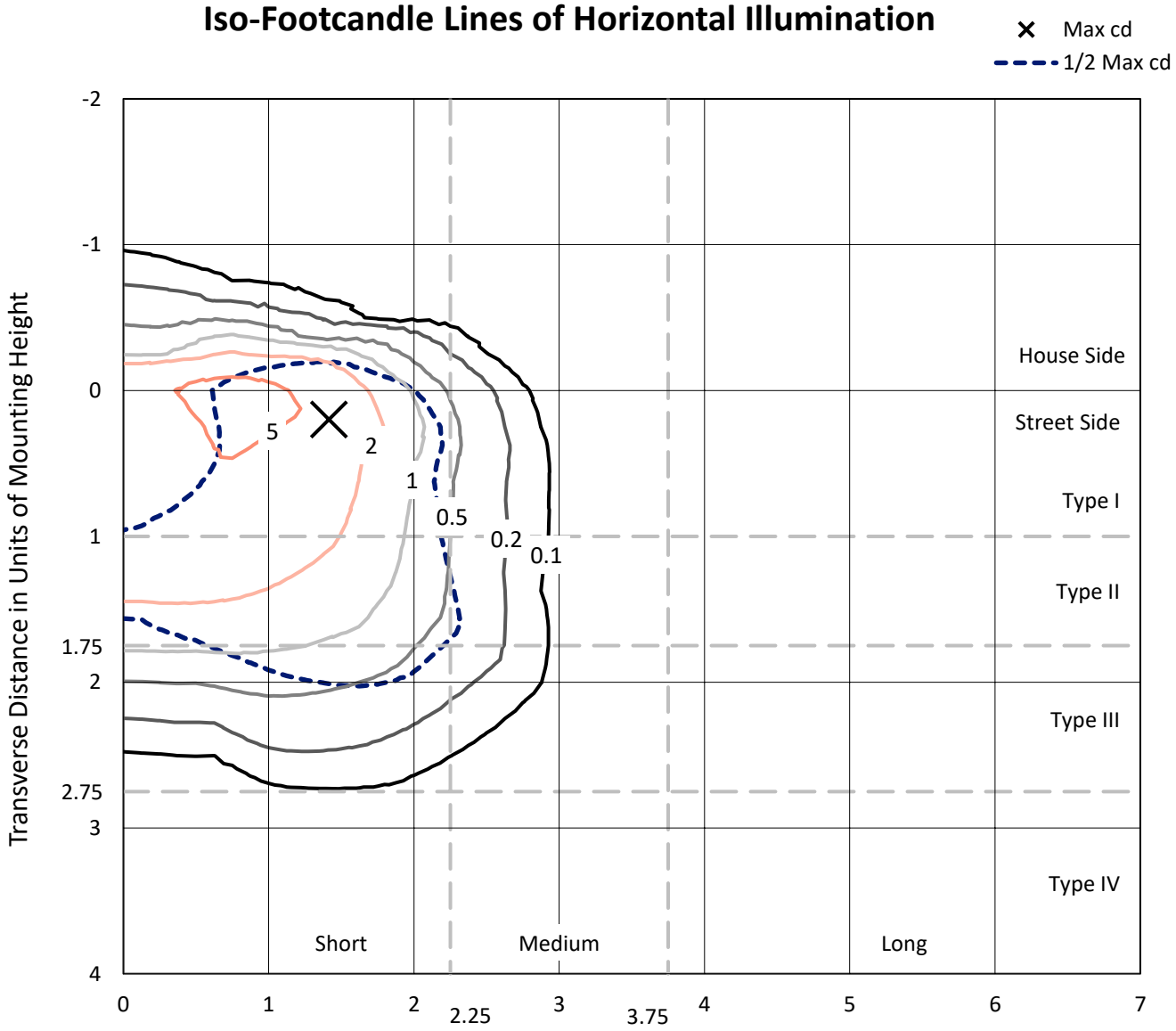
| | |
|---|---|
| Input Watts (W): | 143 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 10.5% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1502157
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## Iso-Footcandle Lines of Horizontal Illumination



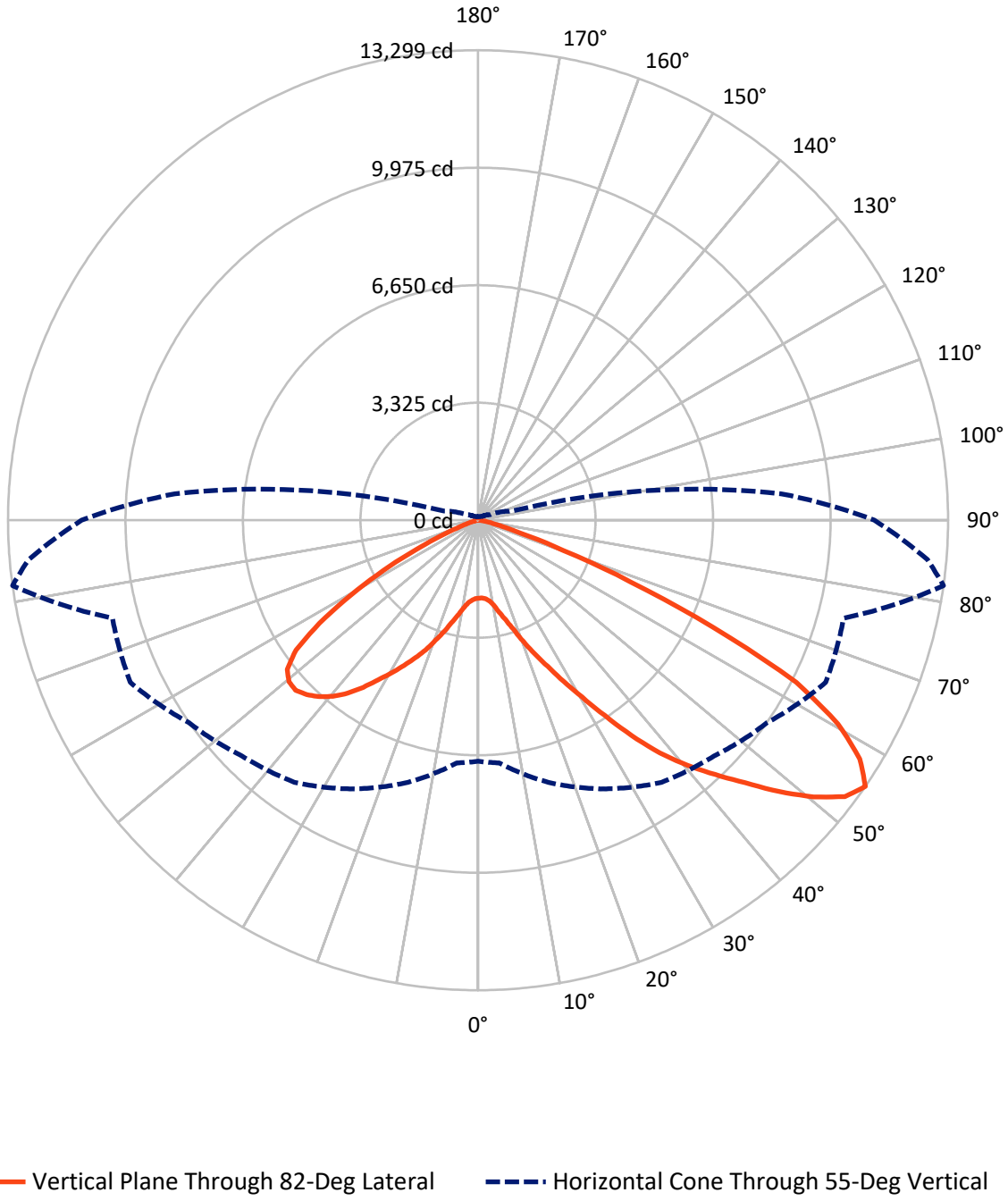

Based on 25 foot mounting height. Maximum calculated value = 6.6 fc
Type III - Short - N/A

