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: P1455846

Luminaire Tested: GLAN-SB5D-727-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: | P1455846 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/21/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB5D-727-U-T2LG |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 900mA 5xLight Square PACKAGE 70CRI 2700K FIXTURE w/ TYPE II LOW GLARE |
| Light Source: | (130) 2700K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 46140.3 lumens |
| Efficiency: | N/A |
| Efficacy: | 126.4 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1' x H: 0') |
| IES Classification: | Type II - Short |
| BUG Rating: | B4 - U0 - G4 |

| | |
|---|---|
| Input Watts (W): | 364.9 |
| 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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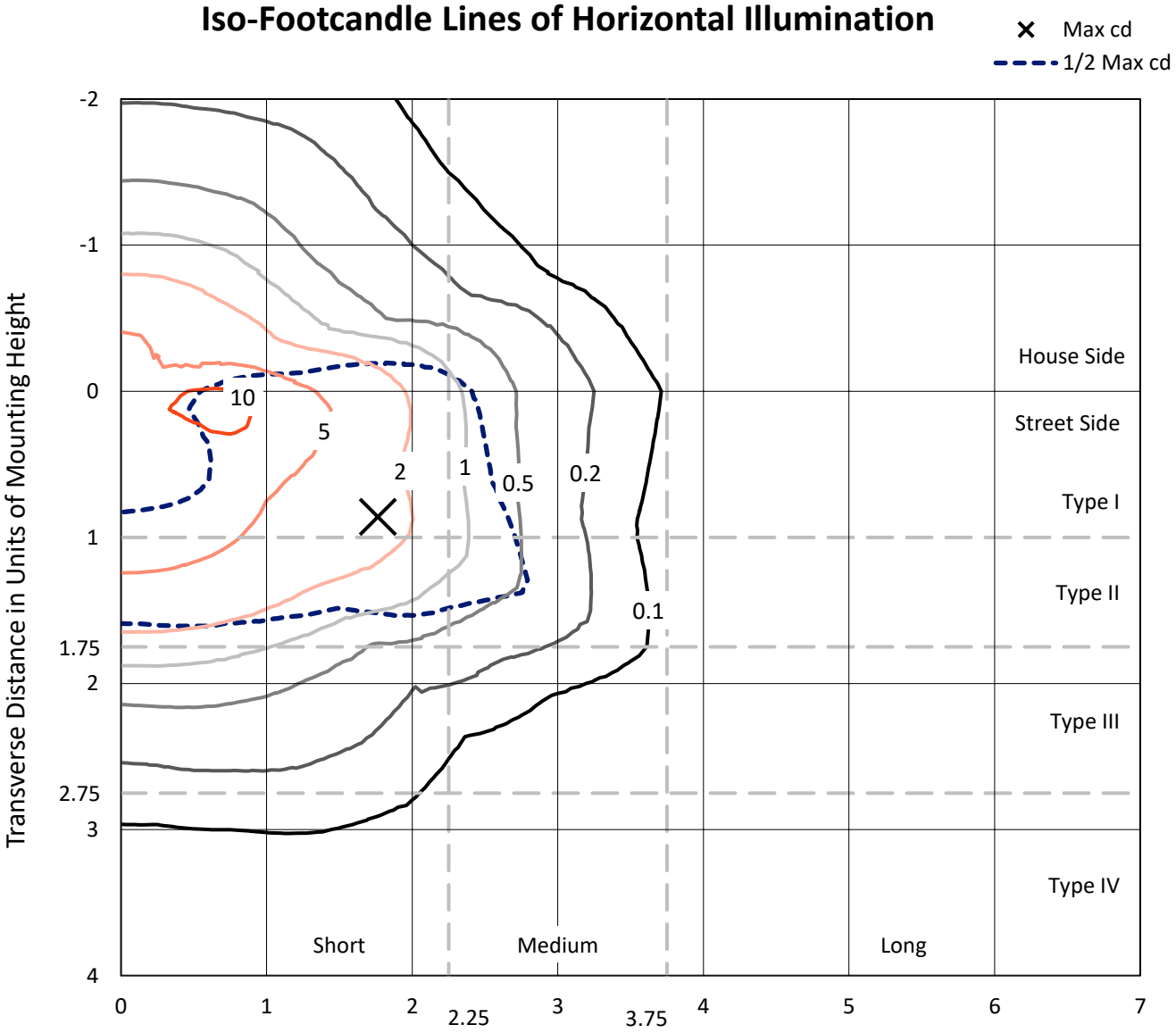
Scaled Data Report

REPORT NUMBER: P1455846
CATALOG NUMBER: GLAN-SB5D-727-U-T2LG

## Iso-Footcandle Lines of Horizontal Illumination




Based on 30 foot mounting height. Maximum calculated value = 12 fc
Type II - Short - N/A

