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: P1500948

Luminaire Tested: GSS-SB2D-740-U-T3LG

Issue Date: 07/20/2026

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2024 |
| Report Number: | P1500948 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 7/20/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB2D-740-U-T3LG |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 2SQUARE 147W 70CRI 4000K FIXTURE w/ TYPE III LOW GLARE DISTRIBUTION FIXTURE |
| Light Source: | (52) 4000K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 20517.7 lumens |
| Efficiency: | N/A |
| Efficacy: | 139.6 lumens/watt |
| Luminous Opening: | Rectangular (W 1' x L: 0.5' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B3 - U0 - G2 |

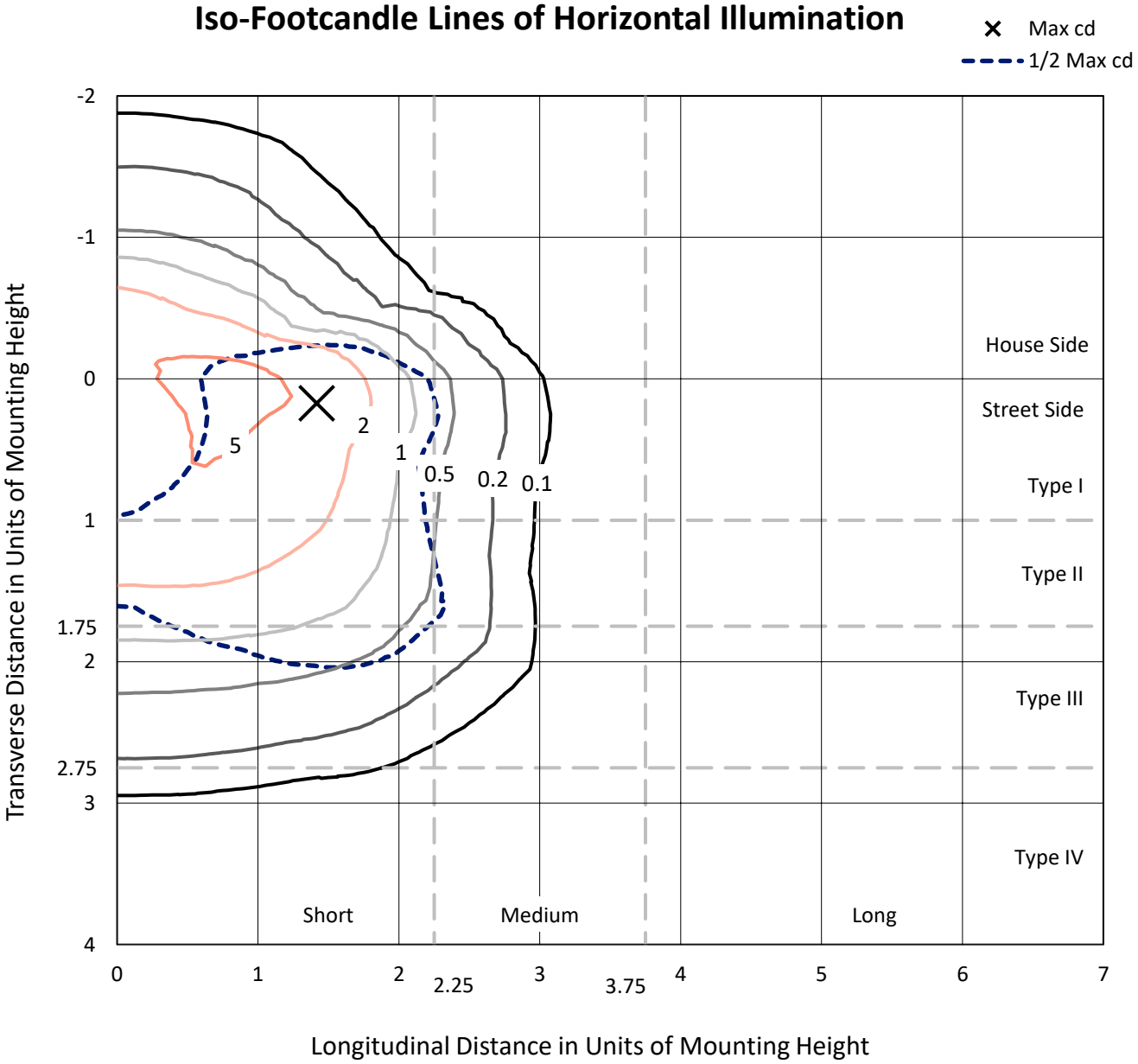
| | |
|---|---|
| Input Watts (W): | 147 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 3.1% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1500948
CATALOG NUMBER: GSS-SB2D-740-U-T3LG

## Iso-Footcandle Lines of Horizontal Illumination



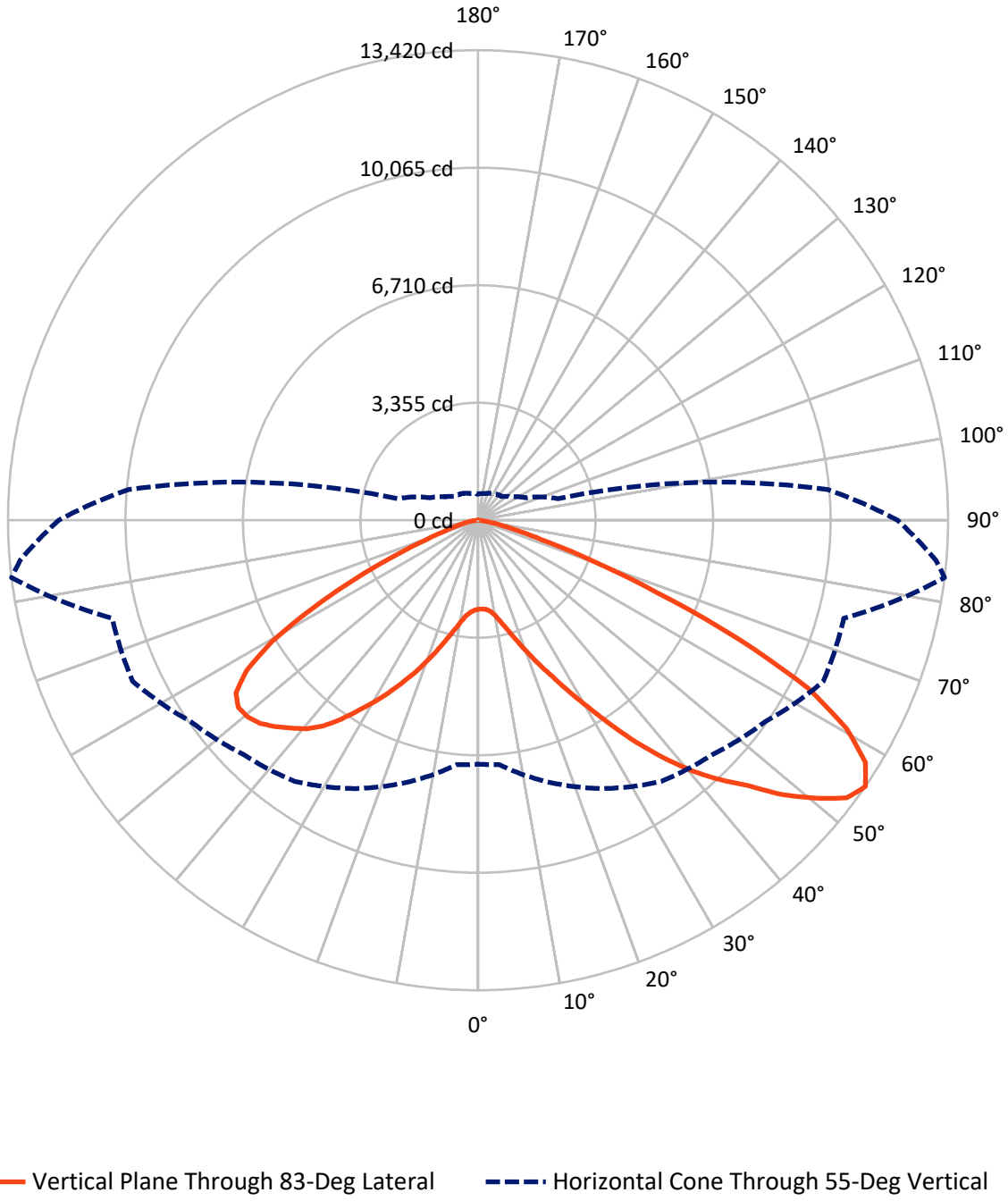

Based on 25 foot mounting height. Maximum calculated value = 6.9 fc
Type III - Short - N/A

