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: P1457292

Luminaire Tested: GLAN-SB7B-840-U-T4LG

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: | P1457292 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/22/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB7B-840-U-T4LG |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 450mA 7xLight Square PACKAGE 80CRI 4000K FIXTURE w/ TYPE IV LOW GLARE |
| Light Source: | (182) 4000K CCT, 80 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 37483 lumens |
| Efficiency: | N/A |
| Efficacy: | 146.0 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1.5' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B3 - U0 - G4 |

| | |
|---|---|
| Input Watts (W): | 256.7 |
| 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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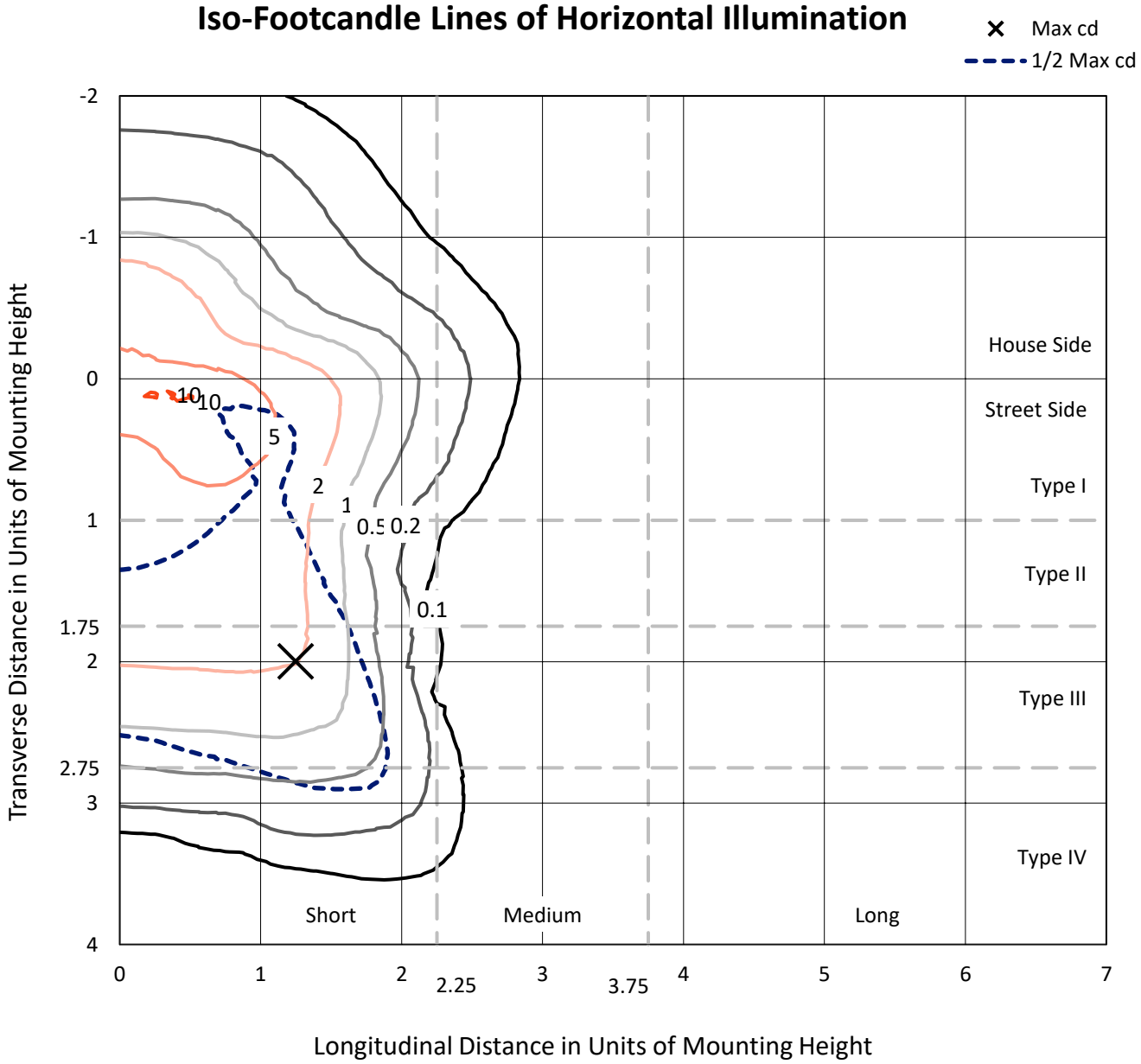
Scaled Data Report

REPORT NUMBER: P1457292
CATALOG NUMBER: GLAN-SB7B-840-U-T4LG

## Iso-Footcandle Lines of Horizontal Illumination




Based on 30 foot mounting height. Maximum calculated value = 10.3 fc
Type IV - Short - N/A

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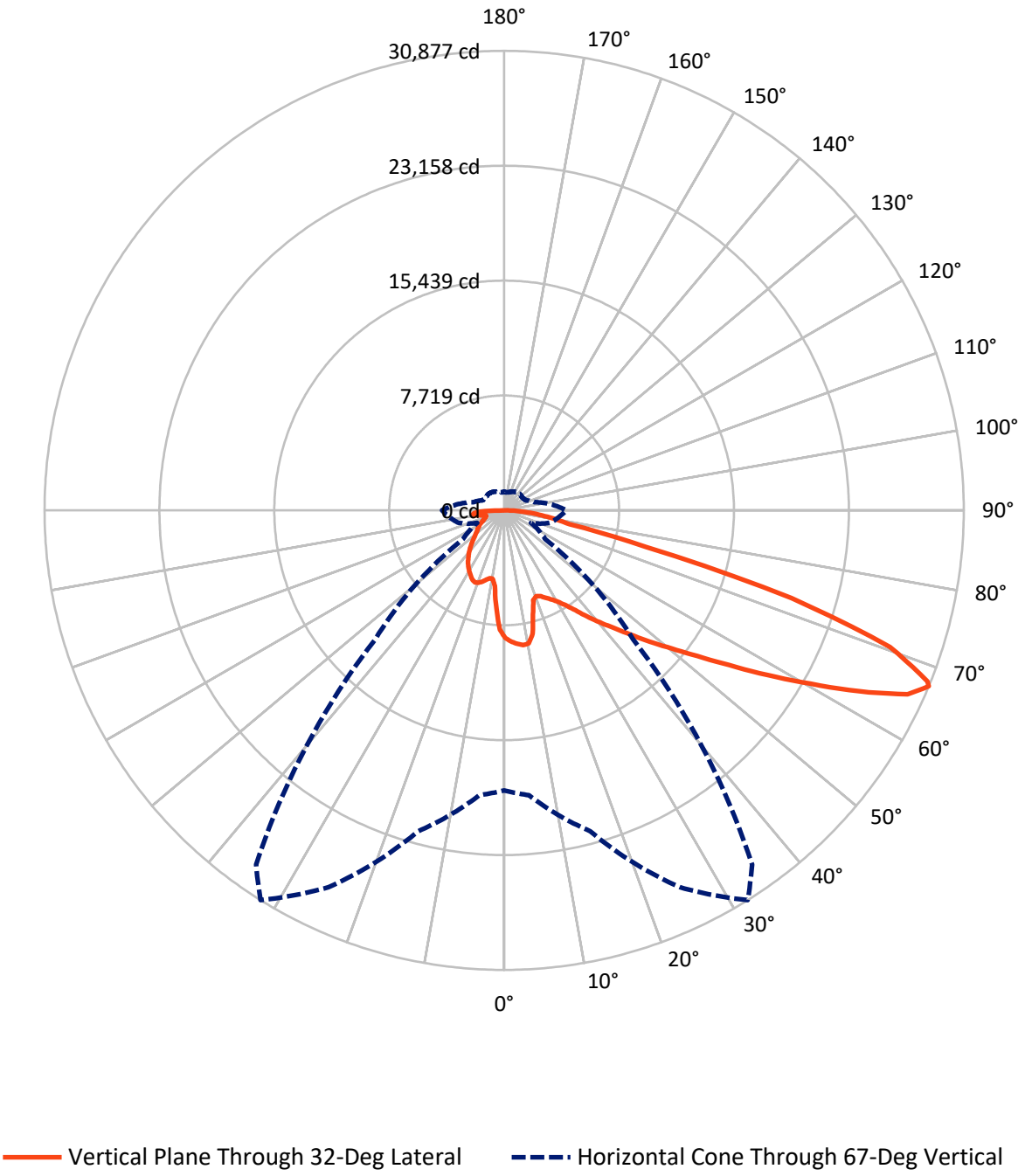
## Luminous Intensity Polar Plot



