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: P1358805

Luminaire Tested: **GSS-SB4C-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: | P1358805 |
| Test Lab: | INNOVATION CENTER(G3) |
| Issue Date: | 02/18/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB4C-727-U-SL4-HSS |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 4SQUARE 204W 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: | 17103.7 lumens |
| Efficiency: | N/A |
| Efficacy: | 83.8 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B2 - U0 - G3 |

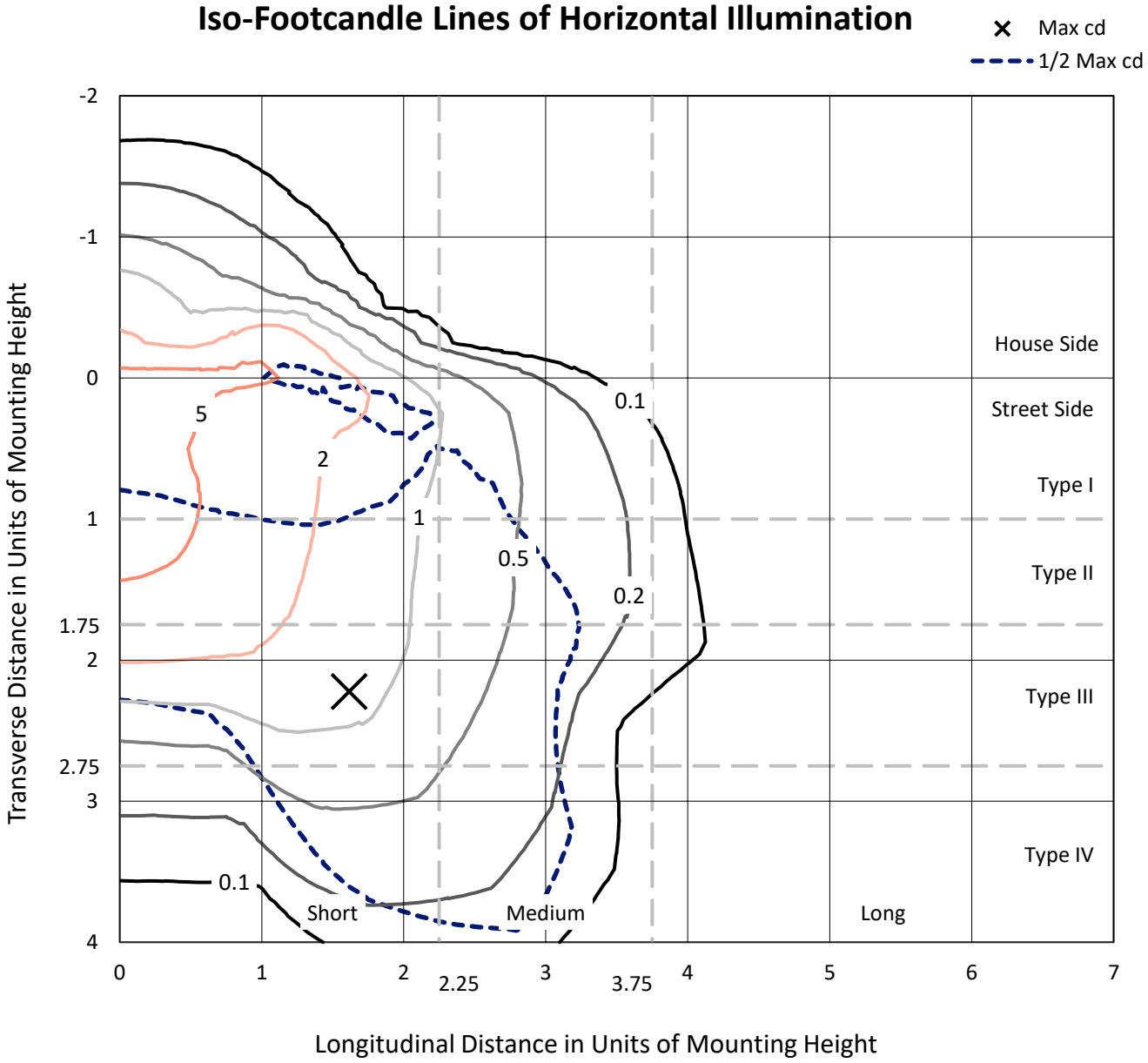
| | |
|---|---|
| Input Watts (W): | 204 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 9.5% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1358805
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## Iso-Footcandle Lines of Horizontal Illumination



