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

Scaled data based on original data using

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

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P641854

Luminaire Tested: GWS-SA6B-760-U-T3-W

Issue Date: 1/10/2023

Report Generated By 670246102 / DESKTOP-G35701P

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | P641854 |
| | TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-23) |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Issue Date: | 1/10/2023 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GWS-SA6B-760-U-T3-W |
| Description: | GALLEON WALL SLIM LUMINAIRE. (6) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS |
| Light Source: | (96) 5700K CCT, 70 CRI LEDS |
| Ballast/Driver: | - |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 21375.5 lumens |
| Efficiency: | N/A |
| Efficacy: | 153.9 lumens/watt |
| Luminous Opening: | Rectangular (W 2' x L: 1' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B3 - U0 - G3 |

| | |
|---|---|
| Input Watts (W): | 138.9 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | NR |
| Total Harmonic Distortion (THDi): | NR |
| Frequency (hertz): | 0 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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1121 Highway 74 South
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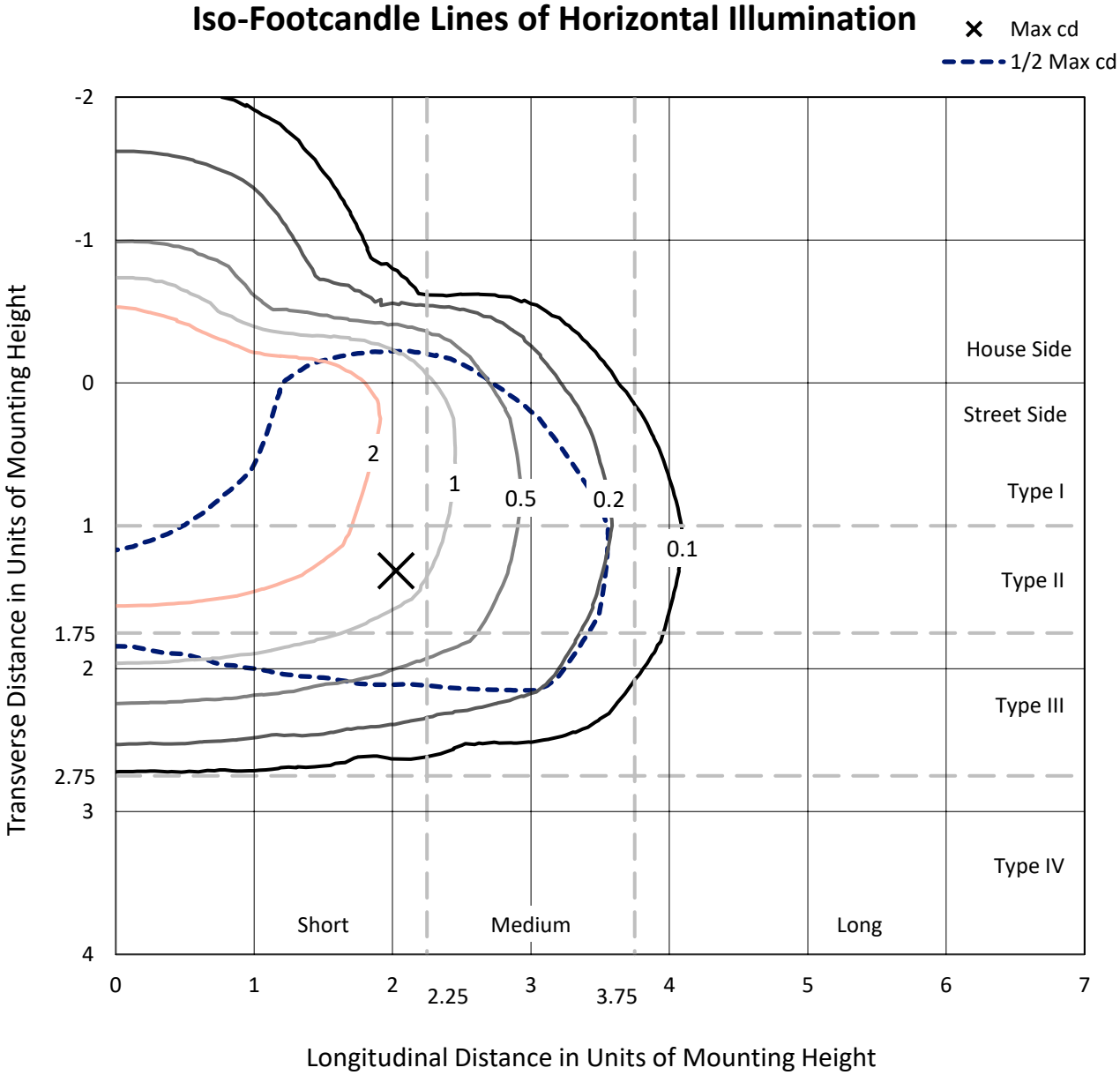
Scaled Data Report

REPORT NUMBER: P641854
CATALOG NUMBER: GWS-SA6B-760-U-T3-W

## Iso-Footcandle Lines of Horizontal Illumination




Based on 25 foot mounting height. Maximum calculated value = 4.8 fc
Type III - Short - N/A

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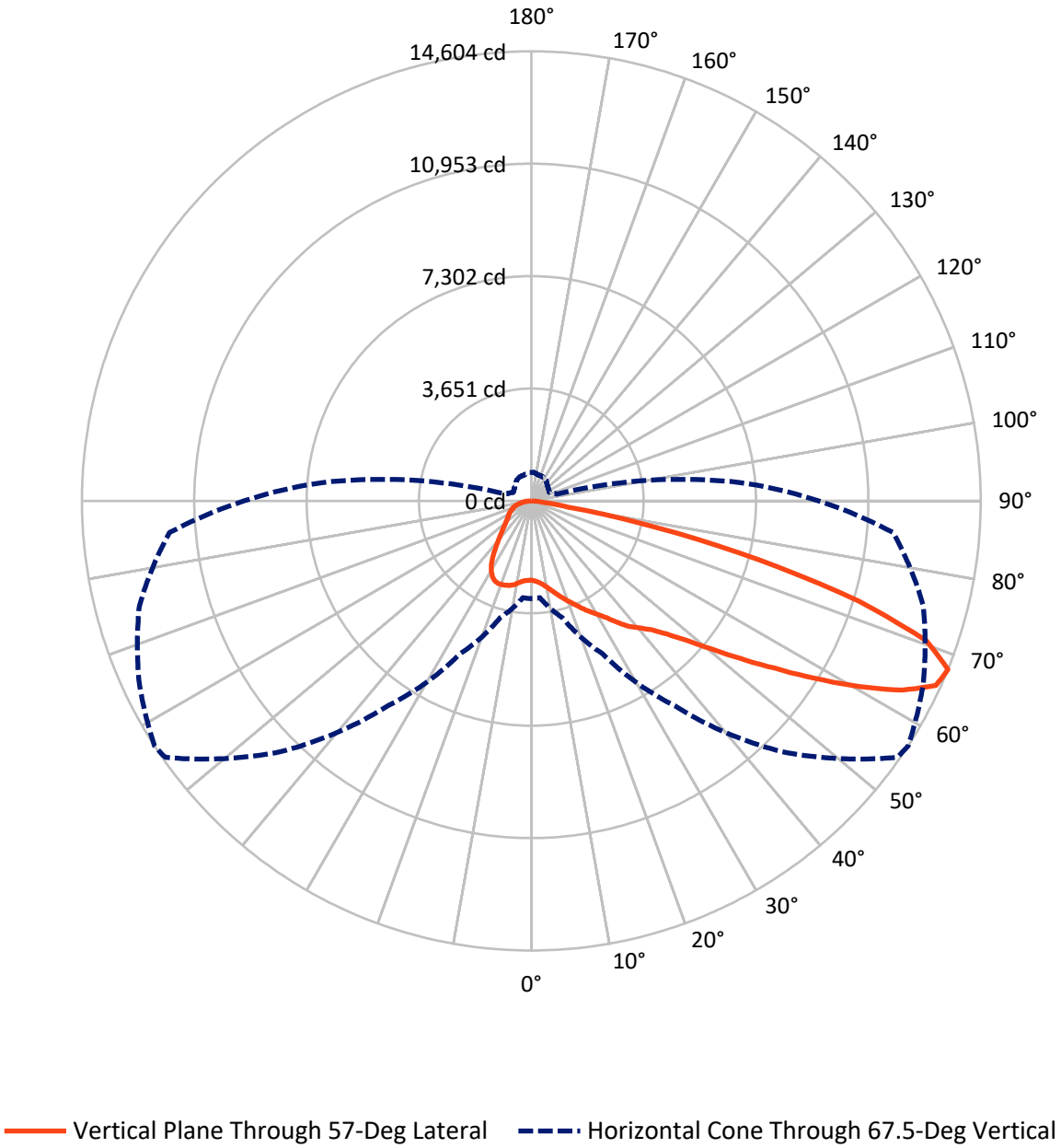
## Luminous Intensity Polar Plot



