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: P1456126

Luminaire Tested: GLAN-SB3D-840-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: | P1456126 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/22/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB3D-840-U-T2LG |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 900mA 3xLight Square PACKAGE 80CRI 4000K FIXTURE w/ TYPE II LOW GLARE |
| Light Source: | (78) 4000K CCT, 80 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 28249.1 lumens |
| Efficiency: | N/A |
| Efficacy: | 129.5 lumens/watt |
| Luminous Opening: | Rectangular (W 1' x L: 1' x H: 0') |
| IES Classification: | Type II - Short |
| BUG Rating: | B3 - U0 - G3 |

| | |
|---|---|
| Input Watts (W): | 218.1 |
| 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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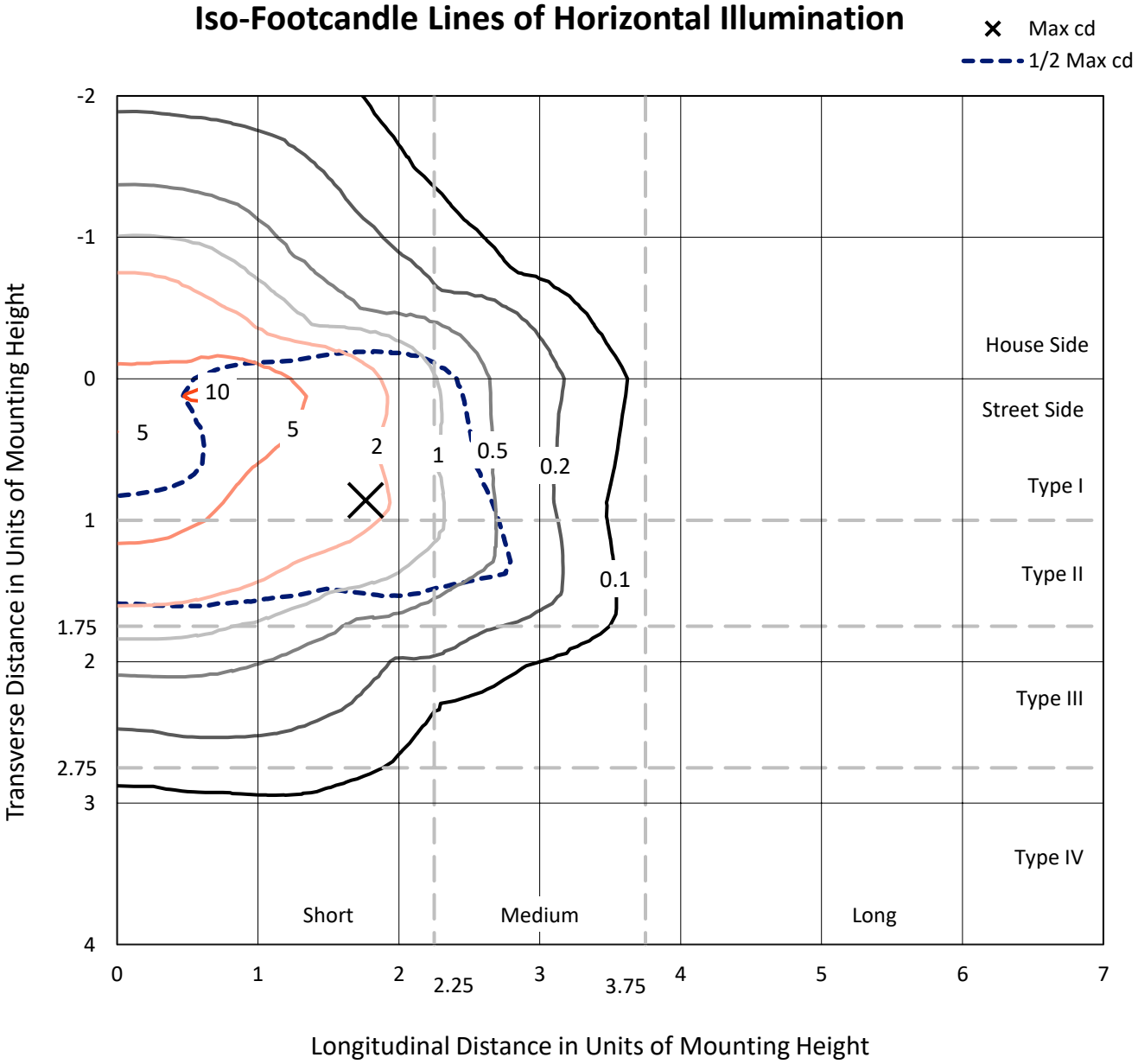
Scaled Data Report

REPORT NUMBER: P1456126
CATALOG NUMBER: GLAN-SB3D-840-U-T2LG

## Iso-Footcandle Lines of Horizontal Illumination




Based on 25 foot mounting height. Maximum calculated value = 10.6 fc
Type II - Short - N/A

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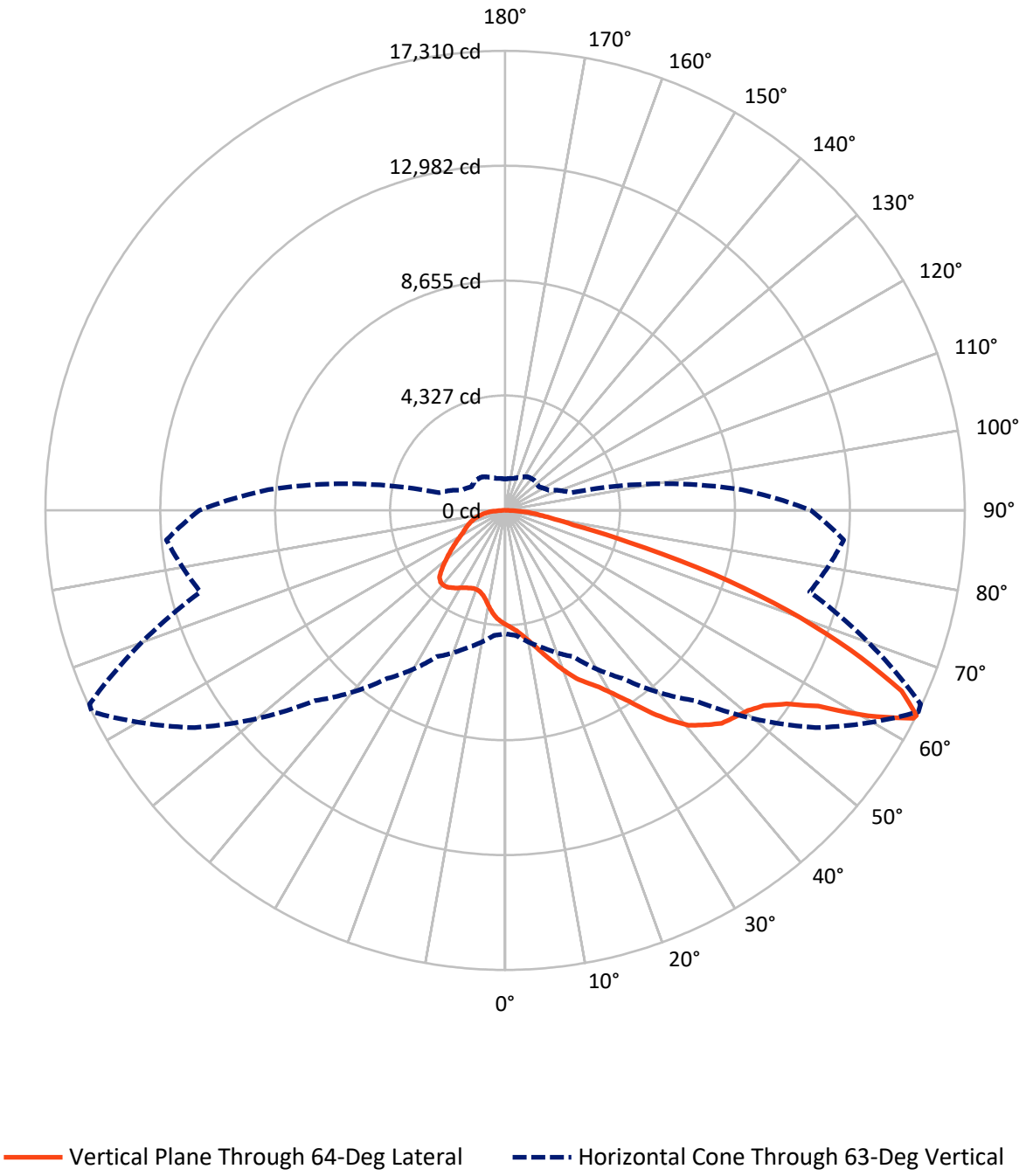
## Luminous Intensity Polar Plot



