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

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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: P1502605

Luminaire Tested: GSS-SB3A-750-U-T4LG-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: | P1502605 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 7/20/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB3A-750-U-T4LG-HSS |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 3SQUARE 85W 70CRI 5000K FIXTURE w/ TYPE IV LOW GLARE DISTRIBUTION FIXTURE W/ HOUSE SIDE SHIELD |
| Light Source: | (78) 5000K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 10684.5 lumens |
| Efficiency: | N/A |
| Efficacy: | 125.7 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 0.5' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B1 - U0 - G2 |

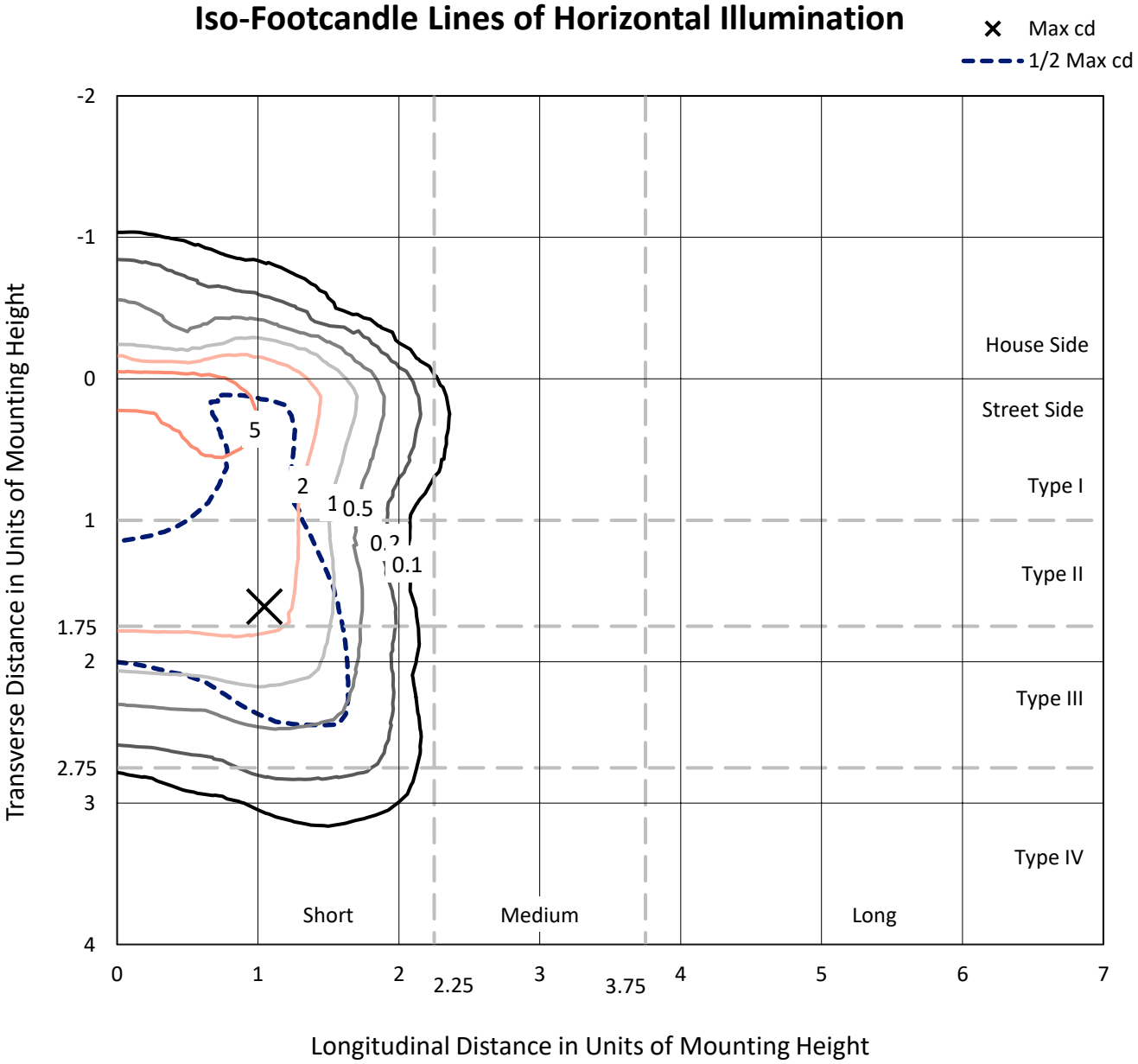
| | |
|---|---|
| Input Watts (W): | 85 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 11.0% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1502605
CATALOG NUMBER: GSS-SB3A-750-U-T4LG-HSS

## Iso-Footcandle Lines of Horizontal Illumination



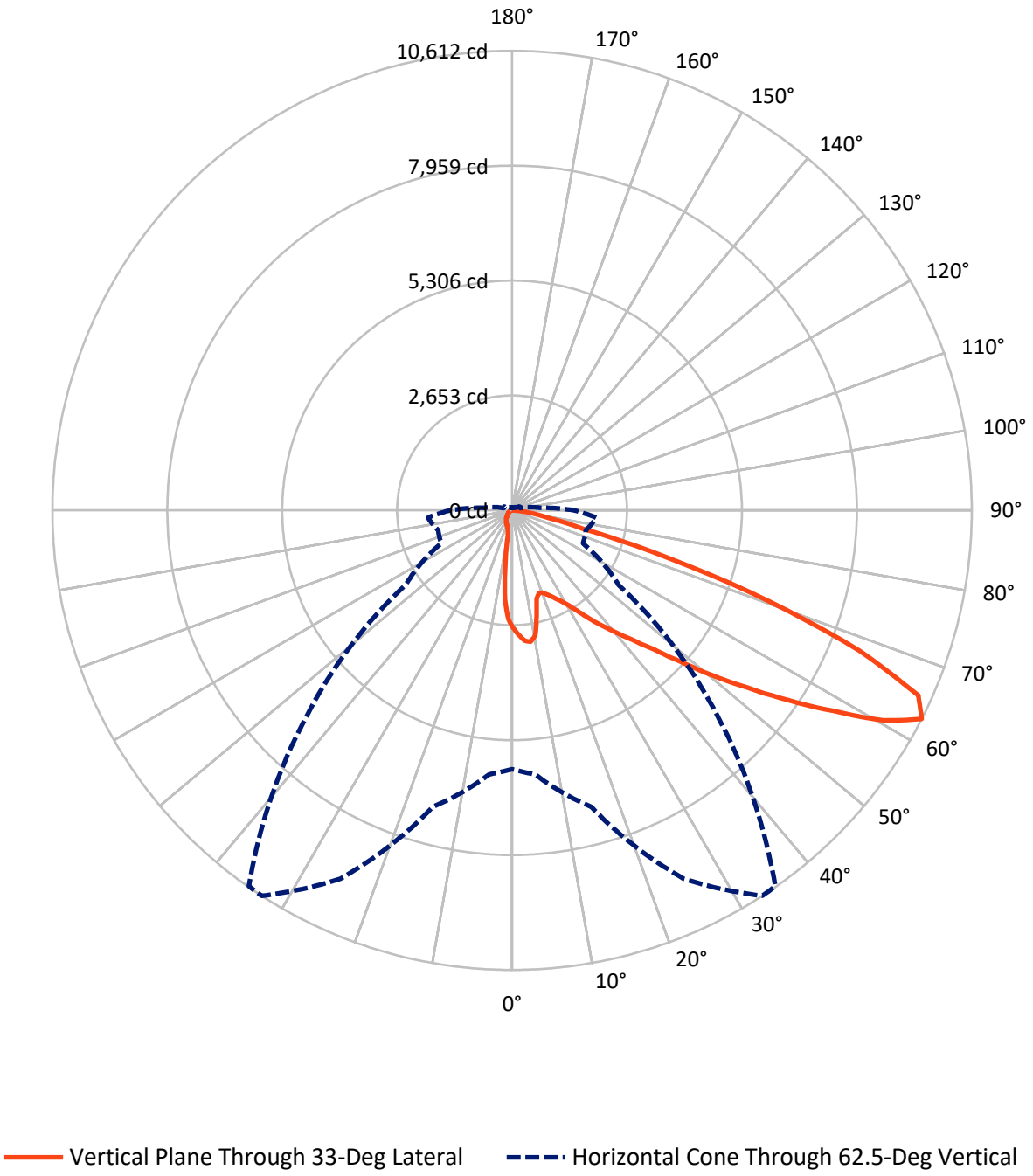

Based on 20 foot mounting height. Maximum calculated value = 8.1 fc
Type III - Short - N/A

