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: P1459028

Luminaire Tested: GLAN-SB9B-840-U-T4LG-HSS

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: | P1459028 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/22/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB9B-840-U-T4LG-HSS |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 450mA 9xLight Square PACKAGE 80CRI 4000K FIXTURE w/ TYPE IV LOW GLARE WITH HOUSE SIDE SHIELD |
| Light Source: | (234) 4000K CCT, 80 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 35570.1 lumens |
| Efficiency: | N/A |
| Efficacy: | 108.0 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1.5' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B2 - 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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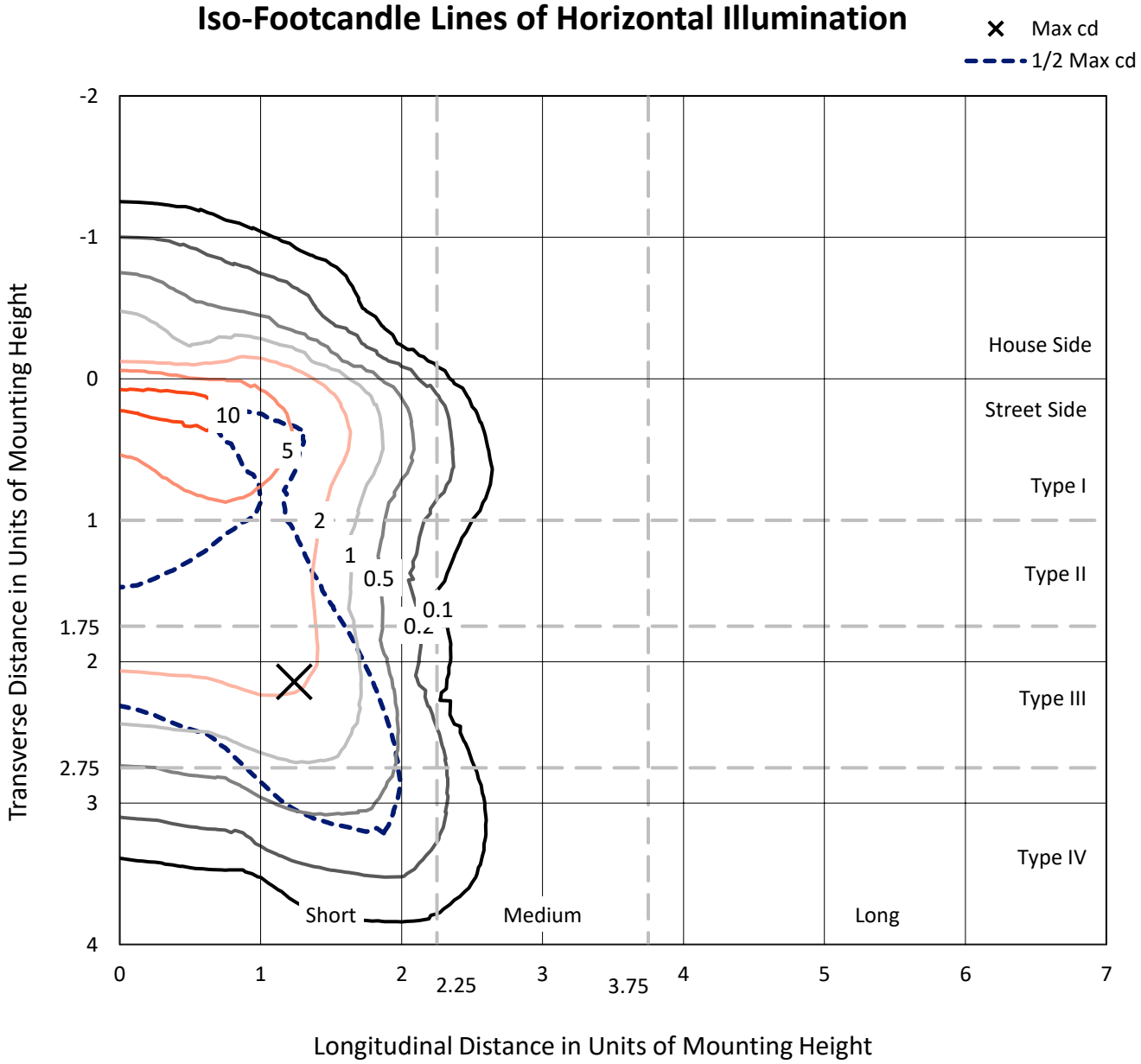
Scaled Data Report

REPORT NUMBER: P1459028
CATALOG NUMBER: GLAN-SB9B-840-U-T4LG-HSS

## Iso-Footcandle Lines of Horizontal Illumination




Based on 30 foot mounting height. Maximum calculated value = 11.9 fc
Type IV - Short - N/A

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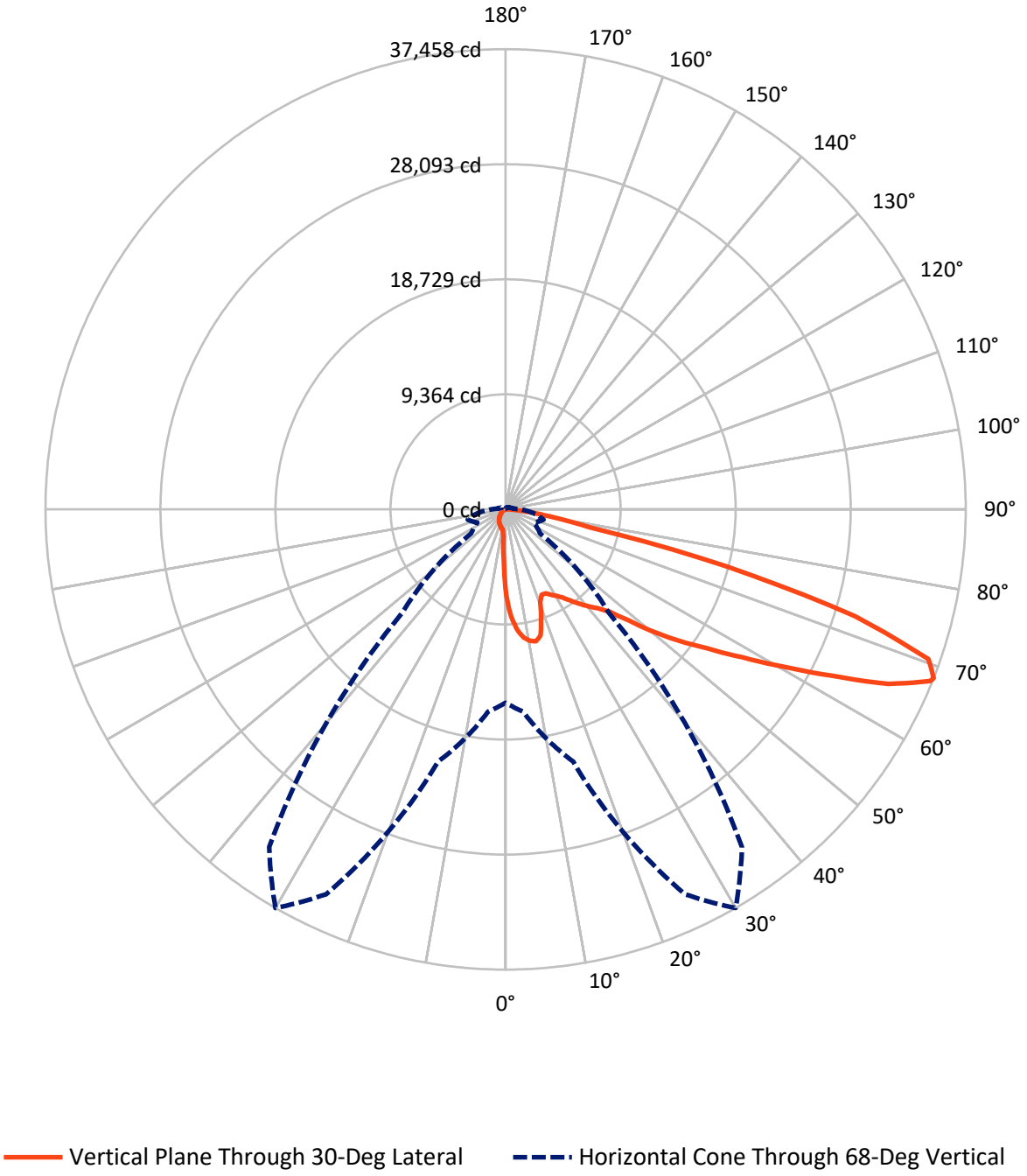
## Luminous Intensity Polar Plot