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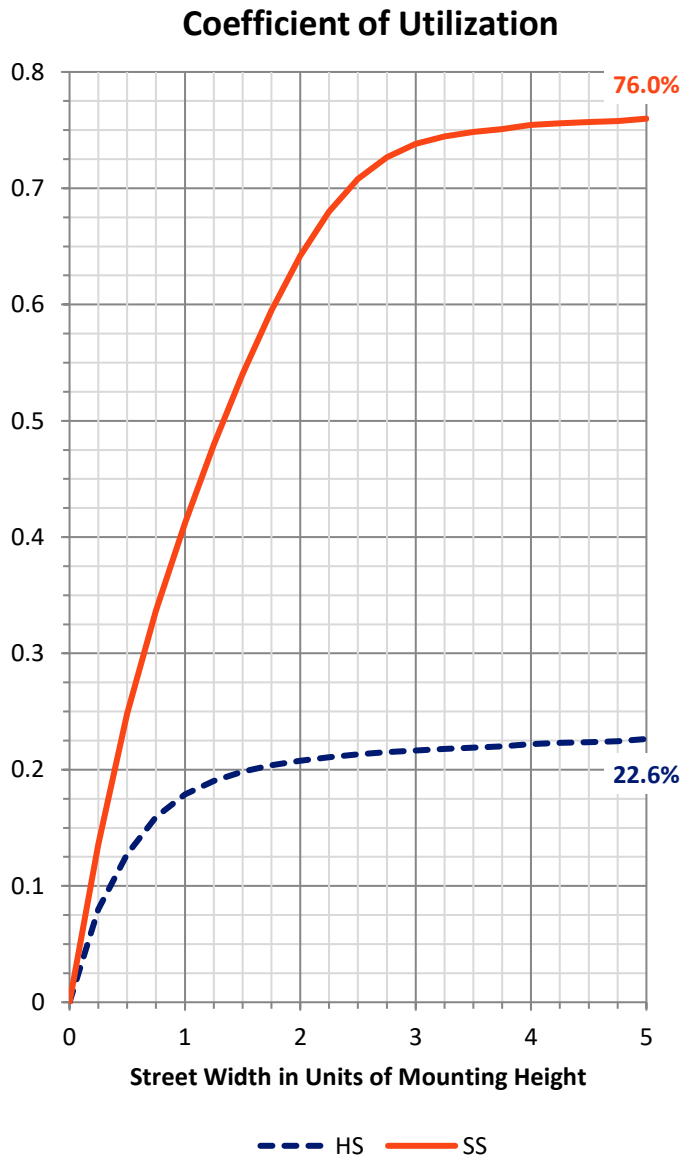
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 8874.0 | 0.0 | 8874.0 |
| | % Fixture | 23.7 | 0.0 | 23.7 |
| **Street Side** | Lumens | 28609.0 | 0.0 | 28609.0 |
| | % Fixture | 76.3 | 0.0 | 76.3 |
| **Total** | Lumens | 37483.0 | 0.0 | 37483.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 748.3 | 2.0 |
| 10°-20° | 1986.8 | 5.3 |
| 20°-30° | 3244.5 | 8.7 |
| 30°-40° | 4782.1 | 12.8 |
| 40°-50° | 6594.8 | 17.6 |
| 50°-60° | 8331.2 | 22.2 |
| 60°-70° | 8063.1 | 21.5 |
| 70°-80° | 2877.7 | 7.7 |
| 80°-90° | 854.5 | 2.3 |
| 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° | 37483.0 | 100.0 |
| 0°-180° | 37483.0 | 100.0 |



