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: P1501005

Luminaire Tested: GSS-SB5A-727-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: | P1501005 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 7/20/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB5A-727-U-T3LG |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 5SQUARE 143W 70CRI 2700K FIXTURE w/ TYPE III LOW GLARE DISTRIBUTION FIXTURE |
| Light Source: | (130) 2700K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 20616.1 lumens |
| Efficiency: | N/A |
| Efficacy: | 144.2 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B3 - U0 - G2 |

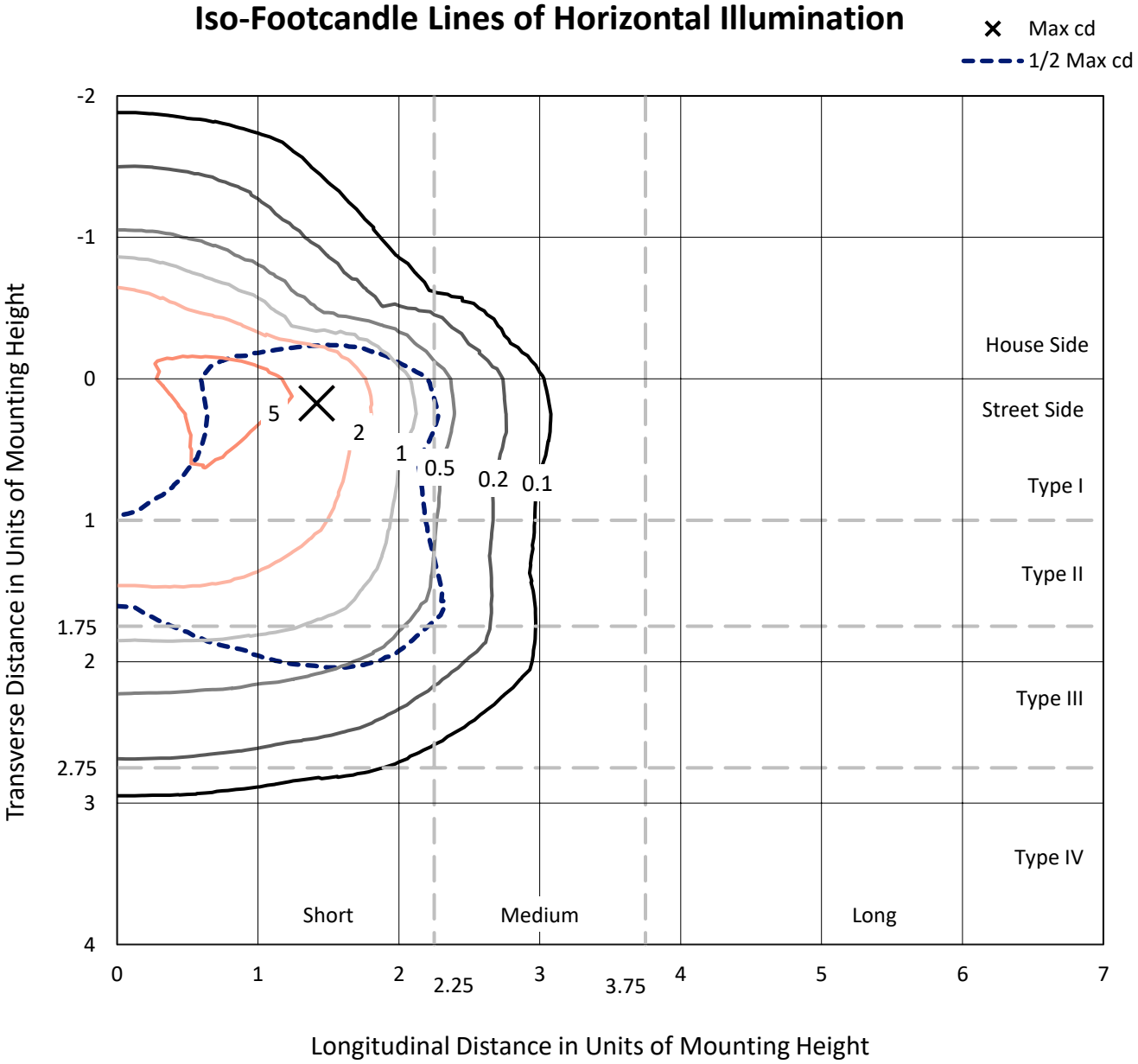
| | |
|---|---|
| Input Watts (W): | 143 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 10.5% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1501005
CATALOG NUMBER: GSS-SB5A-727-U-T3LG