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## Luminous Intensity Polar Plot



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Scaled Data Report

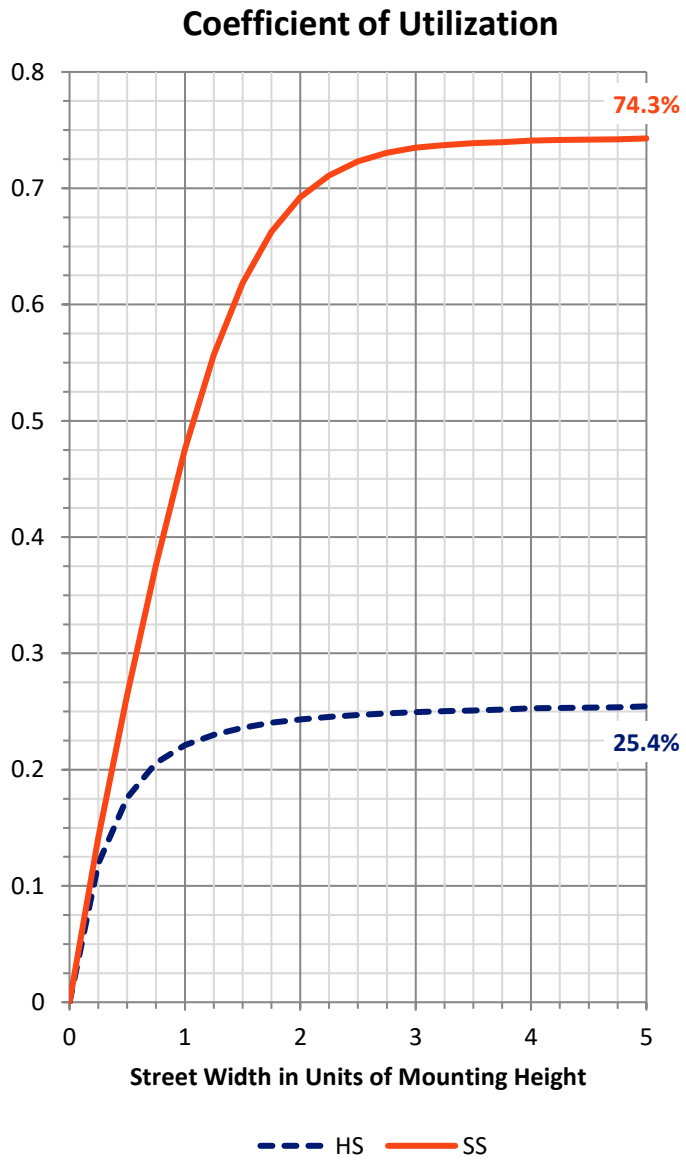
REPORT NUMBER: P1500948
CATALOG NUMBER: GSS-SB2D-740-U-T3LG

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 5265.3 | 0.0 | 5265.3 |
| | % Fixture | 25.7 | 0.0 | 25.7 |
| **Street Side** | Lumens | 15252.5 | 0.0 | 15252.5 |
| | % Fixture | 74.3 | 0.0 | 74.3 |
| **Total** | Lumens | 20517.7 | 0.0 | 20517.7 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 245.4 | 1.2 |
| 10°-20° | 799.5 | 3.9 |
| 20°-30° | 1600.5 | 7.8 |
| 30°-40° | 2847.6 | 13.9 |
| 40°-50° | 4291.2 | 20.9 |
| 50°-60° | 5229.1 | 25.5 |
| 60°-70° | 4228.4 | 20.6 |
| 70°-80° | 1158.1 | 5.6 |
| 80°-90° | 118.0 | 0.6 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 20517.7 | 100.0 |
| 0°-180° | 20517.7 | 100.0 |



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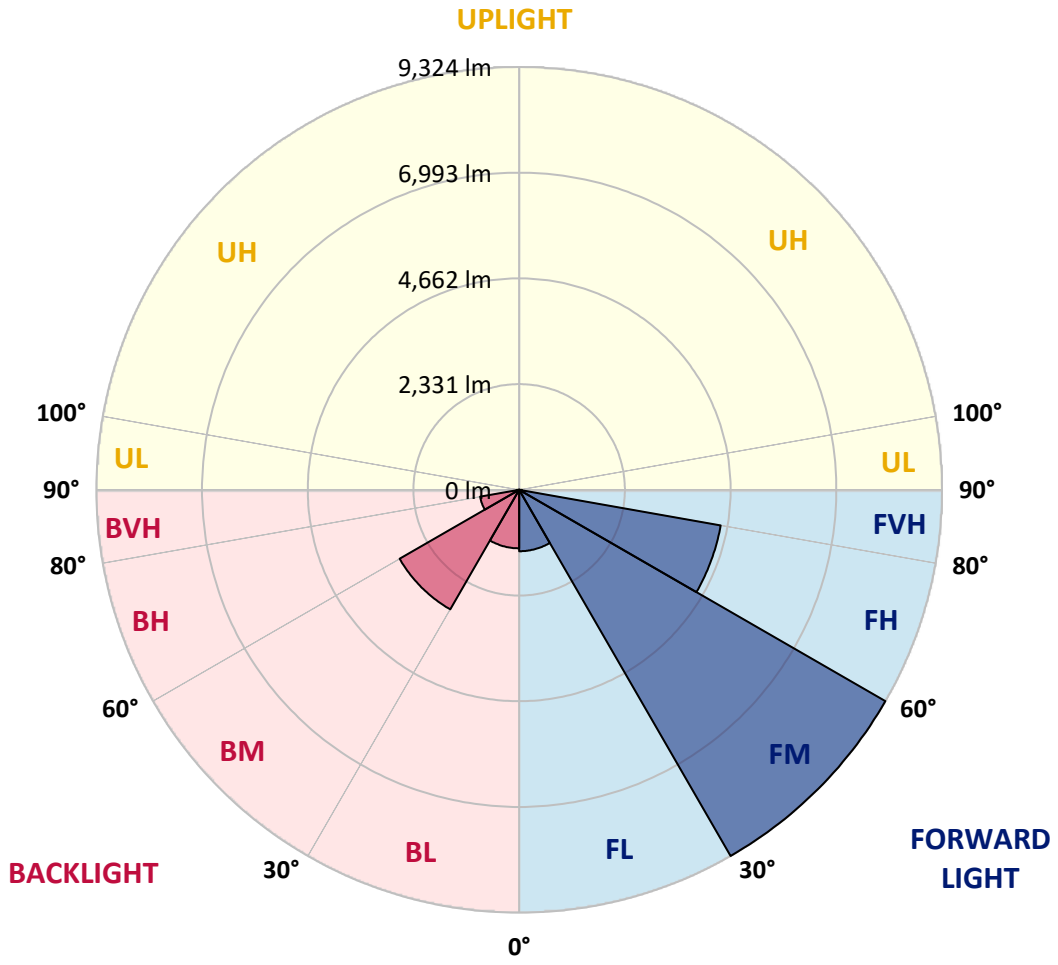
Scaled Data Report