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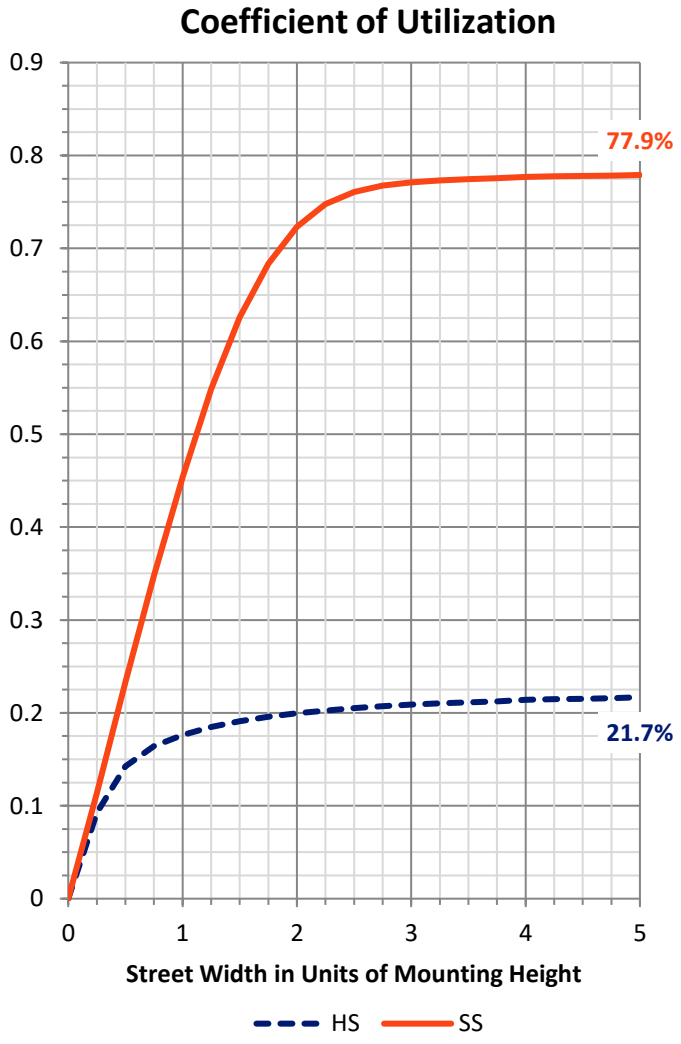
REPORT NUMBER: P641854
CATALOG NUMBER: GWS-SA6B-760-U-T3-W

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 4699.7 | 0.0 | 4699.7 |
| | % Fixture | 22.0 | 0.0 | 22.0 |
| **Street Side** | Lumens | 16675.8 | 0.0 | 16675.8 |
| | % Fixture | 78.0 | 0.0 | 78.0 |
| **Total** | Lumens | 21375.5 | 0.0 | 21375.5 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 255.4 | 1.2 |
| 10°-20° | 845.7 | 4.0 |
| 20°-30° | 1507.6 | 7.1 |
| 30°-40° | 2191.9 | 10.3 |
| 40°-50° | 3172.5 | 14.8 |
| 50°-60° | 4964.8 | 23.2 |
| 60°-70° | 5791.7 | 27.1 |
| 70°-80° | 2417.7 | 11.3 |
| 80°-90° | 228.2 | 1.1 |
| 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° | 21375.5 | 100.0 |
| 0°-180° | 21375.5 | 100.0 |



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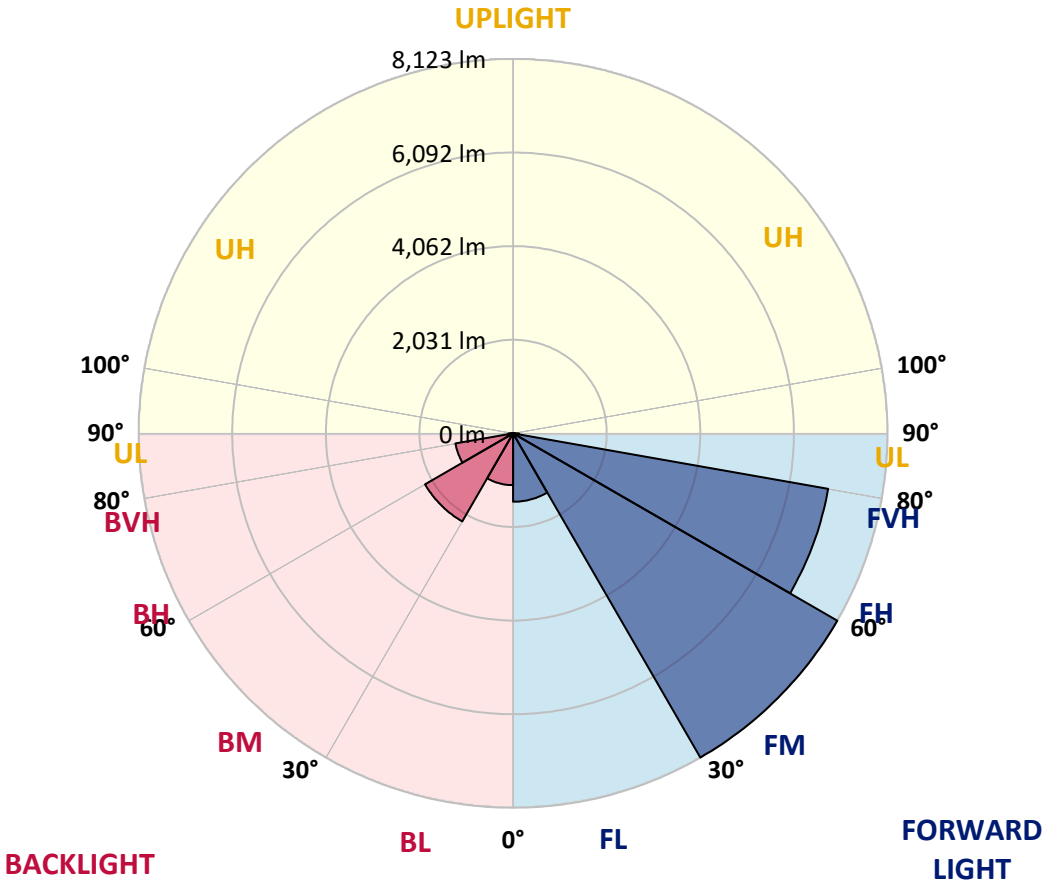
REPORT NUMBER: P641854
CATALOG NUMBER: GWS-SA6B-760-U-T3-W

