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: STREETWORKS

Report Number: P1455932

Luminaire Tested: GLAN-SB9B-735-U-T2LG

Issue Date: 05/20/2026

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: | P1455932 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/21/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB9B-735-U-T2LG |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 450mA 9xLight Square PACKAGE 70CRI 3500K FIXTURE w/ TYPE II LOW GLARE |
| Light Source: | (234) 3500K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 49607.6 lumens |
| Efficiency: | N/A |
| Efficacy: | 150.6 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1.5' x H: 0') |
| IES Classification: | Type II - Short |
| BUG Rating: | B4 - U0 - G4 |

| | |
|---|---|
| Input Watts (W): | 329.5 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.97 |
| Total Harmonic Distortion (THDi): | NR |
| 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: P1455932
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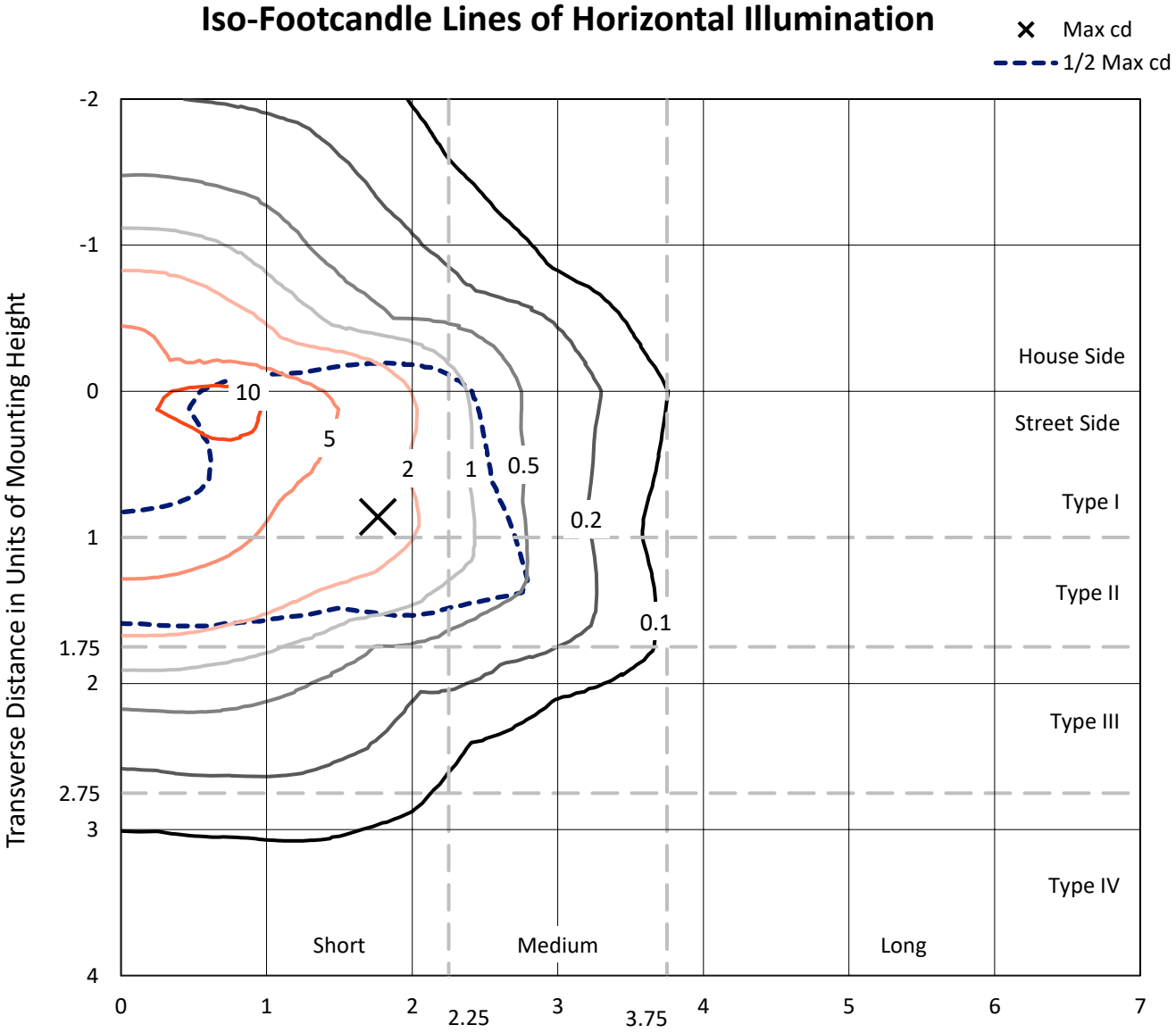
## Iso-Footcandle Lines of Horizontal Illumination




Based on 30 foot mounting height. Maximum calculated value = 12.9 fc
Type II - Short - N/A

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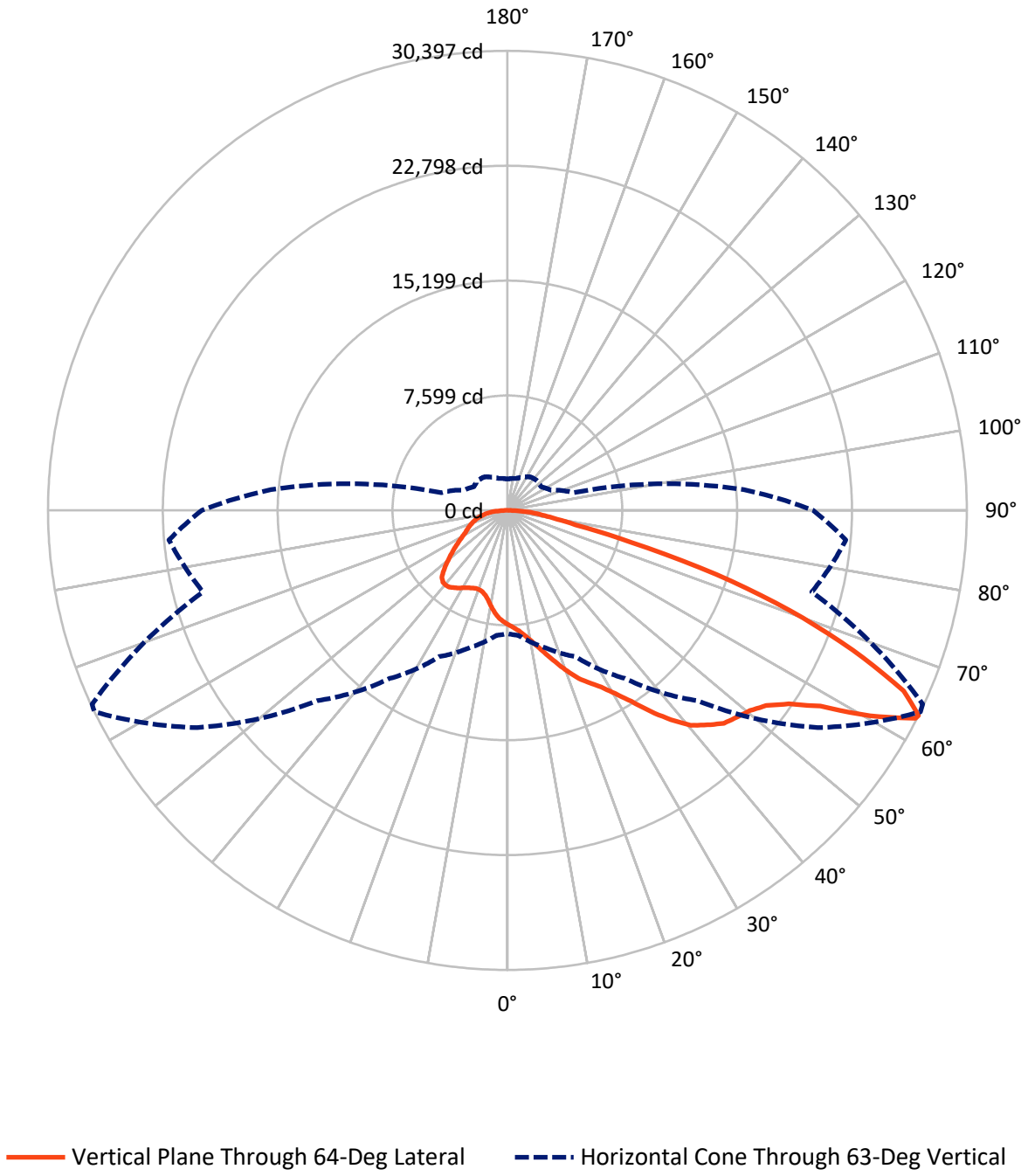
## Luminous Intensity Polar Plot