REPORT NUMBER: P1500948
CATALOG NUMBER: GSS-SB2D-740-U-T3LG

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1354.7 | 6.6 | | | |
| FM | (30°-60°) | 9323.9 | 45.4 | | | |
| FH | (60°-80°) | 4512.4 | 22.0 | | | G2/5000 |
| FVH | (80°-90°) | 61.4 | 0.3 | | | G1/100 |
| BL | (0°-30°) | 1290.7 | 6.3 | B3/2500 | | |
| BM | (30°-60°) | 3043.9 | 14.8 | B3/5000 | | |
| BH | (60°-80°) | 874.2 | 4.3 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 56.5 | 0.3 | | | 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° | 35° | 45° | 55° | 65° | 75° | 83° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2539.9 | 2539.9 | 2539.9 | 2539.9 | 2539.9 | 2539.9 | 2539.9 | 2539.9 | 2539.9 | *2539.9* | 2539.9 |
| 2.5° | 2466.9 | 2462.4 | 2457.8 | 2453.2 | 2462.4 | 2476.0 | 2489.7 | 2498.8 | 2521.6 | *2539.9* | 2530.8 |
| 5° | 2270.8 | 2261.7 | 2270.8 | 2307.3 | 2339.2 | 2394.0 | 2448.7 | 2485.2 | 2535.3 | *2558.1* | 2567.2 |
| 7.5° | 2097.6 | 2088.4 | 2097.6 | 2143.2 | 2197.9 | 2284.5 | 2398.5 | 2489.7 | 2580.9 | *2635.6* | 2644.8 |
| 10° | 2097.6 | 2102.1 | 2102.1 | 2120.4 | 2147.7 | 2234.4 | 2371.2 | 2544.4 | 2704.0 | *2781.6* | 2799.8 |
| 12.5° | 2166.0 | 2166.0 | 2166.0 | 2188.8 | 2207.0 | 2275.4 | 2430.4 | 2644.8 | 2900.1 | *3014.1* | 3027.8 |
| 15° | 2257.2 | 2252.6 | 2266.3 | 2280.0 | 2311.9 | 2380.3 | 2535.3 | 2790.7 | 3114.4 | *3287.7* | 3305.9 |
| 17.5° | 2384.8 | 2375.7 | 2389.4 | 2421.3 | 2466.9 | 2544.4 | 2699.5 | 2991.3 | 3410.8 | *3629.7* | 3657.1 |
| 20° | 2526.2 | 2521.6 | 2549.0 | 2599.2 | 2663.0 | 2758.8 | 2936.6 | 3233.0 | 3748.3 | *4026.4* | 4076.6 |
| 22.5° | 2694.9 | 2685.8 | 2736.0 | 2827.2 | 2913.8 | 3023.2 | 3237.5 | 3547.6 | 4135.9 | *4468.7* | 4518.9 |
| 25° | 2886.4 | 2886.4 | 2954.8 | 3064.3 | 3196.5 | 3392.6 | 3606.9 | 3948.9 | 4591.8 | *4947.5* | 5025.0 |
| 27.5° | 3201.1 | 3223.9 | 3251.2 | 3365.2 | 3552.2 | 3816.7 | 4044.7 | 4432.2 | 5088.9 | *5535.7* | 5563.1 |
| 30° | 3711.8 | 3702.7 | 3748.3 | 3825.8 | 3980.8 | 4259.0 | 4601.0 | 5015.9 | 5718.1 | *6187.8* | 6256.2 |
| 32.5° | 4172.3 | 4186.0 | 4249.8 | 4395.8 | 4582.7 | 4819.8 | 5230.2 | 5740.9 | 6402.1 | *6944.8* | 6976.7 |
| 35° | 4637.4 | 4646.6 | 4769.7 | 4988.6 | 5266.7 | 5531.2 | 5978.1 | 6479.7 | 7145.4 | *7788.4* | 7875.0 |
| 37.5° | 5289.5 | 5280.4 | 5403.5 | 5590.5 | 5964.4 | 6374.8 | 6735.0 | 7213.8 | 7856.7 | *8609.1* | 8709.5 |
| 40° | 5777.4 | 5827.6 | 6060.1 | 6297.3 | 6648.4 | 7072.4 | 7378.0 | 7829.4 | 8440.4 | *9411.7* | 9502.9 |
| 42.5° | 6279.0 | 6320.1 | 6630.1 | 6985.8 | 7355.2 | 7642.4 | 7879.5 | 8299.1 | 8905.5 | *10123.0* | 10173.2 |
| 45° | 6694.0 | 6748.7 | 7104.4 | 7555.8 | 7938.8 | 8230.7 | 8312.7 | 8704.9 | 9379.8 | *10807.0* | 10884.5 |
| 47.5° | 6958.4 | 7017.7 | 7437.2 | 7966.2 | 8358.3 | 8668.4 | 8641.1 | 9192.8 | 9885.9 | *11714.4* | 11687.1 |
| 50° | 7140.8 | 7177.3 | 7633.3 | 8198.7 | 8709.5 | 8914.7 | 9033.2 | 9744.6 | 10405.7 | *12476.0* | 12375.6 |
| 52.5° | 7273.1 | 7332.4 | 7747.3 | 8367.5 | 8905.5 | 9174.6 | 9493.8 | 10382.9 | 10766.0 | *13173.6* | 12950.2 |
| 55° | *6963.0* | *7008.6* | *7738.2* | *8454.1* | *9106.2* | *9461.8* | *10018.2* | *10880.0* | *10811.6* | *13419.9* | *13118.9* |
| 57.5° | 6643.8 | 6680.3 | 7355.2 | 8431.3 | 9325.0 | 9817.5 | 10615.5 | 10943.8 | 10405.7 | *13041.4* | 12662.9 |
| 60° | 6242.5 | 6269.9 | 6944.8 | 8189.6 | 9329.6 | 10095.7 | 10921.0 | 10478.7 | 9653.4 | *12088.4* | 11728.1 |
| 62.5° | 5503.8 | 5503.8 | 6247.1 | 7537.6 | 9101.6 | 10237.0 | 10838.9 | 9598.6 | 8645.6 | *10588.1* | 10091.1 |
| 65° | 4774.2 | 4742.3 | 5243.9 | 6374.8 | 8495.1 | 10200.6 | 10223.4 | 8486.0 | 7081.6 | *8166.8* | 7779.2 |
| 67.5° | 3980.8 | 3985.4 | 4281.8 | 5175.5 | 6880.9 | 9439.0 | 8923.8 | 6557.2 | 4933.8 | *5499.3* | 5298.6 |
| 70° | 2694.9 | 2763.3 | 3064.3 | 3757.4 | 5189.2 | 6689.4 | 7104.4 | 4441.4 | 3077.9 | *3415.4* | 3251.2 |
| 72.5° | 1026.0 | 1039.7 | 1390.8 | 1969.9 | 3278.6 | 4021.9 | 4956.6 | 2485.2 | 1801.2 | *1883.2* | 1892.4 |
| 75° | 433.2 | 451.4 | 592.8 | 829.9 | 1454.6 | 2193.3 | 2608.3 | 1258.5 | 1094.4 | *1126.3* | 1117.2 |
| 77.5° | 291.8 | 301.0 | 360.2 | 446.9 | 656.6 | 880.1 | 1089.8 | 711.3 | 670.3 | *629.3* | 611.0 |
| 80° | 218.9 | 218.9 | 259.9 | 301.0 | 369.4 | 451.4 | 474.2 | 360.2 | 401.3 | *332.9* | 323.8 |
| 82.5° | 141.4 | 150.5 | 164.2 | 177.8 | 209.8 | 223.4 | 191.5 | 196.1 | 232.6 | *173.3* | 164.2 |
| 85° | 68.4 | 73.0 | 77.5 | 82.1 | 82.1 | 77.5 | 68.4 | 86.6 | 118.6 | *73.0* | 68.4 |
| 87.5° | 9.1 | 9.1 | 9.1 | 9.1 | 9.1 | 9.1 | 4.6 | 4.6 | 4.6 | *4.6* | 4.6 |
| 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: P1500948
CATALOG NUMBER: GSS-SB2D-740-U-T3LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2539.9 | 2539.9 | 2539.9 | 2539.9 | 2539.9 | 2539.9 | 2539.9 | 2539.9 | 2539.9 | 2539.9 | 2539.9 |
| 2.5° | 2544.4 | 2562.7 | 2576.4 | 2585.5 | 2608.3 | 2603.7 | 2617.4 | 2626.5 | 2635.6 | 2649.3 | 2631.1 |
| 5° | 2590.0 | 2622.0 | 2658.4 | 2685.8 | 2713.2 | 2726.8 | 2731.4 | 2740.5 | 2745.1 | 2754.2 | 2749.6 |
| 7.5° | 2690.4 | 2726.8 | 2781.6 | 2808.9 | 2831.7 | 2831.7 | 2818.0 | 2813.5 | 2799.8 | 2808.9 | 2808.9 |
| 10° | 2859.1 | 2913.8 | 2973.1 | 2977.6 | 2950.3 | 2918.4 | 2868.2 | 2840.8 | 2804.4 | 2795.2 | 2786.1 |
| 12.5° | 3105.3 | 3178.3 | 3223.9 | 3191.9 | 3096.2 | 2977.6 | 2845.4 | 2722.3 | 2626.5 | 2585.5 | 2576.4 |
| 15° | 3383.5 | 3474.7 | 3483.8 | 3392.6 | 3219.3 | 2932.0 | 2653.9 | 2517.1 | 2466.9 | 2466.9 | 2462.4 |
| 17.5° | 3766.5 | 3830.3 | 3793.9 | 3575.0 | 3187.4 | 2717.7 | 2517.1 | 2494.3 | 2508.0 | 2526.2 | 2526.2 |
| 20° | 4167.8 | 4240.7 | 4090.3 | 3702.7 | 2991.3 | 2590.0 | 2530.8 | 2549.0 | 2580.9 | 2599.2 | 2594.6 |
| 22.5° | 4646.6 | 4683.0 | 4391.2 | 3707.2 | 2781.6 | 2558.1 | 2558.1 | 2580.9 | 2603.7 | 2631.1 | 2631.1 |
| 25° | 5139.0 | 5125.4 | 4669.4 | 3538.5 | 2663.0 | 2549.0 | 2539.9 | 2558.1 | 2567.2 | 2580.9 | 2576.4 |
| 27.5° | 5690.8 | 5617.8 | 4883.7 | 3269.5 | 2626.5 | 2521.6 | 2476.0 | 2457.8 | 2466.9 | 2480.6 | 2485.2 |
| 30° | 6324.6 | 6151.3 | 5057.0 | 3100.7 | 2612.8 | 2457.8 | 2348.4 | 2298.2 | 2289.1 | 2307.3 | 2307.3 |
| 32.5° | 7058.8 | 6684.8 | 5161.8 | 3077.9 | 2599.2 | 2343.8 | 2197.9 | 2102.1 | 2083.9 | 2093.0 | 2115.8 |
| 35° | 7811.2 | 7327.8 | 5134.5 | 3137.2 | 2603.7 | 2252.6 | 2038.3 | 1910.6 | 1892.4 | 1901.5 | 1924.3 |
| 37.5° | 8600.0 | 7938.8 | 5029.6 | 3228.4 | 2567.2 | 2129.5 | 1892.4 | 1737.3 | 1710.0 | 1728.2 | 1737.3 |
| 40° | 9211.0 | 8454.1 | 4769.7 | 3264.9 | 2503.4 | 1974.4 | 1723.7 | 1591.4 | 1518.5 | 1513.9 | 1536.7 |
| 42.5° | 9776.5 | 8859.9 | 4487.0 | 3205.6 | 2371.2 | 1810.3 | 1550.4 | 1418.1 | 1304.1 | 1217.5 | 1217.5 |
| 45° | 10341.9 | 9270.3 | 4199.7 | 3036.9 | 2152.3 | 1637.0 | 1368.0 | 1190.1 | 1057.9 | 994.1 | 998.6 |
| 47.5° | 10907.3 | 9667.0 | 3857.7 | 2781.6 | 1933.4 | 1454.6 | 1171.9 | 1030.5 | 939.3 | 889.2 | 889.2 |
| 50° | 11431.7 | 9954.3 | 3419.9 | 2375.7 | 1682.6 | 1272.2 | 1035.1 | 953.0 | 884.6 | 839.0 | 829.9 |
| 52.5° | 11892.3 | 10145.8 | 2827.2 | 1883.2 | 1409.0 | 1067.0 | 962.1 | 898.3 | 848.1 | 798.0 | 784.3 |
| 55° | *11974.4* | *10018.2* | *2366.6* | *1513.9* | *1162.8* | *957.6* | *907.4* | *852.7* | *784.3* | *761.5* | *747.8* |
| 57.5° | 11468.2 | 9343.3 | 1997.2 | 1276.8 | 994.1 | 880.1 | 861.8 | 798.0 | 743.3 | 720.5 | 706.8 |
| 60° | 10606.4 | 8116.7 | 1650.7 | 1094.4 | 884.6 | 807.1 | 829.9 | 766.1 | 679.4 | 665.7 | 652.1 |
| 62.5° | 9056.0 | 6333.7 | 1317.8 | 921.1 | 802.5 | 752.4 | 775.2 | 684.0 | 611.0 | 592.8 | 588.2 |
| 65° | 7040.5 | 4532.6 | 1108.1 | 811.7 | 738.7 | 697.7 | 688.5 | 606.5 | 551.8 | 538.1 | 538.1 |
| 67.5° | 4915.6 | 2881.9 | 925.7 | 743.3 | 656.6 | 629.3 | 624.7 | 570.0 | 533.5 | 519.8 | 519.8 |
| 70° | 3009.6 | 1746.5 | 779.7 | 679.4 | 579.1 | 529.0 | 560.9 | 551.8 | 497.0 | 483.4 | 478.8 |
| 72.5° | 1564.1 | 1044.2 | 684.0 | 624.7 | 487.9 | 451.4 | 501.6 | 506.2 | 460.6 | 478.8 | 474.2 |
| 75° | 907.4 | 725.0 | 597.4 | 551.8 | 387.6 | 378.5 | 437.8 | 483.4 | 446.9 | 460.6 | 451.4 |
| 77.5° | 519.8 | 465.1 | 460.6 | 451.4 | 305.5 | 310.1 | 392.2 | 433.2 | 383.0 | 396.7 | 364.8 |
| 80° | 287.3 | 301.0 | 319.2 | 282.7 | 214.3 | 241.7 | 314.6 | 346.6 | 291.8 | 287.3 | 264.5 |
| 82.5° | 150.5 | 187.0 | 214.3 | 182.4 | 123.1 | 145.9 | 214.3 | 214.3 | 187.0 | 177.8 | 173.3 |
| 85° | 68.4 | 77.5 | 100.3 | 91.2 | 45.6 | 54.7 | 100.3 | 109.4 | 95.8 | 86.6 | 82.1 |
| 87.5° | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 9.1 | 13.7 | 4.6 | 4.6 | 4.6 |
| 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: SP1-2407-184-1