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## Luminous Intensity Polar Plot



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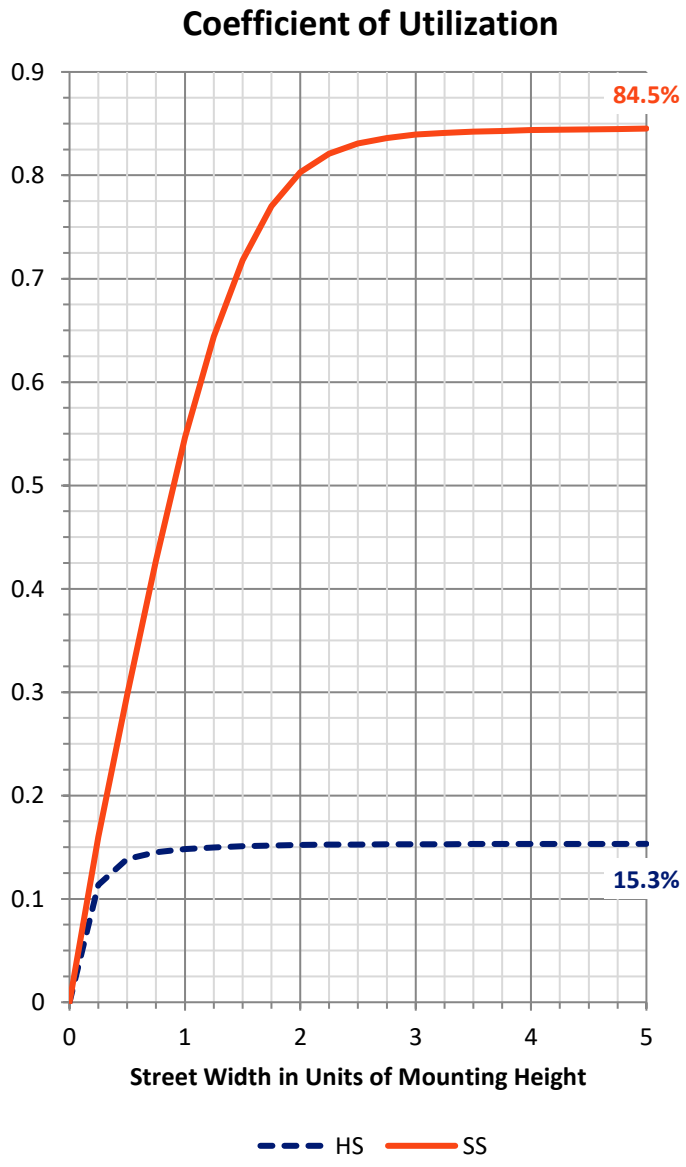
REPORT NUMBER: P1502157
CATALOG NUMBER: GSS-SB5A-727-U-T3LG-HSS

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 2611.7 | 0.0 | 2611.7 |
| | % Fixture | 15.5 | 0.0 | 15.5 |
| **Street Side** | Lumens | 14285.1 | 0.0 | 14285.1 |
| | % Fixture | 84.5 | 0.0 | 84.5 |
| **Total** | Lumens | 16896.7 | 0.0 | 16896.7 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 200.0 | 1.2 |
| 10°-20° | 541.3 | 3.2 |
| 20°-30° | 1082.1 | 6.4 |
| 30°-40° | 2240.8 | 13.3 |
| 40°-50° | 3743.3 | 22.2 |
| 50°-60° | 4747.7 | 28.1 |
| 60°-70° | 3549.2 | 21.0 |
| 70°-80° | 751.8 | 4.4 |
| 80°-90° | 40.5 | 0.2 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 16896.7 | 100.0 |
| 0°-180° | 16896.7 | 100.0 |



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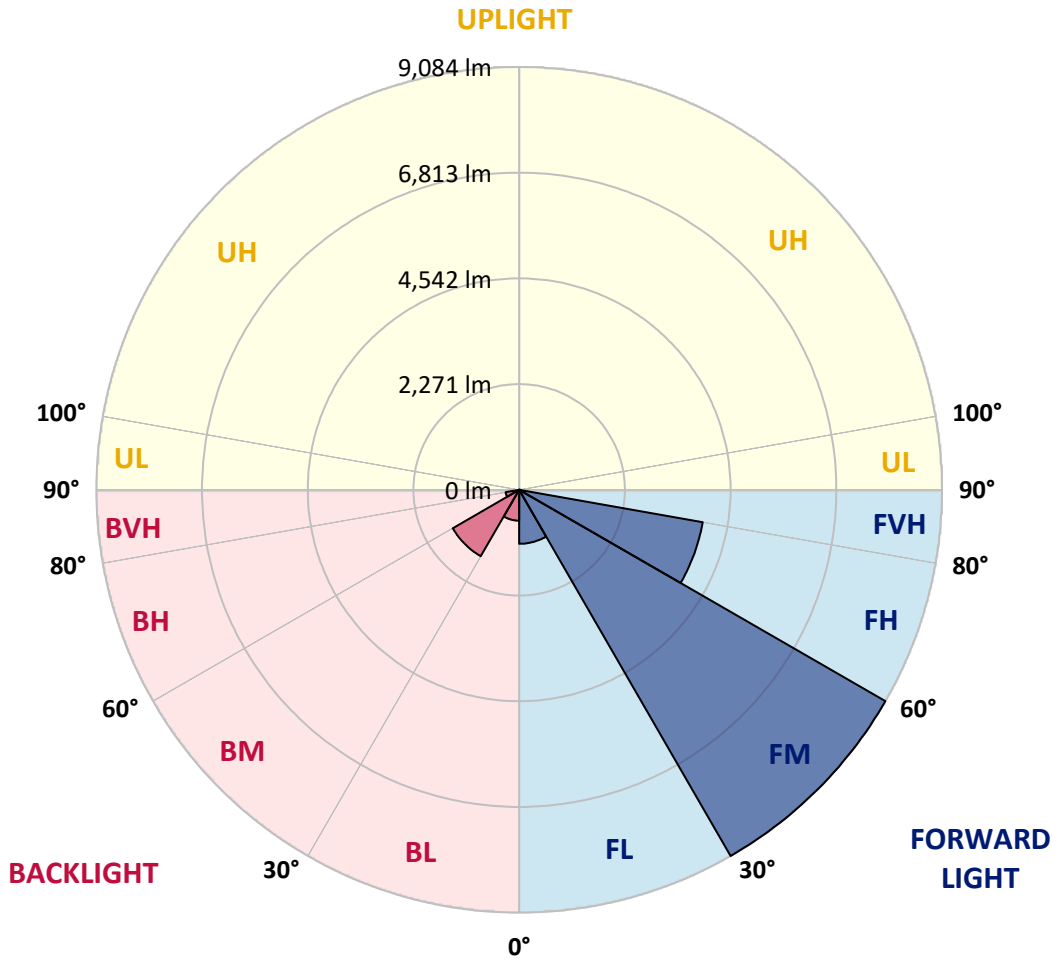
Scaled Data Report

