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

Scaled data based on original data using

LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P1359979

Luminaire Tested: **GSS-SB4A-730-U-T3**

Issue Date: 02/18/2026

Report Generated By 670245763

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-08 |
| Report Number: | P1359979 |
| Test Lab: | INNOVATION CENTER(G3) |
| Issue Date: | 02/18/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB4A-730-U-T3 |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 4SQUARE 114W 70CRI 3000K FIXTURE w/ TYPE III DISTRIBUTION OPTIC |
| Light Source: | (104) 3000K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 17004.8 lumens |
| Efficiency: | N/A |
| Efficacy: | 149.2 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B3 - U0 - G3 |

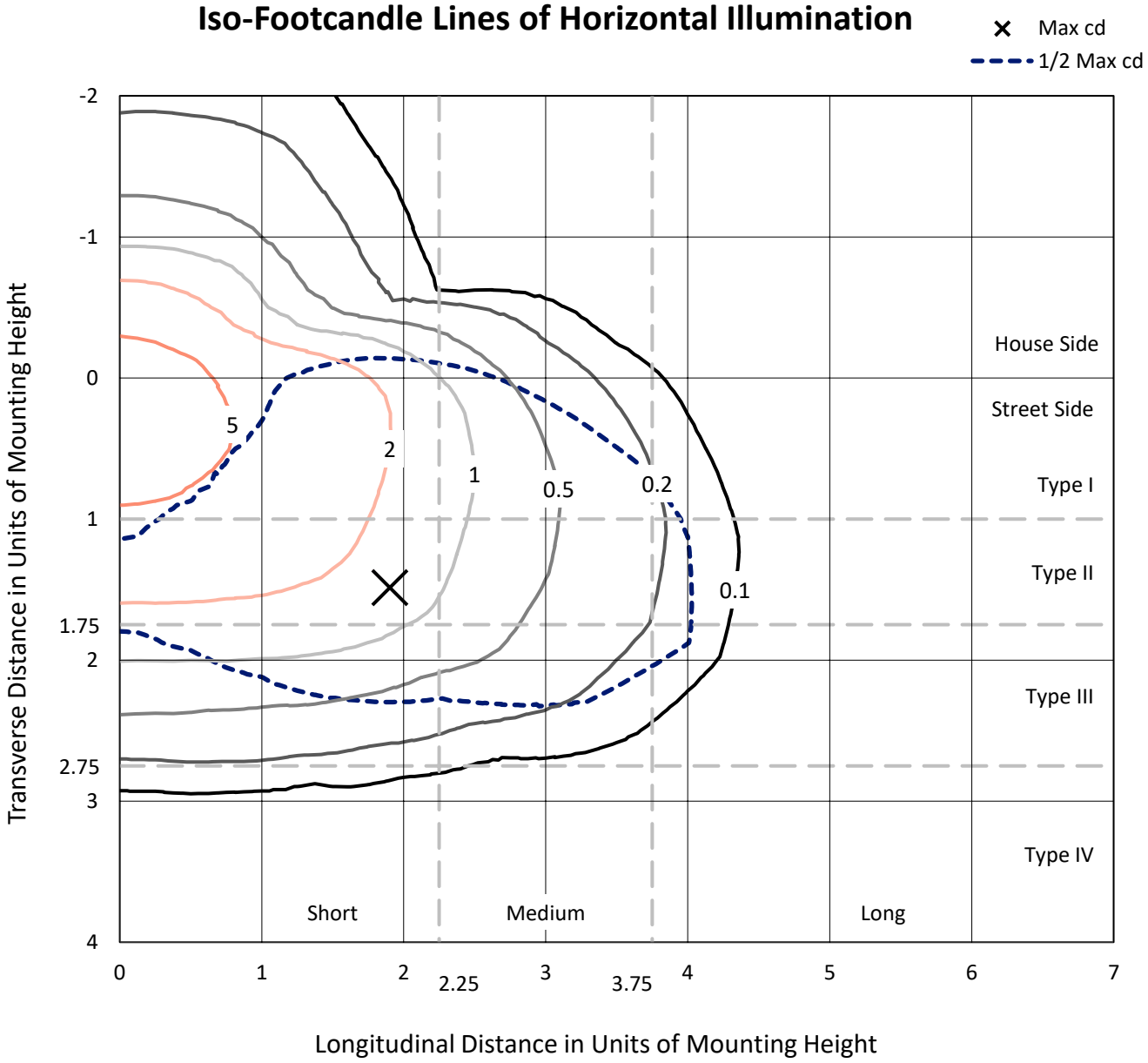
| | |
|---|---|
| Input Watts (W): | 114 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 8.2% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1359979
CATALOG NUMBER: GSS-SB4A-730-U-T3

## Iso-Footcandle Lines of Horizontal Illumination



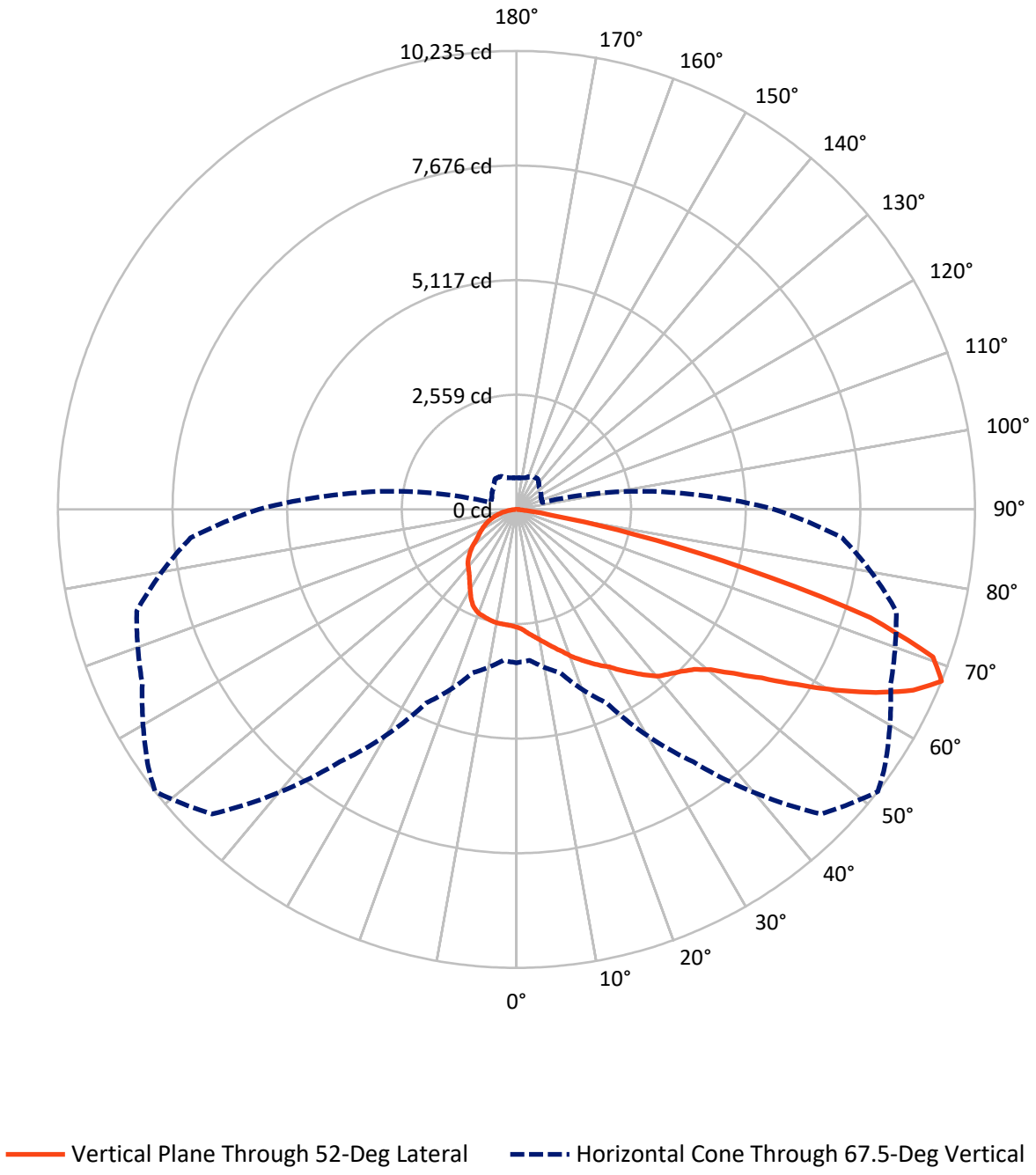

Based on 20 foot mounting height. Maximum calculated value = 7.5 fc
Type III - Short - N/A

