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

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1121 Highway 74 South
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: P1500591

Luminaire Tested: GSS-SB3C-722-U-T4LG

Issue Date: 07/20/2026

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2024 |
| Report Number: | P1500591 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 7/20/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB3C-722-U-T4LG |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 3SQUARE 150W 70CRI 2200K FIXTURE w/ TYPE IV LOW GLARE DISTRIBUTION FIXTURE |
| Light Source: | (78) 2200K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 17241.2 lumens |
| Efficiency: | N/A |
| Efficacy: | 114.9 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 0.5' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B3 - U0 - G2 |

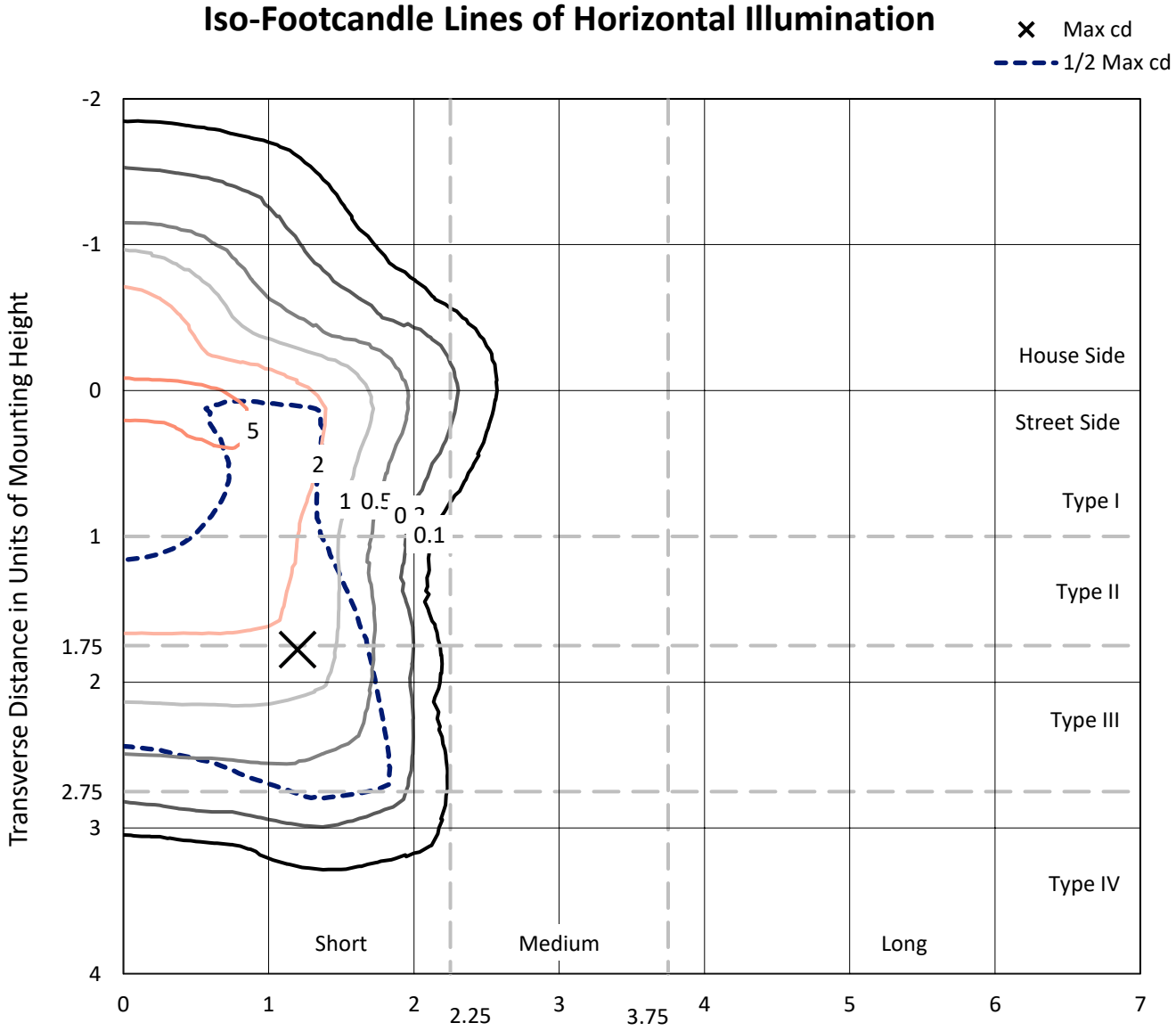
| | |
|---|---|
| Input Watts (W): | 150 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 6.3% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1500591
CATALOG NUMBER: GSS-SB3C-722-U-T4LG

## Iso-Footcandle Lines of Horizontal Illumination



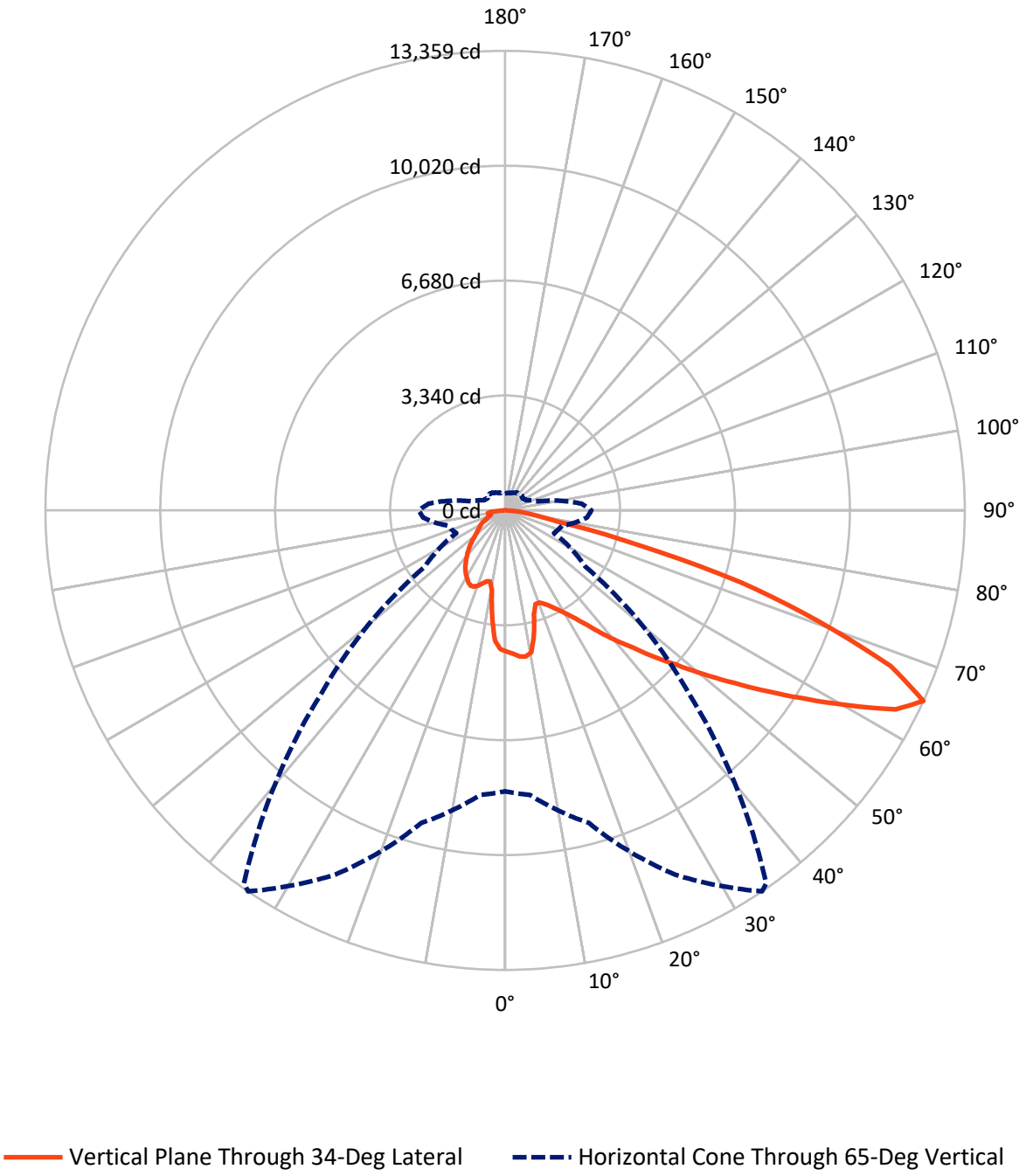

Based on 25 foot mounting height. Maximum calculated value = 7 fc
Type III - Short - N/A