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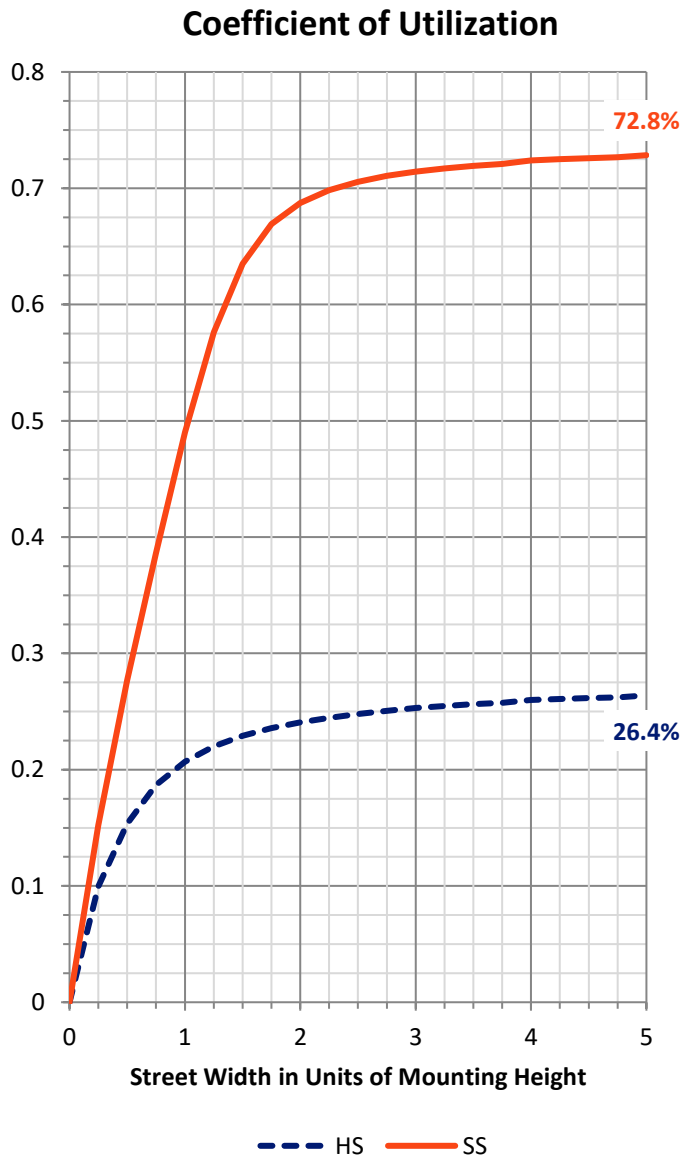
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 7589.7 | 0.0 | 7589.7 |
| | % Fixture | 26.9 | 0.0 | 26.9 |
| **Street Side** | Lumens | 20659.3 | 0.0 | 20659.3 |
| | % Fixture | 73.1 | 0.0 | 73.1 |
| **Total** | Lumens | 28249.1 | 0.0 | 28249.1 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 395.0 | 1.4 |
| 10°-20° | 1216.0 | 4.3 |
| 20°-30° | 2223.6 | 7.9 |
| 30°-40° | 3824.9 | 13.5 |
| 40°-50° | 5640.8 | 20.0 |
| 50°-60° | 6760.8 | 23.9 |
| 60°-70° | 5426.2 | 19.2 |
| 70°-80° | 2180.4 | 7.7 |
| 80°-90° | 581.4 | 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° | 28249.1 | 100.0 |
| 0°-180° | 28249.1 | 100.0 |



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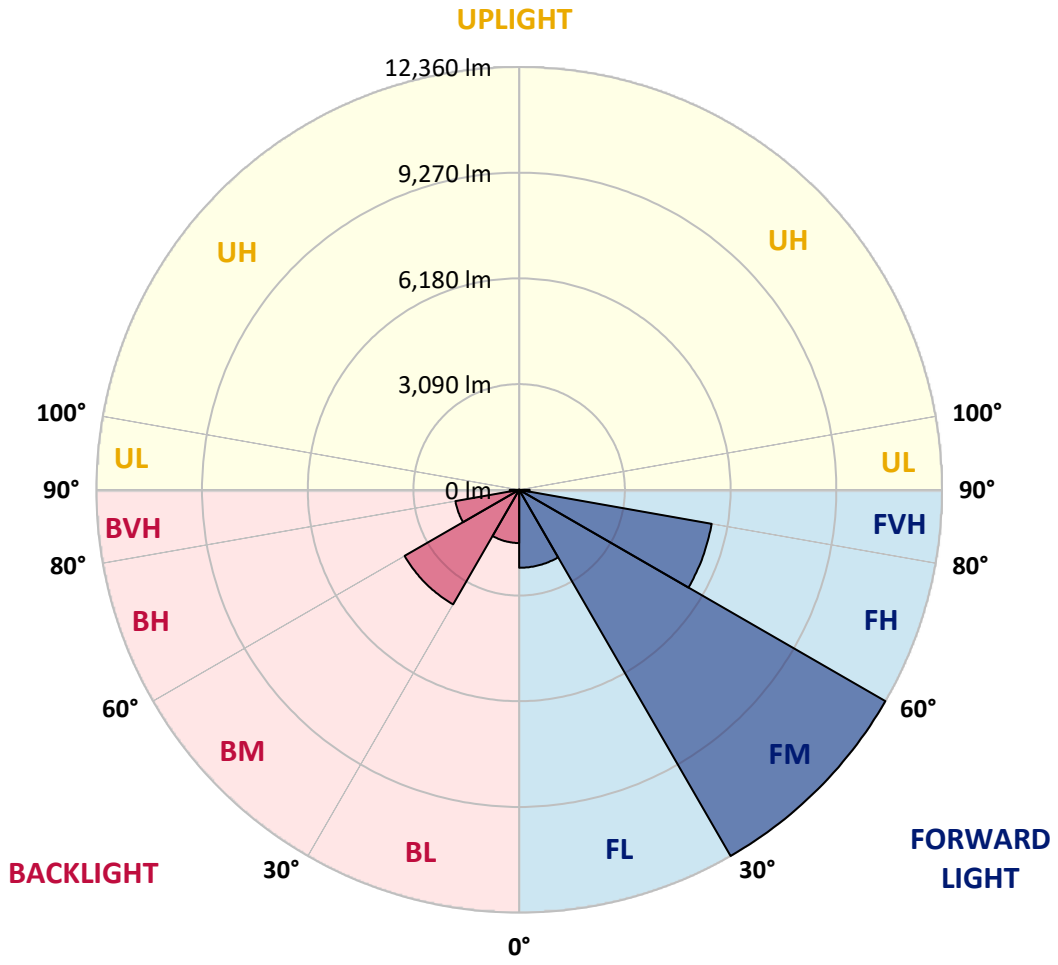
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 2279.2 | 8.1 | | | |
| FM | (30°-60°) | 12360.5 | 43.8 | | | |
| FH | (60°-80°) | 5714.2 | 20.2 | | | G3/7500 |
| FVH | (80°-90°) | 305.5 | 1.1 | | | G3/500 |
| BL | (0°-30°) | 1555.4 | 5.5 | B3/2500 | | |
| BM | (30°-60°) | 3866.0 | 13.7 | B3/5000 | | |
| BH | (60°-80°) | 1892.3 | 6.7 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 275.9 | 1.0 | | | G3/500 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B3-U0-G3**
Type II Short