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## Luminous Intensity Polar Plot



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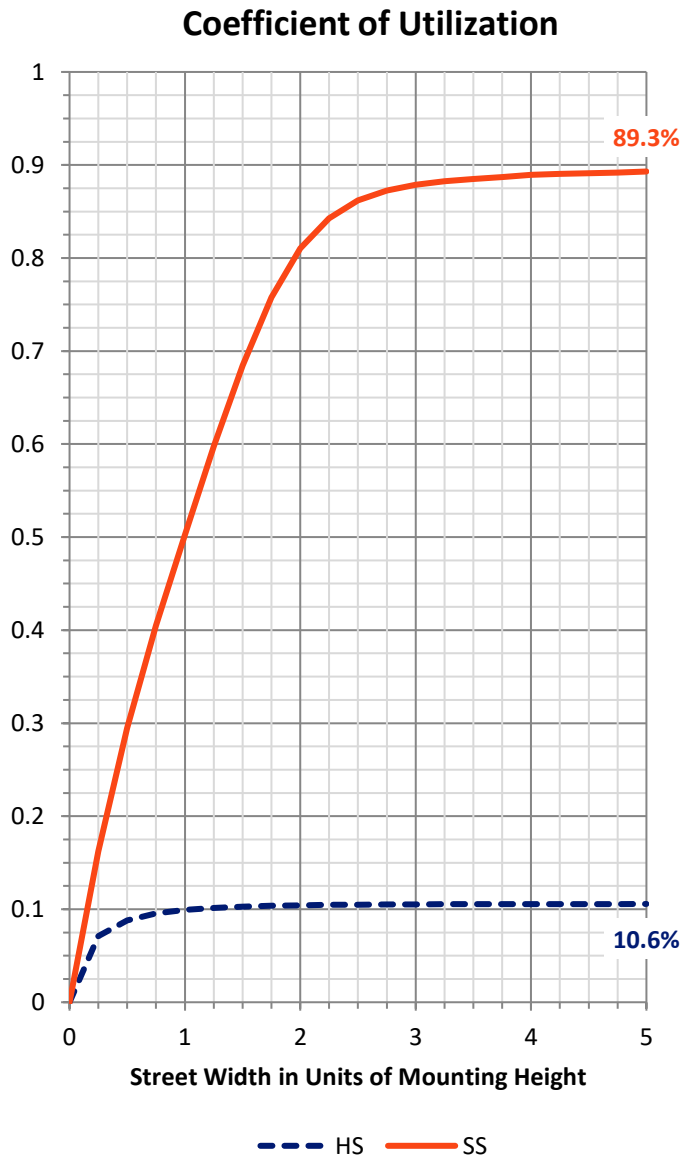
REPORT NUMBER: P1502605
CATALOG NUMBER: GSS-SB3A-750-U-T4LG-HSS

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 1136.9 | 0.0 | 1136.9 |
| | % Fixture | 10.6 | 0.0 | 10.6 |
| **Street Side** | Lumens | 9547.6 | 0.0 | 9547.6 |
| | % Fixture | 89.4 | 0.0 | 89.4 |
| **Total** | Lumens | 10684.5 | 0.0 | 10684.5 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 230.7 | 2.2 |
| 10°-20° | 514.9 | 4.8 |
| 20°-30° | 829.9 | 7.8 |
| 30°-40° | 1380.6 | 12.9 |
| 40°-50° | 2182.0 | 20.4 |
| 50°-60° | 2931.5 | 27.4 |
| 60°-70° | 2152.0 | 20.1 |
| 70°-80° | 425.9 | 4.0 |
| 80°-90° | 37.0 | 0.3 |
| 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° | 10684.5 | 100.0 |
| 0°-180° | 10684.5 | 100.0 |



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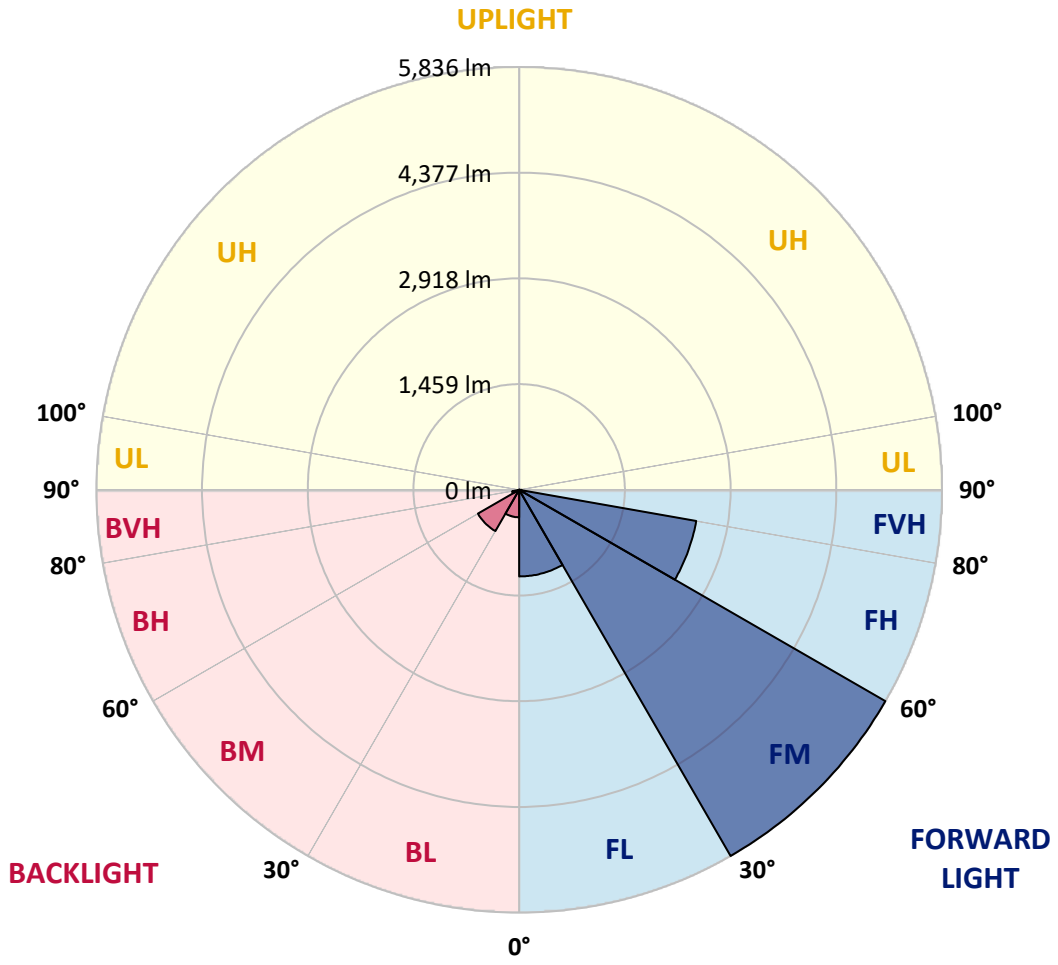
Scaled Data Report

REPORT NUMBER: P1502605
CATALOG NUMBER: GSS-SB3A-750-U-T4LG-HSS

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1196.2 | 11.2 | | | |
| FM | (30°-60°) | 5836.4 | 54.6 | | | |
| FH | (60°-80°) | 2480.8 | 23.2 | | | G2/5000 |
| FVH | (80°-90°) | 34.2 | 0.3 | | | G1/100 |
| BL | (0°-30°) | 379.3 | 3.6 | B1/500 | | |
| BM | (30°-60°) | 657.7 | 6.2 | B1/1000 | | |
| BH | (60°-80°) | 97.1 | 0.9 | B0/110 | | G0/110 |
| BVH | (80°-90°) | 2.8 | 0.0 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B1-U0-G2**
Type III Short