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REPORT NUMBER: P1359979
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## Luminous Intensity Polar Plot



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Scaled Data Report

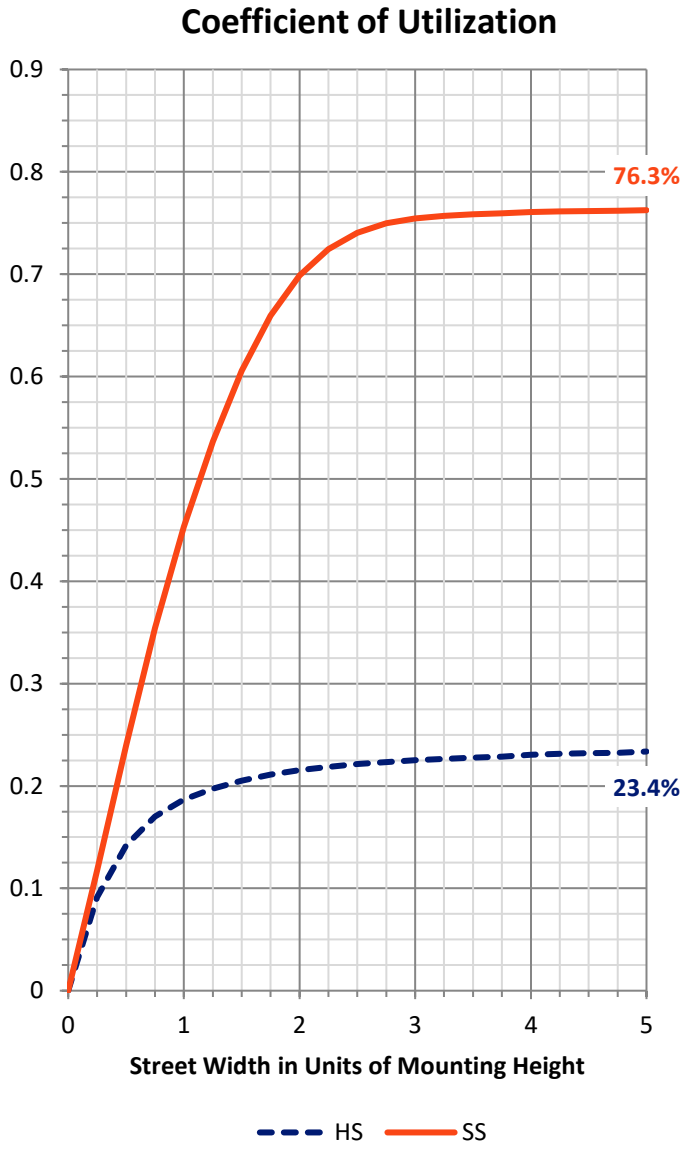
REPORT NUMBER: P1359979
CATALOG NUMBER: GSS-SB4A-730-U-T3

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 4023.1 | 0.0 | 4023.1 |
| | % Fixture | 23.7 | 0.0 | 23.7 |
| **Street Side** | Lumens | 12981.8 | 0.0 | 12981.8 |
| | % Fixture | 76.3 | 0.0 | 76.3 |
| **Total** | Lumens | 17004.8 | 0.0 | 17004.8 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 258.0 | 1.5 |
| 10°-20° | 813.9 | 4.8 |
| 20°-30° | 1391.5 | 8.2 |
| 30°-40° | 2018.6 | 11.9 |
| 40°-50° | 2622.1 | 15.4 |
| 50°-60° | 3552.8 | 20.9 |
| 60°-70° | 4144.3 | 24.4 |
| 70°-80° | 2043.3 | 12.0 |
| 80°-90° | 160.4 | 0.9 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 17004.8 | 100.0 |
| 0°-180° | 17004.8 | 100.0 |



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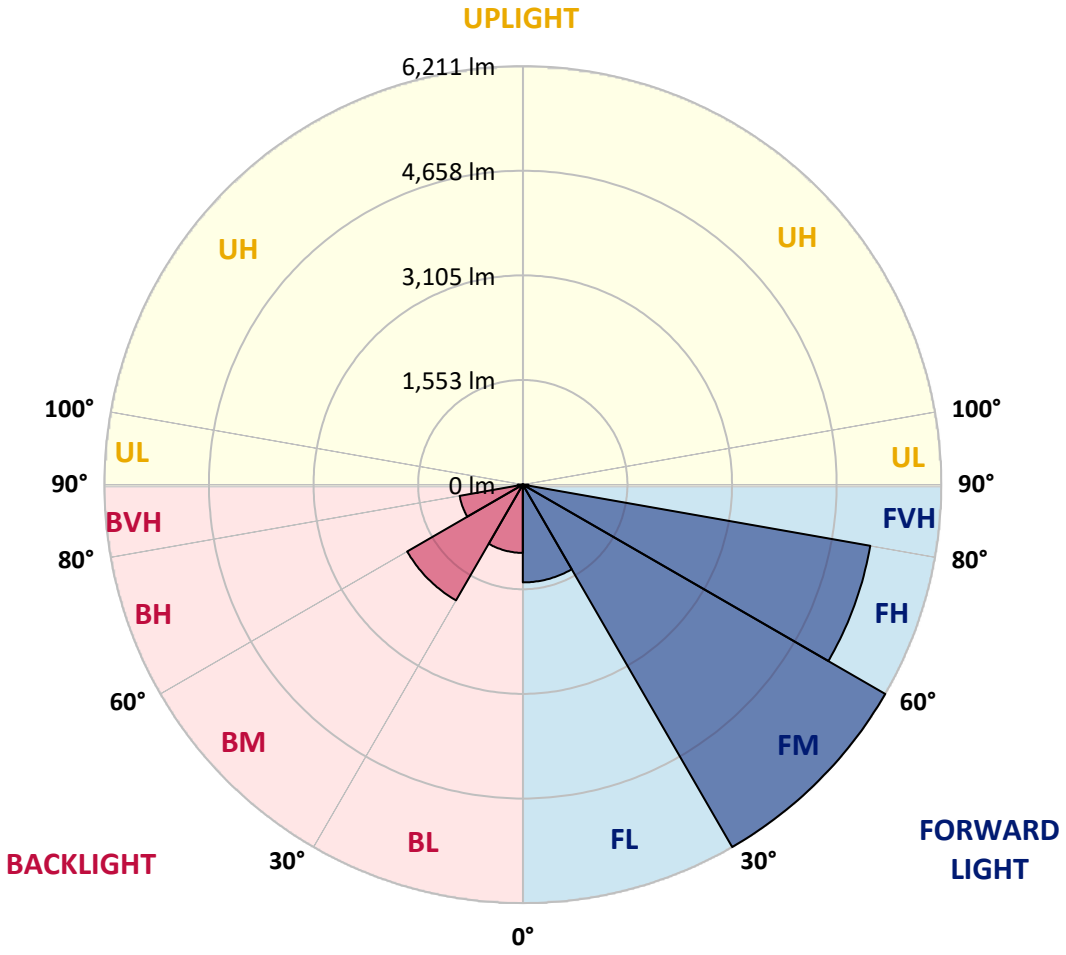
Scaled Data Report