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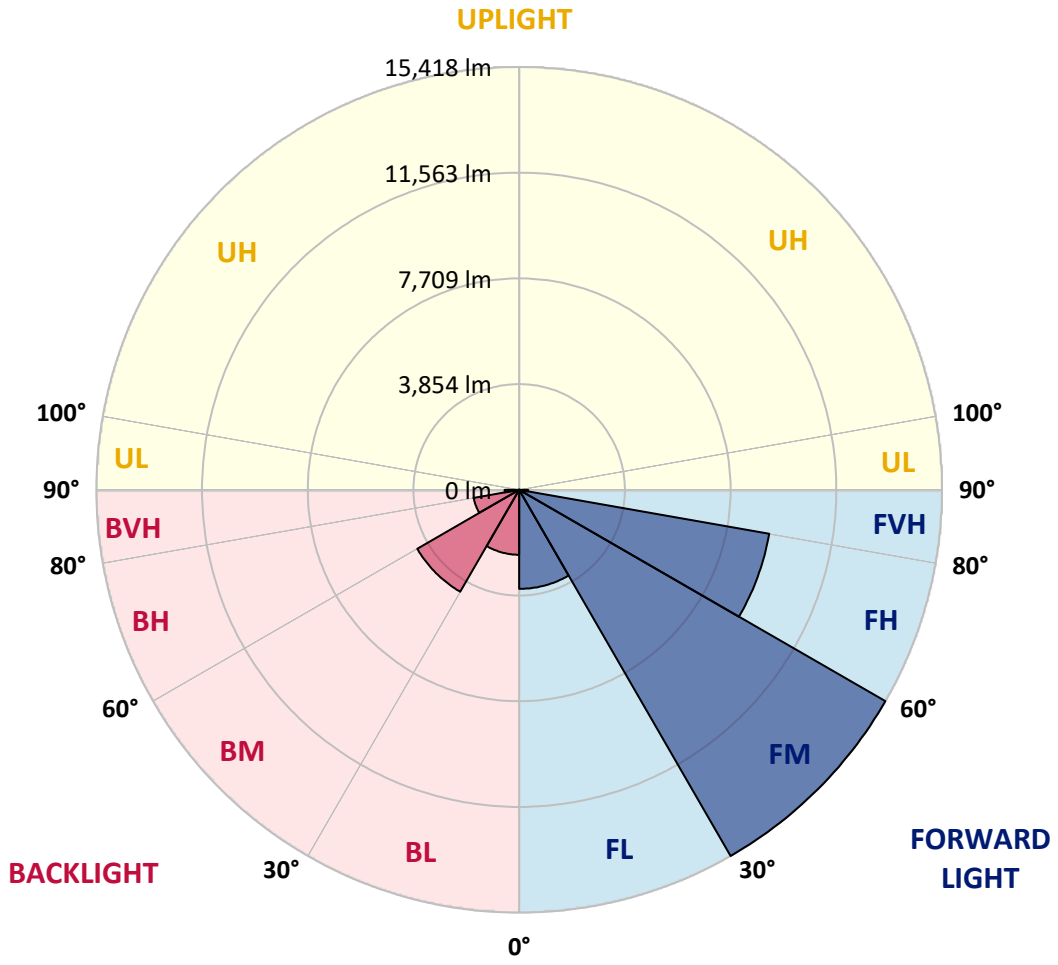
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 3611.6 | 9.6 | | | |
| FM | (30°-60°) | 15417.9 | 41.1 | | | |
| FH | (60°-80°) | 9257.5 | 24.7 | | | G4/12000 |
| FVH | (80°-90°) | 322.0 | 0.9 | | | G3/500 |
| BL | (0°-30°) | 2368.0 | 6.3 | B3/2500 | | |
| BM | (30°-60°) | 4290.2 | 11.4 | B3/5000 | | |
| BH | (60°-80°) | 1683.3 | 4.5 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 532.5 | 1.4 | | | G4/750 |
| 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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REPORT NUMBER: P1457292
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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 32° | 35° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 8564.1 | 8564.1 | 8564.1 | 8564.1 | *8564.1* | 8564.1 | 8564.1 | 8564.1 | 8564.1 | 8564.1 | 8564.1 |
| 2.5° | 8888.7 | 8863.7 | 8838.8 | 8855.4 | *8822.1* | 8813.8 | 8772.2 | 8755.5 | 8705.6 | 8697.3 | 8605.7 |
| 5° | 9071.8 | 9021.9 | 9013.5 | 9030.2 | *8996.9* | 8996.9 | 8963.6 | 8938.6 | 8863.7 | 8822.1 | 8689.0 |
| 7.5° | 9071.8 | 9063.5 | 9080.1 | 9138.4 | *9146.7* | 9146.7 | 9146.7 | 9155.0 | 9080.1 | 9021.9 | 8813.8 |
| 10° | 8555.8 | 8472.6 | 8655.7 | 8947.0 | *9088.5* | 9171.7 | 9321.5 | 9413.0 | 9354.8 | 9313.2 | 9030.2 |
| 12.5° | 7016.1 | 7024.4 | 7315.7 | 7939.9 | *8505.9* | 8747.2 | 9371.4 | 9704.3 | 9729.3 | 9662.7 | 9304.8 |
| 15° | 5950.8 | 5992.4 | 6142.2 | 6591.6 | *7240.8* | 7598.7 | 9080.1 | 9962.3 | 10162.1 | 10095.5 | 9637.8 |
| 17.5° | 5626.2 | 5651.2 | 5717.7 | 5975.7 | *6341.9* | 6633.2 | 8289.5 | 10128.8 | 10686.4 | 10603.2 | 10012.3 |
| 20° | 5576.2 | 5592.9 | 5676.1 | 5892.5 | *6142.2* | 6308.7 | 7482.2 | 9995.6 | 11177.5 | 11144.2 | 10353.5 |
| 22.5° | 5584.6 | 5601.2 | 5709.4 | 6009.0 | *6267.0* | 6408.5 | 7224.2 | 9687.7 | 11693.5 | 11726.8 | 10703.1 |
| 25° | 5601.2 | 5609.5 | 5776.0 | 6175.5 | *6500.1* | 6674.9 | 7390.6 | 9413.0 | 12126.3 | 12409.2 | 11085.9 |
| 27.5° | 5692.8 | 5717.7 | 5942.5 | 6391.9 | *6774.7* | 6974.5 | 7781.8 | 9504.6 | 12600.7 | 13183.3 | 11543.7 |
| 30° | 5942.5 | 5959.1 | 6233.7 | 6699.8 | *7116.0* | 7324.0 | 8247.9 | 9870.8 | 13183.3 | 13982.2 | 11993.1 |
| 32.5° | 6333.6 | 6350.3 | 6666.5 | 7149.3 | *7598.7* | 7848.4 | 8855.4 | 10569.9 | 13832.4 | 14822.8 | 12442.5 |
| 35° | 6874.6 | 6882.9 | 7240.8 | 7756.8 | *8231.2* | 8514.2 | 9562.9 | 11360.6 | 14506.6 | 15538.6 | 12775.4 |
| 37.5° | 7515.5 | 7573.7 | 7939.9 | 8480.9 | *9038.5* | 9296.5 | 10395.1 | 12284.4 | 15105.8 | 16146.2 | 12966.9 |
| 40° | 8397.7 | 8414.3 | 8772.2 | 9296.5 | *9887.4* | 10137.1 | 11227.4 | 13158.3 | 15763.3 | 16504.0 | 13141.6 |
| 42.5° | 9304.8 | 9446.3 | 9746.0 | 10328.5 | *10769.7* | 10969.4 | 12176.2 | 13957.3 | 16287.6 | 16520.7 | 13066.7 |
| 45° | 10520.0 | 10628.2 | 10927.8 | 11443.8 | *11884.9* | 12117.9 | 13199.9 | 14689.7 | 16554.0 | 16379.2 | 12900.3 |
| 47.5° | 11909.9 | 11976.5 | 12217.8 | 12683.9 | *13174.9* | 13341.4 | 14265.2 | 15105.8 | 16653.8 | 16279.3 | 12825.4 |
| 50° | 13549.5 | 13549.5 | 13724.2 | 14123.7 | *14573.2* | 14806.2 | 15247.3 | 15355.5 | 16945.1 | 16104.5 | 13016.8 |
| 52.5° | 14931.0 | 14997.6 | 15230.7 | 15796.6 | *16246.0* | 16512.4 | 16013.0 | 15738.3 | 16354.2 | 15130.8 | 13075.1 |
| 55° | 16254.4 | 16329.3 | 16853.6 | 17561.0 | *18326.7* | 18618.0 | 16970.1 | 15546.9 | 14365.1 | 13707.6 | 12675.6 |
| 57.5° | 17519.4 | 17677.5 | 18335.0 | 19716.6 | *20873.5* | 20848.5 | 18185.2 | 13832.4 | 11726.8 | 12134.6 | 11801.7 |
| 60° | 19283.8 | 19450.3 | 20499.0 | 22238.4 | *23653.3* | 23062.4 | 18201.9 | 11510.4 | 9138.4 | 9687.7 | 10162.1 |
| 62.5° | 20757.0 | 21039.9 | 22579.6 | 25476.0 | *26774.3* | 25850.5 | 16695.5 | 8813.8 | 6067.3 | 6758.1 | 7856.7 |
| 65° | 20623.8 | 20998.3 | 23387.0 | 27856.3 | *29795.5* | 28938.2 | 14489.9 | 5576.2 | 3129.4 | 4619.1 | 5501.3 |
| 67° | *18809.4* | *19217.3* | *22313.3* | *27939.5* | *30877.4* | *29046.4* | *12234.5* | *3370.7* | *1989.1* | *3204.3* | *3820.1* |
| 67.5° | 17769.1 | 18368.3 | 21780.7 | 27781.4 | *30677.7* | 28588.7 | 11219.1 | 2821.4 | 1872.6 | 2979.5 | 3478.9 |
| 70° | 10927.8 | 11893.2 | 16345.9 | 24560.5 | *27498.4* | 23927.9 | 6233.7 | 1598.0 | 1523.1 | 1997.5 | 2405.3 |
| 72.5° | 3287.5 | 3578.8 | 6308.7 | 15755.0 | *20182.7* | 17735.8 | 2804.8 | 1231.8 | 1364.9 | 1606.3 | 1856.0 |
| 75° | 1598.0 | 1706.2 | 2605.0 | 6441.8 | *9829.2* | 9779.2 | 1564.7 | 1057.0 | 1265.1 | 1348.3 | 1464.8 |
| 77.5° | 1023.7 | 1090.3 | 1622.9 | 3603.8 | *4502.6* | 4011.6 | 1131.9 | 923.8 | 1123.6 | 1106.9 | 1090.3 |
| 80° | 640.9 | 674.1 | 1040.3 | 2089.0 | *3320.8* | 2771.5 | 832.3 | 757.4 | 965.4 | 857.2 | 774.0 |
| 82.5° | 416.1 | 457.8 | 665.8 | 1273.4 | *2372.0* | 2064.0 | 549.3 | 541.0 | 799.0 | 682.5 | 599.2 |
| 85° | 274.7 | 307.9 | 424.5 | 749.0 | *1406.5* | 1473.1 | 357.9 | 374.5 | 615.9 | 516.0 | 457.8 |
| 87.5° | 99.9 | 124.8 | 216.4 | 332.9 | *657.5* | 815.6 | 149.8 | 141.5 | 299.6 | 241.4 | 191.4 |
| 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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Scaled Data Report