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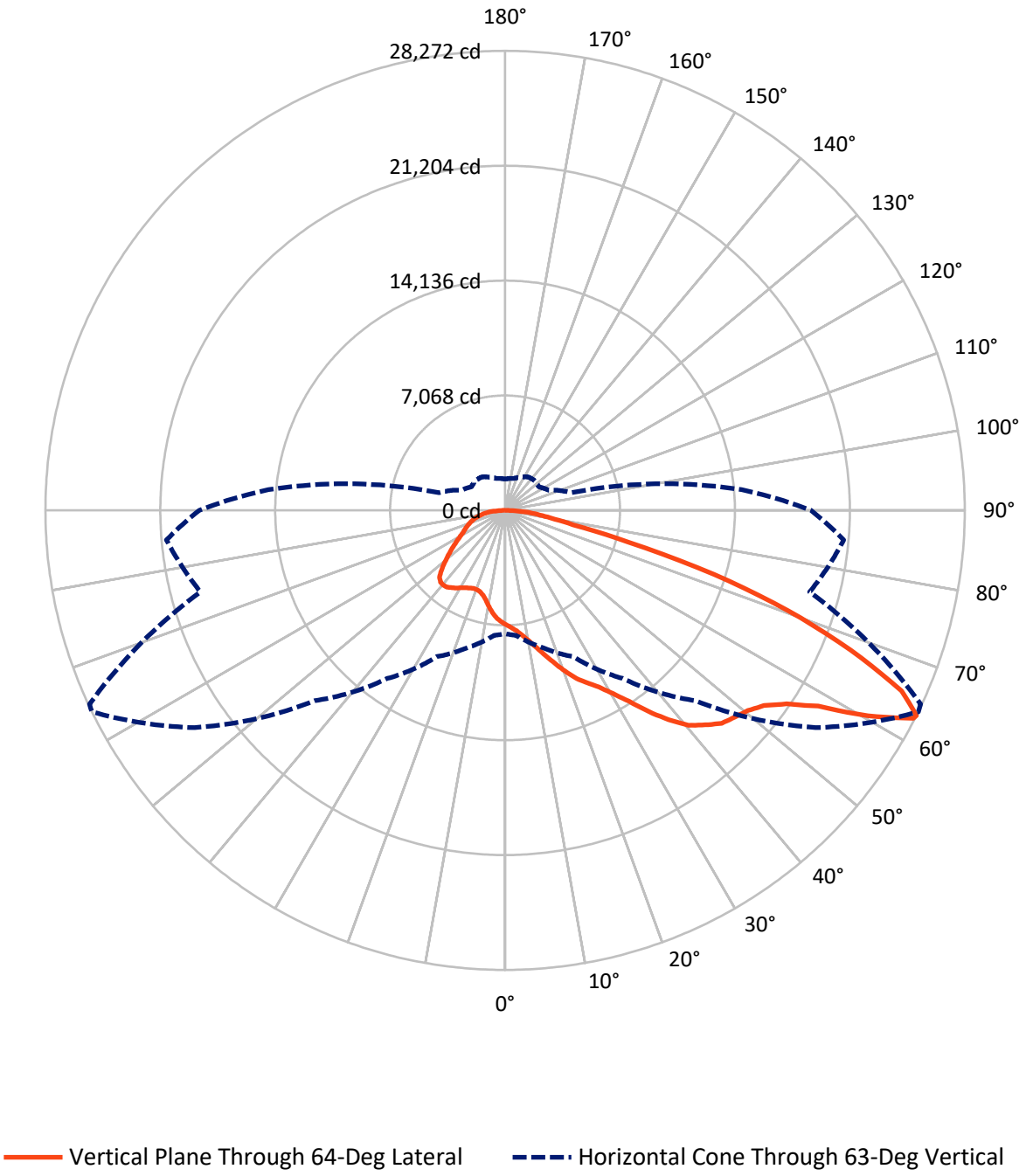
## Luminous Intensity Polar Plot