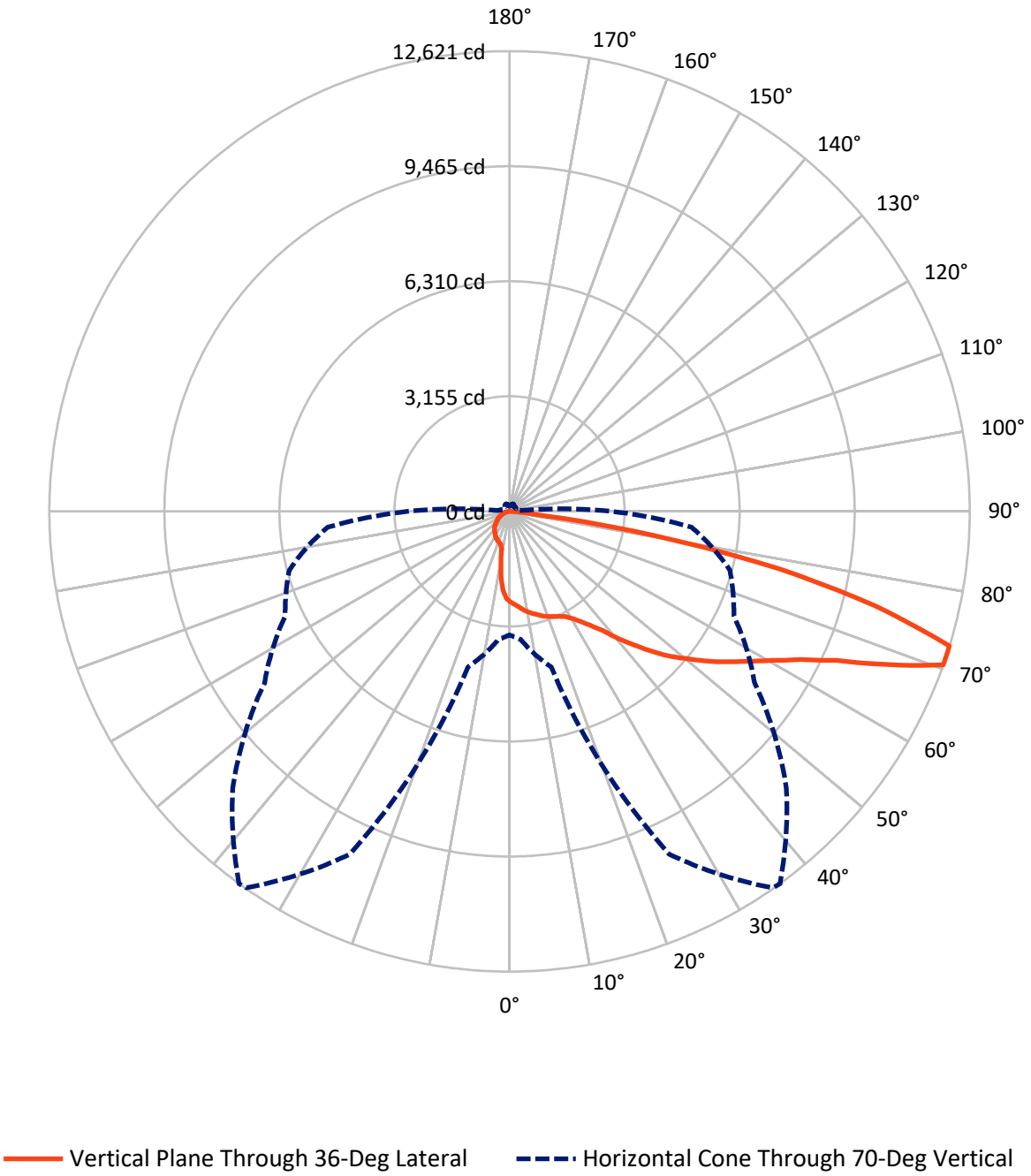

Based on 20 foot mounting height. Maximum calculated value = 7.6 fc
Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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Scaled Data Report

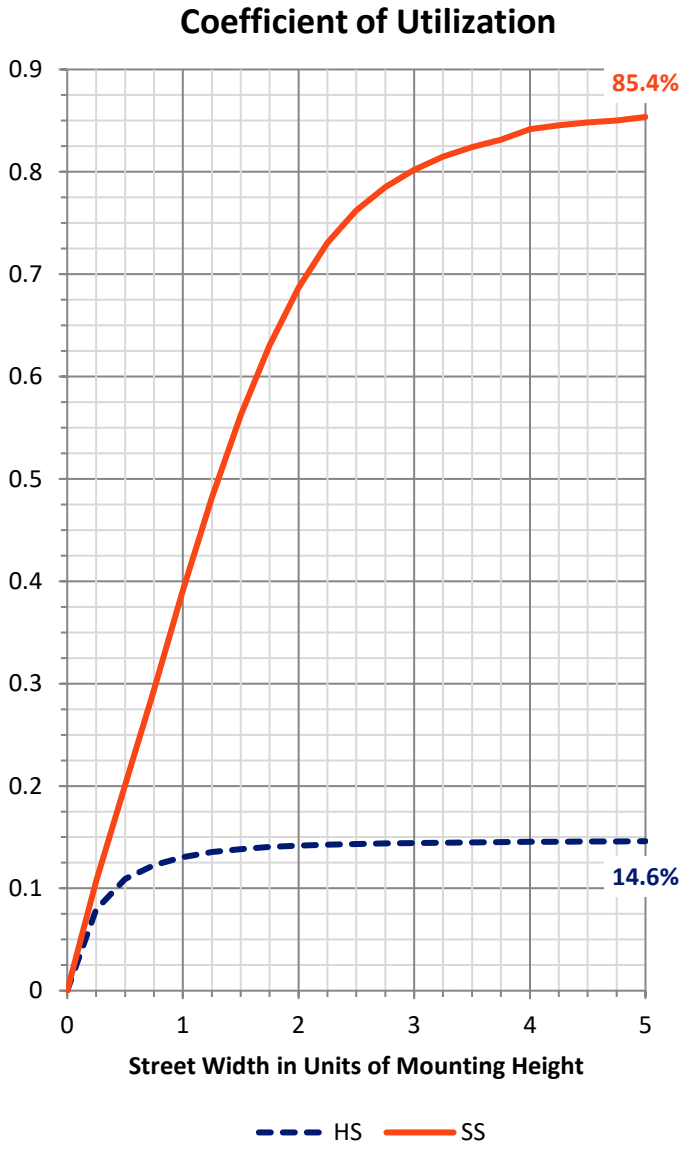
REPORT NUMBER: P1358805
CATALOG NUMBER: GSS-SB4C-727-U-SL4-HSS

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 2524.8 | 0.0 | 2524.8 |
| | % Fixture | 14.8 | 0.0 | 14.8 |
| **Street Side** | Lumens | 14578.9 | 0.0 | 14578.9 |
| | % Fixture | 85.2 | 0.0 | 85.2 |
| **Total** | Lumens | 17103.7 | 0.0 | 17103.7 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 226.1 | 1.3 |
| 10°-20° | 626.7 | 3.7 |
| 20°-30° | 1056.4 | 6.2 |
| 30°-40° | 1687.3 | 9.9 |
| 40°-50° | 2757.5 | 16.1 |
| 50°-60° | 3720.5 | 21.8 |
| 60°-70° | 4132.0 | 24.2 |
| 70°-80° | 2735.6 | 16.0 |
| 80°-90° | 161.6 | 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° | 17103.7 | 100.0 |
| 0°-180° | 17103.7 | 100.0 |



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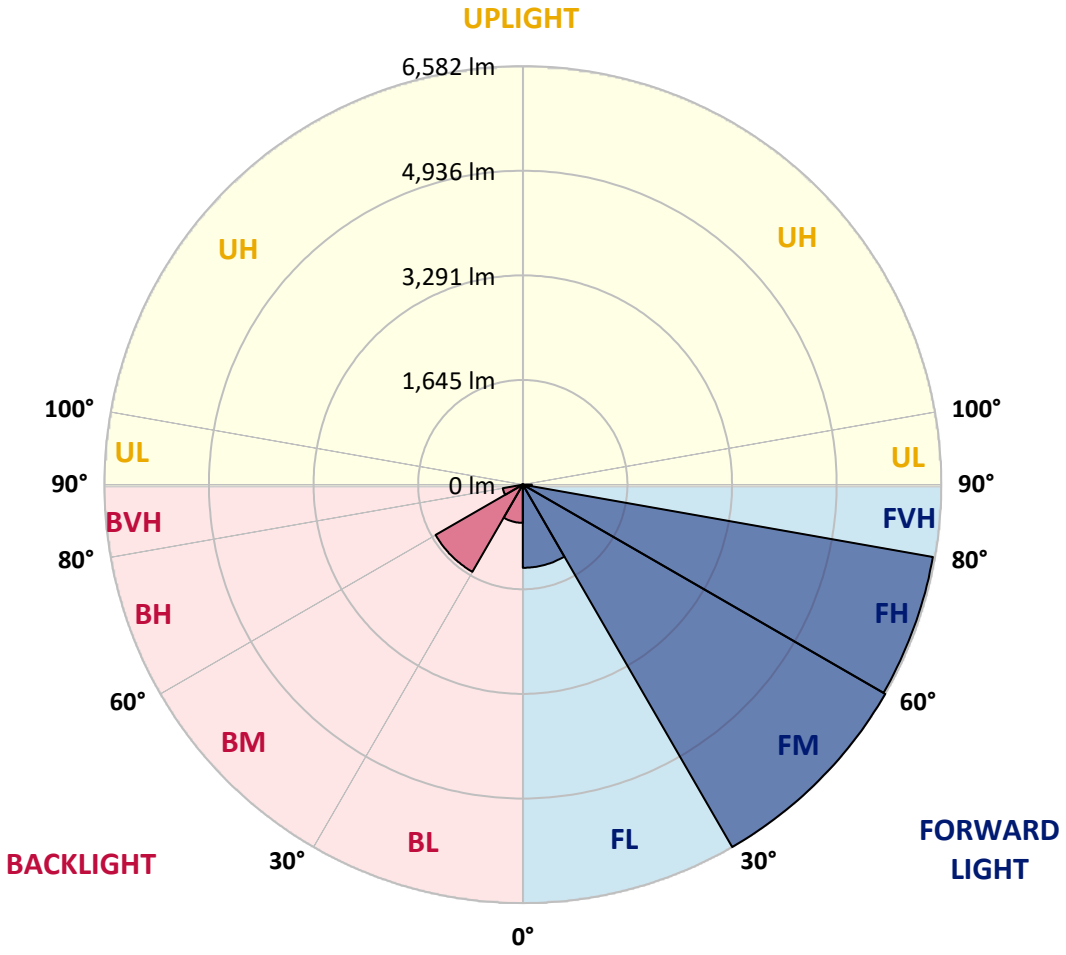
Scaled Data Report