REPORT NUMBER: P1457292
CATALOG NUMBER: GLAN-SB7B-840-U-T4LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 8564.1 | 8564.1 | 8564.1 | 8564.1 | 8564.1 | 8564.1 | 8564.1 | 8564.1 | 8564.1 | 8564.1 | 8564.1 |
| 2.5° | 8589.1 | 8564.1 | 8447.6 | 8347.7 | 8272.8 | 8173.0 | 8064.8 | 7939.9 | 7856.7 | 7873.3 | 7848.4 |
| 5° | 8630.7 | 8564.1 | 8339.4 | 7998.2 | 7665.3 | 7249.1 | 6716.5 | 6400.2 | 6158.8 | 6034.0 | 6067.3 |
| 7.5° | 8722.3 | 8605.7 | 8131.3 | 7440.5 | 6575.0 | 5726.1 | 5201.7 | 4902.1 | 4760.6 | 4702.4 | 4694.0 |
| 10° | 8880.4 | 8680.6 | 7865.0 | 6575.0 | 5443.1 | 4868.8 | 4677.4 | 4594.2 | 4577.5 | 4577.5 | 4569.2 |
| 12.5° | 9071.8 | 8755.5 | 7415.6 | 5734.4 | 4902.1 | 4694.0 | 4660.7 | 4669.1 | 4694.0 | 4719.0 | 4677.4 |
| 15° | 9304.8 | 8788.8 | 6858.0 | 5226.7 | 4793.9 | 4744.0 | 4793.9 | 4852.2 | 4893.8 | 4927.1 | 4885.5 |
| 17.5° | 9537.9 | 8755.5 | 6333.6 | 4985.3 | 4810.6 | 4877.1 | 4977.0 | 5068.6 | 5093.5 | 5143.5 | 5110.2 |
| 20° | 9704.3 | 8639.0 | 5884.2 | 4893.8 | 4852.2 | 5002.0 | 5126.8 | 5226.7 | 5276.6 | 5309.9 | 5276.6 |
| 22.5° | 9829.2 | 8489.2 | 5559.6 | 4802.2 | 4852.2 | 5035.3 | 5185.1 | 5301.6 | 5359.9 | 5393.1 | 5351.5 |
| 25° | 9937.4 | 8281.1 | 5309.9 | 4669.1 | 4752.3 | 4927.1 | 5093.5 | 5210.0 | 5293.3 | 5343.2 | 5318.2 |
| 27.5° | 10070.5 | 8114.7 | 5076.9 | 4469.3 | 4544.2 | 4710.7 | 4885.5 | 5026.9 | 5185.1 | 5268.3 | 5251.7 |
| 30° | 10220.4 | 8031.5 | 4852.2 | 4252.9 | 4302.9 | 4469.3 | 4677.4 | 4868.8 | 5085.2 | 5193.4 | 5193.4 |
| 32.5° | 10395.1 | 7973.2 | 4644.1 | 4044.9 | 4086.5 | 4269.6 | 4469.3 | 4644.1 | 4877.1 | 5051.9 | 5043.6 |
| 35° | 10470.0 | 7906.6 | 4477.6 | 3853.4 | 3936.7 | 4086.5 | 4244.6 | 4361.1 | 4602.5 | 4810.6 | 4827.2 |
| 37.5° | 10544.9 | 7881.7 | 4394.4 | 3703.6 | 3770.2 | 3886.7 | 3970.0 | 4028.2 | 4252.9 | 4469.3 | 4477.6 |
| 40° | 10636.5 | 7998.2 | 4452.7 | 3603.8 | 3545.5 | 3662.0 | 3703.6 | 3736.9 | 3853.4 | 3994.9 | 3994.9 |
| 42.5° | 10578.2 | 8081.4 | 4585.8 | 3512.2 | 3270.8 | 3404.0 | 3420.7 | 3412.3 | 3420.7 | 3429.0 | 3420.7 |
| 45° | 10428.4 | 7998.2 | 4585.8 | 3370.7 | 2979.5 | 3121.0 | 3112.7 | 3071.1 | 3004.5 | 2829.7 | 2804.8 |
| 47.5° | 10395.1 | 7948.2 | 4411.1 | 3137.7 | 2688.3 | 2804.8 | 2821.4 | 2738.2 | 2546.8 | 2363.7 | 2305.4 |
| 50° | 10536.6 | 8039.8 | 4136.4 | 2854.7 | 2438.6 | 2538.4 | 2580.1 | 2438.6 | 2222.2 | 2030.8 | 1997.5 |
| 52.5° | 10744.7 | 8156.3 | 3736.9 | 2546.8 | 2230.5 | 2330.4 | 2380.3 | 2222.2 | 1997.5 | 1847.7 | 1831.0 |
| 55° | 10719.7 | 8156.3 | 3287.5 | 2263.8 | 2072.4 | 2147.3 | 2230.5 | 2064.0 | 1889.3 | 1806.0 | 1797.7 |
| 57.5° | 10178.7 | 7848.4 | 2954.6 | 2064.0 | 1922.6 | 1989.1 | 2097.3 | 1939.2 | 1772.7 | 1789.4 | 1814.4 |
| 60° | 9121.7 | 7049.4 | 2704.9 | 1930.9 | 1789.4 | 1856.0 | 1972.5 | 1789.4 | 1573.0 | 1514.7 | 1514.7 |
| 62.5° | 7515.5 | 5809.3 | 2505.2 | 1797.7 | 1664.6 | 1747.8 | 1806.0 | 1564.7 | 1423.2 | 1356.6 | 1356.6 |
| 65° | 5634.5 | 4494.3 | 2297.1 | 1689.5 | 1556.4 | 1647.9 | 1581.3 | 1464.8 | 1323.3 | 1273.4 | 1281.7 |
| 67° | *4178.0* | *3487.2* | *2122.3* | *1598.0* | *1489.8* | *1531.4* | *1481.5* | *1398.2* | *1256.7* | *1215.1* | *1256.7* |
| 67.5° | 3753.6 | 3312.5 | 2080.7 | 1573.0 | 1473.1 | 1506.4 | 1456.5 | 1389.9 | 1240.1 | 1198.5 | 1240.1 |
| 70° | 2580.1 | 2546.8 | 1856.0 | 1456.5 | 1381.6 | 1348.3 | 1373.3 | 1290.0 | 1165.2 | 1148.5 | 1190.2 |
| 72.5° | 1964.2 | 2030.8 | 1664.6 | 1356.6 | 1281.7 | 1240.1 | 1298.4 | 1215.1 | 1090.3 | 1115.2 | 1156.9 |
| 75° | 1539.7 | 1639.6 | 1489.8 | 1215.1 | 1165.2 | 1173.5 | 1290.0 | 1256.7 | 1156.9 | 1181.8 | 1190.2 |
| 77.5° | 1140.2 | 1323.3 | 1273.4 | 1057.0 | 1015.4 | 1131.9 | 1456.5 | 1556.4 | 1381.6 | 1340.0 | 1281.7 |
| 80° | 832.3 | 948.8 | 1073.6 | 873.9 | 848.9 | 1090.3 | 1797.7 | 1989.1 | 1706.2 | 1539.7 | 1498.1 |
| 82.5° | 615.9 | 665.8 | 882.2 | 699.1 | 615.9 | 973.8 | 1997.5 | 2338.7 | 2030.8 | 1714.5 | 1664.6 |
| 85° | 441.1 | 516.0 | 699.1 | 516.0 | 407.8 | 799.0 | 1955.8 | 2288.8 | 2014.1 | 1622.9 | 1581.3 |
| 87.5° | 158.1 | 224.7 | 299.6 | 233.0 | 208.1 | 549.3 | 1614.6 | 1647.9 | 1256.7 | 574.3 | 582.6 |
| 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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# 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