REPORT NUMBER: P1502157
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## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1160.4 | 6.9 | | | |
| FM | (30°-60°) | 9084.0 | 53.8 | | | |
| FH | (60°-80°) | 4004.5 | 23.7 | | | G2/5000 |
| FVH | (80°-90°) | 36.2 | 0.2 | | | G1/100 |
| BL | (0°-30°) | 663.0 | 3.9 | B2/1000 | | |
| BM | (30°-60°) | 1647.9 | 9.8 | B2/2500 | | |
| BH | (60°-80°) | 296.5 | 1.8 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 4.3 | 0.0 | | | G0/10 |
| 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° | 82° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2205.9 | 2205.9 | 2205.9 | 2205.9 | 2205.9 | 2205.9 | 2205.9 | 2205.9 | 2205.9 | *2205.9* | 2205.9 |
| 2.5° | 2146.2 | 2150.8 | 2141.7 | 2146.2 | 2155.4 | 2150.8 | 2169.2 | 2182.9 | 2196.7 | *2201.3* | 2205.9 |
| 5° | 1958.2 | 1962.8 | 1967.4 | 2004.1 | 2027.0 | 2082.0 | 2132.5 | 2164.6 | 2210.4 | *2233.4* | 2238.0 |
| 7.5° | 1733.5 | 1733.5 | 1751.8 | 1797.7 | 1857.3 | 1962.8 | 2077.5 | 2169.2 | 2256.3 | *2302.2* | 2311.3 |
| 10° | 1692.2 | 1696.8 | 1696.8 | 1728.9 | 1779.4 | 1884.8 | 2031.6 | 2215.0 | 2371.0 | *2439.7* | 2462.7 |
| 12.5° | 1701.4 | 1706.0 | 1710.6 | 1742.7 | 1793.1 | 1884.8 | 2072.9 | 2311.3 | 2554.4 | *2669.0* | 2682.8 |
| 15° | 1724.3 | 1733.5 | 1747.3 | 1788.5 | 1843.6 | 1962.8 | 2160.0 | 2448.9 | 2774.5 | *2921.3* | 2958.0 |
| 17.5° | 1793.1 | 1797.7 | 1820.6 | 1866.5 | 1953.6 | 2072.9 | 2288.4 | 2627.8 | 3081.8 | *3242.3* | 3311.1 |
| 20° | 1898.6 | 1907.8 | 1939.9 | 2004.1 | 2105.0 | 2256.3 | 2494.8 | 2861.7 | 3412.0 | *3659.6* | 3714.7 |
| 22.5° | 2031.6 | 2031.6 | 2077.5 | 2178.3 | 2320.5 | 2490.2 | 2779.1 | 3173.5 | 3815.5 | *4104.5* | 4196.2 |
| 25° | 2251.7 | 2247.1 | 2283.8 | 2398.5 | 2568.2 | 2815.8 | 3109.3 | 3545.0 | 4237.5 | *4581.4* | 4677.7 |
| 27.5° | 2756.2 | 2742.4 | 2728.7 | 2733.3 | 2880.0 | 3196.4 | 3535.8 | 4012.7 | 4760.3 | *5163.8* | 5237.2 |
| 30° | 3343.2 | 3361.5 | 3343.2 | 3297.3 | 3320.3 | 3613.8 | 4035.7 | 4586.0 | 5347.3 | *5801.3* | 5897.6 |
| 32.5° | 3856.8 | 3866.0 | 3944.0 | 3994.4 | 4012.7 | 4150.3 | 4613.5 | 5278.5 | 6094.8 | *6590.1* | 6713.9 |
| 35° | 4416.3 | 4430.1 | 4517.2 | 4622.7 | 4787.8 | 4911.6 | 5338.1 | 6081.0 | 6856.1 | *7479.8* | 7571.5 |
| 37.5° | 5067.5 | 5090.5 | 5205.1 | 5356.4 | 5585.7 | 5870.1 | 6099.4 | 6810.2 | 7631.1 | *8351.1* | 8447.4 |
| 40° | 5640.8 | 5714.1 | 5911.3 | 6104.0 | 6347.0 | 6668.0 | 6819.4 | 7447.6 | 8204.3 | *9121.5* | 9282.0 |
| 42.5° | 6181.9 | 6223.2 | 6539.6 | 6837.7 | 7126.6 | 7388.0 | 7534.8 | 7947.5 | 8713.4 | *9837.0* | 10015.8 |
| 45° | 6631.3 | 6663.4 | 7016.6 | 7411.0 | 7768.7 | 8030.1 | 8053.0 | 8433.6 | 9217.8 | *10593.6* | 10731.2 |
| 47.5° | 6906.5 | 6956.9 | 7411.0 | 7860.4 | 8254.8 | 8497.8 | 8461.2 | 9052.7 | 9768.2 | *11474.1* | 11492.5 |
| 50° | 7071.6 | 7103.7 | 7566.9 | 8149.3 | 8635.4 | 8805.1 | 8883.1 | 9644.3 | 10268.0 | *12308.8* | 12198.7 |
| 52.5° | 7190.8 | 7241.3 | 7695.3 | 8314.4 | 8860.1 | 9089.4 | 9369.2 | 10309.3 | 10662.4 | *12992.1* | 12698.6 |
| 55° | *6819.4* | *6892.7* | *7676.9* | *8387.8* | *9052.7* | *9438.0* | *9988.3* | *10855.0* | *10708.3* | *13299.4* | *12762.8* |
| 57.5° | 6402.0 | 6415.8 | 7190.8 | 8364.8 | 9268.3 | 9804.8 | 10557.0 | 10896.3 | 10281.8 | *12739.9* | 12111.6 |
| 60° | 5787.5 | 5870.1 | 6663.4 | 8066.8 | 9305.0 | 10098.4 | 10942.2 | 10396.4 | 9502.2 | *11703.4* | 10758.7 |
| 62.5° | 4063.2 | 4191.6 | 5228.0 | 7282.6 | 9043.6 | 10258.9 | 10878.0 | 9525.1 | 8525.4 | *10102.9* | 9043.6 |
| 65° | 2274.7 | 2384.7 | 3233.1 | 5874.7 | 8323.6 | 10222.2 | 10217.6 | 8360.3 | 6956.9 | *7300.9* | 6466.2 |
| 67.5° | 1247.4 | 1334.5 | 1678.5 | 4420.9 | 6603.8 | 9438.0 | 8828.0 | 6379.1 | 4664.0 | *4636.4* | 4035.7 |
| 70° | 871.3 | 875.9 | 1059.4 | 2985.5 | 4746.5 | 6585.5 | 6901.9 | 4278.7 | 2893.8 | *2559.0* | 2160.0 |
| 72.5° | 426.5 | 431.1 | 527.4 | 1407.9 | 2902.9 | 3650.4 | 4732.7 | 2224.2 | 1623.4 | *1270.3* | 1082.3 |
| 75° | 215.5 | 211.0 | 288.9 | 527.4 | 1201.5 | 1779.4 | 2086.6 | 1114.4 | 944.7 | *697.1* | 619.1 |
