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: P1501125

Luminaire Tested: GSS-SB5A-827-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: | P1501125 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 7/20/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB5A-827-U-T3LG |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 5SQUARE 143W 80CRI 2700K FIXTURE w/ TYPE III LOW GLARE DISTRIBUTION FIXTURE |
| Light Source: | (130) 2700K CCT, 80 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 19323.2 lumens |
| Efficiency: | N/A |
| Efficacy: | 135.1 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B3 - U0 - G2 |

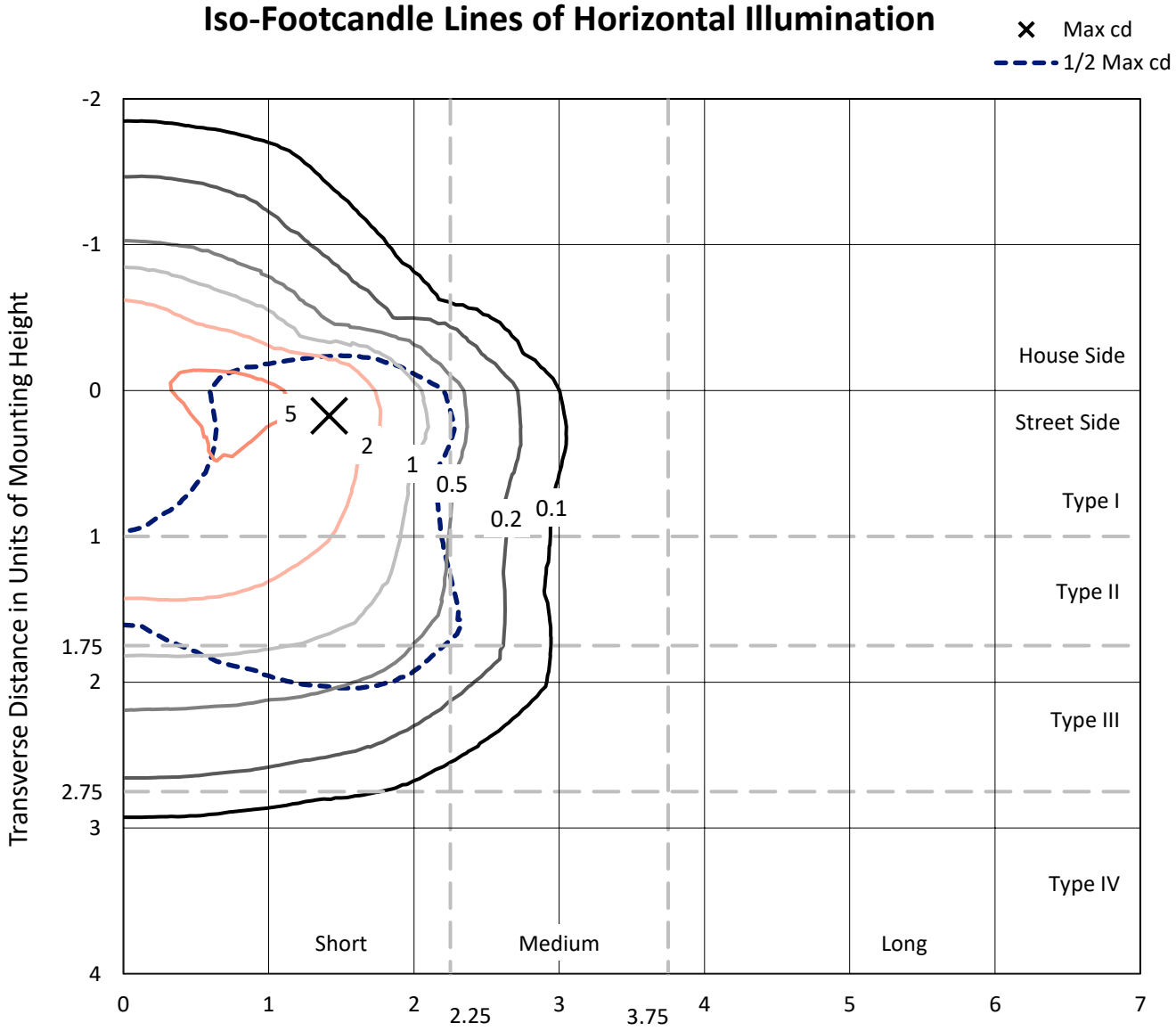
| | |
|---|---|
| Input Watts (W): | 143 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 10.5% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature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

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Scaled Data Report

REPORT NUMBER: P1501125
CATALOG NUMBER: GSS-SB5A-827-U-T3LG

## Iso-Footcandle Lines of Horizontal Illumination



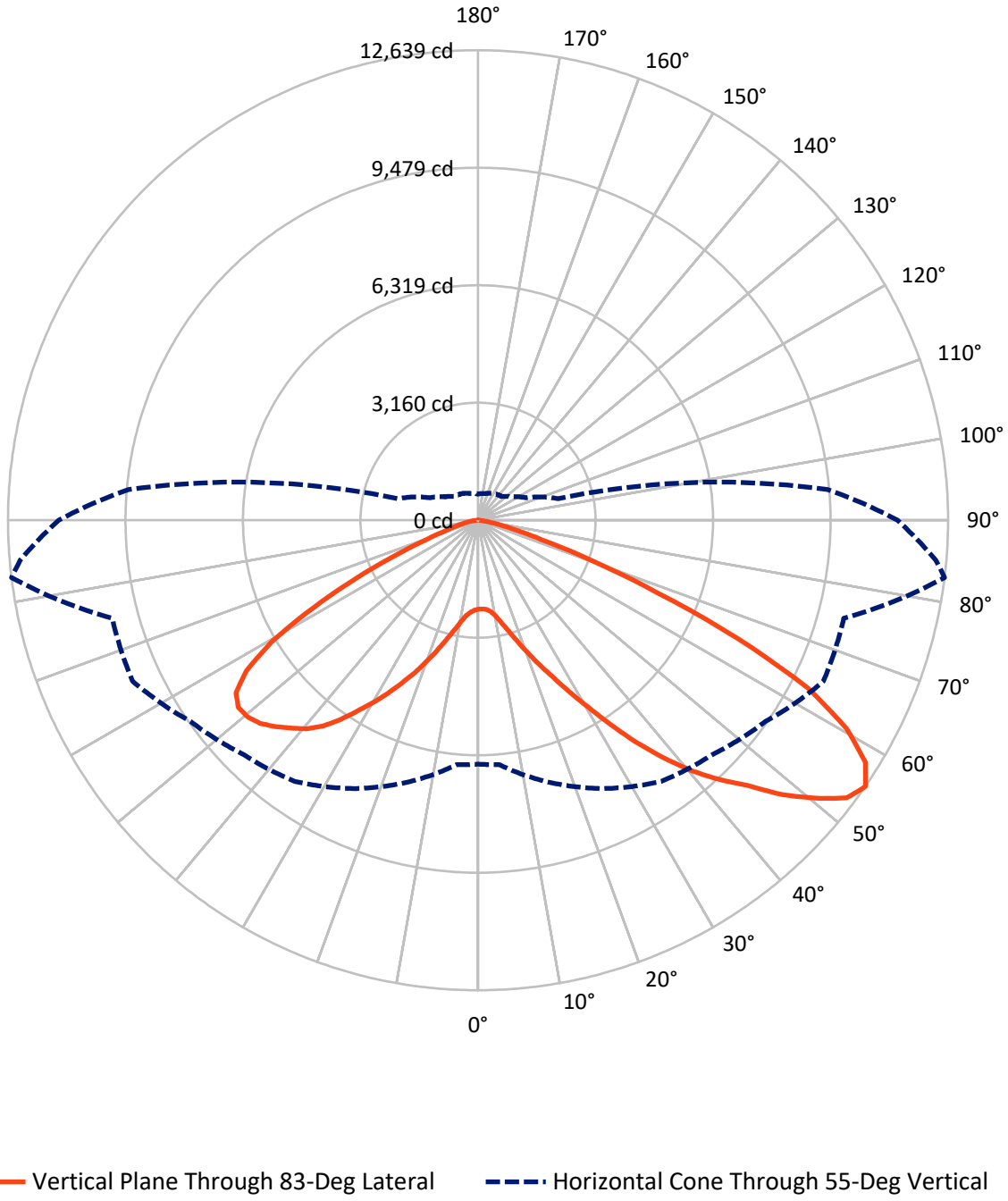

Based on 25 foot mounting height. Maximum calculated value = 6.5 fc
Type III - Short - N/A