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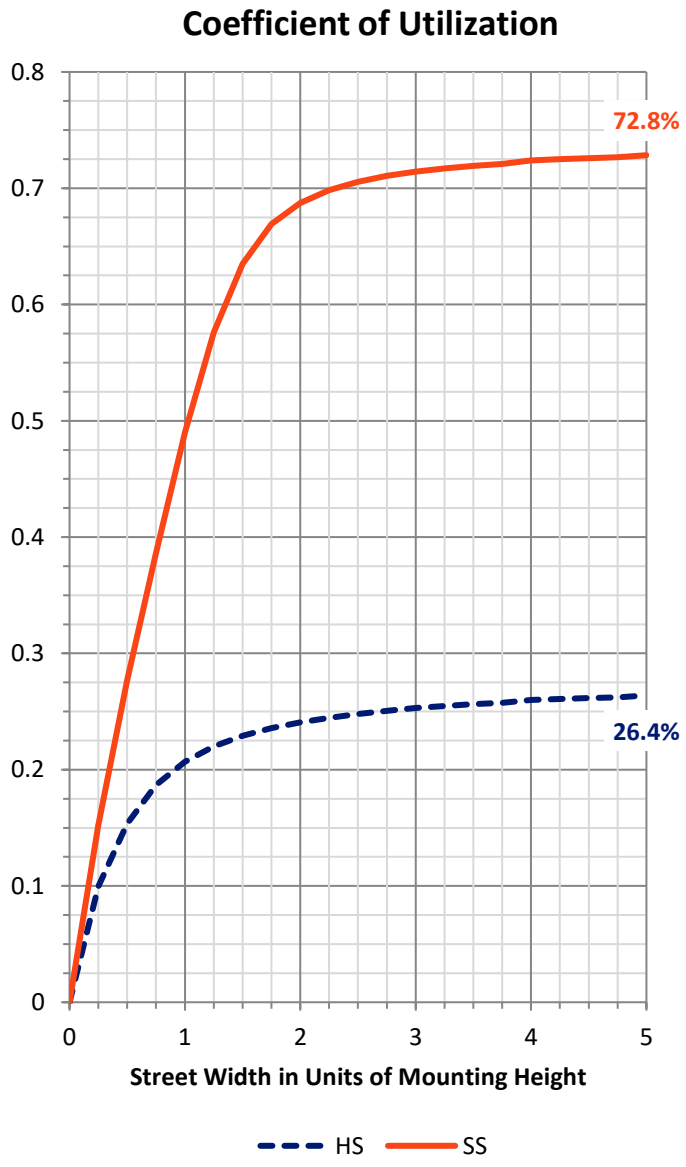
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 13328.2 | 0.0 | 13328.2 |
| | % Fixture | 26.9 | 0.0 | 26.9 |
| **Street Side** | Lumens | 36279.4 | 0.0 | 36279.4 |
| | % Fixture | 73.1 | 0.0 | 73.1 |
| **Total** | Lumens | 49607.6 | 0.0 | 49607.6 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 693.6 | 1.4 |
| 10°-20° | 2135.4 | 4.3 |
| 20°-30° | 3904.8 | 7.9 |
| 30°-40° | 6716.9 | 13.5 |
| 40°-50° | 9905.6 | 20.0 |
| 50°-60° | 11872.5 | 23.9 |
| 60°-70° | 9528.8 | 19.2 |
| 70°-80° | 3828.9 | 7.7 |
| 80°-90° | 1021.0 | 2.1 |
| 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° | 49607.6 | 100.0 |
| 0°-180° | 49607.6 | 100.0 |



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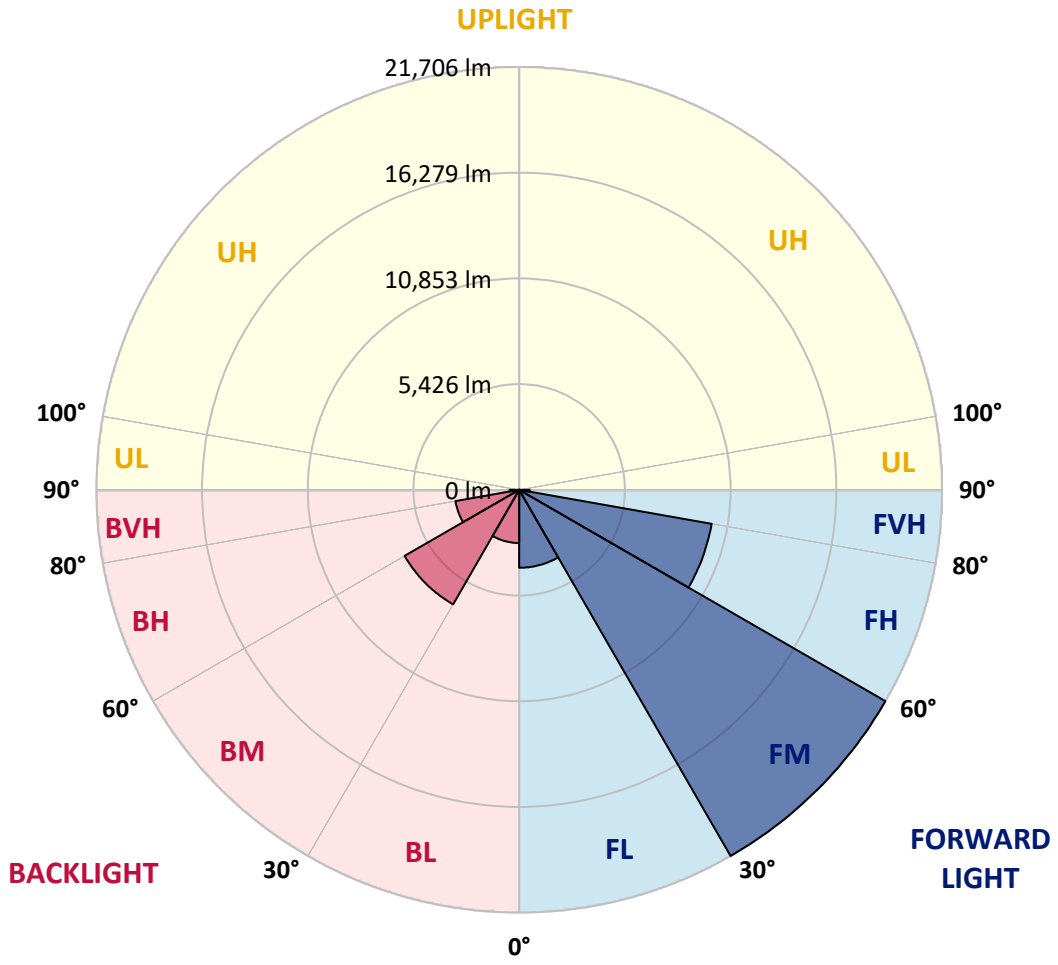
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 4002.4 | 8.1 | | | |
| FM | (30°-60°) | 21705.9 | 43.8 | | | |
| FH | (60°-80°) | 10034.7 | 20.2 | | | G4/12000 |
| FVH | (80°-90°) | 536.4 | 1.1 | | | G4/750 |
| BL | (0°-30°) | 2731.4 | 5.5 | B4/5000 | | |
| BM | (30°-60°) | 6789.1 | 13.7 | B4/8500 | | |
| BH | (60°-80°) | 3323.1 | 6.7 | B4/5000 | | G4/5000 |
| BVH | (80°-90°) | 484.6 | 1.0 | | | G3/500 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B4-U0-G4**
Type II Short