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REPORT NUMBER: P1502605
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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 33° | 35° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2714.0 | 2714.0 | 2714.0 | 2714.0 | 2714.0 | 2714.0 | 2714.0 | 2714.0 | 2714.0 | 2714.0 | 2714.0 |
| 2.5° | 2891.5 | 2903.5 | 2903.5 | 2879.5 | 2873.5 | 2861.4 | 2849.4 | 2846.4 | 2807.3 | 2777.2 | 2747.1 |
| 5° | 3038.9 | 3035.9 | 3032.9 | 3020.9 | 3023.9 | 3008.9 | 2999.8 | 2984.8 | 2918.6 | 2873.5 | 2792.2 |
| 7.5° | 2975.8 | 3002.8 | 3014.9 | 3048.0 | 3063.0 | 3060.0 | 3084.1 | 3090.1 | 3032.9 | 2969.7 | 2846.4 |
| 10° | 2563.5 | 2548.5 | 2656.8 | 2798.2 | 2939.7 | 2972.7 | 3102.1 | 3171.3 | 3150.3 | 3093.1 | 2933.6 |
| 12.5° | 2031.0 | 2046.0 | 2121.2 | 2286.7 | 2518.4 | 2590.6 | 2963.7 | 3237.5 | 3297.7 | 3261.6 | 3054.0 |
| 15° | 1859.5 | 1859.5 | 1898.6 | 1976.8 | 2115.2 | 2184.4 | 2644.8 | 3228.5 | 3454.2 | 3457.2 | 3204.4 |
| 17.5° | 1823.4 | 1829.4 | 1862.5 | 1913.6 | 2003.9 | 2034.0 | 2355.9 | 3096.1 | 3607.6 | 3661.8 | 3372.9 |
| 20° | 1829.4 | 1838.4 | 1874.5 | 1946.7 | 2034.0 | 2070.1 | 2280.7 | 2927.6 | 3737.0 | 3884.4 | 3550.4 |
| 22.5° | 1850.4 | 1847.4 | 1910.6 | 2006.9 | 2118.2 | 2151.3 | 2343.9 | 2858.4 | 3845.3 | 4140.2 | 3758.1 |
| 25° | 1874.5 | 1877.5 | 1958.8 | 2094.2 | 2229.6 | 2268.7 | 2485.3 | 2921.6 | 3923.5 | 4414.0 | 3968.7 |
| 27.5° | 1946.7 | 1955.8 | 2055.0 | 2202.5 | 2362.0 | 2413.1 | 2668.9 | 3087.1 | 4058.9 | 4678.8 | 4197.4 |
| 30° | 2058.1 | 2067.1 | 2181.4 | 2358.9 | 2530.4 | 2608.7 | 2897.5 | 3294.7 | 4260.5 | 4985.7 | 4432.0 |
| 32.5° | 2187.4 | 2199.5 | 2346.9 | 2551.5 | 2759.1 | 2834.3 | 3159.3 | 3610.6 | 4528.3 | 5298.6 | 4675.8 |
| 35° | 2349.9 | 2383.0 | 2542.5 | 2786.2 | 3066.0 | 3138.2 | 3481.2 | 3968.7 | 4877.4 | 5578.4 | 4883.4 |
| 37.5° | 2572.6 | 2599.7 | 2795.2 | 3099.1 | 3382.0 | 3478.2 | 3842.3 | 4344.8 | 5193.3 | 5828.2 | 5051.9 |
| 40° | 2843.4 | 2867.4 | 3087.1 | 3418.1 | 3712.9 | 3794.2 | 4221.4 | 4723.9 | 5533.3 | 5966.6 | 5088.0 |
| 42.5° | 3294.7 | 3360.9 | 3499.3 | 3779.1 | 4095.1 | 4197.4 | 4642.7 | 5091.0 | 5780.0 | 5993.6 | 5030.8 |
| 45° | 4083.0 | 4104.1 | 4134.2 | 4266.6 | 4570.5 | 4660.7 | 5088.0 | 5409.9 | 5927.4 | 5999.7 | 4979.7 |
| 47.5° | 4838.2 | 4910.5 | 4952.6 | 5012.8 | 5196.3 | 5229.4 | 5554.3 | 5695.8 | 6044.8 | 5978.6 | 4979.7 |
| 50° | 5593.5 | 5647.6 | 5719.8 | 5792.0 | 5987.6 | 5999.7 | 6047.8 | 5888.3 | 6050.8 | 5807.1 | 4949.6 |
| 52.5° | 6279.5 | 6297.5 | 6420.9 | 6559.3 | 6803.0 | 6869.2 | 6505.1 | 6029.7 | 5686.7 | 5265.5 | 4808.2 |
| 55° | 6893.3 | 6917.4 | 7103.9 | 7386.7 | 7735.8 | 7823.0 | 7064.8 | 5755.9 | 4907.4 | 4564.4 | 4480.2 |
| 57.5° | 7290.5 | 7347.6 | 7720.7 | 8343.6 | 8737.7 | 8698.6 | 7498.1 | 5115.1 | 3941.6 | 3734.0 | 3899.5 |
| 60° | 7091.9 | 7170.1 | 7955.4 | 9146.9 | 9848.0 | 9733.6 | 7377.7 | 4209.4 | 2912.6 | 2762.1 | 3087.1 |
| 62.5° | 5975.6 | 6120.0 | 7091.9 | 9384.6 | 10612.2 | 10594.2 | 6697.7 | 3002.8 | 1805.3 | 1766.2 | 1949.7 |
| 65° | 4155.2 | 4405.0 | 5557.4 | 8590.3 | 10305.3 | 10332.4 | 5638.6 | 1748.1 | 836.5 | 1038.1 | 1140.4 |
| 67.5° | 2449.2 | 2626.7 | 3580.5 | 7013.6 | 8647.5 | 8397.7 | 3833.3 | 809.4 | 418.2 | 631.9 | 604.8 |
| 70° | 1077.2 | 1197.5 | 2052.0 | 4859.3 | 6300.5 | 5897.4 | 1871.5 | 394.2 | 318.9 | 382.1 | 334.0 |
| 72.5° | 592.7 | 646.9 | 1080.2 | 2566.6 | 3833.3 | 3643.7 | 631.9 | 261.8 | 273.8 | 285.8 | 240.7 |
| 75° | 331.0 | 355.0 | 568.7 | 1483.4 | 1685.0 | 1567.6 | 306.9 | 171.5 | 231.7 | 231.7 | 177.5 |
| 77.5° | 192.6 | 213.6 | 355.0 | 923.7 | 923.7 | 746.2 | 186.5 | 108.3 | 174.5 | 156.5 | 96.3 |
| 80° | 90.3 | 102.3 | 195.6 | 511.5 | 583.7 | 481.4 | 105.3 | 75.2 | 114.3 | 99.3 | 63.2 |
| 82.5° | 27.1 | 33.1 | 96.3 | 198.6 | 331.0 | 282.8 | 54.2 | 48.1 | 84.2 | 63.2 | 36.1 |
| 85° | 18.1 | 21.1 | 48.1 | 81.2 | 162.5 | 141.4 | 18.1 | 15.0 | 36.1 | 30.1 | 15.0 |
| 87.5° | 3.0 | 3.0 | 6.0 | 6.0 | 6.0 | 6.0 | 3.0 | 3.0 | 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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Scaled Data Report