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1484.7 | 6.9 | | | |
| FM | (30°-60°) | 8123.0 | 38.0 | | | |
| FH | (60°-80°) | 6941.0 | 32.5 | | | G3/7500 |
| FVH | (80°-90°) | 127.1 | 0.6 | | | G2/225 |
| BL | (0°-30°) | 1124.0 | 5.3 | B3/2500 | | |
| BM | (30°-60°) | 2206.2 | 10.3 | B2/2500 | | |
| BH | (60°-80°) | 1268.5 | 5.9 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 101.0 | 0.5 | | | G2/225 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B3-U0-G3**
Type III Short



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Scaled Data Report

REPORT NUMBER: P641854
CATALOG NUMBER: GWS-SA6B-760-U-T3-W

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 57° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2575.6 | 2575.6 | 2575.6 | 2575.6 | 2575.6 | 2575.6 | 2575.6 | 2575.6 | 2575.6 | 2575.6 | 2575.6 |
| 2.5° | 2612.4 | 2609.3 | 2607.8 | 2616.9 | 2613.9 | 2612.4 | 2612.4 | 2610.8 | 2607.8 | 2595.5 | 2578.7 |
| 5° | 2684.3 | 2678.2 | 2672.1 | 2679.7 | 2673.6 | 2667.5 | 2665.9 | 2662.9 | 2652.2 | 2633.8 | 2607.8 |
| 7.5° | 2759.4 | 2753.2 | 2754.8 | 2759.4 | 2754.8 | 2751.7 | 2747.1 | 2744.0 | 2727.2 | 2698.1 | 2662.9 |
| 10° | 2865.0 | 2865.0 | 2868.1 | 2872.7 | 2874.2 | 2869.6 | 2860.4 | 2855.8 | 2835.9 | 2799.2 | 2750.2 |
| 12.5° | 3018.1 | 3015.1 | 3015.1 | 3012.0 | 3016.6 | 3012.0 | 3002.8 | 2995.2 | 2970.7 | 2923.2 | 2852.8 |
| 15° | 3220.3 | 3208.0 | 3197.3 | 3177.4 | 3171.3 | 3154.4 | 3157.5 | 3152.9 | 3129.9 | 3065.6 | 2976.8 |
| 17.5° | 3436.2 | 3434.6 | 3417.8 | 3378.0 | 3338.2 | 3310.6 | 3316.7 | 3315.2 | 3303.0 | 3215.7 | 3102.4 |
| 20° | 3626.1 | 3633.7 | 3618.4 | 3587.8 | 3534.2 | 3482.1 | 3479.1 | 3486.7 | 3471.4 | 3384.1 | 3226.4 |
| 22.5° | 3838.9 | 3832.8 | 3817.5 | 3777.7 | 3737.8 | 3682.7 | 3664.3 | 3658.2 | 3652.1 | 3552.6 | 3353.5 |
| 25° | 4041.0 | 4059.4 | 4039.5 | 4002.7 | 3941.5 | 3881.8 | 3866.5 | 3872.6 | 3855.7 | 3724.1 | 3489.8 |
| 27.5° | 4296.8 | 4304.4 | 4292.2 | 4241.6 | 4189.6 | 4105.3 | 4076.3 | 4076.3 | 4070.1 | 3884.8 | 3597.0 |
| 30° | 4569.3 | 4590.8 | 4569.3 | 4528.0 | 4474.4 | 4353.4 | 4290.6 | 4284.5 | 4266.1 | 4050.2 | 3722.5 |
| 32.5° | 4843.4 | 4858.7 | 4843.4 | 4803.6 | 4742.4 | 4636.7 | 4546.4 | 4532.6 | 4508.1 | 4230.9 | 3851.2 |
| 35° | 5086.9 | 5100.7 | 5097.6 | 5106.8 | 5056.3 | 4923.0 | 4867.9 | 4861.8 | 4797.5 | 4466.7 | 4025.7 |
| 37.5° | 5353.3 | 5370.2 | 5347.2 | 5365.6 | 5345.7 | 5220.1 | 5203.3 | 5172.6 | 5080.8 | 4688.8 | 4209.5 |
| 40° | 5656.5 | 5671.8 | 5635.1 | 5642.7 | 5619.8 | 5549.3 | 5463.6 | 5422.2 | 5286.0 | 4929.2 | 4498.9 |
| 42.5° | 5981.2 | 6016.4 | 6033.2 | 6019.4 | 5965.8 | 5926.0 | 5776.0 | 5723.9 | 5610.6 | 5362.5 | 4975.1 |
| 45° | 6451.3 | 6503.3 | 6527.8 | 6492.6 | 6469.6 | 6413.0 | 6229.2 | 6166.4 | 6106.7 | 5973.5 | 5639.7 |
| 47.5° | 6958.1 | 7005.6 | 7083.7 | 7099.0 | 7117.4 | 7074.5 | 6815.7 | 6754.4 | 6765.2 | 6749.9 | 6457.4 |
| 50° | 7362.4 | 7402.2 | 7578.3 | 7766.6 | 7922.8 | 7935.1 | 7604.3 | 7538.5 | 7596.6 | 7645.6 | 7442.0 |
| 52.5° | 7656.4 | 7691.6 | 7924.3 | 8313.3 | 8667.0 | 8928.9 | 8572.1 | 8497.0 | 8544.5 | 8654.8 | 8561.4 |
| 55° | 7895.2 | 7944.2 | 8187.7 | 8784.9 | 9500.0 | 9913.5 | 9685.3 | 9590.4 | 9570.5 | 9706.7 | 9760.3 |
| 57.5° | 8020.8 | 8036.1 | 8377.6 | 9154.0 | 10111.0 | 10879.7 | 10979.2 | 10872.0 | 10682.2 | 10757.2 | 11035.9 |
| 60° | 7734.5 | 7760.5 | 8227.5 | 9248.9 | 10593.4 | 11838.3 | 12337.5 | 12248.7 | 11844.4 | 11885.7 | 12193.5 |
| 62.5° | 6942.8 | 6979.5 | 7541.5 | 8797.2 | 10633.2 | 12478.3 | 13591.6 | 13534.9 | 12992.9 | 12769.3 | 12861.2 |
| 65° | 5569.2 | 5581.5 | 6163.4 | 7679.3 | 9841.5 | 12558.0 | 14465.9 | 14452.2 | 13795.2 | 13271.5 | 12878.0 |
| 67.5° | 3175.9 | 3154.4 | 3932.3 | 5477.4 | 8121.9 | 11522.8 | 14522.6 | 14603.8 | 14055.6 | 13188.9 | 11806.1 |
| 70° | 1376.6 | 1379.7 | 1738.0 | 2702.7 | 5256.9 | 9313.2 | 13489.0 | 13628.3 | 13302.2 | 11812.2 | 9392.8 |
| 72.5° | 637.0 | 646.2 | 800.9 | 1169.9 | 2244.8 | 5777.5 | 10999.1 | 11124.7 | 10844.5 | 9454.1 | 6834.1 |
| 75° | 450.2 | 457.9 | 534.4 | 670.7 | 1032.1 | 2251.0 | 7357.8 | 7621.1 | 7757.4 | 7071.4 | 4503.5 |
| 77.5° | 341.5 | 352.2 | 390.5 | 465.5 | 637.0 | 797.8 | 3520.4 | 4148.2 | 4941.4 | 4399.3 | 2319.9 |
| 80° | 217.4 | 217.4 | 258.8 | 310.8 | 388.9 | 415.0 | 1016.8 | 1205.1 | 2417.9 | 1813.0 | 911.1 |
| 82.5° | 147.0 | 151.6 | 176.1 | 197.5 | 223.6 | 235.8 | 436.4 | 465.5 | 698.3 | 617.1 | 375.2 |
| 85° | 78.1 | 81.2 | 91.9 | 90.3 | 107.2 | 93.4 | 183.8 | 182.2 | 255.7 | 280.2 | 142.4 |
| 87.5° | 0.0 | 0.0 | 1.5 | 1.5 | 3.1 | 4.6 | 19.9 | 21.4 | 53.6 | 85.8 | 47.5 |
| 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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Scaled Data Report