REPORT NUMBER: P1359979
CATALOG NUMBER: GSS-SB4A-730-U-T3

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1450.7 | 8.5 | | | |
| FM | (30°-60°) | 6210.7 | 36.5 | | | |
| FH | (60°-80°) | 5236.2 | 30.8 | | | G3/7500 |
| FVH | (80°-90°) | 84.2 | 0.5 | | | G1/100 |
| BL | (0°-30°) | 1012.7 | 6.0 | B3/2500 | | |
| BM | (30°-60°) | 1982.8 | 11.7 | B2/2500 | | |
| BH | (60°-80°) | 951.4 | 5.6 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 76.2 | 0.4 | | | G1/100 |
| 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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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 52° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2631.5 | 2631.5 | 2631.5 | 2631.5 | 2631.5 | 2631.5 | 2631.5 | 2631.5 | 2631.5 | 2631.5 | 2631.5 |
| 2.5° | 2711.0 | 2707.2 | 2703.4 | 2688.3 | 2688.3 | 2692.1 | 2684.5 | 2688.3 | 2684.5 | 2665.6 | 2650.4 |
| 5° | 2862.5 | 2828.4 | 2820.8 | 2813.2 | 2820.8 | 2798.1 | 2779.2 | 2767.8 | 2726.2 | 2714.8 | 2669.4 |
| 7.5° | 2926.8 | 2930.6 | 2926.8 | 2911.7 | 2900.3 | 2900.3 | 2870.0 | 2854.9 | 2828.4 | 2783.0 | 2707.2 |
| 10° | 3017.7 | 3013.9 | 3002.6 | 3010.1 | 3032.9 | 2995.0 | 2972.3 | 2960.9 | 2915.5 | 2851.1 | 2779.2 |
| 12.5° | 3180.5 | 3154.0 | 3146.4 | 3135.1 | 3131.3 | 3108.6 | 3082.1 | 3085.9 | 3032.9 | 2934.4 | 2858.7 |
| 15° | 3320.6 | 3290.3 | 3324.4 | 3301.7 | 3271.4 | 3237.3 | 3210.8 | 3188.1 | 3127.5 | 3036.6 | 2942.0 |
| 17.5° | 3453.1 | 3438.0 | 3453.1 | 3453.1 | 3449.4 | 3392.6 | 3339.6 | 3320.6 | 3248.7 | 3146.4 | 3021.5 |
| 20° | 3555.4 | 3555.4 | 3581.9 | 3581.9 | 3570.5 | 3536.4 | 3502.4 | 3479.6 | 3377.4 | 3244.9 | 3101.0 |
| 22.5° | 3687.9 | 3627.3 | 3684.1 | 3687.9 | 3691.7 | 3665.2 | 3642.5 | 3612.2 | 3506.1 | 3347.1 | 3165.4 |
| 25° | 3812.8 | 3763.6 | 3797.7 | 3775.0 | 3790.1 | 3801.5 | 3790.1 | 3778.8 | 3661.4 | 3479.6 | 3260.0 |
| 27.5° | 4009.7 | 3960.5 | 3983.2 | 3930.2 | 3930.2 | 3918.9 | 3937.8 | 3952.9 | 3824.2 | 3608.4 | 3343.3 |
| 30° | 4305.1 | 4248.3 | 4229.3 | 4165.0 | 4100.6 | 4074.1 | 4081.7 | 4108.2 | 4021.1 | 3733.3 | 3426.6 |
| 32.5° | 4558.8 | 4528.5 | 4513.3 | 4460.3 | 4380.8 | 4259.6 | 4278.6 | 4278.6 | 4187.7 | 3824.2 | 3468.3 |
| 35° | 4767.0 | 4759.4 | 4763.2 | 4691.3 | 4676.1 | 4479.2 | 4479.2 | 4471.7 | 4305.1 | 3945.4 | 3578.1 |
| 37.5° | 4903.3 | 4861.7 | 4880.6 | 4907.1 | 4857.9 | 4725.4 | 4691.3 | 4672.3 | 4467.9 | 4074.1 | 3722.0 |
| 40° | 4873.0 | 4842.7 | 4914.7 | 4963.9 | 4926.0 | 4899.5 | 4895.7 | 4857.9 | 4630.7 | 4236.9 | 3934.0 |
| 42.5° | 4869.2 | 4842.7 | 4929.8 | 4982.8 | 4963.9 | 5005.5 | 5016.9 | 5043.4 | 4838.9 | 4494.4 | 4236.9 |
| 45° | 4884.4 | 4873.0 | 5016.9 | 5085.1 | 5039.6 | 5096.4 | 5160.8 | 5183.5 | 5104.0 | 4808.6 | 4615.5 |
| 47.5° | 5009.3 | 4994.2 | 5160.8 | 5240.3 | 5278.2 | 5376.6 | 5335.0 | 5372.8 | 5418.3 | 5255.4 | 5051.0 |
| 50° | 5130.5 | 5145.6 | 5369.0 | 5444.8 | 5630.3 | 5766.6 | 5622.7 | 5683.3 | 5834.7 | 5774.2 | 5634.1 |
| 52.5° | 5323.6 | 5327.4 | 5547.0 | 5736.3 | 6092.2 | 6221.0 | 6080.9 | 6088.4 | 6292.9 | 6406.5 | 6221.0 |
| 55° | 5372.8 | 5414.5 | 5709.8 | 6103.6 | 6614.7 | 6705.6 | 6641.2 | 6614.7 | 6857.1 | 7012.3 | 6811.6 |
| 57.5° | 5369.0 | 5346.3 | 5713.6 | 6258.8 | 7012.3 | 7334.1 | 7372.0 | 7300.1 | 7504.5 | 7568.9 | 7459.1 |
| 60° | 5228.9 | 5274.4 | 5675.7 | 6368.6 | 7383.4 | 8099.0 | 8189.9 | 8095.2 | 8193.6 | 8212.6 | 7905.9 |
| 62.5° | 4801.1 | 4816.2 | 5365.2 | 6372.4 | 7674.9 | 8735.1 | 9003.9 | 8897.9 | 8807.0 | 8572.3 | 8004.3 |
| 65° | 4104.4 | 4077.9 | 4604.2 | 5846.1 | 7727.9 | 9348.5 | 9734.7 | 9734.7 | 9144.0 | 8693.4 | 7796.1 |
| 67.5° | 3422.9 | 3381.2 | 3775.0 | 4767.0 | 6879.8 | 9617.3 | 10234.5 | 10033.8 | 9215.9 | 8776.7 | 7300.1 |
| 70° | 1650.8 | 1768.2 | 2370.2 | 3373.6 | 5259.2 | 8121.7 | 9863.4 | 9939.1 | 9159.2 | 8515.5 | 6338.3 |
| 72.5° | 590.7 | 564.2 | 851.9 | 1446.4 | 2911.7 | 5300.9 | 8258.0 | 8924.4 | 8761.6 | 7765.8 | 5191.1 |
| 75° | 272.6 | 276.4 | 355.9 | 503.6 | 942.8 | 2586.1 | 5251.7 | 6145.2 | 7504.5 | 6455.7 | 3884.8 |
| 77.5° | 212.0 | 212.0 | 242.3 | 287.8 | 390.0 | 836.8 | 2684.5 | 3449.4 | 4850.3 | 3998.4 | 1851.5 |
| 80° | 155.2 | 159.0 | 162.8 | 189.3 | 238.5 | 314.3 | 798.9 | 1196.5 | 1768.2 | 1283.6 | 602.0 |
| 82.5° | 109.8 | 109.8 | 106.0 | 106.0 | 128.7 | 140.1 | 215.8 | 302.9 | 518.7 | 352.1 | 159.0 |
| 85° | 45.4 | 53.0 | 45.4 | 45.4 | 45.4 | 56.8 | 68.2 | 79.5 | 113.6 | 98.4 | 68.2 |
| 87.5° | 7.6 | 7.6 | 7.6 | 11.4 | 15.1 | 18.9 | 22.7 | 26.5 | 30.3 | 30.3 | 30.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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Scaled Data Report

