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: P1367684

Luminaire Tested: **GSS-SB4B-735-U-T4W-HSS**

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: | P1367684 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 02/18/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB4B-735-U-T4W-HSS |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 4SQUARE 148W 70CRI 3500K FIXTURE w/ TYPE IV WIDE DISTRIBUTION OPTIC AND HOUSE SIDE SHIELD |
| Light Source: | (104) 3500K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 15855.2 lumens |
| Efficiency: | N/A |
| Efficacy: | 107.1 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B1 - U0 - G3 |

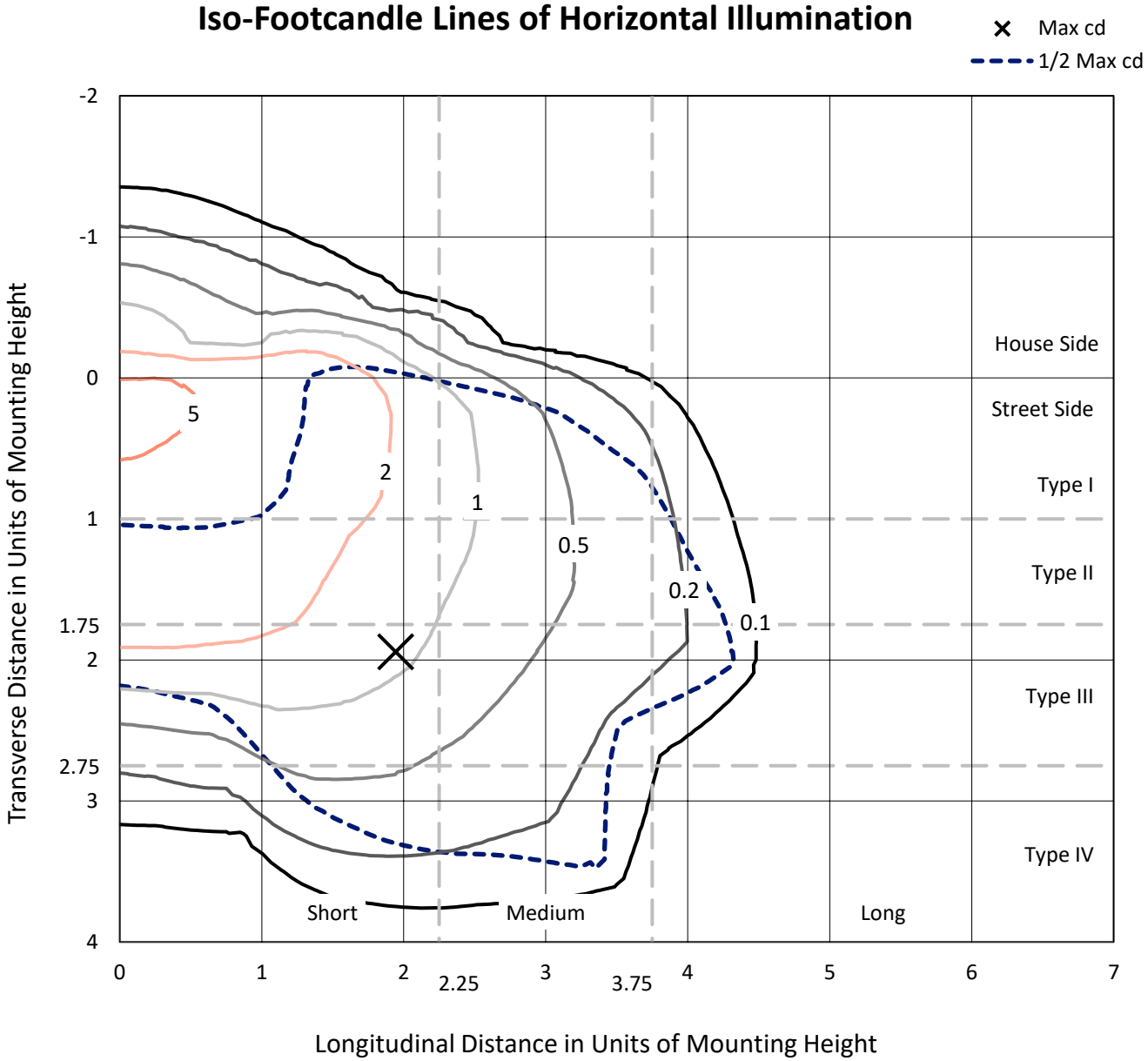
| | |
|---|---|
| Input Watts (W): | 148 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 13.6% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1367684
CATALOG NUMBER: GSS-SB4B-735-U-T4W-HSS

## Iso-Footcandle Lines of Horizontal Illumination



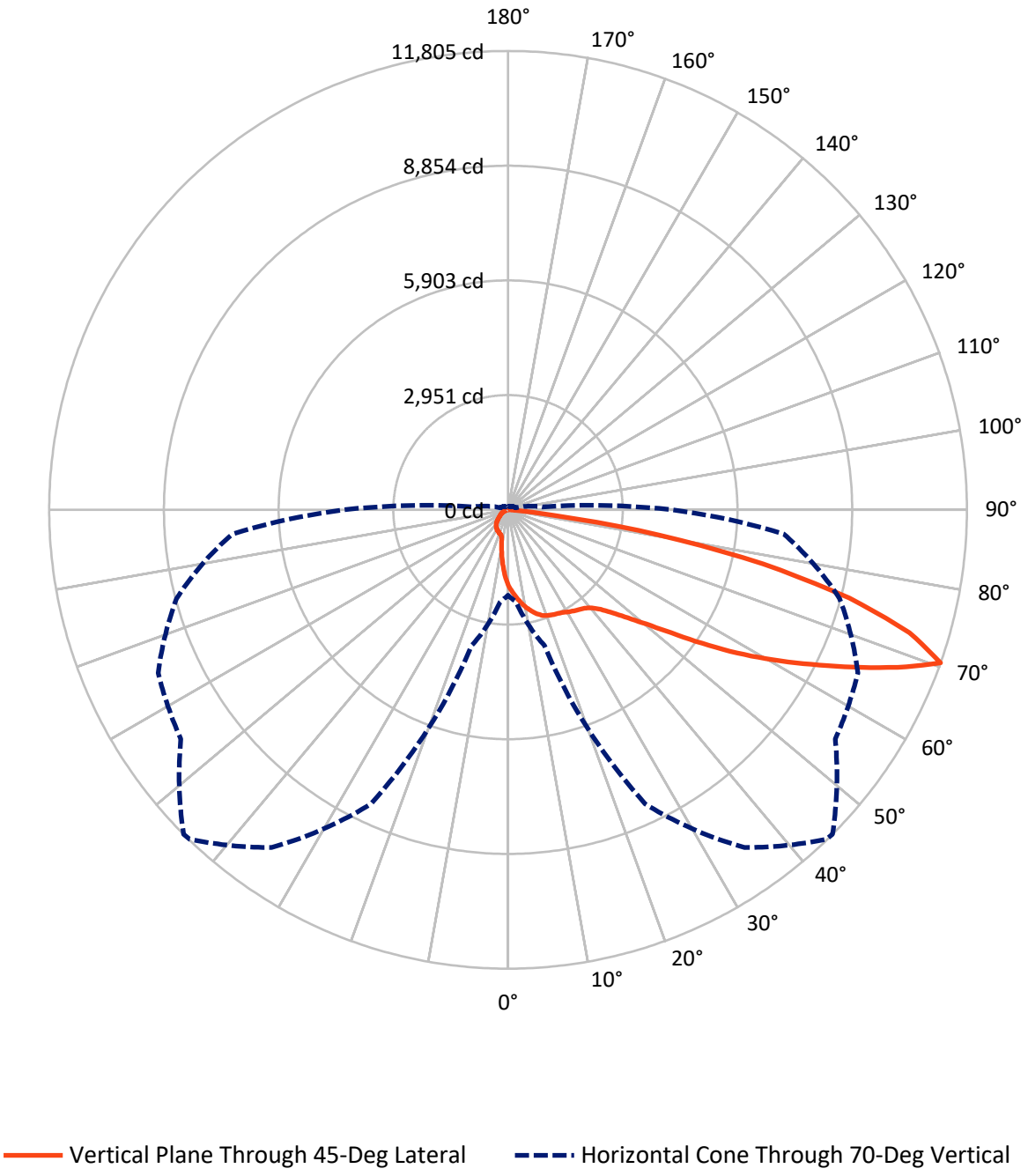

Based on 20 foot mounting height. Maximum calculated value = 6.8 fc
Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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Scaled Data Report

