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: P1367204

Luminaire Tested: **GSS-SB4B-740-U-T4W**

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: | P1367204 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 02/18/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB4B-740-U-T4W |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 4SQUARE 148W 70CRI 4000K FIXTURE w/ TYPE IV WIDE DISTRIBUTION OPTIC |
| Light Source: | (104) 4000K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 22202.2 lumens |
| Efficiency: | N/A |
| Efficacy: | 150.0 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B3 - U0 - G4 |

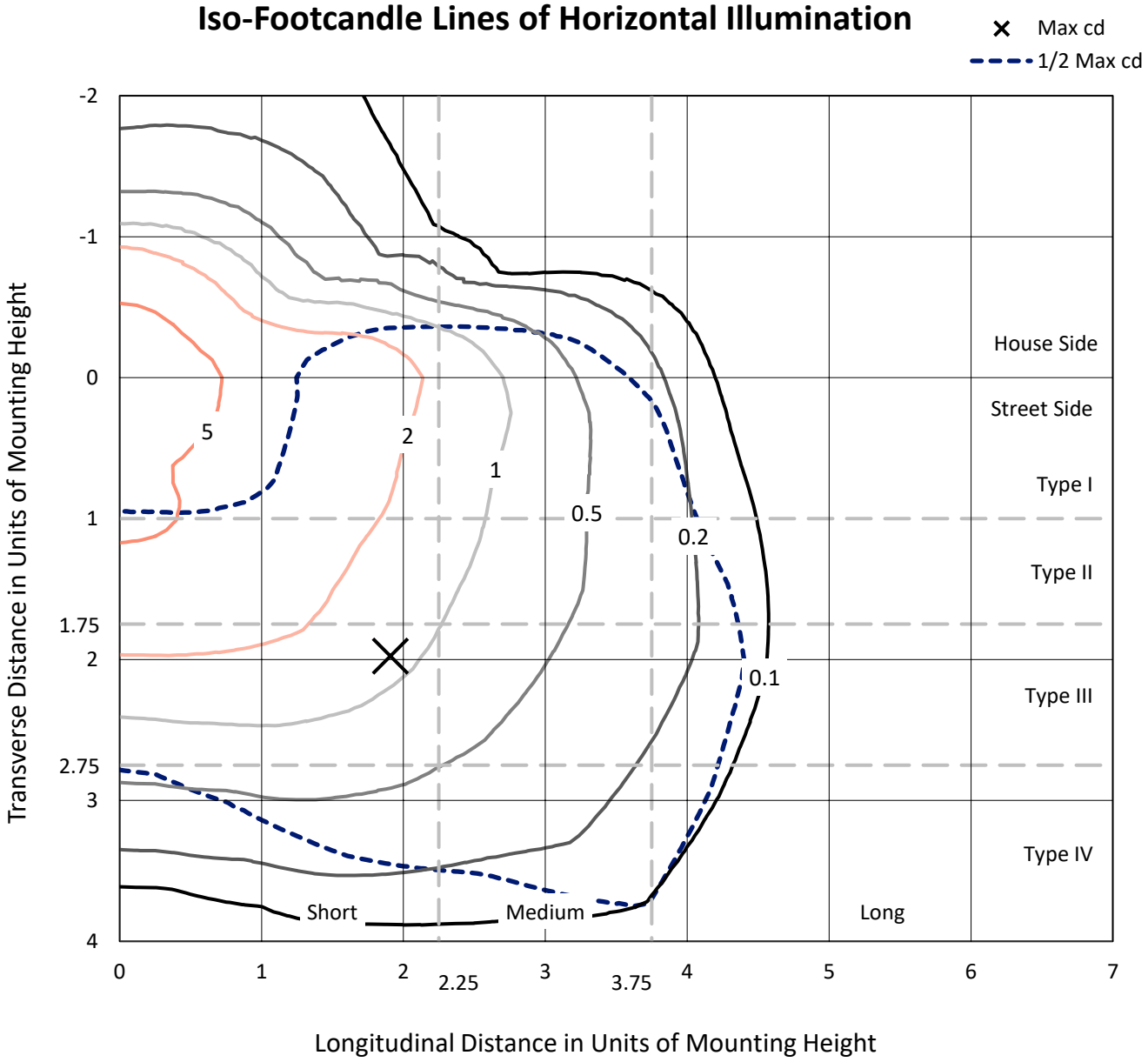
| | |
|---|---|
| Input Watts (W): | 148 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 13.6% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature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

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Scaled Data Report

REPORT NUMBER: P1367204
CATALOG NUMBER: GSS-SB4B-740-U-T4W

## Iso-Footcandle Lines of Horizontal Illumination



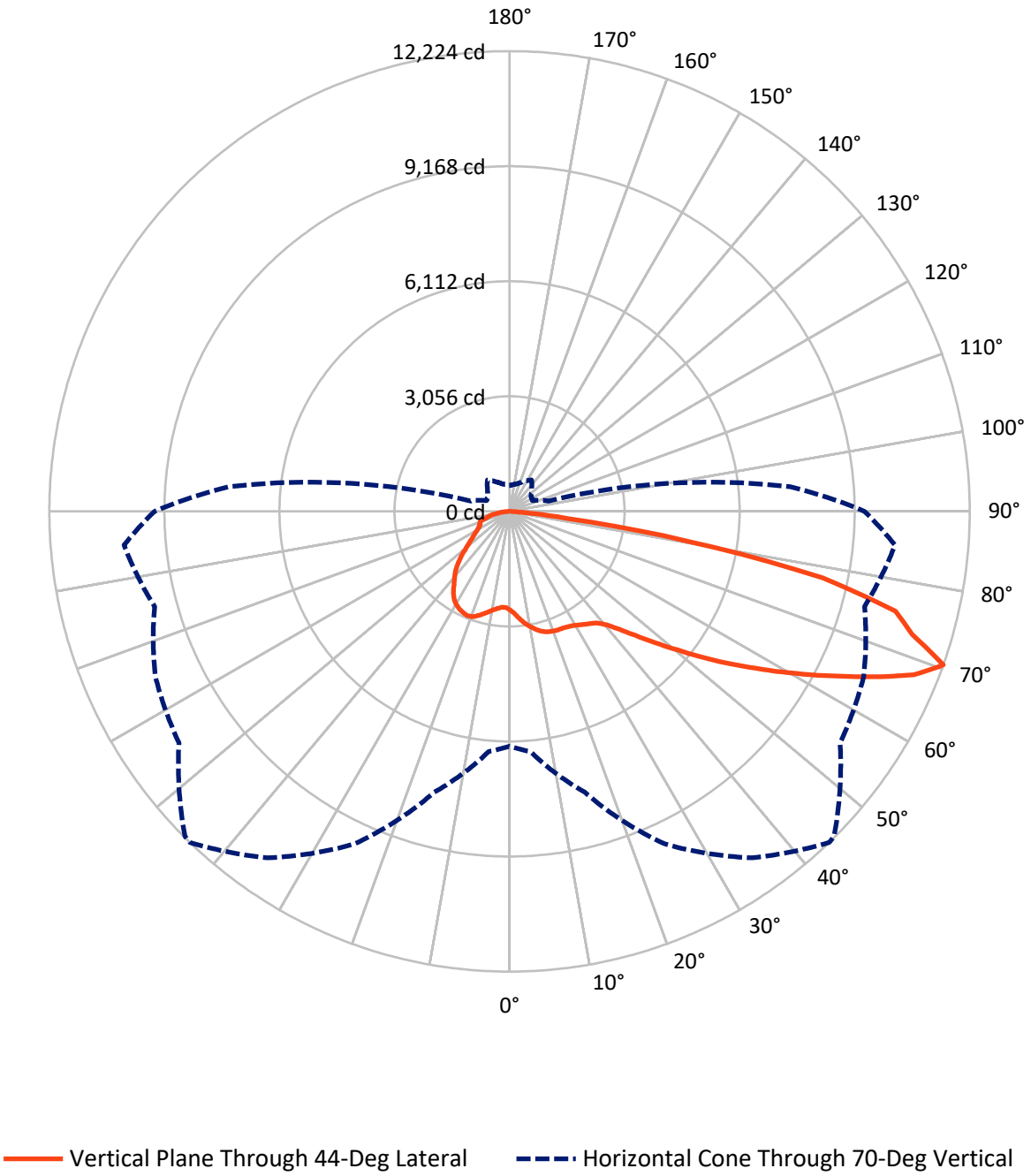

Based on 20 foot mounting height. Maximum calculated value = 8.1 fc
Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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Scaled Data Report