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## Luminous Intensity Polar Plot



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Scaled Data Report

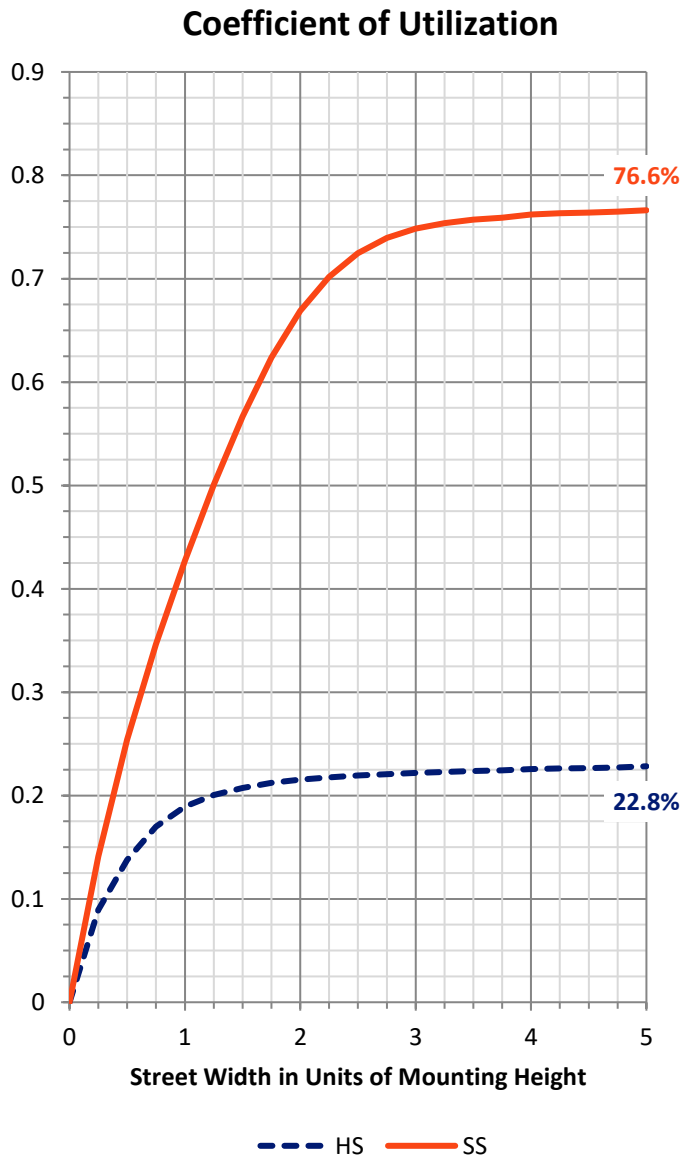
REPORT NUMBER: P1500591
CATALOG NUMBER: GSS-SB3C-722-U-T4LG

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 4011.3 | 0.0 | 4011.3 |
| | % Fixture | 23.3 | 0.0 | 23.3 |
| **Street Side** | Lumens | 13229.9 | 0.0 | 13229.9 |
| | % Fixture | 76.7 | 0.0 | 76.7 |
| **Total** | Lumens | 17241.2 | 0.0 | 17241.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 369.5 | 2.1 |
| 10°-20° | 930.1 | 5.4 |
| 20°-30° | 1541.7 | 8.9 |
| 30°-40° | 2318.7 | 13.4 |
| 40°-50° | 3248.4 | 18.8 |
| 50°-60° | 4095.7 | 23.8 |
| 60°-70° | 3522.6 | 20.4 |
| 70°-80° | 1047.3 | 6.1 |
| 80°-90° | 167.1 | 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° | 17241.2 | 100.0 |
| 0°-180° | 17241.2 | 100.0 |



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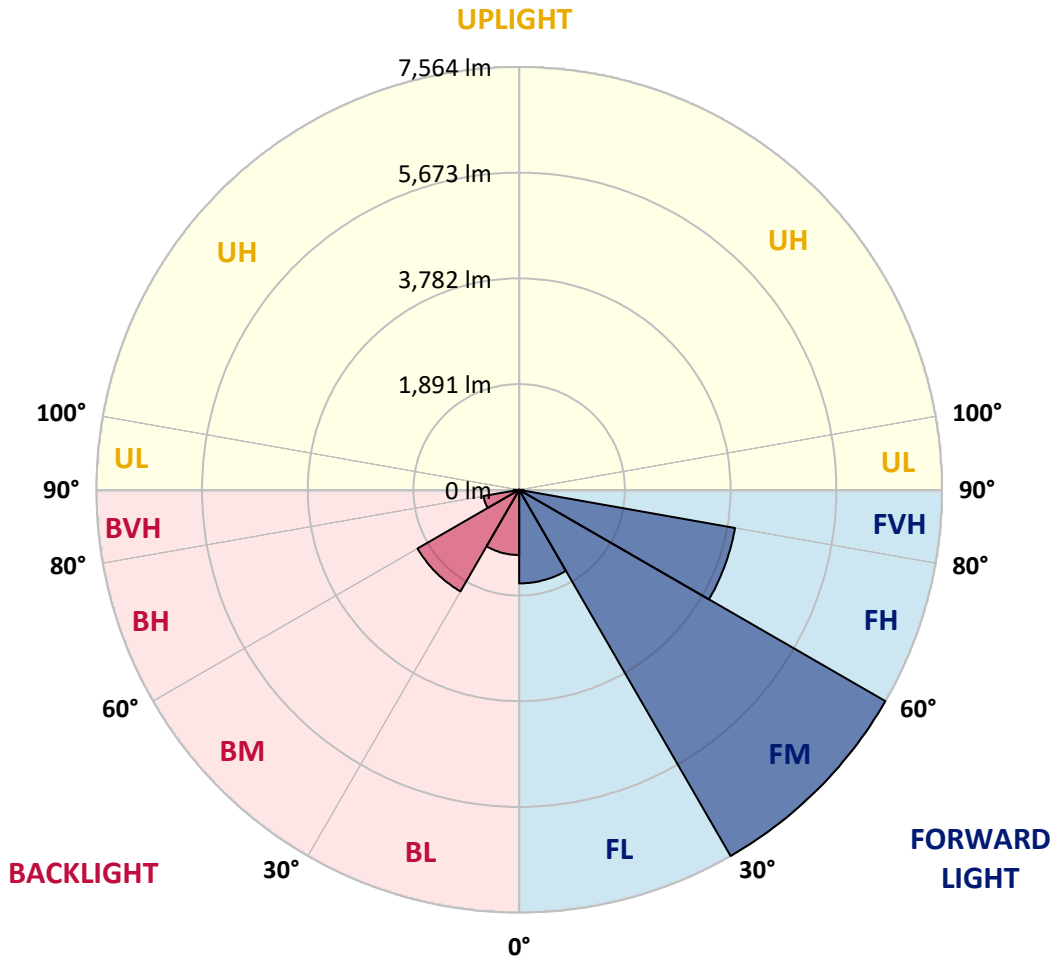
Scaled Data Report

REPORT NUMBER: P1500591
CATALOG NUMBER: GSS-SB3C-722-U-T4LG

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1674.3 | 9.7 | | | |
| FM | (30°-60°) | 7564.2 | 43.9 | | | |
| FH | (60°-80°) | 3920.7 | 22.7 | | | G2/5000 |
| FVH | (80°-90°) | 70.7 | 0.4 | | | G1/100 |
| BL | (0°-30°) | 1167.1 | 6.8 | B3/2500 | | |
| BM | (30°-60°) | 2098.6 | 12.2 | B2/2500 | | |
| BH | (60°-80°) | 649.2 | 3.8 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 96.4 | 0.6 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B3-U0-G2**
Type III Short