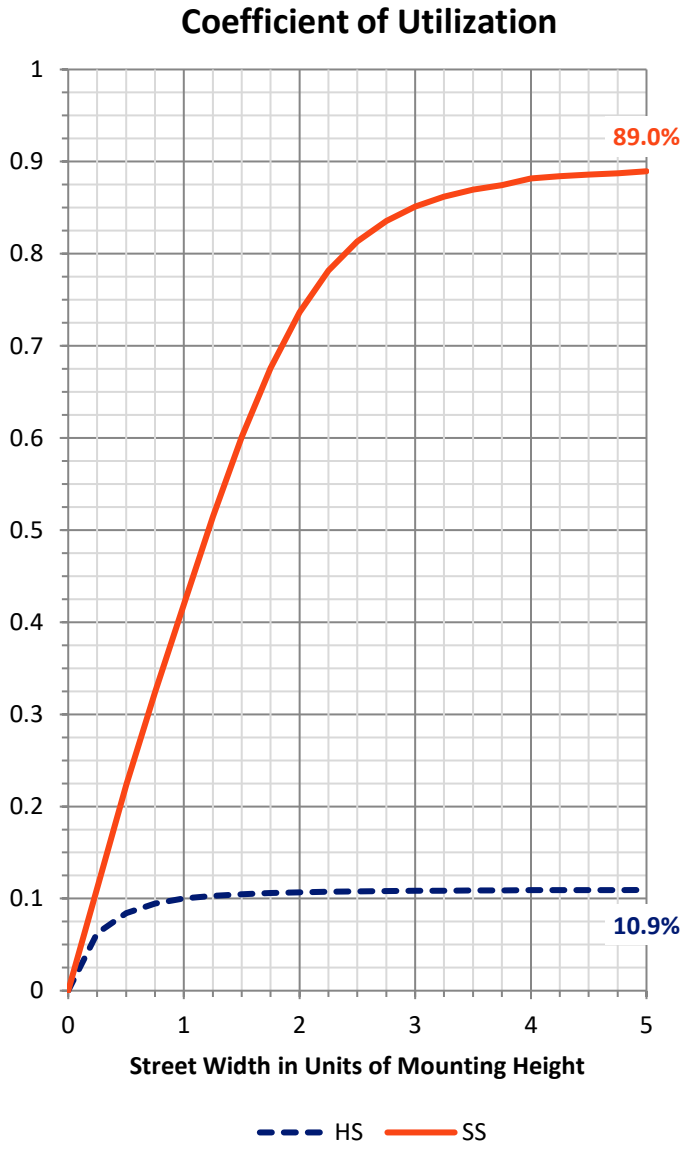
REPORT NUMBER: P1367684
CATALOG NUMBER: GSS-SB4B-735-U-T4W-HSS

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 1750.9 | 0.0 | 1750.9 |
| | % Fixture | 11.0 | 0.0 | 11.0 |
| **Street Side** | Lumens | 14104.3 | 0.0 | 14104.3 |
| | % Fixture | 89.0 | 0.0 | 89.0 |
| **Total** | Lumens | 15855.2 | 0.0 | 15855.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 179.4 | 1.1 |
| 10°-20° | 529.3 | 3.3 |
| 20°-30° | 878.7 | 5.5 |
| 30°-40° | 1245.7 | 7.9 |
| 40°-50° | 1975.7 | 12.5 |
| 50°-60° | 3479.1 | 21.9 |
| 60°-70° | 4509.8 | 28.4 |
| 70°-80° | 2880.6 | 18.2 |
| 80°-90° | 176.9 | 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° | 15855.2 | 100.0 |
| 0°-180° | 15855.2 | 100.0 |



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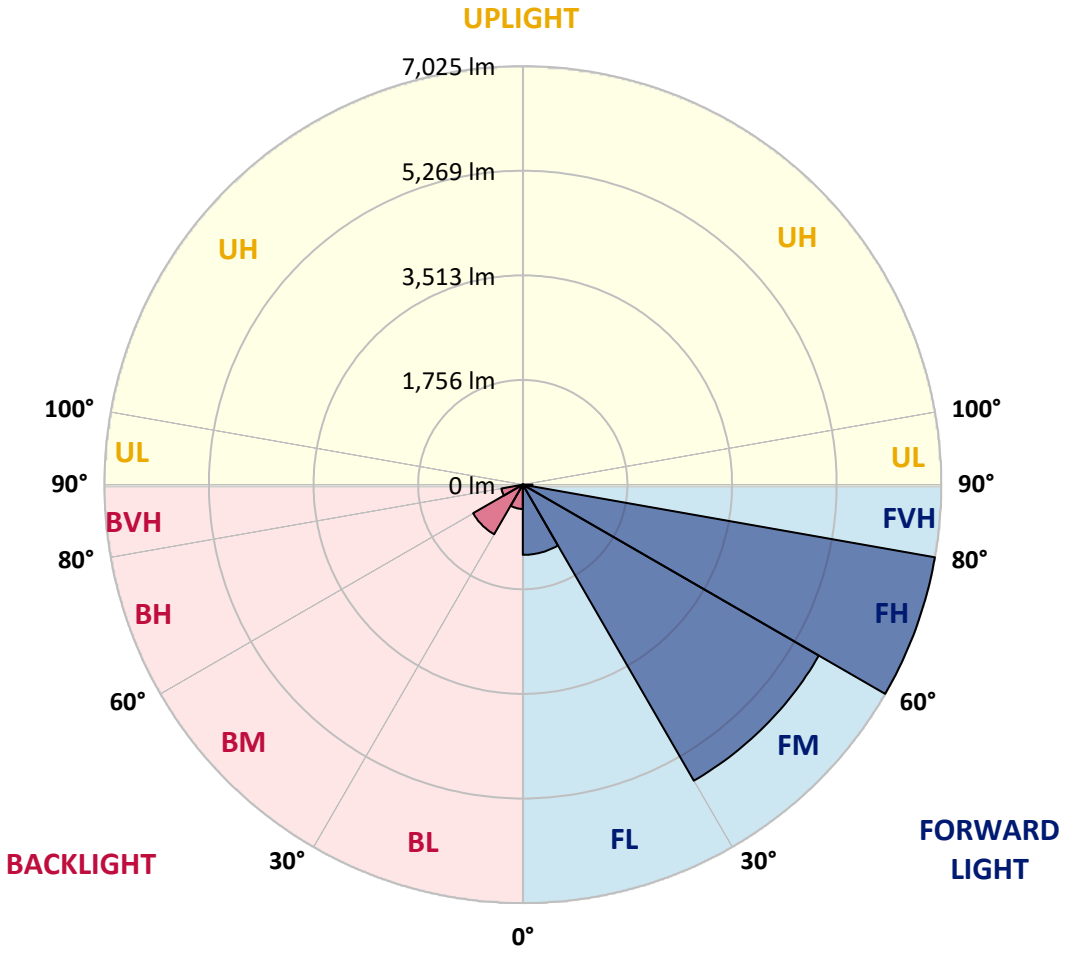
Scaled Data Report

REPORT NUMBER: P1367684
CATALOG NUMBER: GSS-SB4B-735-U-T4W-HSS

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1179.6 | 7.4 | | | |
| FM | (30°-60°) | 5738.2 | 36.2 | | | |
| FH | (60°-80°) | 7025.1 | 44.3 | | | G3/7500 |
| FVH | (80°-90°) | 161.4 | 1.0 | | | G2/225 |
| BL | (0°-30°) | 407.8 | 2.6 | B1/500 | | |
| BM | (30°-60°) | 962.3 | 6.1 | B1/1000 | | |
| BH | (60°-80°) | 365.3 | 2.3 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 15.5 | 0.1 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B1-U0-G3**
Type IV Short