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Scaled Data Report

REPORT NUMBER: P1456126
CATALOG NUMBER: GLAN-SB3D-840-U-T2LG

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 64° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 4302.0 | 4302.0 | 4302.0 | 4302.0 | 4302.0 | 4302.0 | 4302.0 | *4302.0* | 4302.0 | 4302.0 | 4302.0 |
| 2.5° | 4479.7 | 4486.0 | 4467.0 | 4460.6 | 4473.3 | 4447.9 | 4441.6 | *4416.2* | 4403.5 | 4378.2 | 4346.4 |
| 5° | 4606.6 | 4612.9 | 4600.2 | 4600.2 | 4612.9 | 4593.9 | 4587.5 | *4562.2* | 4549.5 | 4524.1 | 4460.6 |
| 7.5° | 4600.2 | 4606.6 | 4619.3 | 4670.0 | 4733.5 | 4758.9 | 4777.9 | *4758.9* | 4752.5 | 4714.4 | 4651.0 |
| 10° | 4498.7 | 4505.1 | 4536.8 | 4612.9 | 4771.6 | 4885.8 | 5006.3 | *5006.3* | 5019.0 | 4987.3 | 4873.1 |
| 12.5° | 4359.1 | 4365.5 | 4441.6 | 4562.2 | 4771.6 | 4968.3 | 5215.7 | *5317.2* | 5310.9 | 5291.9 | 5158.6 |
| 15° | 4022.8 | 4022.8 | 4137.0 | 4365.5 | 4701.8 | 5025.4 | 5393.4 | *5666.2* | 5672.6 | 5691.6 | 5533.0 |
| 17.5° | 3737.3 | 3743.6 | 3838.8 | 4041.9 | 4479.7 | 4993.6 | 5583.7 | *6053.3* | 6072.3 | 6180.2 | 5951.8 |
| 20° | 3762.7 | 3762.7 | 3794.4 | 3883.2 | 4238.6 | 4866.7 | 5691.6 | *6465.7* | 6529.2 | 6783.0 | 6497.4 |
| 22.5° | 3959.4 | 3959.4 | 3984.8 | 3978.4 | 4194.1 | 4784.2 | 5761.4 | *6878.1* | 6992.4 | 7519.0 | 7151.0 |
| 25° | 4321.0 | 4314.7 | 4289.3 | 4251.3 | 4378.2 | 4873.1 | 5920.0 | *7195.4* | 7417.5 | 8331.2 | 7906.1 |
| 27.5° | 4765.2 | 4752.5 | 4714.4 | 4651.0 | 4739.8 | 5139.6 | 6192.9 | *7531.7* | 7772.8 | 9219.5 | 8705.5 |
| 30° | 5317.2 | 5279.2 | 5241.1 | 5158.6 | 5253.8 | 5577.4 | 6599.0 | *8007.6* | 8236.0 | 10228.4 | 9670.0 |
| 32.5° | 5970.8 | 6015.2 | 5888.3 | 5774.1 | 5875.6 | 6173.8 | 7201.7 | *8572.3* | 8819.8 | 11281.7 | 10672.5 |
| 35° | 6947.9 | 7081.2 | 7043.1 | 6465.7 | 6560.9 | 6890.8 | 7906.1 | *9302.0* | 9524.1 | 12239.8 | 11700.5 |
| 37.5° | 7912.4 | 7880.7 | 7912.4 | 7430.2 | 7277.9 | 7677.6 | 8661.1 | *10000.0* | 10215.7 | 13020.2 | 12607.8 |
| 40° | 8686.5 | 8781.7 | 8781.7 | 8388.3 | 8191.6 | 8458.1 | 9346.4 | *10640.8* | 10850.2 | 13451.7 | 13261.4 |
| 42.5° | 9530.4 | 9543.1 | 9517.7 | 9175.1 | 9098.9 | 9168.7 | 9949.2 | *11046.9* | 11218.2 | 13673.8 | 13705.5 |
| 45° | 10482.2 | 10475.8 | 10368.0 | 10082.4 | 9968.2 | 9904.8 | 10323.6 | *11440.3* | 11611.6 | 13775.3 | 13946.6 |
| 47.5° | 11269.0 | 11300.7 | 11307.1 | 11002.5 | 10812.1 | 10539.3 | 10647.2 | *11637.0* | 11833.7 | 13661.1 | 13997.4 |
| 50° | 11313.4 | 11364.2 | 11605.3 | 11694.1 | 11656.0 | 11218.2 | 10945.4 | *11846.4* | 12043.1 | 13686.5 | 14181.4 |
| 52.5° | 11034.2 | 11085.0 | 11395.9 | 11763.9 | 12208.1 | 11998.7 | 11414.9 | *12208.1* | 12411.1 | 13933.9 | 14600.2 |
| 55° | 10285.5 | 10368.0 | 10831.2 | 11345.1 | 12138.3 | 12436.5 | 12246.1 | *12861.6* | 13052.0 | 14130.6 | 15088.8 |
| 57.5° | 8953.0 | 9054.5 | 9695.4 | 10513.9 | 11598.9 | 12335.0 | 13451.7 | *13908.6* | 14067.2 | 14270.2 | 15095.1 |
| 60° | 6694.1 | 6776.6 | 7779.2 | 8883.2 | 10513.9 | 11700.5 | 14168.7 | *15704.2* | 15793.1 | 13515.2 | 14238.5 |
| 62.5° | 4930.2 | 5012.7 | 5685.3 | 6478.4 | 8261.4 | 10532.9 | 14308.3 | *17258.8* | 17271.5 | 12151.0 | 13058.3 |
| 63° | *4644.6* | *4727.1* | *5336.3* | *6078.7* | *7728.4* | *10139.5* | *14263.9* | *17309.6* | *17265.2* | *11871.8* | *12798.2* |
| 65° | 3616.7 | 3762.7 | 4397.2 | 4961.9 | 5793.1 | 8071.0 | 13692.8 | *16408.6* | 16472.0 | 11046.9 | 11491.1 |
| 67.5° | 2461.9 | 2569.8 | 3375.6 | 4029.2 | 4378.2 | 5139.6 | 11230.9 | *14041.8* | 14143.3 | 10190.3 | 9168.7 |
| 70° | 1903.5 | 1954.3 | 2423.8 | 3191.6 | 3540.6 | 3267.8 | 7322.3 | *11307.1* | 11307.1 | 7956.8 | 6497.4 |
| 72.5° | 1491.1 | 1510.1 | 1827.4 | 2493.6 | 2849.0 | 2512.7 | 4079.9 | *8223.3* | 7918.7 | 4720.8 | 4333.7 |
| 75° | 1066.0 | 1091.4 | 1376.9 | 1859.1 | 2271.6 | 1979.7 | 2607.9 | *4790.6* | 4606.6 | 2715.7 | 2893.4 |
| 77.5° | 843.9 | 856.6 | 1027.9 | 1370.6 | 1840.1 | 1510.1 | 1986.0 | *2614.2* | 2588.8 | 1909.9 | 1859.1 |
| 80° | 666.2 | 691.6 | 805.8 | 983.5 | 1421.3 | 1180.2 | 1478.4 | *1725.9* | 1675.1 | 1313.4 | 1192.9 |
| 82.5° | 475.9 | 520.3 | 621.8 | 748.7 | 1053.3 | 843.9 | 970.8 | *1218.3* | 1218.3 | 989.8 | 786.8 |
| 85° | 291.9 | 329.9 | 368.0 | 463.2 | 748.7 | 545.7 | 514.0 | *786.8* | 805.8 | 742.4 | 507.6 |