| 77.5° | 137.6 | 142.2 | 169.7 | 288.9 | 541.1 | 692.5 | 642.0 | 605.4 | 554.9 | *408.2* | 353.1 |
| 80° | 91.7 | 91.7 | 114.6 | 183.4 | 266.0 | 330.2 | 197.2 | 279.7 | 325.6 | *238.5* | 206.4 |
| 82.5° | 27.5 | 27.5 | 68.8 | 100.9 | 128.4 | 133.0 | 87.1 | 128.4 | 183.4 | *133.0* | 100.9 |
| 85° | 18.3 | 18.3 | 36.7 | 50.4 | 55.0 | 45.9 | 27.5 | 55.0 | 87.1 | *59.6* | 50.4 |
| 87.5° | 0.0 | 0.0 | 0.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | *4.6* | 0.0 |
| 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: P1502157
CATALOG NUMBER: GSS-SB5A-727-U-T3LG-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2205.9 | 2205.9 | 2205.9 | 2205.9 | 2205.9 | 2205.9 | 2205.9 | 2205.9 | 2205.9 | 2205.9 | 2205.9 |
| 2.5° | 2210.4 | 2215.0 | 2228.8 | 2233.4 | 2242.5 | 2247.1 | 2247.1 | 2247.1 | 2242.5 | 2247.1 | 2256.3 |
| 5° | 2247.1 | 2270.1 | 2288.4 | 2283.8 | 2283.8 | 2260.9 | 2242.5 | 2205.9 | 2187.5 | 2182.9 | 2187.5 |
| 7.5° | 2338.9 | 2357.2 | 2375.5 | 2348.0 | 2279.2 | 2173.8 | 2059.1 | 1967.4 | 1889.4 | 1852.7 | 1866.5 |
| 10° | 2504.0 | 2526.9 | 2526.9 | 2398.5 | 2205.9 | 1958.2 | 1751.8 | 1582.2 | 1453.8 | 1385.0 | 1417.1 |
| 12.5° | 2742.4 | 2760.8 | 2714.9 | 2444.3 | 2077.5 | 1669.3 | 1325.4 | 1041.0 | 875.9 | 793.4 | 775.0 |
| 15° | 3017.6 | 3045.1 | 2889.2 | 2435.2 | 1875.7 | 1247.4 | 825.5 | 619.1 | 559.5 | 541.1 | 545.7 |
| 17.5° | 3370.7 | 3384.5 | 3081.8 | 2361.8 | 1527.1 | 816.3 | 587.0 | 527.4 | 513.6 | 504.5 | 504.5 |
| 20° | 3806.4 | 3765.1 | 3237.7 | 2238.0 | 1114.4 | 642.0 | 541.1 | 495.3 | 481.5 | 476.9 | 481.5 |
| 22.5° | 4274.1 | 4209.9 | 3366.1 | 2004.1 | 843.8 | 605.4 | 518.2 | 467.8 | 449.4 | 444.8 | 444.8 |
| 25° | 4764.8 | 4618.1 | 3467.0 | 1660.1 | 788.8 | 596.2 | 490.7 | 426.5 | 408.2 | 399.0 | 399.0 |
| 27.5° | 5324.3 | 5072.1 | 3522.0 | 1389.6 | 802.5 | 582.4 | 458.6 | 389.8 | 362.3 | 353.1 | 353.1 |
| 30° | 5943.4 | 5576.6 | 3526.6 | 1334.5 | 830.1 | 564.1 | 426.5 | 348.5 | 321.0 | 307.3 | 311.8 |
| 32.5° | 6695.5 | 6090.2 | 3512.9 | 1421.7 | 848.4 | 550.3 | 389.8 | 307.3 | 284.3 | 270.6 | 270.6 |
| 35° | 7475.2 | 6713.9 | 3457.8 | 1586.8 | 857.6 | 509.0 | 343.9 | 270.6 | 243.1 | 238.5 | 243.1 |
| 37.5° | 8250.2 | 7305.5 | 3379.9 | 1678.5 | 811.7 | 417.3 | 279.7 | 233.9 | 215.5 | 215.5 | 215.5 |
| 40° | 8956.4 | 7819.1 | 3274.4 | 1600.5 | 646.6 | 302.7 | 229.3 | 201.8 | 192.6 | 188.0 | 192.6 |
| 42.5° | 9483.8 | 8277.7 | 3081.8 | 1348.3 | 458.6 | 243.1 | 201.8 | 178.9 | 169.7 | 169.7 | 174.3 |
| 45° | 10061.7 | 8718.0 | 2710.3 | 990.6 | 348.5 | 211.0 | 174.3 | 155.9 | 151.3 | 151.3 | 155.9 |
| 47.5° | 10644.1 | 9071.1 | 2352.6 | 660.4 | 302.7 | 188.0 | 155.9 | 142.2 | 137.6 | 133.0 | 137.6 |
| 50° | 11088.9 | 9240.8 | 1884.8 | 481.5 | 275.2 | 169.7 | 142.2 | 133.0 | 123.8 | 119.2 | 119.2 |
| 52.5° | 11405.4 | 9194.9 | 1380.4 | 412.7 | 252.2 | 155.9 | 133.0 | 123.8 | 110.1 | 110.1 | 110.1 |
| 55° | *11212.7* | *8607.9* | *995.2* | *371.5* | *233.9* | *146.8* | *128.4* | *114.6* | *105.5* | *100.9* | *100.9* |
| 57.5° | 10277.2 | 7337.6 | 720.0 | 334.8 | 206.4 | 137.6 | 123.8 | 110.1 | 96.3 | 91.7 | 91.7 |
| 60° | 8933.5 | 5714.1 | 536.6 | 293.5 | 178.9 | 133.0 | 110.1 | 105.5 | 91.7 | 82.5 | 82.5 |
| 62.5° | 7300.9 | 4159.5 | 417.3 | 252.2 | 160.5 | 114.6 | 105.5 | 96.3 | 82.5 | 73.4 | 68.8 |
| 65° | 5067.5 | 2655.3 | 321.0 | 206.4 | 151.3 | 100.9 | 96.3 | 82.5 | 68.8 | 55.0 | 55.0 |
| 67.5° | 3127.6 | 1577.6 | 247.6 | 160.5 | 119.2 | 87.1 | 82.5 | 73.4 | 59.6 | 45.9 | 45.9 |
| 70° | 1728.9 | 834.7 | 169.7 | 119.2 | 91.7 | 68.8 | 64.2 | 64.2 | 50.4 | 41.3 | 36.7 |
| 72.5° | 830.1 | 454.0 | 114.6 | 100.9 | 68.8 | 45.9 | 50.4 | 50.4 | 41.3 | 32.1 | 32.1 |
| 75° | 499.9 | 270.6 | 78.0 | 78.0 | 45.9 | 36.7 | 36.7 | 41.3 | 32.1 | 22.9 | 22.9 |
| 77.5° | 284.3 | 160.5 | 45.9 | 59.6 | 32.1 | 22.9 | 27.5 | 22.9 | 18.3 | 13.8 | 13.8 |
| 80° | 160.5 | 91.7 | 27.5 | 41.3 | 18.3 | 13.8 | 13.8 | 9.2 | 9.2 | 4.6 | 4.6 |
| 82.5° | 78.0 | 50.4 | 13.8 | 13.8 | 9.2 | 4.6 | 4.6 | 4.6 | 4.6 | 0.0 | 0.0 |
| 85° | 36.7 | 9.2 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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