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REPORT NUMBER: P1455932
CATALOG NUMBER: GLAN-SB9B-735-U-T2LG

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 64° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 7554.7 | 7554.7 | 7554.7 | 7554.7 | 7554.7 | 7554.7 | 7554.7 | *7554.7* | 7554.7 | 7554.7 | 7554.7 |
| 2.5° | 7866.7 | 7877.8 | 7844.4 | 7833.2 | 7855.5 | 7810.9 | 7799.8 | *7755.2* | 7732.9 | 7688.4 | 7632.7 |
| 5° | 8089.5 | 8100.7 | 8078.4 | 8078.4 | 8100.7 | 8067.2 | 8056.1 | *8011.5* | 7989.2 | 7944.7 | 7833.2 |
| 7.5° | 8078.4 | 8089.5 | 8111.8 | 8200.9 | 8312.4 | 8356.9 | 8390.4 | *8356.9* | 8345.8 | 8278.9 | 8167.5 |
| 10° | 7900.1 | 7911.2 | 7966.9 | 8100.7 | 8379.2 | 8579.8 | 8791.5 | *8791.5* | 8813.8 | 8758.1 | 8557.5 |
| 12.5° | 7655.0 | 7666.1 | 7799.8 | 8011.5 | 8379.2 | 8724.6 | 9159.2 | *9337.5* | 9326.3 | 9292.9 | 9058.9 |
| 15° | 7064.4 | 7064.4 | 7265.0 | 7666.1 | 8256.7 | 8824.9 | 9471.2 | *9950.3* | 9961.5 | 9994.9 | 9716.3 |
| 17.5° | 6563.0 | 6574.1 | 6741.3 | 7097.8 | 7866.7 | 8769.2 | 9805.5 | *10630.0* | 10663.4 | 10852.9 | 10451.7 |
| 20° | 6607.5 | 6607.5 | 6663.3 | 6819.3 | 7443.2 | 8546.4 | 9994.9 | *11354.3* | 11465.7 | 11911.4 | 11410.0 |
| 22.5° | 6953.0 | 6953.0 | 6997.5 | 6986.4 | 7365.2 | 8401.5 | 10117.5 | *12078.6* | 12279.1 | 13204.0 | 12557.7 |
| 25° | 7588.1 | 7577.0 | 7532.4 | 7465.5 | 7688.4 | 8557.5 | 10396.0 | *12635.7* | 13025.7 | 14630.2 | 13883.7 |
| 27.5° | 8368.1 | 8345.8 | 8278.9 | 8167.5 | 8323.5 | 9025.5 | 10875.2 | *13226.2* | 13649.7 | 16190.2 | 15287.6 |
| 30° | 9337.5 | 9270.6 | 9203.8 | 9058.9 | 9226.1 | 9794.3 | 11588.3 | *14061.9* | 14463.1 | 17961.8 | 16981.3 |
| 32.5° | 10485.2 | 10563.2 | 10340.3 | 10139.7 | 10318.0 | 10841.7 | 12646.8 | *15053.6* | 15488.2 | 19811.5 | 18741.8 |
| 35° | 12201.1 | 12435.1 | 12368.3 | 11354.3 | 11521.4 | 12100.8 | 13883.7 | *16335.0* | 16725.0 | 21494.0 | 20546.9 |
| 37.5° | 13894.8 | 13839.1 | 13894.8 | 13048.0 | 12780.5 | 13482.5 | 15209.6 | *17560.7* | 17939.6 | 22864.6 | 22140.3 |
| 40° | 15254.2 | 15421.3 | 15421.3 | 14730.5 | 14385.1 | 14853.1 | 16413.0 | *18686.1* | 19053.8 | 23622.3 | 23288.0 |
| 42.5° | 16736.2 | 16758.4 | 16713.9 | 16112.2 | 15978.5 | 16101.0 | 17471.6 | *19399.2* | 19700.1 | 24012.3 | 24068.0 |
| 45° | 18407.5 | 18396.4 | 18207.0 | 17705.6 | 17505.0 | 17393.6 | 18129.0 | *20090.1* | 20390.9 | 24190.5 | 24491.4 |
| 47.5° | 19789.2 | 19844.9 | 19856.1 | 19321.2 | 18987.0 | 18507.8 | 18697.2 | *20435.5* | 20780.9 | 23990.0 | 24580.5 |
| 50° | 19867.2 | 19956.4 | 20379.8 | 20535.8 | 20468.9 | 19700.1 | 19220.9 | *20803.2* | 21148.6 | 24034.5 | 24903.7 |
| 52.5° | 19376.9 | 19466.1 | 20012.1 | 20658.3 | 21438.3 | 21070.6 | 20045.5 | *21438.3* | 21794.9 | 24469.1 | 25639.1 |
| 55° | 18062.1 | 18207.0 | 19020.4 | 19922.9 | 21315.8 | 21839.5 | 21505.2 | *22586.0* | 22920.3 | 24814.5 | 26497.1 |
| 57.5° | 15722.2 | 15900.5 | 17025.9 | 18463.3 | 20368.6 | 21661.2 | 23622.3 | *24424.5* | 24703.1 | 25059.7 | 26508.2 |
| 60° | 11755.4 | 11900.3 | 13660.8 | 15599.6 | 18463.3 | 20546.9 | 24881.4 | *27577.9* | 27733.9 | 23733.7 | 25003.9 |
| 62.5° | 8657.8 | 8802.6 | 9983.8 | 11376.6 | 14507.6 | 18496.7 | 25126.5 | *30307.8* | 30330.1 | 21338.0 | 22931.4 |
| 63° | *8156.4* | *8301.2* | *9370.9* | *10674.6* | *13571.7* | *17805.8* | *25048.5* | *30397.0* | *30319.0* | *20847.8* | *22474.6* |
| 65° | 6351.3 | 6607.5 | 7721.8 | 8713.5 | 10173.2 | 14173.4 | 24045.7 | *28814.7* | 28926.1 | 19399.2 | 20179.2 |
| 67.5° | 4323.3 | 4512.7 | 5927.9 | 7075.5 | 7688.4 | 9025.5 | 19722.4 | *24658.5* | 24836.8 | 17895.0 | 16101.0 |
| 70° | 3342.8 | 3431.9 | 4256.5 | 5604.7 | 6217.6 | 5738.4 | 12858.5 | *19856.1* | 19856.1 | 13972.8 | 11410.0 |
| 72.5° | 2618.5 | 2651.9 | 3209.1 | 4379.0 | 5003.0 | 4412.5 | 7164.7 | *14440.8* | 13905.9 | 8290.1 | 7610.4 |
| 75° | 1872.0 | 1916.5 | 2417.9 | 3264.8 | 3989.0 | 3476.5 | 4579.6 | *8412.6* | 8089.5 | 4769.0 | 5081.0 |
| 77.5° | 1482.0 | 1504.2 | 1805.1 | 2406.8 | 3231.3 | 2651.9 | 3487.6 | *4590.7* | 4546.2 | 3353.9 | 3264.8 |
| 80° | 1170.0 | 1214.5 | 1415.1 | 1727.1 | 2495.9 | 2072.5 | 2596.2 | *3030.8* | 2941.6 | 2306.5 | 2094.8 |
| 82.5° | 835.7 | 913.7 | 1092.0 | 1314.8 | 1849.7 | 1482.0 | 1704.8 | *2139.4* | 2139.4 | 1738.2 | 1381.7 |
| 85° | 512.6 | 579.4 | 646.3 | 813.4 | 1314.8 | 958.3 | 902.5 | *1381.7* | 1415.1 | 1303.7 | 891.4 |