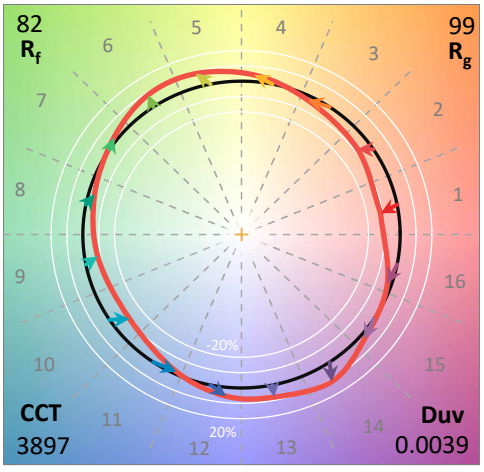
## Test Information

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

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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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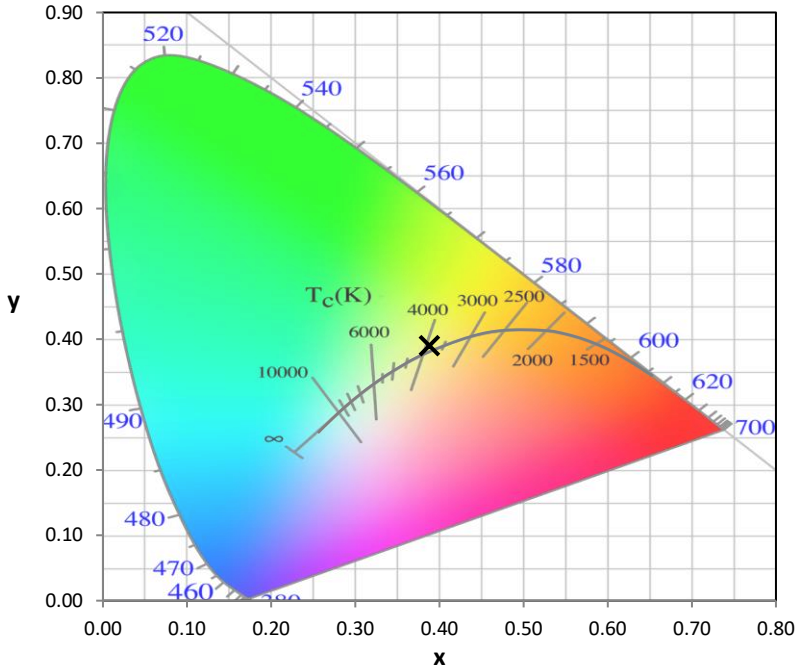
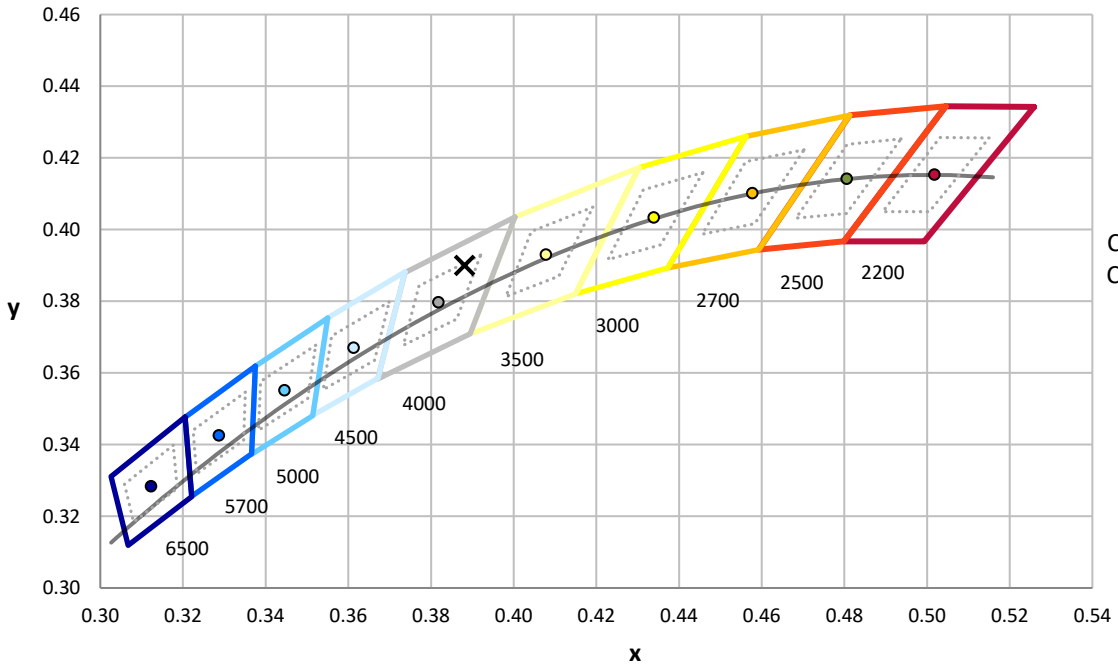
## CIE 1931 Chromaticity Diagram