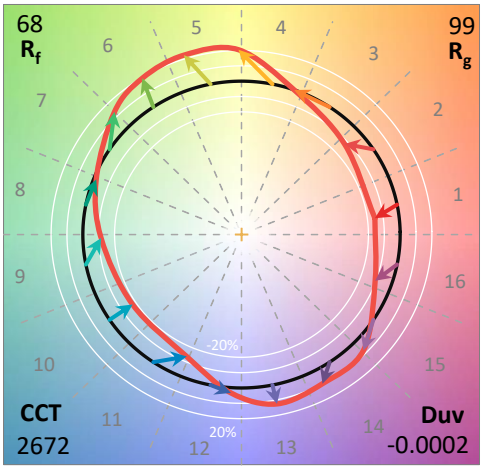
## Test Information

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

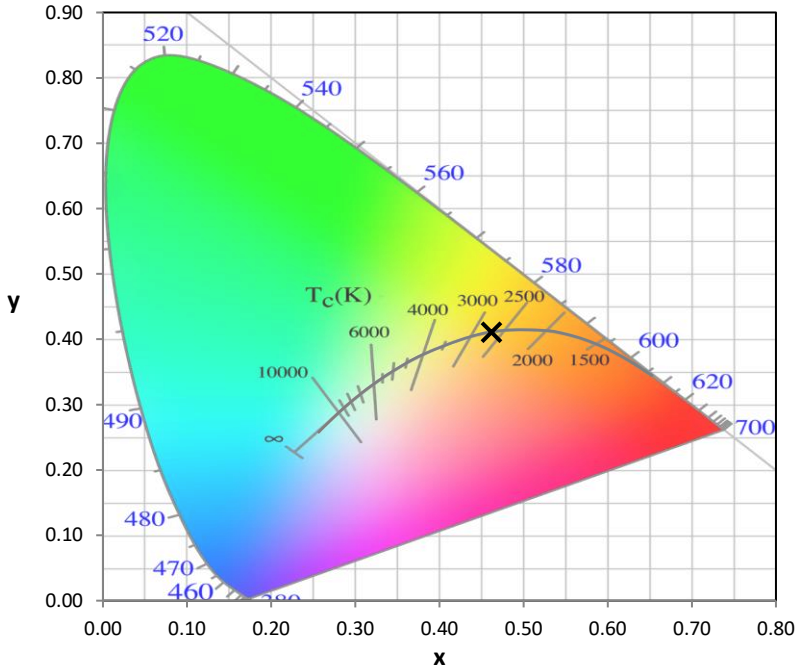
| | |
|---|---|
| Stabilization Time: | 21M |
| Operation Time: | 1H 21M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-3

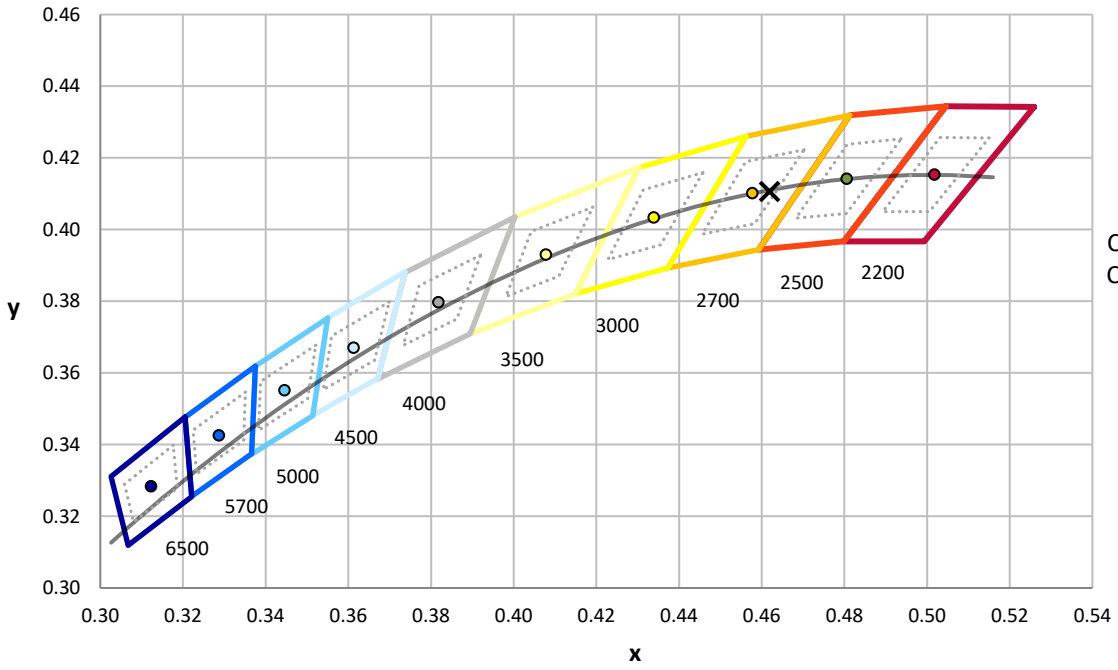
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

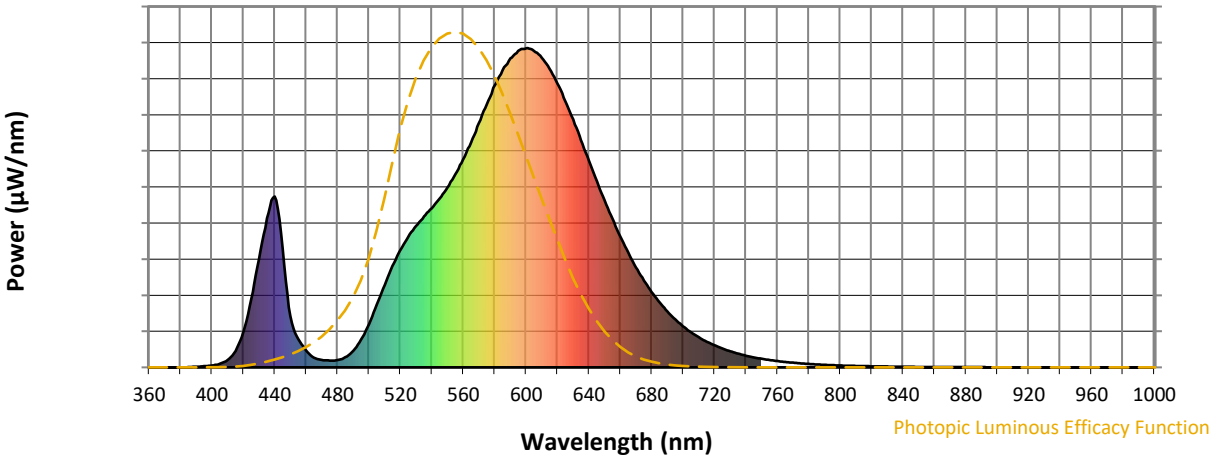



CCT = 2672K
CIE x = 0.4619
CIE y = 0.4106
Duv = -0.0002

Point lies inside the ANSI 2700K 4-step quadrangle

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## Photopic Flux vs. Wavelength