REPORT NUMBER: P1502605
CATALOG NUMBER: GSS-SB3A-750-U-T4LG-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2714.0 | 2714.0 | 2714.0 | 2714.0 | 2714.0 | 2714.0 | 2714.0 | 2714.0 | 2714.0 | 2714.0 | 2714.0 |
| 2.5° | 2729.0 | 2708.0 | 2659.8 | 2614.7 | 2590.6 | 2536.5 | 2515.4 | 2491.3 | 2479.3 | 2476.3 | 2458.2 |
| 5° | 2741.1 | 2702.0 | 2581.6 | 2461.2 | 2334.9 | 2214.5 | 2091.2 | 1982.8 | 1895.6 | 1898.6 | 1901.6 |
| 7.5° | 2777.2 | 2698.9 | 2488.3 | 2247.6 | 1976.8 | 1663.9 | 1329.9 | 1080.2 | 920.7 | 887.6 | 857.5 |
| 10° | 2825.3 | 2711.0 | 2374.0 | 1928.7 | 1396.1 | 878.6 | 619.8 | 529.6 | 490.4 | 481.4 | 484.4 |
| 12.5° | 2915.6 | 2741.1 | 2229.6 | 1489.4 | 773.3 | 505.5 | 448.3 | 433.3 | 427.3 | 427.3 | 427.3 |
| 15° | 3026.9 | 2783.2 | 2003.9 | 974.9 | 505.5 | 421.2 | 409.2 | 406.2 | 400.2 | 400.2 | 403.2 |
| 17.5° | 3120.2 | 2783.2 | 1706.0 | 634.9 | 415.2 | 391.2 | 382.1 | 379.1 | 379.1 | 382.1 | 379.1 |
| 20° | 3222.5 | 2762.1 | 1372.0 | 478.4 | 385.1 | 364.1 | 358.1 | 358.1 | 358.1 | 361.1 | 361.1 |
| 22.5° | 3327.8 | 2726.0 | 1062.1 | 409.2 | 358.1 | 340.0 | 337.0 | 340.0 | 343.0 | 346.0 | 346.0 |
| 25° | 3445.1 | 2680.9 | 839.5 | 379.1 | 334.0 | 318.9 | 318.9 | 318.9 | 321.9 | 328.0 | 331.0 |
| 27.5° | 3574.5 | 2641.8 | 719.1 | 361.1 | 312.9 | 297.9 | 297.9 | 300.9 | 306.9 | 309.9 | 312.9 |
| 30° | 3694.9 | 2641.8 | 680.0 | 370.1 | 303.9 | 285.8 | 279.8 | 282.8 | 288.9 | 294.9 | 294.9 |
| 32.5° | 3845.3 | 2671.9 | 701.1 | 409.2 | 300.9 | 267.8 | 261.8 | 261.8 | 267.8 | 270.8 | 270.8 |
| 35° | 3971.7 | 2729.0 | 773.3 | 463.4 | 312.9 | 252.7 | 240.7 | 237.7 | 243.7 | 240.7 | 243.7 |
| 37.5° | 4074.0 | 2807.3 | 905.7 | 535.6 | 337.0 | 234.7 | 219.6 | 210.6 | 210.6 | 210.6 | 210.6 |
| 40° | 4104.1 | 2885.5 | 1074.2 | 583.7 | 334.0 | 213.6 | 192.6 | 183.5 | 180.5 | 177.5 | 177.5 |
| 42.5° | 4062.0 | 2921.6 | 1209.6 | 580.7 | 297.9 | 198.6 | 171.5 | 159.5 | 150.4 | 147.4 | 147.4 |
| 45° | 4028.9 | 2939.7 | 1257.7 | 505.5 | 270.8 | 180.5 | 153.5 | 138.4 | 129.4 | 126.4 | 123.4 |
| 47.5° | 4031.9 | 2957.7 | 1185.5 | 412.2 | 246.7 | 165.5 | 138.4 | 123.4 | 114.3 | 111.3 | 108.3 |
| 50° | 4043.9 | 2927.6 | 1005.0 | 343.0 | 225.7 | 150.4 | 123.4 | 111.3 | 102.3 | 99.3 | 96.3 |
| 52.5° | 3917.5 | 2768.1 | 707.1 | 300.9 | 207.6 | 141.4 | 111.3 | 102.3 | 93.3 | 90.3 | 90.3 |
| 55° | 3586.6 | 2386.0 | 478.4 | 267.8 | 192.6 | 129.4 | 102.3 | 96.3 | 87.3 | 81.2 | 81.2 |
| 57.5° | 3057.0 | 1799.3 | 331.0 | 243.7 | 168.5 | 117.3 | 96.3 | 87.3 | 78.2 | 72.2 | 72.2 |
| 60° | 2337.9 | 1173.5 | 240.7 | 222.7 | 138.4 | 108.3 | 90.3 | 84.2 | 72.2 | 66.2 | 63.2 |
| 62.5° | *1423.2* | *658.9* | *195.6* | *195.6* | *117.3* | *102.3* | *81.2* | *75.2* | *63.2* | *54.2* | *51.2* |
| 65° | 824.4 | 388.1 | 159.5 | 165.5 | 102.3 | 93.3 | 72.2 | 63.2 | 51.2 | 42.1 | 39.1 |
| 67.5° | 397.2 | 225.7 | 126.4 | 117.3 | 90.3 | 78.2 | 63.2 | 54.2 | 45.1 | 36.1 | 33.1 |
| 70° | 243.7 | 174.5 | 96.3 | 84.2 | 72.2 | 60.2 | 51.2 | 48.1 | 39.1 | 30.1 | 30.1 |
| 72.5° | 198.6 | 141.4 | 75.2 | 60.2 | 54.2 | 42.1 | 42.1 | 39.1 | 30.1 | 24.1 | 21.1 |
| 75° | 156.5 | 105.3 | 57.2 | 42.1 | 33.1 | 33.1 | 30.1 | 27.1 | 24.1 | 18.1 | 18.1 |
| 77.5° | 84.2 | 72.2 | 42.1 | 24.1 | 18.1 | 21.1 | 21.1 | 18.1 | 15.0 | 12.0 | 12.0 |
| 80° | 54.2 | 42.1 | 24.1 | 12.0 | 12.0 | 12.0 | 12.0 | 9.0 | 9.0 | 6.0 | 6.0 |
| 82.5° | 27.1 | 21.1 | 12.0 | 3.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 3.0 | 3.0 |
| 85° | 6.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| 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: SP1-2407-184-6

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-750-U-5WQ

Data in this report applies to families of products including GSS-SB1A-750-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

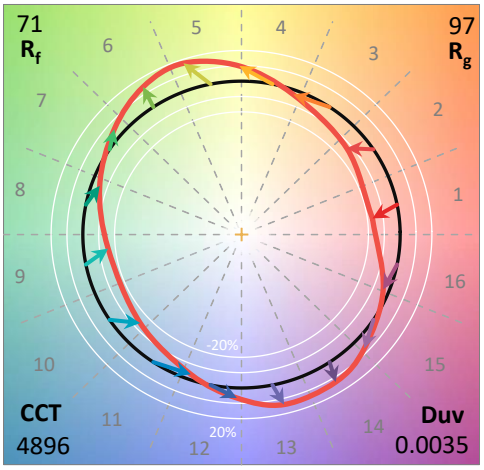
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-6 |
| 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-750-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 5000K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 4896 |
| CIE u': | 0.2101 |
| CIE v': | 0.4901 |
| Duv: | 0.0035 |
| CIE x: | 0.3489 |
| CIE y: | 0.3618 |
| CIE z: | 0.2893 |
| Peak Wavelength (nm): | 443 |
| Dominant Wavelength (nm): | 570 |
| Purity: | 13.25435 |
| Rf: | 70.7 |
| Rg: | 96.8 |

| | |
|---|---|
| CRI (Ra): | 70.2 |
| R1: | 68.1 |
| R2: | 73.9 |
| R3: | 79.4 |
| R4: | 72.1 |
| R5: | 69.2 |
| R6: | 65.7 |
| R7: | 78.1 |
| R8: | 55.3 |
| R9: | -35.1 |
| R10: | 39.3 |
| R11: | 71.1 |
| R12: | 43.8 |
| R13: | 68.1 |
| R14: | 88.4 |
| R15: | 59.7 |




## Test Conditions

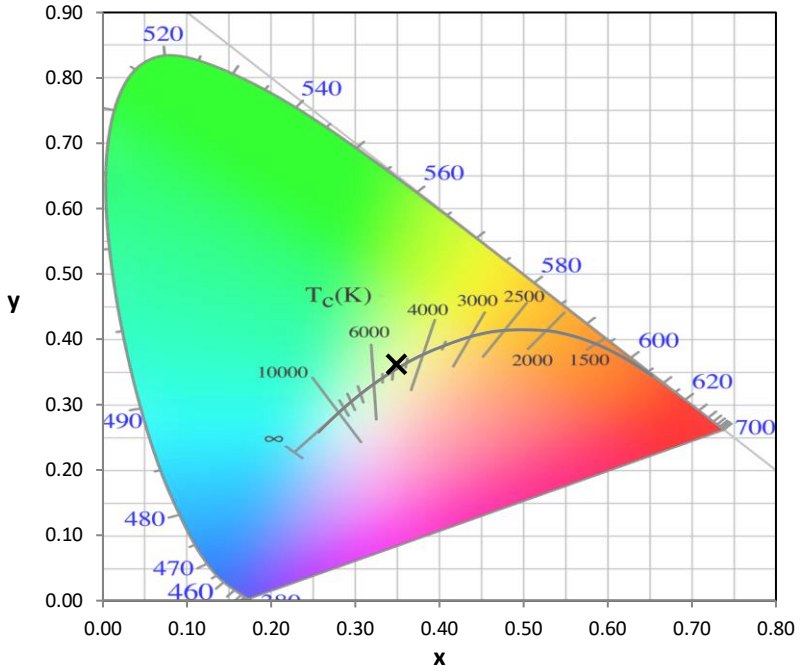
| | |
|---|---|
| Stabilization Time: | 21M |
| Operation Time: | 1H 21M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-6