| 87.5° | 139.6 | 152.3 | 177.7 | 196.7 | 272.8 | 247.5 | 203.0 | *298.2* | 304.6 | 329.9 | 209.4 |
| 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: P1456126
CATALOG NUMBER: GLAN-SB3D-840-U-T2LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 4302.0 | 4302.0 | 4302.0 | 4302.0 | 4302.0 | 4302.0 | 4302.0 | 4302.0 | 4302.0 | 4302.0 | 4302.0 |
| 2.5° | 4340.1 | 4327.4 | 4263.9 | 4200.5 | 4130.7 | 4067.2 | 4003.8 | 3953.0 | 3895.9 | 3908.6 | 3915.0 |
| 5° | 4422.6 | 4390.8 | 4251.3 | 4086.3 | 3870.5 | 3667.5 | 3470.8 | 3331.2 | 3242.4 | 3217.0 | 3166.2 |
| 7.5° | 4600.2 | 4524.1 | 4270.3 | 3921.3 | 3521.6 | 3204.3 | 3020.3 | 2937.8 | 2912.4 | 2918.8 | 2906.1 |
| 10° | 4803.3 | 4689.1 | 4295.7 | 3724.6 | 3217.0 | 3001.3 | 2975.9 | 3026.6 | 3052.0 | 3077.4 | 3083.7 |
| 12.5° | 5069.8 | 4885.8 | 4283.0 | 3508.9 | 3071.1 | 3033.0 | 3128.2 | 3223.3 | 3280.4 | 3318.5 | 3312.2 |
| 15° | 5380.7 | 5133.2 | 4244.9 | 3331.2 | 3052.0 | 3153.5 | 3274.1 | 3382.0 | 3451.8 | 3489.8 | 3470.8 |
| 17.5° | 5755.1 | 5425.1 | 4200.5 | 3217.0 | 3109.1 | 3229.7 | 3356.6 | 3464.5 | 3540.6 | 3566.0 | 3546.9 |
| 20° | 6218.2 | 5755.1 | 4124.3 | 3166.2 | 3153.5 | 3261.4 | 3375.6 | 3477.1 | 3540.6 | 3566.0 | 3540.6 |
| 22.5° | 6763.9 | 6148.4 | 4060.9 | 3166.2 | 3172.6 | 3261.4 | 3343.9 | 3420.0 | 3477.1 | 3496.2 | 3464.5 |
| 25° | 7461.9 | 6605.3 | 4035.5 | 3217.0 | 3178.9 | 3229.7 | 3274.1 | 3318.5 | 3350.2 | 3362.9 | 3350.2 |
| 27.5° | 8172.6 | 7131.9 | 4048.2 | 3280.4 | 3172.6 | 3185.3 | 3185.3 | 3191.6 | 3198.0 | 3204.3 | 3198.0 |
| 30° | 8991.1 | 7664.9 | 4099.0 | 3362.9 | 3185.3 | 3121.8 | 3102.8 | 3064.7 | 3033.0 | 3007.6 | 2982.2 |
| 32.5° | 9784.2 | 8172.6 | 4187.8 | 3483.5 | 3172.6 | 3052.0 | 3013.9 | 2918.8 | 2829.9 | 2753.8 | 2753.8 |
| 35° | 10640.8 | 8699.2 | 4346.4 | 3572.3 | 3159.9 | 2988.6 | 2880.7 | 2772.8 | 2677.7 | 2569.8 | 2569.8 |
| 37.5° | 11376.9 | 9149.7 | 4473.3 | 3673.8 | 3147.2 | 2912.4 | 2741.1 | 2620.5 | 2519.0 | 2411.2 | 2398.5 |
| 40° | 11890.8 | 9409.9 | 4549.5 | 3711.9 | 3102.8 | 2810.9 | 2607.9 | 2455.6 | 2309.6 | 2163.7 | 2157.4 |
| 42.5° | 12138.3 | 9397.2 | 4505.1 | 3699.2 | 3020.3 | 2684.0 | 2493.6 | 2290.6 | 2093.9 | 1960.7 | 1948.0 |
| 45° | 12271.5 | 9314.7 | 4333.7 | 3591.4 | 2887.0 | 2550.8 | 2347.7 | 2132.0 | 1935.3 | 1814.7 | 1789.3 |
| 47.5° | 12246.1 | 9111.6 | 4099.0 | 3324.9 | 2709.4 | 2404.8 | 2201.8 | 1979.7 | 1821.1 | 1751.3 | 1751.3 |
| 50° | 12315.9 | 8953.0 | 3832.5 | 3020.3 | 2468.3 | 2233.5 | 2068.5 | 1865.5 | 1770.3 | 1681.5 | 1649.7 |
| 52.5° | 12626.8 | 9086.3 | 3604.0 | 2734.8 | 2239.8 | 2068.5 | 1954.3 | 1783.0 | 1662.4 | 1605.3 | 1586.3 |
| 55° | 13039.3 | 9371.8 | 3388.3 | 2481.0 | 2017.8 | 1922.6 | 1865.5 | 1706.8 | 1567.3 | 1510.1 | 1478.4 |
| 57.5° | 13115.4 | 9568.5 | 3178.9 | 2233.5 | 1833.7 | 1808.4 | 1789.3 | 1573.6 | 1459.4 | 1415.0 | 1389.6 |
| 60° | 12588.8 | 9422.5 | 2906.1 | 2011.4 | 1687.8 | 1700.5 | 1649.7 | 1491.1 | 1357.9 | 1313.4 | 1288.1 |
| 62.5° | 11694.1 | 9041.8 | 2633.2 | 1821.1 | 1573.6 | 1599.0 | 1548.2 | 1389.6 | 1256.3 | 1211.9 | 1199.2 |
| 63° | *11516.4* | *8940.3* | *2569.8* | *1802.0* | *1548.2* | *1579.9* | *1535.5* | *1376.9* | *1243.6* | *1199.2* | *1180.2* |
| 65° | 10456.8 | 8331.2 | 2347.7 | 1700.5 | 1465.7 | 1465.7 | 1472.1 | 1313.4 | 1199.2 | 1180.2 | 1167.5 |
| 67.5° | 8527.9 | 6954.3 | 2106.6 | 1579.9 | 1376.9 | 1395.9 | 1427.7 | 1338.8 | 1294.4 | 1281.7 | 1269.0 |
| 70° | 6446.7 | 5234.7 | 1897.2 | 1465.7 | 1281.7 | 1345.2 | 1560.9 | 1522.8 | 1357.9 | 1243.6 | 1218.3 |
| 72.5° | 4568.5 | 3566.0 | 1713.2 | 1351.5 | 1167.5 | 1326.1 | 1618.0 | 1453.0 | 1224.6 | 1091.4 | 1066.0 |
| 75° | 3058.4 | 2296.9 | 1529.2 | 1231.0 | 1040.6 | 1224.6 | 1529.2 | 1326.1 | 1066.0 | 1034.3 | 996.2 |
| 77.5° | 1922.6 | 1637.0 | 1345.2 | 1091.4 | 901.0 | 1091.4 | 1389.6 | 1180.2 | 920.0 | 932.7 | 875.6 |
| 80° | 1173.9 | 1167.5 | 1129.4 | 926.4 | 723.3 | 869.3 | 1167.5 | 996.2 | 736.0 | 736.0 | 653.6 |
| 82.5° | 698.0 | 843.9 | 958.1 | 767.8 | 526.6 | 621.8 | 843.9 | 748.7 | 615.5 | 596.4 | 558.4 |
| 85° | 469.5 | 571.1 | 761.4 | 590.1 | 336.3 | 380.7 | 583.8 | 628.2 | 564.7 | 494.9 | 463.2 |
| 87.5° | 171.3 | 228.4 | 349.0 | 241.1 | 145.9 | 228.4 | 437.8 | 456.9 | 342.6 | 266.5 | 241.1 |
| 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