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## Luminous Intensity Polar Plot



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Scaled Data Report

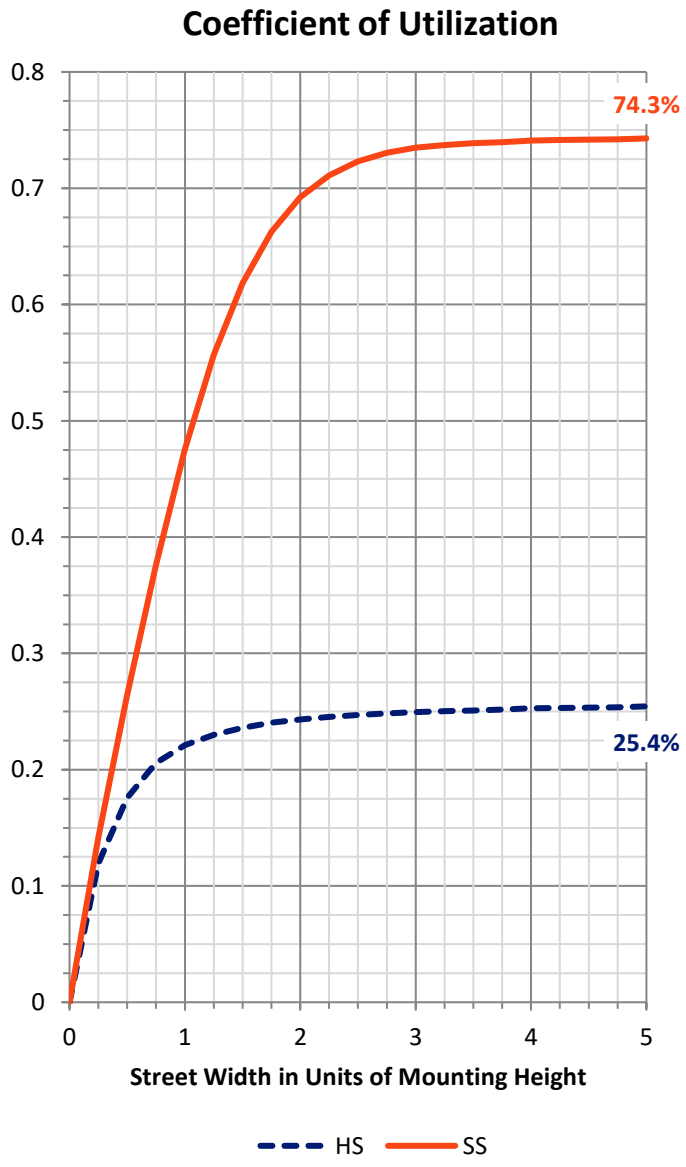
REPORT NUMBER: P1501125
CATALOG NUMBER: GSS-SB5A-827-U-T3LG

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 4958.7 | 0.0 | 4958.7 |
| | % Fixture | 25.7 | 0.0 | 25.7 |
| **Street Side** | Lumens | 14364.5 | 0.0 | 14364.5 |
| | % Fixture | 74.3 | 0.0 | 74.3 |
| **Total** | Lumens | 19323.2 | 0.0 | 19323.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 231.1 | 1.2 |
| 10°-20° | 752.9 | 3.9 |
| 20°-30° | 1507.3 | 7.8 |
| 30°-40° | 2681.8 | 13.9 |
| 40°-50° | 4041.3 | 20.9 |
| 50°-60° | 4924.6 | 25.5 |
| 60°-70° | 3982.3 | 20.6 |
| 70°-80° | 1090.7 | 5.6 |
| 80°-90° | 111.1 | 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° | 19323.2 | 100.0 |
| 0°-180° | 19323.2 | 100.0 |



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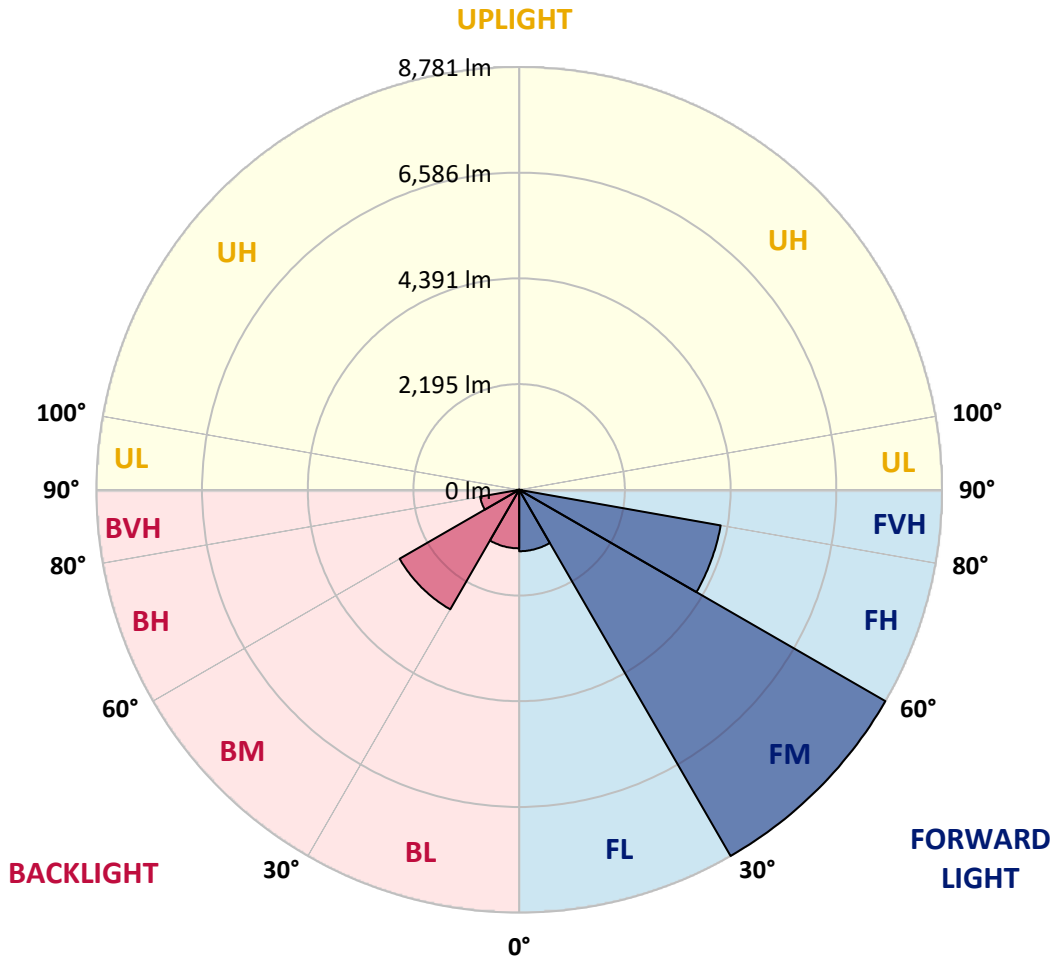
Scaled Data Report