REPORT NUMBER: P1358805
CATALOG NUMBER: GSS-SB4C-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°) | 1308.0 | 7.6 | | | |
| FM | (30°-60°) | 6581.5 | 38.5 | | | |
| FH | (60°-80°) | 6548.4 | 38.3 | | | G3/7500 |
| FVH | (80°-90°) | 141.0 | 0.8 | | | G2/225 |
| BL | (0°-30°) | 601.2 | 3.5 | B2/1000 | | |
| BM | (30°-60°) | 1583.8 | 9.3 | B2/2500 | | |
| BH | (60°-80°) | 319.2 | 1.9 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 20.7 | 0.1 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B2-U0-G3**
Type IV Short



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 36° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2480.9 | 2480.9 | 2480.9 | 2480.9 | 2480.9 | *2480.9* | 2480.9 | 2480.9 | 2480.9 | 2480.9 | 2480.9 |
| 2.5° | 2568.5 | 2545.1 | 2556.8 | 2562.6 | 2545.1 | *2551.0* | 2539.3 | 2533.4 | 2510.1 | 2527.6 | 2504.3 |
| 5° | 2661.9 | 2656.0 | 2650.2 | 2650.2 | 2632.7 | *2626.8* | 2609.3 | 2597.7 | 2574.3 | 2556.8 | 2527.6 |
| 7.5° | 2772.8 | 2737.8 | 2731.9 | 2743.6 | 2708.6 | *2726.1* | 2708.6 | 2691.1 | 2650.2 | 2603.5 | 2556.8 |
| 10° | 2860.3 | 2842.8 | 2819.5 | 2813.6 | 2819.5 | *2807.8* | 2790.3 | 2772.8 | 2749.4 | 2691.1 | 2638.5 |
| 12.5° | 2959.6 | 2947.9 | 2924.5 | 2912.9 | 2872.0 | *2877.8* | 2877.8 | 2854.5 | 2819.5 | 2784.4 | 2726.1 |
| 15° | 3070.5 | 3023.8 | 3012.1 | 2982.9 | 2959.6 | *2942.1* | 2947.9 | 2953.7 | 2912.9 | 2877.8 | 2819.5 |
| 17.5° | 3123.0 | 3111.3 | 3082.2 | 3047.1 | 3047.1 | *3023.8* | 3017.9 | 3017.9 | 3000.4 | 2988.8 | 2918.7 |
| 20° | 3204.7 | 3193.1 | 3140.5 | 3111.3 | 3082.2 | *3076.3* | 3093.8 | 3093.8 | 3064.6 | 3058.8 | 3047.1 |
| 22.5° | 3327.3 | 3292.3 | 3222.3 | 3175.6 | 3140.5 | *3134.7* | 3158.0 | 3152.2 | 3152.2 | 3158.0 | 3181.4 |
| 25° | 3444.1 | 3403.2 | 3327.3 | 3251.4 | 3175.6 | *3187.2* | 3216.4 | 3222.3 | 3198.9 | 3233.9 | 3321.5 |
| 27.5° | 3619.2 | 3613.4 | 3496.6 | 3344.8 | 3274.8 | *3269.0* | 3280.6 | 3269.0 | 3245.6 | 3286.5 | 3449.9 |
| 30° | 4080.4 | 4027.8 | 3835.2 | 3555.0 | 3397.4 | *3409.1* | 3391.5 | 3321.5 | 3263.1 | 3309.8 | 3572.5 |
| 32.5° | 4529.8 | 4407.3 | 4208.8 | 3887.7 | 3595.9 | *3601.7* | 3479.1 | 3344.8 | 3280.6 | 3333.2 | 3695.1 |
| 35° | 5183.6 | 5055.2 | 4757.5 | 4197.1 | 3899.4 | *3846.9* | 3595.9 | 3432.4 | 3315.7 | 3374.0 | 3835.2 |
| 37.5° | 6105.9 | 5919.1 | 5516.4 | 4810.0 | 4167.9 | *4144.6* | 3800.2 | 3508.3 | 3344.8 | 3368.2 | 4022.0 |
| 40° | 6818.1 | 6637.1 | 6310.3 | 5458.0 | 4629.1 | *4582.4* | 4121.2 | 3654.2 | 3350.7 | 3397.4 | 4197.1 |
| 42.5° | 7436.9 | 7343.5 | 6905.7 | 6030.1 | 5107.7 | *5008.5* | 4430.6 | 3835.2 | 3473.3 | 3473.3 | 4489.0 |
| 45° | 8265.8 | 8090.7 | 7594.5 | 6567.1 | 5586.4 | *5475.5* | 4839.2 | 4121.2 | 3625.0 | 3560.8 | 4792.5 |
| 47.5° | 8995.5 | 8849.5 | 8271.6 | 7075.0 | 6041.7 | *5948.3* | 5230.3 | 4430.6 | 3817.7 | 3718.4 | 5148.6 |
| 50° | 9795.2 | 9643.4 | 8978.0 | 7682.0 | 6491.2 | *6357.0* | 5662.3 | 4716.6 | 4051.2 | 3963.6 | 5574.7 |
| 52.5° | 10349.7 | 10221.3 | 9555.9 | 8230.8 | 6923.2 | *6829.8* | 6012.5 | 5008.5 | 4325.5 | 4238.0 | 5983.4 |
| 55° | 10717.5 | 10513.2 | 9865.2 | 8709.4 | 7401.9 | *7285.1* | 6327.8 | 5335.4 | 4634.9 | 4605.7 | 6333.6 |
| 57.5° | 10892.6 | 10688.3 | 10139.6 | 9129.7 | 7874.7 | *7746.3* | 6718.9 | 5691.5 | 5037.7 | 5061.0 | 6707.2 |
| 60° | 10799.2 | 10647.5 | 10244.7 | 9526.7 | 8400.0 | *8295.0* | 7092.5 | 6100.1 | 5452.2 | 5551.4 | 6882.3 |
| 62.5° | 10110.4 | 10145.4 | 10256.3 | 10116.3 | 9071.4 | *8942.9* | 7635.3 | 6619.6 | 6018.4 | 6035.9 | 6864.8 |
| 65° | 7822.1 | 7968.1 | 9240.6 | 10799.2 | 10011.2 | *9841.9* | 8382.5 | 7273.4 | 6403.7 | 6205.2 | 6409.5 |
| 67.5° | 4973.5 | 5282.9 | 6683.8 | 11178.7 | 11324.6 | *11219.5* | 9369.1 | 7810.5 | 6497.0 | 6456.2 | 5995.0 |
| 70° | *3385.7* | *3525.8* | *4418.9* | *10373.1* | *12603.0* | *12620.5* | *10735.0* | *8201.6* | *6788.9* | *6257.7* | *5008.5* |
| 72.5° | 2661.9 | 2673.5 | 3123.0 | 9345.7 | 12550.5 | *12614.7* | 10635.8 | 8610.2 | 6584.6 | 5574.7 | 3817.7 |
| 75° | 1786.3 | 1833.0 | 2130.7 | 7623.7 | 10425.6 | *10373.1* | 8686.1 | 6613.8 | 6006.7 | 4407.3 | 2475.1 |
| 77.5° | 502.0 | 519.5 | 887.3 | 4856.7 | 7308.5 | *7530.3* | 6304.4 | 2270.8 | 4179.6 | 2019.7 | 934.0 |