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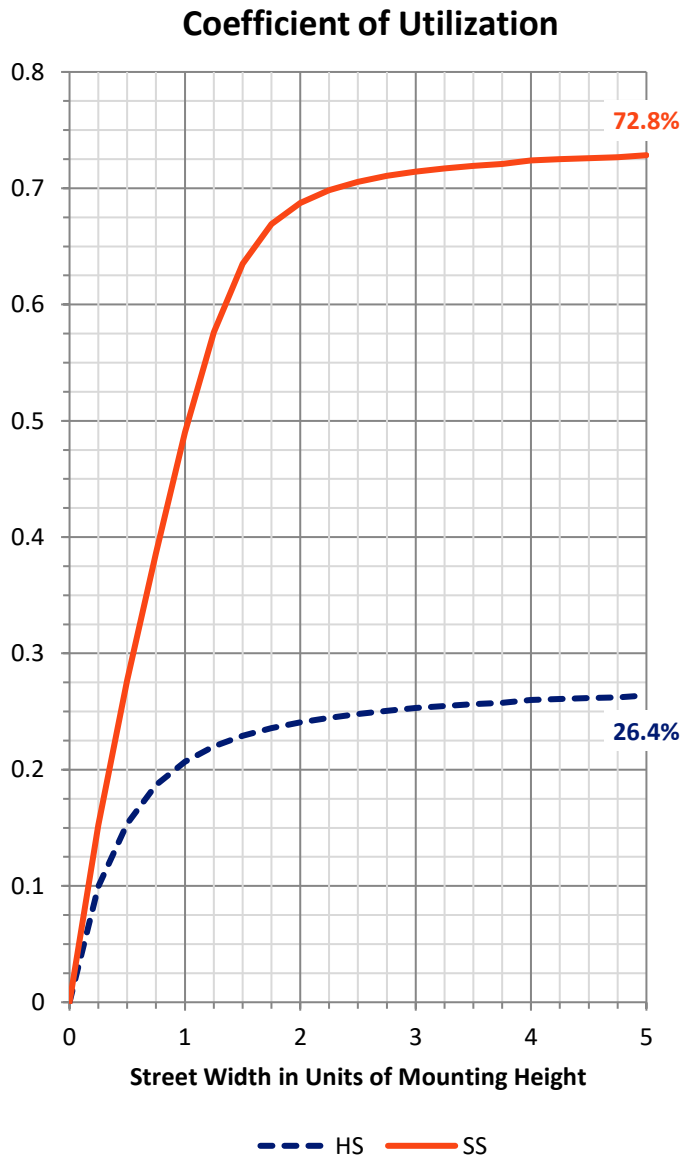
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 12396.6 | 0.0 | 12396.6 |
| | % Fixture | 26.9 | 0.0 | 26.9 |
| **Street Side** | Lumens | 33743.7 | 0.0 | 33743.7 |
| | % Fixture | 73.1 | 0.0 | 73.1 |
| **Total** | Lumens | 46140.3 | 0.0 | 46140.3 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 645.1 | 1.4 |
| 10°-20° | 1986.1 | 4.3 |
| 20°-30° | 3631.9 | 7.9 |
| 30°-40° | 6247.4 | 13.5 |
| 40°-50° | 9213.3 | 20.0 |
| 50°-60° | 11042.7 | 23.9 |
| 60°-70° | 8862.8 | 19.2 |
| 70°-80° | 3561.3 | 7.7 |
| 80°-90° | 949.6 | 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° | 46140.3 | 100.0 |
| 0°-180° | 46140.3 | 100.0 |



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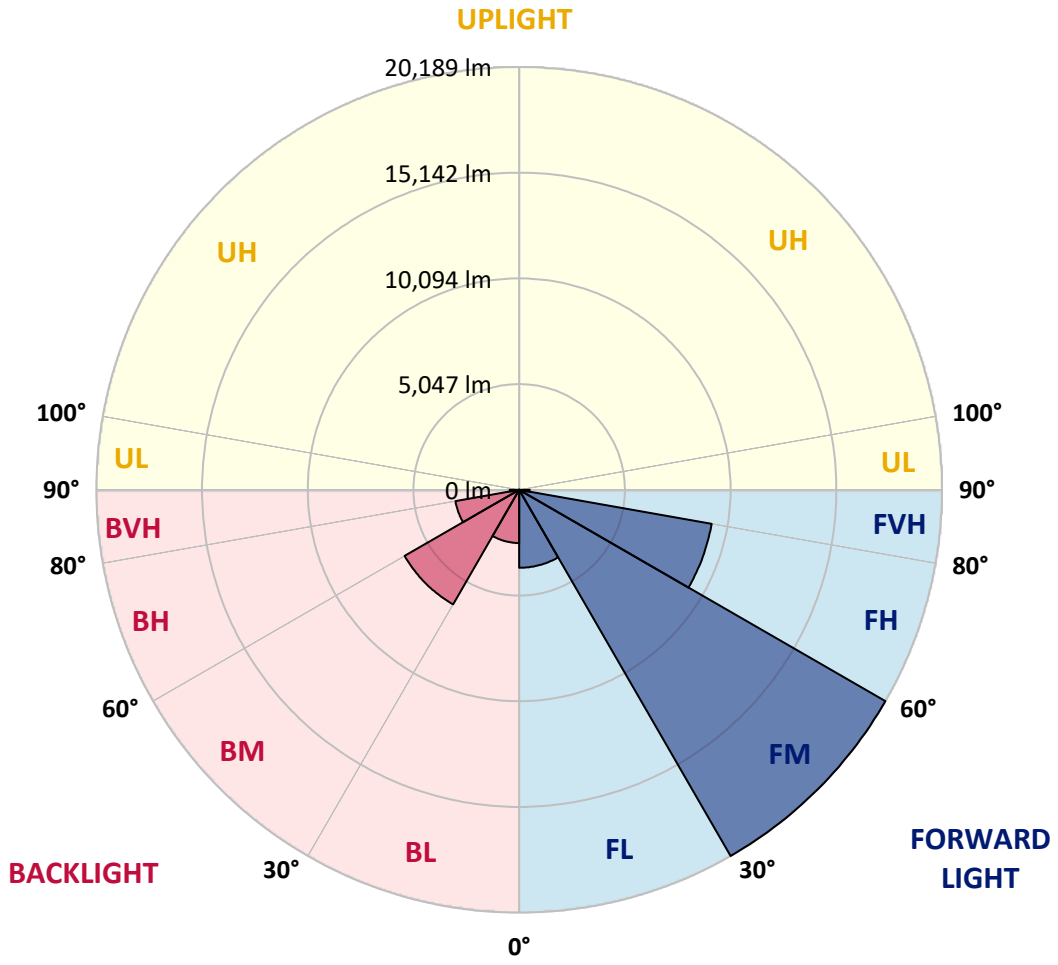
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 3722.6 | 8.1 | | | |
| FM | (30°-60°) | 20188.8 | 43.8 | | | |
| FH | (60°-80°) | 9333.3 | 20.2 | | | G4/12000 |
| FVH | (80°-90°) | 498.9 | 1.1 | | | G3/500 |
| BL | (0°-30°) | 2540.5 | 5.5 | B4/5000 | | |
| BM | (30°-60°) | 6314.6 | 13.7 | B4/8500 | | |
| BH | (60°-80°) | 3090.9 | 6.7 | B4/5000 | | G4/5000 |
| BVH | (80°-90°) | 450.7 | 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: P1455846
CATALOG NUMBER: GLAN-SB5D-727-U-T2LG