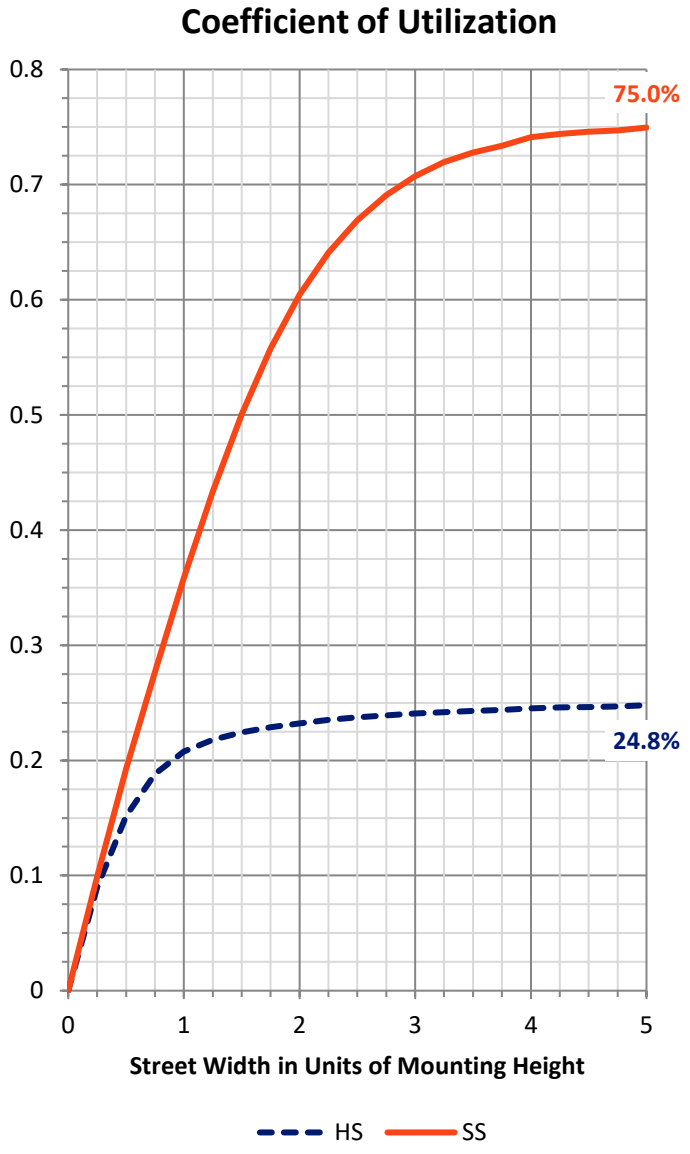
REPORT NUMBER: P1367204
CATALOG NUMBER: GSS-SB4B-740-U-T4W

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 5563.2 | 0.0 | 5563.2 |
| | % Fixture | 25.1 | 0.0 | 25.1 |
| **Street Side** | Lumens | 16639.0 | 0.0 | 16639.0 |
| | % Fixture | 74.9 | 0.0 | 74.9 |
| **Total** | Lumens | 22202.2 | 0.0 | 22202.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 264.8 | 1.2 |
| 10°-20° | 869.2 | 3.9 |
| 20°-30° | 1495.6 | 6.7 |
| 30°-40° | 2108.4 | 9.5 |
| 40°-50° | 2917.5 | 13.1 |
| 50°-60° | 4332.8 | 19.5 |
| 60°-70° | 5790.7 | 26.1 |
| 70°-80° | 4084.9 | 18.4 |
| 80°-90° | 338.3 | 1.5 |
| 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° | 22202.2 | 100.0 |
| 0°-180° | 22202.2 | 100.0 |



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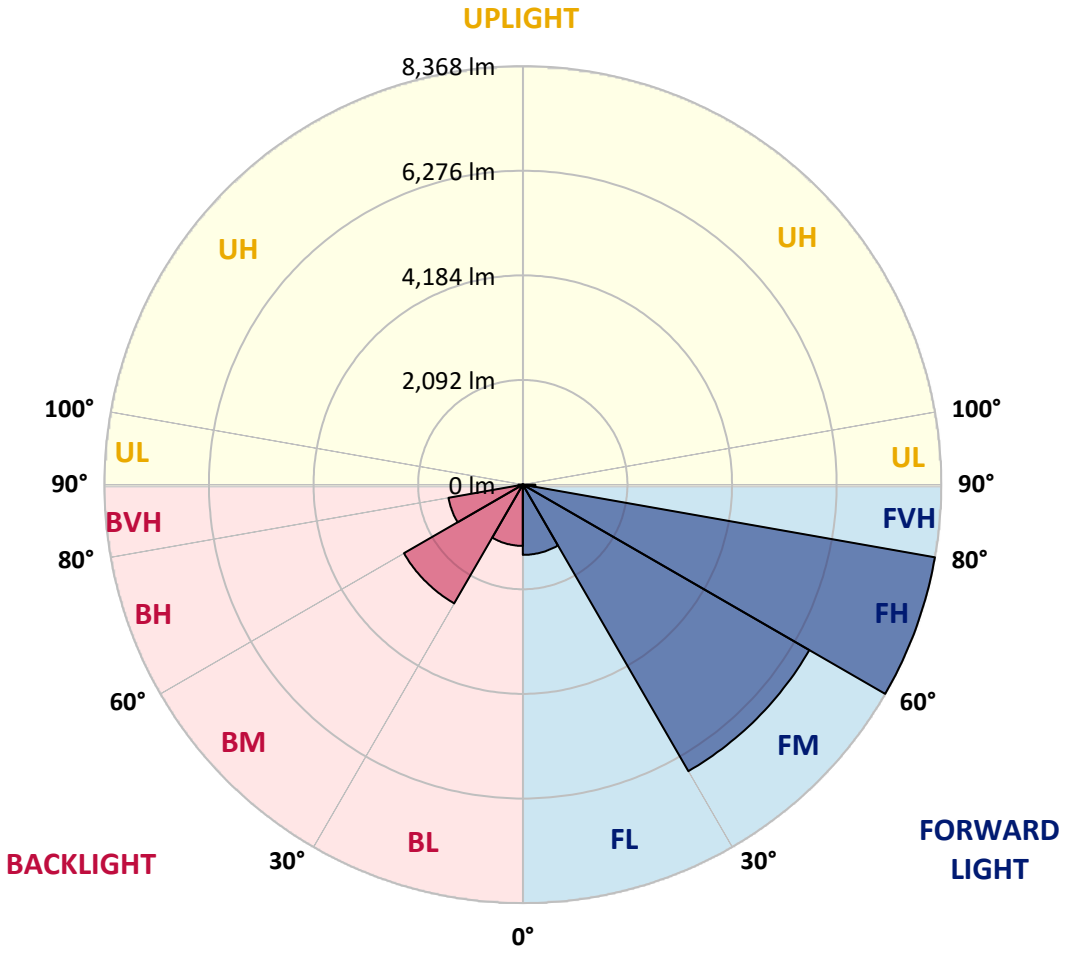
Scaled Data Report

REPORT NUMBER: P1367204
CATALOG NUMBER: GSS-SB4B-740-U-T4W

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1405.1 | 6.3 | | | |
| FM | (30°-60°) | 6615.7 | 29.8 | | | |
| FH | (60°-80°) | 8367.8 | 37.7 | | | G4/12000 |
| FVH | (80°-90°) | 250.4 | 1.1 | | | G3/500 |
| BL | (0°-30°) | 1224.5 | 5.5 | B3/2500 | | |
| BM | (30°-60°) | 2743.0 | 12.4 | B3/5000 | | |
| BH | (60°-80°) | 1507.7 | 6.8 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 87.9 | 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-G4**
Type IV Short