REPORT NUMBER: P1501125
CATALOG NUMBER: GSS-SB5A-827-U-T3LG

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1275.9 | 6.6 | | | |
| FM | (30°-60°) | 8781.1 | 45.4 | | | |
| FH | (60°-80°) | 4249.7 | 22.0 | | | G2/5000 |
| FVH | (80°-90°) | 57.9 | 0.3 | | | G1/100 |
| BL | (0°-30°) | 1215.5 | 6.3 | B3/2500 | | |
| BM | (30°-60°) | 2866.7 | 14.8 | B3/5000 | | |
| BH | (60°-80°) | 823.3 | 4.3 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 53.2 | 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° | 2392.0 | 2392.0 | 2392.0 | 2392.0 | 2392.0 | 2392.0 | 2392.0 | 2392.0 | 2392.0 | *2392.0* | 2392.0 |
| 2.5° | 2323.3 | 2319.0 | 2314.7 | 2310.4 | 2319.0 | 2331.9 | 2344.8 | 2353.4 | 2374.8 | *2392.0* | 2383.4 |
| 5° | 2138.6 | 2130.0 | 2138.6 | 2173.0 | 2203.1 | 2254.6 | 2306.1 | 2340.5 | 2387.7 | *2409.2* | 2417.8 |
| 7.5° | 1975.4 | 1966.9 | 1975.4 | 2018.4 | 2069.9 | 2151.5 | 2258.9 | 2344.8 | 2430.7 | *2482.2* | 2490.8 |
| 10° | 1975.4 | 1979.7 | 1979.7 | 1996.9 | 2022.7 | 2104.3 | 2233.1 | 2396.3 | 2546.6 | *2619.6* | 2636.8 |
| 12.5° | 2039.9 | 2039.9 | 2039.9 | 2061.3 | 2078.5 | 2142.9 | 2288.9 | 2490.8 | 2731.3 | *2838.6* | 2851.5 |
| 15° | 2125.8 | 2121.5 | 2134.3 | 2147.2 | 2177.3 | 2241.7 | 2387.7 | 2628.2 | 2933.1 | *3096.3* | 3113.5 |
| 17.5° | 2246.0 | 2237.4 | 2250.3 | 2280.4 | 2323.3 | 2396.3 | 2542.3 | 2817.2 | 3212.2 | *3418.4* | 3444.1 |
| 20° | 2379.1 | 2374.8 | 2400.6 | 2447.8 | 2508.0 | 2598.1 | 2765.6 | 3044.8 | 3530.0 | *3792.0* | 3839.2 |
| 22.5° | 2538.0 | 2529.4 | 2576.7 | 2662.6 | 2744.2 | 2847.2 | 3049.1 | 3341.1 | 3895.1 | *4208.6* | 4255.8 |
| 25° | 2718.4 | 2718.4 | 2782.8 | 2885.9 | 3010.4 | 3195.1 | 3396.9 | 3719.0 | 4324.5 | *4659.5* | 4732.5 |
| 27.5° | 3014.7 | 3036.2 | 3061.9 | 3169.3 | 3345.4 | 3594.5 | 3809.2 | 4174.2 | 4792.6 | *5213.5* | 5239.2 |
| 30° | 3495.7 | 3487.1 | 3530.0 | 3603.0 | 3749.1 | 4011.0 | 4333.1 | 4723.9 | 5385.2 | *5827.6* | 5892.0 |
| 32.5° | 3929.4 | 3942.3 | 4002.4 | 4139.8 | 4315.9 | 4539.2 | 4925.7 | 5406.7 | 6029.4 | *6540.4* | 6570.5 |
| 35° | 4367.5 | 4376.0 | 4492.0 | 4698.1 | 4960.1 | 5209.2 | 5630.0 | 6102.4 | 6729.4 | *7334.9* | 7416.5 |
| 37.5° | 4981.6 | 4973.0 | 5088.9 | 5265.0 | 5617.1 | 6003.6 | 6342.9 | 6793.8 | 7399.3 | *8107.9* | 8202.4 |
| 40° | 5441.1 | 5488.3 | 5707.3 | 5930.6 | 6261.3 | 6660.7 | 6948.4 | 7373.6 | 7949.0 | *8863.7* | 8949.6 |
| 42.5° | 5913.5 | 5952.1 | 6244.1 | 6579.1 | 6926.9 | 7197.5 | 7420.8 | 7815.9 | 8387.1 | *9533.7* | 9580.9 |
| 45° | 6304.2 | 6355.8 | 6690.7 | 7115.9 | 7476.6 | 7751.5 | 7828.8 | 8198.1 | 8833.7 | *10177.8* | 10250.8 |
| 47.5° | 6553.3 | 6609.2 | 7004.2 | 7502.4 | 7871.7 | 8163.7 | 8138.0 | 8657.6 | 9310.4 | *11032.4* | 11006.7 |
| 50° | 6725.1 | 6759.5 | 7188.9 | 7721.4 | 8202.4 | 8395.6 | 8507.3 | 9177.2 | 9799.9 | *11749.6* | 11655.1 |
| 52.5° | 6849.6 | 6905.5 | 7296.3 | 7880.3 | 8387.1 | 8640.4 | 8941.0 | 9778.5 | 10139.2 | *12406.7* | 12196.2 |
| 55° | *6557.6* | *6600.6* | *7287.7* | *7961.9* | *8576.0* | *8911.0* | *9434.9* | *10246.6* | *10182.1* | *12638.6* | *12355.1* |
| 57.5° | 6257.0 | 6291.4 | 6926.9 | 7940.4 | 8782.1 | 9245.9 | 9997.5 | 10306.7 | 9799.9 | *12282.1* | 11925.7 |
| 60° | 5879.1 | 5904.9 | 6540.4 | 7712.8 | 8786.4 | 9507.9 | 10285.2 | 9868.6 | 9091.3 | *11384.6* | 11045.3 |
| 62.5° | 5183.4 | 5183.4 | 5883.4 | 7098.7 | 8571.7 | 9641.0 | 10207.9 | 9039.8 | 8142.3 | *9971.7* | 9503.6 |
| 65° | 4496.3 | 4466.2 | 4938.6 | 6003.6 | 8000.6 | 9606.7 | 9628.2 | 7992.0 | 6669.3 | *7691.4* | 7326.3 |
| 67.5° | 3749.1 | 3753.3 | 4032.5 | 4874.2 | 6480.3 | 8889.5 | 8404.2 | 6175.4 | 4646.6 | *5179.1* | 4990.1 |
| 70° | 2538.0 | 2602.4 | 2885.9 | 3538.6 | 4887.1 | 6300.0 | 6690.7 | 4182.8 | 2898.8 | *3216.5* | 3061.9 |
| 72.5° | 966.3 | 979.1 | 1309.8 | 1855.2 | 3087.7 | 3787.7 | 4668.1 | 2340.5 | 1696.3 | *1773.6* | 1782.2 |
| 75° | 408.0 | 425.2 | 558.3 | 781.6 | 1369.9 | 2065.6 | 2456.4 | 1185.3 | 1030.7 | *1060.7* | 1052.1 |
| 77.5° | 274.8 | 283.4 | 339.3 | 420.9 | 618.4 | 828.8 | 1026.4 | 669.9 | 631.3 | *592.6* | 575.5 |
| 80° | 206.1 | 206.1 | 244.8 | 283.4 | 347.9 | 425.2 | 446.6 | 339.3 | 377.9 | *313.5* | 304.9 |
| 82.5° | 133.1 | 141.7 | 154.6 | 167.5 | 197.5 | 210.4 | 180.4 | 184.7 | 219.0 | *163.2* | 154.6 |
| 85° | 64.4 | 68.7 | 73.0 | 77.3 | 77.3 | 73.0 | 64.4 | 81.6 | 111.7 | *68.7* | 64.4 |
| 87.5° | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 | 4.3 | 4.3 | 4.3 | *4.3* | 4.3 |
| 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: P1501125
CATALOG NUMBER: GSS-SB5A-827-U-T3LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2392.0 | 2392.0 | 2392.0 | 2392.0 | 2392.0 | 2392.0 | 2392.0 | 2392.0 | 2392.0 | 2392.0 | 2392.0 |
| 2.5° | 2396.3 | 2413.5 | 2426.4 | 2435.0 | 2456.4 | 2452.1 | 2465.0 | 2473.6 | 2482.2 | 2495.1 | 2477.9 |
| 5° | 2439.2 | 2469.3 | 2503.7 | 2529.4 | 2555.2 | 2568.1 | 2572.4 | 2581.0 | 2585.3 | 2593.8 | 2589.6 |
| 7.5° | 2533.7 | 2568.1 | 2619.6 | 2645.4 | 2666.9 | 2666.9 | 2654.0 | 2649.7 | 2636.8 | 2645.4 | 2645.4 |
| 10° | 2692.6 | 2744.2 | 2800.0 | 2804.3 | 2778.5 | 2748.4 | 2701.2 | 2675.4 | 2641.1 | 2632.5 | 2623.9 |
| 12.5° | 2924.5 | 2993.2 | 3036.2 | 3006.1 | 2915.9 | 2804.3 | 2679.7 | 2563.8 | 2473.6 | 2435.0 | 2426.4 |
| 15° | 3186.5 | 3272.4 | 3281.0 | 3195.1 | 3031.9 | 2761.3 | 2499.4 | 2370.5 | 2323.3 | 2323.3 | 2319.0 |
| 17.5° | 3547.2 | 3607.3 | 3573.0 | 3366.8 | 3001.8 | 2559.5 | 2370.5 | 2349.1 | 2361.9 | 2379.1 | 2379.1 |
| 20° | 3925.1 | 3993.8 | 3852.1 | 3487.1 | 2817.2 | 2439.2 | 2383.4 | 2400.6 | 2430.7 | 2447.8 | 2443.5 |
| 22.5° | 4376.0 | 4410.4 | 4135.6 | 3491.4 | 2619.6 | 2409.2 | 2409.2 | 2430.7 | 2452.1 | 2477.9 | 2477.9 |
| 25° | 4839.8 | 4827.0 | 4397.5 | 3332.5 | 2508.0 | 2400.6 | 2392.0 | 2409.2 | 2417.8 | 2430.7 | 2426.4 |
| 27.5° | 5359.5 | 5290.8 | 4599.4 | 3079.1 | 2473.6 | 2374.8 | 2331.9 | 2314.7 | 2323.3 | 2336.2 | 2340.5 |
| 30° | 5956.4 | 5793.2 | 4762.5 | 2920.2 | 2460.7 | 2314.7 | 2211.6 | 2164.4 | 2155.8 | 2173.0 | 2173.0 |
| 32.5° | 6647.8 | 6295.7 | 4861.3 | 2898.8 | 2447.8 | 2207.3 | 2069.9 | 1979.7 | 1962.6 | 1971.2 | 1992.6 |
| 35° | 7356.4 | 6901.2 | 4835.5 | 2954.6 | 2452.1 | 2121.5 | 1919.6 | 1799.4 | 1782.2 | 1790.8 | 1812.3 |
| 37.5° | 8099.3 | 7476.6 | 4736.8 | 3040.5 | 2417.8 | 2005.5 | 1782.2 | 1636.2 | 1610.4 | 1627.6 | 1636.2 |
| 40° | 8674.8 | 7961.9 | 4492.0 | 3074.8 | 2357.7 | 1859.5 | 1623.3 | 1498.8 | 1430.1 | 1425.8 | 1447.2 |
| 42.5° | 9207.3 | 8344.1 | 4225.7 | 3019.0 | 2233.1 | 1704.9 | 1460.1 | 1335.6 | 1228.2 | 1146.6 | 1146.6 |
| 45° | 9739.8 | 8730.6 | 3955.2 | 2860.1 | 2027.0 | 1541.7 | 1288.3 | 1120.9 | 996.3 | 936.2 | 940.5 |
| 47.5° | 10272.3 | 9104.2 | 3633.1 | 2619.6 | 1820.8 | 1369.9 | 1103.7 | 970.5 | 884.7 | 837.4 | 837.4 |
| 50° | 10766.2 | 9374.8 | 3220.8 | 2237.4 | 1584.7 | 1198.2 | 974.8 | 897.5 | 833.1 | 790.2 | 781.6 |
| 52.5° | 11199.9 | 9555.1 | 2662.6 | 1773.6 | 1327.0 | 1004.9 | 906.1 | 846.0 | 798.8 | 751.5 | 738.6 |
| 55° | *11277.2* | *9434.9* | *2228.8* | *1425.8* | *1095.1* | *901.8* | *854.6* | *803.1* | *738.6* | *717.2* | *704.3* |
| 57.5° | 10800.5 | 8799.3 | 1881.0 | 1202.4 | 936.2 | 828.8 | 811.7 | 751.5 | 700.0 | 678.5 | 665.6 |
| 60° | 9988.9 | 7644.1 | 1554.6 | 1030.7 | 833.1 | 760.1 | 781.6 | 721.5 | 639.9 | 627.0 | 614.1 |
| 62.5° | 8528.8 | 5965.0 | 1241.1 | 867.5 | 755.8 | 708.6 | 730.1 | 644.2 | 575.5 | 558.3 | 554.0 |
| 65° | 6630.6 | 4268.7 | 1043.6 | 764.4 | 695.7 | 657.1 | 648.5 | 571.2 | 519.6 | 506.7 | 506.7 |
| 67.5° | 4629.4 | 2714.1 | 871.8 | 700.0 | 618.4 | 592.6 | 588.3 | 536.8 | 502.5 | 489.6 | 489.6 |
| 70° | 2834.3 | 1644.8 | 734.4 | 639.9 | 545.4 | 498.2 | 528.2 | 519.6 | 468.1 | 455.2 | 450.9 |
| 72.5° | 1473.0 | 983.4 | 644.2 | 588.3 | 459.5 | 425.2 | 472.4 | 476.7 | 433.7 | 450.9 | 446.6 |
| 75° | 854.6 | 682.8 | 562.6 | 519.6 | 365.0 | 356.4 | 412.3 | 455.2 | 420.9 | 433.7 | 425.2 |
| 77.5° | 489.6 | 438.0 | 433.7 | 425.2 | 287.7 | 292.0 | 369.3 | 408.0 | 360.7 | 373.6 | 343.6 |
| 80° | 270.6 | 283.4 | 300.6 | 266.3 | 201.8 | 227.6 | 296.3 | 326.4 | 274.8 | 270.6 | 249.1 |
| 82.5° | 141.7 | 176.1 | 201.8 | 171.8 | 116.0 | 137.4 | 201.8 | 201.8 | 176.1 | 167.5 | 163.2 |
| 85° | 64.4 | 73.0 | 94.5 | 85.9 | 42.9 | 51.5 | 94.5 | 103.1 | 90.2 | 81.6 | 77.3 |
| 87.5° | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 8.6 | 12.9 | 4.3 | 4.3 | 4.3 |
| 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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# LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-8