REPORT NUMBER: P641854
CATALOG NUMBER: GWS-SA6B-760-U-T3-W

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2575.6 | 2575.6 | 2575.6 | 2575.6 | 2575.6 | 2575.6 | 2575.6 | 2575.6 | 2575.6 | 2575.6 | 2575.6 |
| 2.5° | 2587.9 | 2569.5 | 2578.7 | 2575.6 | 2584.8 | 2584.8 | 2567.9 | 2563.4 | 2564.9 | 2546.5 | 2540.4 |
| 5° | 2610.8 | 2589.4 | 2594.0 | 2587.9 | 2597.0 | 2604.7 | 2597.0 | 2597.0 | 2606.2 | 2592.4 | 2584.8 |
| 7.5° | 2662.9 | 2638.4 | 2638.4 | 2630.7 | 2641.4 | 2647.6 | 2641.4 | 2650.6 | 2667.5 | 2653.7 | 2646.0 |
| 10° | 2745.6 | 2716.5 | 2718.0 | 2708.8 | 2713.4 | 2710.4 | 2685.9 | 2678.2 | 2682.8 | 2670.5 | 2664.4 |
| 12.5° | 2852.8 | 2812.9 | 2812.9 | 2794.6 | 2783.9 | 2751.7 | 2701.2 | 2682.8 | 2685.9 | 2675.1 | 2670.5 |
| 15° | 2955.4 | 2918.6 | 2911.0 | 2874.2 | 2825.2 | 2765.5 | 2719.5 | 2707.3 | 2710.4 | 2699.6 | 2692.0 |
| 17.5° | 3076.3 | 3028.9 | 3001.3 | 2933.9 | 2843.6 | 2782.3 | 2736.4 | 2707.3 | 2682.8 | 2658.3 | 2652.2 |
| 20° | 3188.1 | 3128.4 | 3077.9 | 2973.7 | 2863.5 | 2779.3 | 2693.5 | 2621.5 | 2561.8 | 2529.7 | 2522.0 |
| 22.5° | 3303.0 | 3226.4 | 3137.6 | 3001.3 | 2862.0 | 2724.1 | 2566.4 | 2457.7 | 2368.9 | 2321.4 | 2330.6 |
| 25° | 3411.7 | 3315.2 | 3194.2 | 3027.3 | 2812.9 | 2601.6 | 2387.3 | 2224.9 | 2123.9 | 2087.1 | 2076.4 |
| 27.5° | 3502.0 | 3382.6 | 3246.3 | 3015.1 | 2711.9 | 2425.5 | 2142.3 | 1961.6 | 1863.6 | 1822.2 | 1811.5 |
| 30° | 3603.1 | 3468.3 | 3321.3 | 2958.4 | 2552.6 | 2179.0 | 1865.1 | 1718.1 | 1647.7 | 1607.8 | 1609.4 |
| 32.5° | 3719.5 | 3578.6 | 3427.0 | 2849.7 | 2349.0 | 1912.6 | 1636.9 | 1535.9 | 1479.2 | 1439.4 | 1433.3 |
| 35° | 3875.7 | 3736.3 | 3497.4 | 2685.9 | 2090.2 | 1667.6 | 1480.7 | 1398.1 | 1327.6 | 1275.6 | 1264.8 |
| 37.5° | 4068.6 | 3973.7 | 3505.1 | 2466.9 | 1813.0 | 1499.1 | 1369.0 | 1280.1 | 1194.4 | 1125.5 | 1117.8 |
| 40° | 4399.3 | 4290.6 | 3442.3 | 2192.8 | 1577.2 | 1390.4 | 1275.6 | 1173.0 | 1073.4 | 996.9 | 986.1 |
| 42.5° | 4871.0 | 4647.4 | 3307.6 | 1883.5 | 1399.6 | 1304.6 | 1186.7 | 1056.6 | 955.5 | 901.9 | 894.3 |
| 45° | 5471.2 | 5045.5 | 3105.4 | 1592.5 | 1267.9 | 1220.4 | 1093.3 | 957.0 | 903.5 | 865.2 | 857.5 |
| 47.5° | 6206.3 | 5509.5 | 2872.7 | 1365.9 | 1165.3 | 1143.9 | 998.4 | 923.4 | 875.9 | 843.7 | 836.1 |
| 50° | 7085.2 | 6100.6 | 2681.3 | 1188.3 | 1073.4 | 1055.0 | 967.8 | 903.5 | 865.2 | 839.1 | 833.0 |
| 52.5° | 8088.2 | 6757.5 | 2587.9 | 1061.2 | 993.8 | 975.4 | 957.0 | 898.9 | 866.7 | 846.8 | 839.1 |
| 55° | 9129.5 | 7449.6 | 2500.6 | 963.2 | 926.4 | 937.1 | 958.6 | 914.2 | 889.7 | 863.6 | 856.0 |
| 57.5° | 10135.5 | 8098.9 | 2286.2 | 886.6 | 877.4 | 918.8 | 966.2 | 929.5 | 900.4 | 874.4 | 865.2 |
| 60° | 10829.2 | 8454.2 | 1923.3 | 825.4 | 840.7 | 895.8 | 946.3 | 906.5 | 869.8 | 859.0 | 854.5 |
| 62.5° | 11016.0 | 8411.3 | 1493.0 | 762.6 | 796.3 | 845.3 | 894.3 | 868.2 | 830.0 | 846.8 | 848.3 |
| 65° | 10579.6 | 7951.9 | 1120.9 | 701.3 | 738.1 | 779.4 | 840.7 | 830.0 | 816.2 | 862.1 | 863.6 |
| 67.5° | *9343.8* | *6823.4* | *854.5* | *647.7* | *678.4* | *728.9* | *823.8* | *868.2* | *871.3* | *929.5* | *923.4* |
| 70° | 7069.9 | 5097.6 | 669.2 | 597.2 | 632.4 | 728.9 | 877.4 | 897.3 | 860.6 | 914.2 | 901.9 |
| 72.5° | 4887.8 | 3364.2 | 569.6 | 552.8 | 575.8 | 695.2 | 875.9 | 875.9 | 836.1 | 836.1 | 813.1 |
| 75° | 3036.5 | 1978.4 | 496.1 | 496.1 | 496.1 | 607.9 | 851.4 | 807.0 | 736.5 | 704.4 | 686.0 |
| 77.5° | 1499.1 | 961.6 | 416.5 | 431.8 | 415.0 | 508.4 | 695.2 | 660.0 | 617.1 | 583.4 | 571.2 |
| 80° | 640.1 | 480.8 | 336.9 | 353.7 | 333.8 | 382.8 | 551.3 | 543.6 | 502.3 | 457.9 | 444.1 |
| 82.5° | 294.0 | 248.1 | 269.5 | 277.2 | 243.5 | 287.9 | 402.7 | 402.7 | 379.8 | 318.5 | 295.5 |
| 85° | 125.6 | 131.7 | 186.8 | 186.8 | 153.1 | 162.3 | 215.9 | 205.2 | 183.8 | 150.1 | 137.8 |
| 87.5° | 42.9 | 64.3 | 94.9 | 82.7 | 32.2 | 13.8 | 7.7 | 3.1 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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# LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-9-R4

Test Date: 10/23/2019

Luminaire Tested: SA1C-760-U-5WQ

Data in this report applies to families of products SA1C-760-U-5WQ .