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 44° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2623.6 | 2623.6 | 2623.6 | 2623.6 | 2623.6 | *2623.6* | 2623.6 | 2623.6 | 2623.6 | 2623.6 | 2623.6 |
| 2.5° | 2817.5 | 2801.4 | 2785.2 | 2779.8 | 2758.3 | *2725.9* | 2725.9 | 2715.2 | 2688.2 | 2666.7 | 2650.5 |
| 5° | 3000.7 | 3006.1 | 2979.1 | 2957.6 | 2925.3 | *2871.4* | 2876.8 | 2828.3 | 2774.4 | 2715.2 | 2672.1 |
| 7.5° | 3178.5 | 3178.5 | 3146.2 | 3119.2 | 3076.1 | *3011.5* | 3011.5 | 2936.1 | 2871.4 | 2790.6 | 2731.3 |
| 10° | 3340.1 | 3329.3 | 3286.2 | 3253.9 | 3194.6 | *3124.6* | 3119.2 | 3043.8 | 2963.0 | 2871.4 | 2790.6 |
| 12.5° | 3464.0 | 3464.0 | 3420.9 | 3367.0 | 3302.4 | *3227.0* | 3221.6 | 3140.8 | 3060.0 | 2963.0 | 2866.0 |
| 15° | 3582.5 | 3555.6 | 3517.9 | 3447.8 | 3372.4 | *3313.2* | 3302.4 | 3232.4 | 3151.5 | 3065.3 | 2957.6 |
| 17.5° | 3625.6 | 3614.8 | 3566.4 | 3496.3 | 3426.3 | *3361.6* | 3361.6 | 3297.0 | 3237.7 | 3151.5 | 3043.8 |
| 20° | 3614.8 | 3598.7 | 3555.6 | 3496.3 | 3442.5 | *3388.6* | 3388.6 | 3340.1 | 3307.8 | 3227.0 | 3130.0 |
| 22.5° | 3561.0 | 3544.8 | 3517.9 | 3464.0 | 3437.1 | *3404.7* | 3404.7 | 3377.8 | 3367.0 | 3318.5 | 3227.0 |
| 25° | 3544.8 | 3534.0 | 3496.3 | 3447.8 | 3420.9 | *3415.5* | 3420.9 | 3426.3 | 3437.1 | 3399.4 | 3323.9 |
| 27.5° | 3555.6 | 3555.6 | 3523.3 | 3474.8 | 3442.5 | *3447.8* | 3453.2 | 3485.6 | 3517.9 | 3496.3 | 3431.7 |
| 30° | 3625.6 | 3609.5 | 3587.9 | 3539.4 | 3501.7 | *3507.1* | 3507.1 | 3571.7 | 3604.1 | 3577.1 | 3528.6 |
| 32.5° | 3744.1 | 3728.0 | 3695.7 | 3593.3 | 3555.6 | *3582.5* | 3593.3 | 3647.2 | 3668.7 | 3641.8 | 3620.2 |
| 35° | 4018.9 | 4035.1 | 3927.3 | 3744.1 | 3641.8 | *3663.3* | 3674.1 | 3711.8 | 3738.8 | 3728.0 | 3706.4 |
| 37.5° | 4519.9 | 4525.3 | 4390.6 | 4062.0 | 3824.9 | *3760.3* | 3765.7 | 3819.6 | 3851.9 | 3814.2 | 3798.0 |
| 40° | 5144.8 | 5150.2 | 4961.7 | 4514.5 | 4115.9 | *3954.2* | 3948.9 | 3959.6 | 4008.1 | 3943.5 | 3932.7 |
| 42.5° | 5823.6 | 5748.2 | 5586.6 | 5074.8 | 4546.8 | *4277.5* | 4229.0 | 4196.7 | 4255.9 | 4175.1 | 4121.2 |
| 45° | 6470.1 | 6416.2 | 6195.3 | 5667.4 | 5064.0 | *4703.1* | 4654.6 | 4493.0 | 4589.9 | 4525.3 | 4428.3 |
| 47.5° | 7008.8 | 6965.7 | 6798.7 | 6308.5 | 5651.2 | *5214.9* | 5139.4 | 4886.2 | 5058.6 | 5026.3 | 4907.8 |
| 50° | 7407.5 | 7364.4 | 7251.2 | 6949.6 | 6394.7 | *5785.9* | 5715.9 | 5408.8 | 5586.6 | 5645.8 | 5554.3 |
| 52.5° | 7698.4 | 7687.6 | 7644.5 | 7596.0 | 7148.9 | *6448.5* | 6367.7 | 5985.2 | 6276.1 | 6389.3 | 6362.3 |
| 55° | 8140.1 | 8118.6 | 8134.7 | 8215.6 | 7957.0 | *7154.3* | 7035.7 | 6588.6 | 6987.3 | 7197.4 | 7240.5 |
| 57.5° | 8560.3 | 8560.3 | 8700.4 | 8910.5 | 8878.2 | *7913.9* | 7773.8 | 7294.3 | 7849.2 | 7951.6 | 8156.3 |
| 60° | 8953.6 | 8991.3 | 9185.3 | 9648.6 | 9740.1 | *8738.1* | 8571.1 | 8107.8 | 8668.1 | 8781.2 | 9152.9 |
| 62.5° | 8786.6 | 8878.2 | 9497.7 | 10246.6 | 10548.2 | *9621.6* | 9454.6 | 9002.1 | 9589.3 | 9454.6 | 9788.6 |
| 65° | 7935.4 | 8075.5 | 9034.4 | 10284.3 | 11334.8 | *10591.3* | 10451.3 | 10009.5 | 10095.7 | 9557.0 | 10144.2 |
| 67.5° | 7041.1 | 7245.9 | 8361.0 | 9826.3 | 11539.5 | *11582.6* | 11458.7 | 10629.0 | 10090.3 | 9664.7 | 10505.1 |
| 70° | *6238.4* | *6405.4* | *7719.9* | *9745.5* | *11232.4* | *12223.7* | *12196.7* | *10720.6* | *10381.2* | *9761.7* | *10278.9* |
| 72.5° | 4374.4 | 4606.1 | 5952.9 | 8996.7 | 11324.0 | *11178.5* | 11119.3 | 11361.7 | 10596.7 | 9406.1 | 9109.8 |
| 75° | 1573.1 | 1664.7 | 3086.9 | 6087.6 | 9002.1 | *10585.9* | 10634.4 | 10526.7 | 10386.6 | 8425.7 | 6847.2 |
| 77.5° | 468.7 | 501.0 | 878.1 | 2413.5 | 5047.9 | *8495.7* | 8576.5 | 8291.0 | 7806.1 | 5080.2 | 2591.3 |
| 80° | 253.2 | 274.7 | 414.8 | 705.7 | 1890.9 | *4794.7* | 5015.5 | 4245.2 | 2812.1 | 1341.4 | 581.8 |
| 82.5° | 123.9 | 134.7 | 215.5 | 344.8 | 813.5 | *1524.6* | 1530.0 | 1357.6 | 915.8 | 404.0 | 215.5 |
| 85° | 43.1 | 48.5 | 70.0 | 129.3 | 280.1 | *312.5* | 312.5 | 290.9 | 269.4 | 199.3 | 97.0 |
| 87.5° | 10.8 | 10.8 | 16.2 | 21.5 | 26.9 | *32.3* | 32.3 | 37.7 | 43.1 | 48.5 | 48.5 |
| 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: P1367204
CATALOG NUMBER: GSS-SB4B-740-U-T4W