## Iso-Footcandle Lines of Horizontal Illumination



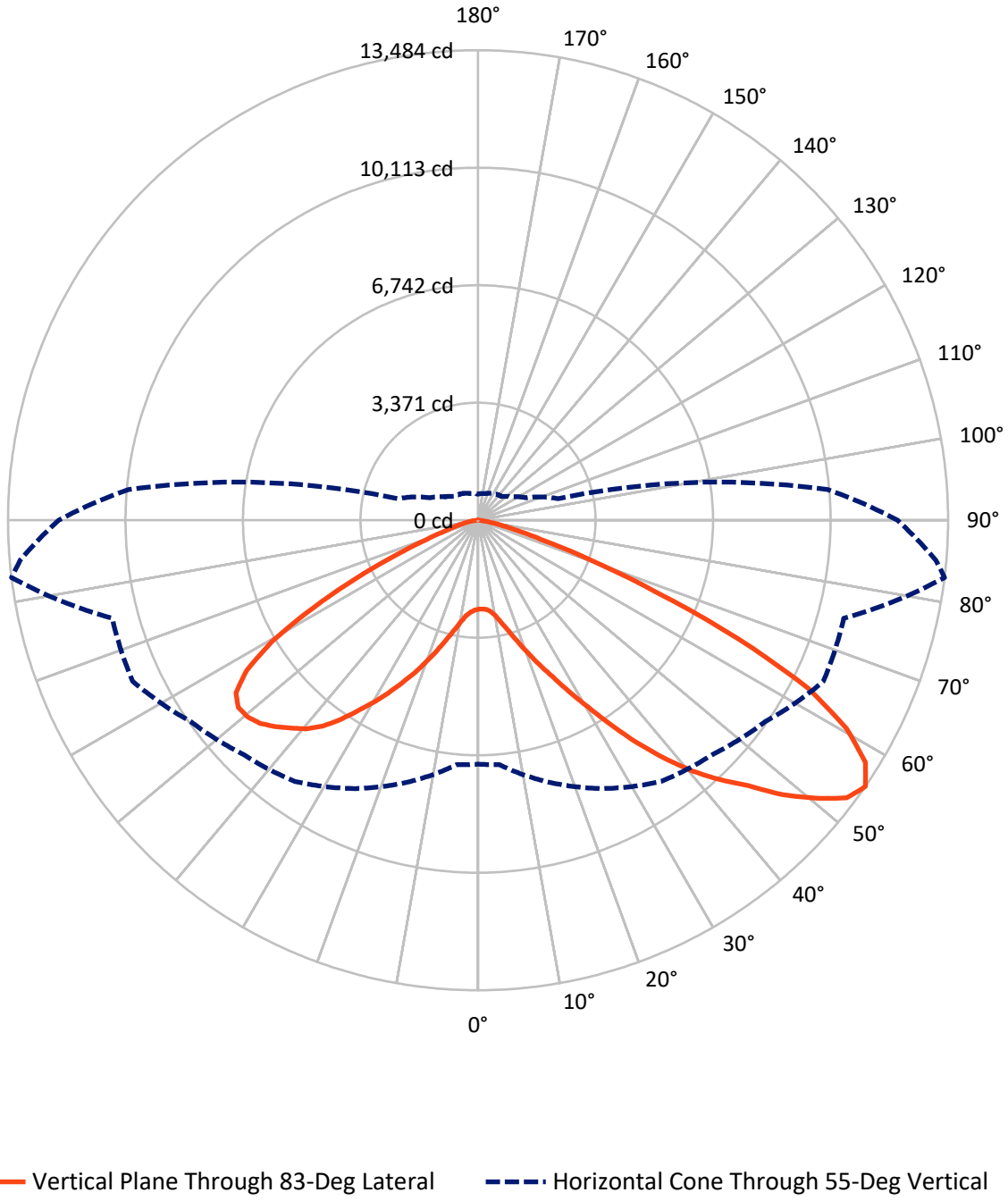

Based on 25 foot mounting height. Maximum calculated value = 6.9 fc
Type III - Short - N/A

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## Luminous Intensity Polar Plot



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Scaled Data Report

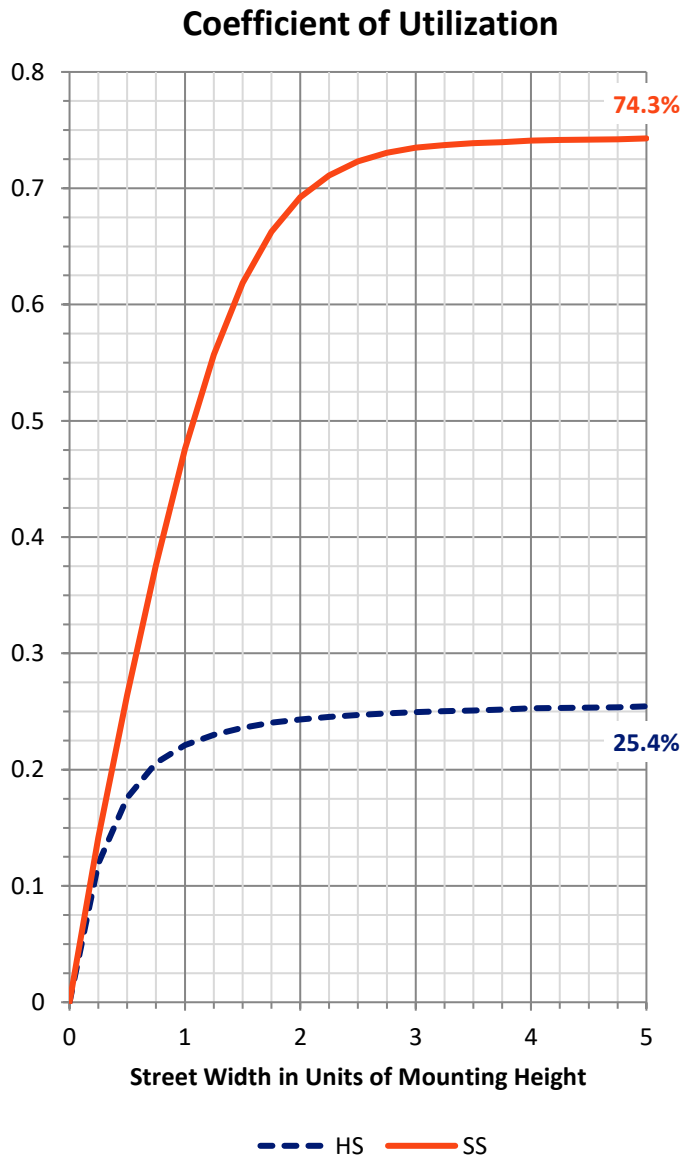
REPORT NUMBER: P1501005
CATALOG NUMBER: GSS-SB5A-727-U-T3LG

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 5290.5 | 0.0 | 5290.5 |
| | % Fixture | 25.7 | 0.0 | 25.7 |
| **Street Side** | Lumens | 15325.6 | 0.0 | 15325.6 |
| | % Fixture | 74.3 | 0.0 | 74.3 |
| **Total** | Lumens | 20616.1 | 0.0 | 20616.1 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 246.6 | 1.2 |
| 10°-20° | 803.3 | 3.9 |
| 20°-30° | 1608.2 | 7.8 |
| 30°-40° | 2861.2 | 13.9 |
| 40°-50° | 4311.7 | 20.9 |
| 50°-60° | 5254.1 | 25.5 |
| 60°-70° | 4248.7 | 20.6 |
| 70°-80° | 1163.7 | 5.6 |
| 80°-90° | 118.5 | 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° | 20616.1 | 100.0 |
| 0°-180° | 20616.1 | 100.0 |



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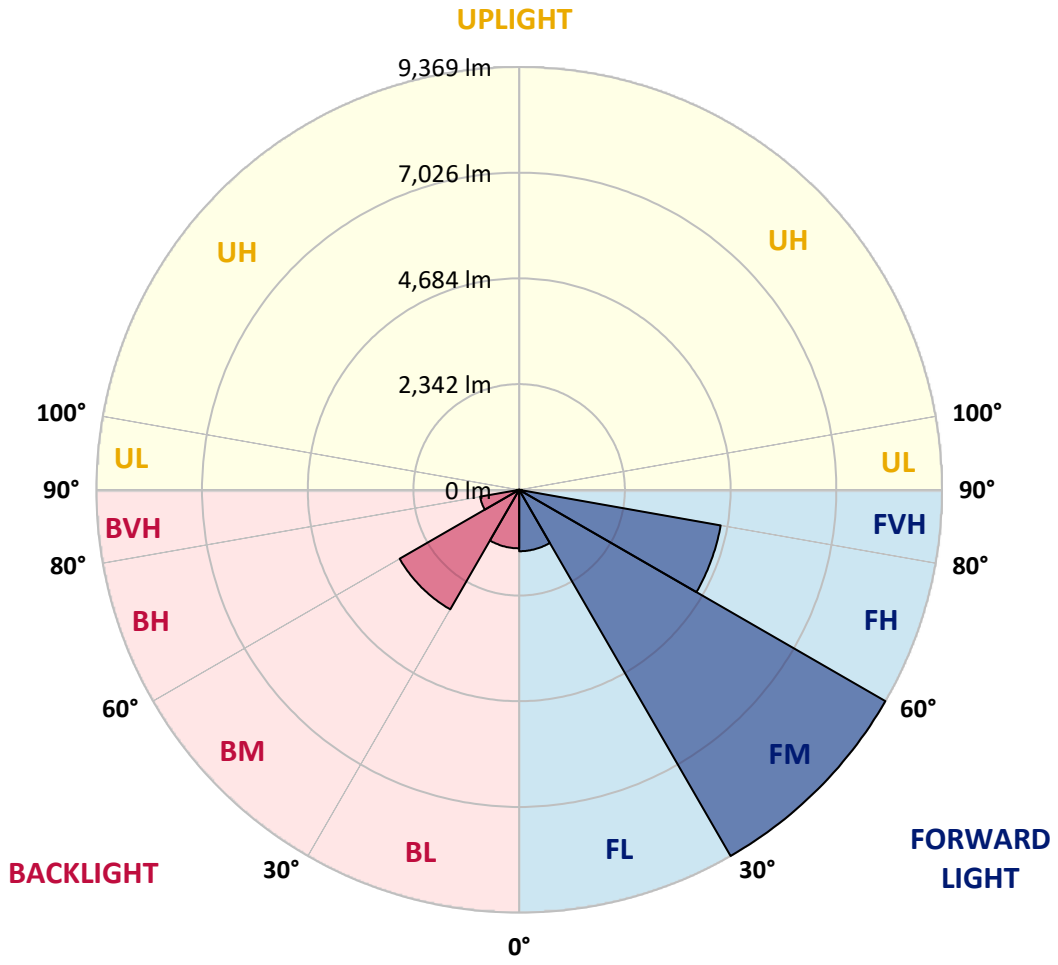
Scaled Data Report