| 80° | 151.8 | 163.4 | 361.9 | 1395.1 | 3496.6 | *4004.5* | 3280.6 | 683.0 | 1009.9 | 478.7 | 186.8 |
| 82.5° | 64.2 | 70.0 | 216.0 | 321.1 | 799.7 | *863.9* | 770.5 | 181.0 | 315.2 | 151.8 | 64.2 |
| 85° | 23.3 | 29.2 | 70.0 | 75.9 | 122.6 | *110.9* | 87.6 | 58.4 | 81.7 | 70.0 | 35.0 |
| 87.5° | 0.0 | 5.8 | 5.8 | 11.7 | 17.5 | *17.5* | 23.3 | 23.3 | 23.3 | 23.3 | 23.3 |
| 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: P1358805
CATALOG NUMBER: GSS-SB4C-727-U-SL4-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2480.9 | 2480.9 | 2480.9 | 2480.9 | 2480.9 | 2480.9 | 2480.9 | 2480.9 | 2480.9 | 2480.9 | 2480.9 |
| 2.5° | 2486.7 | 2480.9 | 2457.6 | 2428.4 | 2410.9 | 2405.0 | 2387.5 | 2352.5 | 2364.2 | 2370.0 | 2340.8 |
| 5° | 2510.1 | 2469.2 | 2422.5 | 2364.2 | 2299.9 | 2247.4 | 2177.4 | 2124.8 | 2089.8 | 2084.0 | 2078.1 |
| 7.5° | 2533.4 | 2498.4 | 2416.7 | 2288.3 | 2159.8 | 2025.6 | 1844.6 | 1716.2 | 1622.8 | 1576.1 | 1593.6 |
| 10° | 2609.3 | 2551.0 | 2410.9 | 2212.4 | 1938.0 | 1646.2 | 1383.5 | 1231.7 | 1144.1 | 1103.3 | 1085.8 |
| 12.5° | 2685.2 | 2603.5 | 2410.9 | 2078.1 | 1611.1 | 1243.4 | 1033.2 | 986.5 | 986.5 | 998.2 | 992.4 |
| 15° | 2784.4 | 2691.1 | 2428.4 | 1873.8 | 1278.4 | 974.8 | 939.8 | 945.7 | 963.2 | 974.8 | 974.8 |
| 17.5° | 2895.4 | 2825.3 | 2428.4 | 1617.0 | 998.2 | 904.8 | 910.6 | 928.1 | 945.7 | 951.5 | 957.3 |
| 20° | 3053.0 | 2953.7 | 2352.5 | 1319.3 | 875.6 | 875.6 | 887.3 | 899.0 | 922.3 | 934.0 | 939.8 |
| 22.5° | 3198.9 | 3088.0 | 2212.4 | 1050.7 | 840.6 | 846.4 | 869.8 | 881.5 | 904.8 | 916.5 | 910.6 |
| 25° | 3379.9 | 3274.8 | 2060.6 | 852.3 | 805.6 | 817.2 | 834.8 | 852.3 | 887.3 | 899.0 | 899.0 |
| 27.5° | 3578.3 | 3484.9 | 1943.9 | 834.8 | 770.5 | 788.1 | 817.2 | 840.6 | 869.8 | 881.5 | 881.5 |
| 30° | 3794.3 | 3700.9 | 1873.8 | 899.0 | 753.0 | 747.2 | 782.2 | 799.7 | 834.8 | 863.9 | 869.8 |
| 32.5° | 4022.0 | 3876.0 | 1850.5 | 1027.4 | 764.7 | 718.0 | 747.2 | 770.5 | 817.2 | 852.3 | 852.3 |
| 35° | 4348.9 | 4138.7 | 1850.5 | 1167.5 | 811.4 | 688.8 | 712.2 | 741.4 | 793.9 | 828.9 | 828.9 |
| 37.5° | 4751.7 | 4553.2 | 2031.4 | 1266.7 | 852.3 | 665.5 | 677.1 | 706.3 | 747.2 | 793.9 | 799.7 |
| 40° | 5230.3 | 5136.9 | 2510.1 | 1330.9 | 875.6 | 642.1 | 653.8 | 665.5 | 688.8 | 735.5 | 747.2 |
| 42.5° | 5744.0 | 5644.8 | 3193.1 | 1395.1 | 863.9 | 624.6 | 618.8 | 618.8 | 630.4 | 659.6 | 665.5 |
| 45° | 6240.2 | 6100.1 | 3806.0 | 1371.8 | 811.4 | 589.6 | 577.9 | 560.4 | 560.4 | 583.7 | 583.7 |
| 47.5° | 6678.0 | 6427.0 | 4103.7 | 1214.2 | 747.2 | 554.6 | 531.2 | 502.0 | 502.0 | 513.7 | 513.7 |
| 50° | 6958.2 | 6415.3 | 3916.9 | 963.2 | 653.8 | 519.5 | 484.5 | 461.2 | 455.3 | 461.2 | 455.3 |
| 52.5° | 6999.1 | 6006.7 | 3222.3 | 747.2 | 566.2 | 478.7 | 437.8 | 426.1 | 420.3 | 420.3 | 420.3 |
| 55° | 6724.7 | 5253.7 | 2264.9 | 572.1 | 496.2 | 432.0 | 402.8 | 396.9 | 391.1 | 385.3 | 379.4 |
| 57.5° | 6251.9 | 4162.1 | 1383.5 | 461.2 | 449.5 | 391.1 | 373.6 | 367.8 | 356.1 | 338.6 | 332.7 |
| 60° | 5621.4 | 3064.6 | 729.7 | 391.1 | 391.1 | 344.4 | 344.4 | 344.4 | 315.2 | 291.9 | 280.2 |
| 62.5° | 4920.9 | 2066.4 | 408.6 | 332.7 | 326.9 | 309.4 | 315.2 | 309.4 | 280.2 | 239.3 | 233.5 |
| 65° | 4138.7 | 1173.3 | 274.4 | 274.4 | 280.2 | 268.5 | 280.2 | 274.4 | 233.5 | 192.6 | 181.0 |
| 67.5° | 3572.5 | 612.9 | 216.0 | 233.5 | 233.5 | 221.8 | 239.3 | 245.2 | 210.1 | 169.3 | 157.6 |
| 70° | *2796.1* | *309.4* | *175.1* | *192.6* | *192.6* | *175.1* | *210.1* | *227.7* | *192.6* | *145.9* | *140.1* |
| 72.5° | 1973.0 | 192.6 | 145.9 | 151.8 | 145.9 | 134.3 | 181.0 | 204.3 | 169.3 | 122.6 | 116.7 |
| 75° | 1202.5 | 128.4 | 110.9 | 122.6 | 105.1 | 105.1 | 157.6 | 181.0 | 145.9 | 99.2 | 93.4 |
| 77.5° | 560.4 | 93.4 | 81.7 | 87.6 | 75.9 | 81.7 | 128.4 | 140.1 | 105.1 | 81.7 | 75.9 |
| 80° | 140.1 | 64.2 | 64.2 | 58.4 | 58.4 | 64.2 | 93.4 | 87.6 | 75.9 | 70.0 | 64.2 |
| 82.5° | 58.4 | 46.7 | 40.9 | 40.9 | 40.9 | 46.7 | 58.4 | 58.4 | 64.2 | 58.4 | 58.4 |
| 85° | 29.2 | 29.2 | 29.2 | 29.2 | 35.0 | 35.0 | 46.7 | 52.5 | 52.5 | 52.5 | 46.7 |
| 87.5° | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 23.3 | 29.2 | 35.0 | 40.9 | 23.3 | 17.5 |
| 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