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2623.6 | 2623.6 | 2623.6 | 2623.6 | 2623.6 | 2623.6 | 2623.6 | 2623.6 | 2623.6 | 2623.6 | 2623.6 |
| 2.5° | 2639.8 | 2618.2 | 2602.0 | 2585.9 | 2575.1 | 2553.6 | 2548.2 | 2548.2 | 2542.8 | 2548.2 | 2542.8 |
| 5° | 2655.9 | 2623.6 | 2596.7 | 2575.1 | 2564.3 | 2553.6 | 2553.6 | 2558.9 | 2553.6 | 2558.9 | 2553.6 |
| 7.5° | 2688.2 | 2666.7 | 2639.8 | 2607.4 | 2602.0 | 2596.7 | 2602.0 | 2612.8 | 2618.2 | 2623.6 | 2612.8 |
| 10° | 2752.9 | 2720.6 | 2682.9 | 2666.7 | 2655.9 | 2650.5 | 2666.7 | 2688.2 | 2693.6 | 2704.4 | 2693.6 |
| 12.5° | 2828.3 | 2790.6 | 2763.7 | 2725.9 | 2725.9 | 2731.3 | 2747.5 | 2774.4 | 2790.6 | 2806.8 | 2790.6 |
| 15° | 2914.5 | 2876.8 | 2839.1 | 2806.8 | 2801.4 | 2812.1 | 2839.1 | 2866.0 | 2871.4 | 2876.8 | 2866.0 |
| 17.5° | 3000.7 | 2963.0 | 2914.5 | 2876.8 | 2871.4 | 2898.3 | 2909.1 | 2909.1 | 2898.3 | 2898.3 | 2882.2 |
| 20° | 3086.9 | 3060.0 | 3011.5 | 2941.4 | 2963.0 | 2973.8 | 2941.4 | 2914.5 | 2898.3 | 2893.0 | 2876.8 |
| 22.5° | 3189.3 | 3146.2 | 3092.3 | 3016.9 | 3033.0 | 2989.9 | 2930.7 | 2919.9 | 2903.7 | 2909.1 | 2893.0 |
| 25° | 3286.2 | 3259.3 | 3173.1 | 3076.1 | 3033.0 | 2963.0 | 2925.3 | 2925.3 | 2909.1 | 2919.9 | 2914.5 |
| 27.5° | 3399.4 | 3367.0 | 3248.5 | 3108.4 | 2995.3 | 2919.9 | 2914.5 | 2914.5 | 2887.6 | 2893.0 | 2887.6 |
| 30° | 3512.5 | 3464.0 | 3307.8 | 3081.5 | 2903.7 | 2855.2 | 2871.4 | 2866.0 | 2855.2 | 2871.4 | 2882.2 |
| 32.5° | 3609.5 | 3571.7 | 3340.1 | 3016.9 | 2790.6 | 2769.0 | 2779.8 | 2806.8 | 2833.7 | 2849.9 | 2871.4 |
| 35° | 3711.8 | 3668.7 | 3367.0 | 2903.7 | 2666.7 | 2634.4 | 2629.0 | 2709.8 | 2758.3 | 2785.2 | 2801.4 |
| 37.5° | 3819.6 | 3765.7 | 3383.2 | 2779.8 | 2548.2 | 2451.2 | 2467.4 | 2532.0 | 2585.9 | 2634.4 | 2672.1 |
| 40° | 3965.0 | 3911.1 | 3404.7 | 2645.1 | 2424.3 | 2295.0 | 2273.4 | 2289.6 | 2327.3 | 2397.3 | 2435.0 |
| 42.5° | 4180.5 | 4094.3 | 3404.7 | 2472.7 | 2246.5 | 2154.9 | 2079.5 | 2020.2 | 1998.7 | 2041.8 | 2063.3 |
| 45° | 4476.8 | 4347.5 | 3383.2 | 2295.0 | 2041.8 | 1977.1 | 1853.2 | 1756.2 | 1670.0 | 1626.9 | 1616.2 |
| 47.5° | 4967.0 | 4740.8 | 3361.6 | 2122.6 | 1847.8 | 1767.0 | 1616.2 | 1503.0 | 1379.1 | 1266.0 | 1239.1 |
| 50° | 5624.3 | 5263.3 | 3367.0 | 1950.2 | 1653.9 | 1546.1 | 1411.5 | 1292.9 | 1147.5 | 1039.7 | 1023.6 |
| 52.5° | 6491.6 | 5996.0 | 3399.4 | 1761.6 | 1465.3 | 1368.4 | 1255.2 | 1136.7 | 991.3 | 910.4 | 905.1 |
| 55° | 7499.1 | 6879.5 | 3512.5 | 1551.5 | 1292.9 | 1217.5 | 1136.7 | 1023.6 | 899.7 | 829.6 | 818.9 |
| 57.5° | 8673.5 | 7903.1 | 3738.8 | 1330.7 | 1136.7 | 1109.8 | 1045.1 | 937.4 | 835.0 | 765.0 | 754.2 |
| 60° | 9831.7 | 8894.4 | 3911.1 | 1136.7 | 1012.8 | 1012.8 | 953.5 | 872.7 | 732.7 | 673.4 | 662.6 |
| 62.5° | 10370.5 | 9201.4 | 3582.5 | 980.5 | 915.8 | 932.0 | 894.3 | 781.2 | 738.1 | 711.1 | 695.0 |
| 65° | 10499.8 | 9029.0 | 2693.6 | 862.0 | 835.0 | 888.9 | 829.6 | 835.0 | 797.3 | 770.4 | 754.2 |
| 67.5° | 10343.5 | 8538.8 | 1723.9 | 759.6 | 775.8 | 835.0 | 915.8 | 921.2 | 797.3 | 738.1 | 727.3 |
| 70° | *9427.7* | *7488.3* | *1061.3* | *673.4* | *695.0* | *824.2* | *1018.2* | *867.3* | *754.2* | *705.7* | *684.2* |
| 72.5° | 7865.4 | 6179.2 | 743.4 | 592.6 | 592.6 | 781.2 | 915.8 | 813.5 | 695.0 | 668.0 | 641.1 |
| 75° | 5521.9 | 4180.5 | 544.1 | 495.6 | 495.6 | 608.8 | 845.8 | 743.4 | 651.9 | 662.6 | 651.9 |
| 77.5° | 1880.2 | 1357.6 | 393.3 | 382.5 | 366.3 | 522.6 | 754.2 | 711.1 | 603.4 | 571.0 | 528.0 |
| 80° | 554.9 | 436.4 | 290.9 | 269.4 | 264.0 | 420.2 | 635.7 | 522.6 | 431.0 | 393.3 | 366.3 |
| 82.5° | 215.5 | 193.9 | 188.6 | 172.4 | 167.0 | 280.1 | 420.2 | 360.9 | 323.2 | 269.4 | 264.0 |
| 85° | 86.2 | 86.2 | 97.0 | 97.0 | 86.2 | 150.8 | 253.2 | 199.3 | 188.6 | 167.0 | 161.6 |
| 87.5° | 43.1 | 43.1 | 37.7 | 26.9 | 26.9 | 32.3 | 26.9 | 26.9 | 26.9 | 26.9 | 26.9 |
| 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: SP1-2407-184-1

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-740-U-5WQ

Data in this report applies to families of products including GSS-SB1A-740-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

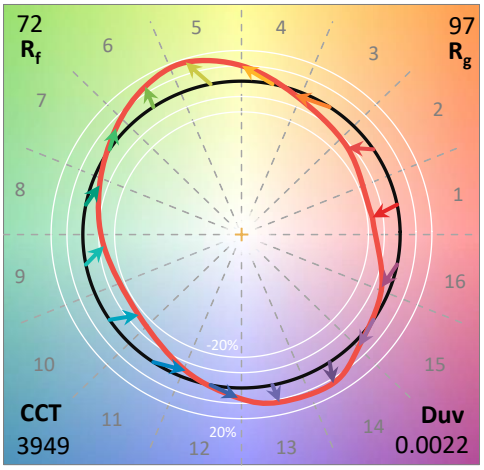
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-1 |
| 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-740-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 4000K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3949 |
| CIE u': | 0.2248 |
| CIE v': | 0.5053 |
| Duv: | 0.0022 |
| CIE x: | 0.3844 |
| CIE y: | 0.3840 |
| CIE z: | 0.2316 |
| Peak Wavelength (nm): | 440 |
| Dominant Wavelength (nm): | 578 |
| Purity: | 30.60026 |
| Rf: | 71.8 |
| Rg: | 96.5 |

| | |
|---|---|
| CRI (Ra): | 70.7 |
| R1: | 68.0 |
| R2: | 76.0 |
| R3: | 84.3 |
| R4: | 72.0 |
| R5: | 68.6 |
| R6: | 68.3 |
| R7: | 77.9 |
| R8: | 50.3 |
| R9: | -36.7 |
| R10: | 45.1 |
| R11: | 70.7 |
| R12: | 47.1 |
| R13: | 68.5 |
| R14: | 91.1 |
| R15: | 58.7 |