REPORT NUMBER: P1359979
CATALOG NUMBER: GSS-SB4A-730-U-T3

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2631.5 | 2631.5 | 2631.5 | 2631.5 | 2631.5 | 2631.5 | 2631.5 | 2631.5 | 2631.5 | 2631.5 | 2631.5 |
| 2.5° | 2642.9 | 2642.9 | 2631.5 | 2612.6 | 2605.0 | 2593.6 | 2589.9 | 2586.1 | 2578.5 | 2593.6 | 2586.1 |
| 5° | 2658.0 | 2642.9 | 2627.7 | 2597.4 | 2593.6 | 2574.7 | 2555.8 | 2552.0 | 2540.6 | 2552.0 | 2552.0 |
| 7.5° | 2692.1 | 2669.4 | 2635.3 | 2605.0 | 2578.5 | 2574.7 | 2540.6 | 2510.3 | 2510.3 | 2514.1 | 2510.3 |
| 10° | 2752.7 | 2726.2 | 2692.1 | 2635.3 | 2586.1 | 2540.6 | 2483.8 | 2446.0 | 2449.8 | 2449.8 | 2442.2 |
| 12.5° | 2832.2 | 2794.3 | 2733.7 | 2650.4 | 2574.7 | 2502.8 | 2434.6 | 2423.3 | 2419.5 | 2427.0 | 2404.3 |
| 15° | 2892.8 | 2858.7 | 2760.2 | 2665.6 | 2548.2 | 2476.3 | 2404.3 | 2377.8 | 2381.6 | 2374.0 | 2355.1 |
| 17.5° | 2968.5 | 2915.5 | 2794.3 | 2654.2 | 2517.9 | 2449.8 | 2366.5 | 2309.7 | 2279.4 | 2283.2 | 2279.4 |
| 20° | 3040.4 | 2964.7 | 2820.8 | 2654.2 | 2510.3 | 2389.2 | 2283.2 | 2207.4 | 2143.1 | 2131.7 | 2127.9 |
| 22.5° | 3093.4 | 3017.7 | 2851.1 | 2658.0 | 2464.9 | 2321.0 | 2165.8 | 2067.3 | 1972.7 | 1957.5 | 1953.8 |
| 25° | 3169.2 | 3070.7 | 2885.2 | 2631.5 | 2404.3 | 2207.4 | 2014.3 | 1904.5 | 1821.2 | 1806.1 | 1806.1 |
| 27.5° | 3233.5 | 3127.5 | 2930.6 | 2605.0 | 2305.9 | 2052.2 | 1870.5 | 1760.6 | 1707.6 | 1681.1 | 1681.1 |
| 30° | 3301.7 | 3184.3 | 2968.5 | 2525.5 | 2173.4 | 1897.0 | 1756.9 | 1684.9 | 1624.3 | 1597.8 | 1586.5 |
| 32.5° | 3377.4 | 3279.0 | 2976.1 | 2446.0 | 2040.8 | 1794.7 | 1677.3 | 1616.8 | 1552.4 | 1514.5 | 1510.7 |
| 35° | 3472.1 | 3400.1 | 2949.6 | 2328.6 | 1908.3 | 1715.2 | 1601.6 | 1533.5 | 1469.1 | 1431.2 | 1438.8 |
| 37.5° | 3623.5 | 3540.2 | 2870.0 | 2162.0 | 1798.5 | 1666.0 | 1541.0 | 1442.6 | 1366.9 | 1306.3 | 1310.1 |
| 40° | 3846.9 | 3710.6 | 2752.7 | 1961.3 | 1719.0 | 1609.2 | 1469.1 | 1355.5 | 1245.7 | 1154.8 | 1154.8 |
| 42.5° | 4100.6 | 3862.1 | 2608.8 | 1775.8 | 1658.4 | 1537.3 | 1393.4 | 1249.5 | 1094.3 | 999.6 | 995.8 |
| 45° | 4384.6 | 3994.6 | 2442.2 | 1624.3 | 1560.0 | 1450.2 | 1294.9 | 1090.5 | 988.2 | 939.0 | 935.2 |
| 47.5° | 4763.2 | 4138.5 | 2245.3 | 1491.8 | 1446.4 | 1363.1 | 1147.3 | 999.6 | 939.0 | 901.1 | 897.4 |
| 50° | 5119.1 | 4293.7 | 2082.5 | 1363.1 | 1325.2 | 1260.9 | 1045.0 | 961.7 | 912.5 | 882.2 | 874.6 |
| 52.5° | 5531.8 | 4452.7 | 1900.7 | 1238.1 | 1188.9 | 1101.8 | 1022.3 | 942.8 | 897.4 | 874.6 | 867.1 |
| 55° | 5940.8 | 4676.1 | 1700.1 | 1124.5 | 1067.7 | 1029.9 | 999.6 | 931.4 | 886.0 | 870.9 | 859.5 |
| 57.5° | 6406.5 | 4891.9 | 1454.0 | 1003.4 | 980.7 | 976.9 | 995.8 | 927.7 | 889.8 | 863.3 | 848.1 |
| 60° | 6648.8 | 4986.6 | 1196.5 | 893.6 | 897.4 | 920.1 | 980.7 | 927.7 | 867.1 | 821.6 | 802.7 |
| 62.5° | 6565.5 | 4793.5 | 946.6 | 783.8 | 817.8 | 859.5 | 954.2 | 893.6 | 817.8 | 783.8 | 761.1 |
| 65° | 6232.3 | 4464.1 | 738.3 | 689.1 | 745.9 | 783.8 | 889.8 | 844.4 | 768.6 | 734.5 | 730.8 |
| 67.5° | *5751.4* | *3892.4* | *598.2* | *605.8* | *662.6* | *711.8* | *833.0* | *814.1* | *727.0* | *704.3* | *704.3* |
| 70° | 4835.2 | 3127.5 | 492.2 | 530.1 | 579.3 | 632.3 | 791.3 | 764.8 | 674.0 | 662.6 | 662.6 |
| 72.5° | 3778.8 | 2207.4 | 420.3 | 465.7 | 480.9 | 556.6 | 734.5 | 708.0 | 655.0 | 681.5 | 685.3 |
| 75° | 2665.6 | 1344.2 | 359.7 | 393.8 | 408.9 | 458.1 | 681.5 | 692.9 | 643.7 | 730.8 | 745.9 |
| 77.5° | 1211.6 | 590.7 | 280.2 | 310.5 | 329.4 | 390.0 | 586.9 | 643.7 | 556.6 | 556.6 | 526.3 |
| 80° | 424.1 | 249.9 | 223.4 | 223.4 | 238.5 | 302.9 | 488.4 | 530.1 | 446.8 | 393.8 | 378.6 |
| 82.5° | 155.2 | 136.3 | 166.6 | 166.6 | 151.5 | 185.5 | 325.6 | 352.1 | 321.8 | 280.2 | 276.4 |
| 85° | 60.6 | 64.4 | 102.2 | 102.2 | 75.7 | 90.9 | 181.7 | 189.3 | 181.7 | 159.0 | 159.0 |
| 87.5° | 26.5 | 26.5 | 30.3 | 30.3 | 26.5 | 22.7 | 34.1 | 34.1 | 22.7 | 15.1 | 7.6 |
| 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: SP1-2407-184-4

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-730-U-5WQ

Data in this report applies to families of products including GSS-SB1A-730-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

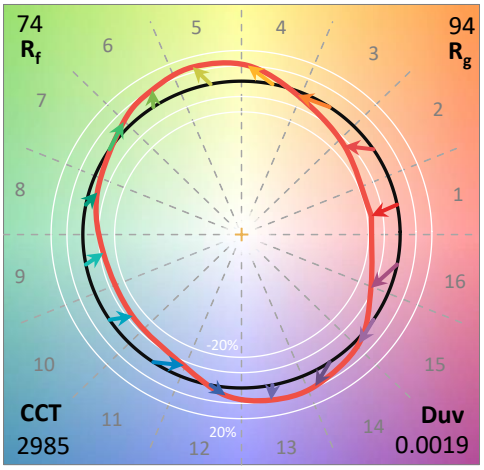
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-4 |
| 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-730-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 3000K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 2985 |
| CIE u': | 0.2504 |
| CIE v': | 0.5243 |
| Duv: | 0.0019 |
| CIE x: | 0.4408 |
| CIE y: | 0.4101 |
| CIE z: | 0.1491 |
| Peak Wavelength (nm): | 595 |
| Dominant Wavelength (nm): | 582 |
| Purity: | 55.41818 |
| Rf: | 73.8 |
| Rg: | 94.4 |

| | |
|---|---|
| CRI (Ra): | 70.8 |
| R1: | 66.3 |
| R2: | 80.6 |
| R3: | 94.5 |
| R4: | 68.2 |
| R5: | 66.5 |
| R6: | 74.7 |
| R7: | 76.2 |
| R8: | 39.6 |
| R9: | -43.2 |
| R10: | 57.6 |
| R11: | 64.8 |
| R12: | 53.5 |
| R13: | 68.7 |
| R14: | 97.0 |
| R15: | 56.4 |