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 64° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 7026.6 | 7026.6 | 7026.6 | 7026.6 | 7026.6 | 7026.6 | 7026.6 | *7026.6* | 7026.6 | 7026.6 | 7026.6 |
| 2.5° | 7316.8 | 7327.2 | 7296.1 | 7285.7 | 7306.5 | 7265.0 | 7254.6 | *7213.2* | 7192.5 | 7151.0 | 7099.2 |
| 5° | 7524.1 | 7534.5 | 7513.7 | 7513.7 | 7534.5 | 7503.4 | 7493.0 | *7451.6* | 7430.8 | 7389.4 | 7285.7 |
| 7.5° | 7513.7 | 7524.1 | 7544.8 | 7627.7 | 7731.4 | 7772.8 | 7803.9 | *7772.8* | 7762.5 | 7700.3 | 7596.6 |
| 10° | 7347.9 | 7358.3 | 7410.1 | 7534.5 | 7793.6 | 7980.1 | 8177.0 | *8177.0* | 8197.7 | 8145.9 | 7959.4 |
| 12.5° | 7119.9 | 7130.3 | 7254.6 | 7451.6 | 7793.6 | 8114.8 | 8519.0 | *8684.8* | 8674.5 | 8643.4 | 8425.7 |
| 15° | 6570.6 | 6570.6 | 6757.2 | 7130.3 | 7679.6 | 8208.1 | 8809.2 | *9254.8* | 9265.2 | 9296.3 | 9037.2 |
| 17.5° | 6104.3 | 6114.6 | 6270.1 | 6601.7 | 7316.8 | 8156.3 | 9120.1 | *9887.0* | 9918.1 | 10094.3 | 9721.2 |
| 20° | 6145.7 | 6145.7 | 6197.5 | 6342.6 | 6923.0 | 7949.0 | 9296.3 | *10560.7* | 10664.3 | 11078.9 | 10612.5 |
| 22.5° | 6467.0 | 6467.0 | 6508.4 | 6498.1 | 6850.5 | 7814.3 | 9410.3 | *11234.3* | 11420.9 | 12281.1 | 11680.0 |
| 25° | 7057.7 | 7047.4 | 7005.9 | 6943.7 | 7151.0 | 7959.4 | 9669.4 | *11752.5* | 12115.2 | 13607.6 | 12913.3 |
| 27.5° | 7783.2 | 7762.5 | 7700.3 | 7596.6 | 7741.7 | 8394.7 | 10115.0 | *12301.8* | 12695.6 | 15058.6 | 14219.1 |
| 30° | 8684.8 | 8622.7 | 8560.5 | 8425.7 | 8581.2 | 9109.8 | 10778.3 | *13079.1* | 13452.2 | 16706.4 | 15794.4 |
| 32.5° | 9752.3 | 9824.9 | 9617.6 | 9431.0 | 9596.9 | 10083.9 | 11762.9 | *14001.5* | 14405.6 | 18426.8 | 17431.9 |
| 35° | 11348.3 | 11566.0 | 11503.8 | 10560.7 | 10716.1 | 11255.1 | 12913.3 | *15193.3* | 15556.0 | 19991.7 | 19110.8 |
| 37.5° | 12923.6 | 12871.8 | 12923.6 | 12136.0 | 11887.2 | 12540.2 | 14146.5 | *16333.3* | 16685.7 | 21266.5 | 20592.8 |
| 40° | 14188.0 | 14343.5 | 14343.5 | 13700.9 | 13379.6 | 13814.9 | 15265.8 | *17380.0* | 17722.0 | 21971.2 | 21660.3 |
| 42.5° | 15566.4 | 15587.1 | 15545.7 | 14986.0 | 14861.6 | 14975.6 | 16250.4 | *18043.3* | 18323.1 | 22333.9 | 22385.7 |
| 45° | 17120.9 | 17110.6 | 16934.4 | 16468.0 | 16281.5 | 16177.8 | 16861.9 | *18685.9* | 18965.7 | 22499.7 | 22779.6 |
| 47.5° | 18406.1 | 18457.9 | 18468.2 | 17970.8 | 17659.9 | 17214.2 | 17390.4 | *19007.2* | 19328.4 | 22313.2 | 22862.5 |
| 50° | 18478.6 | 18561.5 | 18955.3 | 19100.4 | 19038.2 | 18323.1 | 17877.5 | *19349.2* | 19670.4 | 22354.7 | 23163.0 |
| 52.5° | 18022.6 | 18105.5 | 18613.3 | 19214.4 | 19939.9 | 19597.9 | 18644.4 | *19939.9* | 20271.5 | 22758.8 | 23847.0 |
| 55° | 16799.7 | 16934.4 | 17691.0 | 18530.4 | 19825.9 | 20313.0 | 20002.1 | *21007.4* | 21318.3 | 23080.1 | 24645.0 |
| 57.5° | 14623.3 | 14789.1 | 15835.8 | 17172.8 | 18945.0 | 20147.2 | 21971.2 | *22717.4* | 22976.5 | 23308.1 | 24655.4 |
| 60° | 10933.8 | 11068.5 | 12706.0 | 14509.3 | 17172.8 | 19110.8 | 23142.3 | *25650.3* | 25795.4 | 22074.8 | 23256.3 |
| 62.5° | 8052.6 | 8187.4 | 9285.9 | 10581.4 | 13493.6 | 17203.9 | 23370.3 | *28189.5* | 28210.2 | 19846.6 | 21328.6 |
| 63° | *7586.3* | *7721.0* | *8715.9* | *9928.5* | *12623.1* | *16561.3* | *23297.8* | *28272.4* | *28199.8* | *19390.6* | *20903.7* |
| 65° | 5907.3 | 6145.7 | 7182.1 | 8104.5 | 9462.1 | 13182.7 | 22365.0 | *26800.7* | 26904.3 | 18043.3 | 18768.8 |
| 67.5° | 4021.1 | 4197.3 | 5513.5 | 6581.0 | 7151.0 | 8394.7 | 18343.9 | *22935.0* | 23100.8 | 16644.2 | 14975.6 |
| 70° | 3109.1 | 3192.0 | 3959.0 | 5213.0 | 5783.0 | 5337.3 | 11959.8 | *18468.2* | 18468.2 | 12996.2 | 10612.5 |
| 72.5° | 2435.5 | 2466.6 | 2984.8 | 4073.0 | 4653.3 | 4104.1 | 6663.9 | *13431.4* | 12934.0 | 7710.6 | 7078.5 |
| 75° | 1741.1 | 1782.6 | 2248.9 | 3036.6 | 3710.2 | 3233.5 | 4259.5 | *7824.6* | 7524.1 | 4435.7 | 4725.9 |
| 77.5° | 1378.4 | 1399.1 | 1678.9 | 2238.6 | 3005.5 | 2466.6 | 3243.9 | *4269.9* | 4228.4 | 3119.5 | 3036.6 |
| 80° | 1088.2 | 1129.7 | 1316.2 | 1606.4 | 2321.5 | 1927.7 | 2414.8 | *2818.9* | 2736.0 | 2145.3 | 1948.4 |
| 82.5° | 777.3 | 849.8 | 1015.6 | 1222.9 | 1720.4 | 1378.4 | 1585.7 | *1989.8* | 1989.8 | 1616.7 | 1285.1 |
| 85° | 476.7 | 538.9 | 601.1 | 756.6 | 1222.9 | 891.3 | 839.5 | *1285.1* | 1316.2 | 1212.6 | 829.1 |
| 87.5° | 228.0 | 248.7 | 290.2 | 321.3 | 445.6 | 404.2 | 331.6 | *487.1* | 497.5 | 538.9 | 342.0 |
| 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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Scaled Data Report