## Test Conditions

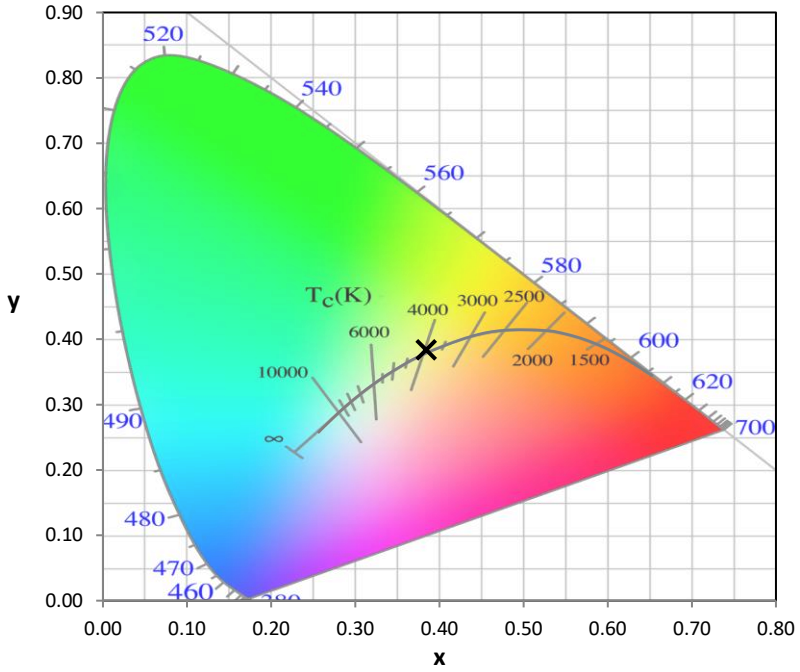
| | |
|---|---|
| Stabilization Time: | 34M |
| Operation Time: | 1H 34M |
| Sphere Temperature (°C): | 25.2 |

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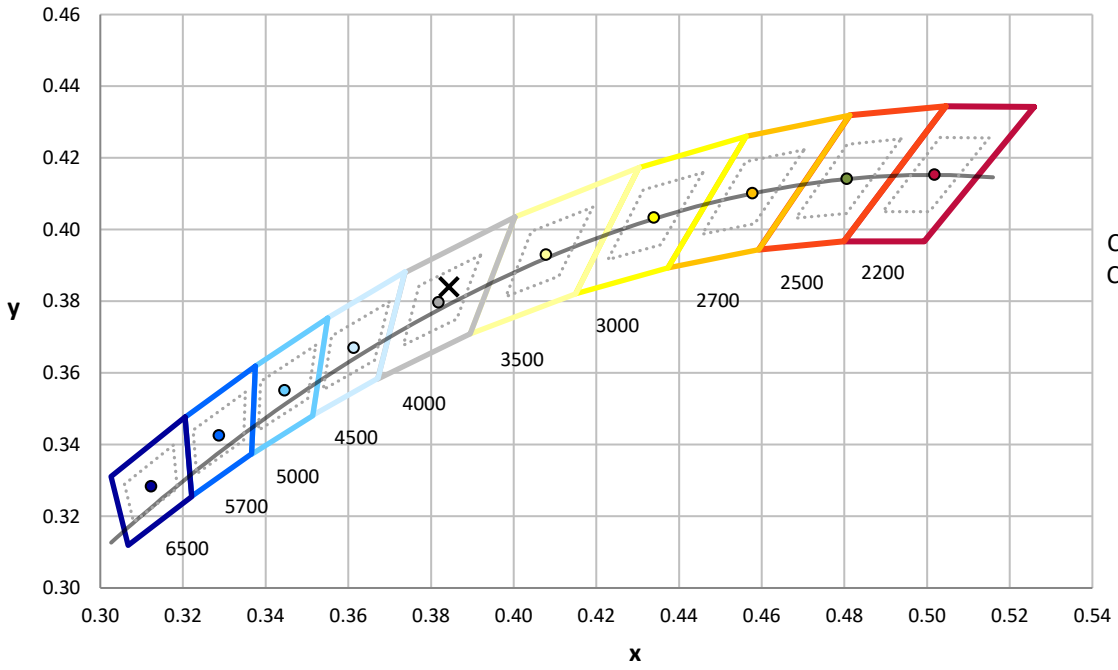
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

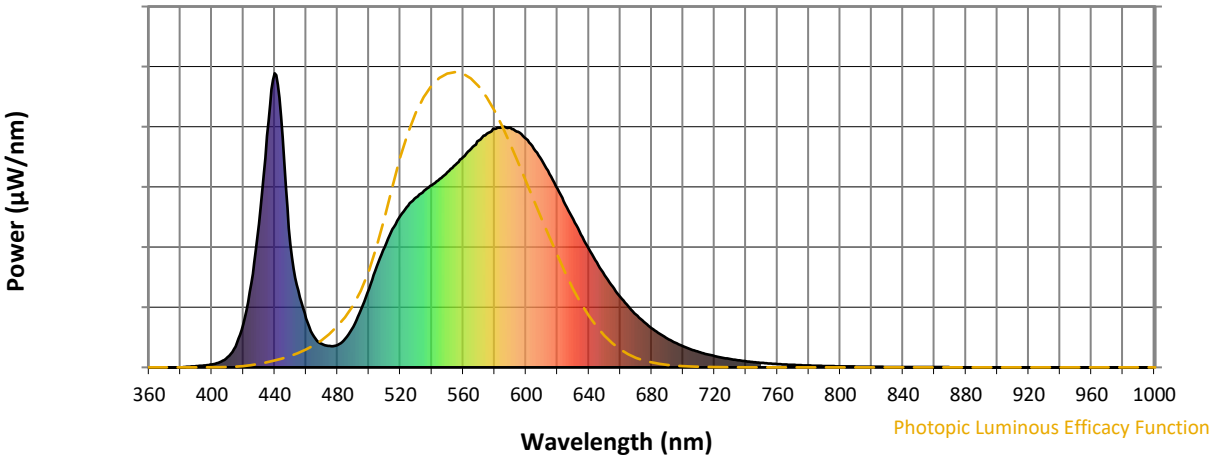



CCT = 3949K
CIE x = 0.3844
CIE y = 0.3840
Duv = 0.0022

Point lies inside the ANSI 4000K 4-step quadrangle

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## Photopic Flux vs. Wavelength

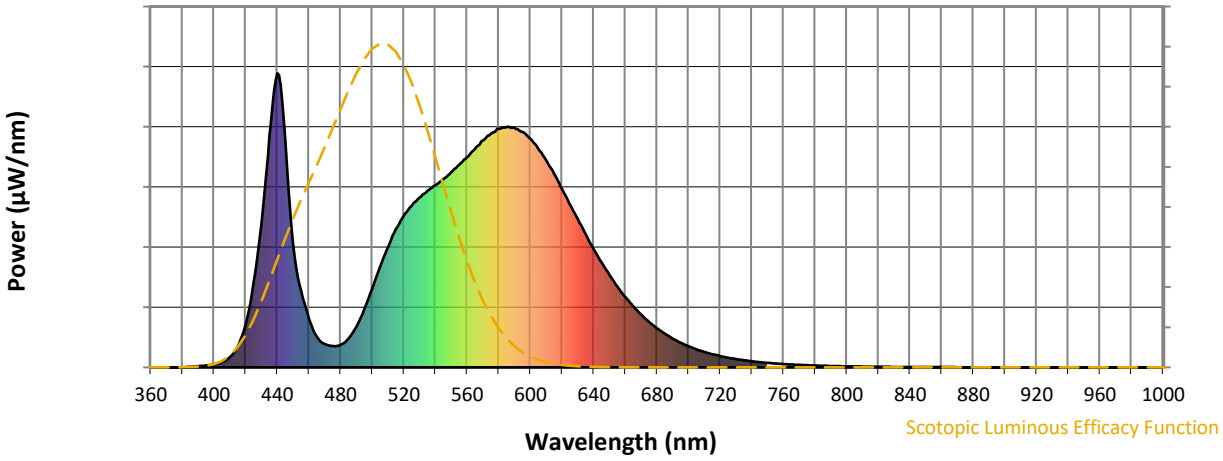



## Photopic Lumens: NR

| 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 | 139 | NR | 620 | 607 | NR | 750 | 15 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 198 | NR | 625 | 554 | NR | 755 | 13 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 267 | NR | 630 | 504 | NR | 760 | 11 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 343 | NR | 635 | 452 | NR | 765 | 10 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 410 | NR | 640 | 403 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 470 | NR | 645 | 357 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 516 | NR | 650 | 314 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 7 | NR | 525 | 550 | NR | 655 | 275 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 10 | NR | 530 | 578 | NR | 660 | 240 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 17 | NR | 535 | 601 | NR | 665 | 208 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 35 | NR | 540 | 620 | NR | 670 | 179 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 70 | NR | 545 | 641 | NR | 675 | 155 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 147 | NR | 550 | 664 | NR | 680 | 133 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 285 | NR | 555 | 689 | NR | 685 | 114 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 487 | NR | 560 | 715 | NR | 690 | 98 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 787 | NR | 565 | 743 | NR | 695 | 84 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 1000 | NR | 570 | 771 | NR | 700 | 72 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 783 | NR | 575 | 794 | NR | 705 | 61 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 417 | NR | 580 | 811 | NR | 710 | 52 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 261 | NR | 585 | 817 | NR | 715 | 45 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 167 | NR | 590 | 815 | NR | 720 | 39 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 104 | NR | 595 | 801 | NR | 725 | 33 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 777 | NR | 730 | 28 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 73 | NR | 605 | 744 | NR | 735 | 24 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 704 | NR | 740 | 21 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 98 | NR | 615 | 657 | NR | 745 | 18 | NR | 875 | 1 | NR | | | |