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-740-U-5WQ

Data in this report applies to families of products including GSS-SB1A-740-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

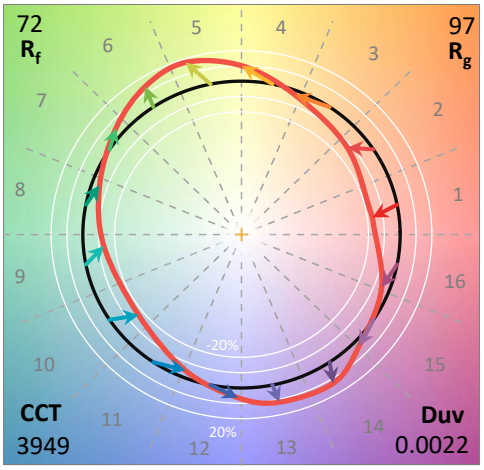
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-1 |
| 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-740-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 4000K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3949 |
| CIE u': | 0.2248 |
| CIE v': | 0.5053 |
| Duv: | 0.0022 |
| CIE x: | 0.3844 |
| CIE y: | 0.3840 |
| CIE z: | 0.2316 |
| Peak Wavelength (nm): | 440 |
| Dominant Wavelength (nm): | 578 |
| Purity: | 30.60026 |
| Rf: | 71.8 |
| Rg: | 96.5 |

| | |
|---|---|
| CRI (Ra): | 70.7 |
| R1: | 68.0 |
| R2: | 76.0 |
| R3: | 84.3 |
| R4: | 72.0 |
| R5: | 68.6 |
| R6: | 68.3 |
| R7: | 77.9 |
| R8: | 50.3 |
| R9: | -36.7 |
| R10: | 45.1 |
| R11: | 70.7 |
| R12: | 47.1 |
| R13: | 68.5 |
| R14: | 91.1 |
| R15: | 58.7 |