REPORT NUMBER: P1455846
CATALOG NUMBER: GLAN-SB5D-727-U-T2LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 7026.6 | 7026.6 | 7026.6 | 7026.6 | 7026.6 | 7026.6 | 7026.6 | 7026.6 | 7026.6 | 7026.6 | 7026.6 |
| 2.5° | 7088.8 | 7068.1 | 6964.5 | 6860.8 | 6746.8 | 6643.2 | 6539.5 | 6456.6 | 6363.4 | 6384.1 | 6394.4 |
| 5° | 7223.5 | 7171.7 | 6943.7 | 6674.3 | 6321.9 | 5990.3 | 5669.0 | 5441.0 | 5295.9 | 5254.4 | 5171.5 |
| 7.5° | 7513.7 | 7389.4 | 6974.8 | 6404.8 | 5751.9 | 5233.7 | 4933.2 | 4798.4 | 4757.0 | 4767.3 | 4746.6 |
| 10° | 7845.4 | 7658.8 | 7016.3 | 6083.5 | 5254.4 | 4902.1 | 4860.6 | 4943.5 | 4985.0 | 5026.4 | 5036.8 |
| 12.5° | 8280.7 | 7980.1 | 6995.5 | 5731.2 | 5016.1 | 4953.9 | 5109.3 | 5264.8 | 5358.1 | 5420.3 | 5409.9 |
| 15° | 8788.5 | 8384.3 | 6933.4 | 5441.0 | 4985.0 | 5150.8 | 5347.7 | 5523.9 | 5637.9 | 5700.1 | 5669.0 |
| 17.5° | 9399.9 | 8861.0 | 6860.8 | 5254.4 | 5078.2 | 5275.2 | 5482.4 | 5658.6 | 5783.0 | 5824.4 | 5793.3 |
| 20° | 10156.5 | 9399.9 | 6736.5 | 5171.5 | 5150.8 | 5327.0 | 5513.5 | 5679.3 | 5783.0 | 5824.4 | 5783.0 |
| 22.5° | 11047.8 | 10042.5 | 6632.8 | 5171.5 | 5181.9 | 5327.0 | 5461.7 | 5586.1 | 5679.3 | 5710.4 | 5658.6 |
| 25° | 12187.8 | 10788.7 | 6591.4 | 5254.4 | 5192.2 | 5275.2 | 5347.7 | 5420.3 | 5472.1 | 5492.8 | 5472.1 |
| 27.5° | 13348.5 | 11648.9 | 6612.1 | 5358.1 | 5181.9 | 5202.6 | 5202.6 | 5213.0 | 5223.3 | 5233.7 | 5223.3 |
| 30° | 14685.5 | 12519.4 | 6695.0 | 5492.8 | 5202.6 | 5099.0 | 5067.9 | 5005.7 | 4953.9 | 4912.4 | 4871.0 |
| 32.5° | 15980.9 | 13348.5 | 6840.1 | 5689.7 | 5181.9 | 4985.0 | 4922.8 | 4767.3 | 4622.2 | 4497.9 | 4497.9 |
| 35° | 17380.0 | 14208.7 | 7099.2 | 5834.8 | 5161.2 | 4881.3 | 4705.2 | 4529.0 | 4373.5 | 4197.3 | 4197.3 |
| 37.5° | 18582.2 | 14944.6 | 7306.5 | 6000.6 | 5140.4 | 4757.0 | 4477.1 | 4280.2 | 4114.4 | 3938.2 | 3917.5 |
| 40° | 19421.7 | 15369.5 | 7430.8 | 6062.8 | 5067.9 | 4591.1 | 4259.5 | 4010.8 | 3772.4 | 3534.0 | 3523.7 |
| 42.5° | 19825.9 | 15348.7 | 7358.3 | 6042.1 | 4933.2 | 4383.9 | 4073.0 | 3741.3 | 3420.0 | 3202.4 | 3181.7 |