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-827-U-5WQ

Data in this report applies to families of products including GSS-SB1A-827-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

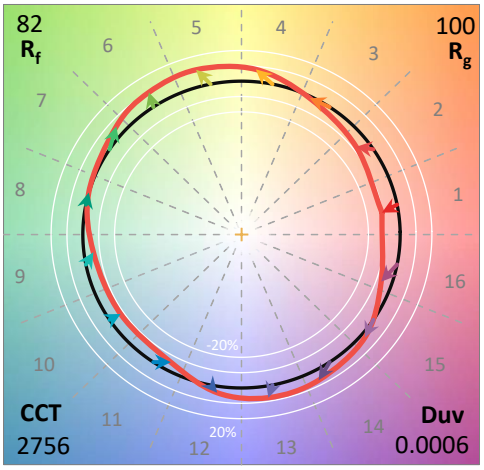
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-8 |
| 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-827-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 80 CRI 2700K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 2756 |
| CIE u': | 0.2599 |
| CIE v': | 0.5271 |
| Duv: | 0.0006 |
| CIE x: | 0.4563 |
| CIE y: | 0.4112 |
| CIE z: | 0.1325 |
| Peak Wavelength (nm): | 609 |
| Dominant Wavelength (nm): | 583 |
| Purity: | 60.41121 |
| Rf: | 82.2 |
| Rg: | 99.9 |

| | |
|---|---|
| CRI (Ra): | 82.9 |
| R1: | 81.6 |
| R2: | 88.8 |
| R3: | 96.0 |
| R4: | 83.4 |
| R5: | 81.4 |
| R6: | 87.0 |
| R7: | 84.0 |
| R8: | 60.8 |
| R9: | 10.8 |
| R10: | 74.8 |
| R11: | 84.3 |
| R12: | 72.1 |
| R13: | 82.9 |
| R14: | 97.3 |
| R15: | 73.7 |