## Test Conditions

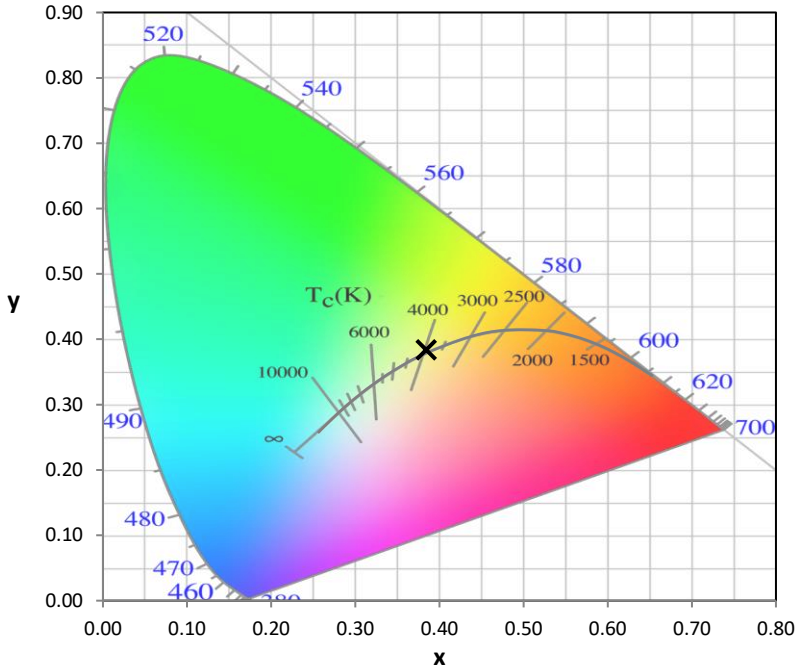
| | |
|---|---|
| Stabilization Time: | 34M |
| Operation Time: | 1H 34M |
| Sphere Temperature (°C): | 25.2 |

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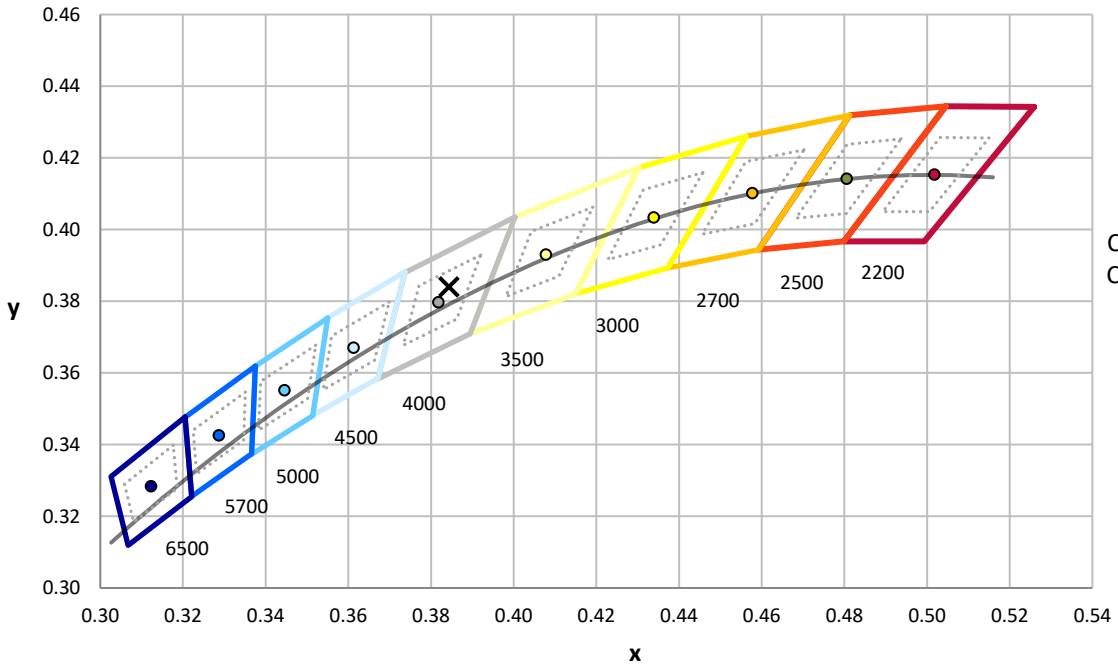
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

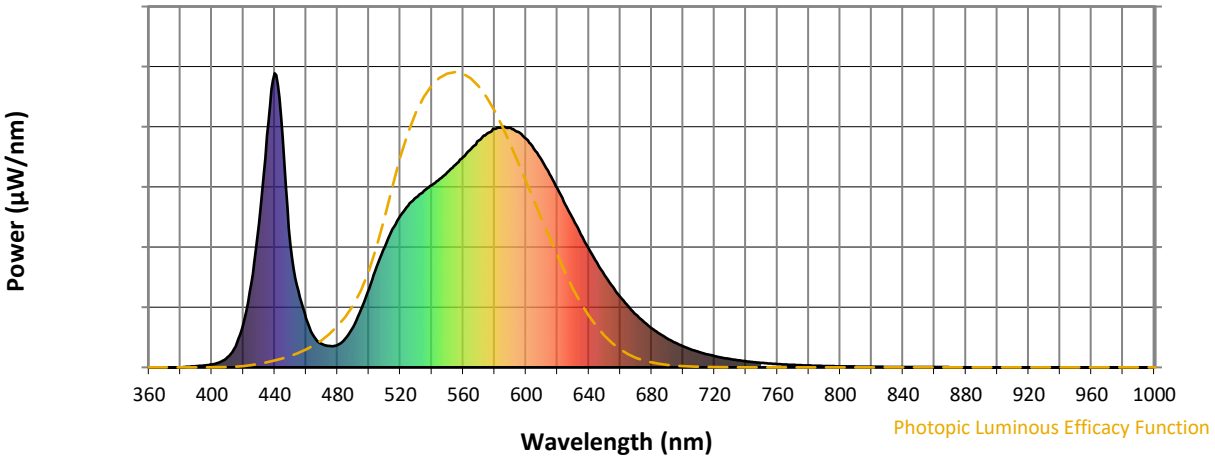



CCT = 3949K
CIE x = 0.3844
CIE y = 0.3840
Duv = 0.0022

Point lies inside the ANSI 4000K 4-step quadrangle

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## Photopic Flux vs. Wavelength

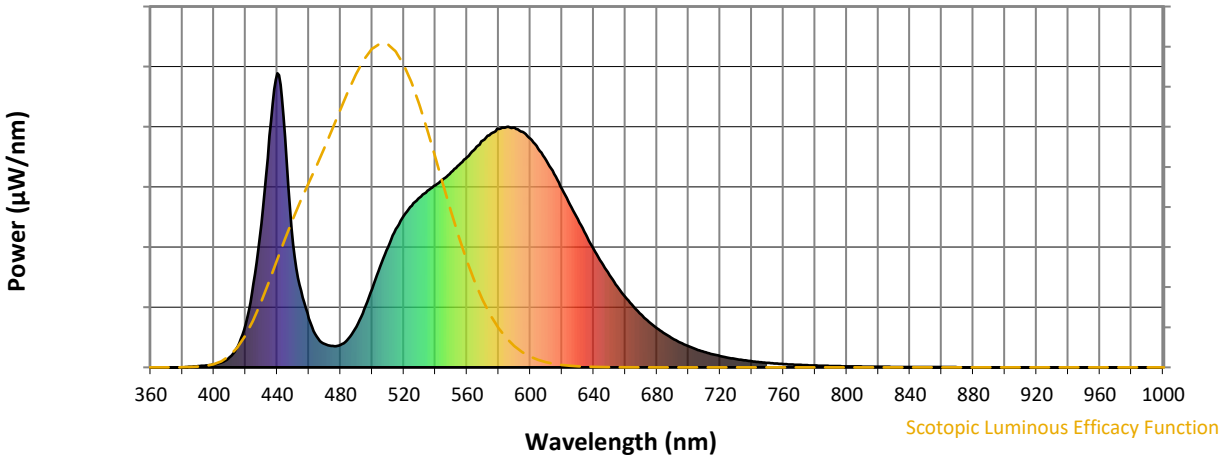



## Photopic Lumens: NR

| 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 | 139 | NR | 620 | 607 | NR | 750 | 15 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 198 | NR | 625 | 554 | NR | 755 | 13 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 267 | NR | 630 | 504 | NR | 760 | 11 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 343 | NR | 635 | 452 | NR | 765 | 10 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 410 | NR | 640 | 403 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 470 | NR | 645 | 357 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 516 | NR | 650 | 314 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 7 | NR | 525 | 550 | NR | 655 | 275 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 10 | NR | 530 | 578 | NR | 660 | 240 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 17 | NR | 535 | 601 | NR | 665 | 208 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 35 | NR | 540 | 620 | NR | 670 | 179 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 70 | NR | 545 | 641 | NR | 675 | 155 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 147 | NR | 550 | 664 | NR | 680 | 133 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 285 | NR | 555 | 689 | NR | 685 | 114 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 487 | NR | 560 | 715 | NR | 690 | 98 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 787 | NR | 565 | 743 | NR | 695 | 84 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 1000 | NR | 570 | 771 | NR | 700 | 72 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 783 | NR | 575 | 794 | NR | 705 | 61 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 417 | NR | 580 | 811 | NR | 710 | 52 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 261 | NR | 585 | 817 | NR | 715 | 45 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 167 | NR | 590 | 815 | NR | 720 | 39 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 104 | NR | 595 | 801 | NR | 725 | 33 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 777 | NR | 730 | 28 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 73 | NR | 605 | 744 | NR | 735 | 24 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 704 | NR | 740 | 21 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 98 | NR | 615 | 657 | NR | 745 | 18 | NR | 875 | 1 | NR | | | |