Report Generated By FNC07603 / LDUCLS01DT446
Version: v6.13

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

## Test Information

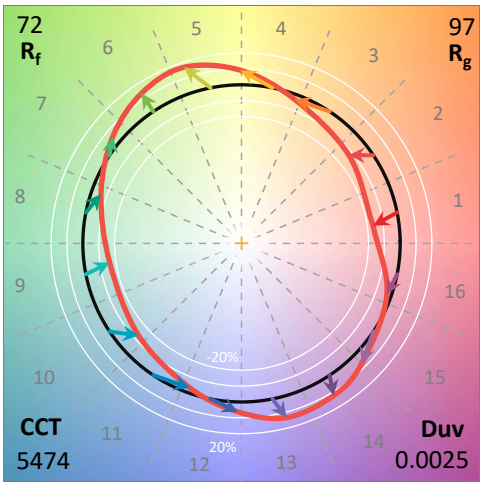
| | |
|---|---|
| Test Method: | LM-79-2008 |
| Report Number: | SP1-1908-441-9-R4 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 10/28/2024 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | **SA1C-760-U-5WQ** |
| Description: | McGRAW EDISON ROADWAY AND AREA LUMINAIRE |

***THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.***TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 5474 | CRI (Ra): | 71.7 | | |
| CIE u': | 0.2052 | R1: | 70.6 | R9: | -27.1 |
| CIE v': | 0.4804 | R2: | 74.6 | R10: | 40.8 |
| Duv: | 0.0025 | R3: | 78.3 | R11: | 74.6 |
| CIE x: | 0.3330 | R4: | 73.8 | R12: | 50.4 |
| CIE y: | 0.3466 | R5: | 72.4 | R13: | 70.0 |
| CIE z: | 0.3204 | R6: | 67.5 | R14: | 87.8 |
| Peak Wavelength (nm): | 442 | R7: | 77.5 | | |
| Dominant Wavelength (nm): | 554 | R8: | 58.9 | | |
| Purity: | 4.1 | | | | |

| | |
|---|---|
| Rf: | 72.1 |
| Rg: | 97.2 |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 240M |
| Operation Time: | 12H |
| Room Temperature (°C) / RH%: | 24.6/31% |
| Sphere Temperature (°C): | 25.9 |

Cooper Lighting Solutions Photometric Lab
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Peachtree City, GA 30269

REPORT NUMBER: SP1-1908-441-9-R4

| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/28/2019 | 12/28/2019 |
| Power Meter | IN0071 | 12/5/2018 | 12/5/2019 |
| AC Power Source | IN0063 | 12/5/2018 | 12/5/2019 |
| DC Power Source | IN0208 | 12/5/2018 | 12/5/2019 |
| Sphere Thermometer | IN0085 | 12/5/2018 | 12/5/2019 |
| Room Thermometer | IN0046 | 12/5/2018 | 12/5/2019 |

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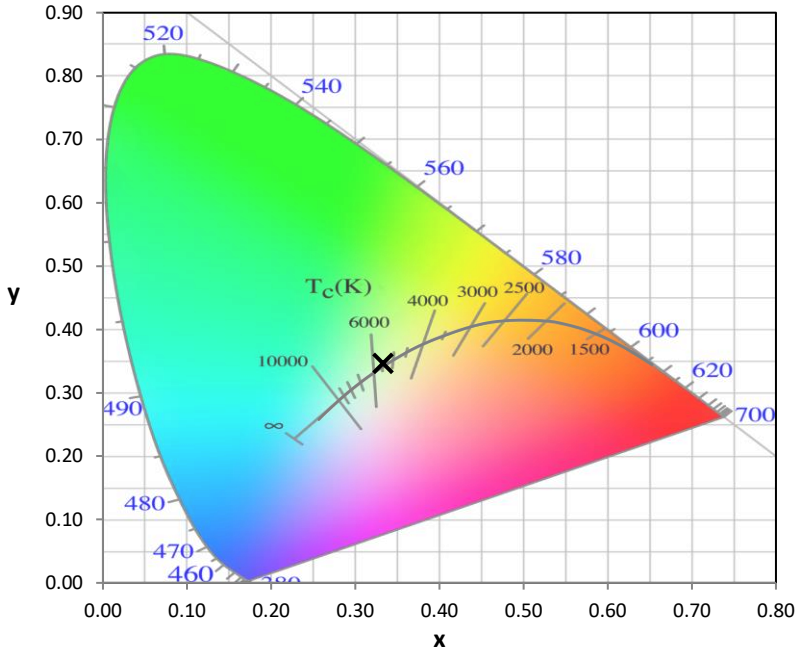
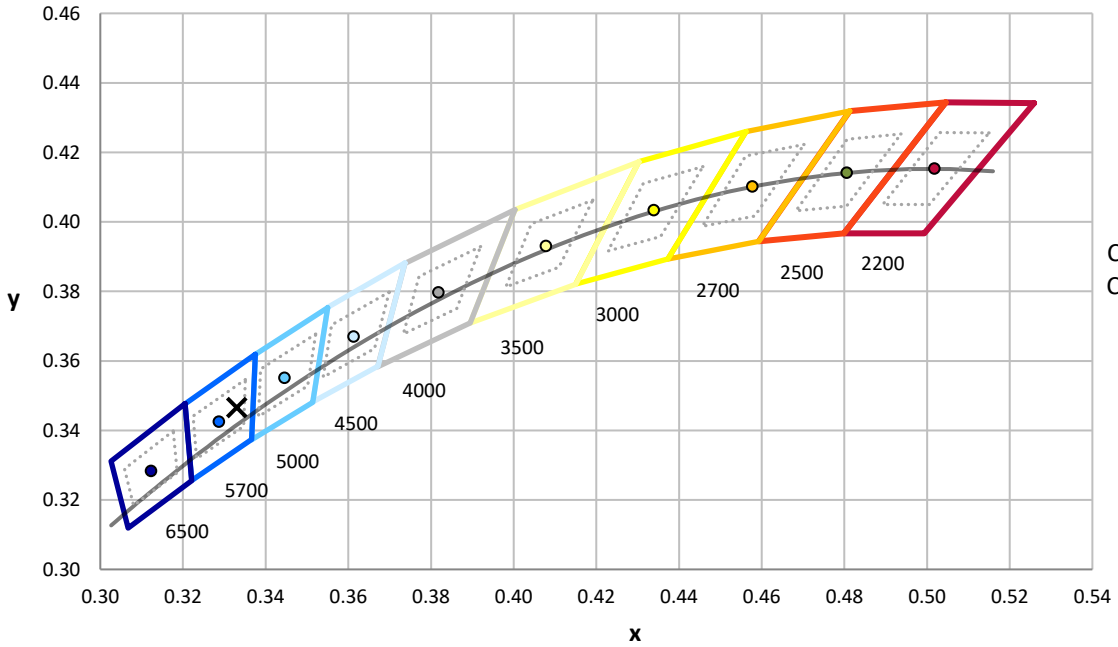
## CIE 1931 Chromaticity Diagram