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 34° | 35° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 4099.2 | 4099.2 | 4099.2 | 4099.2 | *4099.2* | 4099.2 | 4099.2 | 4099.2 | 4099.2 | 4099.2 | 4099.2 |
| 2.5° | 4177.2 | 4200.7 | 4173.3 | 4161.6 | *4165.5* | 4169.4 | 4149.9 | 4153.8 | 4130.4 | 4130.4 | 4110.9 |
| 5° | 4267.0 | 4270.9 | 4255.3 | 4267.0 | *4263.1* | 4259.2 | 4259.2 | 4255.3 | 4204.6 | 4192.9 | 4173.3 |
| 7.5° | 4216.3 | 4231.9 | 4239.7 | 4282.7 | *4294.4* | 4317.8 | 4333.4 | 4341.2 | 4302.2 | 4270.9 | 4220.2 |
| 10° | 3751.7 | 3763.4 | 3853.2 | 4048.4 | *4196.8* | 4224.1 | 4368.5 | 4450.5 | 4423.2 | 4407.6 | 4321.7 |
| 12.5° | 2998.2 | 3017.8 | 3119.3 | 3373.0 | *3720.5* | 3794.7 | 4255.3 | 4532.5 | 4595.0 | 4598.9 | 4473.9 |
| 15° | 2674.2 | 2674.2 | 2705.5 | 2849.9 | *3131.0* | 3189.5 | 3868.8 | 4555.9 | 4778.5 | 4805.8 | 4653.5 |
| 17.5° | 2607.9 | 2603.9 | 2623.5 | 2709.4 | *2857.7* | 2892.8 | 3423.8 | 4434.9 | 4997.1 | 5043.9 | 4848.7 |
| 20° | 2603.9 | 2592.2 | 2631.3 | 2728.9 | *2857.7* | 2888.9 | 3216.9 | 4224.1 | 5168.9 | 5317.2 | 5043.9 |
| 22.5° | 2607.9 | 2607.9 | 2662.5 | 2803.1 | *2951.4* | 2978.7 | 3255.9 | 4048.4 | 5309.4 | 5602.2 | 5250.8 |
| 25° | 2650.8 | 2643.0 | 2721.1 | 2892.8 | *3095.8* | 3115.4 | 3416.0 | 4040.6 | 5430.4 | 5922.3 | 5500.7 |
| 27.5° | 2721.1 | 2725.0 | 2830.4 | 3037.3 | *3267.6* | 3306.7 | 3638.5 | 4208.5 | 5578.8 | 6273.7 | 5742.7 |
| 30° | 2869.4 | 2873.3 | 2998.2 | 3209.1 | *3474.5* | 3525.3 | 3896.2 | 4458.3 | 5789.6 | 6652.4 | 6004.3 |
| 32.5° | 3037.3 | 3056.8 | 3209.1 | 3455.0 | *3740.0* | 3767.3 | 4212.4 | 4833.1 | 6105.8 | 7031.0 | 6285.4 |
| 35° | 3318.4 | 3337.9 | 3509.7 | 3767.3 | *4083.6* | 4122.6 | 4598.9 | 5266.5 | 6492.3 | 7413.6 | 6504.0 |
| 37.5° | 3681.4 | 3697.1 | 3864.9 | 4177.2 | *4513.0* | 4552.0 | 5028.3 | 5727.1 | 6882.7 | 7718.1 | 6699.2 |
| 40° | 4114.8 | 4149.9 | 4329.5 | 4634.0 | *4973.7* | 4997.1 | 5496.8 | 6172.2 | 7304.3 | 7929.0 | 6777.3 |
| 42.5° | 4587.2 | 4622.3 | 4805.8 | 5141.5 | *5453.8* | 5524.1 | 6004.3 | 6644.6 | 7647.9 | 8022.7 | 6714.8 |
| 45° | 5192.3 | 5184.5 | 5356.2 | 5707.6 | *6074.6* | 6101.9 | 6547.0 | 7035.0 | 7854.8 | 7944.6 | 6652.4 |
| 47.5° | 5926.2 | 5934.0 | 6043.3 | 6328.3 | *6707.0* | 6769.5 | 7113.0 | 7370.7 | 7975.8 | 7882.1 | 6582.1 |
| 50° | 6753.9 | 6773.4 | 6867.1 | 7074.0 | *7480.0* | 7522.9 | 7624.5 | 7604.9 | 8050.0 | 7749.4 | 6609.4 |
| 52.5° | 7581.5 | 7593.2 | 7718.1 | 7936.8 | *8331.1* | 8362.3 | 8139.8 | 7784.5 | 7772.8 | 7214.5 | 6550.9 |
| 55° | 8260.8 | 8256.9 | 8479.4 | 8815.2 | *9295.4* | 9275.8 | 8647.3 | 7647.9 | 6906.1 | 6383.0 | 6289.3 |
| 57.5° | 8850.3 | 8873.7 | 9162.6 | 9744.3 | *10349.4* | 10333.8 | 9189.9 | 6925.6 | 5641.2 | 5399.2 | 5863.8 |
| 60° | 9381.2 | 9435.9 | 9978.5 | 10849.1 | *11516.7* | 11423.0 | 9287.5 | 5836.4 | 4388.1 | 4228.0 | 5020.5 |
| 62.5° | 9150.9 | 9252.4 | 10123.0 | 11821.2 | *12738.7* | 12531.7 | 8686.3 | 4520.8 | 2970.9 | 2826.5 | 3548.7 |
| 65° | *8167.1* | *8303.7* | *9408.6* | *11680.7* | *13359.4* | *13230.6* | *7593.2* | *2842.1* | *1565.5* | *1717.7* | *2389.2* |
| 67.5° | 6859.3 | 7023.2 | 8217.9 | 10493.9 | *12086.7* | 11809.5 | 5898.9 | 1495.2 | 730.0 | 1132.2 | 1483.5 |
| 70° | 3759.5 | 4165.5 | 5941.8 | 8924.5 | *9681.8* | 9295.4 | 3412.1 | 706.6 | 530.9 | 706.6 | 886.2 |
| 72.5° | 1413.2 | 1510.8 | 2576.6 | 6000.4 | *7171.6* | 6695.3 | 1296.1 | 456.8 | 445.1 | 523.1 | 640.3 |
| 75° | 679.3 | 726.1 | 1120.4 | 2728.9 | *3915.7* | 3650.2 | 636.3 | 339.6 | 382.6 | 409.9 | 464.6 |
| 77.5° | 406.0 | 437.2 | 698.8 | 1585.0 | *1542.1* | 1417.1 | 390.4 | 261.6 | 308.4 | 292.8 | 273.3 |
| 80° | 242.0 | 269.4 | 425.5 | 901.8 | *929.1* | 823.7 | 238.1 | 183.5 | 214.7 | 187.4 | 167.9 |
| 82.5° | 140.5 | 152.3 | 222.5 | 406.0 | *589.5* | 542.7 | 136.6 | 109.3 | 156.2 | 124.9 | 93.7 |
| 85° | 70.3 | 74.2 | 101.5 | 175.7 | *292.8* | 222.5 | 58.6 | 50.8 | 74.2 | 54.7 | 31.2 |
| 87.5° | 15.6 | 15.6 | 15.6 | 19.5 | *27.3* | 27.3 | 7.8 | 3.9 | 3.9 | 3.9 | 3.9 |
| 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: P1500591
CATALOG NUMBER: GSS-SB3C-722-U-T4LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 4099.2 | 4099.2 | 4099.2 | 4099.2 | 4099.2 | 4099.2 | 4099.2 | 4099.2 | 4099.2 | 4099.2 | 4099.2 |
| 2.5° | 4107.0 | 4114.8 | 4087.5 | 4056.2 | 4048.4 | 4025.0 | 4032.8 | 4017.2 | 3993.8 | 3997.7 | 4001.6 |
| 5° | 4146.0 | 4130.4 | 4075.7 | 4005.5 | 3943.0 | 3872.7 | 3790.8 | 3697.1 | 3630.7 | 3603.4 | 3626.8 |
| 7.5° | 4181.2 | 4165.5 | 4071.8 | 3915.7 | 3704.9 | 3412.1 | 3107.6 | 2830.4 | 2639.1 | 2568.8 | 2584.4 |
| 10° | 4278.8 | 4216.3 | 4044.5 | 3704.9 | 3201.3 | 2646.9 | 2338.5 | 2166.7 | 2108.1 | 2076.9 | 2080.8 |
| 12.5° | 4407.6 | 4321.7 | 3993.8 | 3337.9 | 2576.6 | 2225.3 | 2116.0 | 2076.9 | 2057.4 | 2049.6 | 2057.4 |
| 15° | 4563.7 | 4431.0 | 3872.7 | 2877.2 | 2287.7 | 2151.1 | 2127.7 | 2131.6 | 2131.6 | 2135.5 | 2135.5 |
| 17.5° | 4700.4 | 4493.5 | 3654.1 | 2545.4 | 2229.2 | 2190.1 | 2213.6 | 2233.1 | 2233.1 | 2237.0 | 2233.1 |
| 20° | 4825.3 | 4524.7 | 3373.0 | 2404.8 | 2240.9 | 2260.4 | 2315.1 | 2334.6 | 2338.5 | 2334.6 | 2334.6 |
| 22.5° | 4958.0 | 4544.2 | 3091.9 | 2326.8 | 2268.2 | 2326.8 | 2385.3 | 2412.7 | 2420.5 | 2424.4 | 2428.3 |
| 25° | 5086.9 | 4505.2 | 2861.6 | 2264.3 | 2256.5 | 2338.5 | 2404.8 | 2440.0 | 2447.8 | 2447.8 | 2451.7 |
| 27.5° | 5215.7 | 4493.5 | 2705.5 | 2182.3 | 2201.8 | 2268.2 | 2346.3 | 2393.1 | 2424.4 | 2428.3 | 2432.2 |
| 30° | 5364.1 | 4458.3 | 2557.1 | 2073.0 | 2080.8 | 2162.8 | 2244.8 | 2326.8 | 2389.2 | 2416.6 | 2416.6 |
| 32.5° | 5465.6 | 4423.2 | 2424.4 | 1955.9 | 1955.9 | 2041.8 | 2143.3 | 2244.8 | 2334.6 | 2389.2 | 2400.9 |
| 35° | 5563.2 | 4392.0 | 2307.2 | 1838.8 | 1842.7 | 1924.7 | 2030.1 | 2139.4 | 2252.6 | 2319.0 | 2350.2 |
| 37.5° | 5613.9 | 4360.7 | 2225.3 | 1749.0 | 1733.4 | 1819.2 | 1889.5 | 1979.3 | 2100.3 | 2209.6 | 2237.0 |
| 40° | 5625.6 | 4360.7 | 2217.5 | 1686.5 | 1620.1 | 1717.7 | 1749.0 | 1811.4 | 1920.8 | 2037.9 | 2080.8 |
| 42.5° | 5547.5 | 4317.8 | 2256.5 | 1647.5 | 1503.0 | 1573.3 | 1608.4 | 1639.7 | 1709.9 | 1807.5 | 1842.7 |
| 45° | 5453.8 | 4259.2 | 2291.6 | 1592.8 | 1358.6 | 1413.2 | 1467.9 | 1471.8 | 1503.0 | 1526.5 | 1549.9 |
| 47.5° | 5375.8 | 4196.8 | 2229.2 | 1491.3 | 1210.2 | 1249.3 | 1307.8 | 1307.8 | 1292.2 | 1245.4 | 1229.8 |
| 50° | 5438.2 | 4216.3 | 2123.8 | 1346.9 | 1073.6 | 1100.9 | 1163.4 | 1128.2 | 1093.1 | 995.5 | 983.8 |
| 52.5° | 5492.9 | 4290.5 | 1998.8 | 1206.3 | 956.5 | 983.8 | 1046.3 | 991.6 | 921.3 | 843.3 | 831.5 |
| 55° | 5403.1 | 4294.4 | 1768.5 | 1050.2 | 874.5 | 897.9 | 956.5 | 890.1 | 823.7 | 776.9 | 769.1 |
| 57.5° | 5133.7 | 4177.2 | 1526.5 | 929.1 | 804.2 | 827.6 | 882.3 | 815.9 | 753.5 | 749.6 | 769.1 |
| 60° | 4540.3 | 3767.3 | 1303.9 | 851.1 | 737.9 | 765.2 | 819.8 | 749.6 | 667.6 | 632.4 | 644.2 |
| 62.5° | 3427.7 | 2896.7 | 1116.5 | 761.3 | 675.4 | 710.5 | 749.6 | 636.3 | 566.1 | 550.5 | 534.8 |
| 65° | *2506.3* | *2225.3* | *1003.3* | *691.0* | *616.8* | *659.8* | *628.5* | *566.1* | *519.2* | *503.6* | *495.8* |
| 67.5° | 1620.1 | 1510.8 | 862.8 | 624.6 | 562.2 | 597.3 | 554.4 | 523.1 | 472.4 | 464.6 | 476.3 |
| 70° | 991.6 | 1026.7 | 722.2 | 550.5 | 507.5 | 499.7 | 507.5 | 476.3 | 421.6 | 433.3 | 449.0 |
| 72.5° | 702.7 | 757.4 | 620.7 | 480.2 | 433.3 | 417.7 | 452.9 | 433.3 | 394.3 | 406.0 | 421.6 |
| 75° | 503.6 | 562.2 | 511.4 | 394.3 | 367.0 | 359.2 | 421.6 | 433.3 | 406.0 | 413.8 | 425.5 |
| 77.5° | 296.7 | 359.2 | 363.1 | 304.5 | 277.2 | 320.1 | 449.0 | 499.7 | 480.2 | 456.8 | 445.1 |
| 80° | 191.3 | 214.7 | 257.7 | 195.2 | 195.2 | 277.2 | 491.9 | 609.0 | 523.1 | 464.6 | 456.8 |
| 82.5° | 97.6 | 113.2 | 167.9 | 124.9 | 117.1 | 206.9 | 484.1 | 581.7 | 577.8 | 515.3 | 503.6 |
| 85° | 27.3 | 35.1 | 78.1 | 54.7 | 46.8 | 109.3 | 363.1 | 437.2 | 390.4 | 285.0 | 288.9 |
| 87.5° | 3.9 | 3.9 | 0.0 | 0.0 | 3.9 | 15.6 | 42.9 | 7.8 | 7.8 | 7.8 | 7.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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# LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-2