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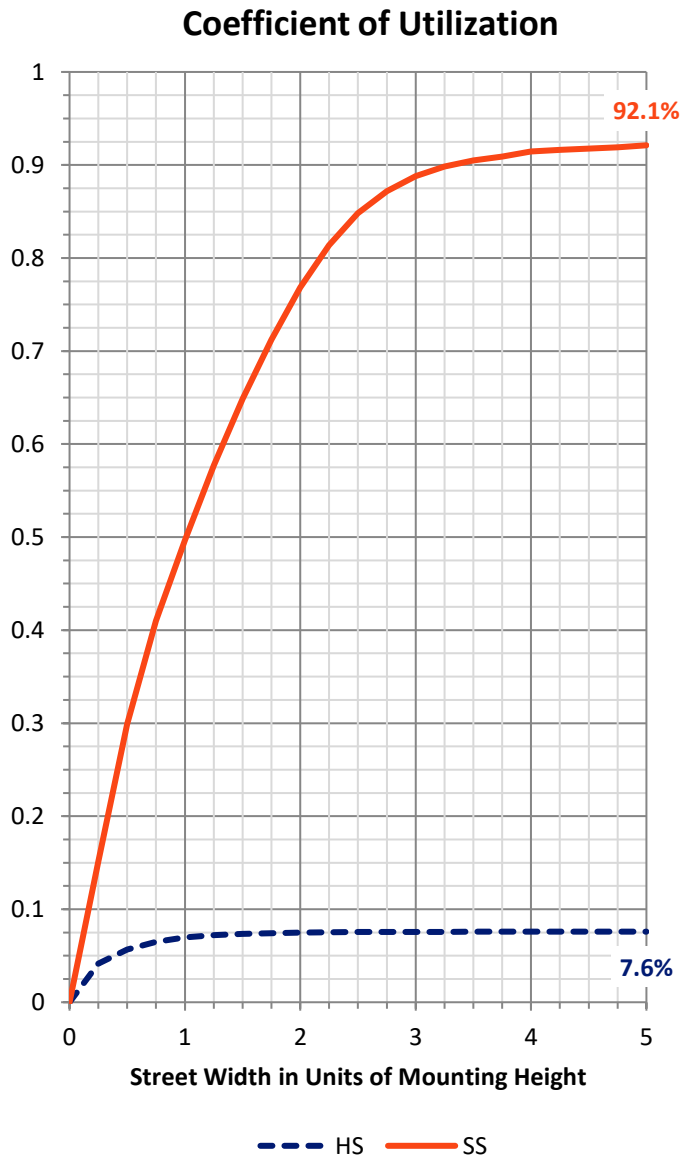
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 2714.9 | 0.0 | 2714.9 |
| | % Fixture | 7.6 | 0.0 | 7.6 |
| **Street Side** | Lumens | 32855.2 | 0.0 | 32855.2 |
| | % Fixture | 92.4 | 0.0 | 92.4 |
| **Total** | Lumens | 35570.1 | 0.0 | 35570.1 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 605.2 | 1.7 |
| 10°-20° | 1727.9 | 4.9 |
| 20°-30° | 2715.3 | 7.6 |
| 30°-40° | 4258.7 | 12.0 |
| 40°-50° | 6365.6 | 17.9 |
| 50°-60° | 8468.3 | 23.8 |
| 60°-70° | 8186.2 | 23.0 |
| 70°-80° | 2942.6 | 8.3 |
| 80°-90° | 300.3 | 0.8 |
| 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° | 35570.1 | 100.0 |
| 0°-180° | 35570.1 | 100.0 |



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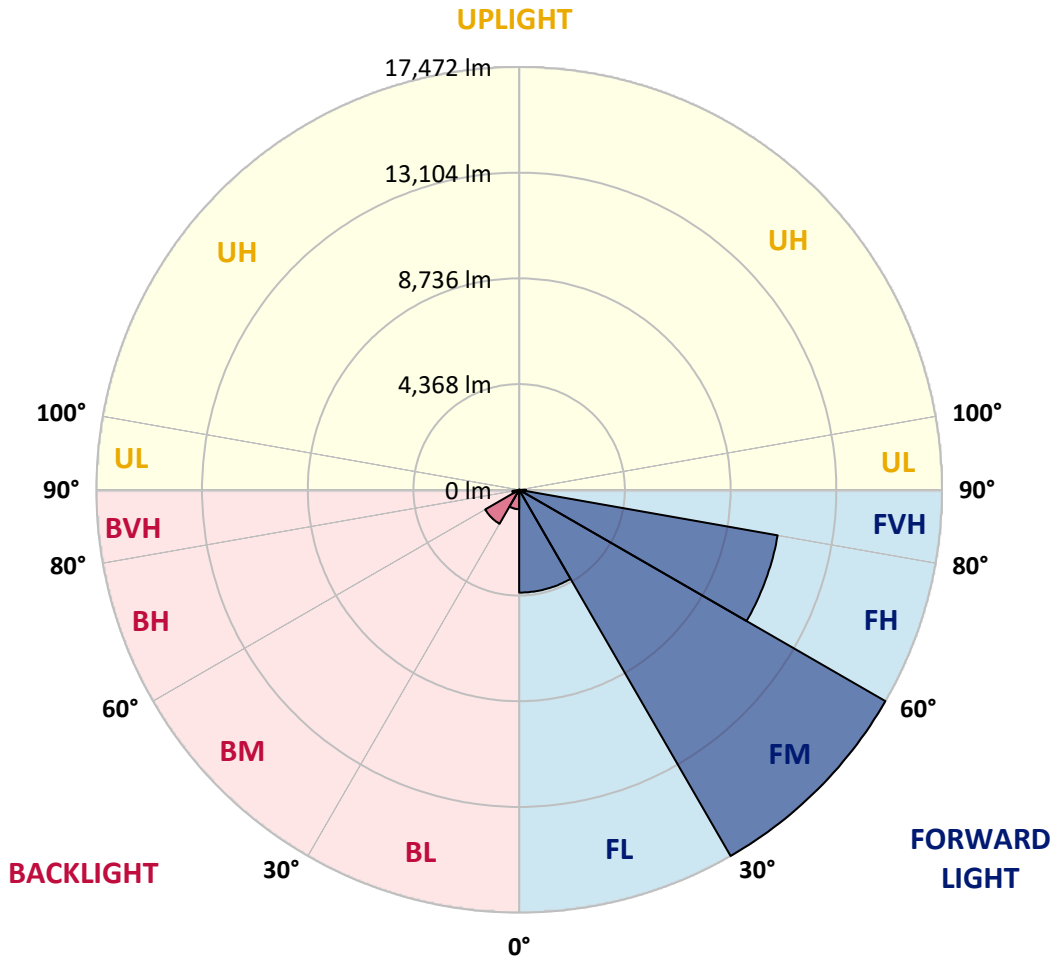
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 4247.1 | 11.9 | | | |
| FM | (30°-60°) | 17472.0 | 49.1 | | | |
| FH | (60°-80°) | 10846.5 | 30.5 | | | G4/12000 |
| FVH | (80°-90°) | 289.6 | 0.8 | | | G3/500 |
| BL | (0°-30°) | 801.4 | 2.3 | B2/1000 | | |
| BM | (30°-60°) | 1620.5 | 4.6 | B2/2500 | | |
| BH | (60°-80°) | 282.4 | 0.8 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 10.7 | 0.0 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B2-U0-G4**
Type IV Short