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REPORT NUMBER: P1367684
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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 44° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1959.9 | 1959.9 | 1959.9 | 1959.9 | 1959.9 | 1959.9 | *1959.9* | 1959.9 | 1959.9 | 1959.9 | 1959.9 |
| 2.5° | 2189.0 | 2189.0 | 2168.6 | 2158.4 | 2143.1 | 2112.6 | *2112.6* | 2092.2 | 2051.5 | 2021.0 | 1985.3 |
| 5° | 2412.9 | 2402.8 | 2372.2 | 2351.9 | 2311.1 | 2265.3 | *2265.3* | 2209.3 | 2148.2 | 2102.4 | 2026.1 |
| 7.5° | 2596.2 | 2591.1 | 2570.8 | 2535.1 | 2479.1 | 2423.1 | *2412.9* | 2346.8 | 2260.2 | 2178.8 | 2087.1 |
| 10° | 2774.4 | 2774.4 | 2728.6 | 2687.8 | 2626.7 | 2555.5 | *2555.5* | 2468.9 | 2367.1 | 2270.4 | 2153.3 |
| 12.5° | 2927.1 | 2906.7 | 2871.1 | 2804.9 | 2743.8 | 2672.6 | *2667.5* | 2580.9 | 2474.0 | 2372.2 | 2234.8 |
| 15° | 3044.2 | 3034.0 | 2988.2 | 2916.9 | 2845.6 | 2774.4 | *2774.4* | 2682.7 | 2580.9 | 2463.8 | 2316.2 |
| 17.5° | 3125.6 | 3120.5 | 3069.6 | 2988.2 | 2911.8 | 2850.7 | *2855.8* | 2774.4 | 2682.7 | 2560.6 | 2407.9 |
| 20° | 3146.0 | 3130.7 | 3090.0 | 3013.6 | 2952.5 | 2896.6 | *2901.6* | 2840.6 | 2759.1 | 2662.4 | 2494.4 |
| 22.5° | 3115.4 | 3110.4 | 3064.5 | 3003.5 | 2967.8 | 2927.1 | *2932.2* | 2896.6 | 2845.6 | 2743.8 | 2596.2 |
| 25° | 3079.8 | 3069.6 | 3039.1 | 2988.2 | 2967.8 | 2947.5 | *2957.6* | 2942.4 | 2922.0 | 2840.6 | 2698.0 |
| 27.5° | 3069.6 | 3059.4 | 3023.8 | 2978.0 | 2978.0 | 2978.0 | *2988.2* | 3008.5 | 3003.5 | 2937.3 | 2799.8 |
| 30° | 3084.9 | 3090.0 | 3054.4 | 3008.5 | 2998.4 | 3028.9 | *3049.3* | 3095.1 | 3095.1 | 3023.8 | 2911.8 |
| 32.5° | 3130.7 | 3125.6 | 3095.1 | 3034.0 | 3028.9 | 3079.8 | *3100.2* | 3166.4 | 3151.1 | 3095.1 | 3008.5 |
| 35° | 3222.3 | 3222.3 | 3176.5 | 3084.9 | 3064.5 | 3130.7 | *3151.1* | 3232.5 | 3232.5 | 3181.6 | 3105.3 |
| 37.5° | 3390.3 | 3410.7 | 3354.7 | 3207.1 | 3140.9 | 3176.5 | *3207.1* | 3303.8 | 3339.4 | 3278.3 | 3222.3 |
| 40° | 3690.7 | 3650.0 | 3594.0 | 3390.3 | 3268.2 | 3298.7 | *3314.0* | 3420.9 | 3471.8 | 3395.4 | 3359.8 |
| 42.5° | 4423.7 | 4377.9 | 4133.6 | 3670.3 | 3476.9 | 3482.0 | *3497.2* | 3599.1 | 3695.8 | 3609.2 | 3578.7 |
| 45° | 5508.0 | 5467.3 | 5055.0 | 4265.9 | 3787.4 | 3762.0 | *3782.3* | 3868.9 | 4001.2 | 3940.1 | 3909.6 |
| 47.5° | 6337.8 | 6286.9 | 5976.4 | 5141.5 | 4286.3 | 4133.6 | *4148.8* | 4215.0 | 4439.0 | 4388.1 | 4383.0 |
| 50° | 6740.0 | 6709.4 | 6526.1 | 6083.3 | 5126.2 | 4617.2 | *4612.1* | 4673.2 | 4978.6 | 4973.5 | 4988.8 |
| 52.5° | 7142.1 | 7142.1 | 6999.6 | 6790.9 | 6134.2 | 5284.0 | *5253.5* | 5197.5 | 5614.9 | 5645.5 | 5808.4 |
| 55° | 7579.9 | 7590.1 | 7585.0 | 7529.0 | 7131.9 | 6154.5 | *6057.8* | 5859.3 | 6353.1 | 6444.7 | 6643.2 |
| 57.5° | 8022.8 | 8043.1 | 8083.9 | 8302.8 | 8190.8 | 7070.8 | *6948.7* | 6582.1 | 7218.5 | 7198.1 | 7325.4 |
| 60° | 8368.9 | 8389.3 | 8557.3 | 8964.5 | 9056.2 | 7997.3 | *7829.3* | 7411.9 | 8078.8 | 7961.7 | 7880.2 |
| 62.5° | 8160.2 | 8211.1 | 8806.7 | 9514.3 | 9814.7 | 8862.7 | *8755.8* | 8348.6 | 8928.9 | 8557.3 | 8094.1 |
| 65° | 6210.5 | 6465.1 | 7783.5 | 9621.2 | 10501.9 | 9845.2 | *9753.6* | 9346.3 | 9509.2 | 8648.9 | 7926.1 |
| 67.5° | 3838.3 | 4189.6 | 5620.0 | 8964.5 | 10853.2 | 10914.2 | *10812.4* | 10084.5 | 9555.1 | 8725.3 | 7732.6 |
| 70° | *2199.1* | *2377.3* | *3609.2* | *8343.5* | *10603.7* | *11784.7* | *11805.1* | *10277.9* | *9931.8* | *8832.2* | *7116.7* |
| 72.5° | 1450.8 | 1501.7 | 1980.2 | 6979.2 | 10277.9 | 10685.2 | *10802.3* | 10990.6 | 10186.3 | 8343.5 | 5869.5 |
| 75° | 661.8 | 687.2 | 997.8 | 4464.5 | 7819.2 | 9183.4 | *9071.4* | 9152.9 | 9672.1 | 7289.7 | 4306.6 |
| 77.5° | 208.7 | 239.3 | 402.2 | 1700.3 | 4159.0 | 6790.9 | *6709.4* | 4719.0 | 7167.6 | 3991.0 | 1349.0 |
| 80° | 101.8 | 117.1 | 239.3 | 514.2 | 1537.4 | 3848.5 | *3945.2* | 1608.6 | 2270.4 | 901.0 | 274.9 |
| 82.5° | 45.8 | 50.9 | 137.4 | 244.3 | 600.7 | 1130.1 | *1201.4* | 524.3 | 590.5 | 280.0 | 101.8 |
| 85° | 20.4 | 25.5 | 56.0 | 96.7 | 168.0 | 183.3 | *198.5* | 112.0 | 218.9 | 157.8 | 50.9 |
| 87.5° | 0.0 | 5.1 | 5.1 | 15.3 | 15.3 | 20.4 | *20.4* | 25.5 | 30.5 | 35.6 | 30.5 |
| 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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Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P1367684
CATALOG NUMBER: GSS-SB4B-735-U-T4W-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1959.9 | 1959.9 | 1959.9 | 1959.9 | 1959.9 | 1959.9 | 1959.9 | 1959.9 | 1959.9 | 1959.9 | 1959.9 |
| 2.5° | 1965.0 | 1939.5 | 1903.9 | 1853.0 | 1817.3 | 1761.3 | 1720.6 | 1690.1 | 1654.4 | 1664.6 | 1669.7 |
| 5° | 1980.2 | 1939.5 | 1842.8 | 1720.6 | 1613.7 | 1506.8 | 1430.5 | 1359.2 | 1313.4 | 1308.3 | 1287.9 |
| 7.5° | 2021.0 | 1949.7 | 1786.8 | 1588.3 | 1399.9 | 1257.4 | 1130.1 | 1033.4 | 972.3 | 951.9 | 941.8 |
| 10° | 2077.0 | 1975.2 | 1720.6 | 1440.6 | 1191.2 | 997.8 | 850.1 | 773.8 | 743.2 | 738.1 | 738.1 |
| 12.5° | 2138.1 | 2010.8 | 1654.4 | 1293.0 | 987.6 | 778.9 | 712.7 | 702.5 | 702.5 | 707.6 | 707.6 |
| 15° | 2209.3 | 2036.2 | 1578.1 | 1119.9 | 789.0 | 687.2 | 682.1 | 682.1 | 682.1 | 692.3 | 687.2 |
| 17.5° | 2280.6 | 2071.9 | 1486.5 | 946.9 | 682.1 | 661.8 | 661.8 | 661.8 | 661.8 | 672.0 | 666.9 |
| 20° | 2356.9 | 2097.3 | 1389.7 | 789.0 | 651.6 | 646.5 | 646.5 | 641.4 | 641.4 | 651.6 | 651.6 |
| 22.5° | 2443.5 | 2117.7 | 1282.8 | 682.1 | 636.3 | 626.1 | 626.1 | 626.1 | 621.1 | 631.2 | 631.2 |
| 25° | 2530.0 | 2148.2 | 1160.7 | 626.1 | 616.0 | 610.9 | 605.8 | 605.8 | 600.7 | 610.9 | 605.8 |
| 27.5° | 2626.7 | 2183.9 | 1043.6 | 605.8 | 600.7 | 595.6 | 590.5 | 585.4 | 580.3 | 590.5 | 585.4 |
| 30° | 2738.7 | 2219.5 | 931.6 | 595.6 | 585.4 | 580.3 | 570.1 | 565.1 | 554.9 | 565.1 | 565.1 |
| 32.5° | 2840.6 | 2255.1 | 845.0 | 590.5 | 575.2 | 554.9 | 539.6 | 529.4 | 524.3 | 534.5 | 539.6 |
| 35° | 2947.5 | 2311.1 | 799.2 | 600.7 | 565.1 | 534.5 | 509.1 | 493.8 | 488.7 | 498.9 | 504.0 |
| 37.5° | 3074.7 | 2377.3 | 789.0 | 621.1 | 554.9 | 509.1 | 473.4 | 448.0 | 442.9 | 453.1 | 458.2 |
| 40° | 3252.9 | 2468.9 | 809.4 | 631.2 | 539.6 | 478.5 | 427.6 | 402.2 | 386.9 | 386.9 | 392.0 |
| 42.5° | 3482.0 | 2662.4 | 824.7 | 641.4 | 514.2 | 442.9 | 386.9 | 351.3 | 325.8 | 325.8 | 330.9 |
| 45° | 3833.2 | 2983.1 | 901.0 | 631.2 | 488.7 | 397.1 | 341.1 | 295.3 | 274.9 | 274.9 | 280.0 |
| 47.5° | 4306.6 | 3431.1 | 1114.8 | 610.9 | 453.1 | 356.3 | 295.3 | 254.5 | 239.3 | 239.3 | 239.3 |
| 50° | 4932.8 | 3991.0 | 1343.9 | 575.2 | 412.3 | 315.6 | 254.5 | 229.1 | 218.9 | 213.8 | 208.7 |
| 52.5° | 5681.1 | 4581.5 | 1506.8 | 539.6 | 376.7 | 280.0 | 229.1 | 208.7 | 198.5 | 193.4 | 193.4 |
| 55° | 6404.0 | 4999.0 | 1562.8 | 504.0 | 341.1 | 249.4 | 213.8 | 198.5 | 188.4 | 183.3 | 183.3 |
| 57.5° | 6841.8 | 5080.4 | 1333.7 | 463.2 | 305.4 | 229.1 | 193.4 | 183.3 | 173.1 | 168.0 | 168.0 |
| 60° | 6943.6 | 4729.2 | 941.8 | 407.2 | 264.7 | 203.6 | 178.2 | 168.0 | 157.8 | 147.6 | 147.6 |
| 62.5° | 6582.1 | 3909.6 | 656.7 | 330.9 | 234.2 | 183.3 | 162.9 | 152.7 | 137.4 | 127.3 | 122.2 |
| 65° | 5854.2 | 2855.8 | 463.2 | 259.6 | 203.6 | 162.9 | 142.5 | 132.4 | 117.1 | 101.8 | 96.7 |
| 67.5° | 5111.0 | 1730.8 | 300.3 | 213.8 | 178.2 | 132.4 | 122.2 | 117.1 | 101.8 | 86.5 | 86.5 |
| 70° | *4230.3* | *885.8* | *208.7* | *173.1* | *147.6* | *106.9* | *101.8* | *101.8* | *91.6* | *76.4* | *76.4* |
| 72.5° | 3263.1 | 325.8 | 142.5 | 137.4 | 112.0 | 81.4 | 91.6 | 86.5 | 76.4 | 66.2 | 66.2 |
| 75° | 2214.4 | 157.8 | 106.9 | 96.7 | 76.4 | 66.2 | 71.3 | 71.3 | 66.2 | 56.0 | 50.9 |
| 77.5° | 702.5 | 101.8 | 81.4 | 76.4 | 61.1 | 56.0 | 61.1 | 61.1 | 50.9 | 45.8 | 40.7 |
| 80° | 178.2 | 71.3 | 66.2 | 56.0 | 45.8 | 45.8 | 50.9 | 40.7 | 40.7 | 35.6 | 35.6 |
| 82.5° | 76.4 | 50.9 | 45.8 | 40.7 | 35.6 | 35.6 | 35.6 | 35.6 | 30.5 | 30.5 | 30.5 |
| 85° | 40.7 | 35.6 | 30.5 | 30.5 | 30.5 | 25.5 | 25.5 | 30.5 | 25.5 | 25.5 | 25.5 |
| 87.5° | 25.5 | 25.5 | 20.4 | 15.3 | 15.3 | 20.4 | 20.4 | 20.4 | 20.4 | 20.4 | 20.4 |
| 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: SP1-2407-184-5