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## Scotopic Flux vs. Wavelength

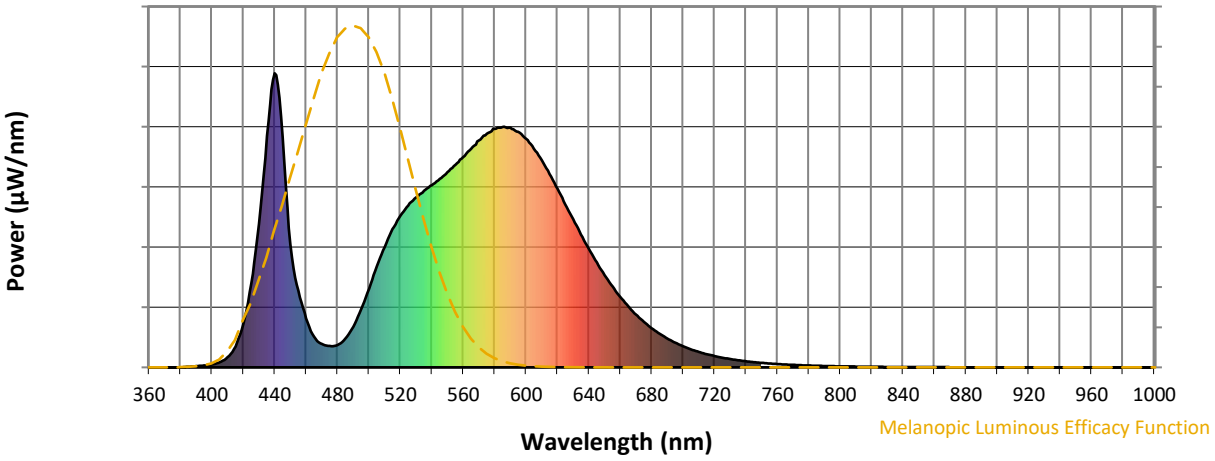



**Scotopic Lumens: NR** **S/P: 1.47**

| 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 | 139 | NR | 620 | 607 | NR | 750 | 15 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 198 | NR | 625 | 554 | NR | 755 | 13 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 267 | NR | 630 | 504 | NR | 760 | 11 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 343 | NR | 635 | 452 | NR | 765 | 10 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 410 | NR | 640 | 403 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 470 | NR | 645 | 357 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 516 | NR | 650 | 314 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 7 | NR | 525 | 550 | NR | 655 | 275 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 10 | NR | 530 | 578 | NR | 660 | 240 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 17 | NR | 535 | 601 | NR | 665 | 208 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 35 | NR | 540 | 620 | NR | 670 | 179 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 70 | NR | 545 | 641 | NR | 675 | 155 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 147 | NR | 550 | 664 | NR | 680 | 133 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 285 | NR | 555 | 689 | NR | 685 | 114 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 487 | NR | 560 | 715 | NR | 690 | 98 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 787 | NR | 565 | 743 | NR | 695 | 84 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 1000 | NR | 570 | 771 | NR | 700 | 72 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 783 | NR | 575 | 794 | NR | 705 | 61 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 417 | NR | 580 | 811 | NR | 710 | 52 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 261 | NR | 585 | 817 | NR | 715 | 45 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 167 | NR | 590 | 815 | NR | 720 | 39 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 104 | NR | 595 | 801 | NR | 725 | 33 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 777 | NR | 730 | 28 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 73 | NR | 605 | 744 | NR | 735 | 24 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 704 | NR | 740 | 21 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 98 | NR | 615 | 657 | NR | 745 | 18 | NR | 875 | 1 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.78**

| 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 | 139 | NR | 620 | 607 | NR | 750 | 15 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 198 | NR | 625 | 554 | NR | 755 | 13 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 267 | NR | 630 | 504 | NR | 760 | 11 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 343 | NR | 635 | 452 | NR | 765 | 10 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 410 | NR | 640 | 403 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 470 | NR | 645 | 357 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 516 | NR | 650 | 314 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 7 | NR | 525 | 550 | NR | 655 | 275 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 10 | NR | 530 | 578 | NR | 660 | 240 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 17 | NR | 535 | 601 | NR | 665 | 208 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 35 | NR | 540 | 620 | NR | 670 | 179 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 70 | NR | 545 | 641 | NR | 675 | 155 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 147 | NR | 550 | 664 | NR | 680 | 133 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 285 | NR | 555 | 689 | NR | 685 | 114 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 487 | NR | 560 | 715 | NR | 690 | 98 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 787 | NR | 565 | 743 | NR | 695 | 84 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 1000 | NR | 570 | 771 | NR | 700 | 72 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 783 | NR | 575 | 794 | NR | 705 | 61 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 417 | NR | 580 | 811 | NR | 710 | 52 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 261 | NR | 585 | 817 | NR | 715 | 45 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 167 | NR | 590 | 815 | NR | 720 | 39 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 104 | NR | 595 | 801 | NR | 725 | 33 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 777 | NR | 730 | 28 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 73 | NR | 605 | 744 | NR | 735 | 24 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 704 | NR | 740 | 21 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 98 | NR | 615 | 657 | NR | 745 | 18 | NR | 875 | 1 | NR | | | |

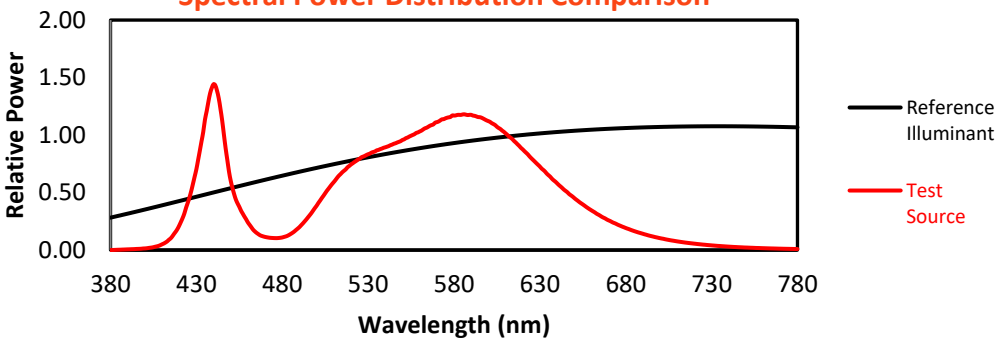
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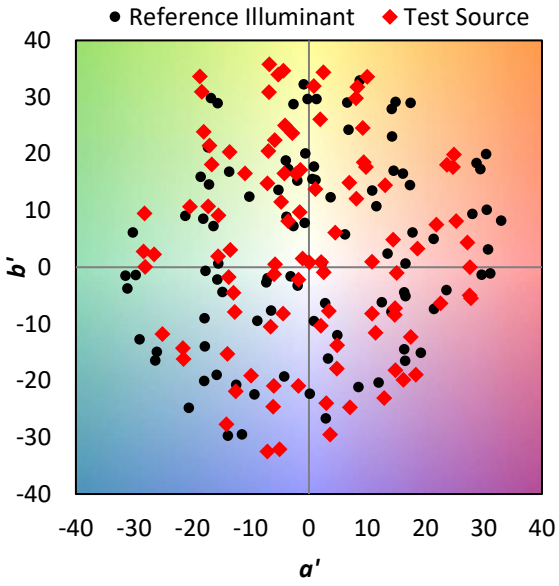
## Summary