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 30° | 35° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 7014.0 | 7014.0 | 7014.0 | 7014.0 | 7014.0 | 7014.0 | 7014.0 | 7014.0 | 7014.0 | 7014.0 | 7014.0 |
| 2.5° | 8964.7 | 8964.7 | 8900.8 | 8815.5 | 8719.5 | 8687.6 | 8506.3 | 8250.5 | 7984.0 | 7674.9 | 7227.2 |
| 5° | 10115.9 | 10105.3 | 9977.4 | 9977.4 | 9849.5 | 9732.2 | 9551.0 | 9177.9 | 8751.5 | 8197.2 | 7419.1 |
| 7.5° | 10627.6 | 10648.9 | 10595.6 | 10595.6 | 10521.0 | 10435.7 | 10329.1 | 9966.7 | 9465.7 | 8719.5 | 7610.9 |
| 10° | 10808.8 | 10819.5 | 10819.5 | 10894.1 | 10872.8 | 10862.1 | 10851.5 | 10648.9 | 10126.6 | 9252.5 | 7813.5 |
| 12.5° | 10371.8 | 10425.1 | 10574.3 | 10904.8 | 11011.4 | 11128.6 | 11288.5 | 11224.5 | 10862.1 | 9924.1 | 8122.6 |
| 15° | 8964.7 | 8975.4 | 9391.1 | 10211.9 | 10648.9 | 11096.6 | 11714.9 | 11842.8 | 11608.3 | 10648.9 | 8442.4 |
| 17.5° | 7397.8 | 7429.7 | 7760.2 | 8676.9 | 9380.4 | 10414.4 | 11960.1 | 12482.4 | 12397.1 | 11363.1 | 8740.9 |
| 20° | 6747.5 | 6790.2 | 6950.0 | 7525.7 | 8058.6 | 9018.0 | 11714.9 | 13090.0 | 13121.9 | 12077.3 | 9018.0 |
| 22.5° | 6598.3 | 6630.3 | 6758.2 | 7205.9 | 7536.3 | 8175.9 | 10883.4 | 13569.7 | 13942.7 | 12898.1 | 9348.5 |
| 25° | 6555.6 | 6587.6 | 6779.5 | 7269.8 | 7579.0 | 8111.9 | 10126.6 | 13825.5 | 14912.8 | 13750.9 | 9668.2 |
| 27.5° | 6523.7 | 6566.3 | 6875.4 | 7504.3 | 7866.8 | 8378.4 | 9988.0 | 13878.8 | 15840.1 | 14656.9 | 10190.6 |
| 30° | 6566.3 | 6630.3 | 7035.3 | 7749.5 | 8165.2 | 8740.9 | 10318.5 | 13932.1 | 16863.5 | 15690.9 | 10851.5 |
| 32.5° | 6736.9 | 6790.2 | 7280.5 | 8080.0 | 8559.6 | 9209.9 | 10883.4 | 14251.9 | 17833.5 | 16746.2 | 11480.4 |
| 35° | 6928.7 | 7003.3 | 7589.6 | 8549.0 | 9124.6 | 9860.1 | 11650.9 | 14880.8 | 18760.9 | 17748.2 | 12130.6 |
| 37.5° | 7163.2 | 7248.5 | 7952.1 | 9082.0 | 9742.9 | 10574.3 | 12482.4 | 15754.9 | 19581.7 | 18569.0 | 12780.8 |
| 40° | 7483.0 | 7579.0 | 8367.8 | 9646.9 | 10361.1 | 11192.6 | 13303.2 | 16618.3 | 20210.6 | 19059.3 | 13207.2 |
| 42.5° | 8740.9 | 8868.8 | 9199.2 | 10201.2 | 11000.7 | 11853.5 | 14113.3 | 17439.1 | 20445.1 | 19219.2 | 13292.5 |
| 45° | 11086.0 | 11213.9 | 11128.6 | 11320.5 | 11853.5 | 12652.9 | 14998.0 | 18227.9 | 20477.1 | 19176.6 | 13249.9 |
| 47.5° | 13441.7 | 13591.0 | 13516.4 | 13409.8 | 13527.0 | 13910.8 | 15989.4 | 18728.9 | 20306.5 | 19155.3 | 13249.9 |
| 50° | 15690.9 | 15605.6 | 15616.3 | 15584.3 | 15690.9 | 15893.4 | 16948.7 | 18824.8 | 20263.9 | 19357.8 | 13367.1 |
| 52.5° | 16895.4 | 16938.1 | 17204.6 | 17599.0 | 17833.5 | 18036.0 | 18046.7 | 18974.1 | 19954.7 | 19016.7 | 13228.5 |
| 55° | 18078.7 | 18163.9 | 18782.2 | 19453.7 | 19976.1 | 20359.8 | 19144.6 | 18878.1 | 18110.6 | 17876.1 | 12503.7 |
| 57.5° | 19411.1 | 19528.4 | 20402.4 | 21788.2 | 22704.9 | 22907.4 | 20231.9 | 17087.3 | 15328.5 | 16245.2 | 11096.6 |
| 60° | 21244.6 | 21383.1 | 22545.0 | 24623.6 | 25988.1 | 25572.3 | 20317.2 | 14241.2 | 12173.2 | 13484.4 | 9156.6 |
| 62.5° | 22683.6 | 22960.7 | 25060.7 | 28301.2 | 29804.2 | 28482.4 | 18728.9 | 10915.4 | 8506.3 | 9476.4 | 6683.6 |
| 65° | 21148.6 | 21681.6 | 25103.3 | 32511.7 | 34249.2 | 31904.1 | 16234.5 | 7451.0 | 4796.8 | 6129.3 | 4274.5 |
| 67.5° | 17098.0 | 17844.1 | 22289.2 | 34558.4 | 37297.9 | 33705.6 | 12780.8 | 3954.7 | 2750.2 | 3560.3 | 2249.2 |
| 68° | 15733.5 | 16543.7 | 21255.2 | 34558.4 | 37457.8 | 33545.7 | 11864.1 | 3421.7 | 2537.0 | 3197.9 | 1950.7 |
| 70° | 10872.8 | 11448.4 | 16341.1 | 32618.3 | 36519.7 | 30582.3 | 7813.5 | 1961.4 | 1908.1 | 2195.9 | 1289.8 |
| 72.5° | 5329.8 | 5948.0 | 8740.9 | 25849.5 | 29750.9 | 23504.4 | 3560.3 | 1300.5 | 1449.7 | 1609.6 | 1012.7 |
| 75° | 2121.3 | 2249.2 | 3443.0 | 12748.9 | 18590.3 | 14998.0 | 1865.4 | 980.7 | 1247.2 | 1257.8 | 799.5 |
| 77.5° | 1215.2 | 1289.8 | 1908.1 | 4690.2 | 6971.4 | 6704.9 | 1204.5 | 703.5 | 991.3 | 906.1 | 522.3 |
| 80° | 682.2 | 692.9 | 1076.6 | 2473.0 | 3986.7 | 3571.0 | 820.8 | 511.7 | 756.8 | 639.6 | 351.8 |
| 82.5° | 341.1 | 383.7 | 682.2 | 1364.4 | 2217.2 | 2270.5 | 437.0 | 362.4 | 607.6 | 458.4 | 287.8 |
| 85° | 245.2 | 266.5 | 490.3 | 756.8 | 1023.3 | 1535.0 | 266.5 | 181.2 | 458.4 | 309.1 | 202.5 |
| 87.5° | 127.9 | 159.9 | 309.1 | 373.1 | 415.7 | 522.3 | 127.9 | 85.3 | 255.8 | 181.2 | 106.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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Scaled Data Report