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-735-U-5WQ

Data in this report applies to families of products including GSS-SB1A-735-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

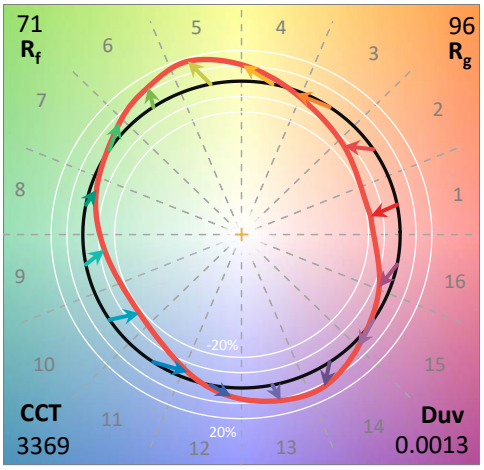
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-5 |
| 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-735-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 3500K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3369 |
| CIE u': | 0.2386 |
| CIE v': | 0.5156 |
| Duv: | 0.0013 |
| CIE x: | 0.4143 |
| CIE y: | 0.3980 |
| CIE z: | 0.1877 |
| Peak Wavelength (nm): | 590 |
| Dominant Wavelength (nm): | 580 |
| Purity: | 43.80166 |
| Rf: | 71.4 |
| Rg: | 96 |

| | |
|---|---|
| CRI (Ra): | 70.1 |
| R1: | 66.6 |
| R2: | 77.6 |
| R3: | 88.5 |
| R4: | 69.5 |
| R5: | 66.4 |
| R6: | 69.6 |
| R7: | 77.5 |
| R8: | 44.9 |
| R9: | -40.2 |
| R10: | 49.1 |
| R11: | 66.3 |
| R12: | 45.7 |
| R13: | 68.0 |
| R14: | 93.4 |
| R15: | 57.6 |