## Test Conditions

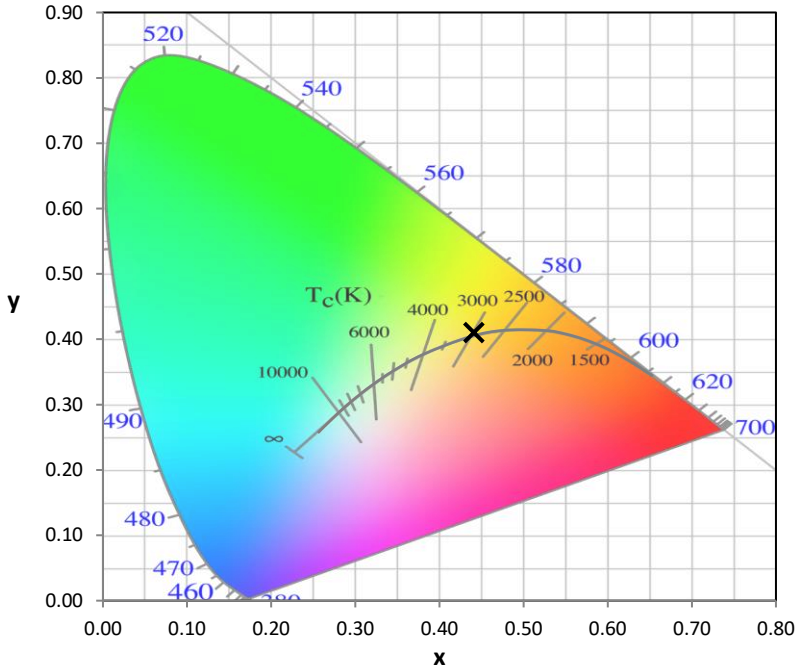
| | |
|---|---|
| Stabilization Time: | 36M |
| Operation Time: | 1H 36M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-4

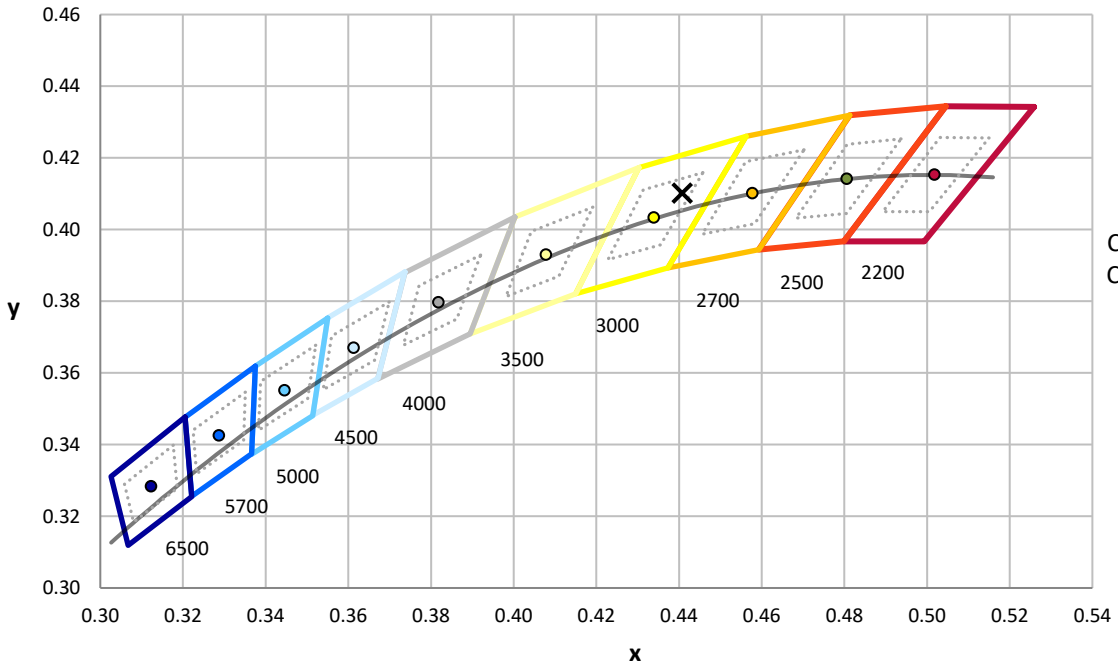
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

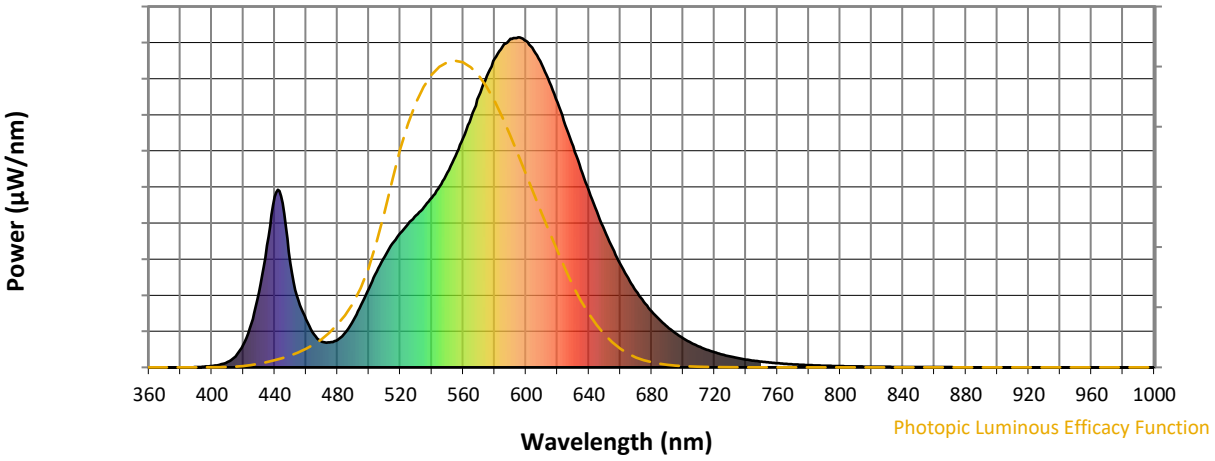



CCT = 2985K
CIE x = 0.4408
CIE y = 0.4101
Duv = 0.0019

Point lies inside the ANSI 3000K 4-step quadrangle

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## Photopic Flux vs. Wavelength

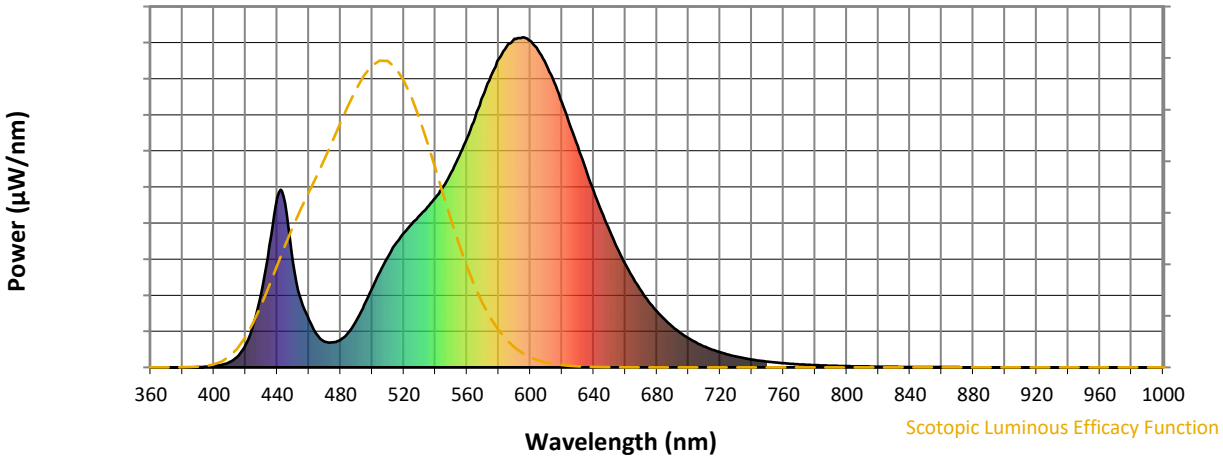



## Photopic Lumens: NR

| 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 | 142 | NR | 620 | 803 | NR | 750 | 17 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 189 | NR | 625 | 734 | NR | 755 | 15 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 240 | NR | 630 | 670 | NR | 760 | 13 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 290 | NR | 635 | 600 | NR | 765 | 11 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 335 | NR | 640 | 535 | NR | 770 | 9 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 375 | NR | 645 | 473 | NR | 775 | 8 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 408 | NR | 650 | 415 | NR | 780 | 7 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 434 | NR | 655 | 362 | NR | 785 | 6 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 461 | NR | 660 | 313 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 8 | NR | 535 | 486 | NR | 665 | 271 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 16 | NR | 540 | 514 | NR | 670 | 231 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 33 | NR | 545 | 549 | NR | 675 | 198 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 69 | NR | 550 | 591 | NR | 680 | 169 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 131 | NR | 555 | 640 | NR | 685 | 144 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 227 | NR | 560 | 695 | NR | 690 | 123 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 369 | NR | 565 | 757 | NR | 695 | 104 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 517 | NR | 570 | 822 | NR | 700 | 88 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 498 | NR | 575 | 882 | NR | 705 | 75 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 315 | NR | 580 | 935 | NR | 710 | 63 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 204 | NR | 585 | 972 | NR | 715 | 54 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 145 | NR | 590 | 996 | NR | 720 | 46 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 100 | NR | 595 | 1000 | NR | 725 | 39 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 78 | NR | 600 | 989 | NR | 730 | 33 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 76 | NR | 605 | 960 | NR | 735 | 28 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 83 | NR | 610 | 918 | NR | 740 | 24 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 105 | NR | 615 | 864 | NR | 745 | 20 | NR | 875 | 1 | NR | | | |