REPORT NUMBER: P1459028
CATALOG NUMBER: GLAN-SB9B-840-U-T4LG-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 7014.0 | 7014.0 | 7014.0 | 7014.0 | 7014.0 | 7014.0 | 7014.0 | 7014.0 | 7014.0 | 7014.0 | 7014.0 |
| 2.5° | 7014.0 | 6768.8 | 6267.8 | 5681.6 | 5223.2 | 4754.2 | 4370.4 | 4008.0 | 3837.5 | 3816.1 | 3858.8 |
| 5° | 6982.0 | 6449.0 | 5308.5 | 4189.2 | 3272.5 | 2632.9 | 2281.2 | 2099.9 | 2004.0 | 1961.4 | 1972.0 |
| 7.5° | 6918.1 | 6107.9 | 4285.2 | 2835.4 | 2121.3 | 1844.1 | 1758.8 | 1726.9 | 1716.2 | 1716.2 | 1716.2 |
| 10° | 6854.1 | 5649.6 | 3283.2 | 2078.6 | 1737.5 | 1662.9 | 1641.6 | 1641.6 | 1630.9 | 1630.9 | 1641.6 |
| 12.5° | 6822.1 | 5223.2 | 2547.6 | 1737.5 | 1620.3 | 1588.3 | 1567.0 | 1556.3 | 1556.3 | 1556.3 | 1567.0 |
| 15° | 6747.5 | 4754.2 | 2057.3 | 1609.6 | 1545.6 | 1503.0 | 1492.3 | 1481.7 | 1481.7 | 1481.7 | 1481.7 |
| 17.5° | 6683.6 | 4295.8 | 1790.8 | 1524.3 | 1471.0 | 1428.4 | 1417.7 | 1407.1 | 1407.1 | 1417.7 | 1417.7 |
| 20° | 6587.6 | 3858.8 | 1609.6 | 1439.0 | 1396.4 | 1353.8 | 1343.1 | 1332.4 | 1343.1 | 1343.1 | 1343.1 |
| 22.5° | 6470.4 | 3496.3 | 1503.0 | 1375.1 | 1321.8 | 1279.2 | 1279.2 | 1279.2 | 1279.2 | 1279.2 | 1289.8 |
| 25° | 6395.8 | 3240.5 | 1428.4 | 1300.5 | 1247.2 | 1215.2 | 1204.5 | 1204.5 | 1225.9 | 1225.9 | 1236.5 |
| 27.5° | 6513.0 | 3176.6 | 1439.0 | 1279.2 | 1183.2 | 1151.2 | 1140.6 | 1140.6 | 1161.9 | 1172.6 | 1183.2 |
| 30° | 6864.8 | 3293.8 | 1567.0 | 1343.1 | 1140.6 | 1087.3 | 1076.6 | 1076.6 | 1108.6 | 1119.3 | 1129.9 |
| 32.5° | 7269.8 | 3539.0 | 1758.8 | 1428.4 | 1108.6 | 1023.3 | 1002.0 | 1002.0 | 1034.0 | 1044.6 | 1055.3 |
| 35° | 7824.1 | 3922.7 | 2014.7 | 1503.0 | 1129.9 | 959.4 | 916.7 | 916.7 | 938.0 | 959.4 | 970.0 |
| 37.5° | 8538.3 | 4551.6 | 2313.1 | 1556.3 | 1129.9 | 884.7 | 831.4 | 820.8 | 842.1 | 842.1 | 852.8 |
| 40° | 9284.5 | 5372.4 | 2622.3 | 1556.3 | 1076.6 | 810.1 | 756.8 | 724.9 | 735.5 | 724.9 | 735.5 |
| 42.5° | 9700.2 | 6033.3 | 2888.7 | 1460.4 | 1012.7 | 735.5 | 682.2 | 639.6 | 628.9 | 607.6 | 618.3 |
| 45° | 9934.7 | 6331.8 | 2814.1 | 1353.8 | 948.7 | 682.2 | 618.3 | 565.0 | 543.6 | 511.7 | 511.7 |
| 47.5° | 9934.7 | 6363.8 | 2409.1 | 1268.5 | 884.7 | 639.6 | 554.3 | 501.0 | 469.0 | 437.0 | 447.7 |
| 50° | 9817.5 | 6076.0 | 1908.1 | 1183.2 | 810.1 | 596.9 | 501.0 | 458.4 | 415.7 | 394.4 | 394.4 |
| 52.5° | 9327.1 | 5137.9 | 1460.4 | 1076.6 | 724.9 | 543.6 | 447.7 | 405.1 | 362.4 | 351.8 | 351.8 |
| 55° | 8485.0 | 3773.5 | 1183.2 | 970.0 | 650.2 | 501.0 | 405.1 | 373.1 | 330.4 | 309.1 | 309.1 |
| 57.5° | 6896.8 | 2579.6 | 980.7 | 874.1 | 575.6 | 447.7 | 362.4 | 330.4 | 277.1 | 255.8 | 255.8 |
| 60° | 5116.6 | 1684.2 | 831.4 | 767.5 | 490.3 | 405.1 | 319.8 | 277.1 | 234.5 | 213.2 | 202.5 |
| 62.5° | 3453.7 | 1140.6 | 692.9 | 607.6 | 415.7 | 351.8 | 277.1 | 234.5 | 181.2 | 138.6 | 138.6 |
| 65° | 2153.2 | 884.7 | 575.6 | 479.7 | 362.4 | 309.1 | 234.5 | 181.2 | 127.9 | 95.9 | 85.3 |
| 67.5° | 1236.5 | 714.2 | 469.0 | 373.1 | 309.1 | 245.2 | 181.2 | 149.2 | 106.6 | 74.6 | 64.0 |
| 68° | *1140.6* | *682.2* | *437.0* | *351.8* | *287.8* | *234.5* | *170.6* | *138.6* | *95.9* | *64.0* | *64.0* |
| 70° | 927.4 | 607.6 | 373.1 | 287.8 | 245.2 | 191.9 | 149.2 | 117.3 | 74.6 | 42.6 | 42.6 |
| 72.5° | 820.8 | 511.7 | 319.8 | 223.9 | 170.6 | 159.9 | 117.3 | 85.3 | 53.3 | 32.0 | 21.3 |
| 75° | 671.6 | 405.1 | 255.8 | 170.6 | 117.3 | 117.3 | 85.3 | 53.3 | 21.3 | 0.0 | 0.0 |
| 77.5° | 437.0 | 298.5 | 202.5 | 106.6 | 64.0 | 74.6 | 53.3 | 21.3 | 0.0 | 0.0 | 0.0 |
| 80° | 287.8 | 223.9 | 138.6 | 53.3 | 32.0 | 32.0 | 10.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 202.5 | 149.2 | 85.3 | 21.3 | 10.7 | 10.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 127.9 | 64.0 | 32.0 | 10.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 53.3 | 21.3 | 10.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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: SP1-2407-184-11

Test Date: 10/11/2024

Luminaire Tested: GSS-SB1A-840-U-5WQ

Data in this report applies to families of products including GSS-SB1A-840-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

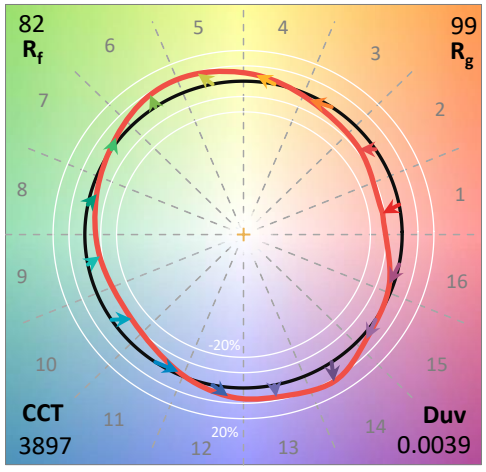
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-11 |
| 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-840-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 80 CRI 4000K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3897 |
| CIE u': | 0.2249 |
| CIE v': | 0.5084 |
| Duv: | 0.0039 |
| CIE x: | 0.3882 |
| CIE y: | 0.3900 |
| CIE z: | 0.2218 |
| Peak Wavelength (nm): | 445 |
| Dominant Wavelength (nm): | 577 |
| Purity: | 33.54925 |
| Rf: | 81.8 |
| Rg: | 98.6 |

| | |
|---|---|
| CRI (Ra): | 80.2 |
| R1: | 78.9 |
| R2: | 83.5 |
| R3: | 88.3 |
| R4: | 82.1 |
| R5: | 78.8 |
| R6: | 78.4 |
| R7: | 85.8 |
| R8: | 65.8 |
| R9: | 6.7 |
| R10: | 61.9 |
| R11: | 81.9 |
| R12: | 58.9 |
| R13: | 79.2 |
| R14: | 93.2 |
| R15: | 71.9 |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 24M |
| Operation Time: | 1H 24M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-11