## Test Conditions

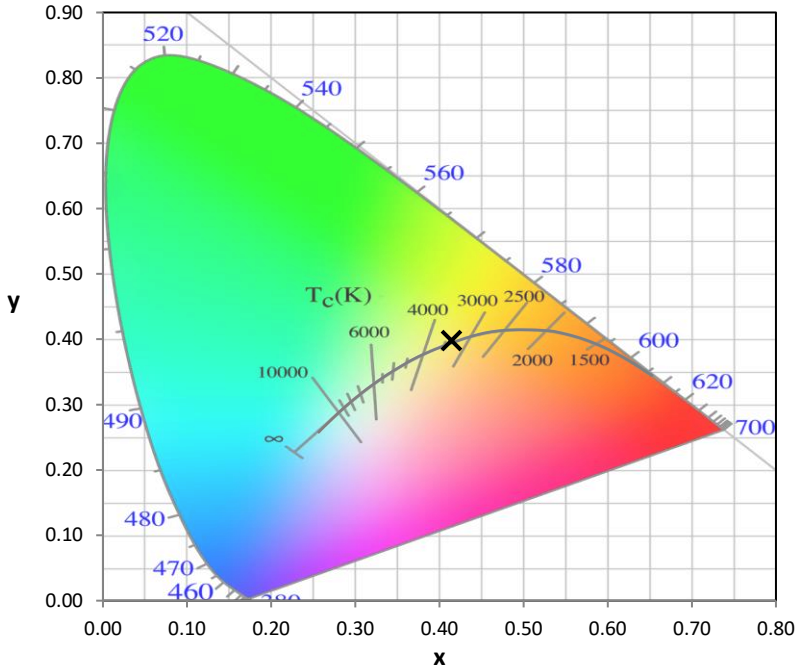
| | |
|---|---|
| Stabilization Time: | 21M |
| Operation Time: | 1H 21M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-5

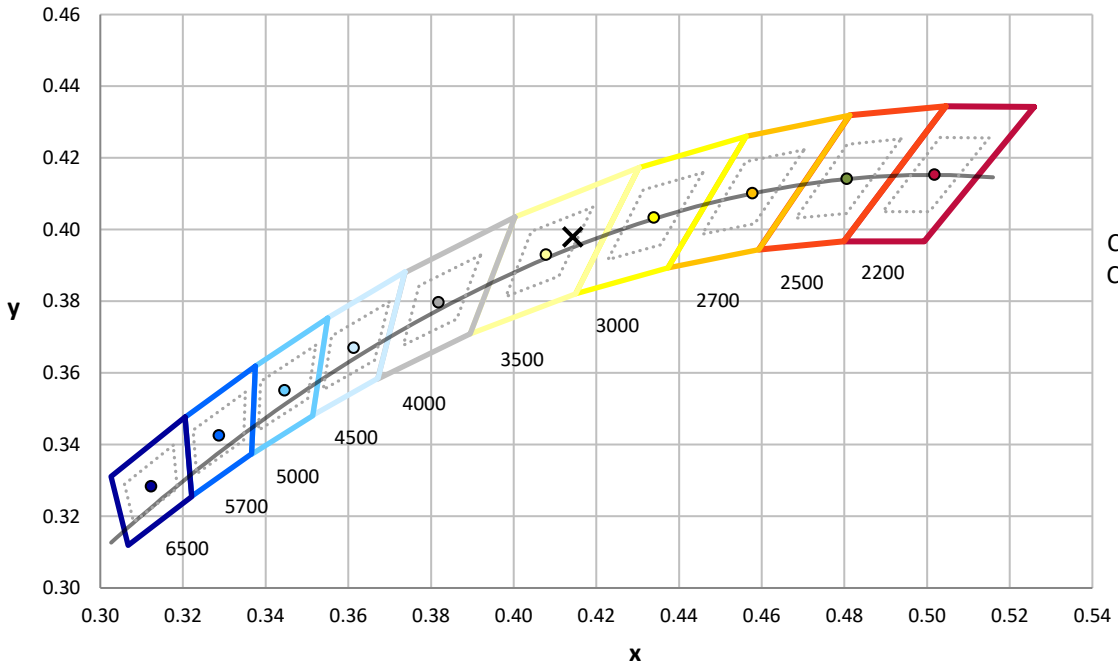
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

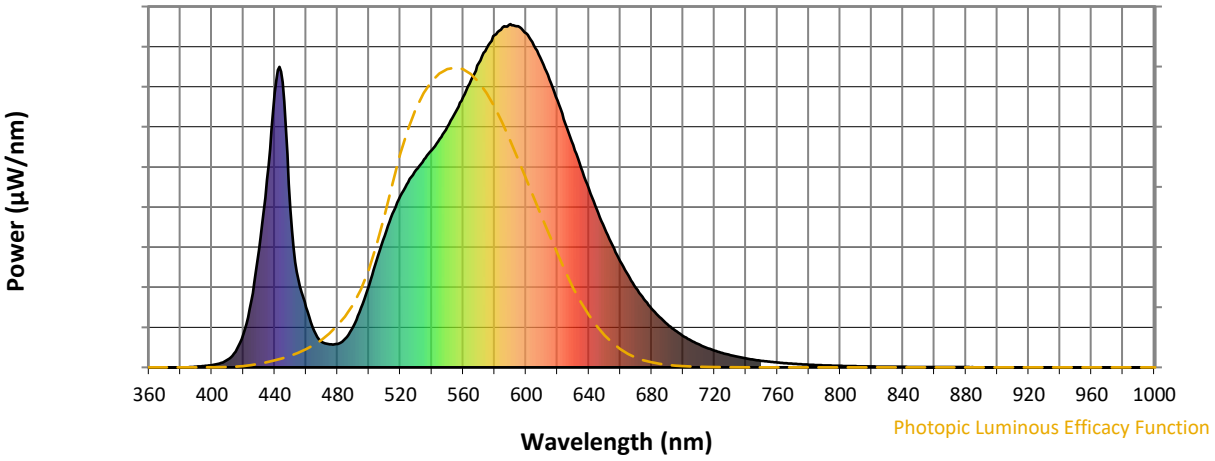



CCT = 3369K
CIE x = 0.4143
CIE y = 0.3980
Duv = 0.0013

Point lies inside the ANSI 3500K 4-step quadrangle

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## Photopic Flux vs. Wavelength

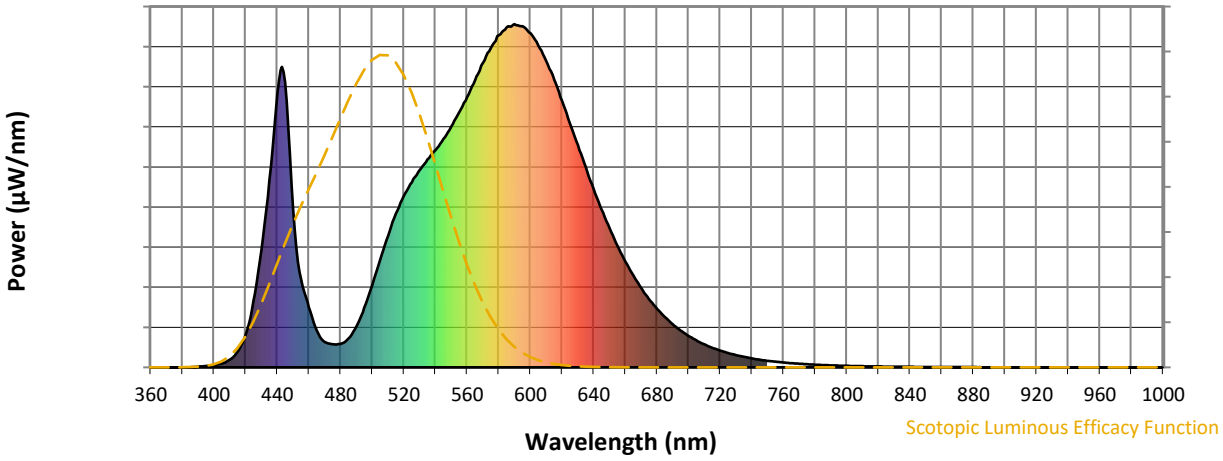



## Photopic Lumens: NR

| 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 | 119 | NR | 620 | 778 | NR | 750 | 19 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 173 | NR | 625 | 711 | NR | 755 | 16 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 239 | NR | 630 | 648 | NR | 760 | 14 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 313 | NR | 635 | 582 | NR | 765 | 12 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 383 | NR | 640 | 520 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 448 | NR | 645 | 460 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 500 | NR | 650 | 406 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 539 | NR | 655 | 355 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 575 | NR | 660 | 309 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 11 | NR | 535 | 606 | NR | 665 | 269 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 22 | NR | 540 | 633 | NR | 670 | 231 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 45 | NR | 545 | 666 | NR | 675 | 199 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 96 | NR | 550 | 701 | NR | 680 | 171 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 193 | NR | 555 | 743 | NR | 685 | 147 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 341 | NR | 560 | 788 | NR | 690 | 126 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 547 | NR | 565 | 837 | NR | 695 | 107 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 799 | NR | 570 | 887 | NR | 700 | 92 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 831 | NR | 575 | 931 | NR | 705 | 78 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 461 | NR | 580 | 967 | NR | 710 | 67 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 256 | NR | 585 | 990 | NR | 715 | 57 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 176 | NR | 590 | 1000 | NR | 720 | 49 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 107 | NR | 595 | 994 | NR | 725 | 42 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 74 | NR | 600 | 973 | NR | 730 | 36 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 67 | NR | 605 | 938 | NR | 735 | 31 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 68 | NR | 610 | 892 | NR | 740 | 26 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 84 | NR | 615 | 838 | NR | 745 | 22 | NR | 875 | 1 | NR | | | |