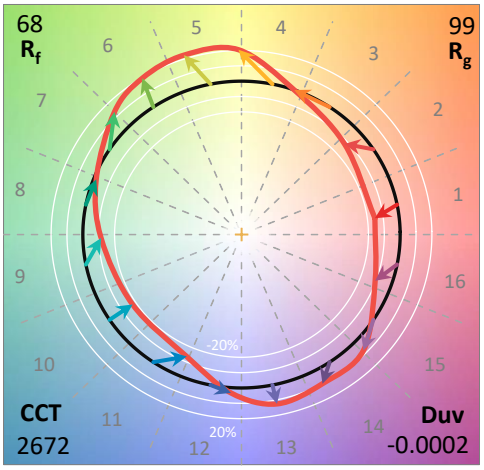
## Test Information

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

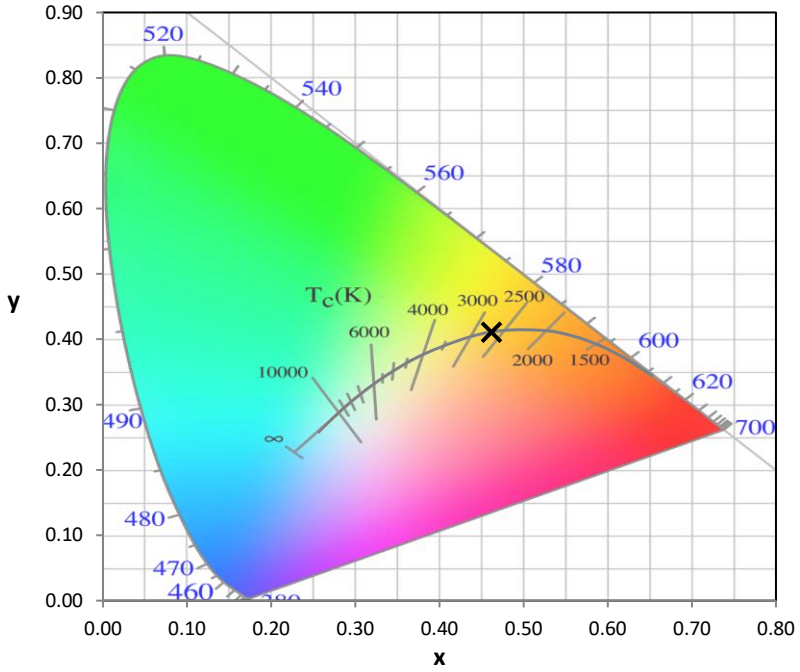
| | |
|---|---|
| Stabilization Time: | 21M |
| Operation Time: | 1H 21M |
| Sphere Temperature (°C): | 25.2 |

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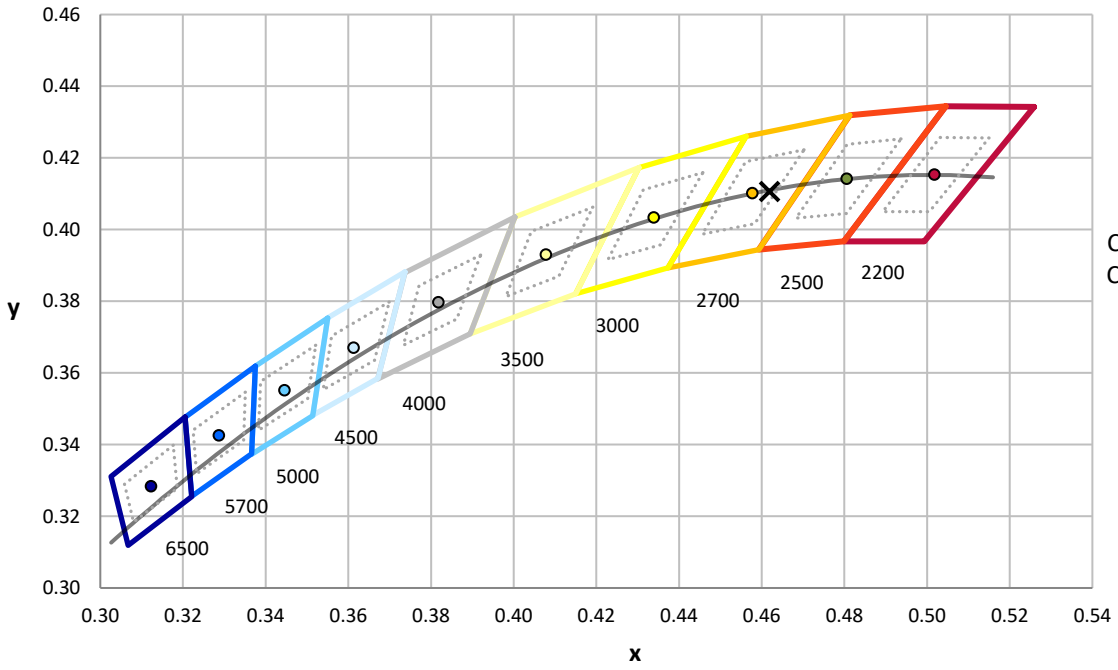
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