| 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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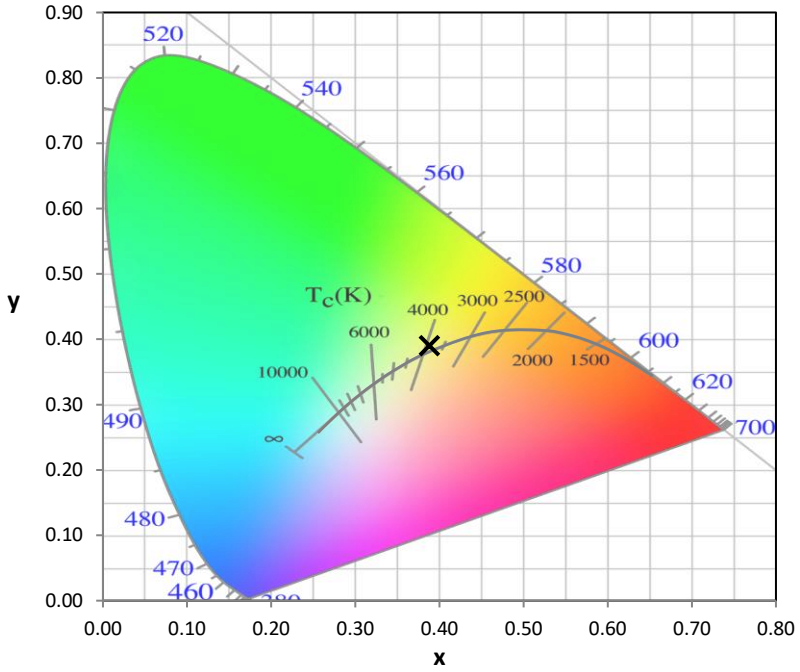
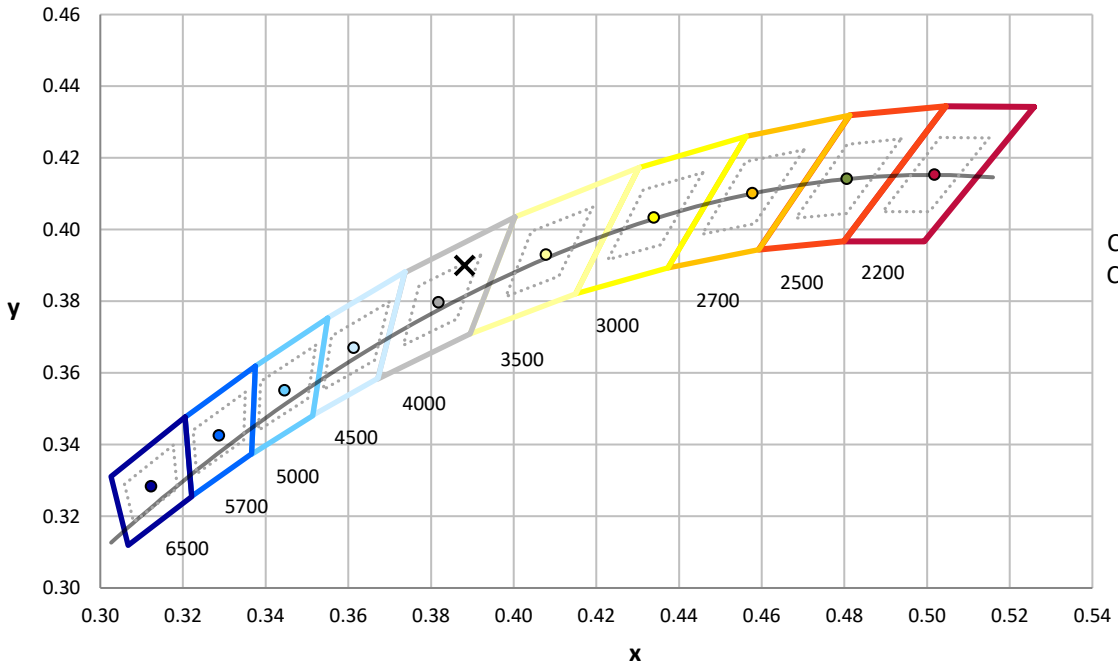
## CIE 1931 Chromaticity Diagram




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




CCT = 3897K
CIE x = 0.3882
CIE y = 0.3900
Duv = 0.0039

Point lies inside the ANSI 4000K 4-step quadrangle

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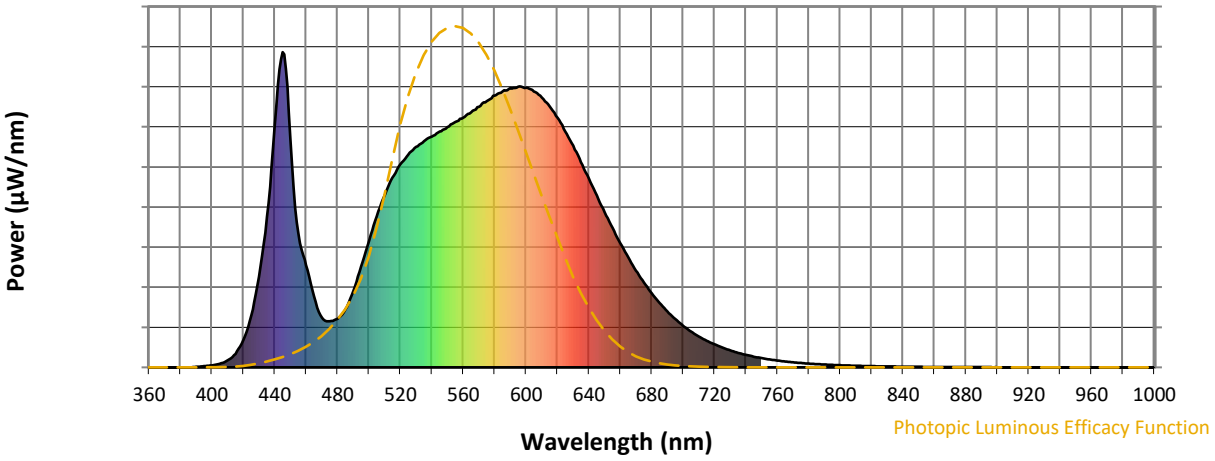
## Photopic Flux vs. Wavelength




## 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 | 242 | NR | 620 | 792 | NR | 750 | 29 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 320 | NR | 625 | 748 | NR | 755 | 25 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 401 | NR | 630 | 703 | NR | 760 | 22 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 479 | NR | 635 | 651 | NR | 765 | 19 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 546 | NR | 640 | 599 | NR | 770 | 16 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 602 | NR | 645 | 545 | NR | 775 | 14 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 645 | NR | 650 | 493 | NR | 780 | 12 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 674 | NR | 655 | 443 | NR | 785 | 10 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 699 | NR | 660 | 394 | NR | 790 | 9 | NR | 920 | 0 | NR |
| 405 | 11 | NR | 535 | 718 | NR | 665 | 349 | NR | 795 | 8 | NR | 925 | 0 | NR |
| 410 | 22 | NR | 540 | 732 | NR | 670 | 307 | NR | 800 | 7 | NR | 930 | 0 | NR |
| 415 | 43 | NR | 545 | 749 | NR | 675 | 269 | NR | 805 | 6 | NR | 935 | 0 | NR |
| 420 | 86 | NR | 550 | 762 | NR | 680 | 235 | NR | 810 | 5 | NR | 940 | 0 | NR |
| 425 | 164 | NR | 555 | 778 | NR | 685 | 204 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 288 | NR | 560 | 792 | NR | 690 | 178 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 478 | NR | 565 | 809 | NR | 695 | 153 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 766 | NR | 570 | 827 | NR | 700 | 132 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 1000 | NR | 575 | 845 | NR | 705 | 114 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 726 | NR | 580 | 862 | NR | 710 | 98 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 425 | NR | 585 | 875 | NR | 715 | 84 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 324 | NR | 590 | 887 | NR | 720 | 73 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 225 | NR | 595 | 890 | NR | 725 | 63 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 157 | NR | 600 | 887 | NR | 730 | 54 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 147 | NR | 605 | 875 | NR | 735 | 46 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 154 | NR | 610 | 856 | NR | 740 | 40 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 184 | NR | 615 | 828 | NR | 745 | 34 | NR | 875 | 1 | NR | | | |