REPORT NUMBER: P1501005
CATALOG NUMBER: GSS-SB5A-727-U-T3LG

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1361.2 | 6.6 | | | |
| FM | (30°-60°) | 9368.6 | 45.4 | | | |
| FH | (60°-80°) | 4534.0 | 22.0 | | | G2/5000 |
| FVH | (80°-90°) | 61.7 | 0.3 | | | G1/100 |
| BL | (0°-30°) | 1296.8 | 6.3 | B3/2500 | | |
| BM | (30°-60°) | 3058.5 | 14.8 | B3/5000 | | |
| BH | (60°-80°) | 878.4 | 4.3 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 56.8 | 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° | 2552.1 | 2552.1 | 2552.1 | 2552.1 | 2552.1 | 2552.1 | 2552.1 | 2552.1 | 2552.1 | *2552.1* | 2552.1 |
| 2.5° | 2478.7 | 2474.2 | 2469.6 | 2465.0 | 2474.2 | 2487.9 | 2501.7 | 2510.8 | 2533.7 | *2552.1* | 2542.9 |
| 5° | 2281.7 | 2272.6 | 2281.7 | 2318.4 | 2350.5 | 2405.4 | 2460.4 | 2497.1 | 2547.5 | *2570.4* | 2579.5 |
| 7.5° | 2107.6 | 2098.5 | 2107.6 | 2153.4 | 2208.4 | 2295.5 | 2410.0 | 2501.7 | 2593.3 | *2648.3* | 2657.4 |
| 10° | 2107.6 | 2112.2 | 2112.2 | 2130.5 | 2158.0 | 2245.1 | 2382.5 | 2556.6 | 2717.0 | *2794.9* | 2813.2 |
| 12.5° | 2176.3 | 2176.3 | 2176.3 | 2199.3 | 2217.6 | 2286.3 | 2442.1 | 2657.4 | 2914.0 | *3028.6* | 3042.3 |
| 15° | 2268.0 | 2263.4 | 2277.1 | 2290.9 | 2323.0 | 2391.7 | 2547.5 | 2804.1 | 3129.4 | *3303.5* | 3321.8 |
| 17.5° | 2396.3 | 2387.1 | 2400.9 | 2432.9 | 2478.7 | 2556.6 | 2712.4 | 3005.7 | 3427.2 | *3647.1* | 3674.6 |
| 20° | 2538.3 | 2533.7 | 2561.2 | 2611.6 | 2675.8 | 2772.0 | 2950.7 | 3248.5 | 3766.2 | *4045.7* | 4096.1 |
| 22.5° | 2707.8 | 2698.7 | 2749.1 | 2840.7 | 2927.8 | 3037.7 | 3253.1 | 3564.6 | 4155.7 | *4490.2* | 4540.6 |
| 25° | 2900.3 | 2900.3 | 2969.0 | 3079.0 | 3211.8 | 3408.9 | 3624.2 | 3967.8 | 4613.9 | *4971.2* | 5049.1 |
| 27.5° | 3216.4 | 3239.3 | 3266.8 | 3381.4 | 3569.2 | 3835.0 | 4064.0 | 4453.5 | 5113.3 | *5562.3* | 5589.8 |
| 30° | 3729.6 | 3720.4 | 3766.2 | 3844.1 | 3999.9 | 4279.4 | 4623.0 | 5040.0 | 5745.6 | *6217.5* | 6286.2 |
| 32.5° | 4192.3 | 4206.1 | 4270.2 | 4416.8 | 4604.7 | 4843.0 | 5255.3 | 5768.5 | 6432.8 | *6978.1* | 7010.1 |
| 35° | 4659.7 | 4668.8 | 4792.6 | 5012.5 | 5292.0 | 5557.7 | 6006.7 | 6510.7 | 7179.7 | *7825.7* | 7912.7 |
| 37.5° | 5314.9 | 5305.7 | 5429.4 | 5617.3 | 5993.0 | 6405.3 | 6767.3 | 7248.4 | 7894.4 | *8650.4* | 8751.2 |
| 40° | 5805.1 | 5855.5 | 6089.2 | 6327.5 | 6680.2 | 7106.4 | 7413.3 | 7866.9 | 8480.9 | *9456.8* | 9548.4 |
| 42.5° | 6309.1 | 6350.4 | 6661.9 | 7019.3 | 7390.4 | 7679.1 | 7917.3 | 8338.9 | 8948.2 | *10171.6* | 10222.0 |
| 45° | 6726.1 | 6781.0 | 7138.4 | 7592.0 | 7976.9 | 8270.1 | 8352.6 | 8746.6 | 9424.7 | *10858.8* | 10936.7 |
| 47.5° | 6991.8 | 7051.4 | 7472.9 | 8004.4 | 8398.4 | 8710.0 | 8682.5 | 9236.9 | 9933.3 | *11770.6* | 11743.1 |
| 50° | 7175.1 | 7211.7 | 7669.9 | 8238.1 | 8751.2 | 8957.4 | 9076.5 | 9791.3 | 10455.6 | *12535.8* | 12435.0 |
| 52.5° | 7308.0 | 7367.5 | 7784.5 | 8407.6 | 8948.2 | 9218.6 | 9539.3 | 10432.7 | 10817.6 | *13236.8* | 13012.3 |
| 55° | *6996.4* | *7042.2* | *7775.3* | *8494.6* | *9149.8* | *9507.2* | *10066.2* | *10932.1* | *10863.4* | *13484.2* | *13181.8* |
| 57.5° | 6675.7 | 6712.3 | 7390.4 | 8471.7 | 9369.8 | 9864.6 | 10666.4 | 10996.3 | 10455.6 | *13103.9* | 12723.6 |
| 60° | 6272.5 | 6300.0 | 6978.1 | 8228.9 | 9374.3 | 10144.1 | 10973.4 | 10529.0 | 9699.6 | *12146.3* | 11784.4 |
| 62.5° | 5530.2 | 5530.2 | 6277.1 | 7573.7 | 9145.3 | 10286.1 | 10890.9 | 9644.7 | 8687.1 | *10638.9* | 10139.5 |
| 65° | 4797.1 | 4765.1 | 5269.1 | 6405.3 | 8535.9 | 10249.5 | 10272.4 | 8526.7 | 7115.5 | *8206.0* | 7816.5 |
| 67.5° | 3999.9 | 4004.5 | 4302.3 | 5200.3 | 6913.9 | 9484.3 | 8966.6 | 6588.6 | 4957.5 | *5525.6* | 5324.0 |
| 70° | 2707.8 | 2776.6 | 3079.0 | 3775.4 | 5214.1 | 6721.5 | 7138.4 | 4462.7 | 3092.7 | *3431.8* | 3266.8 |
| 72.5° | 1030.9 | 1044.6 | 1397.4 | 1979.3 | 3294.3 | 4041.1 | 4980.4 | 2497.1 | 1809.8 | *1892.3* | 1901.4 |
| 75° | 435.3 | 453.6 | 595.6 | 833.9 | 1461.6 | 2203.8 | 2620.8 | 1264.6 | 1099.6 | *1131.7* | 1122.5 |
| 77.5° | 293.2 | 302.4 | 362.0 | 449.0 | 659.8 | 884.3 | 1095.0 | 714.8 | 673.5 | *632.3* | 614.0 |
| 80° | 219.9 | 219.9 | 261.2 | 302.4 | 371.1 | 453.6 | 476.5 | 362.0 | 403.2 | *334.5* | 325.3 |