| 87.5° | 245.1 | 267.4 | 312.0 | 345.4 | 479.1 | 434.6 | 356.6 | *523.7* | 534.8 | 579.4 | 367.7 |
| 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: P1455932
CATALOG NUMBER: GLAN-SB9B-735-U-T2LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 7554.7 | 7554.7 | 7554.7 | 7554.7 | 7554.7 | 7554.7 | 7554.7 | 7554.7 | 7554.7 | 7554.7 | 7554.7 |
| 2.5° | 7621.5 | 7599.2 | 7487.8 | 7376.4 | 7253.8 | 7142.4 | 7031.0 | 6941.8 | 6841.5 | 6863.8 | 6875.0 |
| 5° | 7766.4 | 7710.7 | 7465.5 | 7175.8 | 6797.0 | 6440.4 | 6095.0 | 5849.9 | 5693.9 | 5649.3 | 5560.1 |
| 7.5° | 8078.4 | 7944.7 | 7499.0 | 6886.1 | 6184.1 | 5627.0 | 5303.9 | 5159.0 | 5114.4 | 5125.6 | 5103.3 |
| 10° | 8434.9 | 8234.4 | 7543.5 | 6540.7 | 5649.3 | 5270.4 | 5225.9 | 5315.0 | 5359.6 | 5404.2 | 5415.3 |
| 12.5° | 8902.9 | 8579.8 | 7521.2 | 6161.8 | 5393.0 | 5326.2 | 5493.3 | 5660.4 | 5760.7 | 5827.6 | 5816.4 |
| 15° | 9448.9 | 9014.3 | 7454.4 | 5849.9 | 5359.6 | 5537.9 | 5749.6 | 5939.0 | 6061.6 | 6128.4 | 6095.0 |
| 17.5° | 10106.3 | 9526.9 | 7376.4 | 5649.3 | 5459.9 | 5671.6 | 5894.4 | 6083.8 | 6217.6 | 6262.1 | 6228.7 |
| 20° | 10919.7 | 10106.3 | 7242.7 | 5560.1 | 5537.9 | 5727.3 | 5927.9 | 6106.1 | 6217.6 | 6262.1 | 6217.6 |
| 22.5° | 11878.0 | 10797.2 | 7131.3 | 5560.1 | 5571.3 | 5727.3 | 5872.1 | 6005.8 | 6106.1 | 6139.6 | 6083.8 |
| 25° | 13103.7 | 11599.4 | 7086.7 | 5649.3 | 5582.4 | 5671.6 | 5749.6 | 5827.6 | 5883.3 | 5905.6 | 5883.3 |
| 27.5° | 14351.6 | 12524.3 | 7109.0 | 5760.7 | 5571.3 | 5593.6 | 5593.6 | 5604.7 | 5615.9 | 5627.0 | 5615.9 |
| 30° | 15789.0 | 13460.2 | 7198.1 | 5905.6 | 5593.6 | 5482.1 | 5448.7 | 5381.9 | 5326.2 | 5281.6 | 5237.0 |
| 32.5° | 17181.9 | 14351.6 | 7354.1 | 6117.3 | 5571.3 | 5359.6 | 5292.7 | 5125.6 | 4969.6 | 4835.9 | 4835.9 |
| 35° | 18686.1 | 15276.5 | 7632.7 | 6273.3 | 5549.0 | 5248.2 | 5058.7 | 4869.3 | 4702.2 | 4512.7 | 4512.7 |
| 37.5° | 19978.6 | 16067.6 | 7855.5 | 6451.6 | 5526.7 | 5114.4 | 4813.6 | 4601.9 | 4423.6 | 4234.2 | 4211.9 |
| 40° | 20881.2 | 16524.4 | 7989.2 | 6518.4 | 5448.7 | 4936.2 | 4579.6 | 4312.2 | 4055.9 | 3799.6 | 3788.5 |
| 42.5° | 21315.8 | 16502.2 | 7911.2 | 6496.1 | 5303.9 | 4713.3 | 4379.0 | 4022.5 | 3677.1 | 3443.1 | 3420.8 |
| 45° | 21549.7 | 16357.3 | 7610.4 | 6306.7 | 5069.9 | 4479.3 | 4122.8 | 3743.9 | 3398.5 | 3186.8 | 3142.2 |
| 47.5° | 21505.2 | 16000.7 | 7198.1 | 5838.7 | 4757.9 | 4223.0 | 3866.5 | 3476.5 | 3197.9 | 3075.4 | 3075.4 |
| 50° | 21627.7 | 15722.2 | 6730.1 | 5303.9 | 4334.5 | 3922.2 | 3632.5 | 3275.9 | 3108.8 | 2952.8 | 2897.1 |
| 52.5° | 22173.7 | 15956.2 | 6329.0 | 4802.5 | 3933.3 | 3632.5 | 3431.9 | 3131.1 | 2919.4 | 2819.1 | 2785.6 |
| 55° | 22898.0 | 16457.6 | 5950.1 | 4356.7 | 3543.3 | 3376.2 | 3275.9 | 2997.4 | 2752.2 | 2651.9 | 2596.2 |
| 57.5° | 23031.7 | 16803.0 | 5582.4 | 3922.2 | 3220.2 | 3175.6 | 3142.2 | 2763.4 | 2562.8 | 2484.8 | 2440.2 |
| 60° | 22106.9 | 16546.7 | 5103.3 | 3532.2 | 2963.9 | 2986.2 | 2897.1 | 2618.5 | 2384.5 | 2306.5 | 2261.9 |
| 62.5° | 20535.8 | 15878.2 | 4624.2 | 3197.9 | 2763.4 | 2807.9 | 2718.8 | 2440.2 | 2206.2 | 2128.2 | 2105.9 |
| 63° | *20223.8* | *15699.9* | *4512.7* | *3164.5* | *2718.8* | *2774.5* | *2696.5* | *2417.9* | *2183.9* | *2105.9* | *2072.5* |
| 65° | 18363.0 | 14630.2 | 4122.8 | 2986.2 | 2573.9 | 2573.9 | 2585.1 | 2306.5 | 2105.9 | 2072.5 | 2050.2 |
| 67.5° | 14975.6 | 12212.3 | 3699.3 | 2774.5 | 2417.9 | 2451.4 | 2507.1 | 2351.1 | 2273.1 | 2250.8 | 2228.5 |
| 70° | 11320.9 | 9192.6 | 3331.6 | 2573.9 | 2250.8 | 2362.2 | 2741.1 | 2674.2 | 2384.5 | 2183.9 | 2139.4 |
| 72.5° | 8022.7 | 6262.1 | 3008.5 | 2373.4 | 2050.2 | 2328.8 | 2841.4 | 2551.7 | 2150.5 | 1916.5 | 1872.0 |
| 75° | 5370.7 | 4033.6 | 2685.4 | 2161.7 | 1827.4 | 2150.5 | 2685.4 | 2328.8 | 1872.0 | 1816.2 | 1749.4 |
| 77.5° | 3376.2 | 2874.8 | 2362.2 | 1916.5 | 1582.2 | 1916.5 | 2440.2 | 2072.5 | 1615.7 | 1638.0 | 1537.7 |
| 80° | 2061.4 | 2050.2 | 1983.4 | 1626.8 | 1270.3 | 1526.5 | 2050.2 | 1749.4 | 1292.5 | 1292.5 | 1147.7 |
| 82.5° | 1225.7 | 1482.0 | 1682.5 | 1348.3 | 924.8 | 1092.0 | 1482.0 | 1314.8 | 1080.8 | 1047.4 | 980.5 |
| 85° | 824.6 | 1002.8 | 1337.1 | 1036.3 | 590.6 | 668.6 | 1025.1 | 1103.1 | 991.7 | 869.1 | 813.4 |
| 87.5° | 300.8 | 401.1 | 612.8 | 423.4 | 256.3 | 401.1 | 768.8 | 802.3 | 601.7 | 468.0 | 423.4 |
| 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