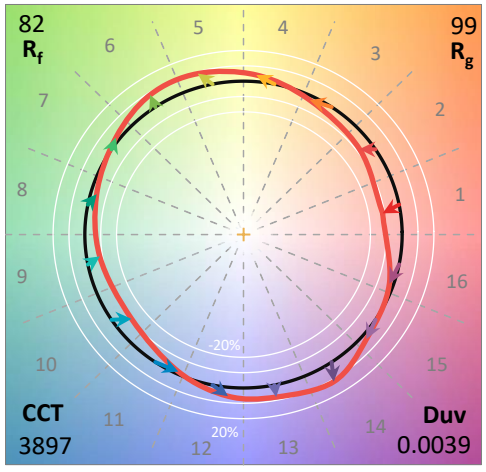
## Test Information

| | |
|---|---|
| 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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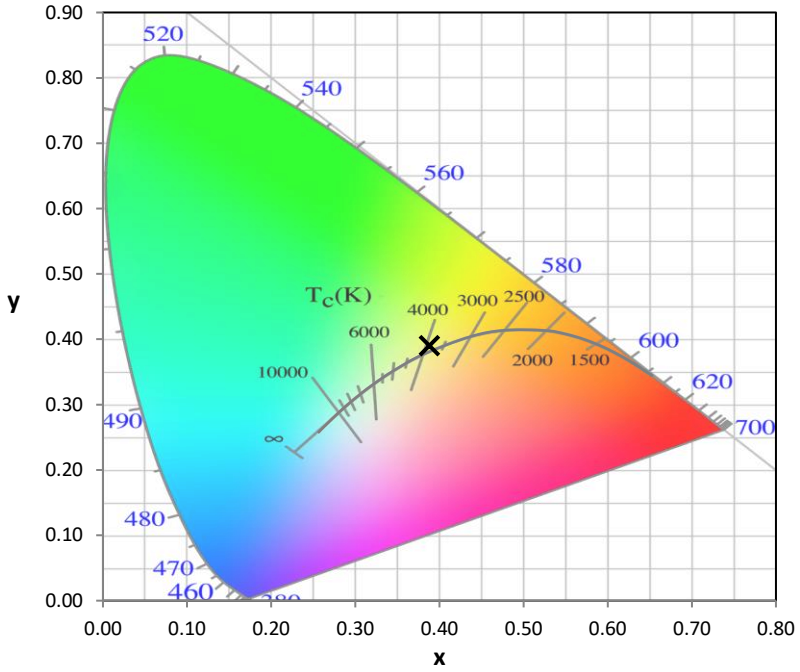
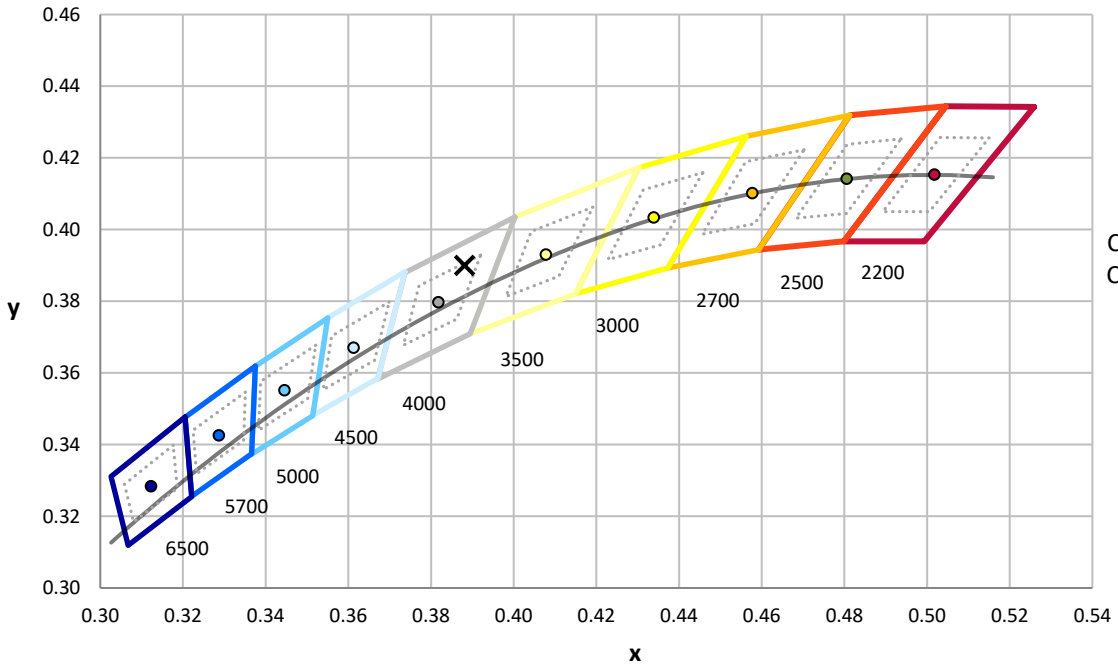
## CIE 1931 Chromaticity Diagram