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




CCT = 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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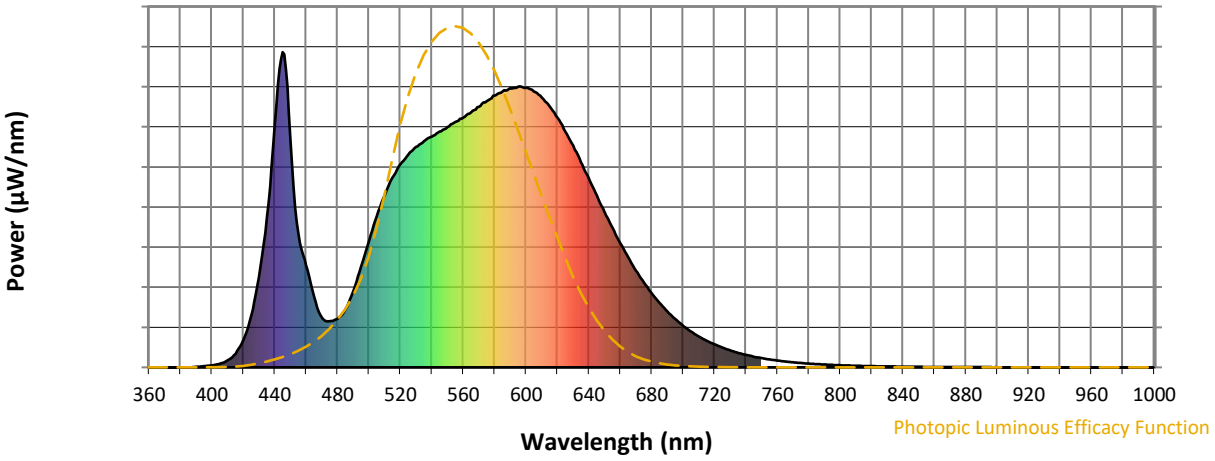
## Photopic Flux vs. Wavelength




## 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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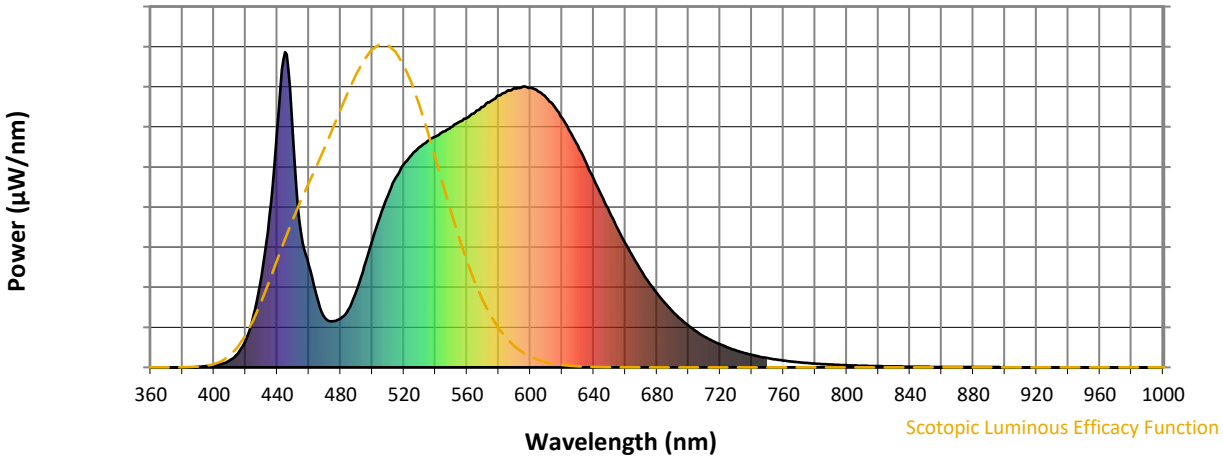
## Scotopic Flux vs. Wavelength




**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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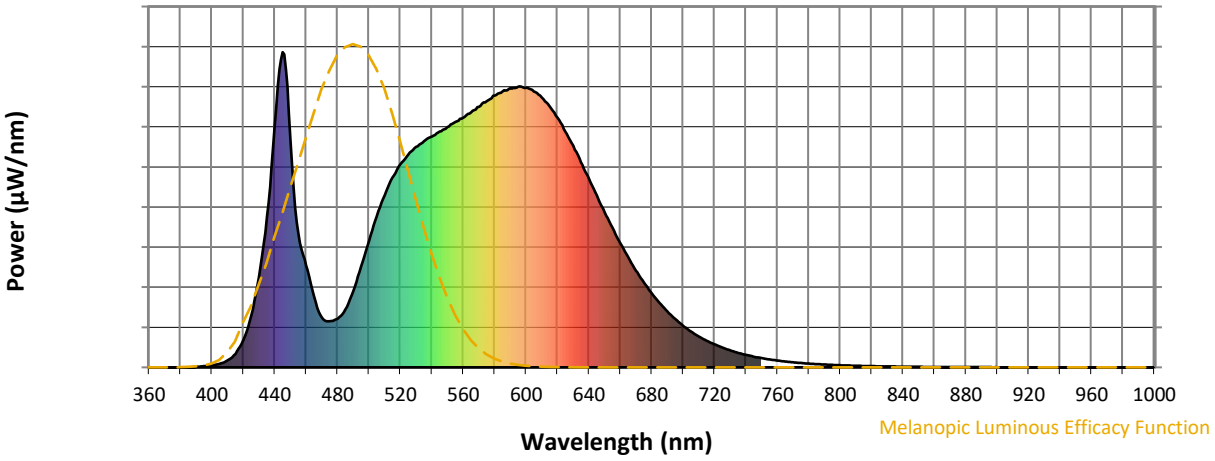
## Melanopic Flux vs. Wavelength




**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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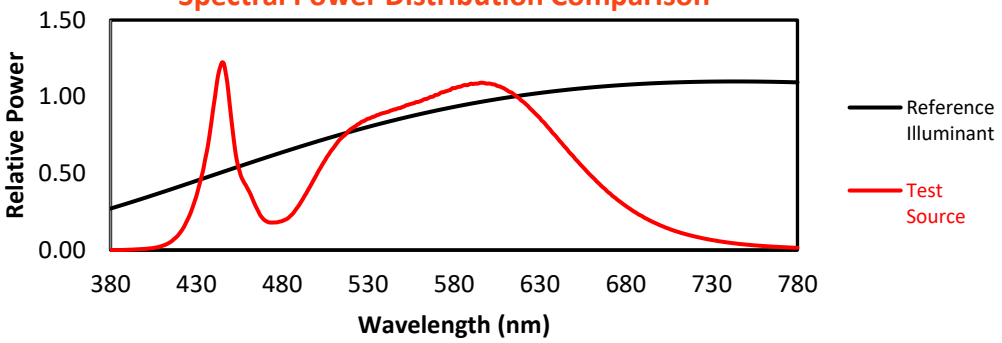
# TM-30-18