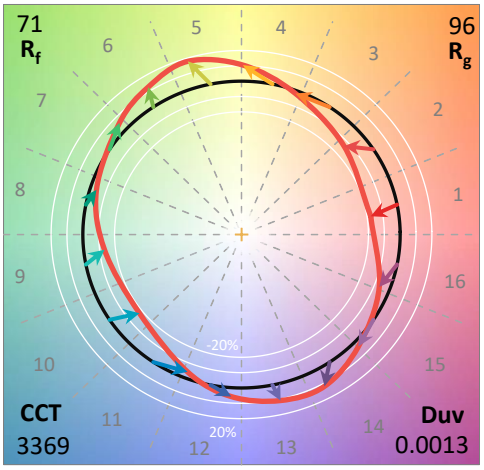
## Test Information

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

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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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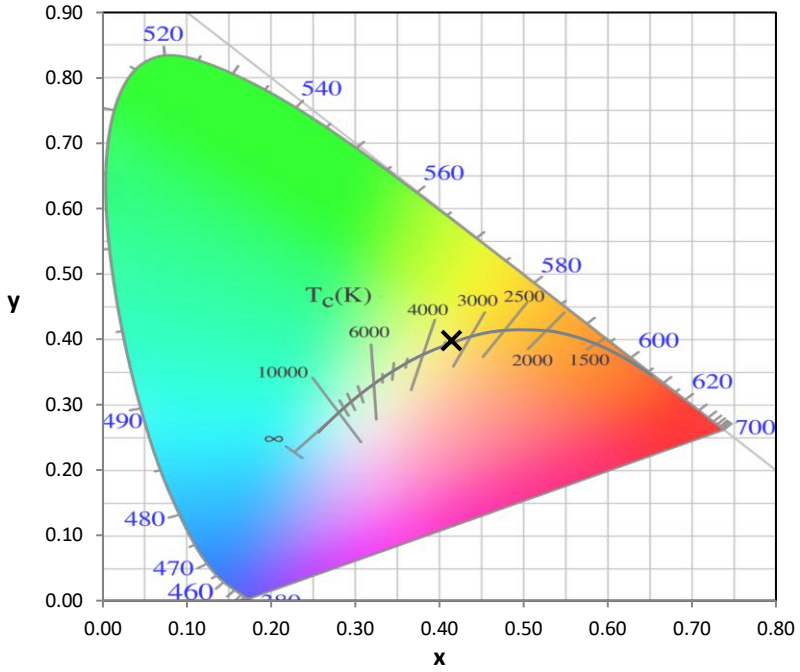
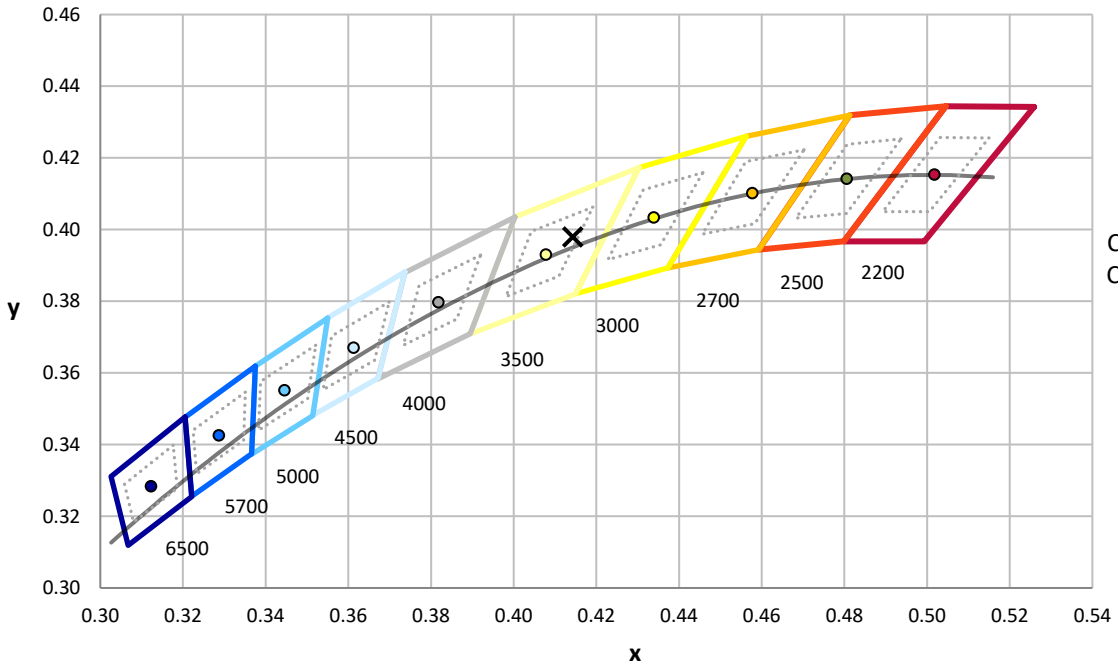
**CIE 1931 Chromaticity Diagram**