Test Date: 10/09/2024

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

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

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

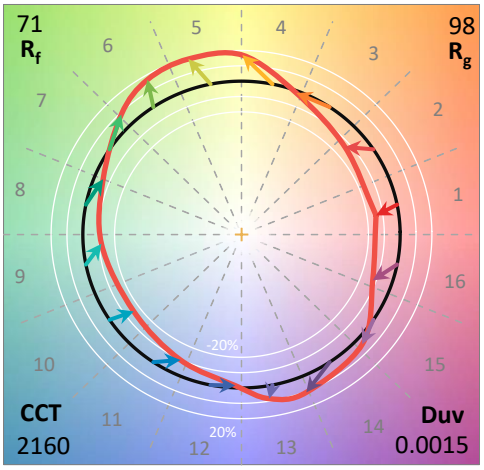
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-2 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 10/15/2024 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGraw-Edison |
| Catalog Number: | **GSS-SB1A-722-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 2200K CCT 26 LEDS |

## Spectral Parameters

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

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




## Test Conditions

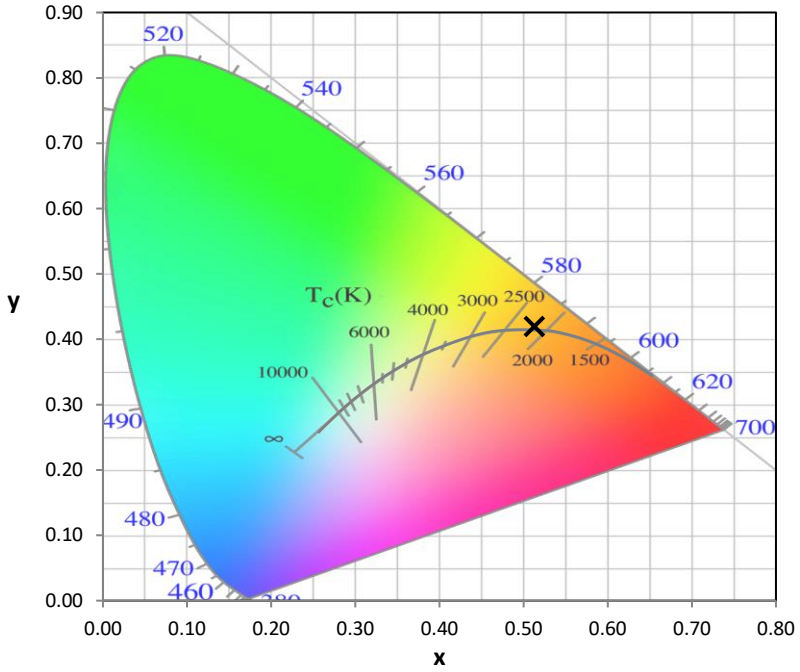
| | |
|---|---|
| Stabilization Time: | 21M |
| Operation Time: | 1H 21M |
| Sphere Temperature (°C): | 25.2 |