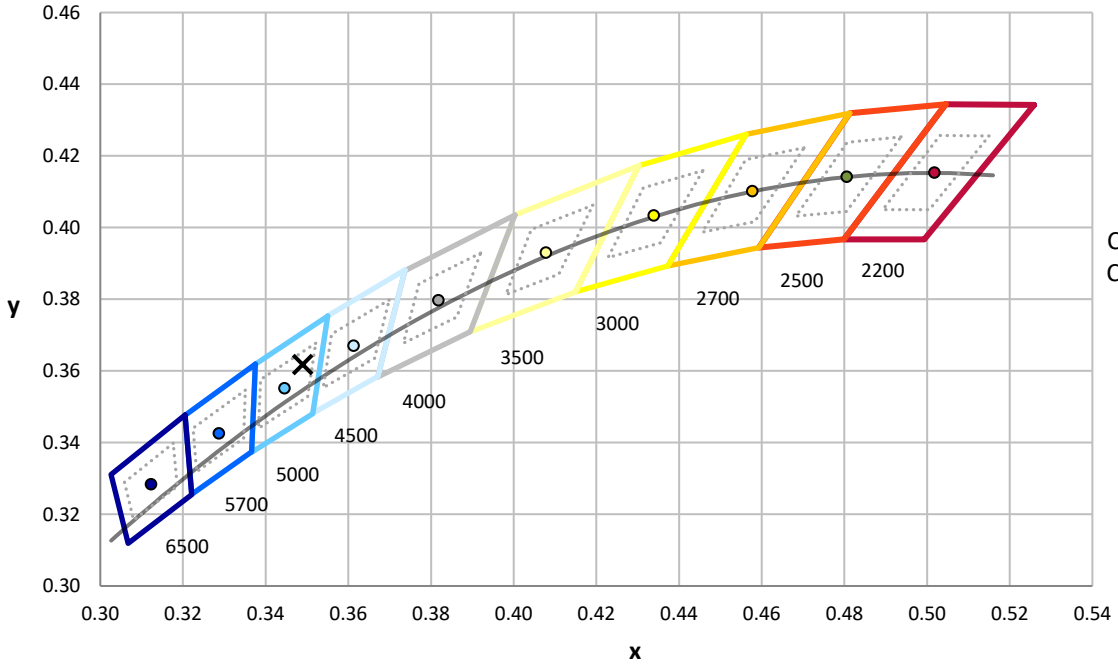
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

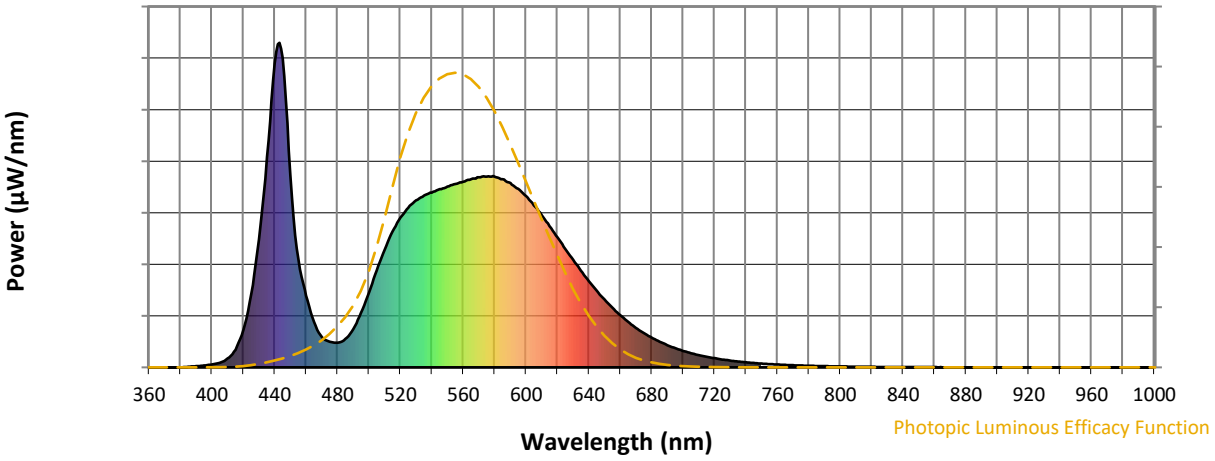



CCT = 4896K
CIE x = 0.3489
CIE y = 0.3618
Duv = 0.0035

Point lies inside the ANSI 5000K 4-step quadrangle

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## Photopic Flux vs. Wavelength

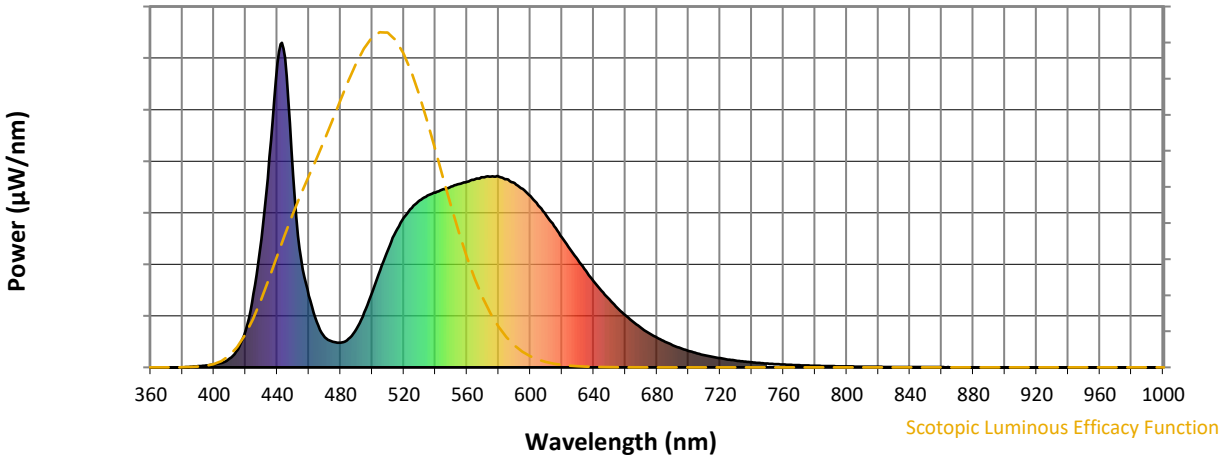



## Photopic Lumens: NR

| 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 | 118 | NR | 620 | 401 | NR | 750 | 12 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 168 | NR | 625 | 365 | NR | 755 | 10 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 230 | NR | 630 | 331 | NR | 760 | 9 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 299 | NR | 635 | 298 | NR | 765 | 8 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 362 | NR | 640 | 266 | NR | 770 | 6 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 418 | NR | 645 | 236 | NR | 775 | 6 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 461 | NR | 650 | 209 | NR | 780 | 5 | NR | 910 | 0 | NR |
| 395 | 6 | NR | 525 | 491 | NR | 655 | 184 | NR | 785 | 4 | NR | 915 | 0 | NR |
| 400 | 9 | NR | 530 | 514 | NR | 660 | 160 | NR | 790 | 4 | NR | 920 | 0 | NR |
| 405 | 14 | NR | 535 | 530 | NR | 665 | 140 | NR | 795 | 3 | NR | 925 | 0 | NR |
| 410 | 27 | NR | 540 | 539 | NR | 670 | 122 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 55 | NR | 545 | 549 | NR | 675 | 106 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 115 | NR | 550 | 557 | NR | 680 | 92 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 226 | NR | 555 | 565 | NR | 685 | 79 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 395 | NR | 560 | 572 | NR | 690 | 68 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 648 | NR | 565 | 580 | NR | 695 | 59 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 937 | NR | 570 | 586 | NR | 700 | 51 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 953 | NR | 575 | 588 | NR | 705 | 44 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 591 | NR | 580 | 588 | NR | 710 | 38 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 334 | NR | 585 | 580 | NR | 715 | 32 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 221 | NR | 590 | 568 | NR | 720 | 28 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 140 | NR | 595 | 550 | NR | 725 | 24 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 93 | NR | 600 | 527 | NR | 730 | 21 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 79 | NR | 605 | 499 | NR | 735 | 18 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 469 | NR | 740 | 15 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 87 | NR | 615 | 435 | NR | 745 | 13 | NR | 875 | 0 | NR | | | |