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## Scotopic Flux vs. Wavelength

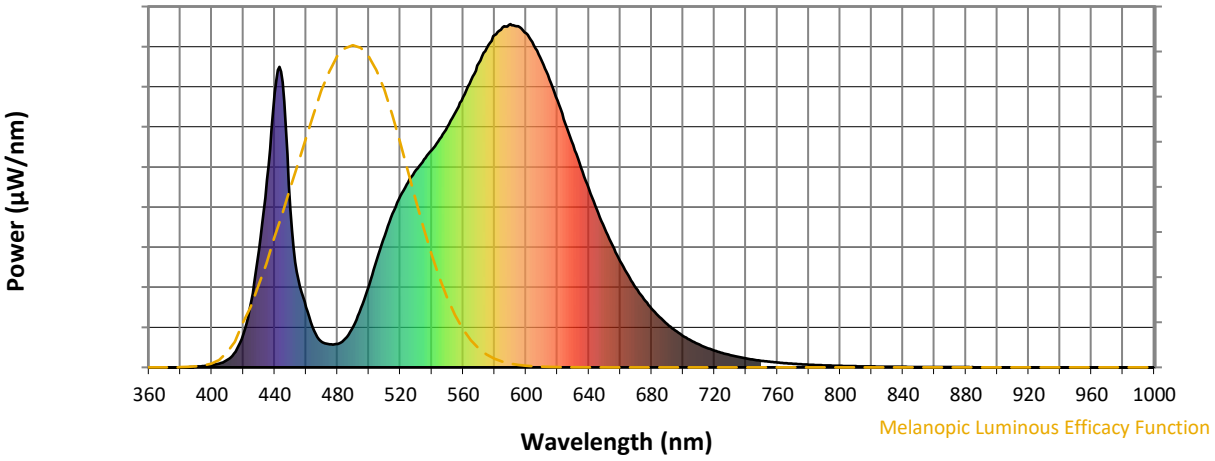



**Scotopic Lumens: NR** **S/P: 1.29**

| 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 | 119 | NR | 620 | 778 | NR | 750 | 19 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 173 | NR | 625 | 711 | NR | 755 | 16 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 239 | NR | 630 | 648 | NR | 760 | 14 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 313 | NR | 635 | 582 | NR | 765 | 12 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 383 | NR | 640 | 520 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 448 | NR | 645 | 460 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 500 | NR | 650 | 406 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 539 | NR | 655 | 355 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 575 | NR | 660 | 309 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 11 | NR | 535 | 606 | NR | 665 | 269 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 22 | NR | 540 | 633 | NR | 670 | 231 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 45 | NR | 545 | 666 | NR | 675 | 199 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 96 | NR | 550 | 701 | NR | 680 | 171 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 193 | NR | 555 | 743 | NR | 685 | 147 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 341 | NR | 560 | 788 | NR | 690 | 126 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 547 | NR | 565 | 837 | NR | 695 | 107 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 799 | NR | 570 | 887 | NR | 700 | 92 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 831 | NR | 575 | 931 | NR | 705 | 78 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 461 | NR | 580 | 967 | NR | 710 | 67 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 256 | NR | 585 | 990 | NR | 715 | 57 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 176 | NR | 590 | 1000 | NR | 720 | 49 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 107 | NR | 595 | 994 | NR | 725 | 42 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 74 | NR | 600 | 973 | NR | 730 | 36 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 67 | NR | 605 | 938 | NR | 735 | 31 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 68 | NR | 610 | 892 | NR | 740 | 26 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 84 | NR | 615 | 838 | NR | 745 | 22 | NR | 875 | 1 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.36**

| 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 | 119 | NR | 620 | 778 | NR | 750 | 19 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 173 | NR | 625 | 711 | NR | 755 | 16 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 239 | NR | 630 | 648 | NR | 760 | 14 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 313 | NR | 635 | 582 | NR | 765 | 12 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 383 | NR | 640 | 520 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 448 | NR | 645 | 460 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 500 | NR | 650 | 406 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 539 | NR | 655 | 355 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 575 | NR | 660 | 309 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 11 | NR | 535 | 606 | NR | 665 | 269 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 22 | NR | 540 | 633 | NR | 670 | 231 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 45 | NR | 545 | 666 | NR | 675 | 199 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 96 | NR | 550 | 701 | NR | 680 | 171 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 193 | NR | 555 | 743 | NR | 685 | 147 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 341 | NR | 560 | 788 | NR | 690 | 126 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 547 | NR | 565 | 837 | NR | 695 | 107 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 799 | NR | 570 | 887 | NR | 700 | 92 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 831 | NR | 575 | 931 | NR | 705 | 78 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 461 | NR | 580 | 967 | NR | 710 | 67 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 256 | NR | 585 | 990 | NR | 715 | 57 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 176 | NR | 590 | 1000 | NR | 720 | 49 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 107 | NR | 595 | 994 | NR | 725 | 42 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 74 | NR | 600 | 973 | NR | 730 | 36 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 67 | NR | 605 | 938 | NR | 735 | 31 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 68 | NR | 610 | 892 | NR | 740 | 26 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 84 | NR | 615 | 838 | NR | 745 | 22 | NR | 875 | 1 | NR | | | |

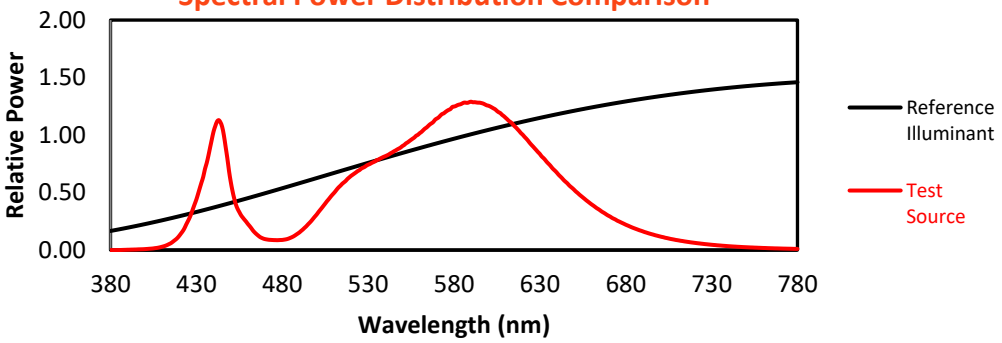
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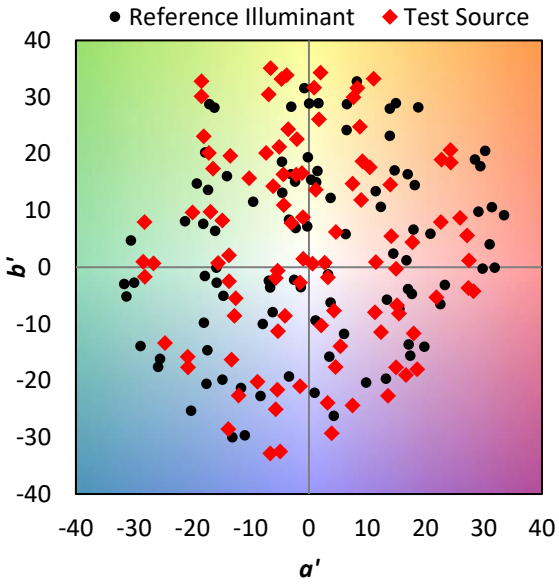
## Summary