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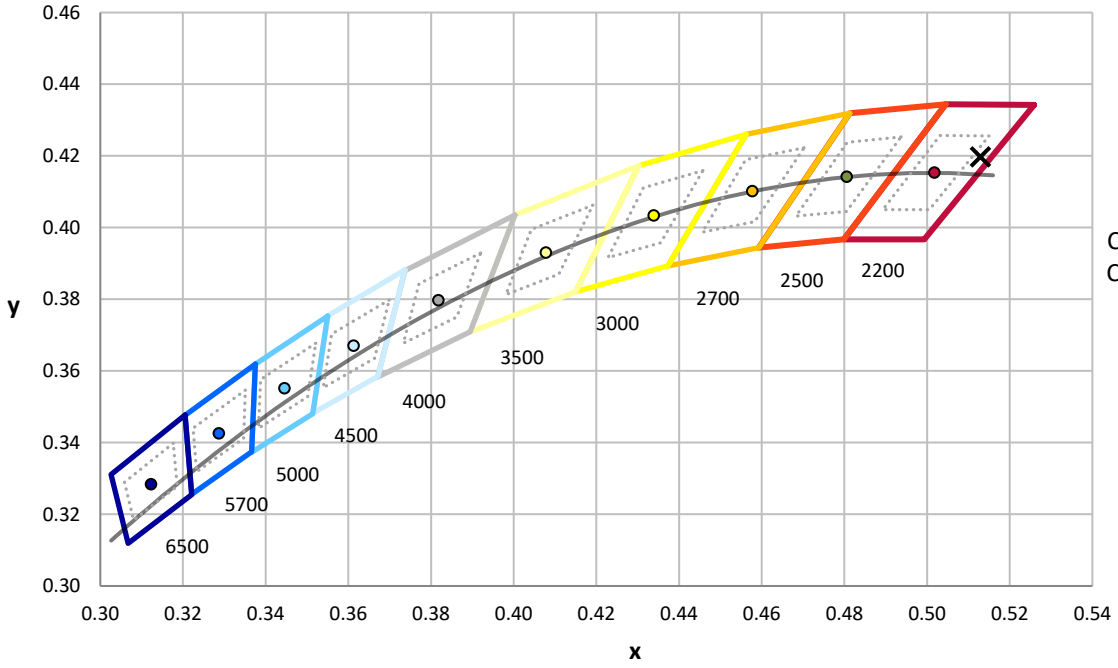
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC Power Source | IN0208 | 10/24/2023 | 10/24/2024 |
| Sphere Thermometer | IN0085 | 10/24/2023 | 10/24/2024 |
| Room Thermometer | IN0046 | 10/24/2023 | 10/24/2024 |

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## CIE 1931 Chromaticity Diagram




## CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles

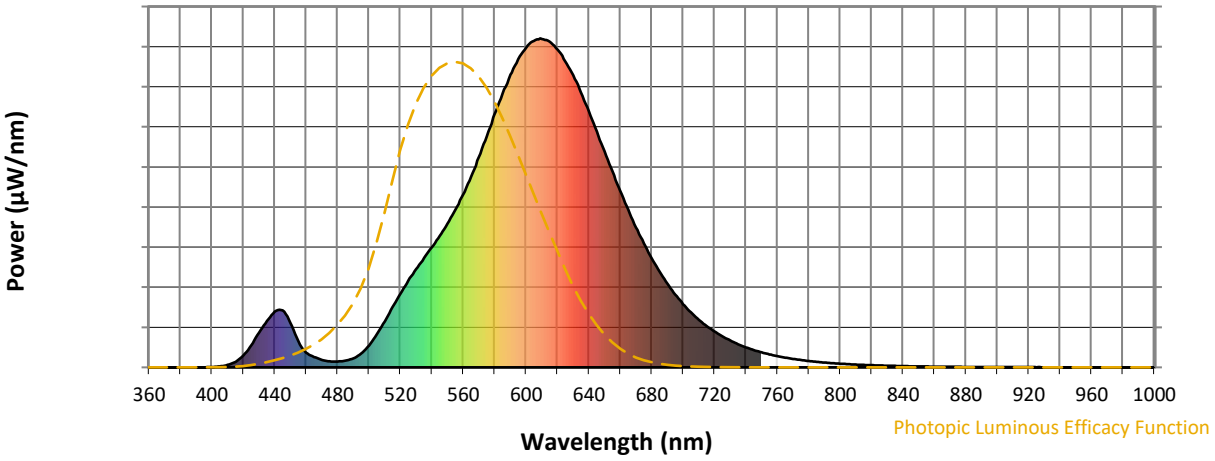



CCT = 2160K
CIE x = 0.5130
CIE y = 0.4197
Duv = 0.0015

Point lies inside the ANSI 2200K 7-step quadrangle

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## Photopic Flux vs. Wavelength

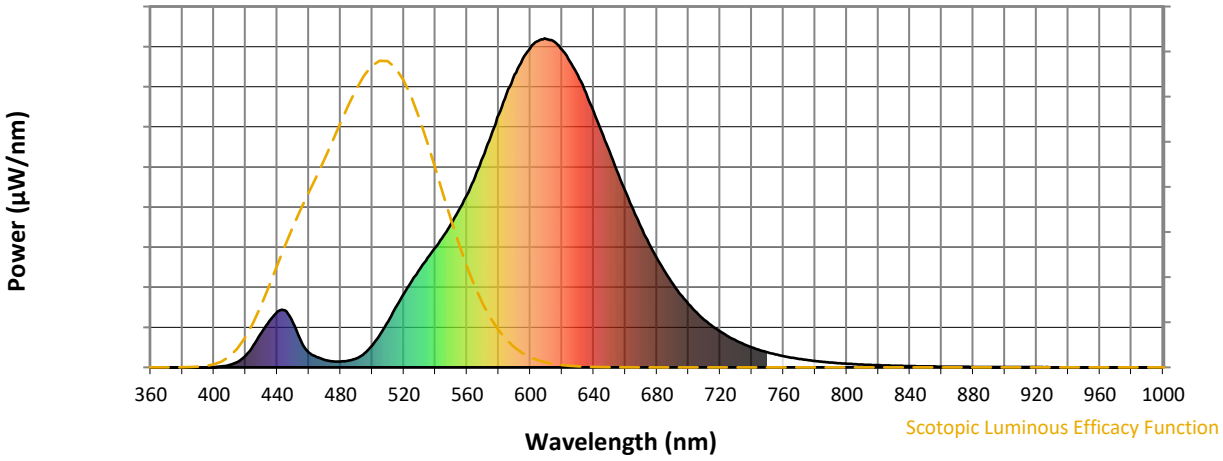



## Photopic Lumens: NR

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 27 | NR | 620 | 966 | NR | 750 | 46 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 42 | NR | 625 | 930 | NR | 755 | 39 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 67 | NR | 630 | 888 | NR | 760 | 34 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 101 | NR | 635 | 835 | NR | 765 | 30 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 139 | NR | 640 | 778 | NR | 770 | 26 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 183 | NR | 645 | 717 | NR | 775 | 22 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 224 | NR | 650 | 656 | NR | 780 | 19 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 262 | NR | 655 | 595 | NR | 785 | 17 | NR | 915 | 1 | NR |
| 400 | 1 | NR | 530 | 299 | NR | 660 | 536 | NR | 790 | 15 | NR | 920 | 1 | NR |
| 405 | 3 | NR | 535 | 332 | NR | 665 | 480 | NR | 795 | 13 | NR | 925 | 1 | NR |
| 410 | 7 | NR | 540 | 365 | NR | 670 | 425 | NR | 800 | 11 | NR | 930 | 1 | NR |
| 415 | 17 | NR | 545 | 400 | NR | 675 | 376 | NR | 805 | 10 | NR | 935 | 0 | NR |
| 420 | 36 | NR | 550 | 437 | NR | 680 | 332 | NR | 810 | 8 | NR | 940 | 0 | NR |
| 425 | 67 | NR | 555 | 479 | NR | 685 | 291 | NR | 815 | 8 | NR | 945 | 0 | NR |
| 430 | 105 | NR | 560 | 525 | NR | 690 | 255 | NR | 820 | 7 | NR | 950 | 0 | NR |
| 435 | 141 | NR | 565 | 579 | NR | 695 | 221 | NR | 825 | 6 | NR | 955 | 0 | NR |
| 440 | 169 | NR | 570 | 639 | NR | 700 | 192 | NR | 830 | 5 | NR | 960 | 0 | NR |
| 445 | 173 | NR | 575 | 703 | NR | 705 | 167 | NR | 835 | 4 | NR | 965 | 0 | NR |
| 450 | 136 | NR | 580 | 769 | NR | 710 | 144 | NR | 840 | 4 | NR | 970 | 0 | NR |
| 455 | 80 | NR | 585 | 832 | NR | 715 | 125 | NR | 845 | 3 | NR | 975 | 0 | NR |
| 460 | 45 | NR | 590 | 890 | NR | 720 | 109 | NR | 850 | 3 | NR | 980 | 0 | NR |
| 465 | 32 | NR | 595 | 937 | NR | 725 | 94 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 23 | NR | 600 | 972 | NR | 730 | 81 | NR | 860 | 2 | NR | 990 | 0 | NR |
| 475 | 18 | NR | 605 | 992 | NR | 735 | 70 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 18 | NR | 610 | 998 | NR | 740 | 61 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 20 | NR | 615 | 990 | NR | 745 | 53 | NR | 875 | 2 | NR | | | |