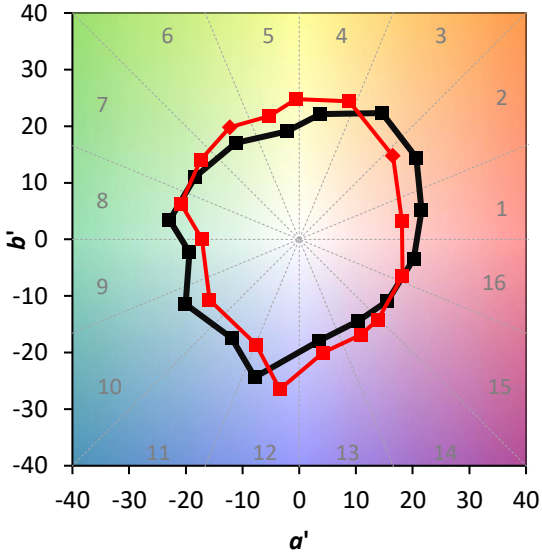
$R_f$ = 71.8
$R_g$ = 96.5
CIE $R_a$ = 70.7
$R_9$ = -36.7

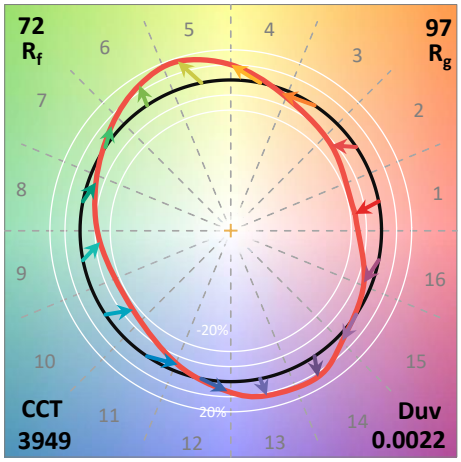
## Spectral Power Distribution Comparison

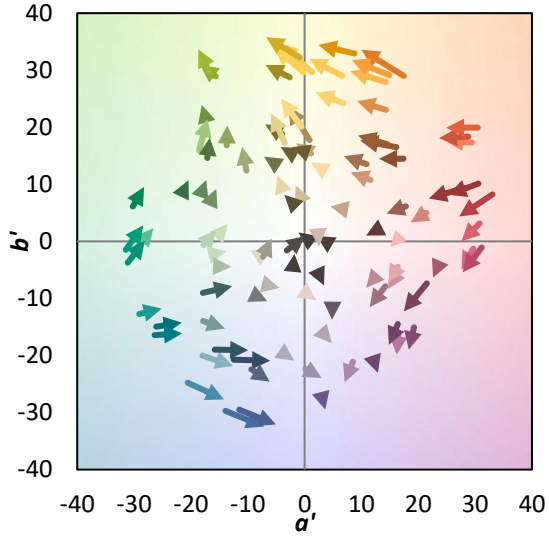



## Color Vector Graphics



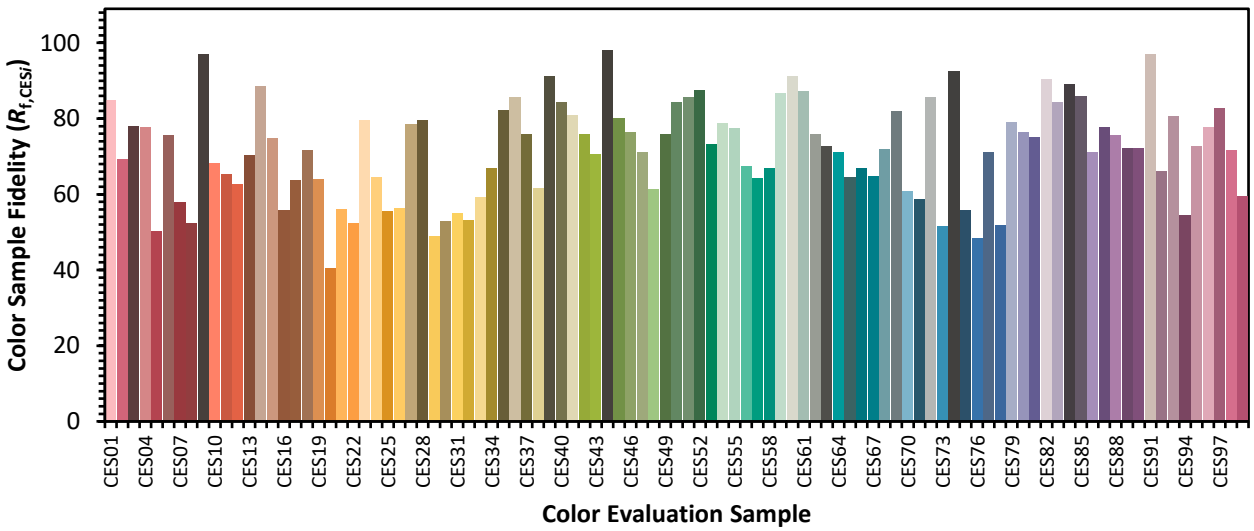



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**Individual Sample Fidelity Index ($R_{f,i}$)**

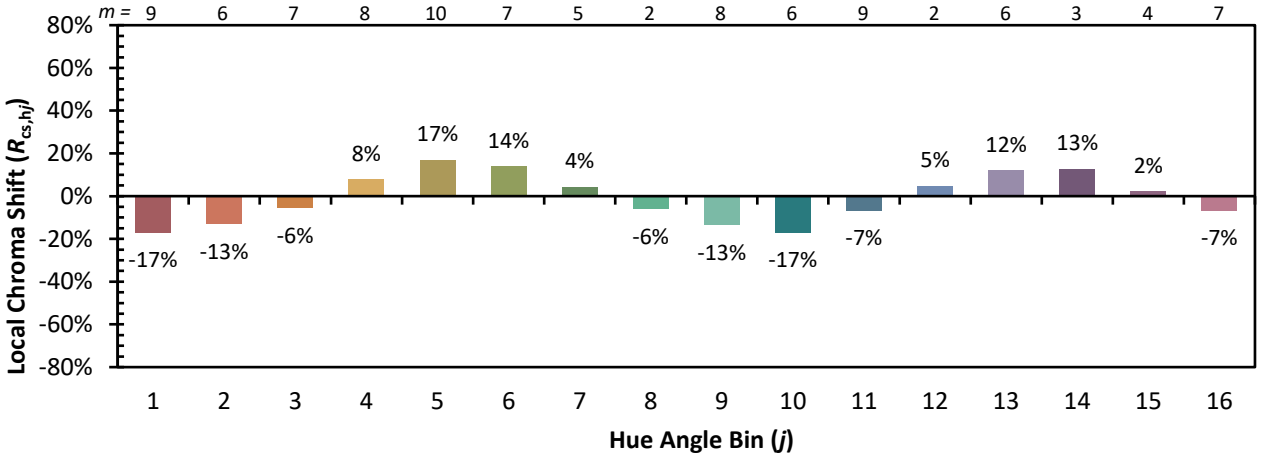
| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 56 | CES51 = 86 | CES76 = 48 |
| CES02 = 61 | CES27 = 79 | CES52 = 88 | CES77 = 71 |
| CES03 = 30 | CES28 = 80 | CES53 = 73 | CES78 = 52 |
| CES04 = 70 | CES29 = 49 | CES54 = 79 | CES79 = 79 |
| CES05 = 47 | CES30 = 53 | CES55 = 77 | CES80 = 77 |
| CES06 = 50 | CES31 = 55 | CES56 = 67 | CES81 = 75 |
| CES07 = 40 | CES32 = 53 | CES57 = 64 | CES82 = 90 |
| CES08 = 39 | CES33 = 59 | CES58 = 67 | CES83 = 84 |
| CES09 = 29 | CES34 = 67 | CES59 = 87 | CES84 = 89 |
| CES10 = 74 | CES35 = 82 | CES60 = 91 | CES85 = 86 |
| CES11 = 57 | CES36 = 86 | CES61 = 87 | CES86 = 71 |
| CES12 = 63 | CES37 = 76 | CES62 = 76 | CES87 = 78 |
| CES13 = 42 | CES38 = 62 | CES63 = 73 | CES88 = 76 |
| CES14 = 74 | CES39 = 91 | CES64 = 71 | CES89 = 72 |
| CES15 = 71 | CES40 = 84 | CES65 = 64 | CES90 = 72 |
| CES16 = 46 | CES41 = 81 | CES66 = 67 | CES91 = 97 |
| CES17 = 49 | CES42 = 76 | CES67 = 65 | CES92 = 66 |
| CES18 = 56 | CES43 = 71 | CES68 = 72 | CES93 = 81 |
| CES19 = 72 | CES44 = 98 | CES69 = 82 | CES94 = 55 |
| CES20 = 65 | CES45 = 80 | CES70 = 61 | CES95 = 73 |
| CES21 = 86 | CES46 = 76 | CES71 = 59 | CES96 = 78 |
| CES22 = 78 | CES47 = 71 | CES72 = 86 | CES97 = 83 |
| CES23 = 92 | CES48 = 61 | CES73 = 52 | CES98 = 72 |
| CES24 = 91 | CES49 = 76 | CES74 = 93 | CES99 = 60 |
| CES25 = 72 | CES50 = 84 | CES75 = 56 | |