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## Scotopic Flux vs. Wavelength

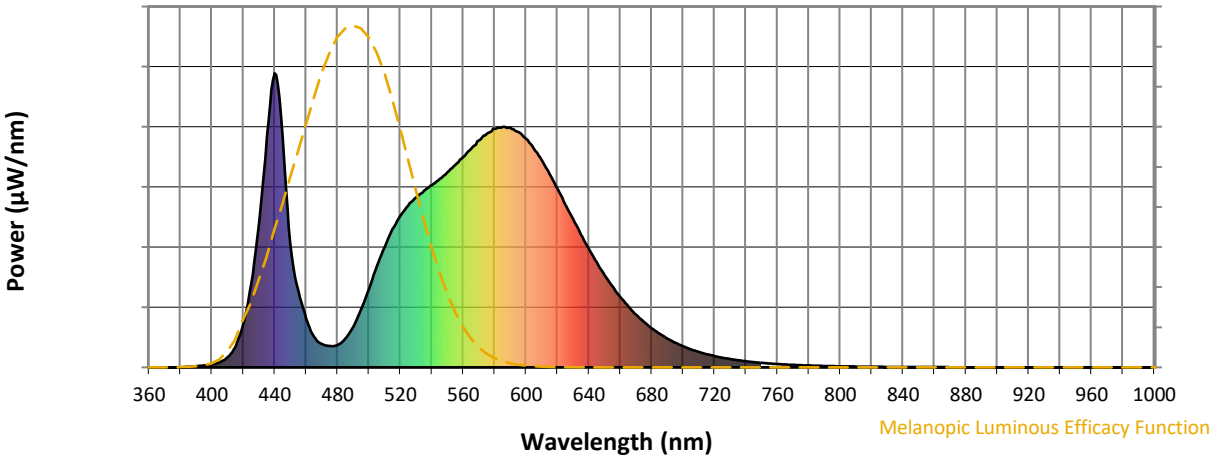



**Scotopic Lumens: NR** **S/P: 1.47**

| 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 | 139 | NR | 620 | 607 | NR | 750 | 15 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 198 | NR | 625 | 554 | NR | 755 | 13 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 267 | NR | 630 | 504 | NR | 760 | 11 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 343 | NR | 635 | 452 | NR | 765 | 10 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 410 | NR | 640 | 403 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 470 | NR | 645 | 357 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 516 | NR | 650 | 314 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 7 | NR | 525 | 550 | NR | 655 | 275 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 10 | NR | 530 | 578 | NR | 660 | 240 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 17 | NR | 535 | 601 | NR | 665 | 208 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 35 | NR | 540 | 620 | NR | 670 | 179 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 70 | NR | 545 | 641 | NR | 675 | 155 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 147 | NR | 550 | 664 | NR | 680 | 133 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 285 | NR | 555 | 689 | NR | 685 | 114 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 487 | NR | 560 | 715 | NR | 690 | 98 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 787 | NR | 565 | 743 | NR | 695 | 84 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 1000 | NR | 570 | 771 | NR | 700 | 72 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 783 | NR | 575 | 794 | NR | 705 | 61 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 417 | NR | 580 | 811 | NR | 710 | 52 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 261 | NR | 585 | 817 | NR | 715 | 45 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 167 | NR | 590 | 815 | NR | 720 | 39 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 104 | NR | 595 | 801 | NR | 725 | 33 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 777 | NR | 730 | 28 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 73 | NR | 605 | 744 | NR | 735 | 24 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 704 | NR | 740 | 21 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 98 | NR | 615 | 657 | NR | 745 | 18 | NR | 875 | 1 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.78**

| 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 | 139 | NR | 620 | 607 | NR | 750 | 15 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 198 | NR | 625 | 554 | NR | 755 | 13 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 267 | NR | 630 | 504 | NR | 760 | 11 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 343 | NR | 635 | 452 | NR | 765 | 10 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 410 | NR | 640 | 403 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 470 | NR | 645 | 357 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 516 | NR | 650 | 314 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 7 | NR | 525 | 550 | NR | 655 | 275 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 10 | NR | 530 | 578 | NR | 660 | 240 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 17 | NR | 535 | 601 | NR | 665 | 208 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 35 | NR | 540 | 620 | NR | 670 | 179 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 70 | NR | 545 | 641 | NR | 675 | 155 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 147 | NR | 550 | 664 | NR | 680 | 133 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 285 | NR | 555 | 689 | NR | 685 | 114 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 487 | NR | 560 | 715 | NR | 690 | 98 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 787 | NR | 565 | 743 | NR | 695 | 84 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 1000 | NR | 570 | 771 | NR | 700 | 72 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 783 | NR | 575 | 794 | NR | 705 | 61 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 417 | NR | 580 | 811 | NR | 710 | 52 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 261 | NR | 585 | 817 | NR | 715 | 45 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 167 | NR | 590 | 815 | NR | 720 | 39 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 104 | NR | 595 | 801 | NR | 725 | 33 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 777 | NR | 730 | 28 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 73 | NR | 605 | 744 | NR | 735 | 24 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 704 | NR | 740 | 21 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 98 | NR | 615 | 657 | NR | 745 | 18 | NR | 875 | 1 | NR | | | |

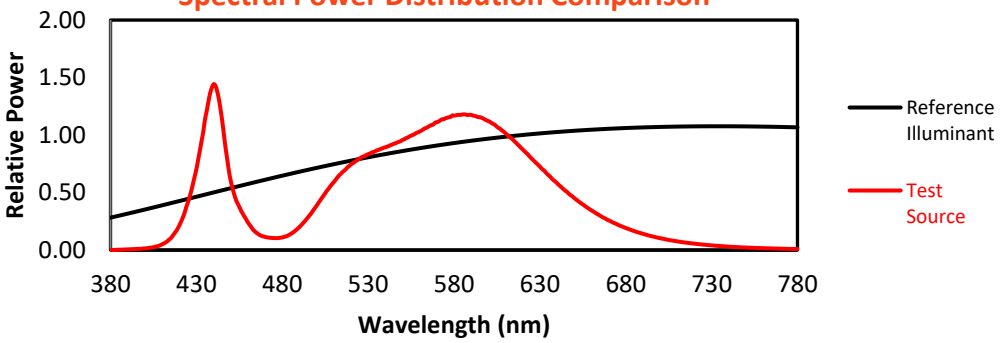
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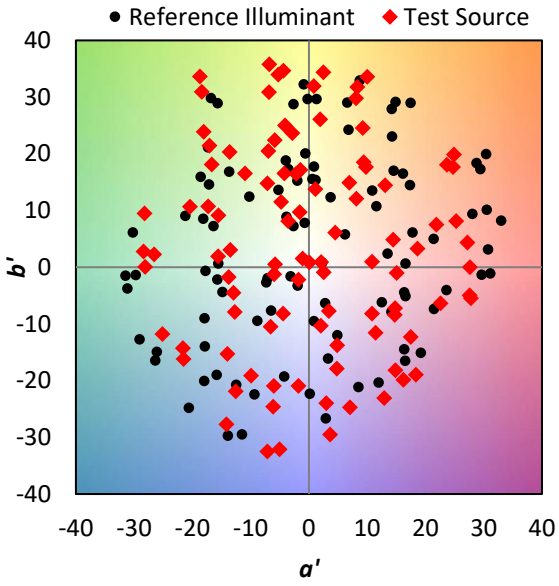
## Summary