**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**




CCT = 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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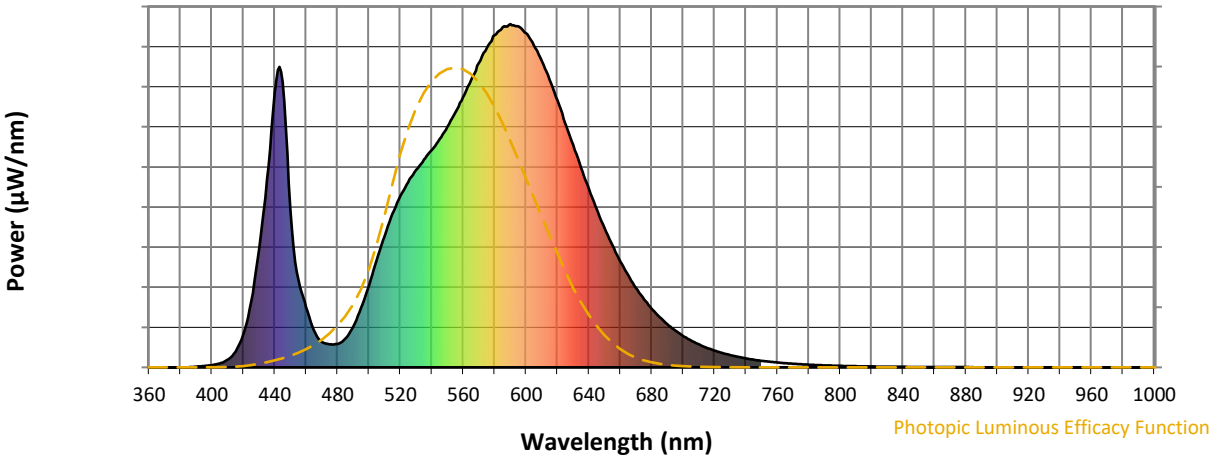
## Photopic Flux vs. Wavelength




## 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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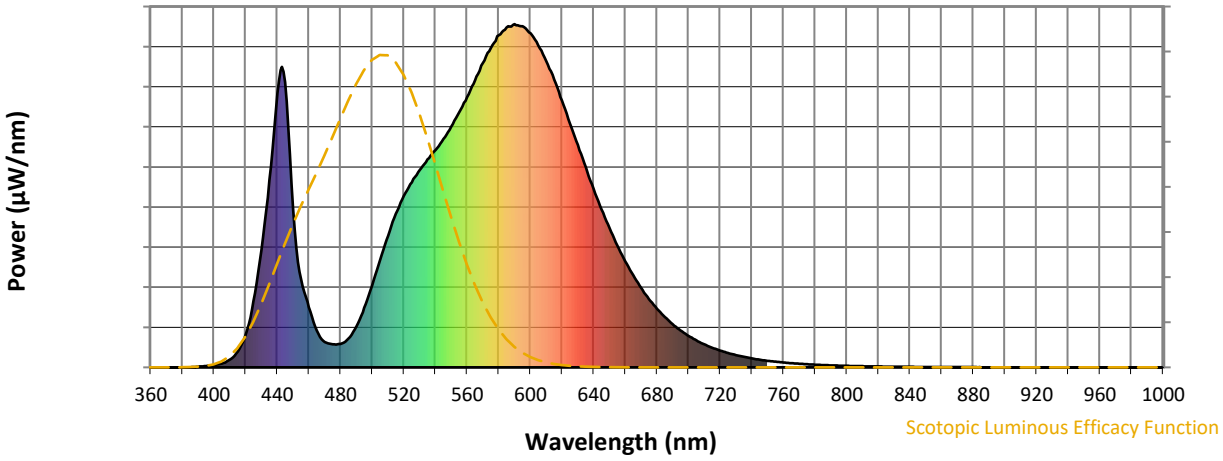
## Scotopic Flux vs. Wavelength




**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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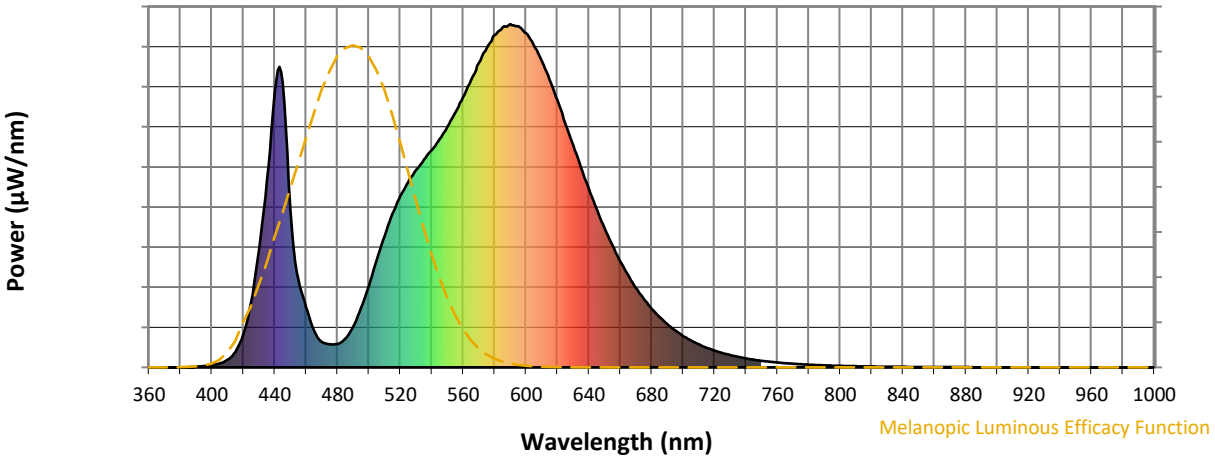
## Melanopic Flux vs. Wavelength




**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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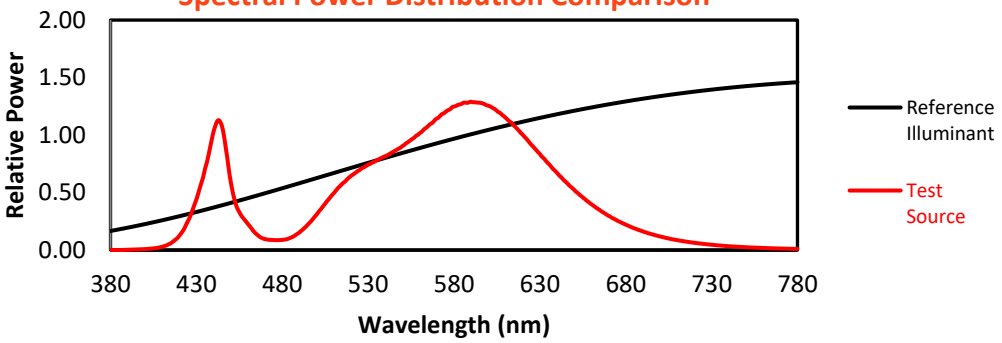
# TM-30-18