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## Scotopic Flux vs. Wavelength

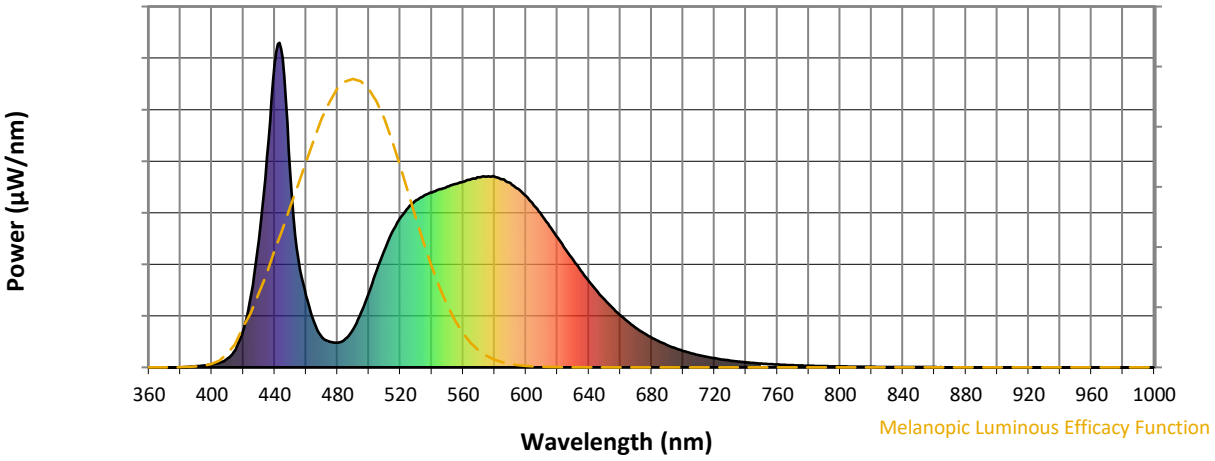



**Scotopic Lumens: NR** **S/P: 1.7**

| 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 | 118 | NR | 620 | 401 | NR | 750 | 12 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 168 | NR | 625 | 365 | NR | 755 | 10 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 230 | NR | 630 | 331 | NR | 760 | 9 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 299 | NR | 635 | 298 | NR | 765 | 8 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 362 | NR | 640 | 266 | NR | 770 | 6 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 418 | NR | 645 | 236 | NR | 775 | 6 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 461 | NR | 650 | 209 | NR | 780 | 5 | NR | 910 | 0 | NR |
| 395 | 6 | NR | 525 | 491 | NR | 655 | 184 | NR | 785 | 4 | NR | 915 | 0 | NR |
| 400 | 9 | NR | 530 | 514 | NR | 660 | 160 | NR | 790 | 4 | NR | 920 | 0 | NR |
| 405 | 14 | NR | 535 | 530 | NR | 665 | 140 | NR | 795 | 3 | NR | 925 | 0 | NR |
| 410 | 27 | NR | 540 | 539 | NR | 670 | 122 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 55 | NR | 545 | 549 | NR | 675 | 106 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 115 | NR | 550 | 557 | NR | 680 | 92 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 226 | NR | 555 | 565 | NR | 685 | 79 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 395 | NR | 560 | 572 | NR | 690 | 68 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 648 | NR | 565 | 580 | NR | 695 | 59 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 937 | NR | 570 | 586 | NR | 700 | 51 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 953 | NR | 575 | 588 | NR | 705 | 44 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 591 | NR | 580 | 588 | NR | 710 | 38 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 334 | NR | 585 | 580 | NR | 715 | 32 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 221 | NR | 590 | 568 | NR | 720 | 28 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 140 | NR | 595 | 550 | NR | 725 | 24 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 93 | NR | 600 | 527 | NR | 730 | 21 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 79 | NR | 605 | 499 | NR | 735 | 18 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 469 | NR | 740 | 15 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 87 | NR | 615 | 435 | NR | 745 | 13 | NR | 875 | 0 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 3.37**

| 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 | 118 | NR | 620 | 401 | NR | 750 | 12 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 168 | NR | 625 | 365 | NR | 755 | 10 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 230 | NR | 630 | 331 | NR | 760 | 9 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 299 | NR | 635 | 298 | NR | 765 | 8 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 362 | NR | 640 | 266 | NR | 770 | 6 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 418 | NR | 645 | 236 | NR | 775 | 6 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 461 | NR | 650 | 209 | NR | 780 | 5 | NR | 910 | 0 | NR |
| 395 | 6 | NR | 525 | 491 | NR | 655 | 184 | NR | 785 | 4 | NR | 915 | 0 | NR |
| 400 | 9 | NR | 530 | 514 | NR | 660 | 160 | NR | 790 | 4 | NR | 920 | 0 | NR |
| 405 | 14 | NR | 535 | 530 | NR | 665 | 140 | NR | 795 | 3 | NR | 925 | 0 | NR |
| 410 | 27 | NR | 540 | 539 | NR | 670 | 122 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 55 | NR | 545 | 549 | NR | 675 | 106 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 115 | NR | 550 | 557 | NR | 680 | 92 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 226 | NR | 555 | 565 | NR | 685 | 79 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 395 | NR | 560 | 572 | NR | 690 | 68 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 648 | NR | 565 | 580 | NR | 695 | 59 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 937 | NR | 570 | 586 | NR | 700 | 51 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 953 | NR | 575 | 588 | NR | 705 | 44 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 591 | NR | 580 | 588 | NR | 710 | 38 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 334 | NR | 585 | 580 | NR | 715 | 32 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 221 | NR | 590 | 568 | NR | 720 | 28 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 140 | NR | 595 | 550 | NR | 725 | 24 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 93 | NR | 600 | 527 | NR | 730 | 21 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 79 | NR | 605 | 499 | NR | 735 | 18 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 469 | NR | 740 | 15 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 87 | NR | 615 | 435 | NR | 745 | 13 | NR | 875 | 0 | NR | | | |

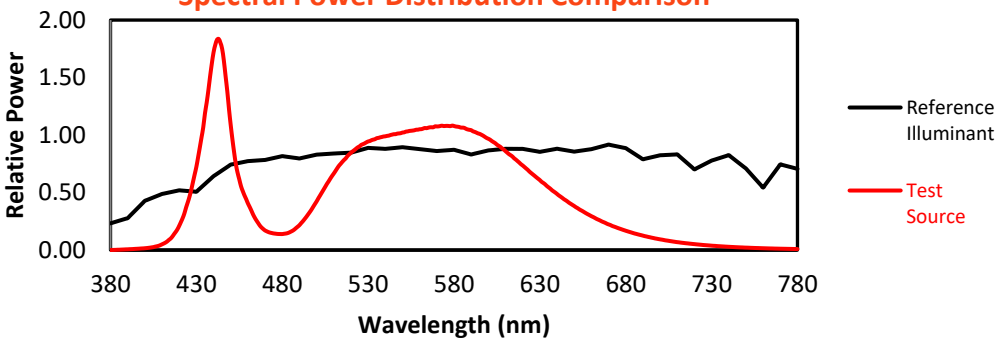
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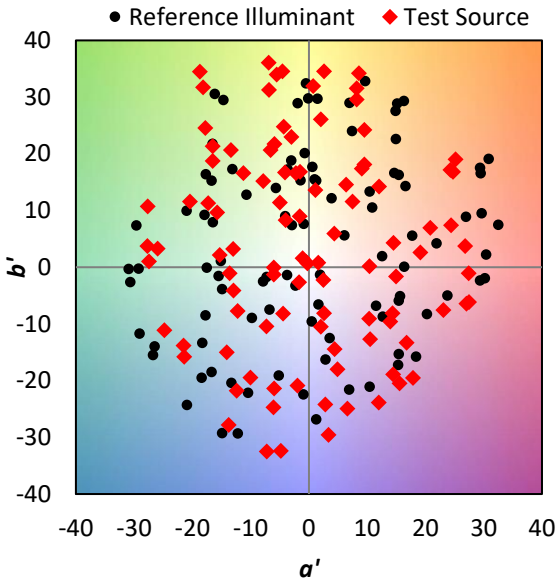
## Summary