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## Scotopic Flux vs. Wavelength

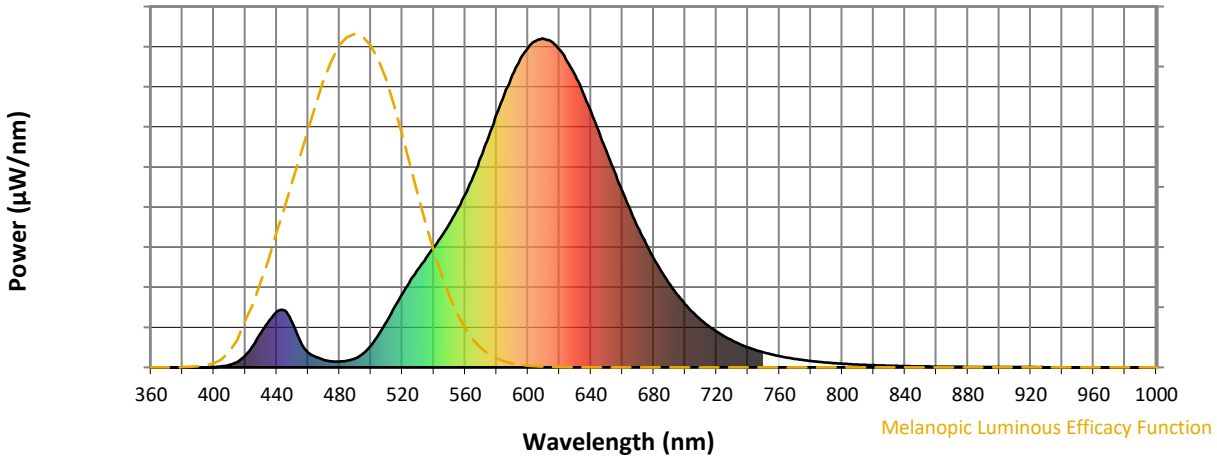



**Scotopic Lumens: NR** **S/P: 0.8**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 27 | NR | 620 | 966 | NR | 750 | 46 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 42 | NR | 625 | 930 | NR | 755 | 39 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 67 | NR | 630 | 888 | NR | 760 | 34 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 101 | NR | 635 | 835 | NR | 765 | 30 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 139 | NR | 640 | 778 | NR | 770 | 26 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 183 | NR | 645 | 717 | NR | 775 | 22 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 224 | NR | 650 | 656 | NR | 780 | 19 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 262 | NR | 655 | 595 | NR | 785 | 17 | NR | 915 | 1 | NR |
| 400 | 1 | NR | 530 | 299 | NR | 660 | 536 | NR | 790 | 15 | NR | 920 | 1 | NR |
| 405 | 3 | NR | 535 | 332 | NR | 665 | 480 | NR | 795 | 13 | NR | 925 | 1 | NR |
| 410 | 7 | NR | 540 | 365 | NR | 670 | 425 | NR | 800 | 11 | NR | 930 | 1 | NR |
| 415 | 17 | NR | 545 | 400 | NR | 675 | 376 | NR | 805 | 10 | NR | 935 | 0 | NR |
| 420 | 36 | NR | 550 | 437 | NR | 680 | 332 | NR | 810 | 8 | NR | 940 | 0 | NR |
| 425 | 67 | NR | 555 | 479 | NR | 685 | 291 | NR | 815 | 8 | NR | 945 | 0 | NR |
| 430 | 105 | NR | 560 | 525 | NR | 690 | 255 | NR | 820 | 7 | NR | 950 | 0 | NR |
| 435 | 141 | NR | 565 | 579 | NR | 695 | 221 | NR | 825 | 6 | NR | 955 | 0 | NR |
| 440 | 169 | NR | 570 | 639 | NR | 700 | 192 | NR | 830 | 5 | NR | 960 | 0 | NR |
| 445 | 173 | NR | 575 | 703 | NR | 705 | 167 | NR | 835 | 4 | NR | 965 | 0 | NR |
| 450 | 136 | NR | 580 | 769 | NR | 710 | 144 | NR | 840 | 4 | NR | 970 | 0 | NR |
| 455 | 80 | NR | 585 | 832 | NR | 715 | 125 | NR | 845 | 3 | NR | 975 | 0 | NR |
| 460 | 45 | NR | 590 | 890 | NR | 720 | 109 | NR | 850 | 3 | NR | 980 | 0 | NR |
| 465 | 32 | NR | 595 | 937 | NR | 725 | 94 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 23 | NR | 600 | 972 | NR | 730 | 81 | NR | 860 | 2 | NR | 990 | 0 | NR |
| 475 | 18 | NR | 605 | 992 | NR | 735 | 70 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 18 | NR | 610 | 998 | NR | 740 | 61 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 20 | NR | 615 | 990 | NR | 745 | 53 | NR | 875 | 2 | NR | | | |

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## Melanopic Flux vs. Wavelength




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

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 27 | NR | 620 | 966 | NR | 750 | 46 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 42 | NR | 625 | 930 | NR | 755 | 39 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 67 | NR | 630 | 888 | NR | 760 | 34 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 101 | NR | 635 | 835 | NR | 765 | 30 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 139 | NR | 640 | 778 | NR | 770 | 26 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 183 | NR | 645 | 717 | NR | 775 | 22 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 224 | NR | 650 | 656 | NR | 780 | 19 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 262 | NR | 655 | 595 | NR | 785 | 17 | NR | 915 | 1 | NR |
| 400 | 1 | NR | 530 | 299 | NR | 660 | 536 | NR | 790 | 15 | NR | 920 | 1 | NR |
| 405 | 3 | NR | 535 | 332 | NR | 665 | 480 | NR | 795 | 13 | NR | 925 | 1 | NR |
| 410 | 7 | NR | 540 | 365 | NR | 670 | 425 | NR | 800 | 11 | NR | 930 | 1 | NR |
| 415 | 17 | NR | 545 | 400 | NR | 675 | 376 | NR | 805 | 10 | NR | 935 | 0 | NR |
| 420 | 36 | NR | 550 | 437 | NR | 680 | 332 | NR | 810 | 8 | NR | 940 | 0 | NR |
| 425 | 67 | NR | 555 | 479 | NR | 685 | 291 | NR | 815 | 8 | NR | 945 | 0 | NR |
| 430 | 105 | NR | 560 | 525 | NR | 690 | 255 | NR | 820 | 7 | NR | 950 | 0 | NR |
| 435 | 141 | NR | 565 | 579 | NR | 695 | 221 | NR | 825 | 6 | NR | 955 | 0 | NR |
| 440 | 169 | NR | 570 | 639 | NR | 700 | 192 | NR | 830 | 5 | NR | 960 | 0 | NR |
| 445 | 173 | NR | 575 | 703 | NR | 705 | 167 | NR | 835 | 4 | NR | 965 | 0 | NR |
| 450 | 136 | NR | 580 | 769 | NR | 710 | 144 | NR | 840 | 4 | NR | 970 | 0 | NR |
| 455 | 80 | NR | 585 | 832 | NR | 715 | 125 | NR | 845 | 3 | NR | 975 | 0 | NR |
| 460 | 45 | NR | 590 | 890 | NR | 720 | 109 | NR | 850 | 3 | NR | 980 | 0 | NR |
| 465 | 32 | NR | 595 | 937 | NR | 725 | 94 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 23 | NR | 600 | 972 | NR | 730 | 81 | NR | 860 | 2 | NR | 990 | 0 | NR |
| 475 | 18 | NR | 605 | 992 | NR | 735 | 70 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 18 | NR | 610 | 998 | NR | 740 | 61 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 20 | NR | 615 | 990 | NR | 745 | 53 | NR | 875 | 2 | NR | | | |