| 82.5° | 142.0 | 151.2 | 164.9 | 178.7 | 210.8 | 224.5 | 192.4 | 197.0 | 233.7 | *174.1* | 164.9 |
| 85° | 68.7 | 73.3 | 77.9 | 82.5 | 82.5 | 77.9 | 68.7 | 87.1 | 119.1 | *73.3* | 68.7 |
| 87.5° | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 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: P1501005
CATALOG NUMBER: GSS-SB5A-727-U-T3LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2552.1 | 2552.1 | 2552.1 | 2552.1 | 2552.1 | 2552.1 | 2552.1 | 2552.1 | 2552.1 | 2552.1 | 2552.1 |
| 2.5° | 2556.6 | 2575.0 | 2588.7 | 2597.9 | 2620.8 | 2616.2 | 2629.9 | 2639.1 | 2648.3 | 2662.0 | 2643.7 |
| 5° | 2602.5 | 2634.5 | 2671.2 | 2698.7 | 2726.2 | 2739.9 | 2744.5 | 2753.7 | 2758.2 | 2767.4 | 2762.8 |
| 7.5° | 2703.3 | 2739.9 | 2794.9 | 2822.4 | 2845.3 | 2845.3 | 2831.5 | 2827.0 | 2813.2 | 2822.4 | 2822.4 |
| 10° | 2872.8 | 2927.8 | 2987.3 | 2991.9 | 2964.4 | 2932.3 | 2881.9 | 2854.5 | 2817.8 | 2808.6 | 2799.5 |
| 12.5° | 3120.2 | 3193.5 | 3239.3 | 3207.3 | 3111.0 | 2991.9 | 2859.0 | 2735.3 | 2639.1 | 2597.9 | 2588.7 |
| 15° | 3399.7 | 3491.3 | 3500.5 | 3408.9 | 3234.7 | 2946.1 | 2666.6 | 2529.1 | 2478.7 | 2478.7 | 2474.2 |
| 17.5° | 3784.6 | 3848.7 | 3812.0 | 3592.1 | 3202.7 | 2730.7 | 2529.1 | 2506.2 | 2520.0 | 2538.3 | 2538.3 |
| 20° | 4187.8 | 4261.1 | 4109.9 | 3720.4 | 3005.7 | 2602.5 | 2542.9 | 2561.2 | 2593.3 | 2611.6 | 2607.0 |
| 22.5° | 4668.8 | 4705.5 | 4412.3 | 3725.0 | 2794.9 | 2570.4 | 2570.4 | 2593.3 | 2616.2 | 2643.7 | 2643.7 |
| 25° | 5163.7 | 5149.9 | 4691.8 | 3555.5 | 2675.8 | 2561.2 | 2552.1 | 2570.4 | 2579.5 | 2593.3 | 2588.7 |
| 27.5° | 5718.1 | 5644.8 | 4907.1 | 3285.1 | 2639.1 | 2533.7 | 2487.9 | 2469.6 | 2478.7 | 2492.5 | 2497.1 |
| 30° | 6354.9 | 6180.8 | 5081.2 | 3115.6 | 2625.4 | 2469.6 | 2359.6 | 2309.2 | 2300.1 | 2318.4 | 2318.4 |
| 32.5° | 7092.6 | 6716.9 | 5186.6 | 3092.7 | 2611.6 | 2355.0 | 2208.4 | 2112.2 | 2093.9 | 2103.0 | 2126.0 |
| 35° | 7848.6 | 7362.9 | 5159.1 | 3152.3 | 2616.2 | 2263.4 | 2048.1 | 1919.8 | 1901.4 | 1910.6 | 1933.5 |
| 37.5° | 8641.3 | 7976.9 | 5053.7 | 3243.9 | 2579.5 | 2139.7 | 1901.4 | 1745.7 | 1718.2 | 1736.5 | 1745.7 |
| 40° | 9255.2 | 8494.6 | 4792.6 | 3280.6 | 2515.4 | 1983.9 | 1731.9 | 1599.0 | 1525.7 | 1521.2 | 1544.1 |
| 42.5° | 9823.4 | 8902.4 | 4508.5 | 3221.0 | 2382.5 | 1819.0 | 1557.8 | 1424.9 | 1310.4 | 1223.3 | 1223.3 |
| 45° | 10391.5 | 9314.8 | 4219.8 | 3051.5 | 2162.6 | 1644.9 | 1374.5 | 1195.8 | 1063.0 | 998.8 | 1003.4 |
| 47.5° | 10959.6 | 9713.4 | 3876.2 | 2794.9 | 1942.7 | 1461.6 | 1177.5 | 1035.5 | 943.8 | 893.4 | 893.4 |
| 50° | 11486.5 | 10002.0 | 3436.3 | 2387.1 | 1690.7 | 1278.3 | 1040.1 | 957.6 | 888.9 | 843.0 | 833.9 |
| 52.5° | 11949.3 | 10194.5 | 2840.7 | 1892.3 | 1415.8 | 1072.1 | 966.8 | 902.6 | 852.2 | 801.8 | 788.1 |
| 55° | *12031.8* | *10066.2* | *2377.9* | *1521.2* | *1168.4* | *962.2* | *911.8* | *856.8* | *788.1* | *765.2* | *751.4* |
| 57.5° | 11523.2 | 9388.1 | 2006.8 | 1282.9 | 998.8 | 884.3 | 866.0 | 801.8 | 746.8 | 723.9 | 710.2 |
| 60° | 10657.2 | 8155.6 | 1658.6 | 1099.6 | 888.9 | 811.0 | 833.9 | 769.7 | 682.7 | 668.9 | 655.2 |
| 62.5° | 9099.4 | 6364.1 | 1324.1 | 925.5 | 806.4 | 756.0 | 778.9 | 687.3 | 614.0 | 595.6 | 591.1 |
| 65° | 7074.3 | 4554.3 | 1113.4 | 815.6 | 742.2 | 701.0 | 691.9 | 609.4 | 554.4 | 540.7 | 540.7 |
| 67.5° | 4939.2 | 2895.7 | 930.1 | 746.8 | 659.8 | 632.3 | 627.7 | 572.7 | 536.1 | 522.3 | 522.3 |
| 70° | 3024.0 | 1754.8 | 783.5 | 682.7 | 581.9 | 531.5 | 563.6 | 554.4 | 499.4 | 485.7 | 481.1 |
| 72.5° | 1571.6 | 1049.2 | 687.3 | 627.7 | 490.3 | 453.6 | 504.0 | 508.6 | 462.8 | 481.1 | 476.5 |
| 75° | 911.8 | 728.5 | 600.2 | 554.4 | 389.5 | 380.3 | 439.9 | 485.7 | 449.0 | 462.8 | 453.6 |
| 77.5° | 522.3 | 467.3 | 462.8 | 453.6 | 307.0 | 311.6 | 394.0 | 435.3 | 384.9 | 398.6 | 366.5 |
| 80° | 288.7 | 302.4 | 320.7 | 284.1 | 215.3 | 242.8 | 316.1 | 348.2 | 293.2 | 288.7 | 265.7 |
| 82.5° | 151.2 | 187.9 | 215.3 | 183.3 | 123.7 | 146.6 | 215.3 | 215.3 | 187.9 | 178.7 | 174.1 |
| 85° | 68.7 | 77.9 | 100.8 | 91.6 | 45.8 | 55.0 | 100.8 | 110.0 | 96.2 | 87.1 | 82.5 |
| 87.5° | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 9.2 | 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: SP1-2407-184-3