## 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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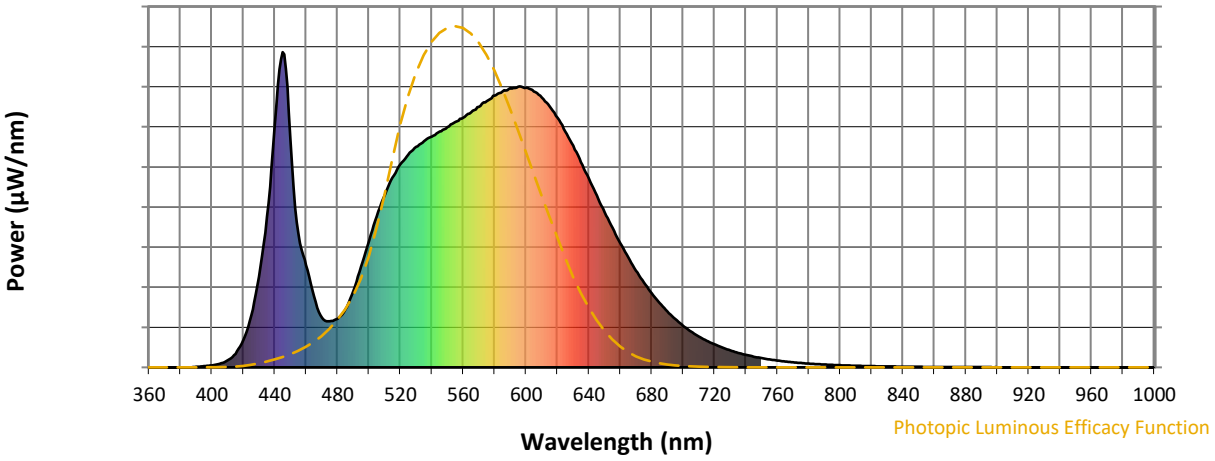
## Photopic Flux vs. Wavelength




## 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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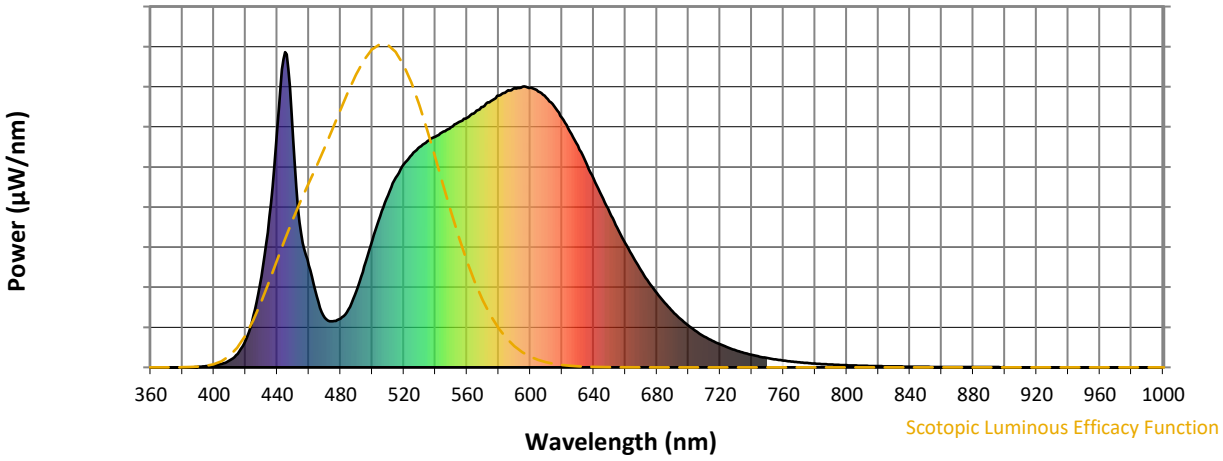
## Scotopic Flux vs. Wavelength




**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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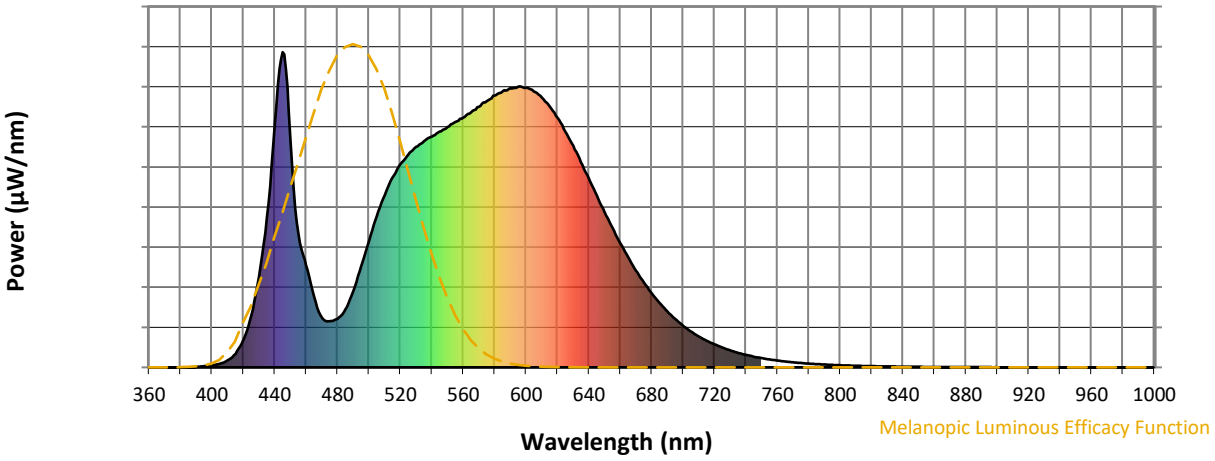
## Melanopic Flux vs. Wavelength




**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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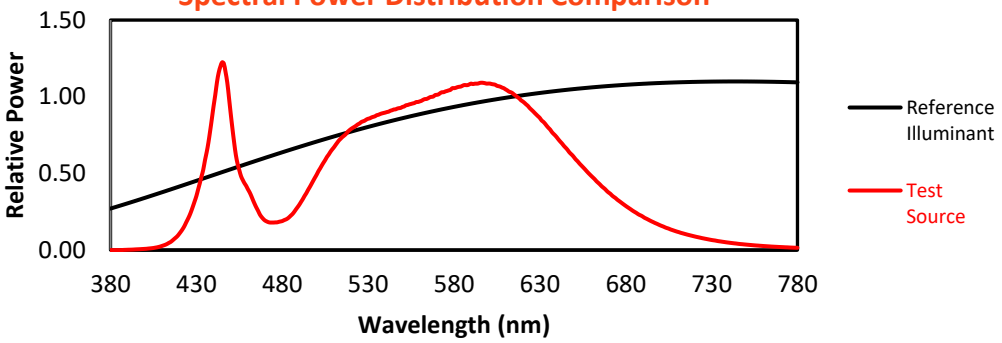
# TM-30-18