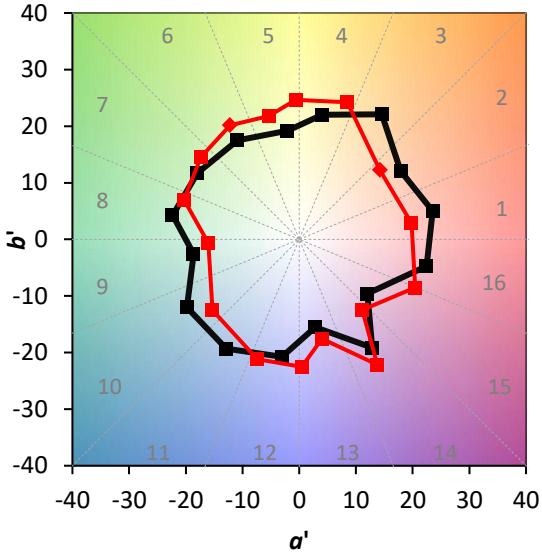
$R_f$ = 70.7
$R_g$ = 96.8
CIE $R_a$ = 70.2
$R_9$ = -35.1

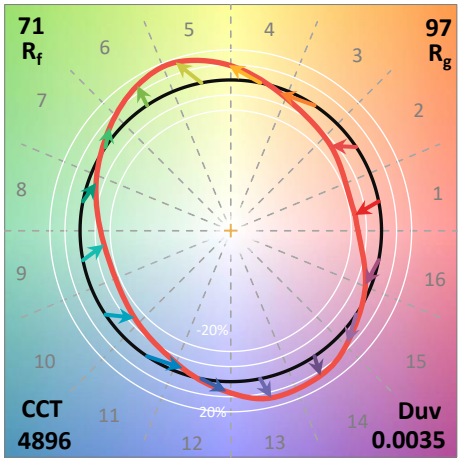
## Spectral Power Distribution Comparison

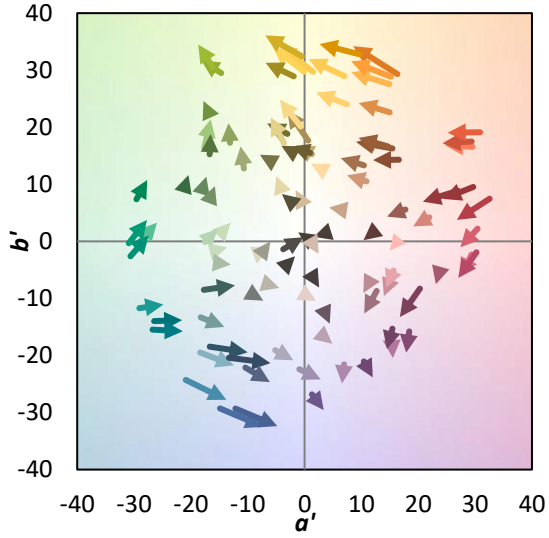



## Color Vector Graphics



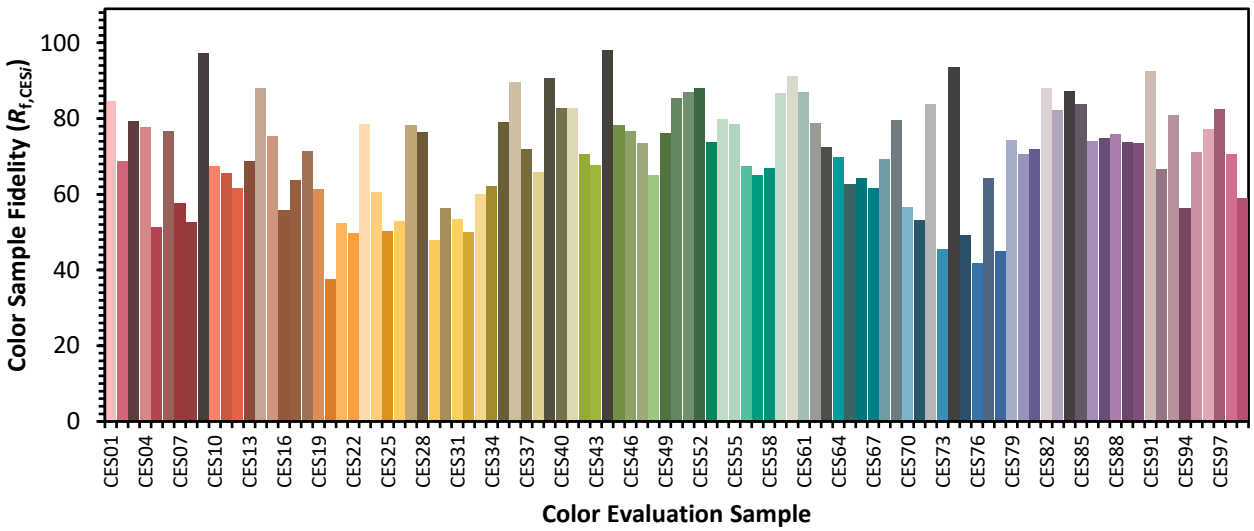



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## Individual Sample Fidelity Index ($R_{f,i}$)

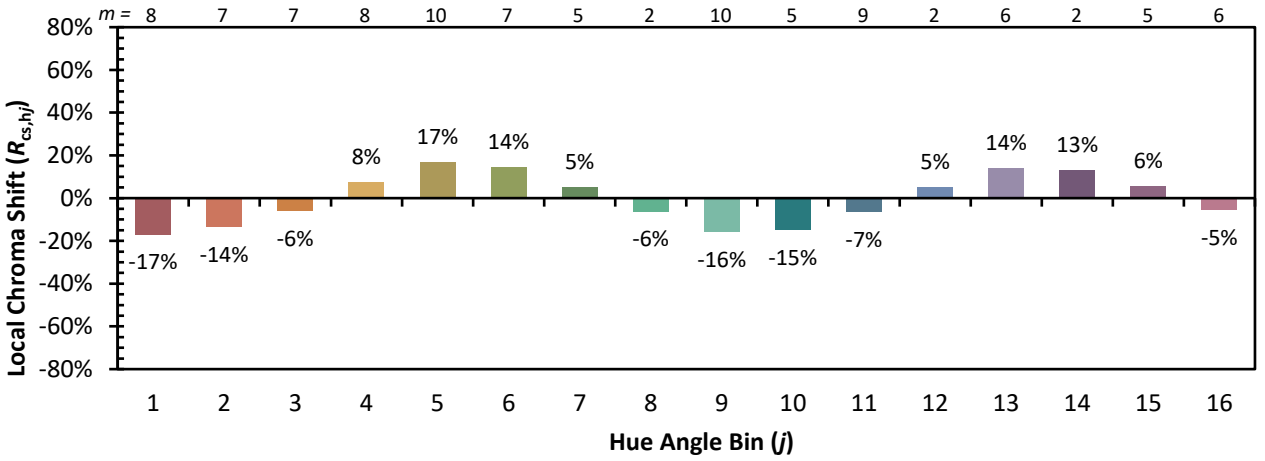
| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 53 | CES51 = 87 | CES76 = 42 |
| CES02 = 59 | CES27 = 78 | CES52 = 88 | CES77 = 64 |
| CES03 = 30 | CES28 = 76 | CES53 = 74 | CES78 = 45 |
| CES04 = 69 | CES29 = 48 | CES54 = 80 | CES79 = 74 |
| CES05 = 46 | CES30 = 56 | CES55 = 79 | CES80 = 71 |
| CES06 = 50 | CES31 = 54 | CES56 = 68 | CES81 = 72 |
| CES07 = 39 | CES32 = 50 | CES57 = 65 | CES82 = 88 |
| CES08 = 38 | CES33 = 60 | CES58 = 67 | CES83 = 82 |
| CES09 = 29 | CES34 = 62 | CES59 = 87 | CES84 = 87 |
| CES10 = 72 | CES35 = 79 | CES60 = 91 | CES85 = 84 |
| CES11 = 56 | CES36 = 90 | CES61 = 87 | CES86 = 74 |
| CES12 = 61 | CES37 = 72 | CES62 = 79 | CES87 = 75 |
| CES13 = 41 | CES38 = 66 | CES63 = 72 | CES88 = 76 |
| CES14 = 74 | CES39 = 91 | CES64 = 70 | CES89 = 74 |
| CES15 = 70 | CES40 = 83 | CES65 = 63 | CES90 = 73 |
| CES16 = 46 | CES41 = 83 | CES66 = 64 | CES91 = 92 |
| CES17 = 49 | CES42 = 70 | CES67 = 62 | CES92 = 67 |
| CES18 = 55 | CES43 = 68 | CES68 = 69 | CES93 = 81 |
| CES19 = 71 | CES44 = 98 | CES69 = 80 | CES94 = 56 |
| CES20 = 64 | CES45 = 78 | CES70 = 56 | CES95 = 71 |
| CES21 = 85 | CES46 = 77 | CES71 = 53 | CES96 = 77 |
| CES22 = 77 | CES47 = 73 | CES72 = 84 | CES97 = 82 |
| CES23 = 91 | CES48 = 65 | CES73 = 46 | CES98 = 71 |
| CES24 = 90 | CES49 = 76 | CES74 = 94 | CES99 = 59 |
| CES25 = 71 | CES50 = 85 | CES75 = 49 | |