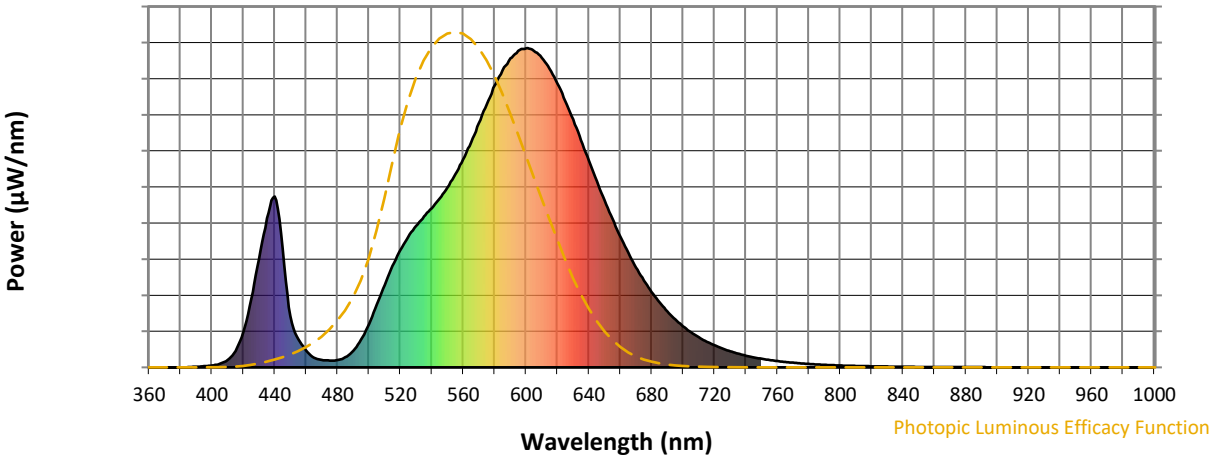



CCT = 2672K
CIE x = 0.4619
CIE y = 0.4106
Duv = -0.0002

Point lies inside the ANSI 2700K 4-step quadrangle

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## Photopic Flux vs. Wavelength

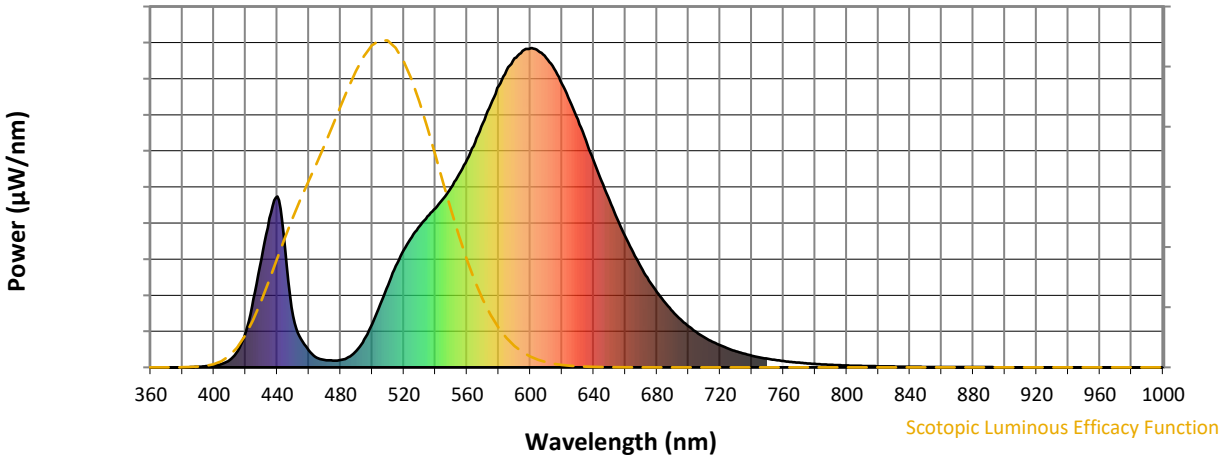



## Photopic Lumens: NR

| 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

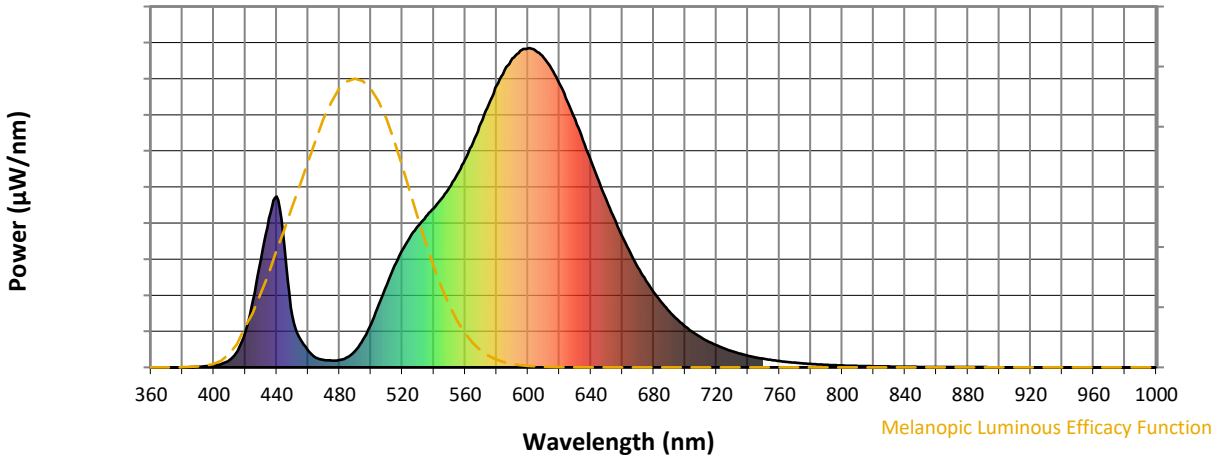



**Scotopic Lumens: NR** **S/P: 1.02**

| 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 | | | |

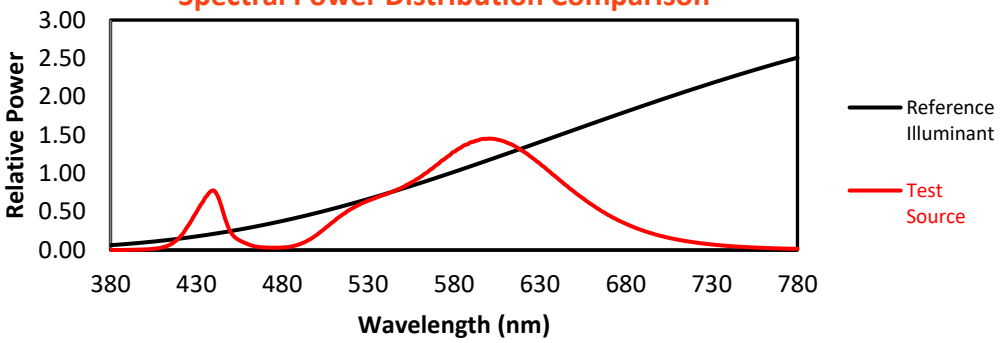
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# TM-30-18