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

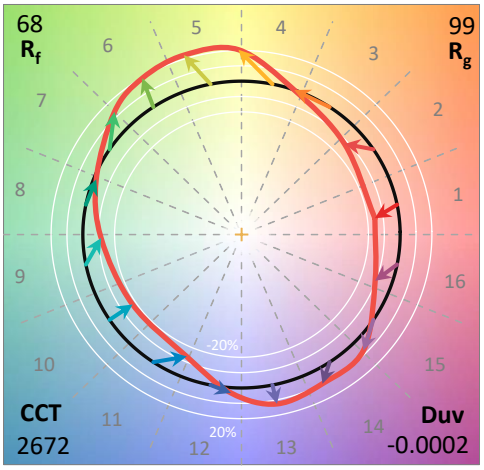
## Test Information

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

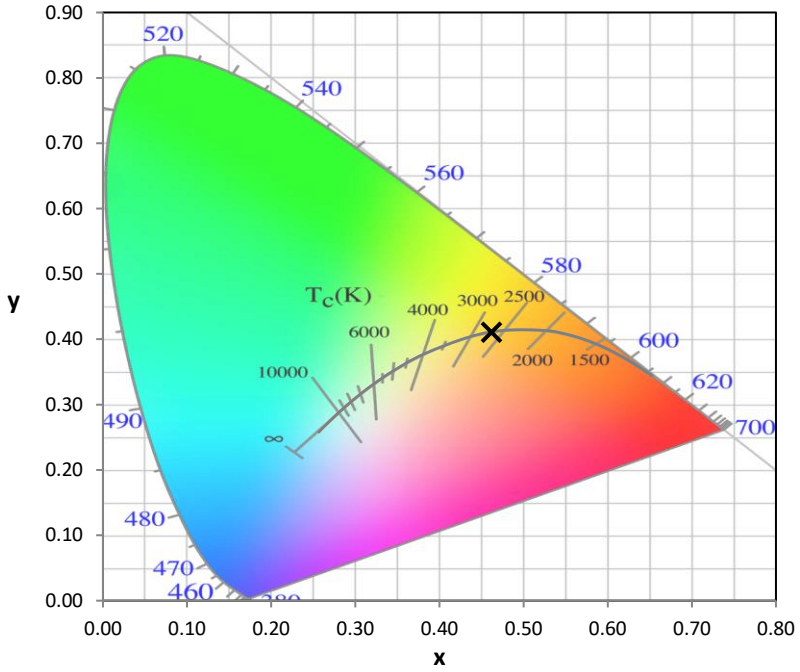
| | |
|---|---|
| Stabilization Time: | 21M |
| Operation Time: | 1H 21M |
| Sphere Temperature (°C): | 25.2 |

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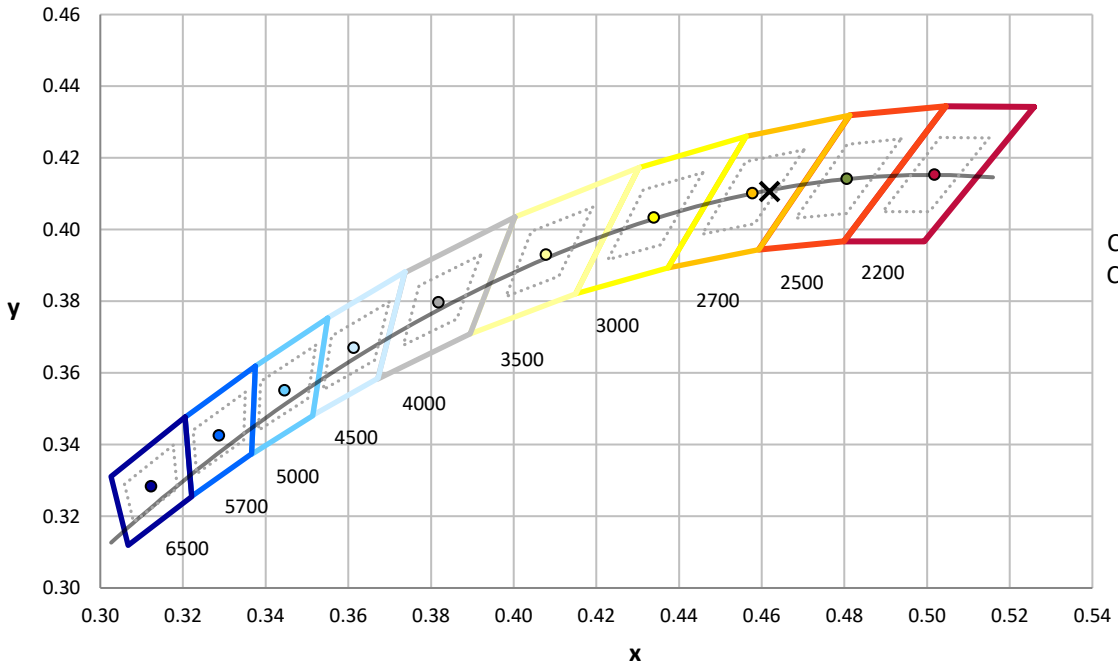
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