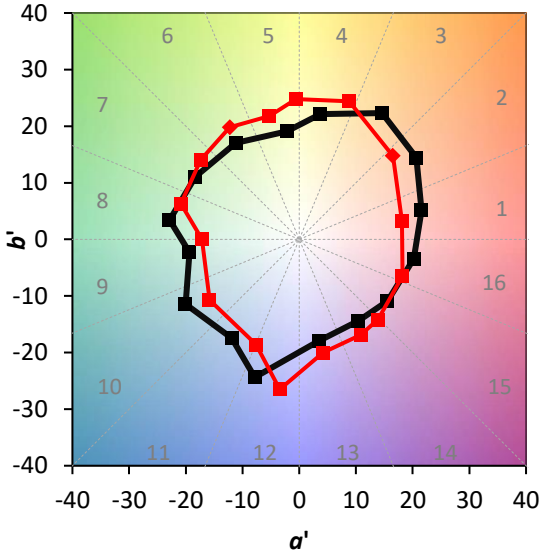
$R_f$ = 71.8
$R_g$ = 96.5
CIE $R_a$ = 70.7
$R_9$ = -36.7

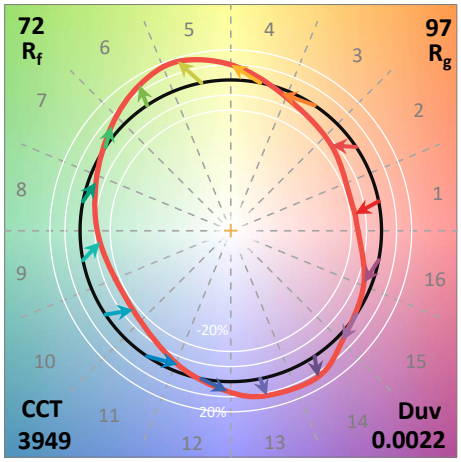
## Spectral Power Distribution Comparison

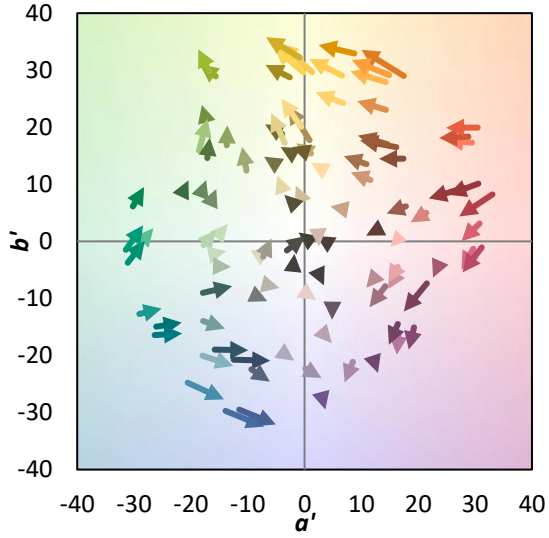



## Color Vector Graphics



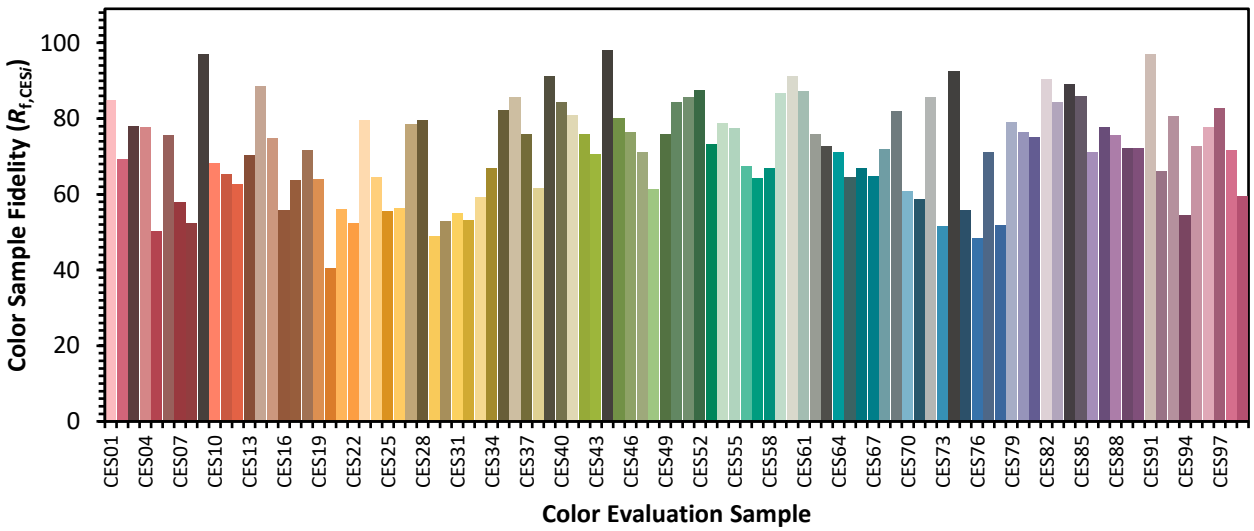



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**Individual Sample Fidelity Index ($R_{f,i}$)**

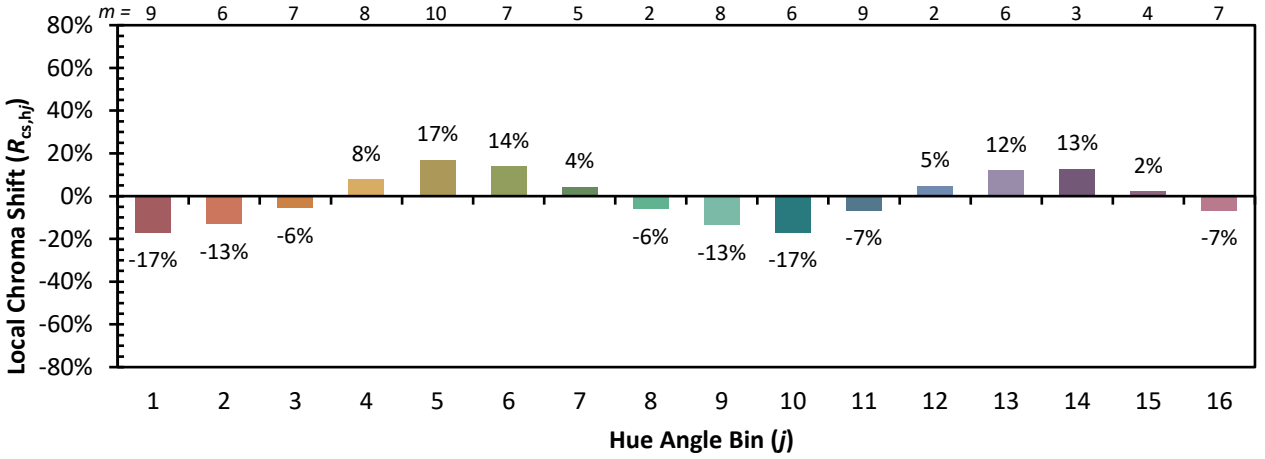
| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 56 | CES51 = 86 | CES76 = 48 |
| CES02 = 61 | CES27 = 79 | CES52 = 88 | CES77 = 71 |
| CES03 = 30 | CES28 = 80 | CES53 = 73 | CES78 = 52 |
| CES04 = 70 | CES29 = 49 | CES54 = 79 | CES79 = 79 |
| CES05 = 47 | CES30 = 53 | CES55 = 77 | CES80 = 77 |
| CES06 = 50 | CES31 = 55 | CES56 = 67 | CES81 = 75 |
| CES07 = 40 | CES32 = 53 | CES57 = 64 | CES82 = 90 |
| CES08 = 39 | CES33 = 59 | CES58 = 67 | CES83 = 84 |
| CES09 = 29 | CES34 = 67 | CES59 = 87 | CES84 = 89 |
| CES10 = 74 | CES35 = 82 | CES60 = 91 | CES85 = 86 |
| CES11 = 57 | CES36 = 86 | CES61 = 87 | CES86 = 71 |
| CES12 = 63 | CES37 = 76 | CES62 = 76 | CES87 = 78 |
| CES13 = 42 | CES38 = 62 | CES63 = 73 | CES88 = 76 |
| CES14 = 74 | CES39 = 91 | CES64 = 71 | CES89 = 72 |
| CES15 = 71 | CES40 = 84 | CES65 = 64 | CES90 = 72 |
| CES16 = 46 | CES41 = 81 | CES66 = 67 | CES91 = 97 |
| CES17 = 49 | CES42 = 76 | CES67 = 65 | CES92 = 66 |
| CES18 = 56 | CES43 = 71 | CES68 = 72 | CES93 = 81 |
| CES19 = 72 | CES44 = 98 | CES69 = 82 | CES94 = 55 |
| CES20 = 65 | CES45 = 80 | CES70 = 61 | CES95 = 73 |
| CES21 = 86 | CES46 = 76 | CES71 = 59 | CES96 = 78 |
| CES22 = 78 | CES47 = 71 | CES72 = 86 | CES97 = 83 |
| CES23 = 92 | CES48 = 61 | CES73 = 52 | CES98 = 72 |
| CES24 = 91 | CES49 = 76 | CES74 = 93 | CES99 = 60 |
| CES25 = 72 | CES50 = 84 | CES75 = 56 | |