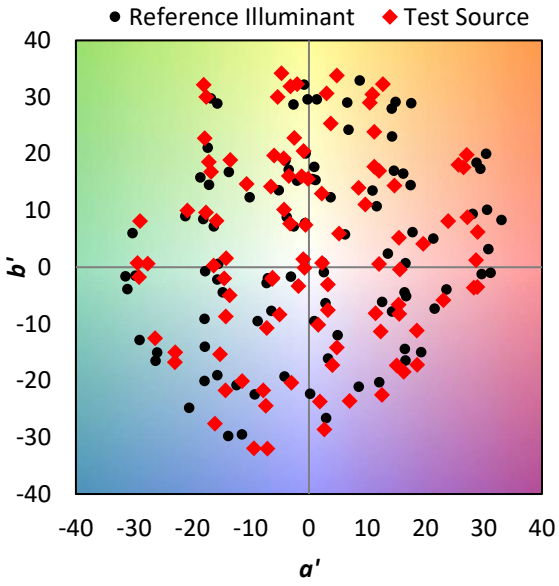
## Summary

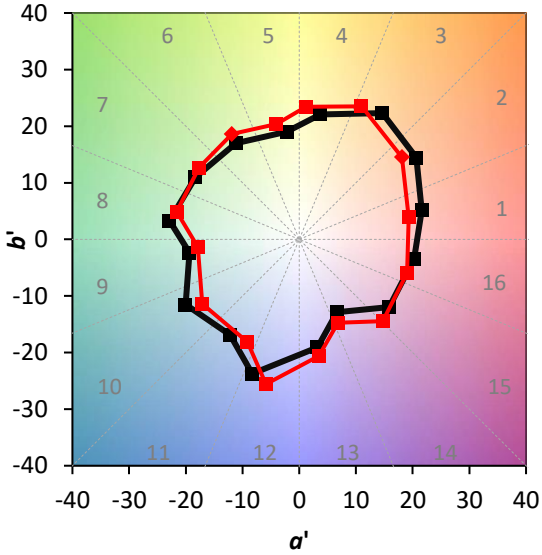
$R_f$ = 81.8
$R_g$ = 98.6
CIE $R_a$ = 80.2
$R_9$ = 6.7

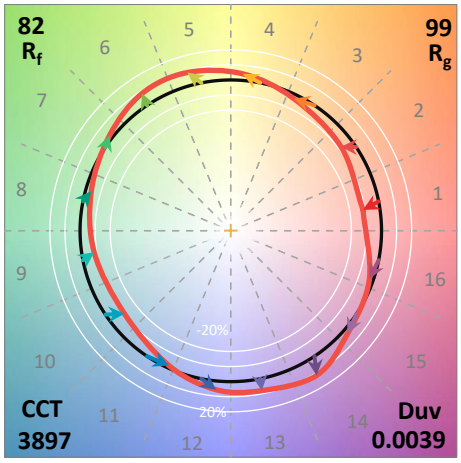
## Spectral Power Distribution Comparison

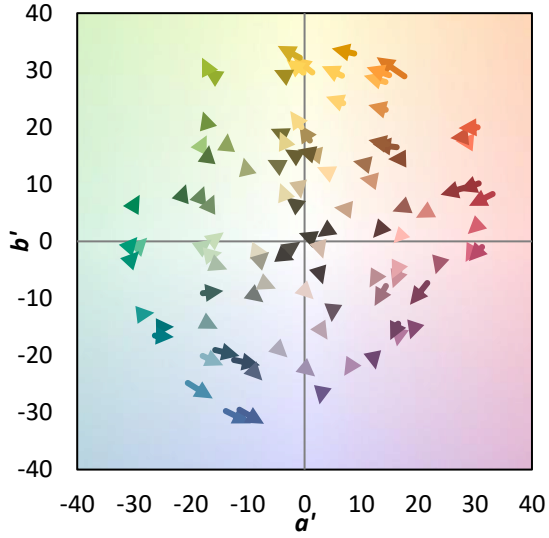



## Color Vector Graphics



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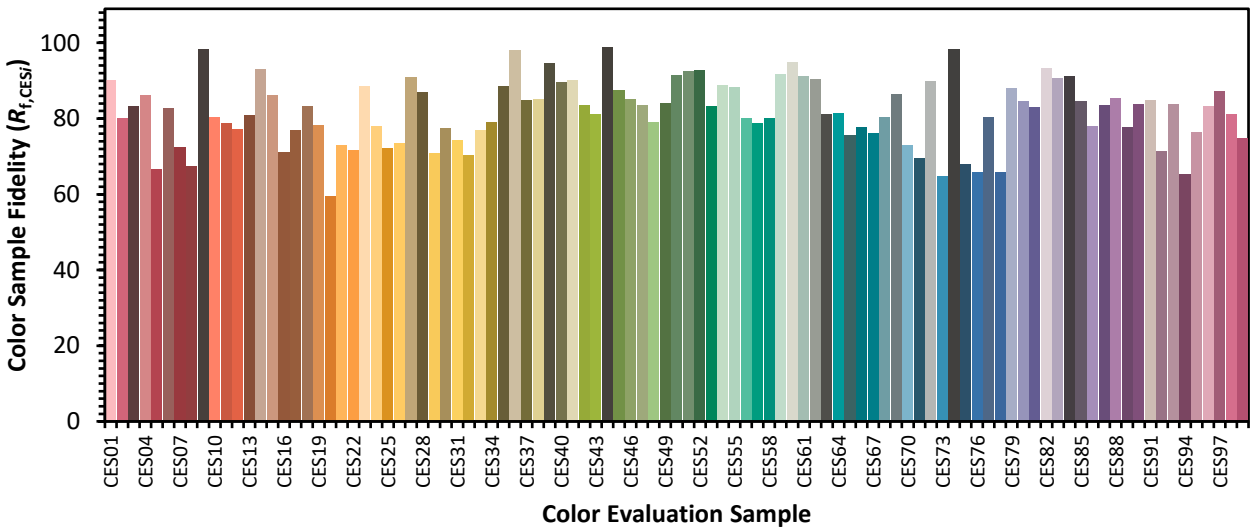
# TM-30-18