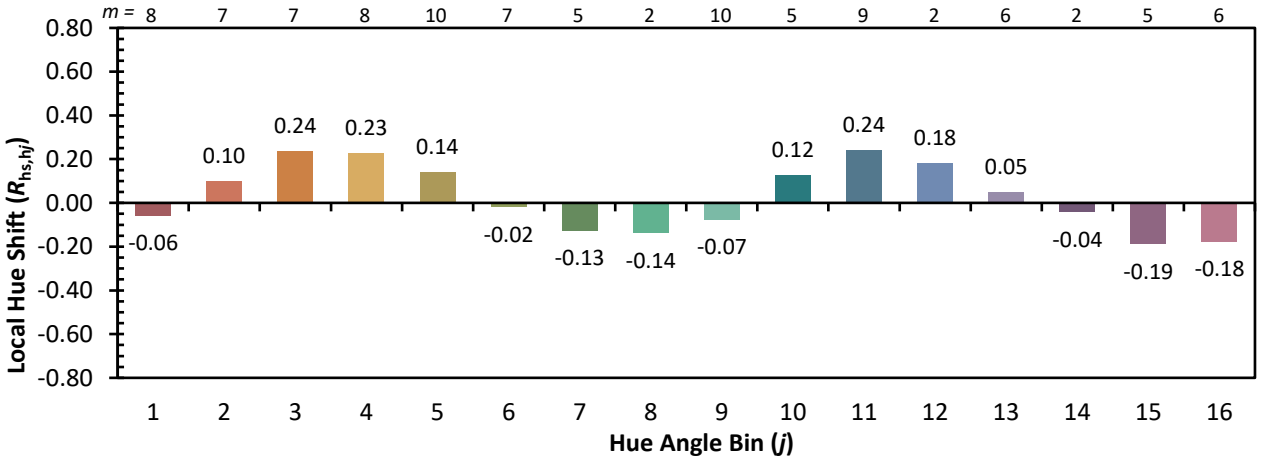


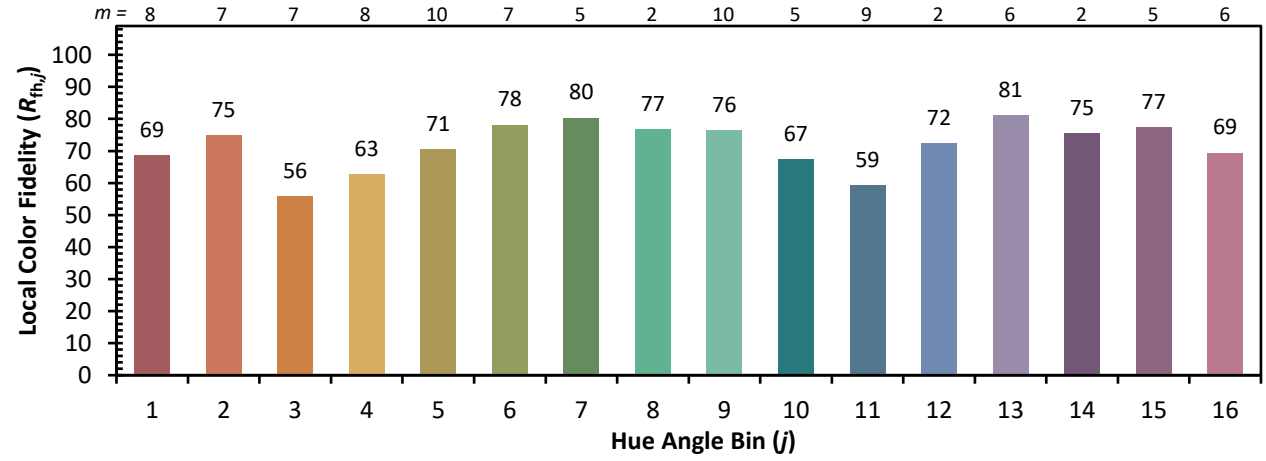
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## Color Rendition by Hue-Angle Bin



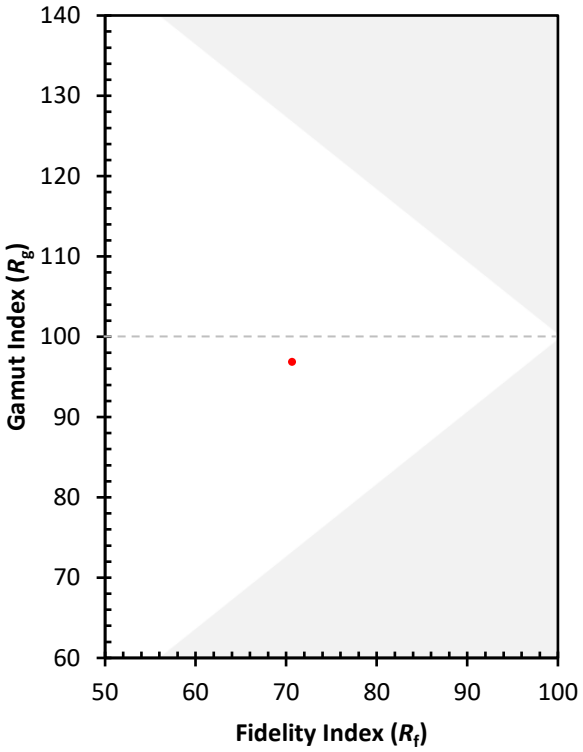



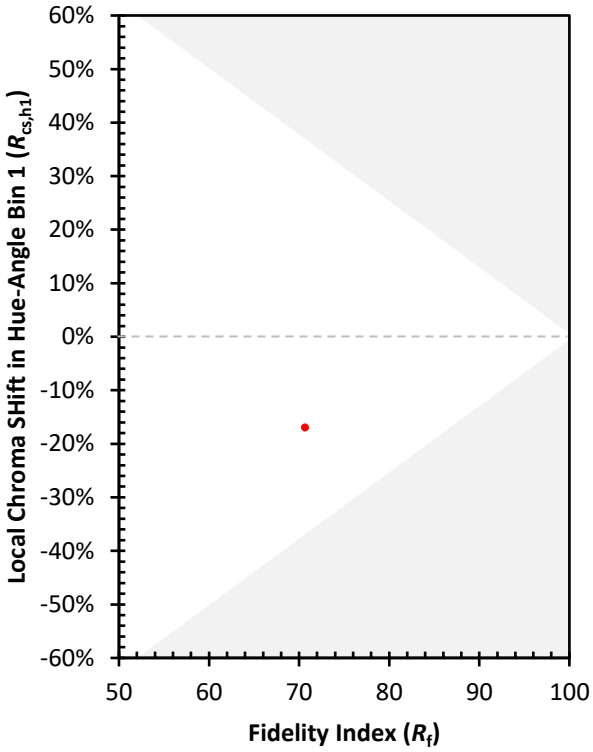



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## Measure Comparisons




(END OF REPORT)