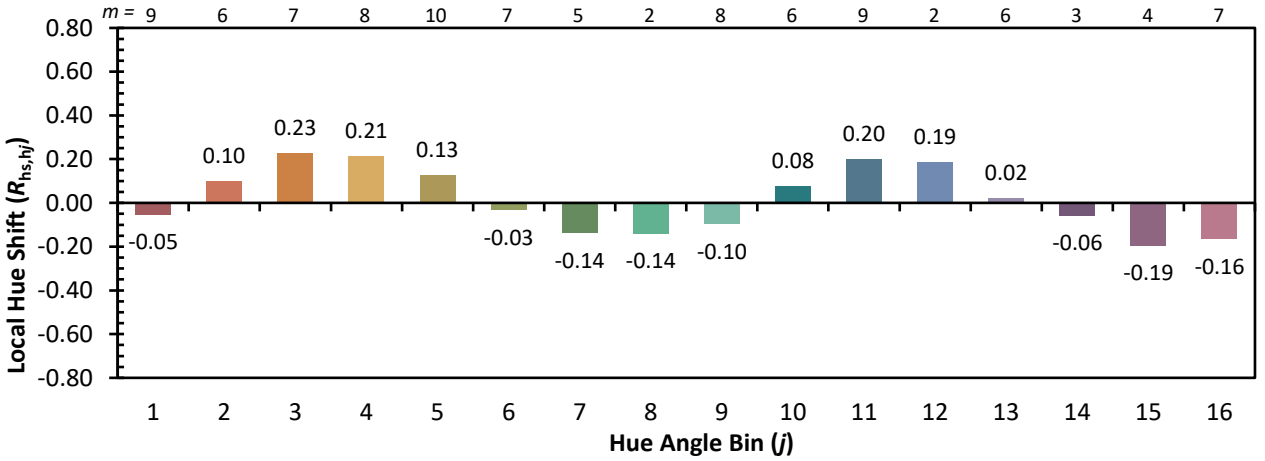


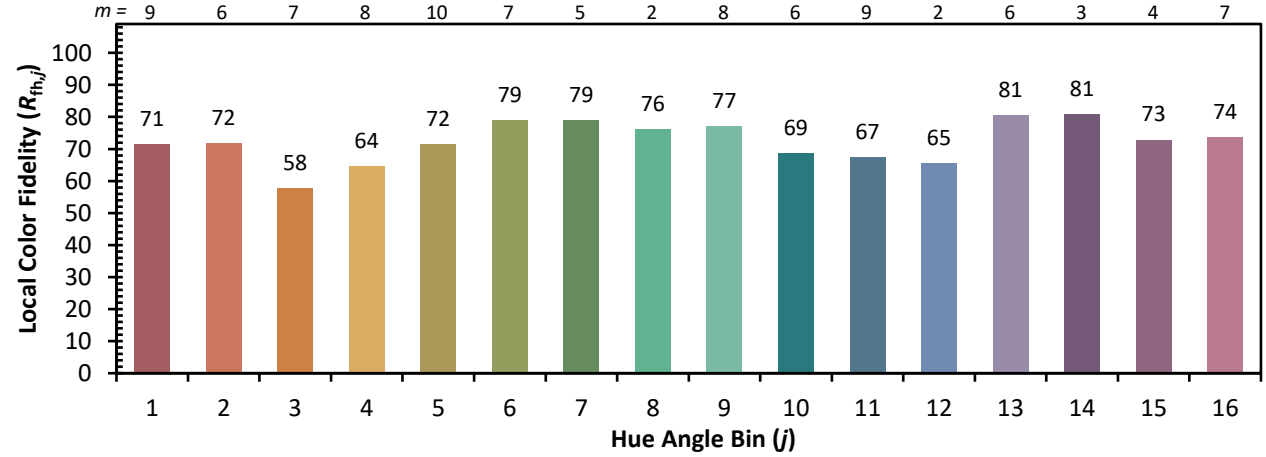
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## Color Rendition by Hue-Angle Bin



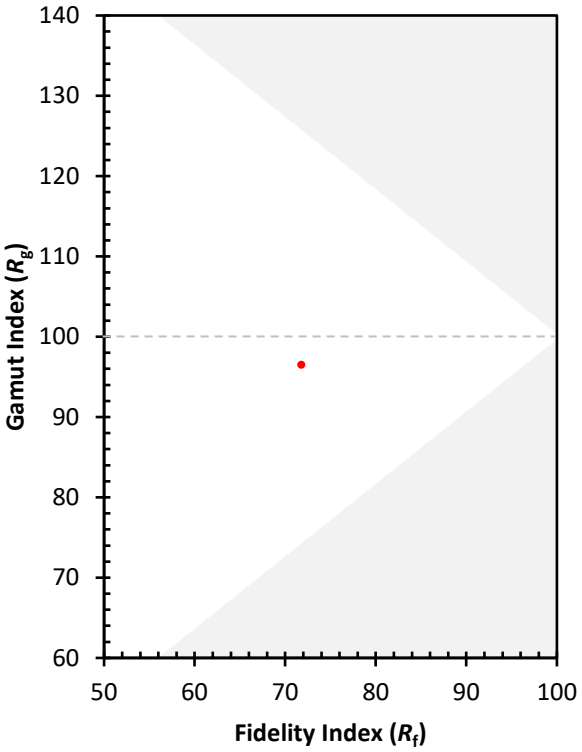



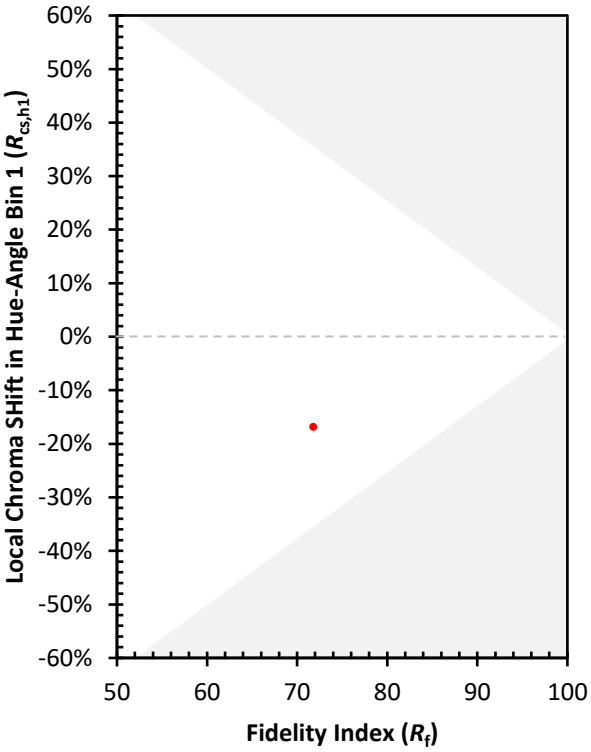



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## Measure Comparisons




(END OF REPORT)