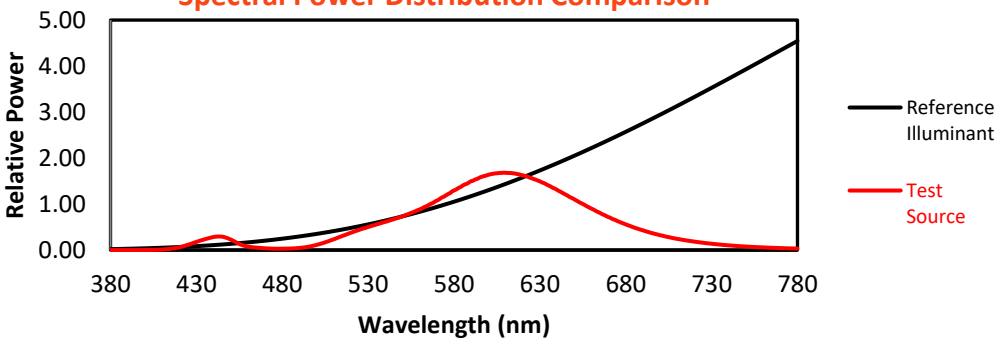
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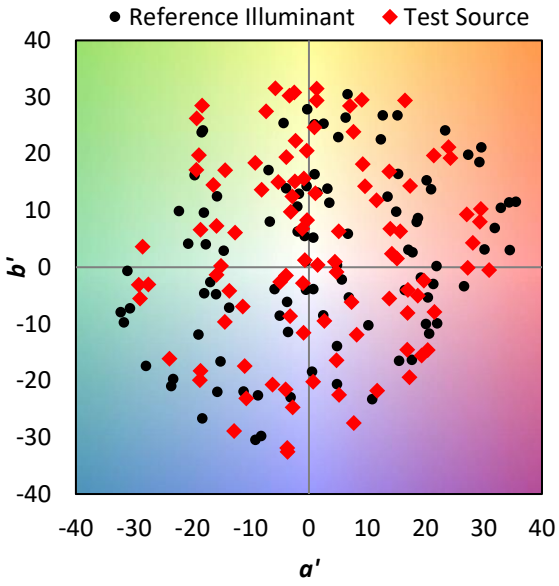
## Summary

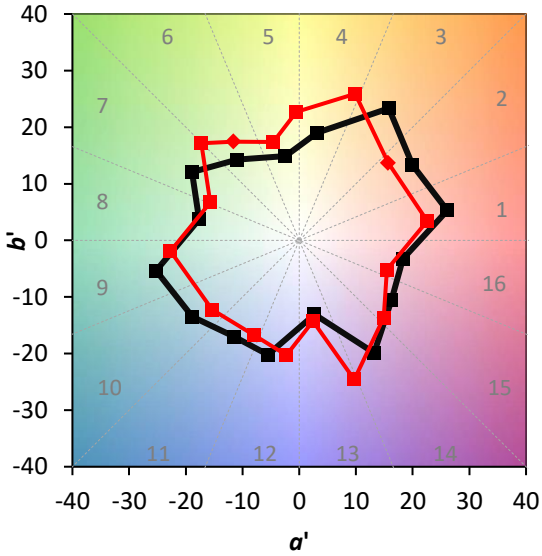
$R_f$ = 70.6
$R_g$ = 97.6
CIE $R_a$ = 71.9
$R_9$ = -17.8

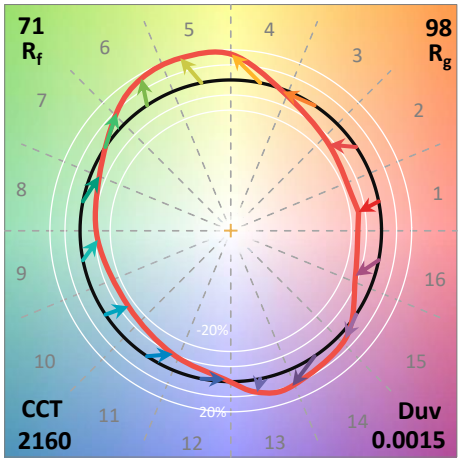
## Spectral Power Distribution Comparison

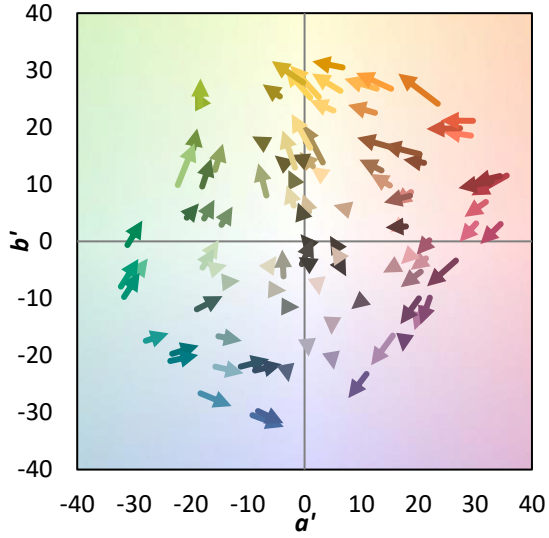



## Color Vector Graphics



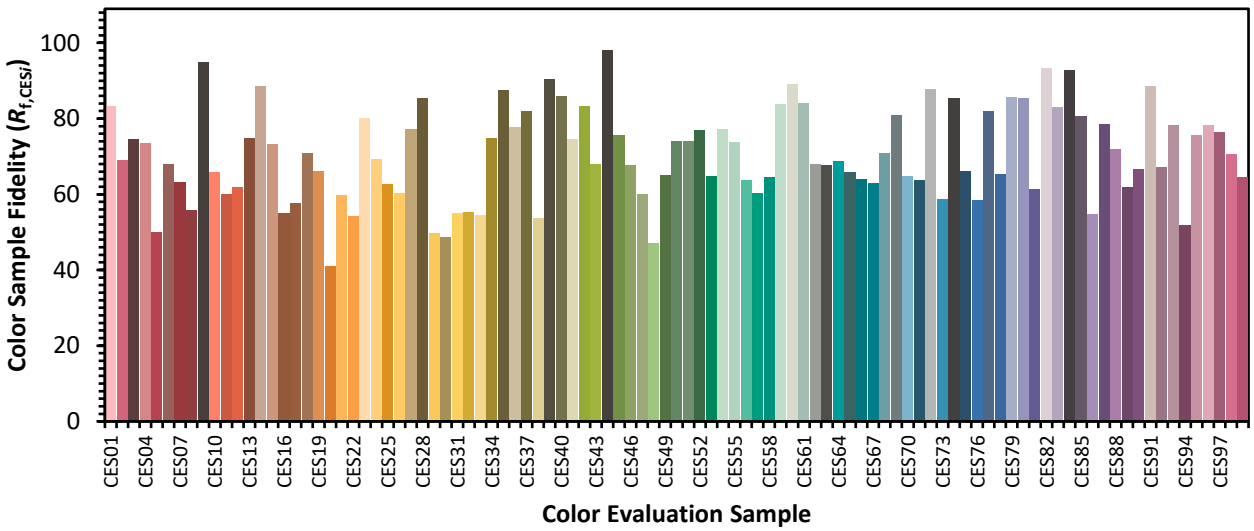



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**Individual Sample Fidelity Index ($R_{f,i}$)**