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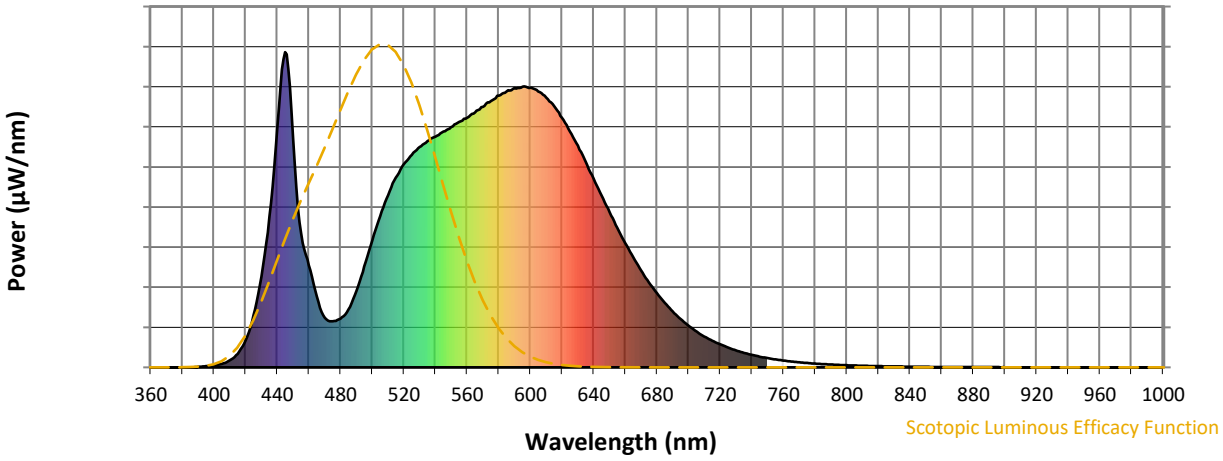
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.57**

| 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 | 242 | NR | 620 | 792 | NR | 750 | 29 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 320 | NR | 625 | 748 | NR | 755 | 25 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 401 | NR | 630 | 703 | NR | 760 | 22 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 479 | NR | 635 | 651 | NR | 765 | 19 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 546 | NR | 640 | 599 | NR | 770 | 16 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 602 | NR | 645 | 545 | NR | 775 | 14 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 645 | NR | 650 | 493 | NR | 780 | 12 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 674 | NR | 655 | 443 | NR | 785 | 10 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 699 | NR | 660 | 394 | NR | 790 | 9 | NR | 920 | 0 | NR |
| 405 | 11 | NR | 535 | 718 | NR | 665 | 349 | NR | 795 | 8 | NR | 925 | 0 | NR |
| 410 | 22 | NR | 540 | 732 | NR | 670 | 307 | NR | 800 | 7 | NR | 930 | 0 | NR |
| 415 | 43 | NR | 545 | 749 | NR | 675 | 269 | NR | 805 | 6 | NR | 935 | 0 | NR |
| 420 | 86 | NR | 550 | 762 | NR | 680 | 235 | NR | 810 | 5 | NR | 940 | 0 | NR |
| 425 | 164 | NR | 555 | 778 | NR | 685 | 204 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 288 | NR | 560 | 792 | NR | 690 | 178 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 478 | NR | 565 | 809 | NR | 695 | 153 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 766 | NR | 570 | 827 | NR | 700 | 132 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 1000 | NR | 575 | 845 | NR | 705 | 114 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 726 | NR | 580 | 862 | NR | 710 | 98 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 425 | NR | 585 | 875 | NR | 715 | 84 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 324 | NR | 590 | 887 | NR | 720 | 73 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 225 | NR | 595 | 890 | NR | 725 | 63 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 157 | NR | 600 | 887 | NR | 730 | 54 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 147 | NR | 605 | 875 | NR | 735 | 46 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 154 | NR | 610 | 856 | NR | 740 | 40 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 184 | NR | 615 | 828 | NR | 745 | 34 | NR | 875 | 1 | NR | | | |

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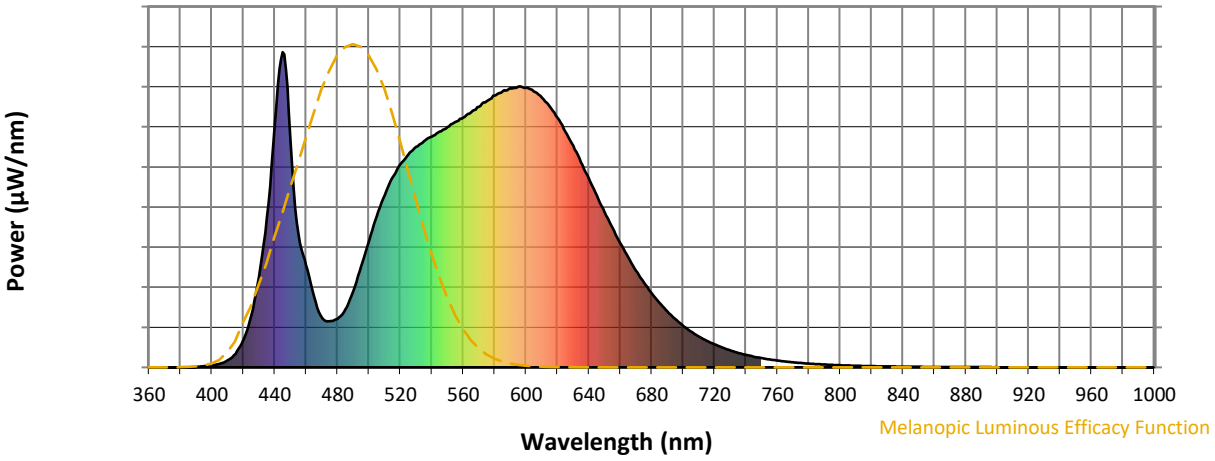
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 3.06**

| 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 | 242 | NR | 620 | 792 | NR | 750 | 29 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 320 | NR | 625 | 748 | NR | 755 | 25 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 401 | NR | 630 | 703 | NR | 760 | 22 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 479 | NR | 635 | 651 | NR | 765 | 19 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 546 | NR | 640 | 599 | NR | 770 | 16 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 602 | NR | 645 | 545 | NR | 775 | 14 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 645 | NR | 650 | 493 | NR | 780 | 12 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 674 | NR | 655 | 443 | NR | 785 | 10 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 699 | NR | 660 | 394 | NR | 790 | 9 | NR | 920 | 0 | NR |
| 405 | 11 | NR | 535 | 718 | NR | 665 | 349 | NR | 795 | 8 | NR | 925 | 0 | NR |
| 410 | 22 | NR | 540 | 732 | NR | 670 | 307 | NR | 800 | 7 | NR | 930 | 0 | NR |
| 415 | 43 | NR | 545 | 749 | NR | 675 | 269 | NR | 805 | 6 | NR | 935 | 0 | NR |
| 420 | 86 | NR | 550 | 762 | NR | 680 | 235 | NR | 810 | 5 | NR | 940 | 0 | NR |
| 425 | 164 | NR | 555 | 778 | NR | 685 | 204 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 288 | NR | 560 | 792 | NR | 690 | 178 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 478 | NR | 565 | 809 | NR | 695 | 153 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 766 | NR | 570 | 827 | NR | 700 | 132 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 1000 | NR | 575 | 845 | NR | 705 | 114 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 726 | NR | 580 | 862 | NR | 710 | 98 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 425 | NR | 585 | 875 | NR | 715 | 84 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 324 | NR | 590 | 887 | NR | 720 | 73 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 225 | NR | 595 | 890 | NR | 725 | 63 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 157 | NR | 600 | 887 | NR | 730 | 54 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 147 | NR | 605 | 875 | NR | 735 | 46 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 154 | NR | 610 | 856 | NR | 740 | 40 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 184 | NR | 615 | 828 | NR | 745 | 34 | NR | 875 | 1 | NR | | | |

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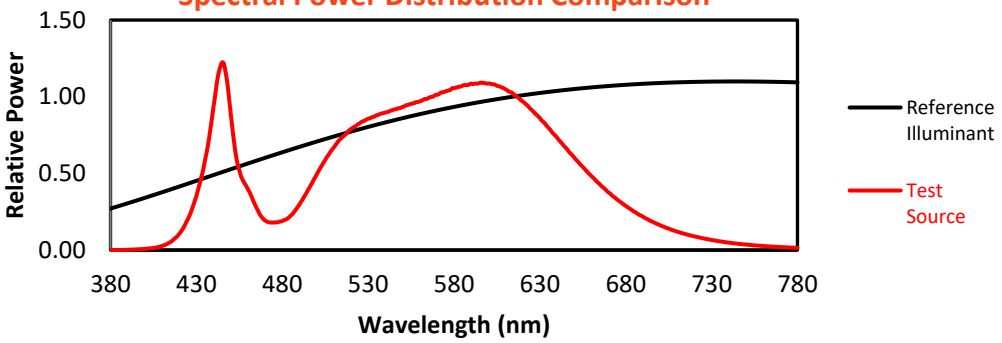
# TM-30-18