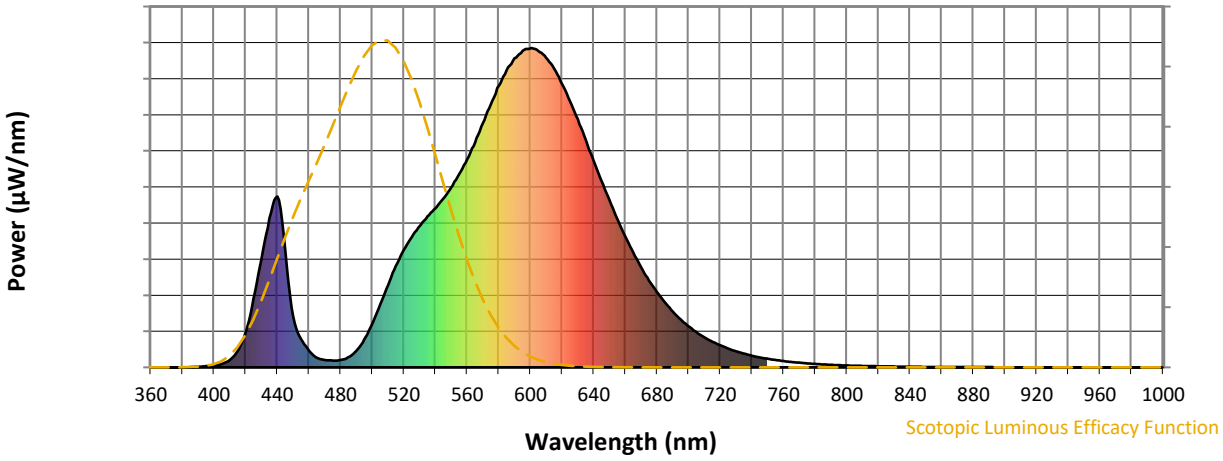



## Photopic Lumens: NR

| 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

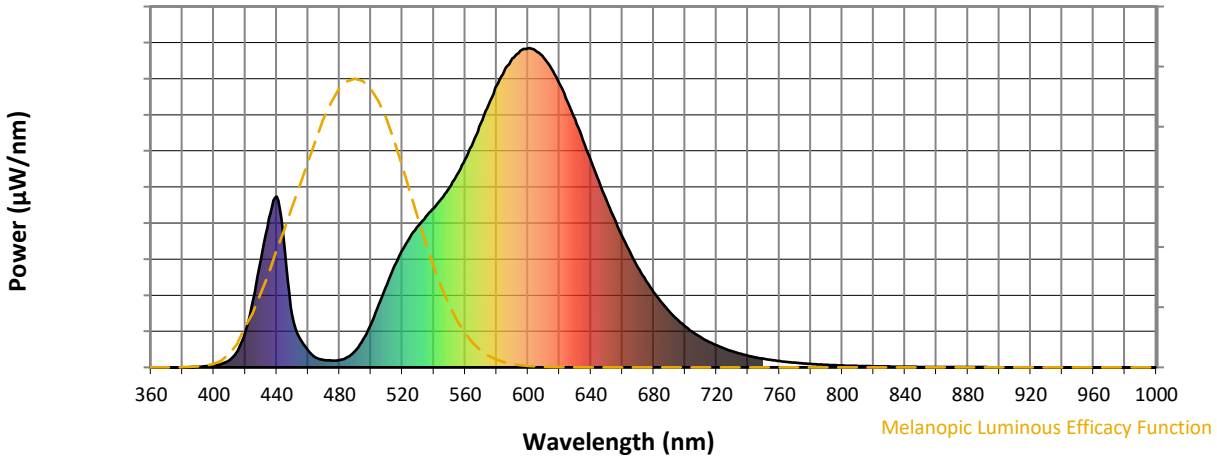



**Scotopic Lumens: NR** **S/P: 1.02**

| 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 | | | |

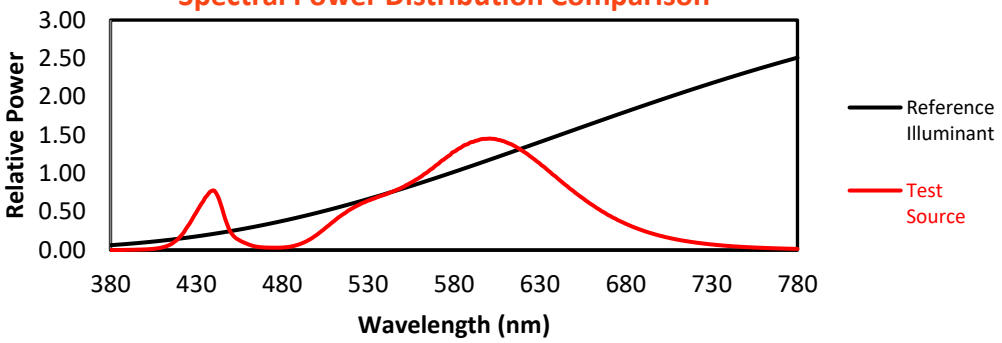
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# TM-30-18

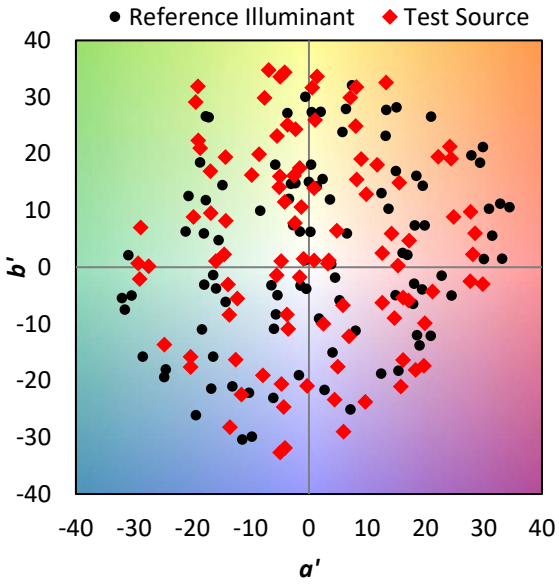
## Summary

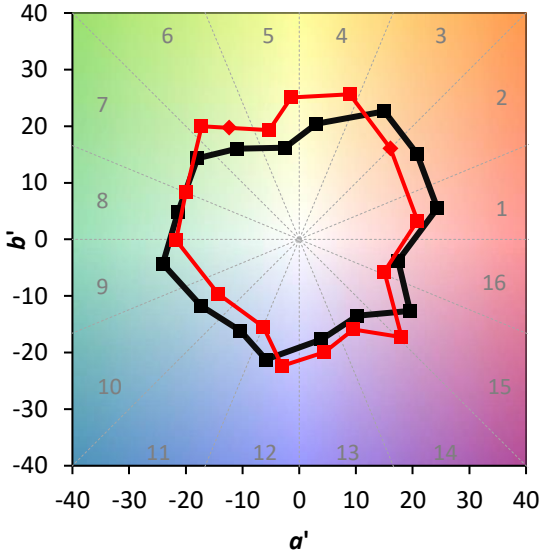
$R_f$ = 67.9
$R_g$ = 98.6
CIE $R_a$ = 71.1
$R_9$ = -27.8