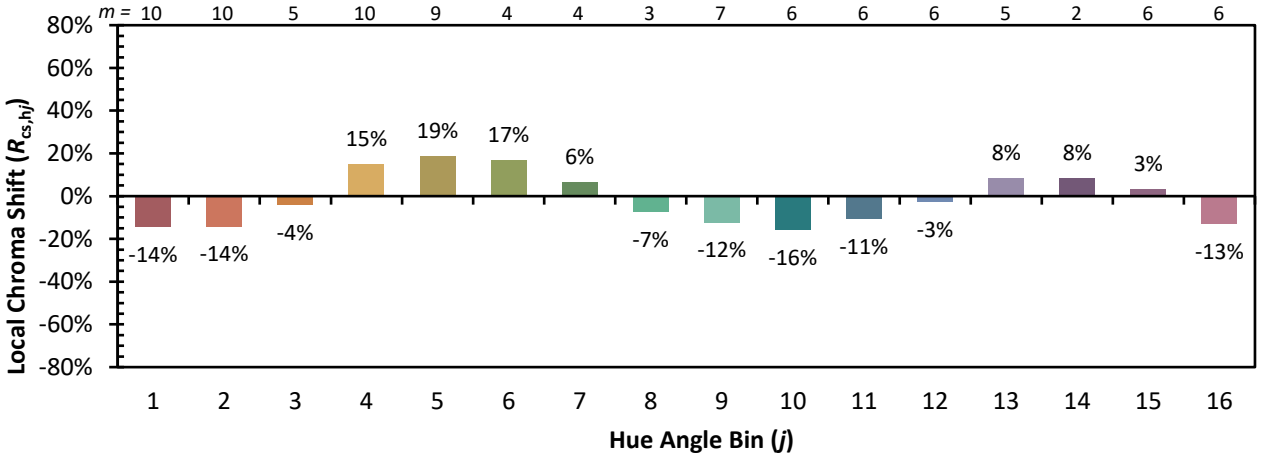
| | | | |
|---|---|---|---|
| CES01 = 87 | CES26 = 60 | CES51 = 74 | CES76 = 58 |
| CES02 = 65 | CES27 = 77 | CES52 = 77 | CES77 = 82 |
| CES03 = 32 | CES28 = 85 | CES53 = 65 | CES78 = 65 |
| CES04 = 72 | CES29 = 50 | CES54 = 77 | CES79 = 86 |
| CES05 = 52 | CES30 = 49 | CES55 = 74 | CES80 = 85 |
| CES06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

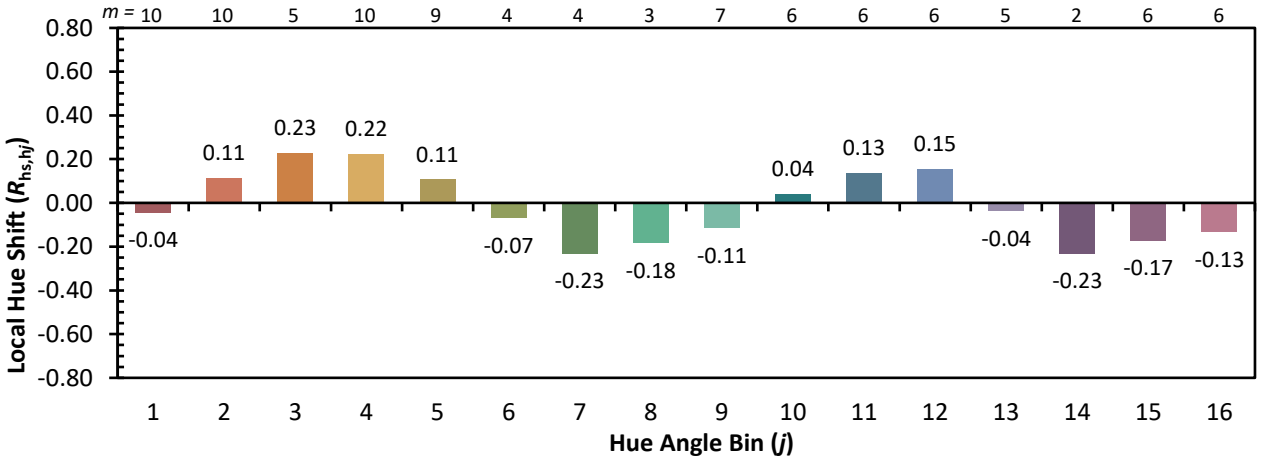


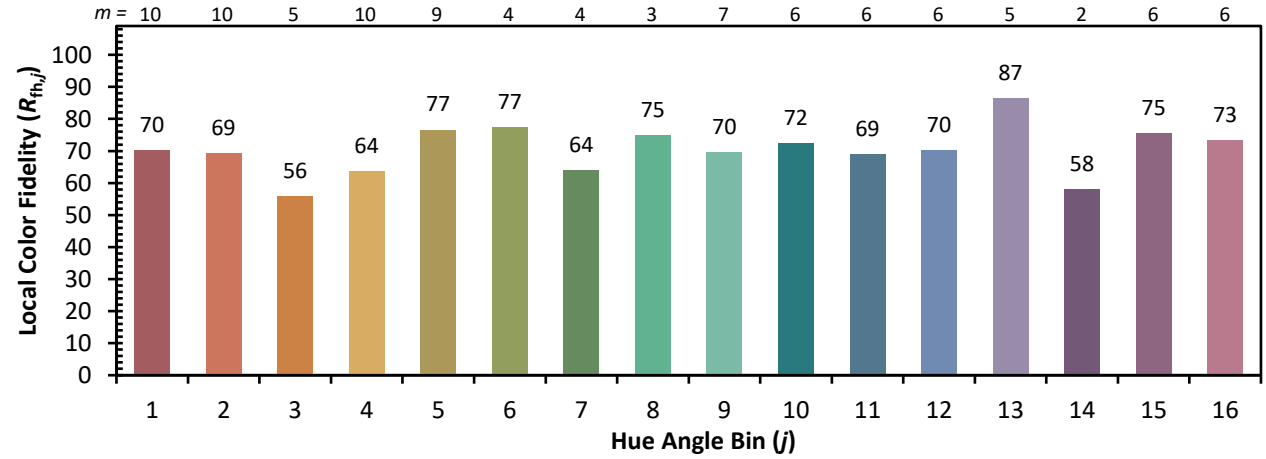
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## Color Rendition by Hue-Angle Bin



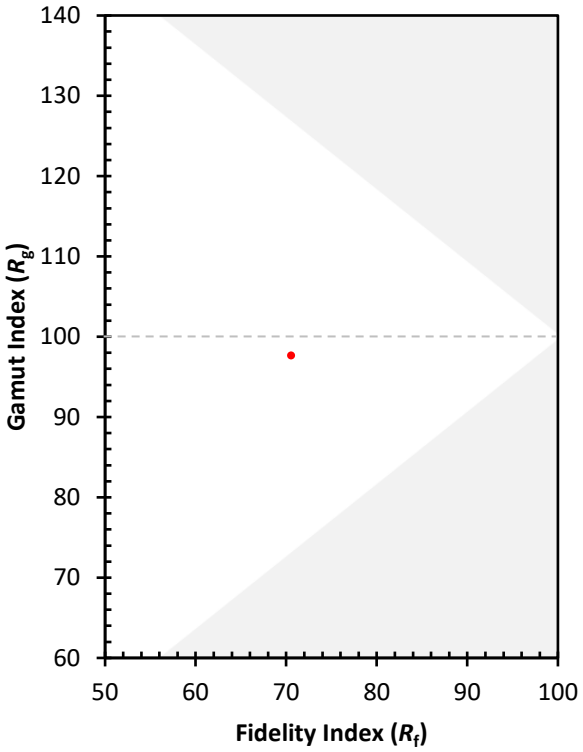



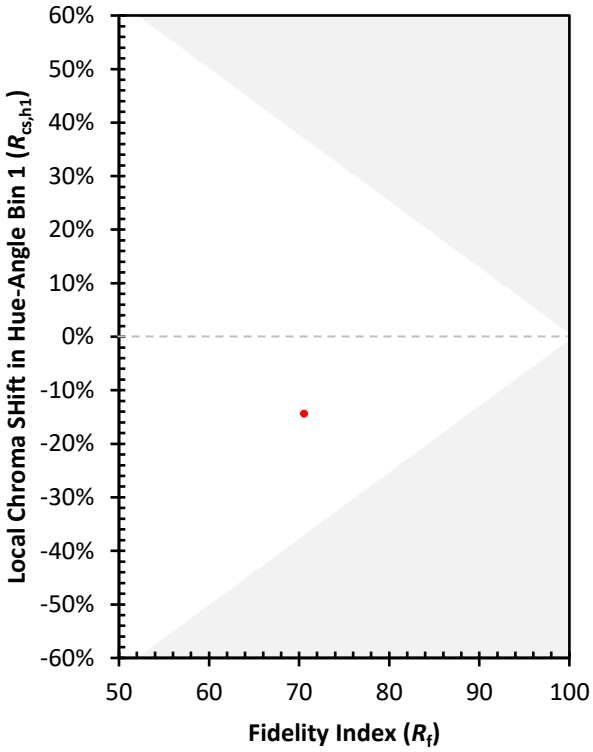



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## Measure Comparisons




(END OF REPORT)