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




CCT = 5474K
CIE x = 0.3330
CIE y = 0.3466
Duv = 0.0025

Point lies inside the ANSI 5700K 4-step quadrangle

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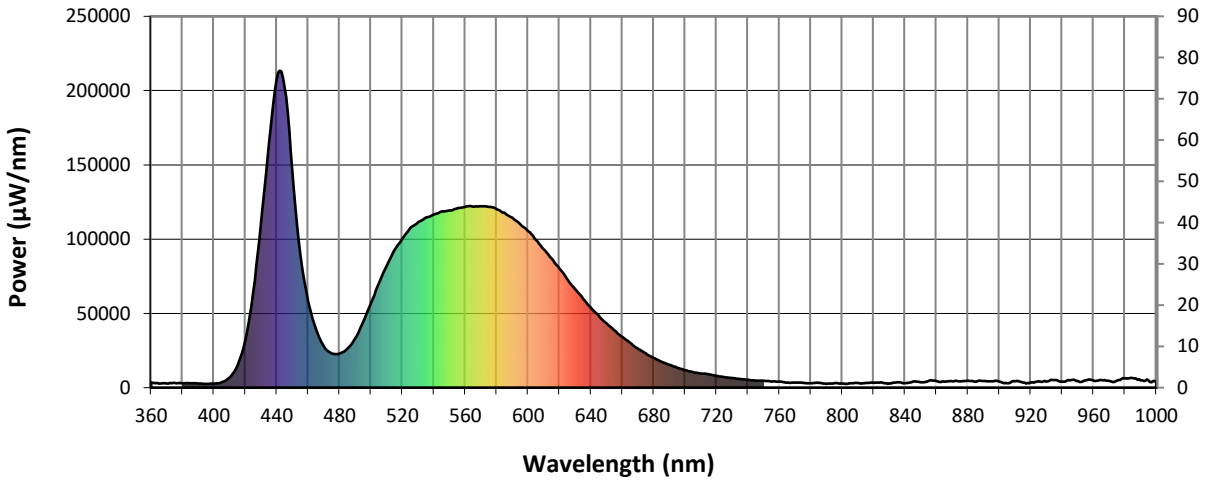
## Photopic Flux vs. Wavelength




######

| λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

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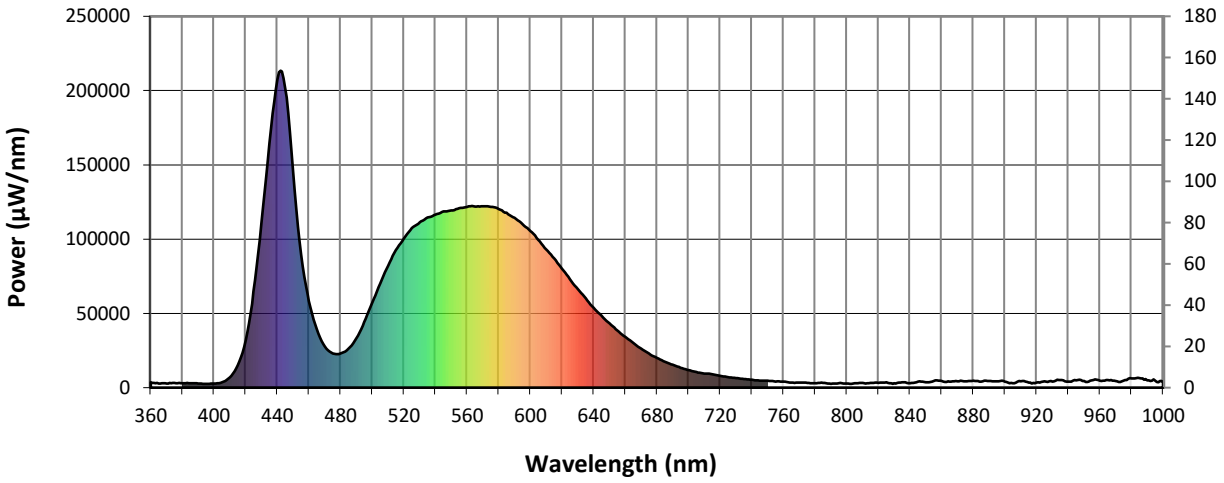
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: 13759.3** **S/P: 1.85**

| λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

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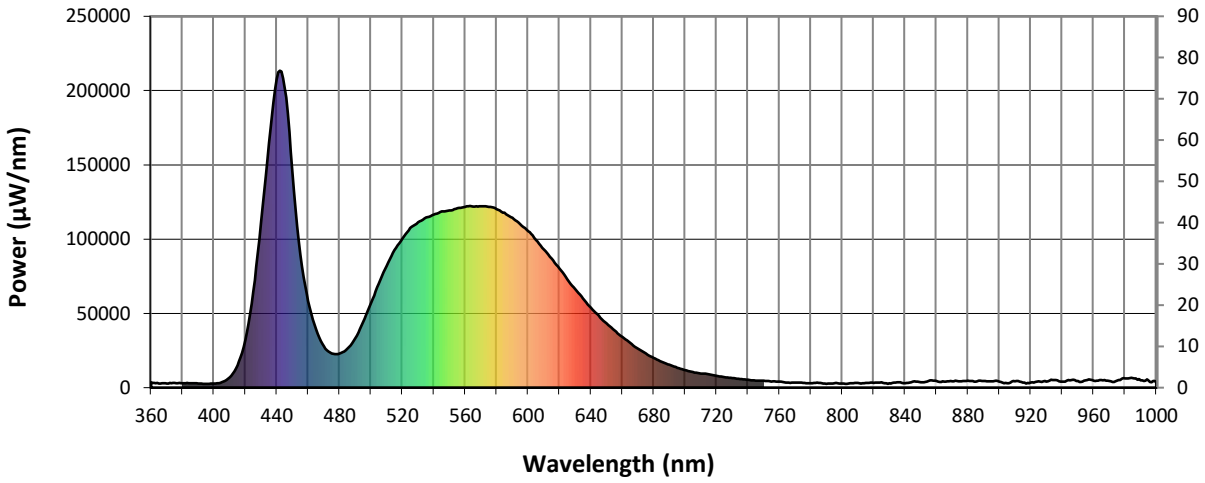
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: 5527.6** **M/P: 0.74**

| λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

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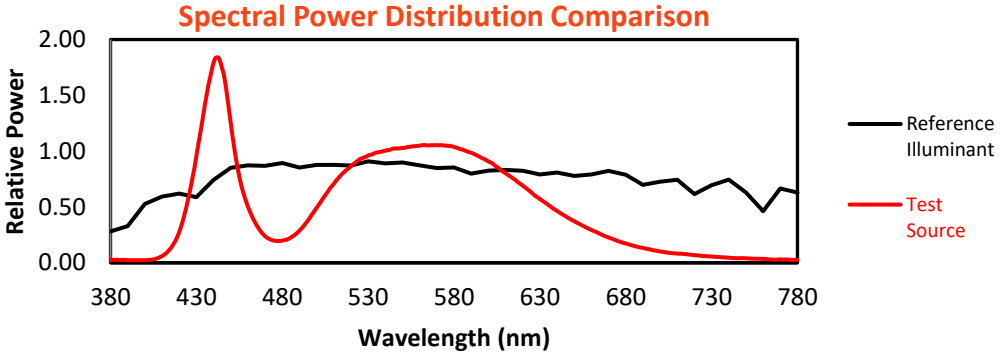
# TM-30-18

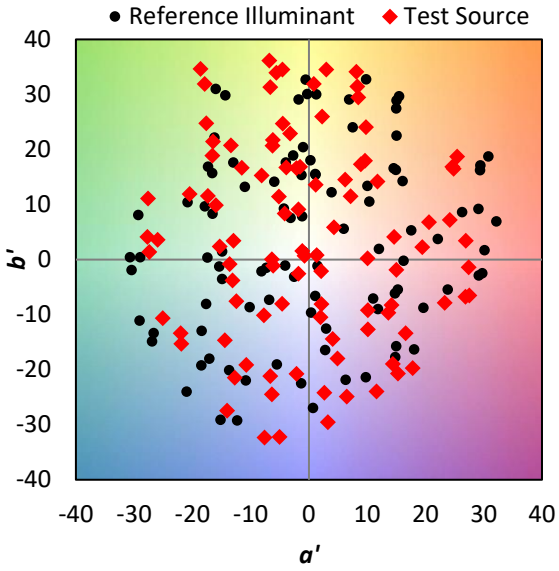
## Summary

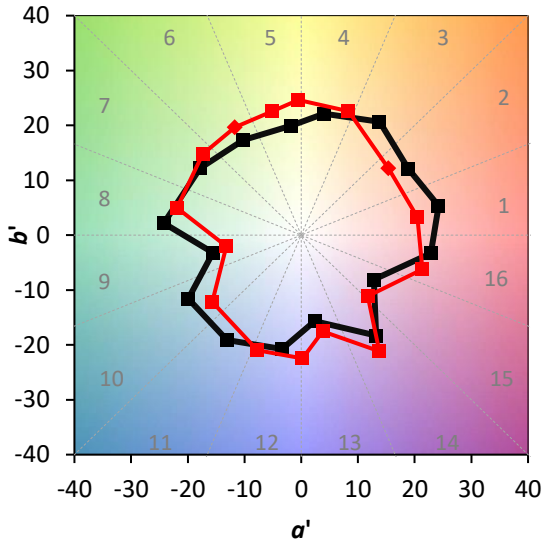
$R_f$ = 72.1
$R_g$ = 97.2
CIE $R_a$ = 71.7
$R_9$ = -27.1