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## Scotopic Flux vs. Wavelength

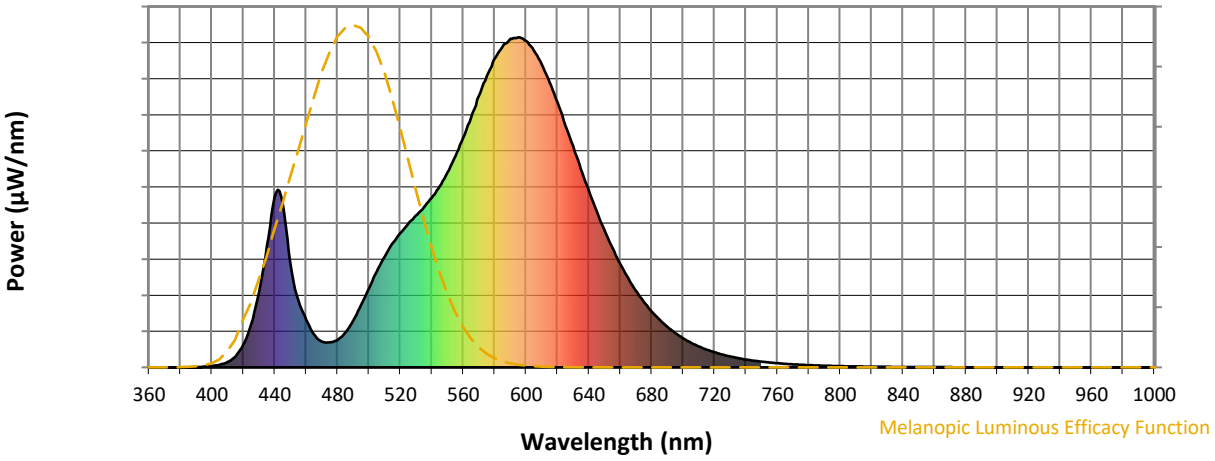



**Scotopic Lumens: NR** **S/P: 1.19**

| 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 | 142 | NR | 620 | 803 | NR | 750 | 17 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 189 | NR | 625 | 734 | NR | 755 | 15 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 240 | NR | 630 | 670 | NR | 760 | 13 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 290 | NR | 635 | 600 | NR | 765 | 11 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 335 | NR | 640 | 535 | NR | 770 | 9 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 375 | NR | 645 | 473 | NR | 775 | 8 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 408 | NR | 650 | 415 | NR | 780 | 7 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 434 | NR | 655 | 362 | NR | 785 | 6 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 461 | NR | 660 | 313 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 8 | NR | 535 | 486 | NR | 665 | 271 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 16 | NR | 540 | 514 | NR | 670 | 231 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 33 | NR | 545 | 549 | NR | 675 | 198 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 69 | NR | 550 | 591 | NR | 680 | 169 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 131 | NR | 555 | 640 | NR | 685 | 144 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 227 | NR | 560 | 695 | NR | 690 | 123 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 369 | NR | 565 | 757 | NR | 695 | 104 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 517 | NR | 570 | 822 | NR | 700 | 88 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 498 | NR | 575 | 882 | NR | 705 | 75 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 315 | NR | 580 | 935 | NR | 710 | 63 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 204 | NR | 585 | 972 | NR | 715 | 54 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 145 | NR | 590 | 996 | NR | 720 | 46 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 100 | NR | 595 | 1000 | NR | 725 | 39 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 78 | NR | 600 | 989 | NR | 730 | 33 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 76 | NR | 605 | 960 | NR | 735 | 28 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 83 | NR | 610 | 918 | NR | 740 | 24 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 105 | NR | 615 | 864 | NR | 745 | 20 | NR | 875 | 1 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.13**

| 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 | 142 | NR | 620 | 803 | NR | 750 | 17 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 189 | NR | 625 | 734 | NR | 755 | 15 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 240 | NR | 630 | 670 | NR | 760 | 13 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 290 | NR | 635 | 600 | NR | 765 | 11 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 335 | NR | 640 | 535 | NR | 770 | 9 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 375 | NR | 645 | 473 | NR | 775 | 8 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 408 | NR | 650 | 415 | NR | 780 | 7 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 434 | NR | 655 | 362 | NR | 785 | 6 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 461 | NR | 660 | 313 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 8 | NR | 535 | 486 | NR | 665 | 271 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 16 | NR | 540 | 514 | NR | 670 | 231 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 33 | NR | 545 | 549 | NR | 675 | 198 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 69 | NR | 550 | 591 | NR | 680 | 169 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 131 | NR | 555 | 640 | NR | 685 | 144 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 227 | NR | 560 | 695 | NR | 690 | 123 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 369 | NR | 565 | 757 | NR | 695 | 104 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 517 | NR | 570 | 822 | NR | 700 | 88 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 498 | NR | 575 | 882 | NR | 705 | 75 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 315 | NR | 580 | 935 | NR | 710 | 63 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 204 | NR | 585 | 972 | NR | 715 | 54 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 145 | NR | 590 | 996 | NR | 720 | 46 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 100 | NR | 595 | 1000 | NR | 725 | 39 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 78 | NR | 600 | 989 | NR | 730 | 33 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 76 | NR | 605 | 960 | NR | 735 | 28 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 83 | NR | 610 | 918 | NR | 740 | 24 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 105 | NR | 615 | 864 | NR | 745 | 20 | NR | 875 | 1 | NR | | | |

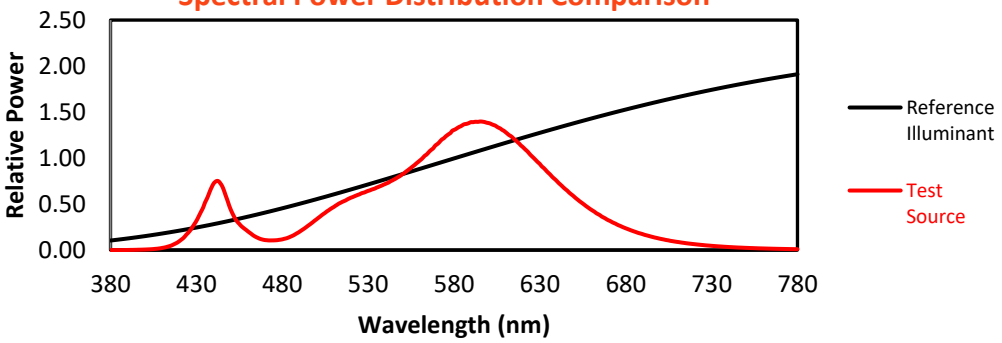
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# TM-30-18