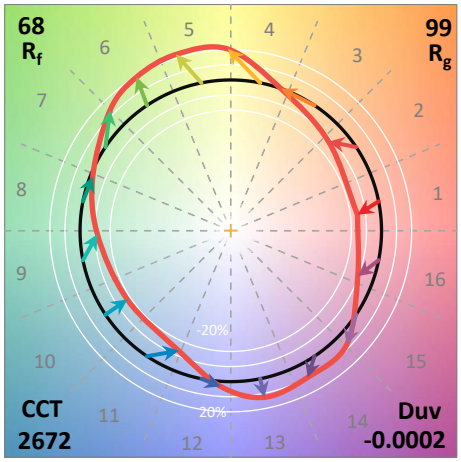
## Spectral Power Distribution Comparison

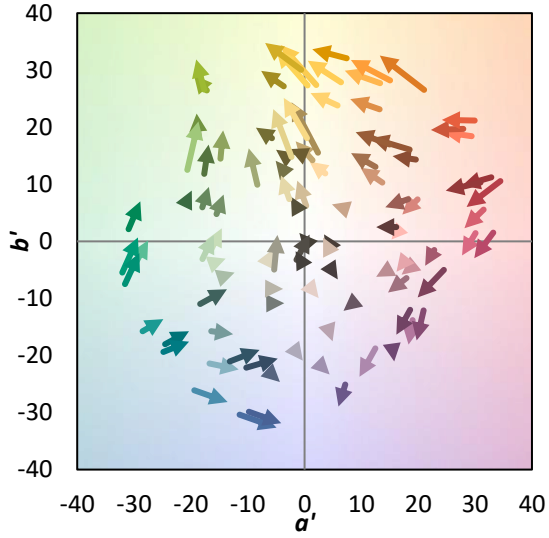



## Color Vector Graphics



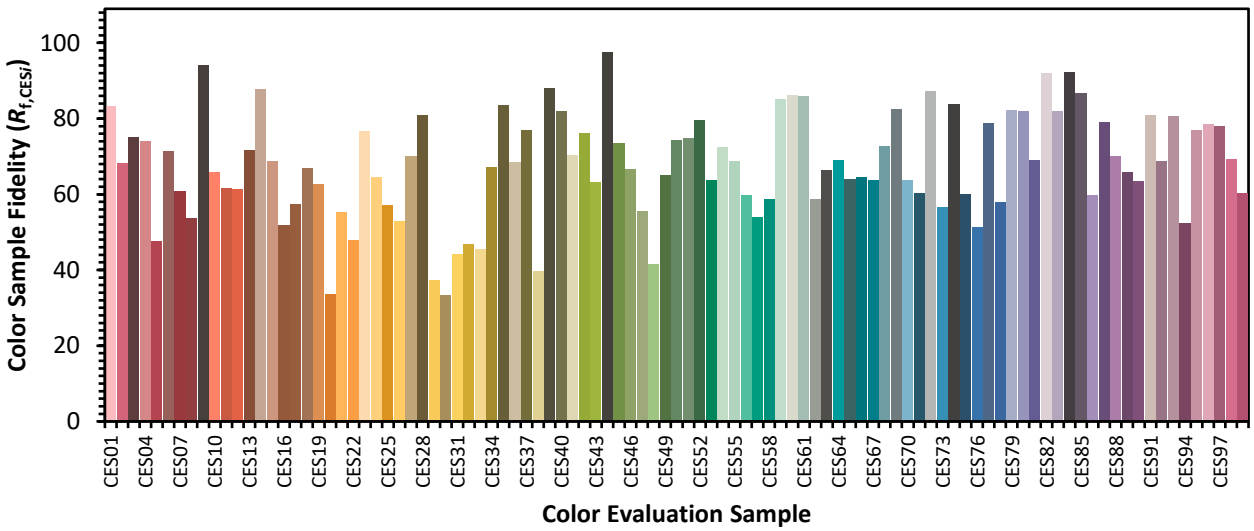



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**Individual Sample Fidelity Index ($R_{f,i}$)**

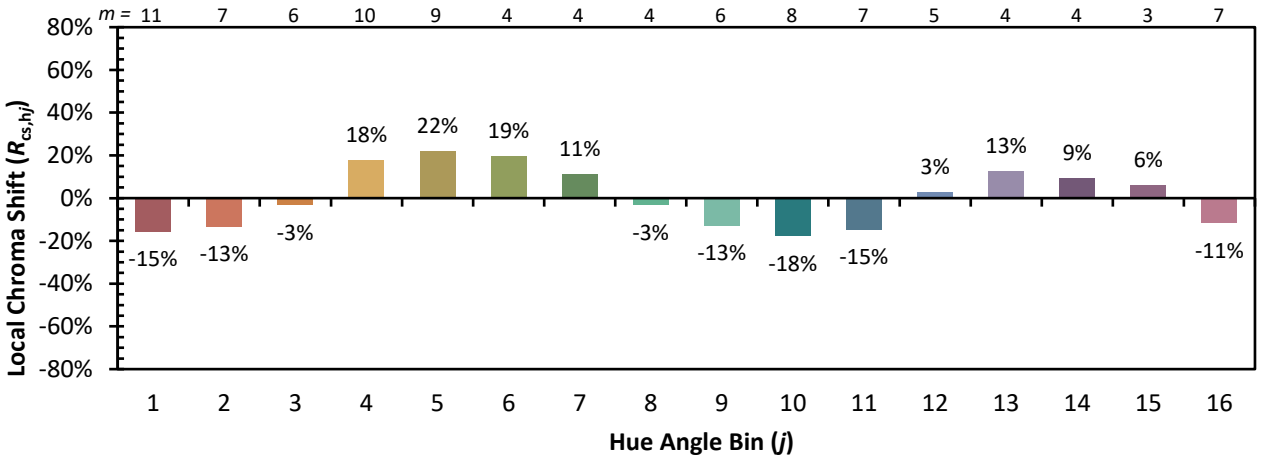
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 53 | CES51 = 75 | CES76 = 51 |
| CES02 = 63 | CES27 = 70 | CES52 = 80 | CES77 = 79 |
| CES03 = 31 | CES28 = 81 | CES53 = 64 | CES78 = 58 |
| CES04 = 71 | CES29 = 37 | CES54 = 73 | CES79 = 82 |
| CES05 = 50 | CES30 = 33 | CES55 = 69 | CES80 = 82 |
| CES06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