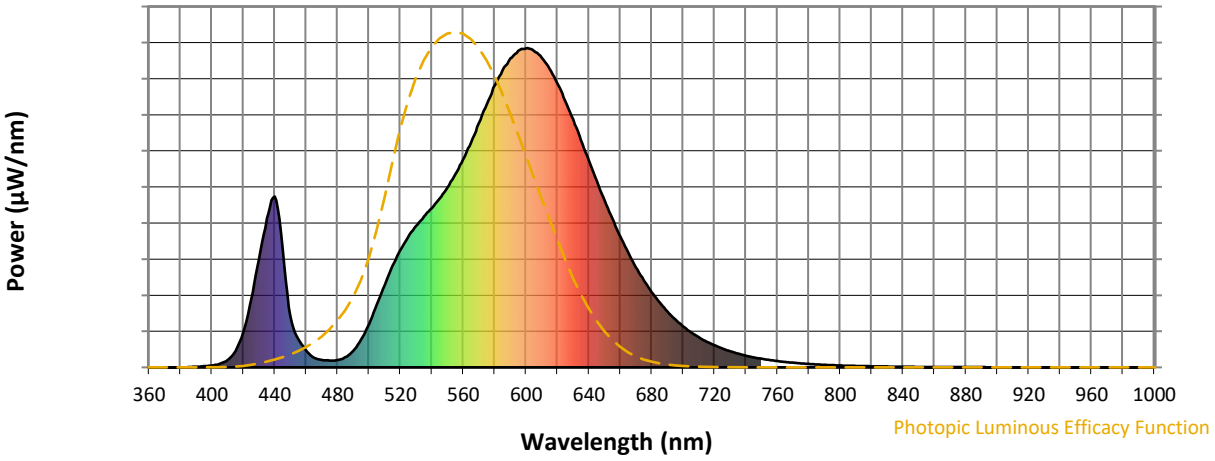



CCT = 2672K
CIE x = 0.4619
CIE y = 0.4106
Duv = -0.0002

Point lies inside the ANSI 2700K 4-step quadrangle

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## Photopic Flux vs. Wavelength

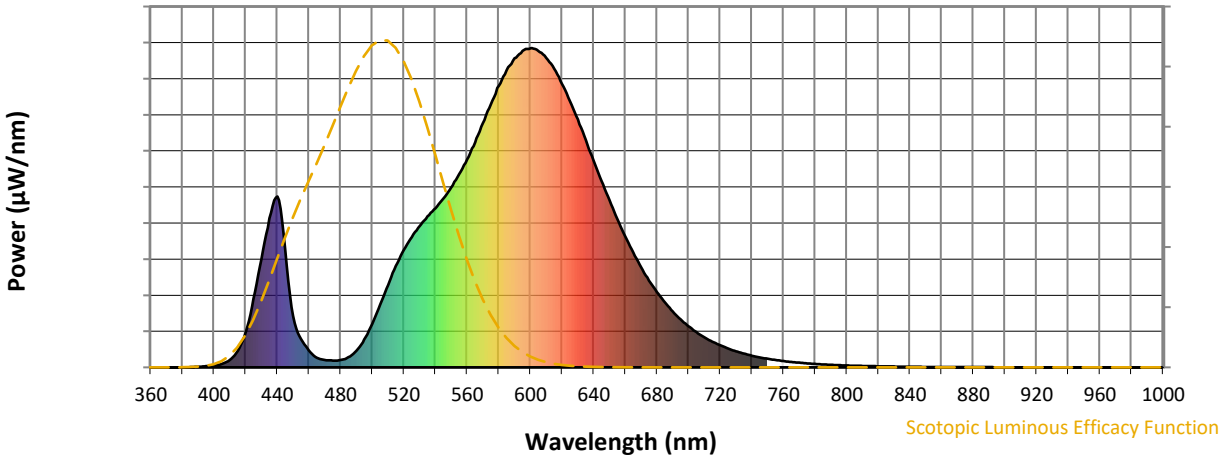



## Photopic Lumens: NR

| 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

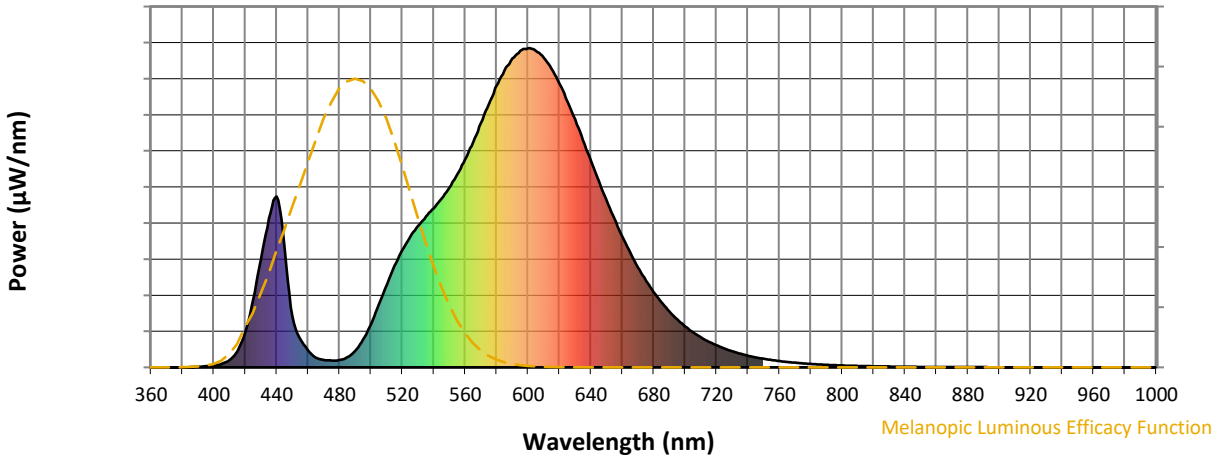



**Scotopic Lumens: NR** **S/P: 1.02**

| 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 | | | |

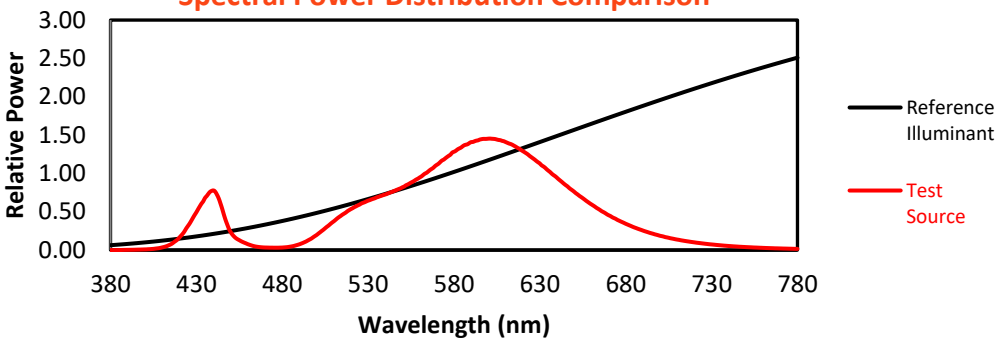
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# TM-30-18