## Test Conditions

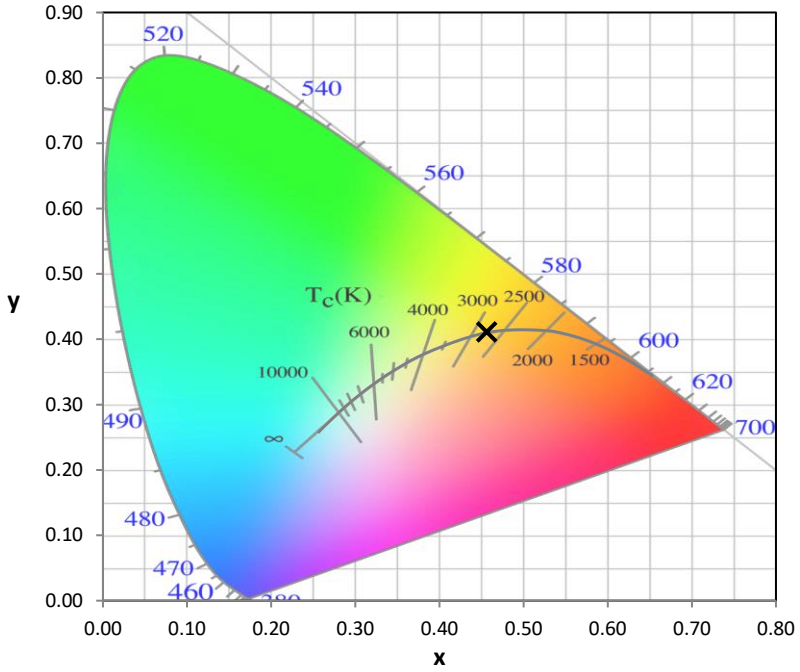
| | |
|---|---|
| Stabilization Time: | 29M |
| Operation Time: | 1H 29M |
| Sphere Temperature (°C): | 25.2 |

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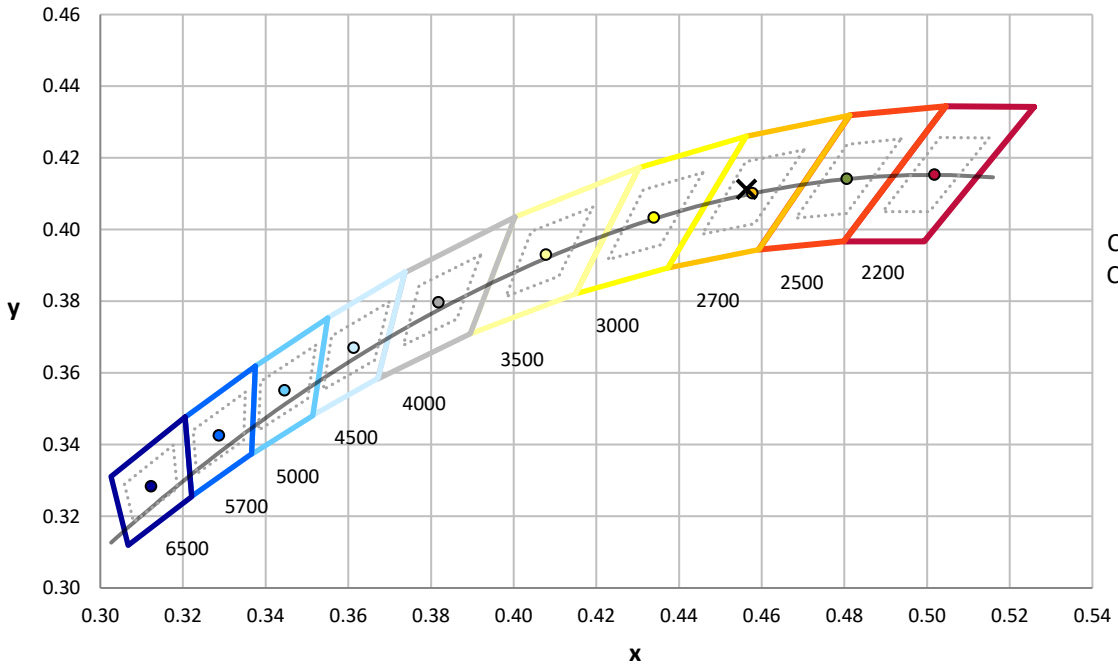
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

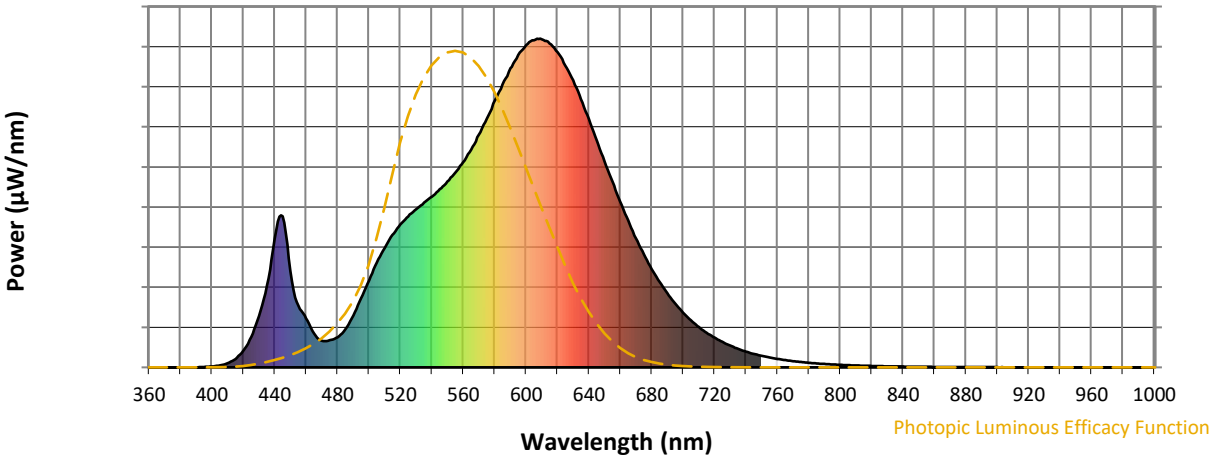



CCT = 2756K
CIE x = 0.4563
CIE y = 0.4112
Duv = 0.0006

Point lies inside the ANSI 2700K 4-step quadrangle

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## Photopic Flux vs. Wavelength