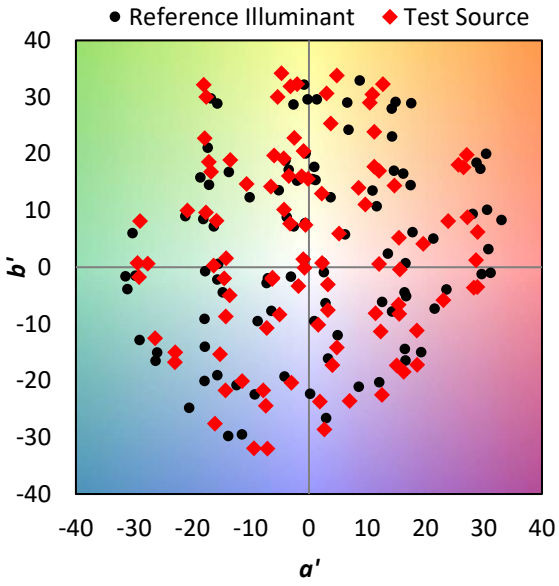
## Summary

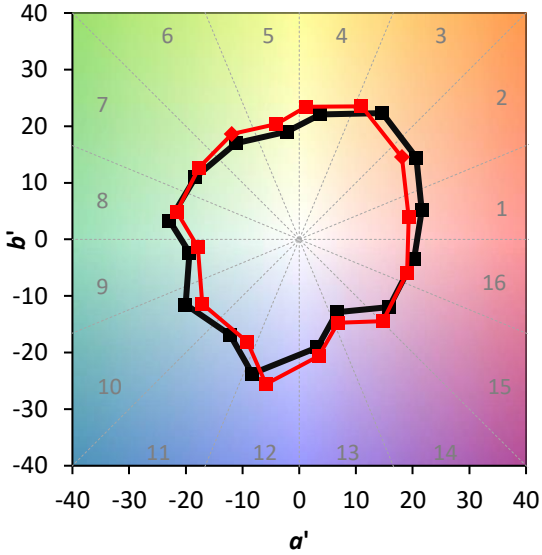
$R_f$ = 81.8
$R_g$ = 98.6
CIE $R_a$ = 80.2
$R_9$ = 6.7

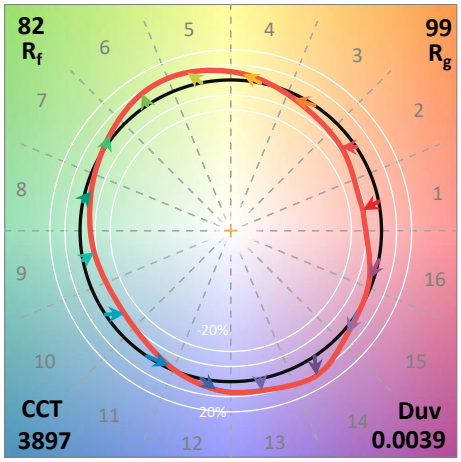
## Spectral Power Distribution Comparison

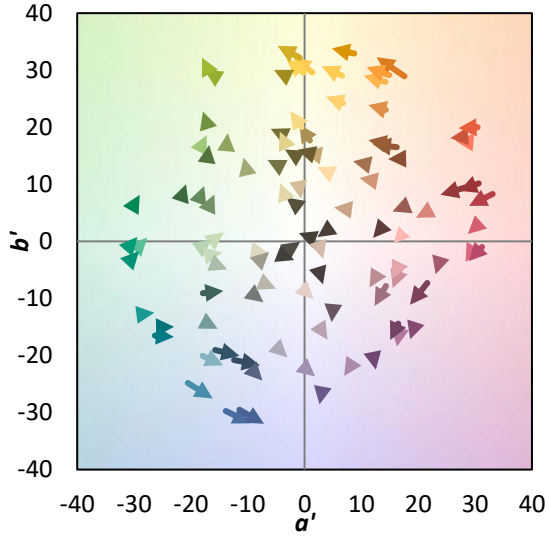



## Color Vector Graphics



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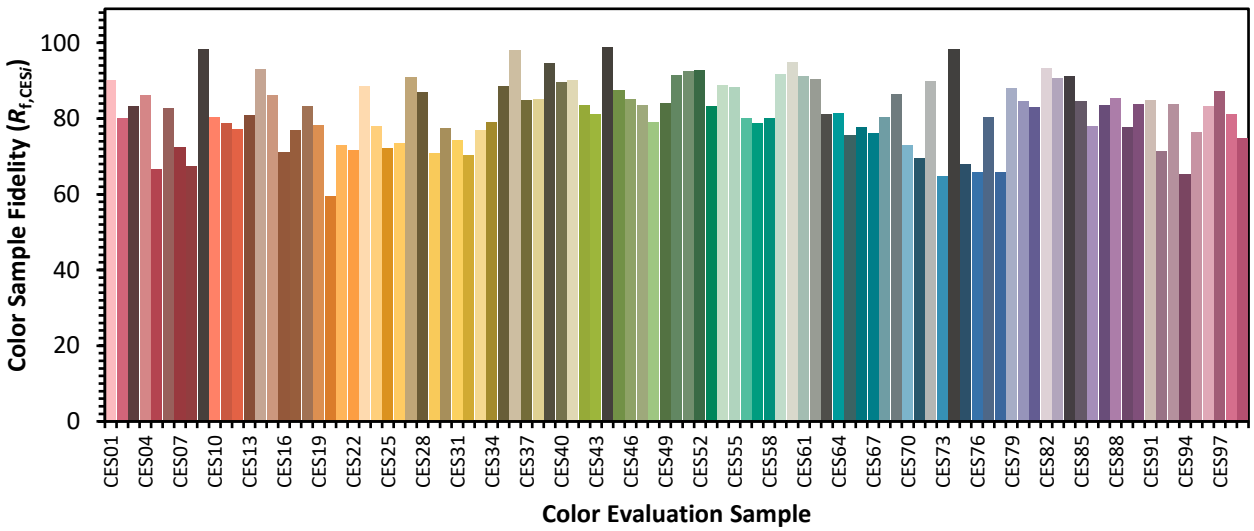
# TM-30-18