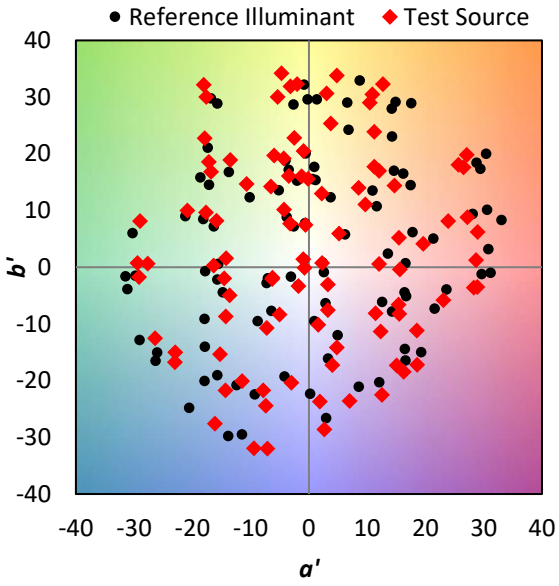
## Summary

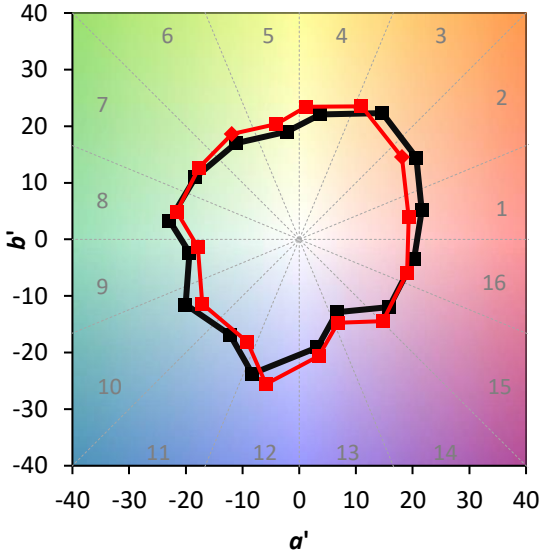
$R_f$ = 81.8
$R_g$ = 98.6
CIE $R_a$ = 80.2
$R_9$ = 6.7

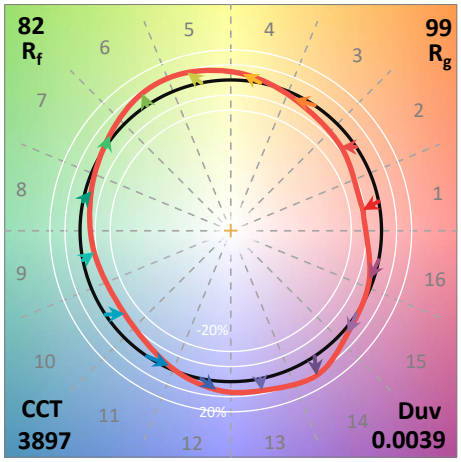
## Spectral Power Distribution Comparison

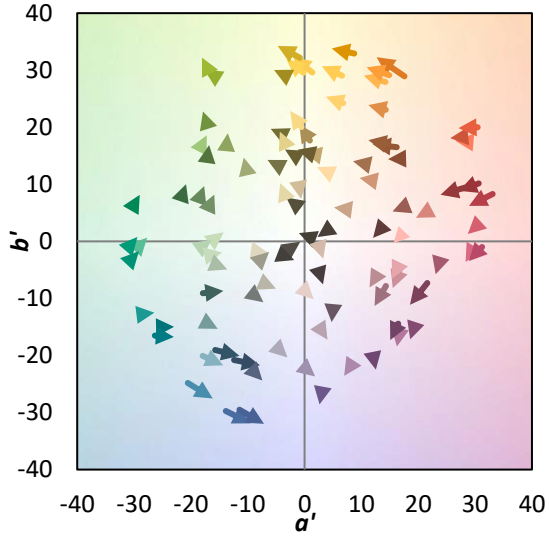



## Color Vector Graphics



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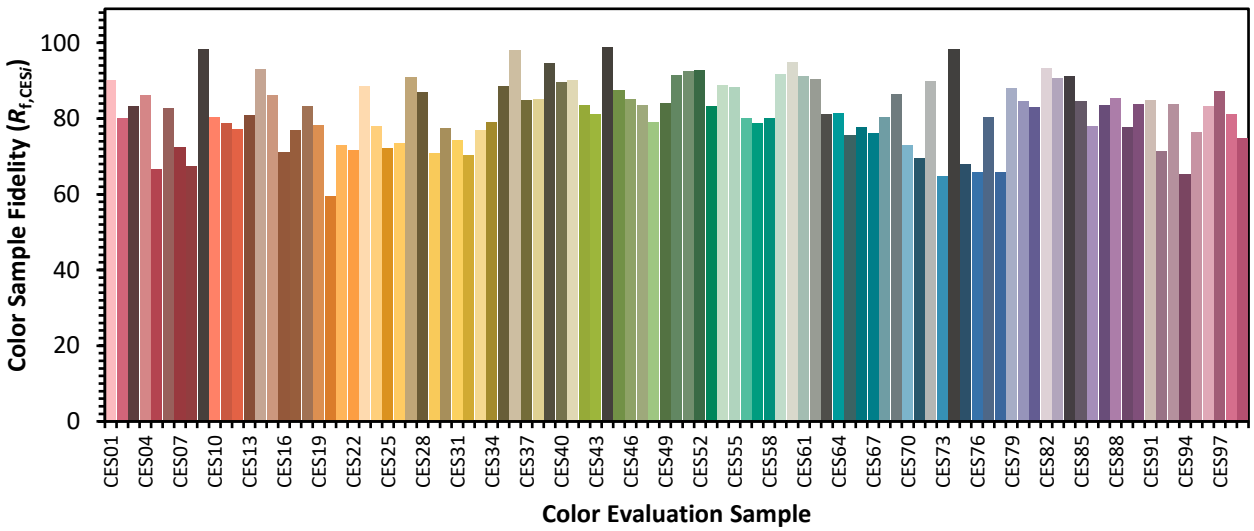
**Individual Sample Fidelity Index ($R_{f,i}$)**

| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 73 | CES51 = 93 | CES76 = 66 |
| CES02 = 61 | CES27 = 91 | CES52 = 93 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 83 | CES78 = 66 |
| CES04 = 69 | CES29 = 71 | CES54 = 89 | CES79 = 88 |
| CES05 = 48 | CES30 = 77 | CES55 = 88 | CES80 = 85 |
| CES06 = 50 | CES31 = 74 | CES56 = 80 | CES81 = 83 |
| CES07 = 41 | CES32 = 70 | CES57 = 79 | CES82 = 93 |
| CES08 = 40 | CES33 = 77 | CES58 = 80 | CES83 = 91 |
| CES09 = 29 | CES34 = 79 | CES59 = 92 | CES84 = 91 |
| CES10 = 74 | CES35 = 88 | CES60 = 95 | CES85 = 84 |
| CES11 = 57 | CES36 = 98 | CES61 = 91 | CES86 = 78 |
| CES12 = 63 | CES37 = 85 | CES62 = 90 | CES87 = 84 |
| CES13 = 42 | CES38 = 85 | CES63 = 81 | CES88 = 85 |
| CES14 = 74 | CES39 = 95 | CES64 = 81 | CES89 = 78 |
| CES15 = 71 | CES40 = 90 | CES65 = 76 | CES90 = 84 |
| CES16 = 47 | CES41 = 90 | CES66 = 78 | CES91 = 85 |
| CES17 = 49 | CES42 = 84 | CES67 = 76 | CES92 = 71 |
| CES18 = 56 | CES43 = 81 | CES68 = 80 | CES93 = 84 |
| CES19 = 71 | CES44 = 99 | CES69 = 86 | CES94 = 65 |
| CES20 = 65 | CES45 = 87 | CES70 = 73 | CES95 = 77 |
| CES21 = 86 | CES46 = 85 | CES71 = 70 | CES96 = 83 |
| CES22 = 78 | CES47 = 84 | CES72 = 90 | CES97 = 87 |
| CES23 = 91 | CES48 = 79 | CES73 = 65 | CES98 = 81 |
| CES24 = 90 | CES49 = 84 | CES74 = 98 | CES99 = 75 |
| CES25 = 71 | CES50 = 91 | CES75 = 68 | |