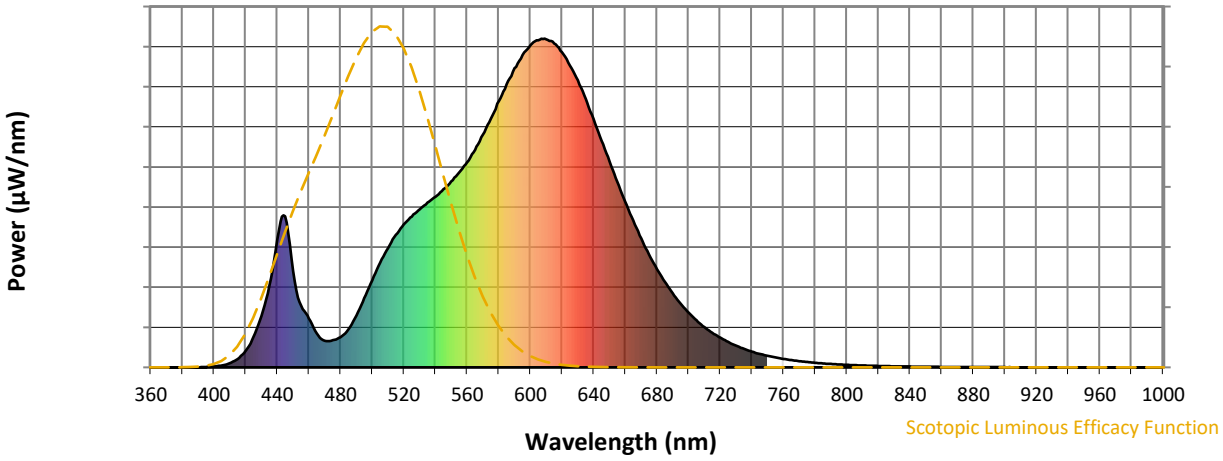



## Photopic Lumens: NR

| 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 | 158 | NR | 620 | 959 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 211 | NR | 625 | 918 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 264 | NR | 630 | 873 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 318 | NR | 635 | 816 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 363 | NR | 640 | 755 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 403 | NR | 645 | 689 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 435 | NR | 650 | 626 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 459 | NR | 655 | 564 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 481 | NR | 660 | 503 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 6 | NR | 535 | 501 | NR | 665 | 447 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 13 | NR | 540 | 519 | NR | 670 | 392 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 26 | NR | 545 | 542 | NR | 675 | 343 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 51 | NR | 550 | 565 | NR | 680 | 299 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 93 | NR | 555 | 593 | NR | 685 | 260 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 156 | NR | 560 | 624 | NR | 690 | 225 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 250 | NR | 565 | 662 | NR | 695 | 194 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 391 | NR | 570 | 707 | NR | 700 | 166 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 460 | NR | 575 | 756 | NR | 705 | 143 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 293 | NR | 580 | 810 | NR | 710 | 122 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 188 | NR | 585 | 860 | NR | 715 | 105 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 149 | NR | 590 | 910 | NR | 720 | 90 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 103 | NR | 595 | 950 | NR | 725 | 77 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 80 | NR | 600 | 980 | NR | 730 | 66 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 82 | NR | 605 | 995 | NR | 735 | 56 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 92 | NR | 610 | 998 | NR | 740 | 48 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 116 | NR | 615 | 985 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

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## Scotopic Flux vs. Wavelength

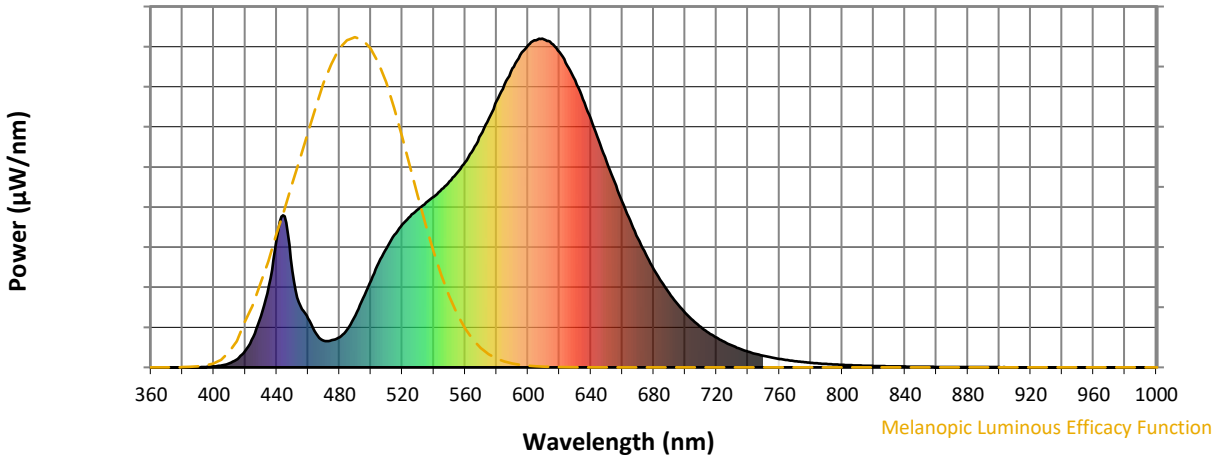



**Scotopic Lumens: NR** **S/P: 1.2**

| 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 | 158 | NR | 620 | 959 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 211 | NR | 625 | 918 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 264 | NR | 630 | 873 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 318 | NR | 635 | 816 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 363 | NR | 640 | 755 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 403 | NR | 645 | 689 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 435 | NR | 650 | 626 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 459 | NR | 655 | 564 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 481 | NR | 660 | 503 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 6 | NR | 535 | 501 | NR | 665 | 447 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 13 | NR | 540 | 519 | NR | 670 | 392 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 26 | NR | 545 | 542 | NR | 675 | 343 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 51 | NR | 550 | 565 | NR | 680 | 299 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 93 | NR | 555 | 593 | NR | 685 | 260 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 156 | NR | 560 | 624 | NR | 690 | 225 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 250 | NR | 565 | 662 | NR | 695 | 194 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 391 | NR | 570 | 707 | NR | 700 | 166 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 460 | NR | 575 | 756 | NR | 705 | 143 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 293 | NR | 580 | 810 | NR | 710 | 122 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 188 | NR | 585 | 860 | NR | 715 | 105 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 149 | NR | 590 | 910 | NR | 720 | 90 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 103 | NR | 595 | 950 | NR | 725 | 77 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 80 | NR | 600 | 980 | NR | 730 | 66 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 82 | NR | 605 | 995 | NR | 735 | 56 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 92 | NR | 610 | 998 | NR | 740 | 48 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 116 | NR | 615 | 985 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.16**

| 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 | 158 | NR | 620 | 959 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 211 | NR | 625 | 918 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 264 | NR | 630 | 873 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 318 | NR | 635 | 816 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 363 | NR | 640 | 755 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 403 | NR | 645 | 689 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 435 | NR | 650 | 626 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 459 | NR | 655 | 564 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 481 | NR | 660 | 503 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 6 | NR | 535 | 501 | NR | 665 | 447 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 13 | NR | 540 | 519 | NR | 670 | 392 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 26 | NR | 545 | 542 | NR | 675 | 343 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 51 | NR | 550 | 565 | NR | 680 | 299 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 93 | NR | 555 | 593 | NR | 685 | 260 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 156 | NR | 560 | 624 | NR | 690 | 225 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 250 | NR | 565 | 662 | NR | 695 | 194 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 391 | NR | 570 | 707 | NR | 700 | 166 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 460 | NR | 575 | 756 | NR | 705 | 143 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 293 | NR | 580 | 810 | NR | 710 | 122 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 188 | NR | 585 | 860 | NR | 715 | 105 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 149 | NR | 590 | 910 | NR | 720 | 90 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 103 | NR | 595 | 950 | NR | 725 | 77 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 80 | NR | 600 | 980 | NR | 730 | 66 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 82 | NR | 605 | 995 | NR | 735 | 56 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 92 | NR | 610 | 998 | NR | 740 | 48 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 116 | NR | 615 | 985 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

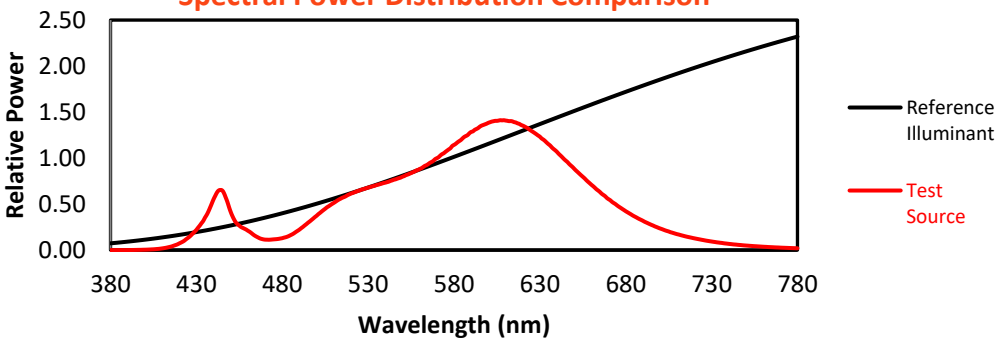
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**TM-30-18**