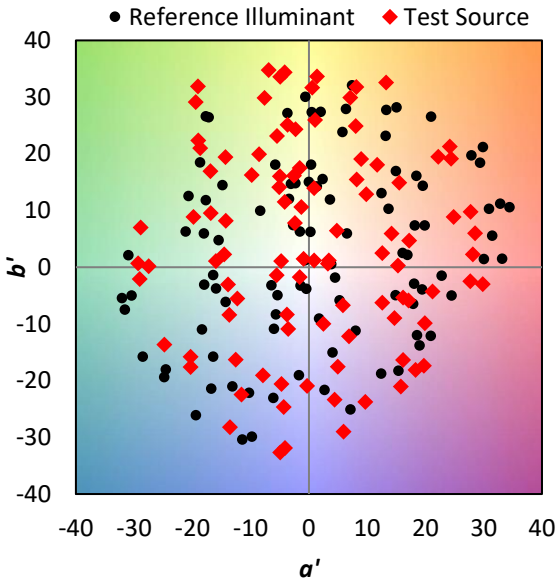
## Summary

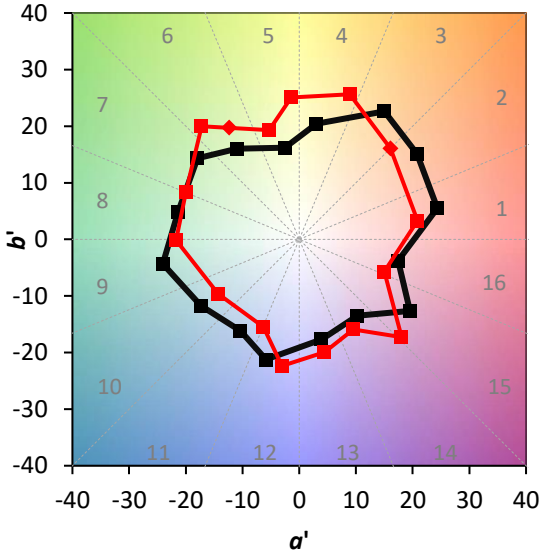
$R_f$ = 67.9
$R_g$ = 98.6
CIE $R_a$ = 71.1
$R_9$ = -27.8

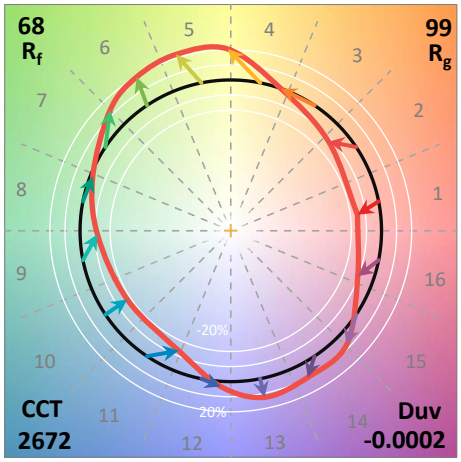
## Spectral Power Distribution Comparison

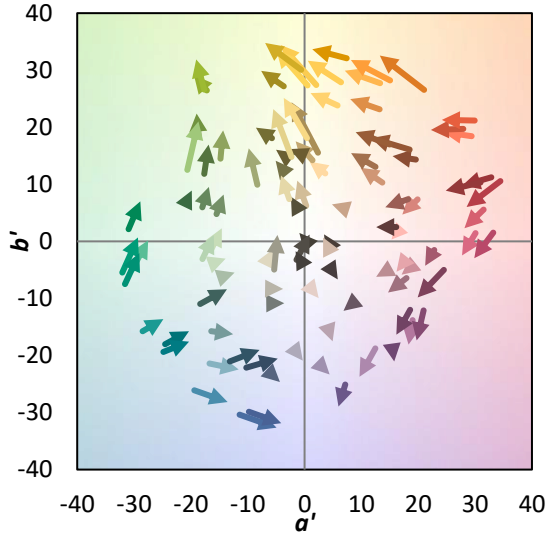



## Color Vector Graphics



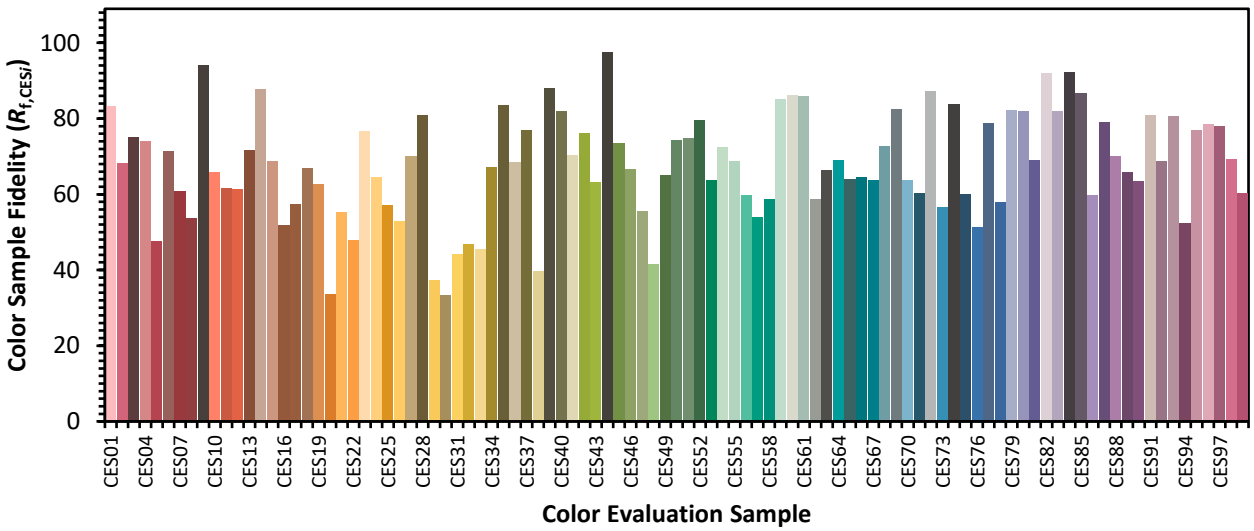



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**Individual Sample Fidelity Index ($R_{f,i}$)**

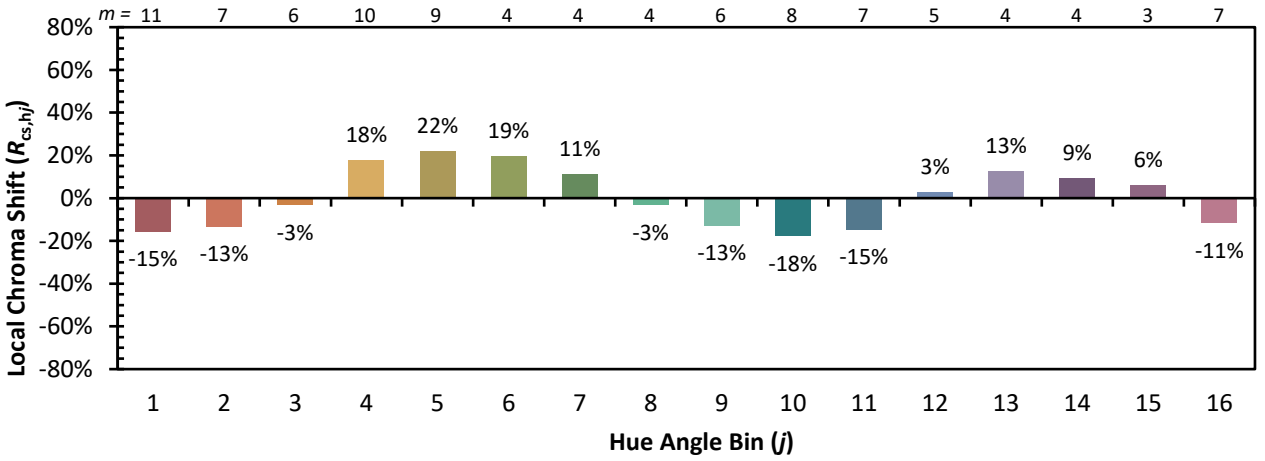
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 53 | CES51 = 75 | CES76 = 51 |
| CES02 = 63 | CES27 = 70 | CES52 = 80 | CES77 = 79 |
| CES03 = 31 | CES28 = 81 | CES53 = 64 | CES78 = 58 |
| CES04 = 71 | CES29 = 37 | CES54 = 73 | CES79 = 82 |
| CES05 = 50 | CES30 = 33 | CES55 = 69 | CES80 = 82 |
| CES06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