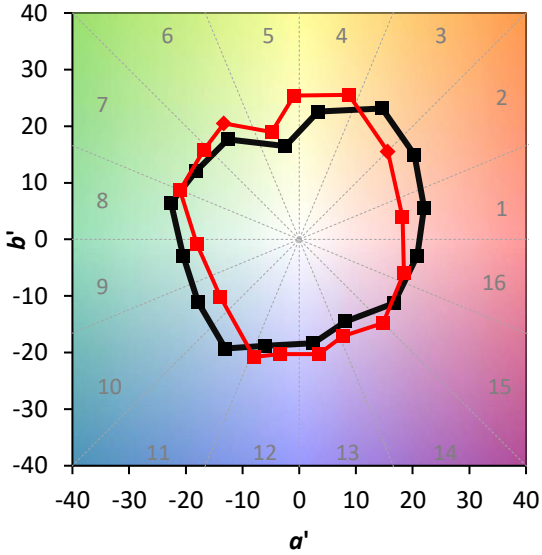
$R_f$ = 71.4
$R_g$ = 96
CIE $R_a$ = 70.1
$R_9$ = -40.2

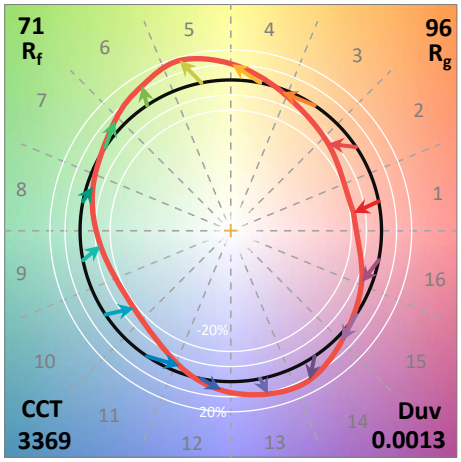
## Spectral Power Distribution Comparison

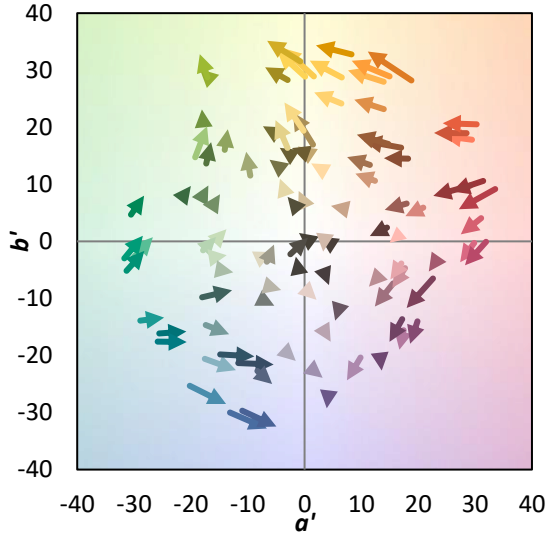



## Color Vector Graphics



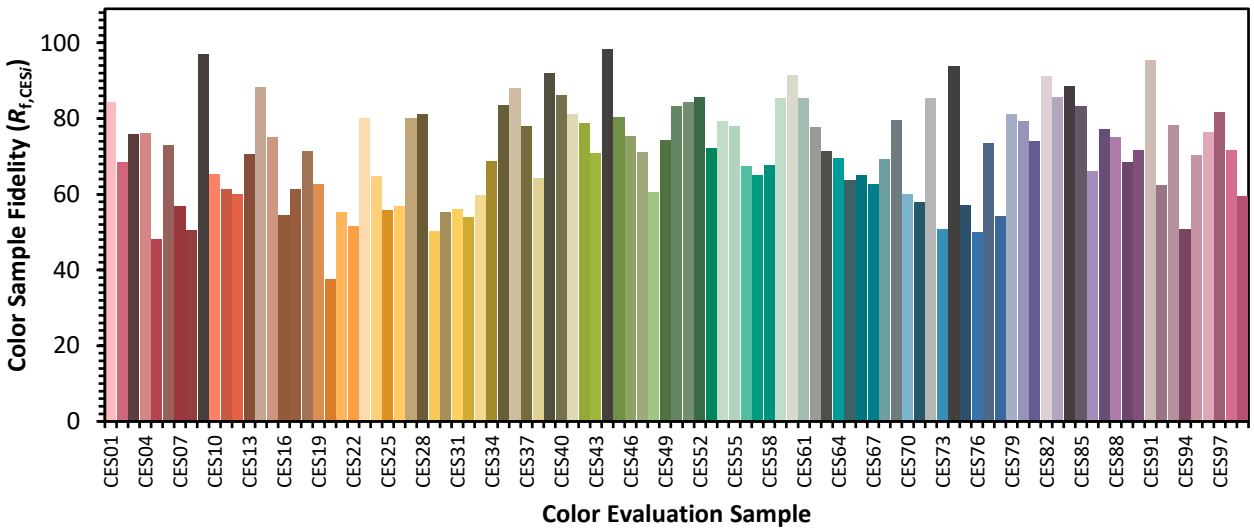



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## Individual Sample Fidelity Index ($R_{f,i}$)

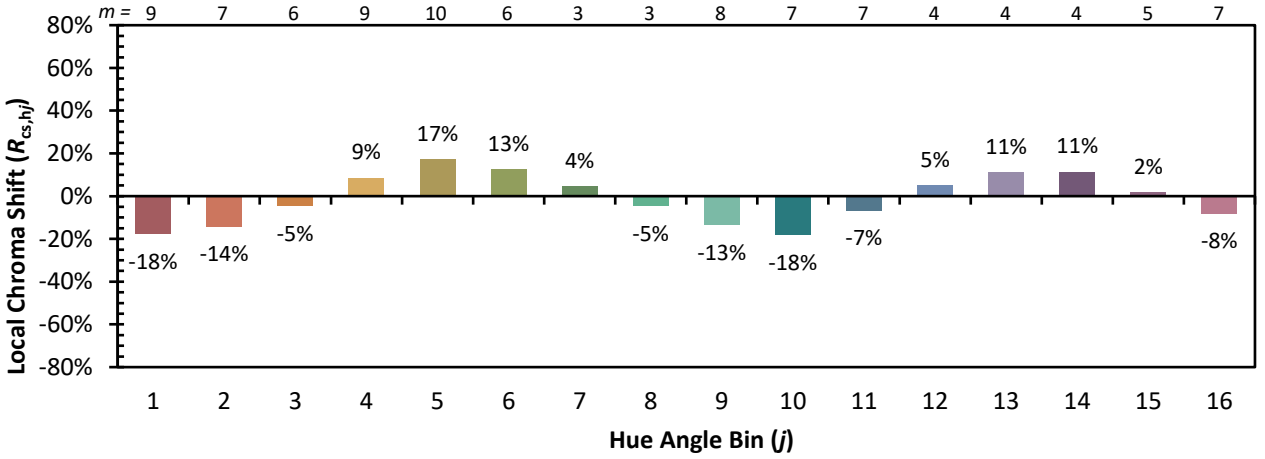
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 57 | CES51 = 84 | CES76 = 50 |
| CES02 = 62 | CES27 = 80 | CES52 = 86 | CES77 = 74 |
| CES03 = 31 | CES28 = 81 | CES53 = 72 | CES78 = 54 |
| CES04 = 70 | CES29 = 50 | CES54 = 79 | CES79 = 81 |
| CES05 = 48 | CES30 = 55 | CES55 = 78 | CES80 = 79 |
| CES06 = 51 | CES31 = 56 | CES56 = 67 | CES81 = 74 |
| CES07 = 40 | CES32 = 54 | CES57 = 65 | CES82 = 91 |
| CES08 = 39 | CES33 = 60 | CES58 = 68 | CES83 = 86 |
| CES09 = 29 | CES34 = 69 | CES59 = 85 | CES84 = 89 |
| CES10 = 75 | CES35 = 83 | CES60 = 91 | CES85 = 83 |
| CES11 = 58 | CES36 = 88 | CES61 = 85 | CES86 = 66 |
| CES12 = 64 | CES37 = 78 | CES62 = 78 | CES87 = 77 |
| CES13 = 43 | CES38 = 64 | CES63 = 71 | CES88 = 75 |
| CES14 = 74 | CES39 = 92 | CES64 = 70 | CES89 = 68 |
| CES15 = 71 | CES40 = 86 | CES65 = 64 | CES90 = 72 |
| CES16 = 47 | CES41 = 81 | CES66 = 65 | CES91 = 95 |
| CES17 = 50 | CES42 = 79 | CES67 = 63 | CES92 = 62 |
| CES18 = 56 | CES43 = 71 | CES68 = 69 | CES93 = 78 |
| CES19 = 72 | CES44 = 98 | CES69 = 80 | CES94 = 51 |
| CES20 = 65 | CES45 = 80 | CES70 = 60 | CES95 = 70 |
| CES21 = 87 | CES46 = 75 | CES71 = 58 | CES96 = 76 |
| CES22 = 79 | CES47 = 71 | CES72 = 85 | CES97 = 82 |
| CES23 = 92 | CES48 = 61 | CES73 = 51 | CES98 = 72 |
| CES24 = 91 | CES49 = 74 | CES74 = 94 | CES99 = 60 |
| CES25 = 72 | CES50 = 83 | CES75 = 57 | |