**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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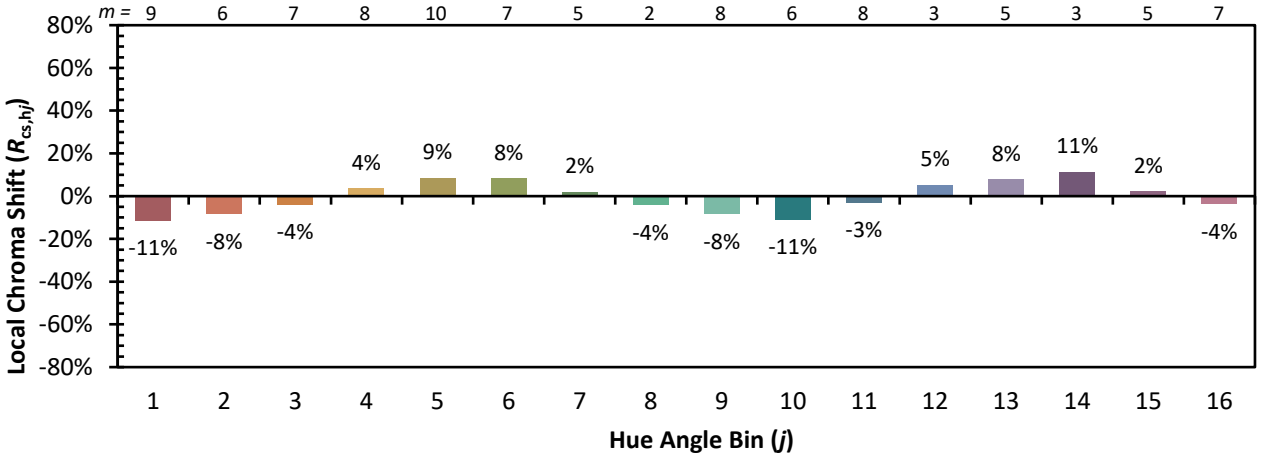
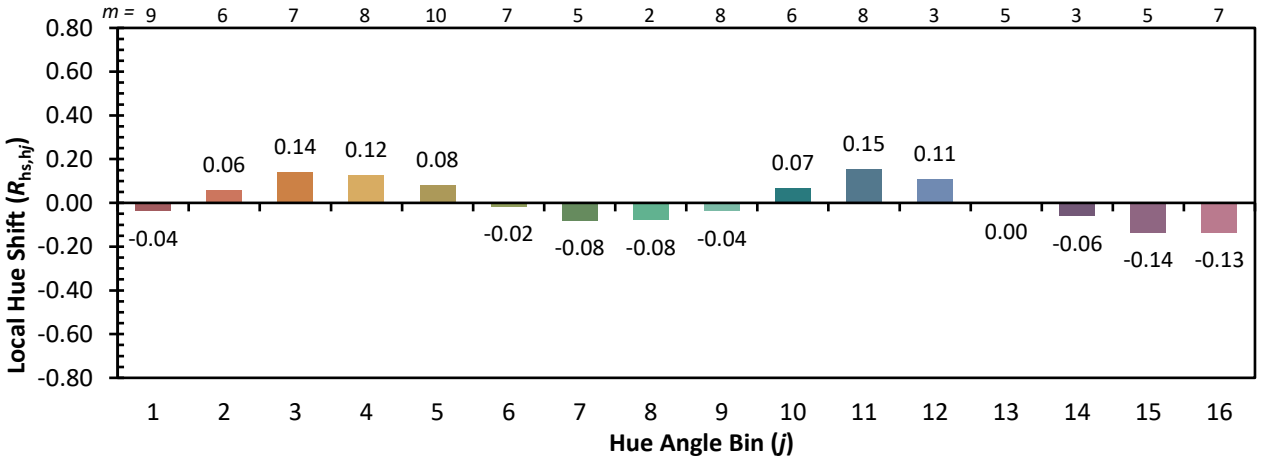
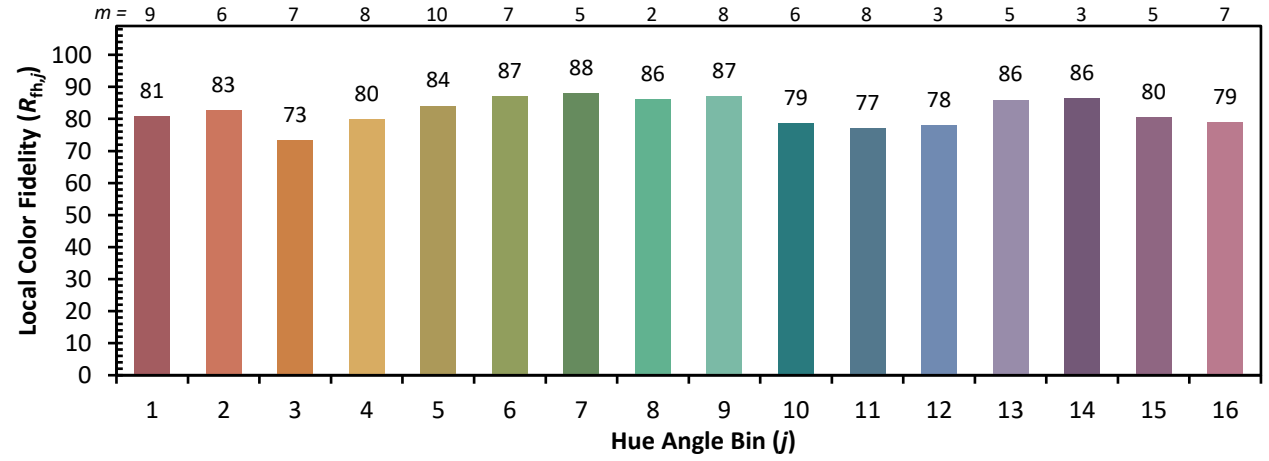
# TM-30-18

## Color Rendition by Hue-Angle Bin



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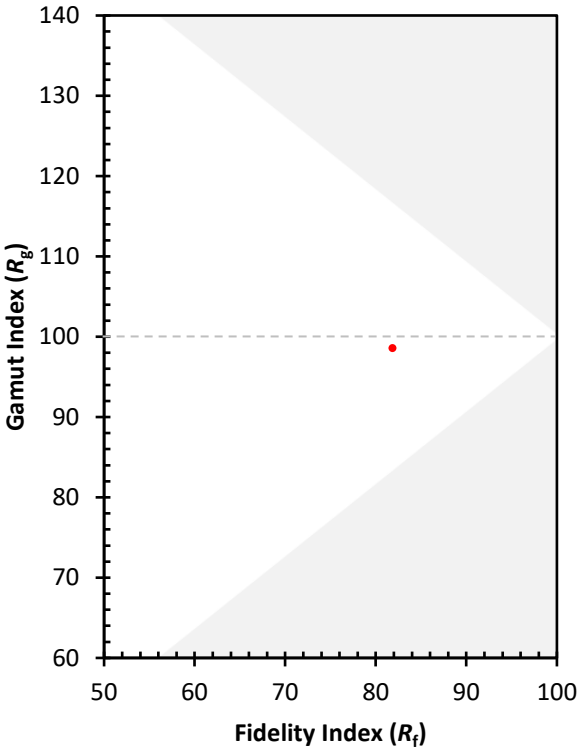
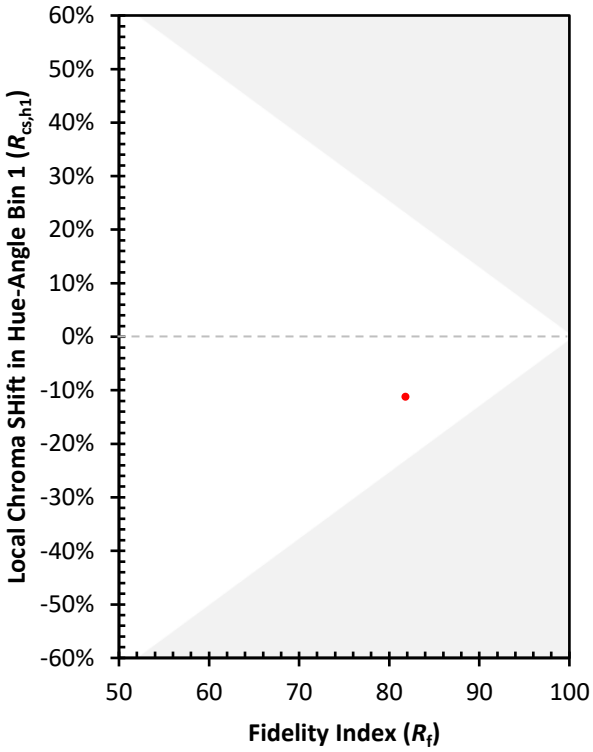
## Measure Comparisons




(END OF REPORT)