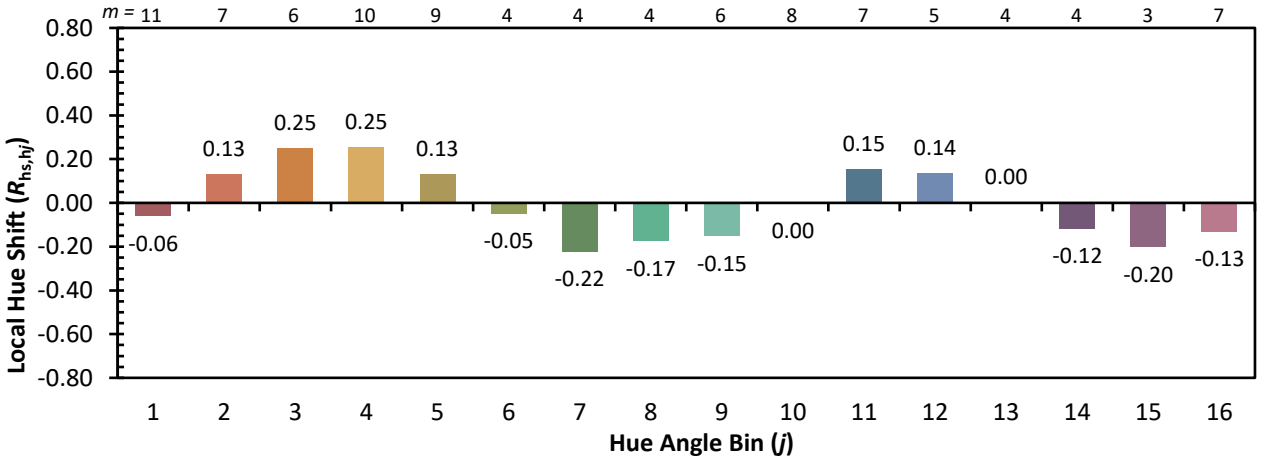


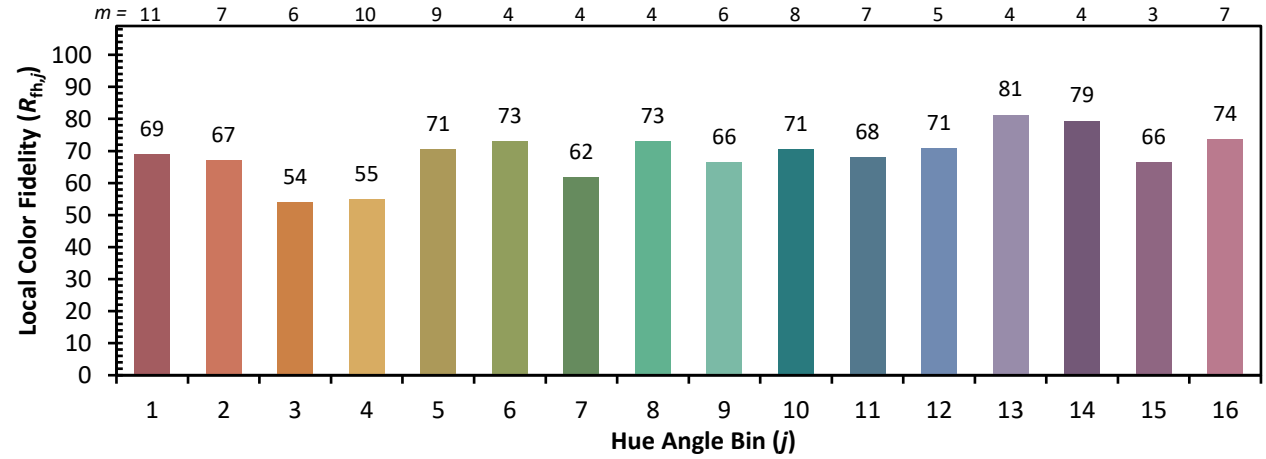
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## Color Rendition by Hue-Angle Bin



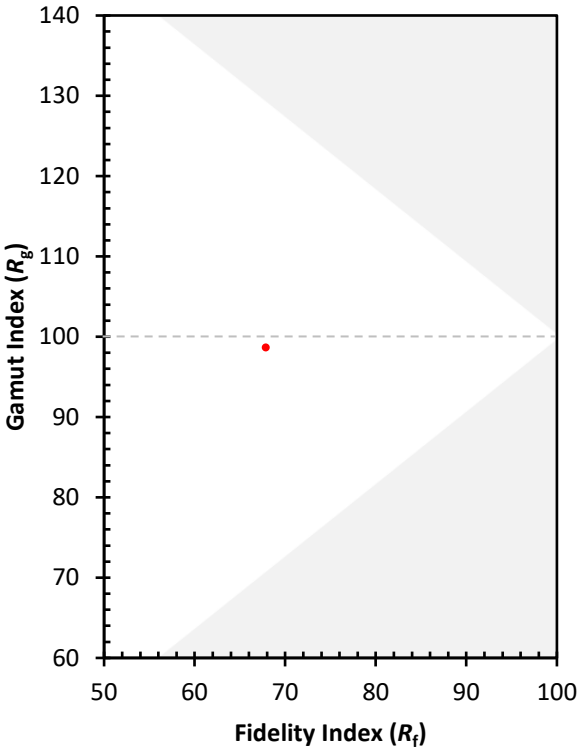



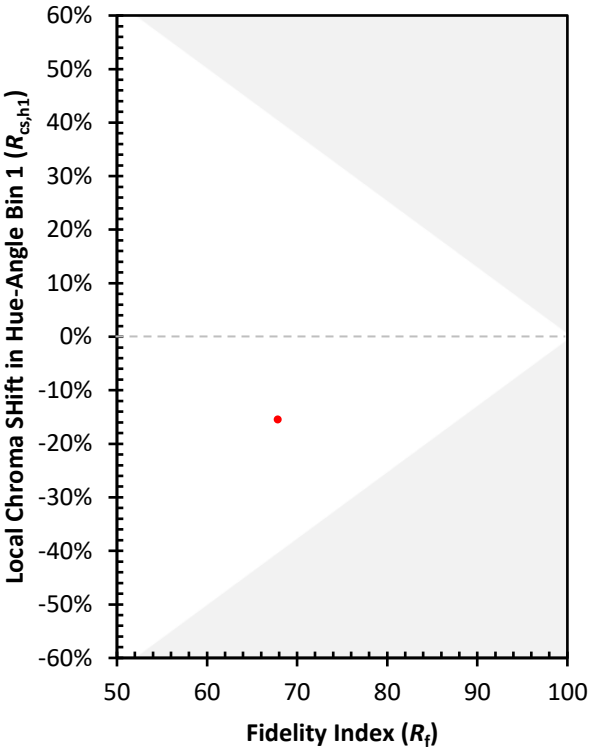



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## Measure Comparisons




(END OF REPORT)