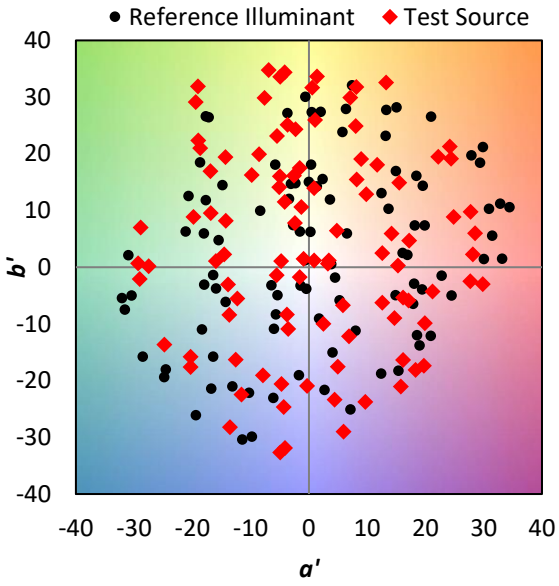
## Summary

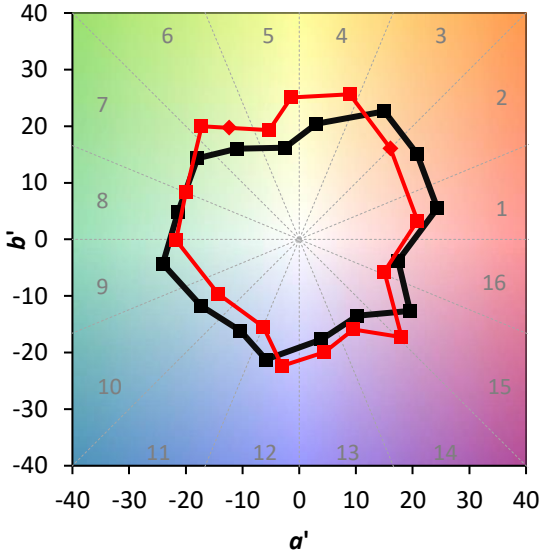
$R_f$ = 67.9
$R_g$ = 98.6
CIE $R_a$ = 71.1
$R_9$ = -27.8

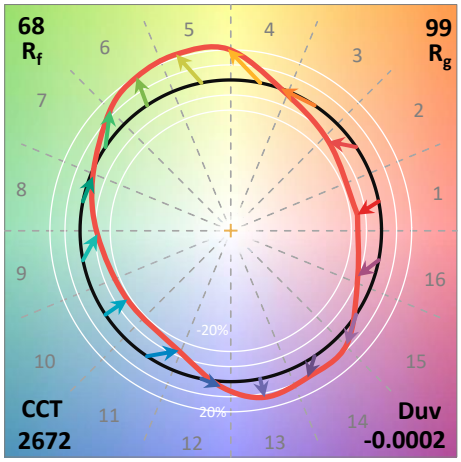
## Spectral Power Distribution Comparison

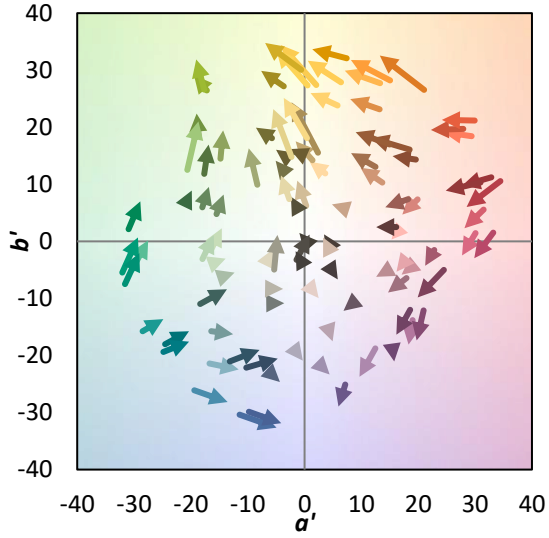



## Color Vector Graphics



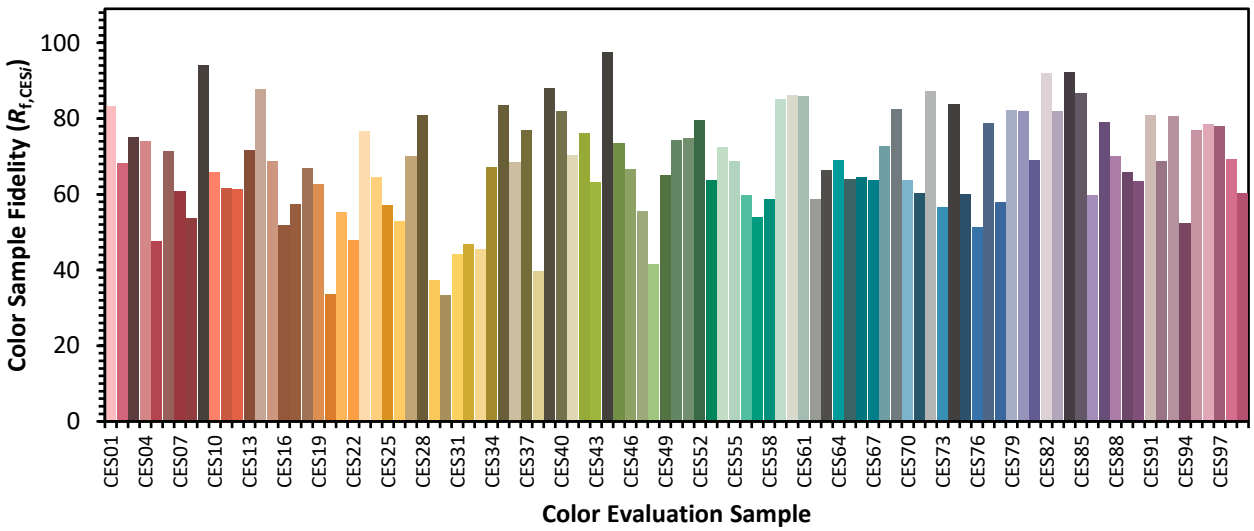



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**Individual Sample Fidelity Index ($R_{f,i}$)**

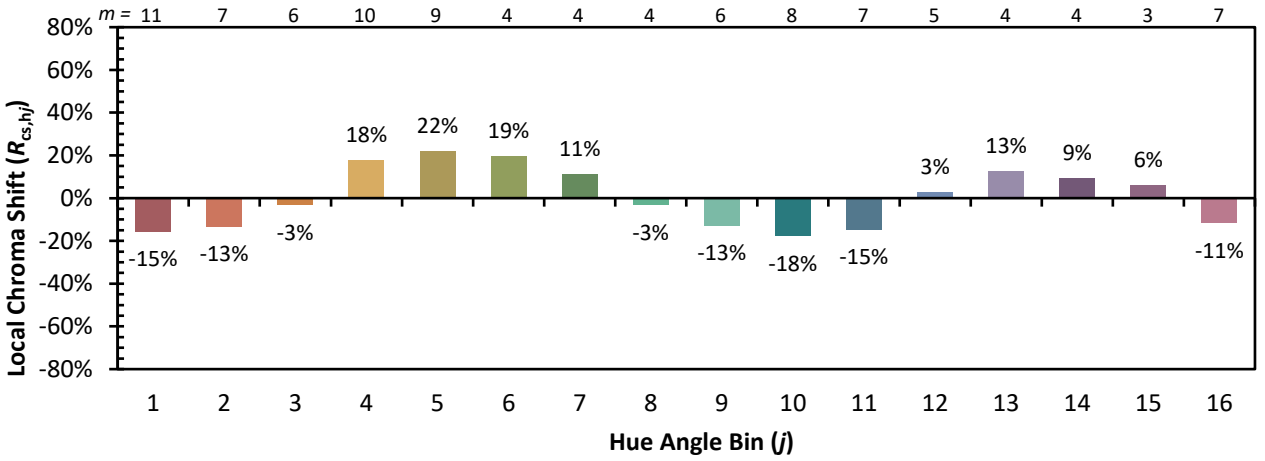
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 53 | CES51 = 75 | CES76 = 51 |
| CES02 = 63 | CES27 = 70 | CES52 = 80 | CES77 = 79 |
| CES03 = 31 | CES28 = 81 | CES53 = 64 | CES78 = 58 |
| CES04 = 71 | CES29 = 37 | CES54 = 73 | CES79 = 82 |
| CES05 = 50 | CES30 = 33 | CES55 = 69 | CES80 = 82 |
| CES06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