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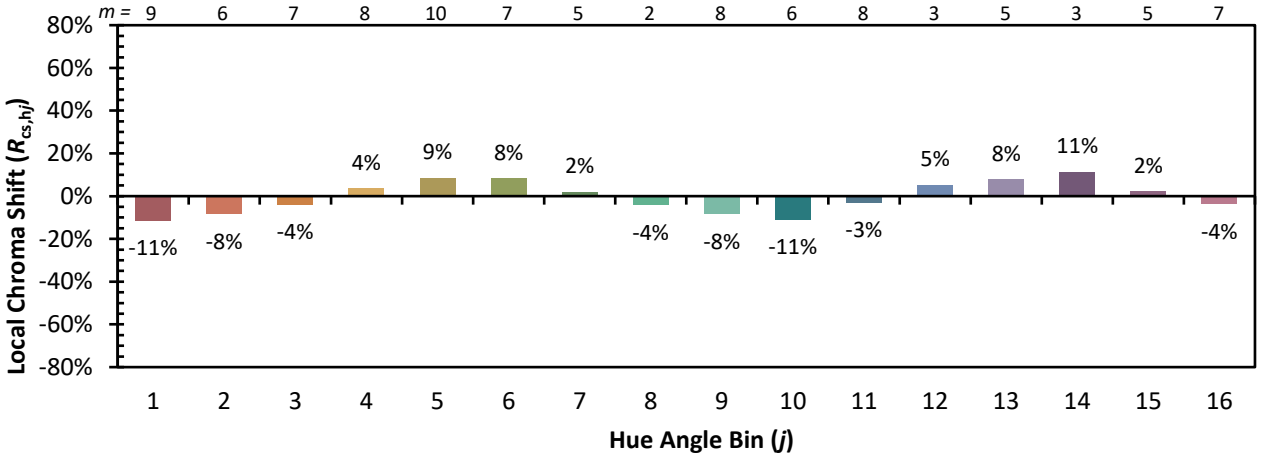
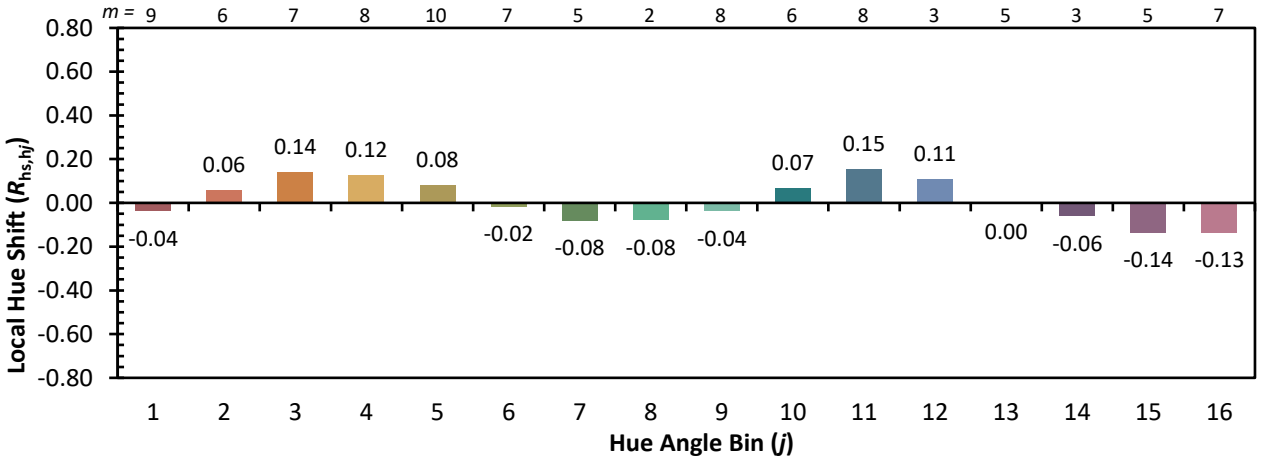
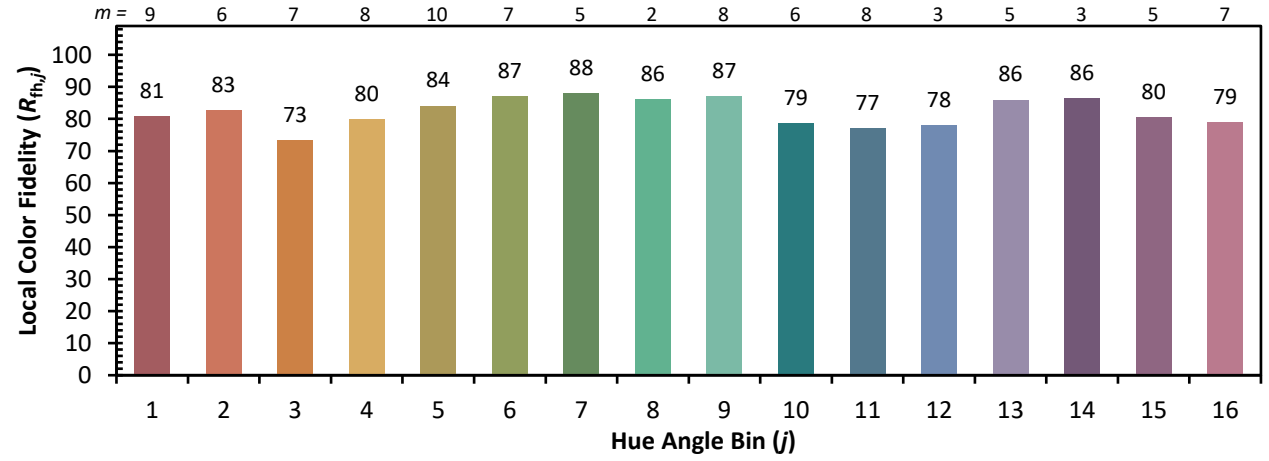
## Color Rendition by Hue-Angle Bin



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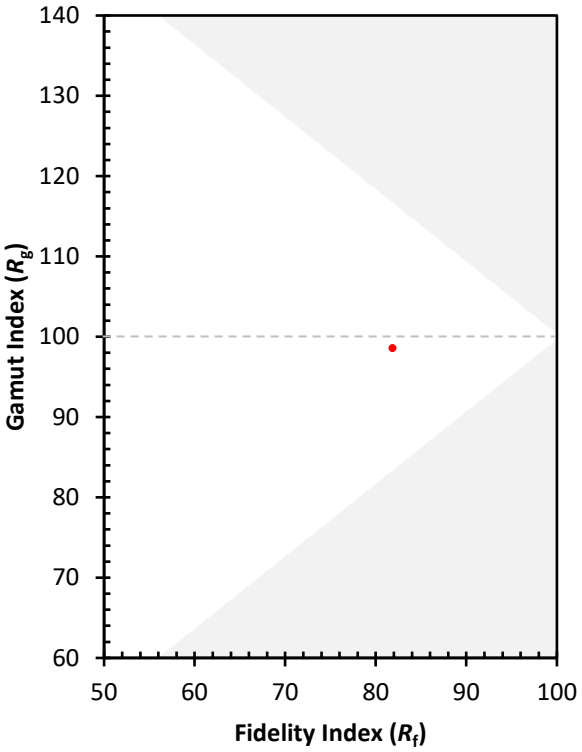
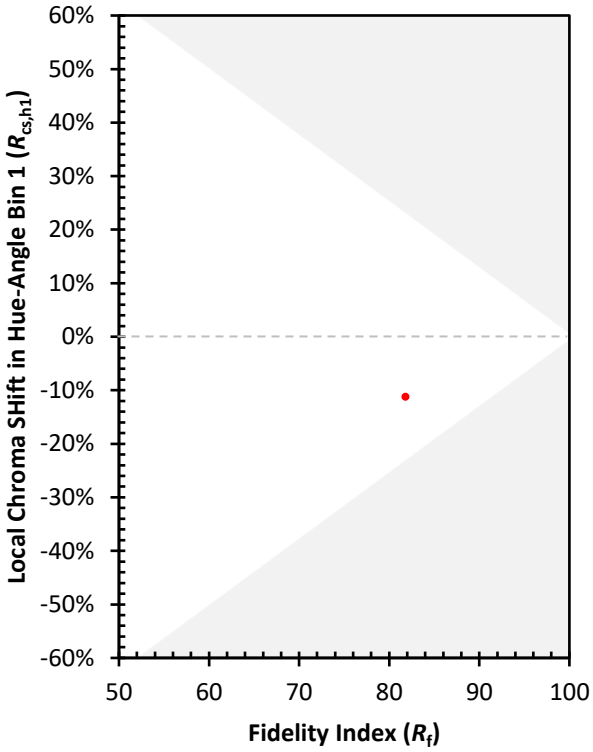
## Measure Comparisons




(END OF REPORT)