| 45° | 20043.5 | 15214.0 | 7078.5 | 5865.9 | 4715.5 | 4166.2 | 3834.6 | 3482.2 | 3160.9 | 2964.0 | 2922.6 |
| 47.5° | 20002.1 | 14882.4 | 6695.0 | 5430.6 | 4425.3 | 3927.9 | 3596.2 | 3233.5 | 2974.4 | 2860.4 | 2860.4 |
| 50° | 20116.1 | 14623.3 | 6259.7 | 4933.2 | 4031.5 | 3648.0 | 3378.6 | 3046.9 | 2891.5 | 2746.4 | 2694.6 |
| 52.5° | 20623.9 | 14840.9 | 5886.6 | 4466.8 | 3658.4 | 3378.6 | 3192.0 | 2912.2 | 2715.3 | 2622.0 | 2590.9 |
| 55° | 21297.5 | 15307.3 | 5534.3 | 4052.2 | 3295.7 | 3140.2 | 3046.9 | 2787.9 | 2559.9 | 2466.6 | 2414.8 |
| 57.5° | 21421.9 | 15628.6 | 5192.2 | 3648.0 | 2995.1 | 2953.7 | 2922.6 | 2570.2 | 2383.7 | 2311.1 | 2269.7 |
| 60° | 20561.7 | 15390.2 | 4746.6 | 3285.3 | 2756.8 | 2777.5 | 2694.6 | 2435.5 | 2217.8 | 2145.3 | 2103.8 |
| 62.5° | 19100.4 | 14768.4 | 4301.0 | 2974.4 | 2570.2 | 2611.7 | 2528.8 | 2269.7 | 2052.0 | 1979.5 | 1958.8 |
| 63° | *18810.2* | *14602.6* | *4197.3* | *2943.3* | *2528.8* | *2580.6* | *2508.0* | *2248.9* | *2031.3* | *1958.8* | *1927.7* |
| 65° | 17079.5 | 13607.6 | 3834.6 | 2777.5 | 2394.0 | 2394.0 | 2404.4 | 2145.3 | 1958.8 | 1927.7 | 1906.9 |
| 67.5° | 13928.9 | 11358.7 | 3440.8 | 2580.6 | 2248.9 | 2280.0 | 2331.8 | 2186.8 | 2114.2 | 2093.5 | 2072.8 |
| 70° | 10529.6 | 8550.1 | 3098.8 | 2394.0 | 2093.5 | 2197.1 | 2549.5 | 2487.3 | 2217.8 | 2031.3 | 1989.8 |
| 72.5° | 7461.9 | 5824.4 | 2798.2 | 2207.5 | 1906.9 | 2166.0 | 2642.8 | 2373.3 | 2000.2 | 1782.6 | 1741.1 |
| 75° | 4995.3 | 3751.7 | 2497.7 | 2010.6 | 1699.7 | 2000.2 | 2497.7 | 2166.0 | 1741.1 | 1689.3 | 1627.1 |
| 77.5° | 3140.2 | 2673.9 | 2197.1 | 1782.6 | 1471.7 | 1782.6 | 2269.7 | 1927.7 | 1502.7 | 1523.5 | 1430.2 |
| 80° | 1917.3 | 1906.9 | 1844.8 | 1513.1 | 1181.5 | 1419.8 | 1906.9 | 1627.1 | 1202.2 | 1202.2 | 1067.5 |
| 82.5° | 1140.0 | 1378.4 | 1564.9 | 1254.0 | 860.2 | 1015.6 | 1378.4 | 1222.9 | 1005.3 | 974.2 | 912.0 |
| 85° | 766.9 | 932.7 | 1243.7 | 963.8 | 549.3 | 621.8 | 953.5 | 1026.0 | 922.4 | 808.4 | 756.6 |
| 87.5° | 279.8 | 373.1 | 570.0 | 393.8 | 238.4 | 373.1 | 715.1 | 746.2 | 559.6 | 435.3 | 393.8 |
| 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: SP1-2407-184-3