**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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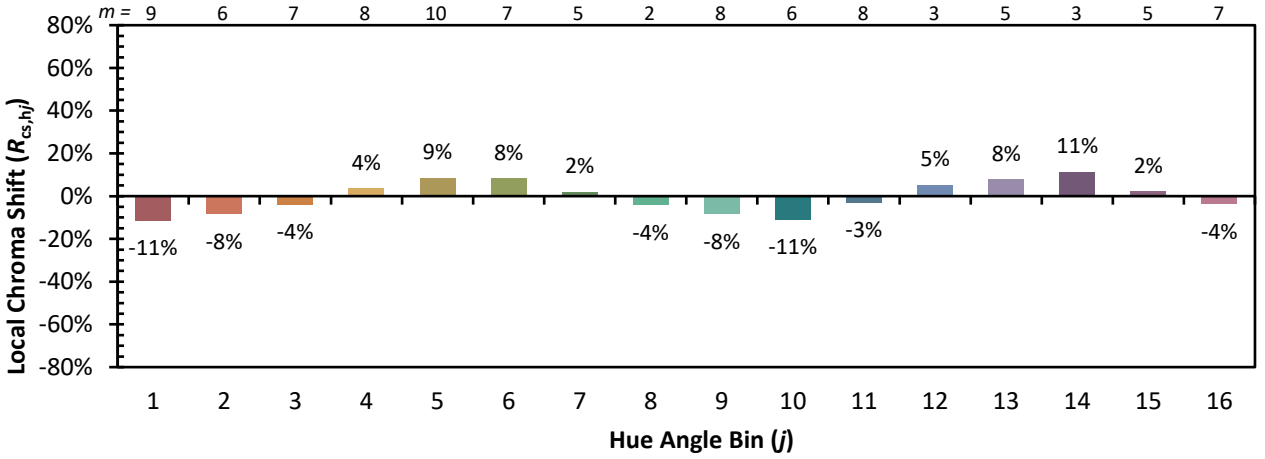
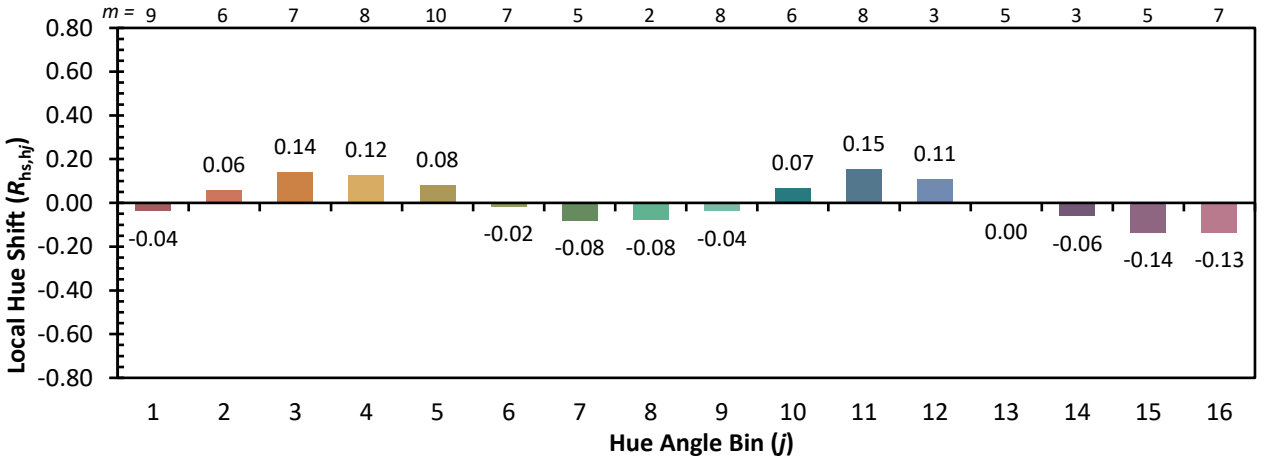
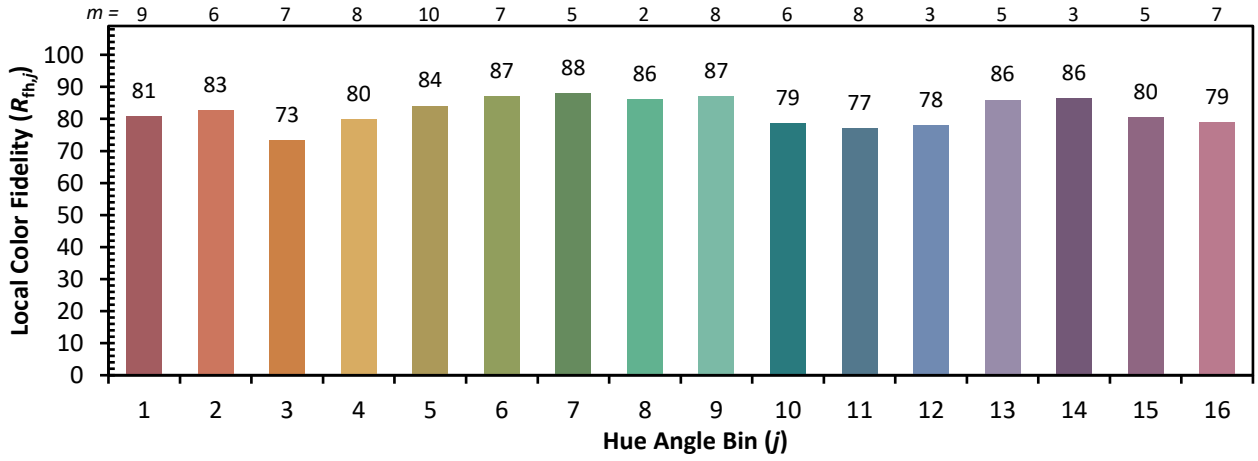
# TM-30-18

## Color Rendition by Hue-Angle Bin



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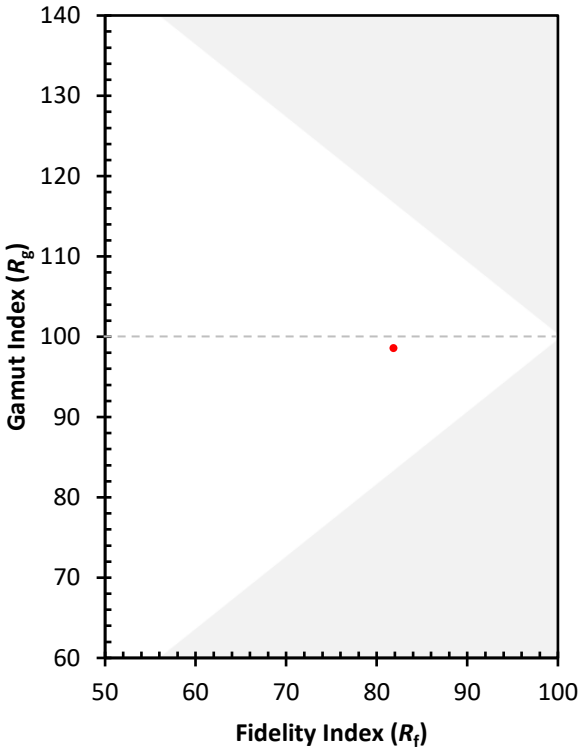
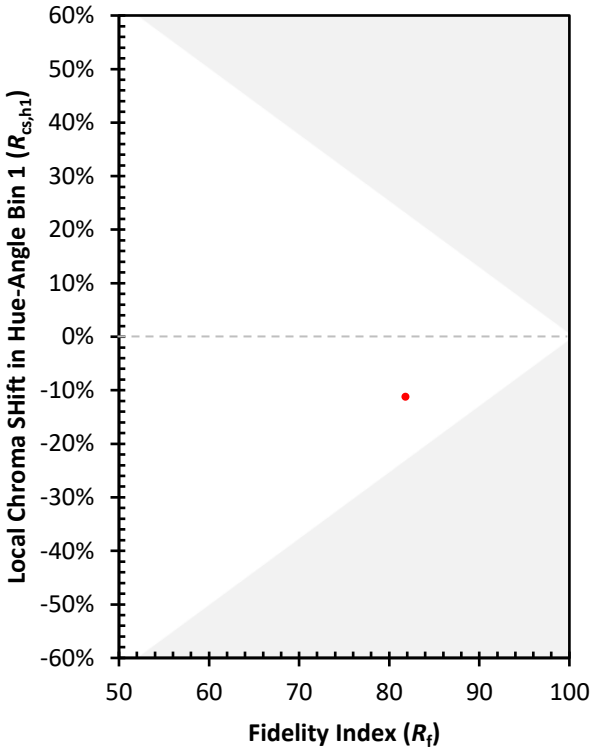
## Measure Comparisons




(END OF REPORT)