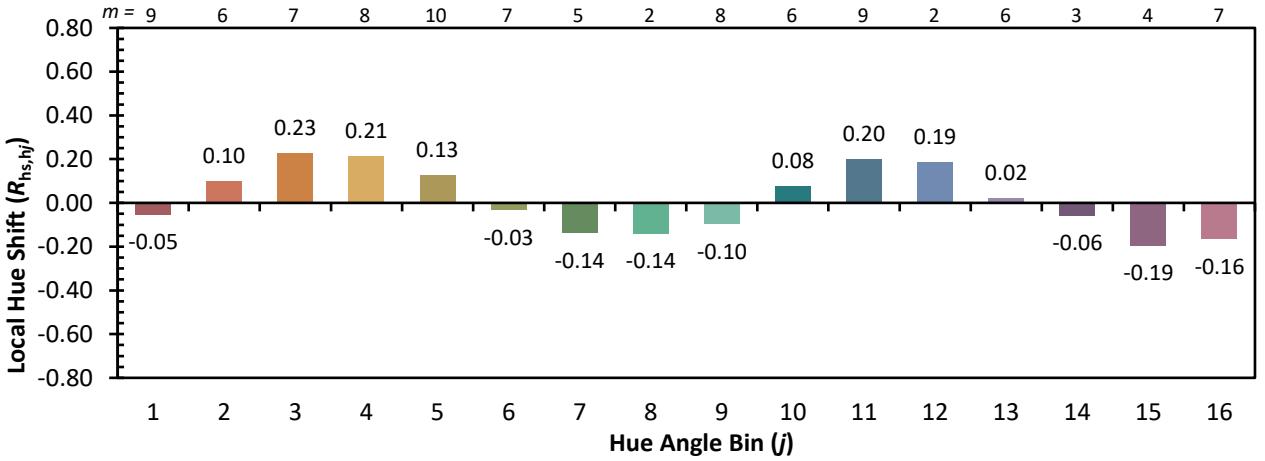


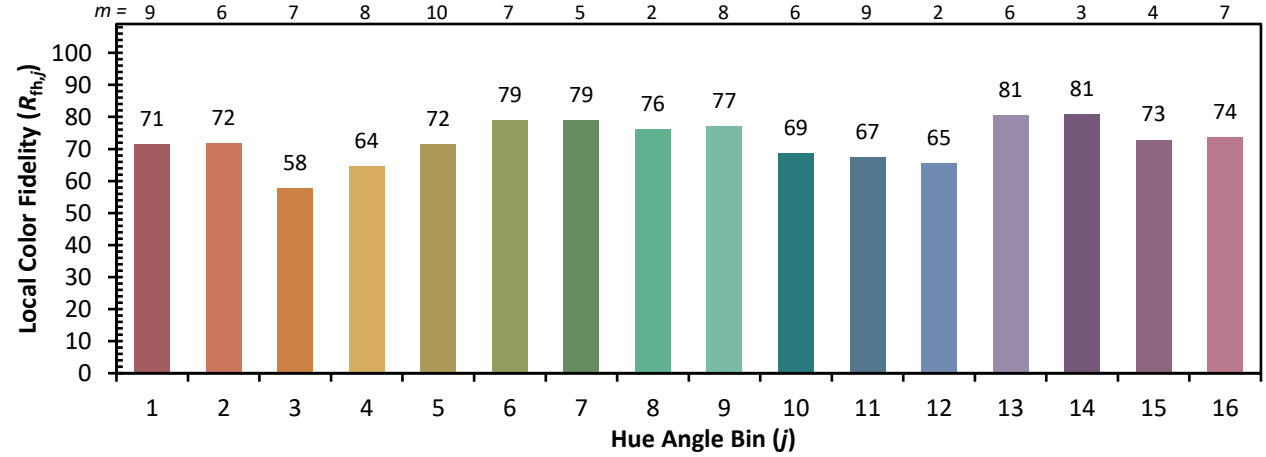
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## Color Rendition by Hue-Angle Bin



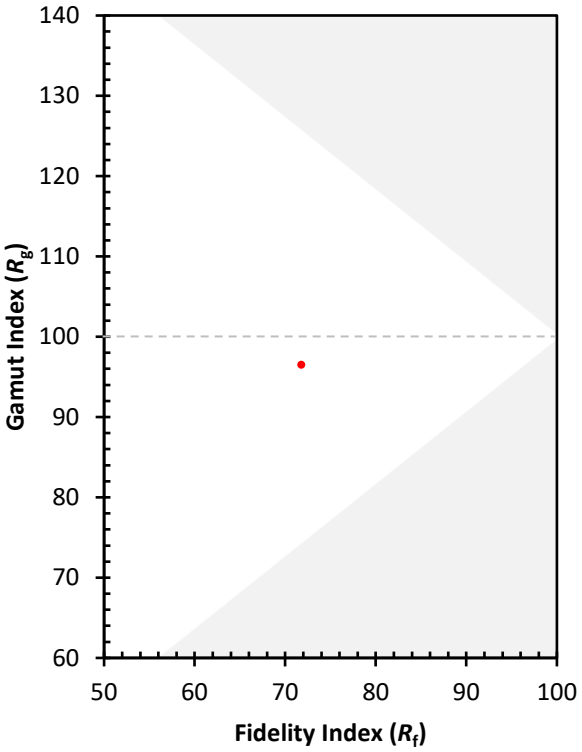



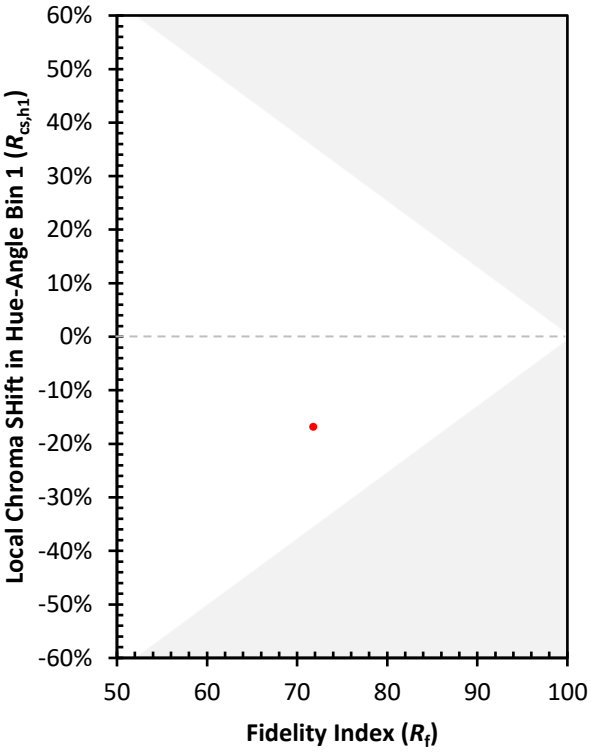



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## Measure Comparisons




(END OF REPORT)