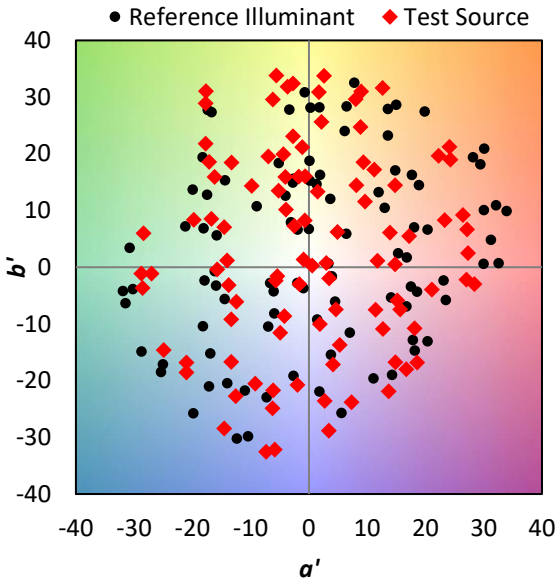
## Summary

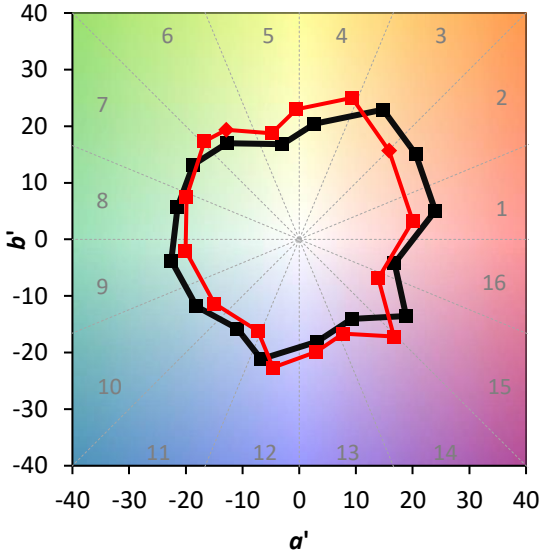
$R_f$ = 73.8
$R_g$ = 94.4
CIE $R_a$ = 70.8
$R_9$ = -43.2

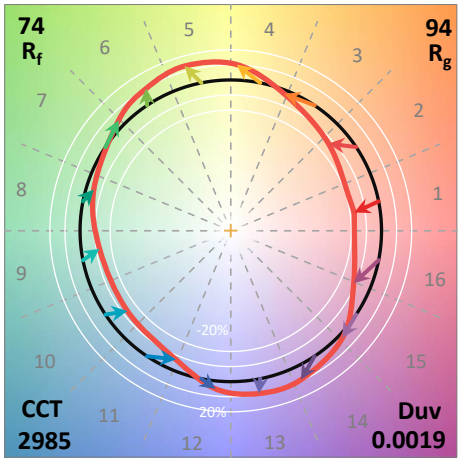
## Spectral Power Distribution Comparison

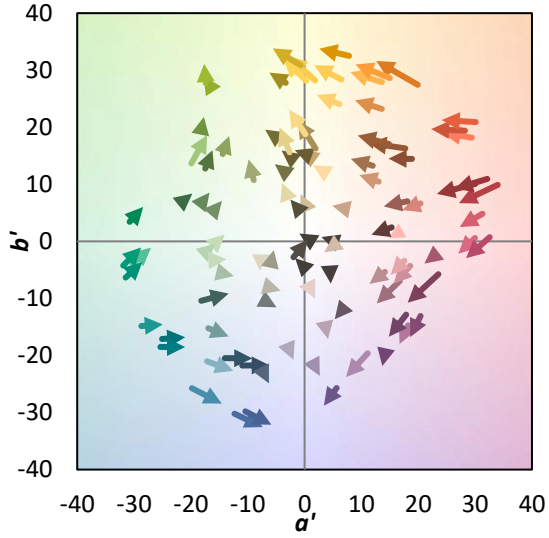



## Color Vector Graphics



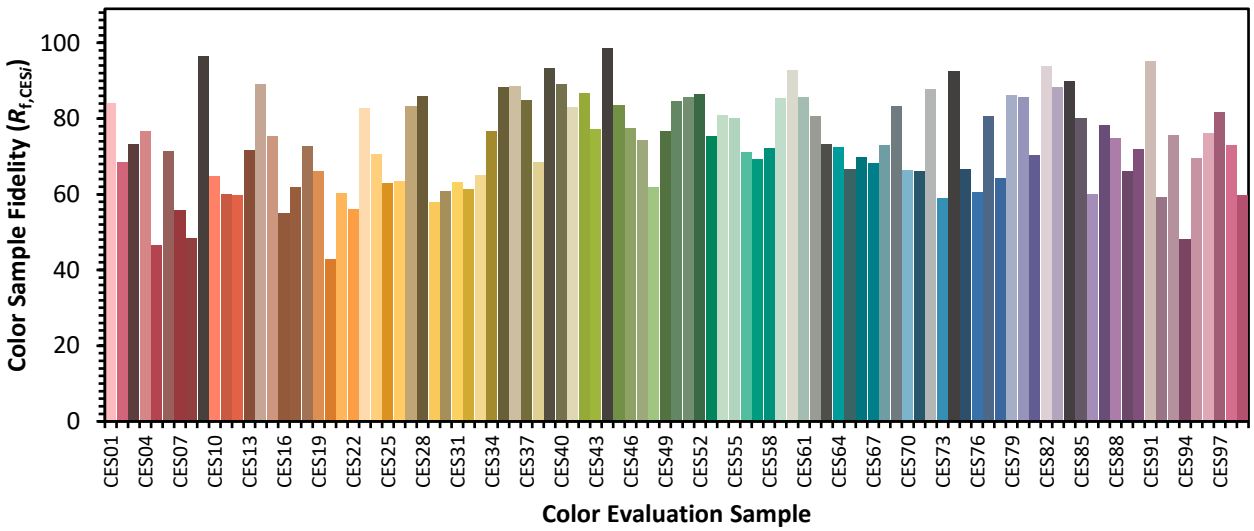



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**Individual Sample Fidelity Index ($R_{f,i}$)**

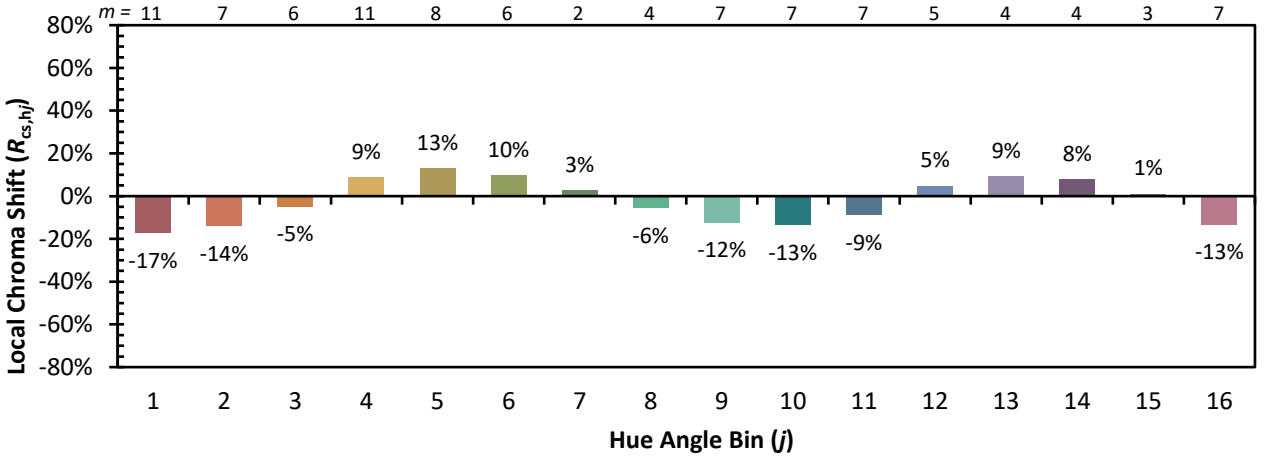
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 63 | CES51 = 86 | CES76 = 61 |
| CES02 = 62 | CES27 = 83 | CES52 = 86 | CES77 = 81 |
| CES03 = 31 | CES28 = 86 | CES53 = 75 | CES78 = 64 |
| CES04 = 71 | CES29 = 58 | CES54 = 81 | CES79 = 86 |
| CES05 = 49 | CES30 = 61 | CES55 = 80 | CES80 = 86 |
| CES06 = 51 | CES31 = 63 | CES56 = 71 | CES81 = 70 |
| CES07 = 41 | CES32 = 61 | CES57 = 69 | CES82 = 94 |
| CES08 = 40 | CES33 = 65 | CES58 = 72 | CES83 = 88 |
| CES09 = 29 | CES34 = 77 | CES59 = 85 | CES84 = 90 |
| CES10 = 76 | CES35 = 88 | CES60 = 93 | CES85 = 80 |
| CES11 = 59 | CES36 = 89 | CES61 = 86 | CES86 = 60 |
| CES12 = 65 | CES37 = 85 | CES62 = 81 | CES87 = 78 |
| CES13 = 43 | CES38 = 69 | CES63 = 73 | CES88 = 75 |
| CES14 = 74 | CES39 = 93 | CES64 = 72 | CES89 = 66 |
| CES15 = 71 | CES40 = 89 | CES65 = 67 | CES90 = 72 |
| CES16 = 47 | CES41 = 83 | CES66 = 70 | CES91 = 95 |
| CES17 = 50 | CES42 = 87 | CES67 = 68 | CES92 = 59 |
| CES18 = 56 | CES43 = 77 | CES68 = 73 | CES93 = 76 |
| CES19 = 73 | CES44 = 99 | CES69 = 83 | CES94 = 48 |
| CES20 = 66 | CES45 = 83 | CES70 = 66 | CES95 = 70 |
| CES21 = 87 | CES46 = 77 | CES71 = 66 | CES96 = 76 |
| CES22 = 79 | CES47 = 74 | CES72 = 88 | CES97 = 82 |
| CES23 = 92 | CES48 = 62 | CES73 = 59 | CES98 = 73 |
| CES24 = 91 | CES49 = 77 | CES74 = 93 | CES99 = 60 |
| CES25 = 73 | CES50 = 85 | CES75 = 67 | |