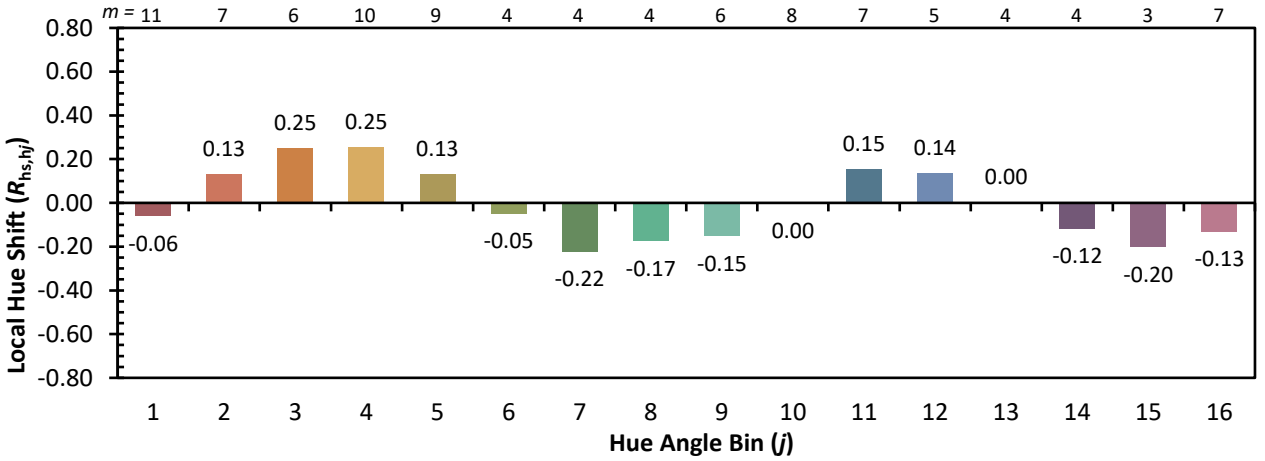


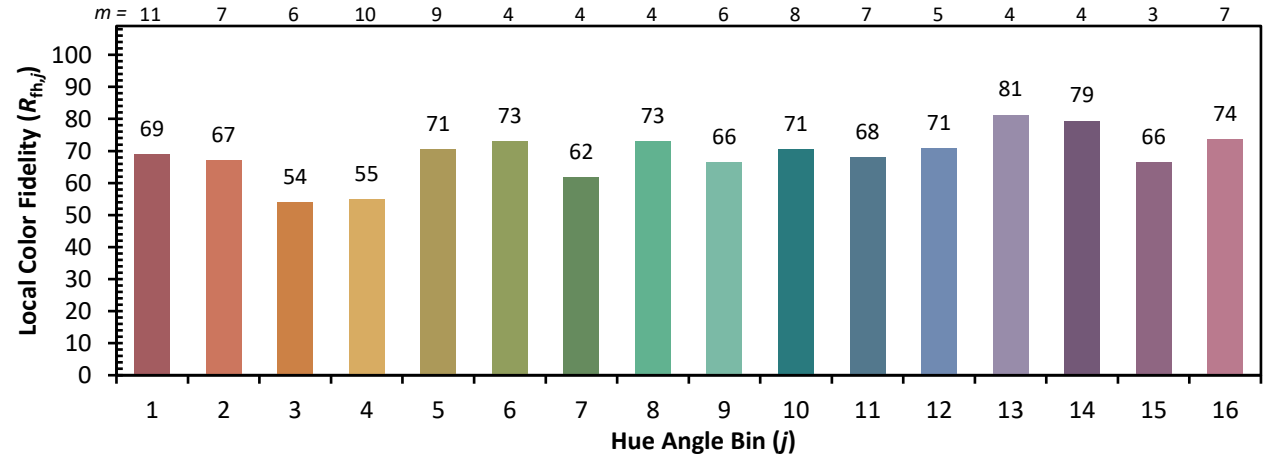
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## Color Rendition by Hue-Angle Bin



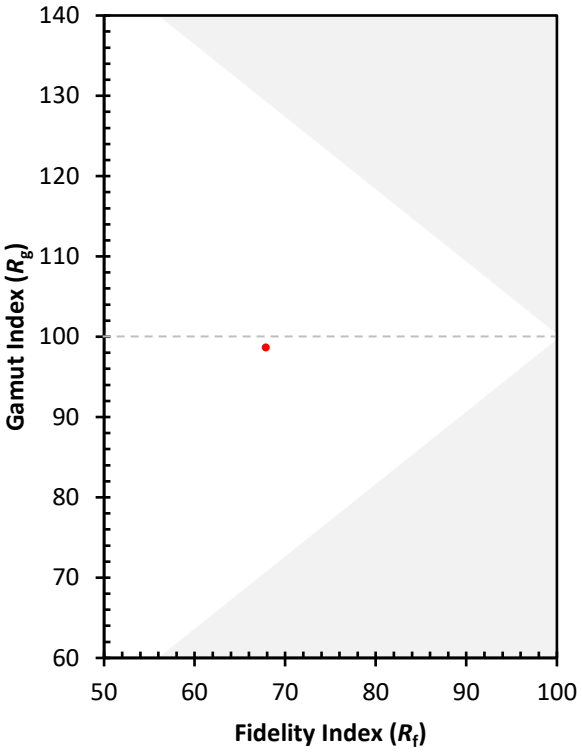



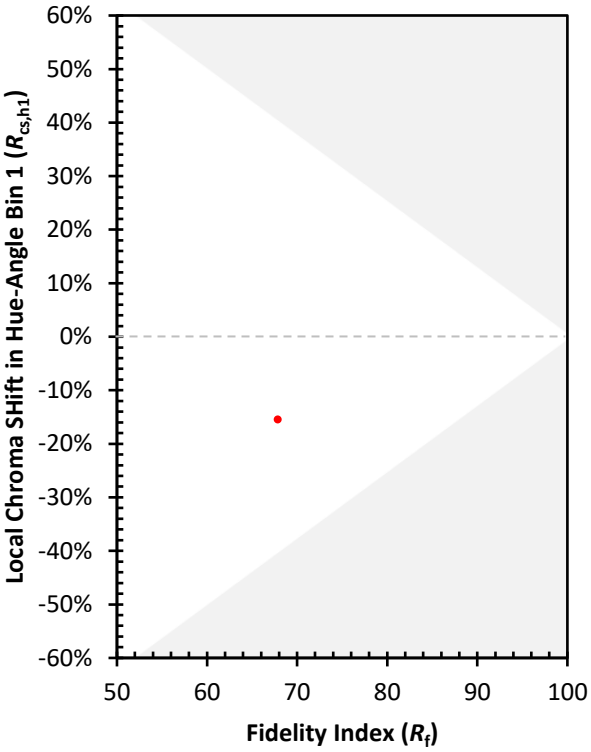



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## Measure Comparisons




(END OF REPORT)