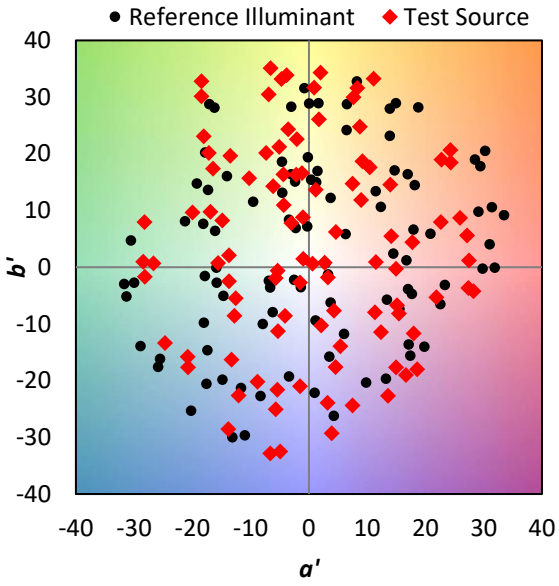
## Summary

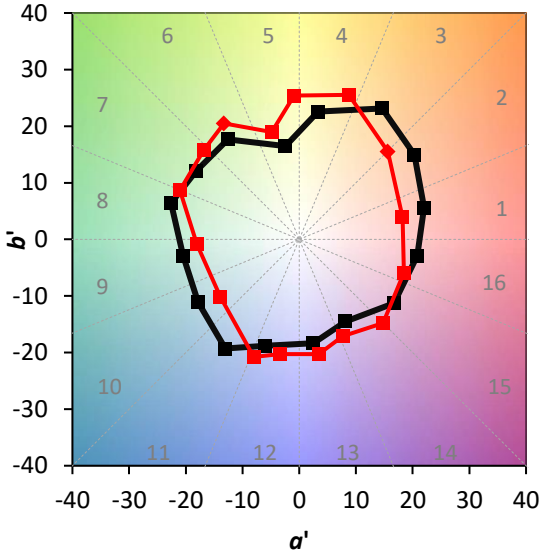
$R_f$ = 71.4
$R_g$ = 96
CIE $R_a$ = 70.1
$R_9$ = -40.2

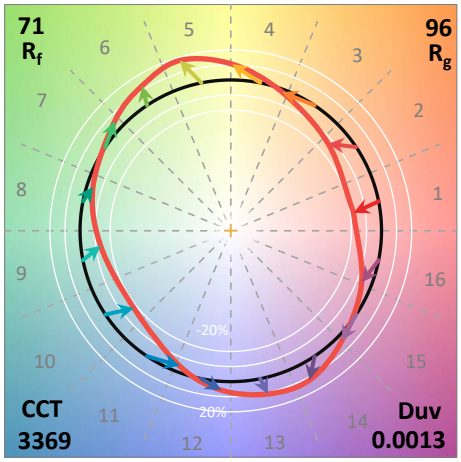
## Spectral Power Distribution Comparison

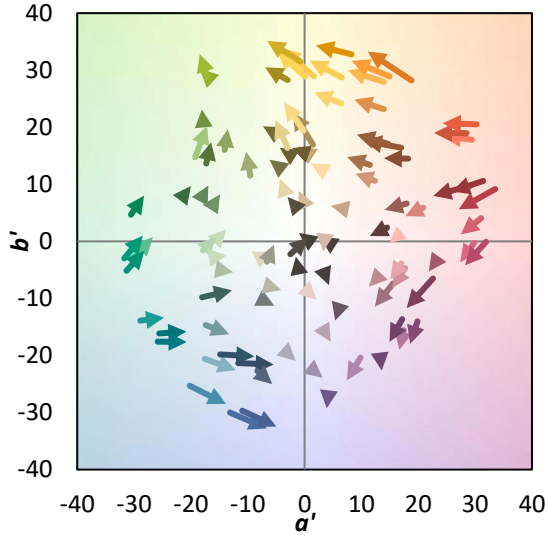



## Color Vector Graphics



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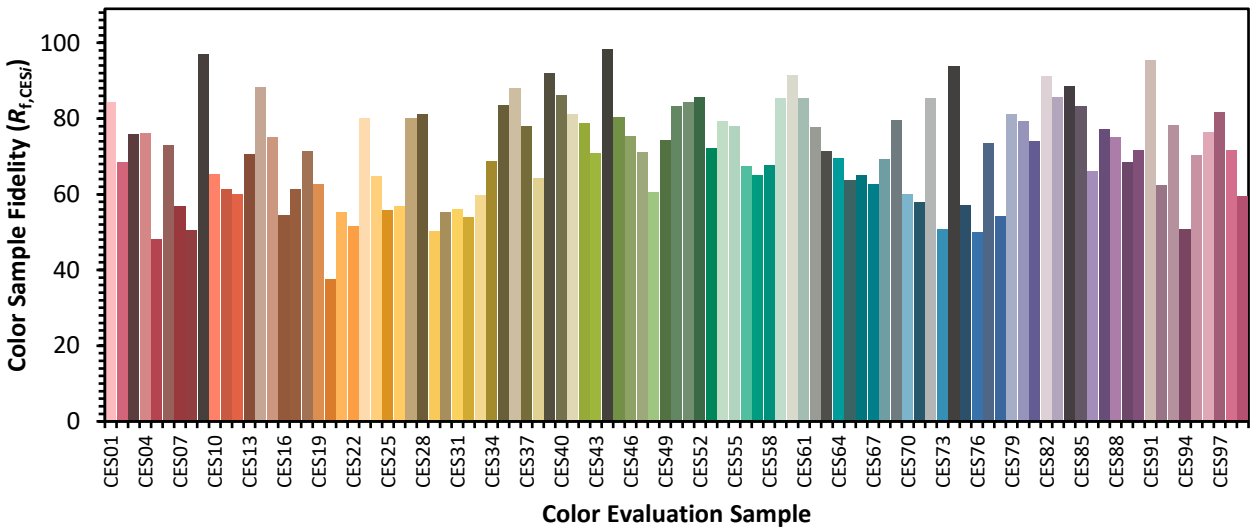
# TM-30-18