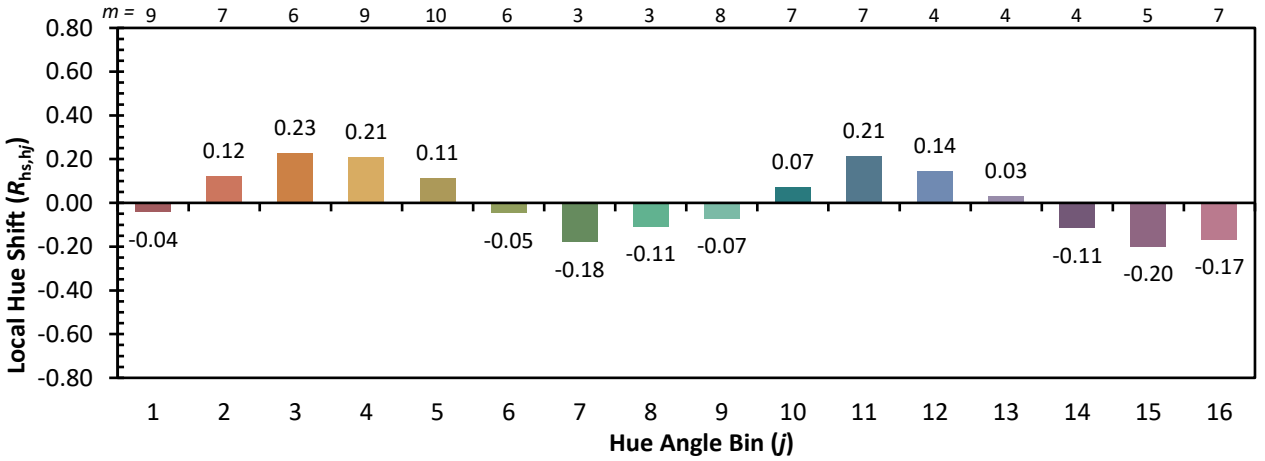


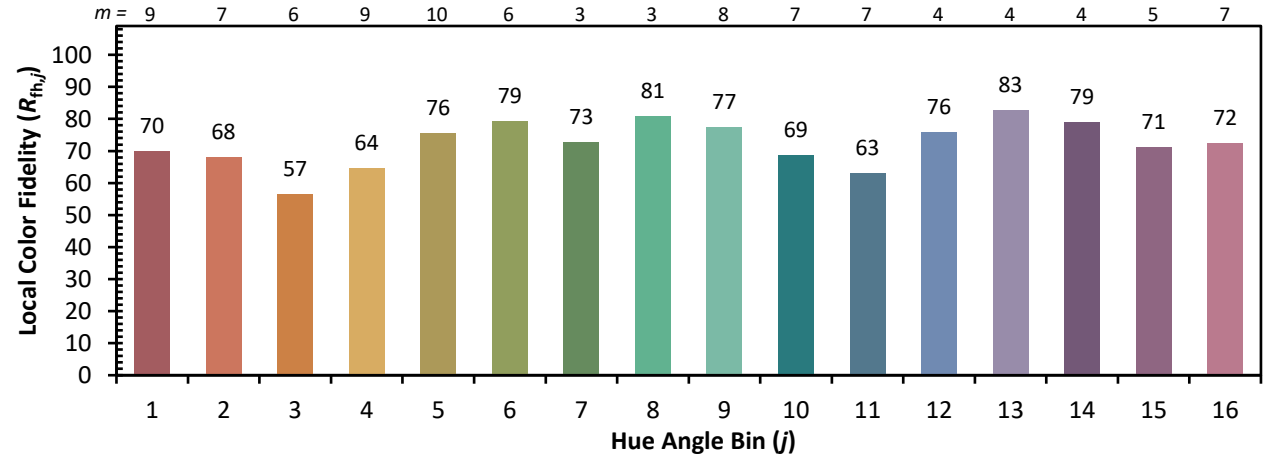
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## Color Rendition by Hue-Angle Bin



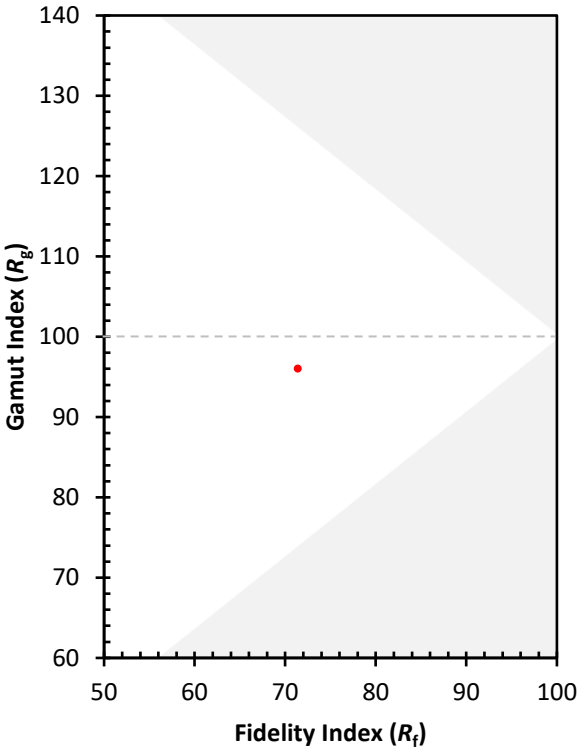



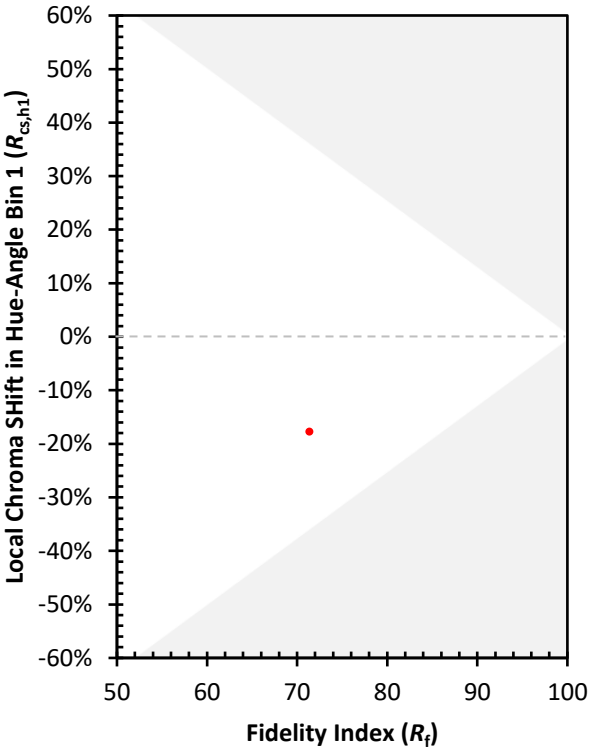



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## Measure Comparisons




(END OF REPORT)