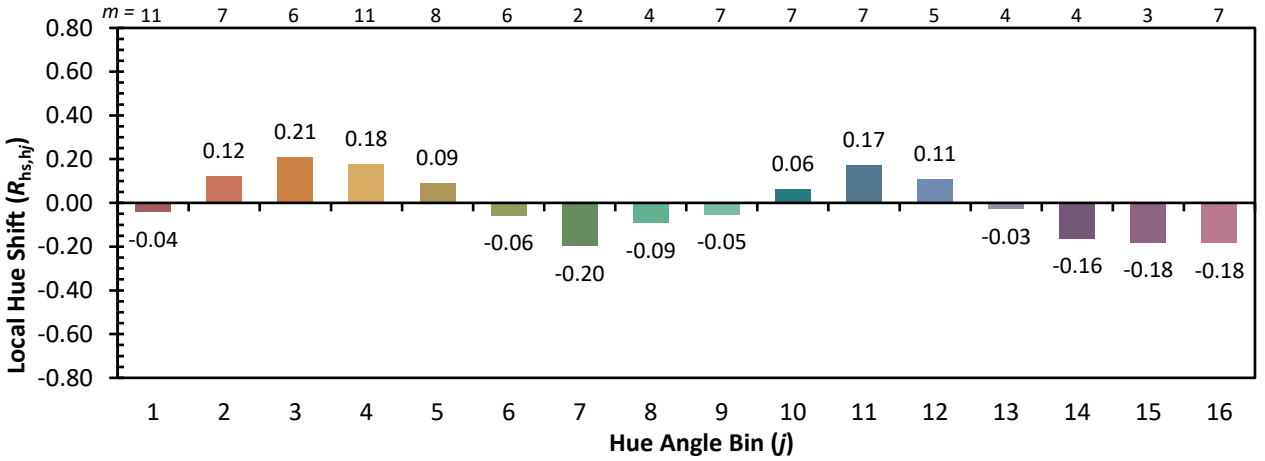


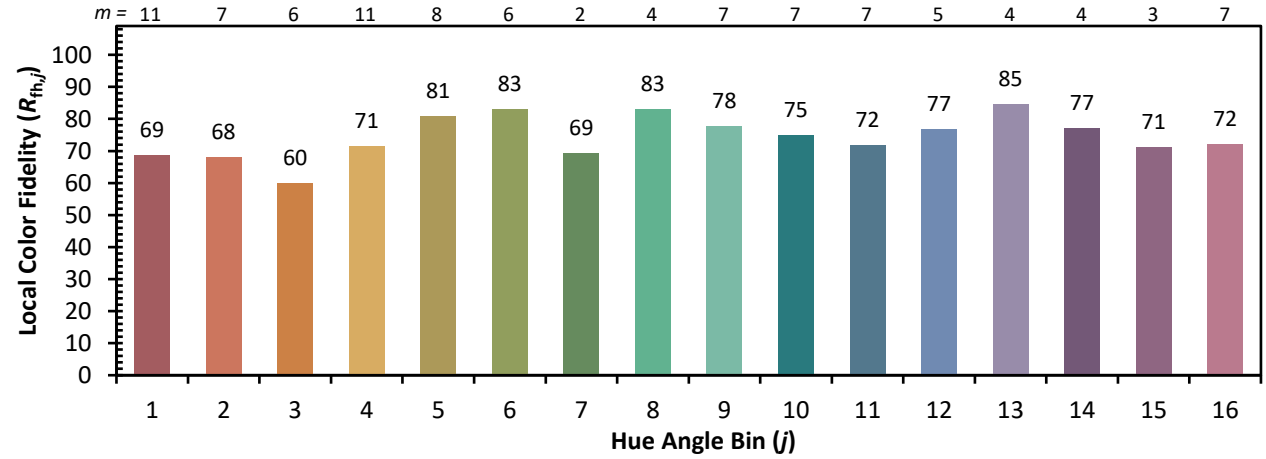
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## Color Rendition by Hue-Angle Bin



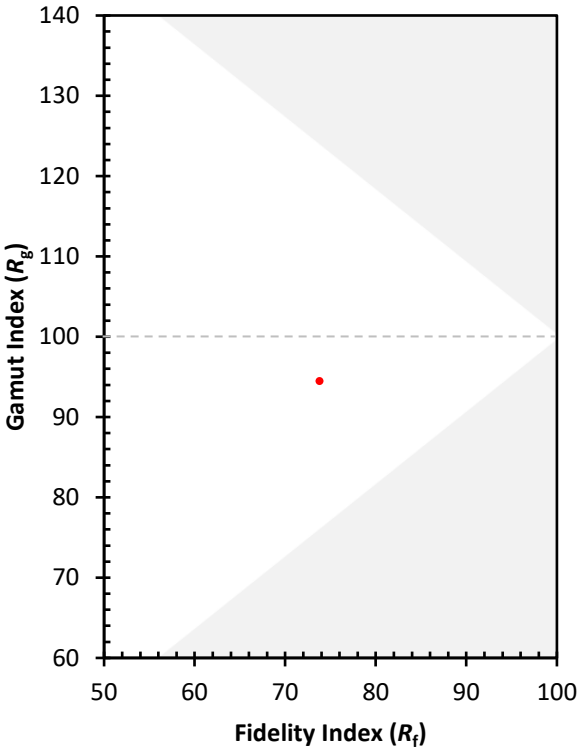



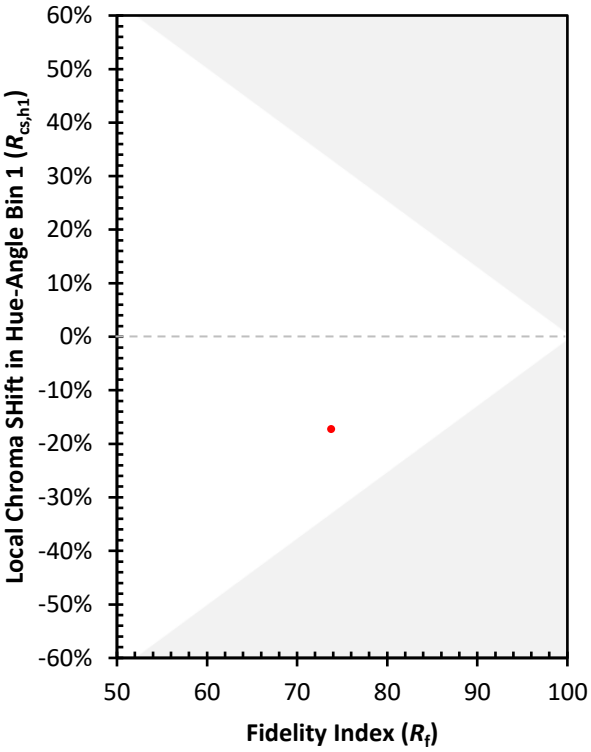



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## Measure Comparisons




(END OF REPORT)