## 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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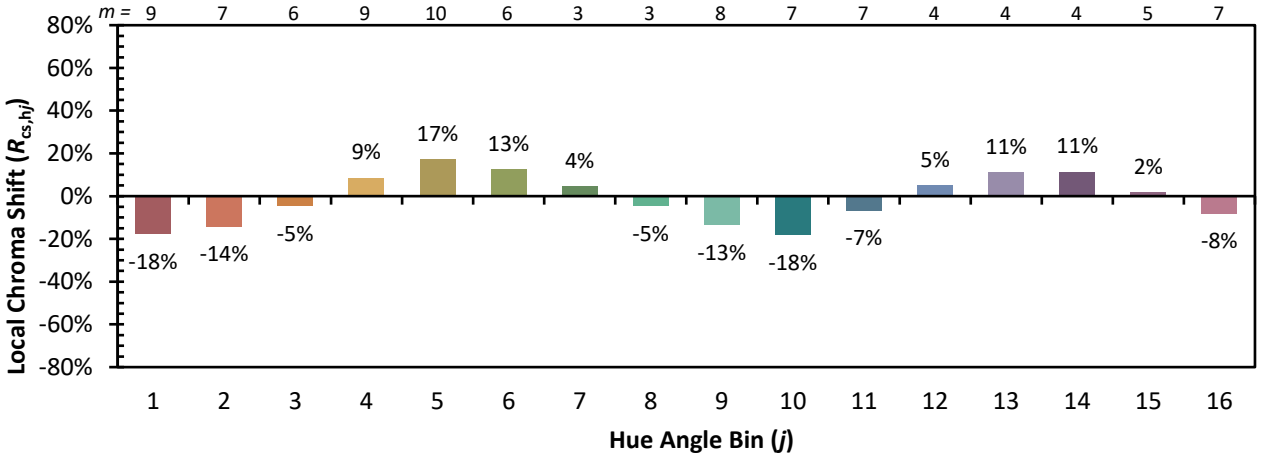
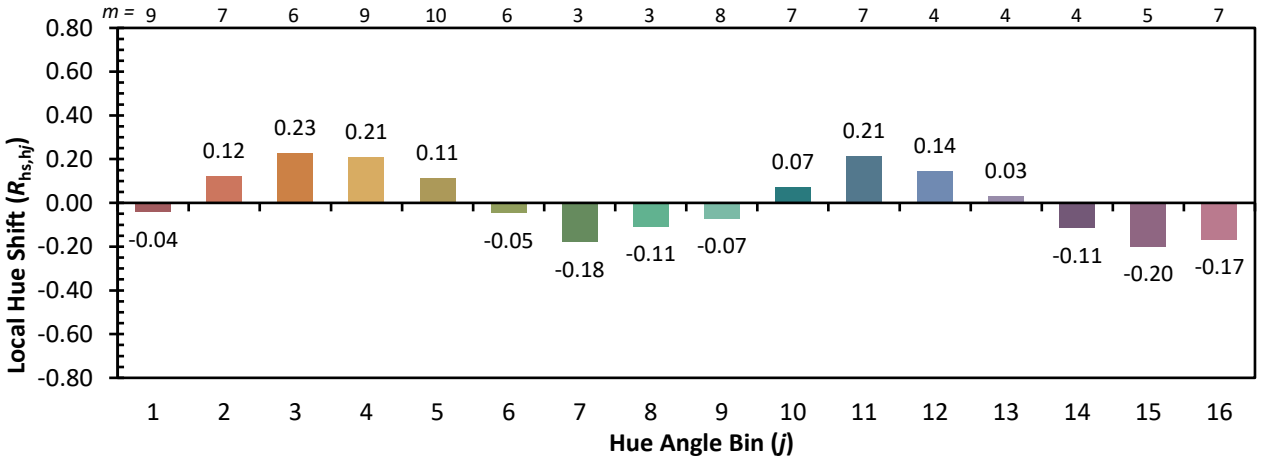
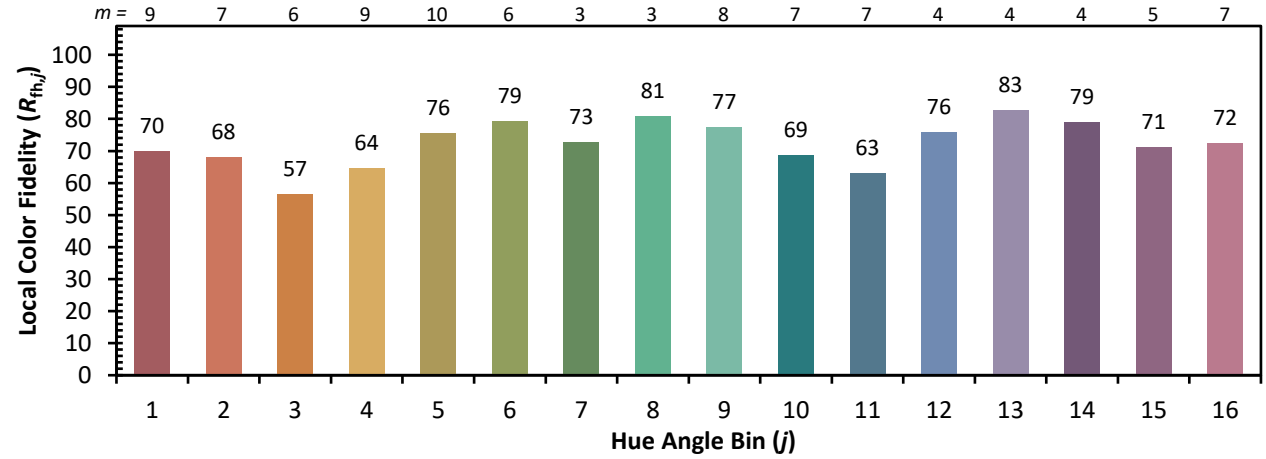
## Color Rendition by Hue-Angle Bin



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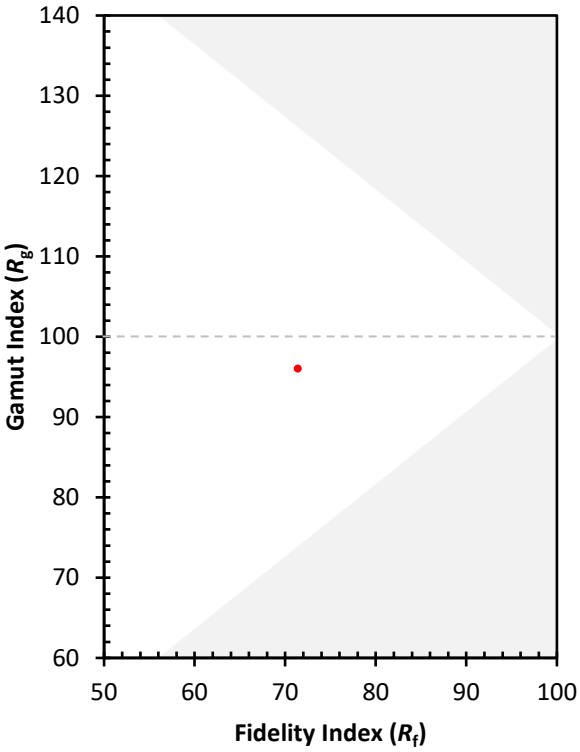
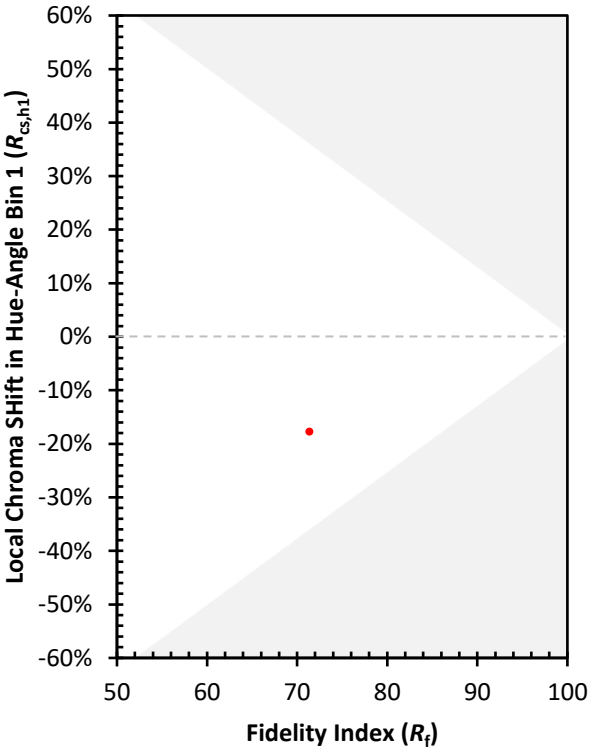
## Measure Comparisons




(END OF REPORT)