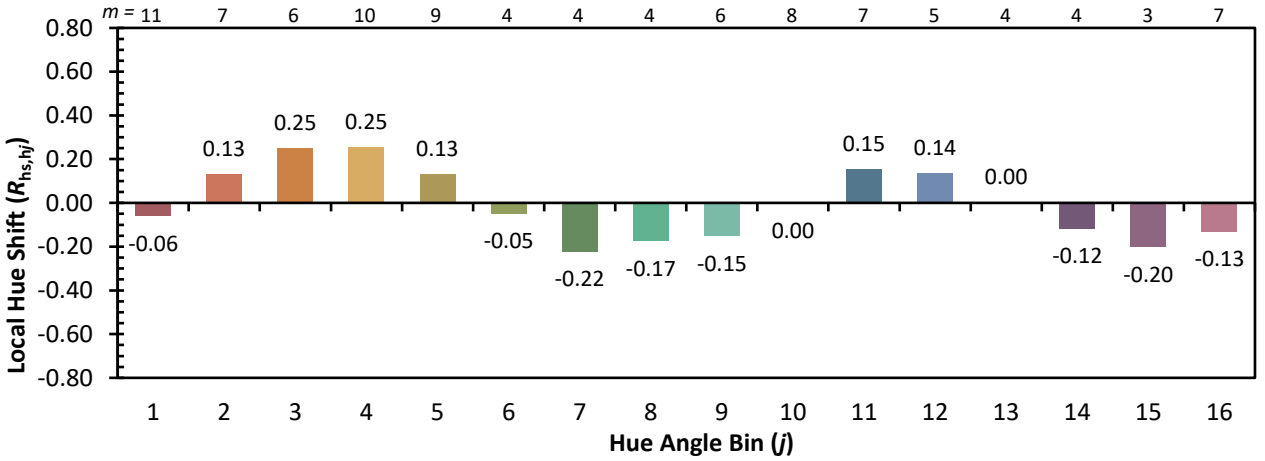


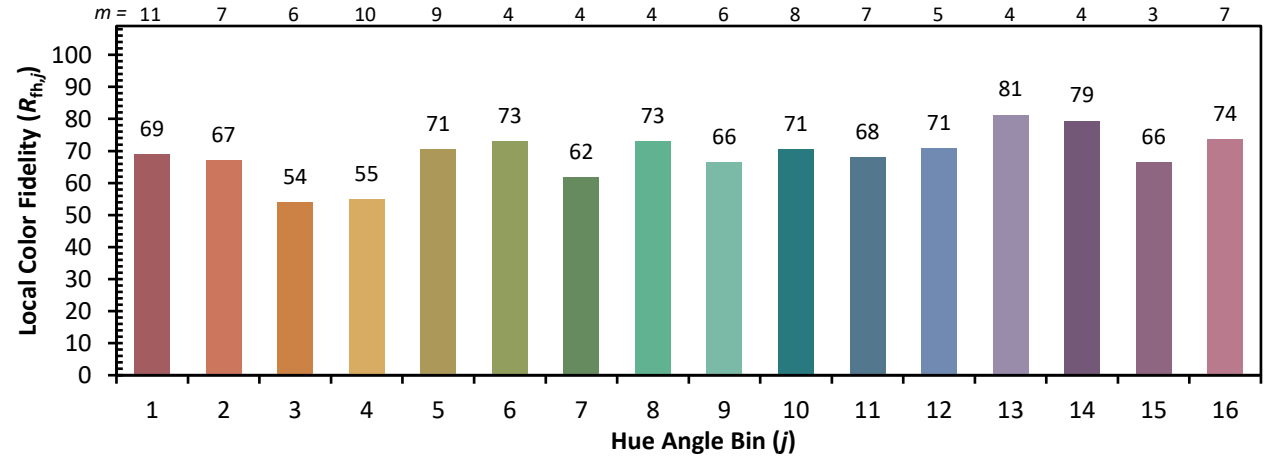
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## Color Rendition by Hue-Angle Bin



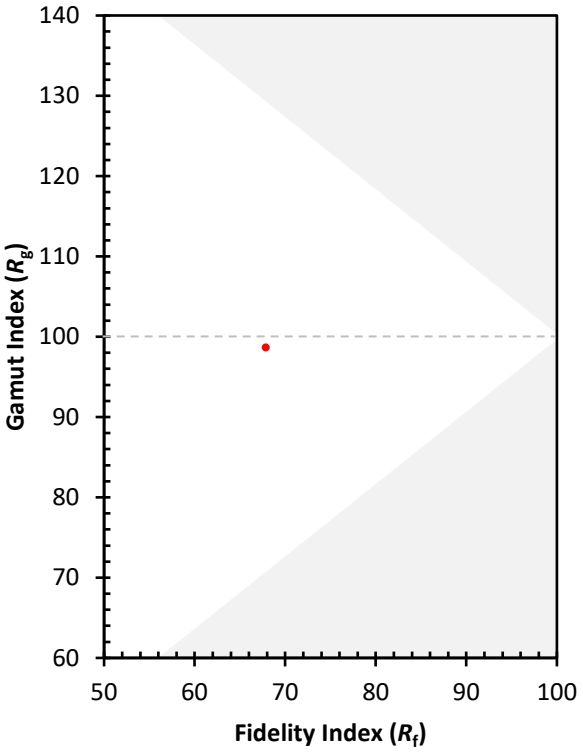



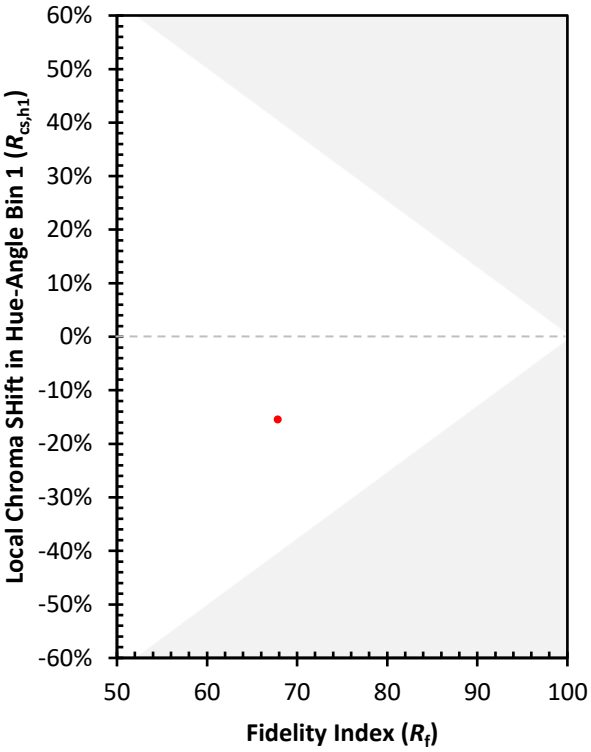



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## Measure Comparisons




(END OF REPORT)