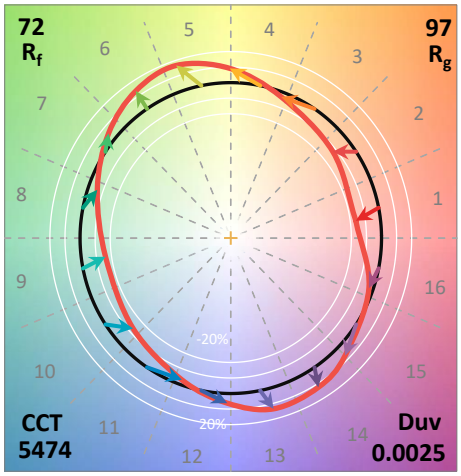
## Spectral Power Distribution Comparison

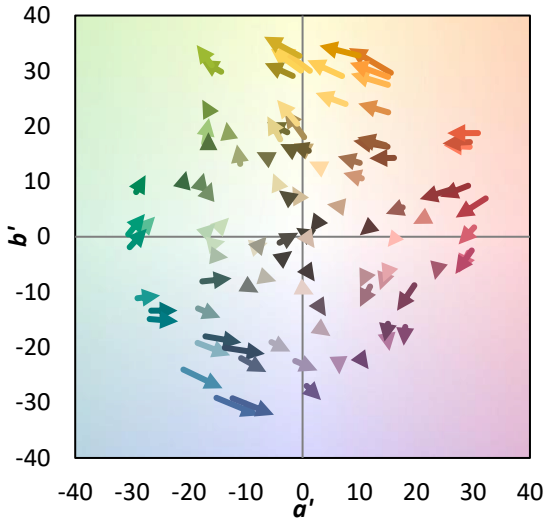



## Color Vector Graphics



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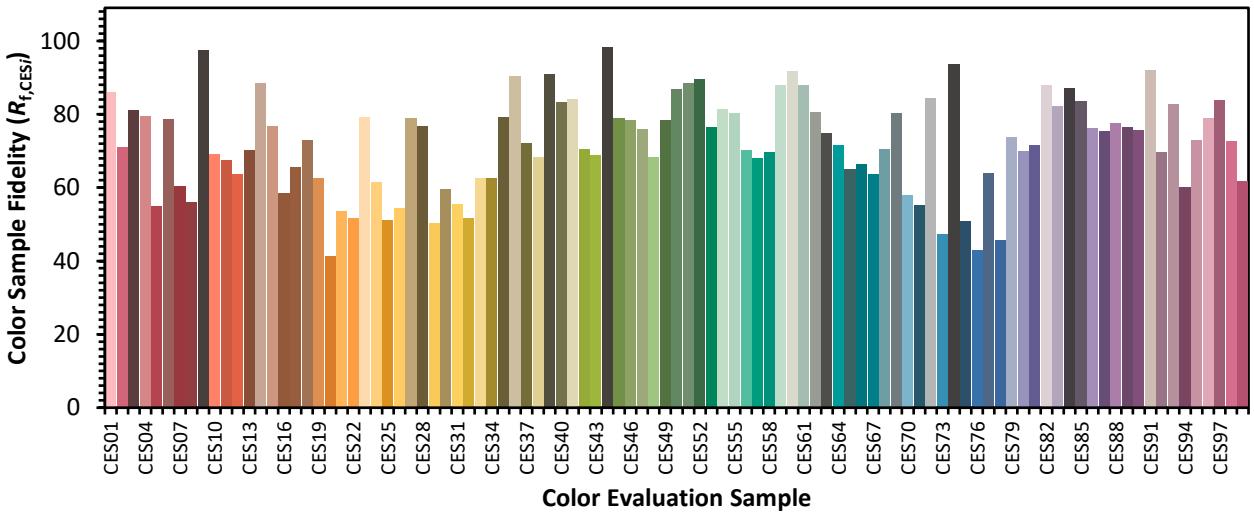
## Individual Sample Fidelity Index ($R_{f,i}$)

| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 54 | CES51 = 88 | CES76 = 43 |
| CES02 = 59 | CES27 = 79 | CES52 = 90 | CES77 = 64 |
| CES03 = 30 | CES28 = 77 | CES53 = 77 | CES78 = 46 |
| CES04 = 69 | CES29 = 50 | CES54 = 81 | CES79 = 74 |
| CES05 = 46 | CES30 = 59 | CES55 = 80 | CES80 = 70 |
| CES06 = 50 | CES31 = 55 | CES56 = 70 | CES81 = 71 |
| CES07 = 38 | CES32 = 52 | CES57 = 68 | CES82 = 88 |
| CES08 = 38 | CES33 = 63 | CES58 = 70 | CES83 = 82 |
| CES09 = 29 | CES34 = 63 | CES59 = 88 | CES84 = 87 |
| CES10 = 72 | CES35 = 79 | CES60 = 92 | CES85 = 84 |
| CES11 = 55 | CES36 = 90 | CES61 = 88 | CES86 = 76 |
| CES12 = 61 | CES37 = 72 | CES62 = 81 | CES87 = 75 |
| CES13 = 41 | CES38 = 68 | CES63 = 75 | CES88 = 77 |
| CES14 = 74 | CES39 = 91 | CES64 = 72 | CES89 = 76 |
| CES15 = 70 | CES40 = 83 | CES65 = 65 | CES90 = 76 |
| CES16 = 46 | CES41 = 84 | CES66 = 66 | CES91 = 92 |
| CES17 = 48 | CES42 = 70 | CES67 = 64 | CES92 = 70 |
| CES18 = 55 | CES43 = 69 | CES68 = 71 | CES93 = 83 |
| CES19 = 70 | CES44 = 98 | CES69 = 80 | CES94 = 60 |
| CES20 = 64 | CES45 = 79 | CES70 = 58 | CES95 = 73 |
| CES21 = 85 | CES46 = 78 | CES71 = 55 | CES96 = 79 |
| CES22 = 77 | CES47 = 76 | CES72 = 84 | CES97 = 84 |
| CES23 = 91 | CES48 = 68 | CES73 = 47 | CES98 = 73 |
| CES24 = 90 | CES49 = 78 | CES74 = 94 | CES99 = 62 |
| CES25 = 71 | CES50 = 87 | CES75 = 51 | |