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-727-U-5WQ

Data in this report applies to families of products including GSS-SB1A-727-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

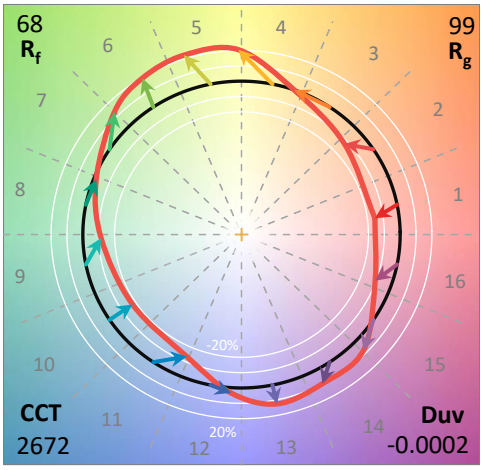
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-3 |
| 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-727-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 2700K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 2672 |
| CIE u': | 0.2638 |
| CIE v': | 0.5276 |
| Duv: | -0.0002 |
| CIE x: | 0.4619 |
| CIE y: | 0.4106 |
| CIE z: | 0.1275 |
| Peak Wavelength (nm): | 601 |
| Dominant Wavelength (nm): | 584 |
| Purity: | 61.88407 |
| Rf: | 67.9 |
| Rg: | 98.6 |

| | |
|---|---|
| CRI (Ra): | 71.1 |
| R1: | 68.3 |
| R2: | 79.8 |
| R3: | 91.2 |
| R4: | 69.4 |
| R5: | 66.5 |
| R6: | 72.6 |
| R7: | 77.0 |
| R8: | 44.1 |
| R9: | -27.8 |
| R10: | 54.4 |
| R11: | 65.8 |
| R12: | 45.6 |
| R13: | 69.8 |
| R14: | 94.5 |
| R15: | 60.1 |