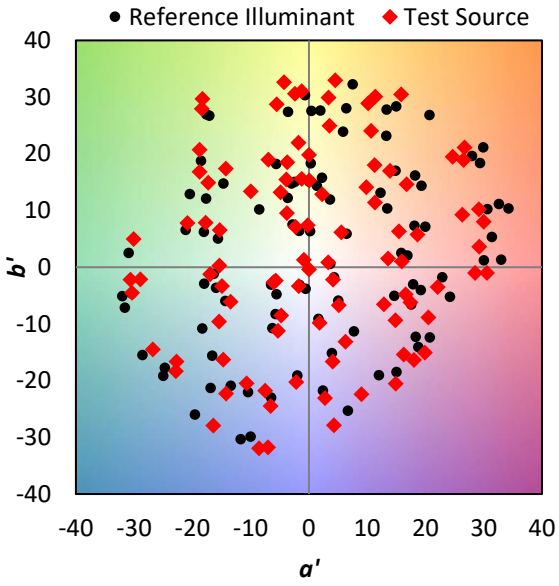
## Summary

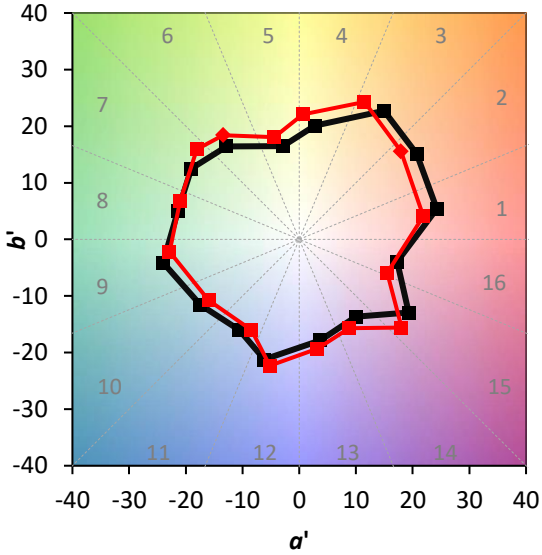
$R_f$ = 82.2
$R_g$ = 99.9
CIE $R_a$ = 82.9
$R_9$ = 10.8

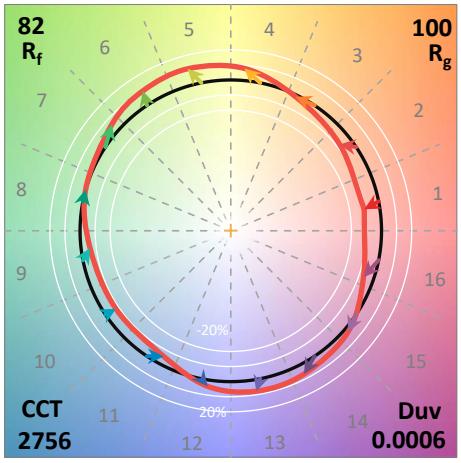
## Spectral Power Distribution Comparison

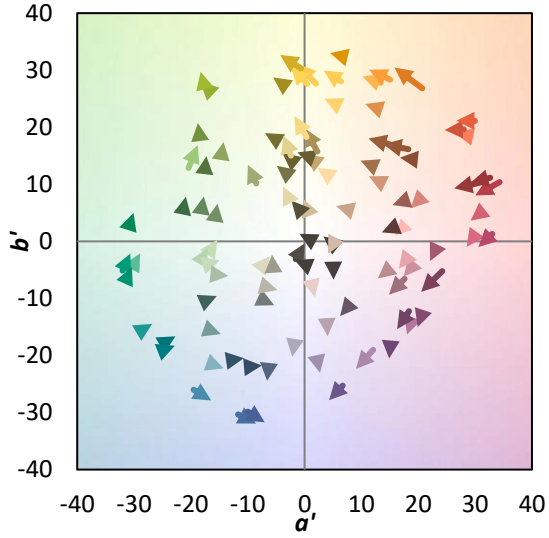



## Color Vector Graphics



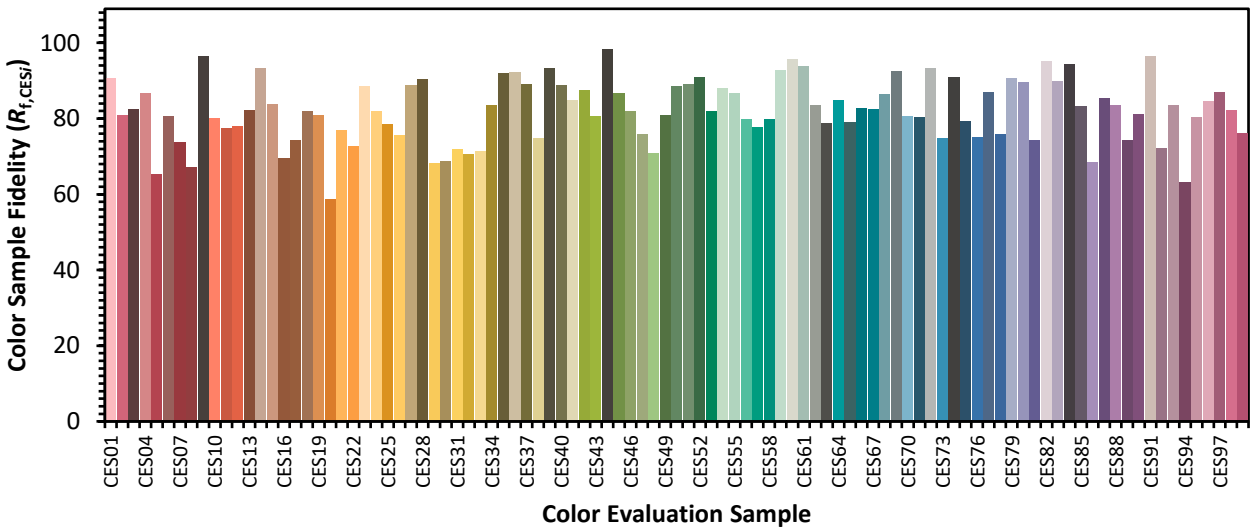



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**Individual Sample Fidelity Index ($R_{f,i}$)**

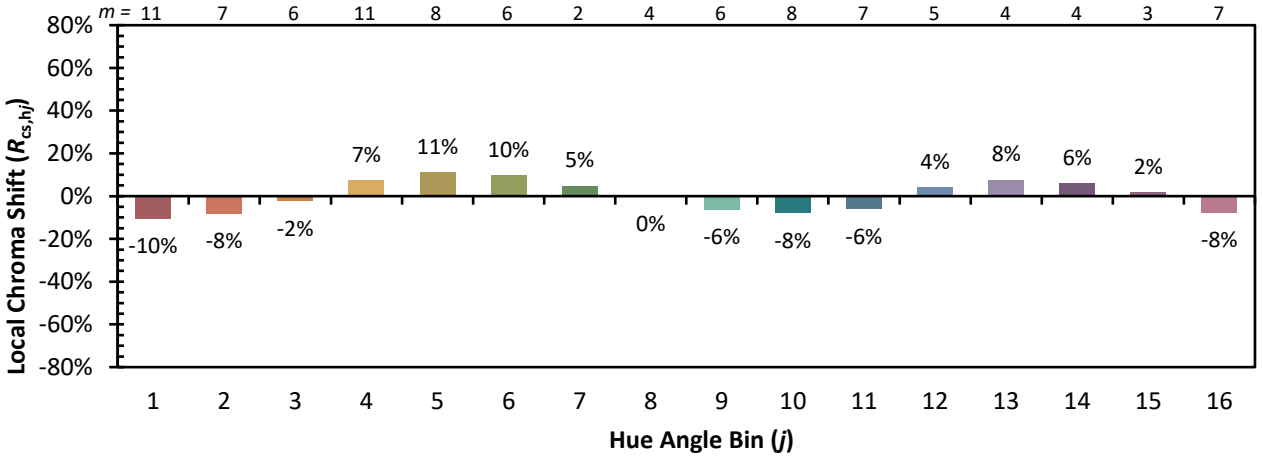
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 76 | CES51 = 89 | CES76 = 75 |
| CES02 = 63 | CES27 = 89 | CES52 = 91 | CES77 = 87 |
| CES03 = 31 | CES28 = 90 | CES53 = 82 | CES78 = 76 |
| CES04 = 71 | CES29 = 68 | CES54 = 88 | CES79 = 91 |
| CES05 = 50 | CES30 = 69 | CES55 = 87 | CES80 = 90 |
| CES06 = 52 | CES31 = 72 | CES56 = 80 | CES81 = 74 |
| CES07 = 43 | CES32 = 71 | CES57 = 78 | CES82 = 95 |
| CES08 = 42 | CES33 = 71 | CES58 = 80 | CES83 = 90 |
| CES09 = 29 | CES34 = 84 | CES59 = 93 | CES84 = 94 |
| CES10 = 77 | CES35 = 92 | CES60 = 96 | CES85 = 83 |
| CES11 = 59 | CES36 = 92 | CES61 = 94 | CES86 = 69 |
| CES12 = 66 | CES37 = 89 | CES62 = 84 | CES87 = 85 |
| CES13 = 44 | CES38 = 75 | CES63 = 79 | CES88 = 84 |
| CES14 = 74 | CES39 = 93 | CES64 = 85 | CES89 = 74 |
| CES15 = 72 | CES40 = 89 | CES65 = 79 | CES90 = 81 |
| CES16 = 48 | CES41 = 85 | CES66 = 83 | CES91 = 96 |
| CES17 = 50 | CES42 = 88 | CES67 = 82 | CES92 = 72 |
| CES18 = 57 | CES43 = 81 | CES68 = 86 | CES93 = 84 |
| CES19 = 73 | CES44 = 98 | CES69 = 92 | CES94 = 63 |
| CES20 = 67 | CES45 = 87 | CES70 = 81 | CES95 = 80 |
| CES21 = 87 | CES46 = 82 | CES71 = 81 | CES96 = 85 |
| CES22 = 79 | CES47 = 76 | CES72 = 93 | CES97 = 87 |
| CES23 = 92 | CES48 = 71 | CES73 = 75 | CES98 = 82 |
| CES24 = 91 | CES49 = 81 | CES74 = 91 | CES99 = 76 |
| CES25 = 72 | CES50 = 88 | CES75 = 79 | |