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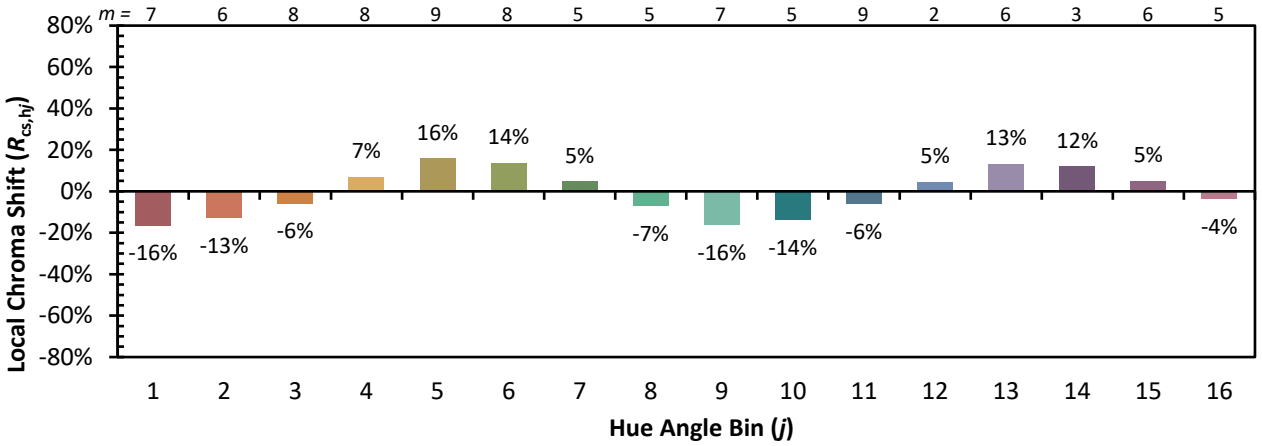
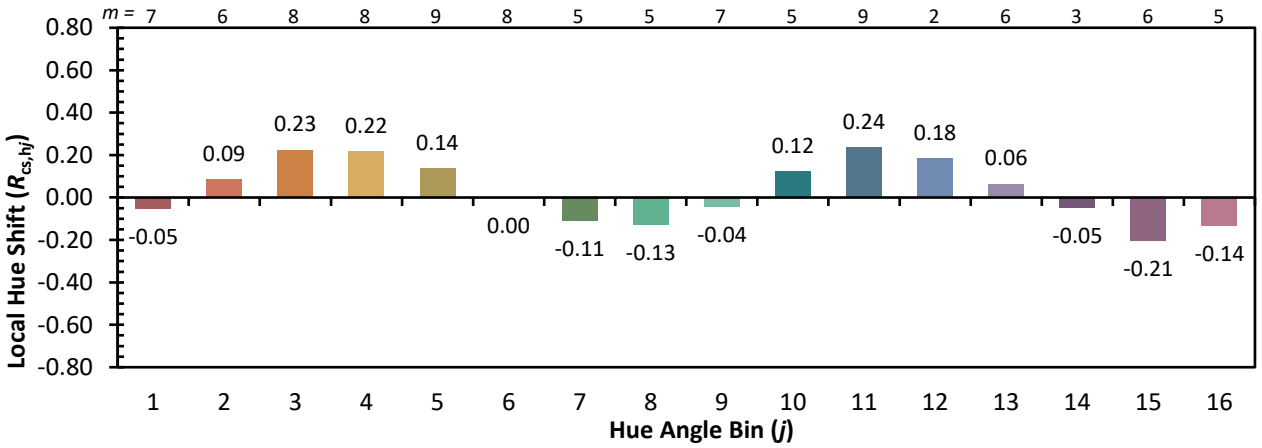
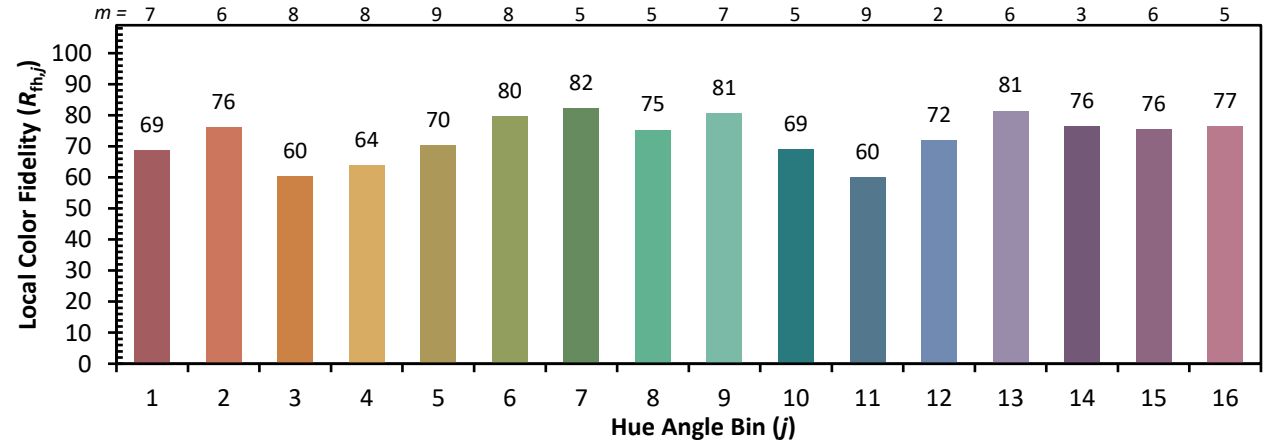
## Color Rendition by Hue-Angle Bin



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Peachtree City, GA 30269

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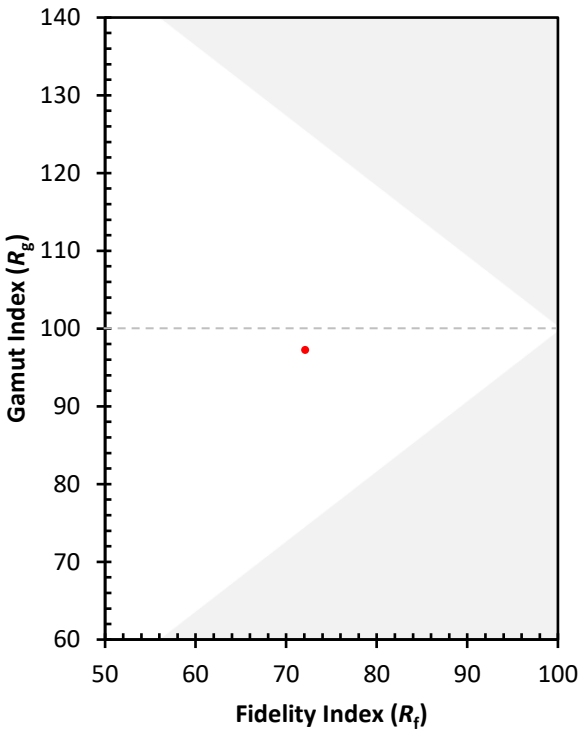
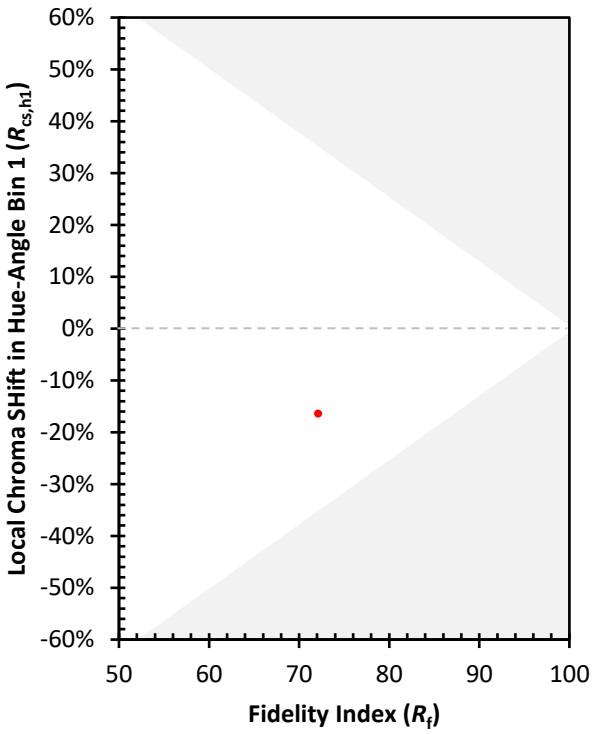
**TM-30-18**

## Measure Comparisons




(END OF REPORT)