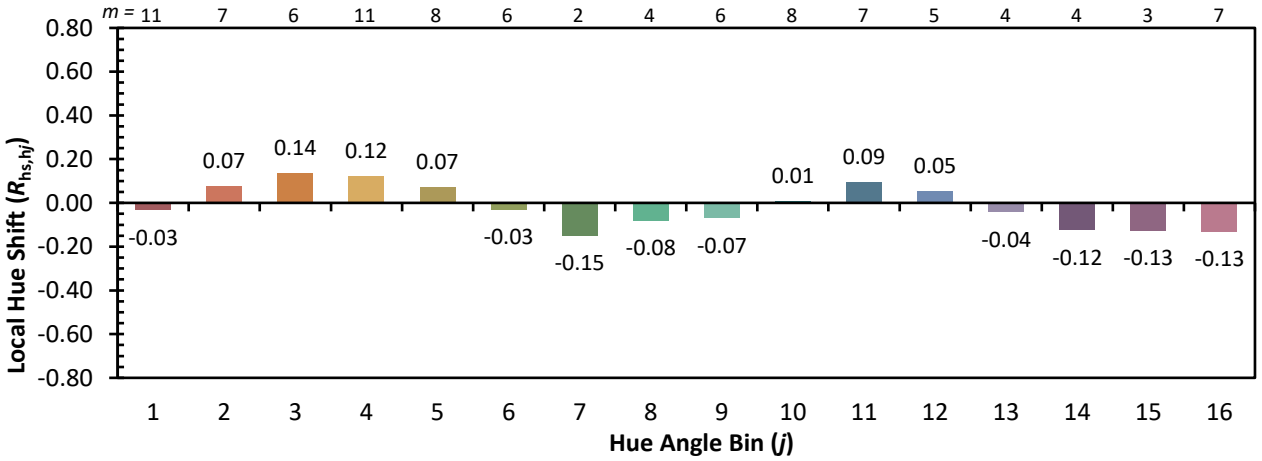


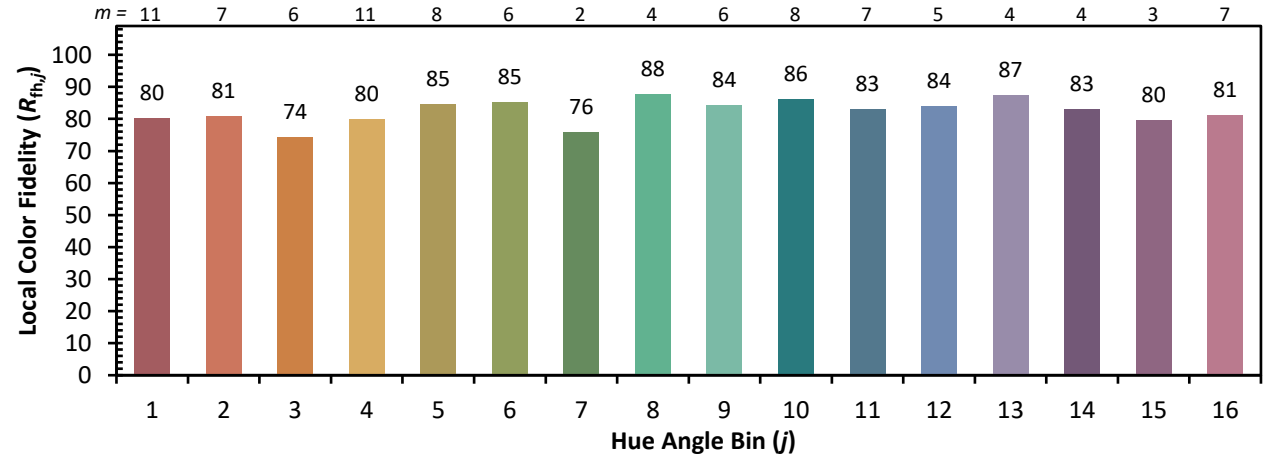
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## Color Rendition by Hue-Angle Bin



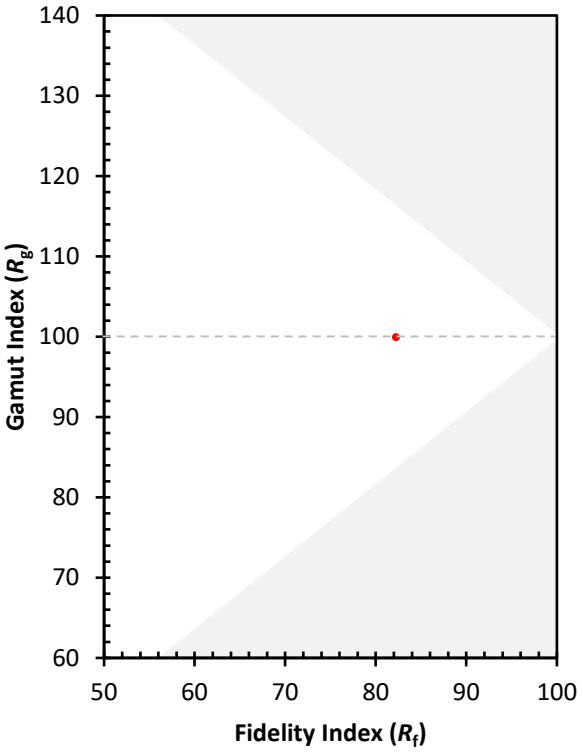



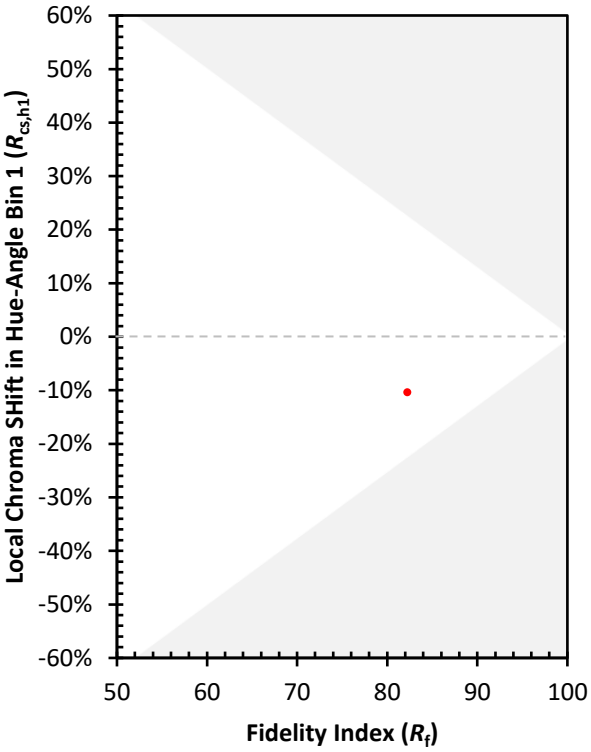



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## Measure Comparisons




(END OF REPORT)