## 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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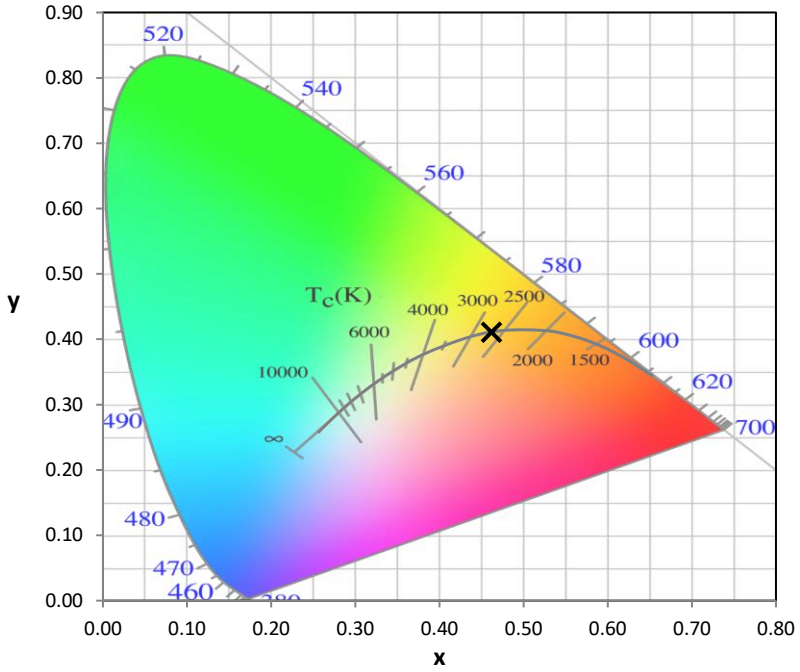
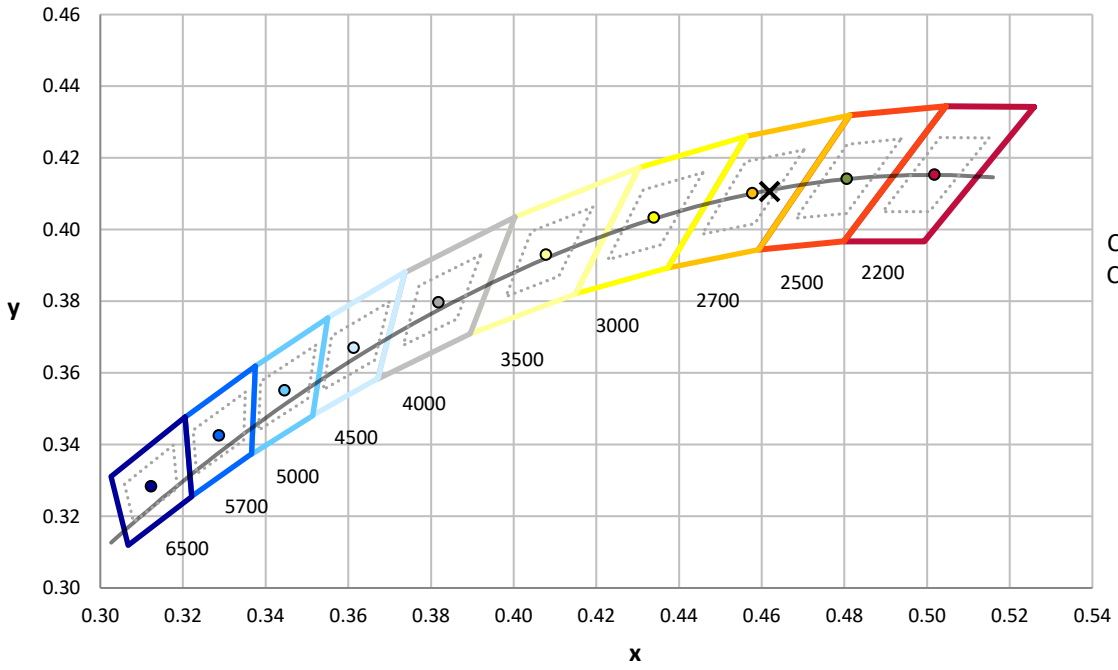
**CIE 1931 Chromaticity Diagram**




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




CCT = 2672K
CIE x = 0.4619
CIE y = 0.4106
Duv = -0.0002

Point lies inside the ANSI 2700K 4-step quadrangle

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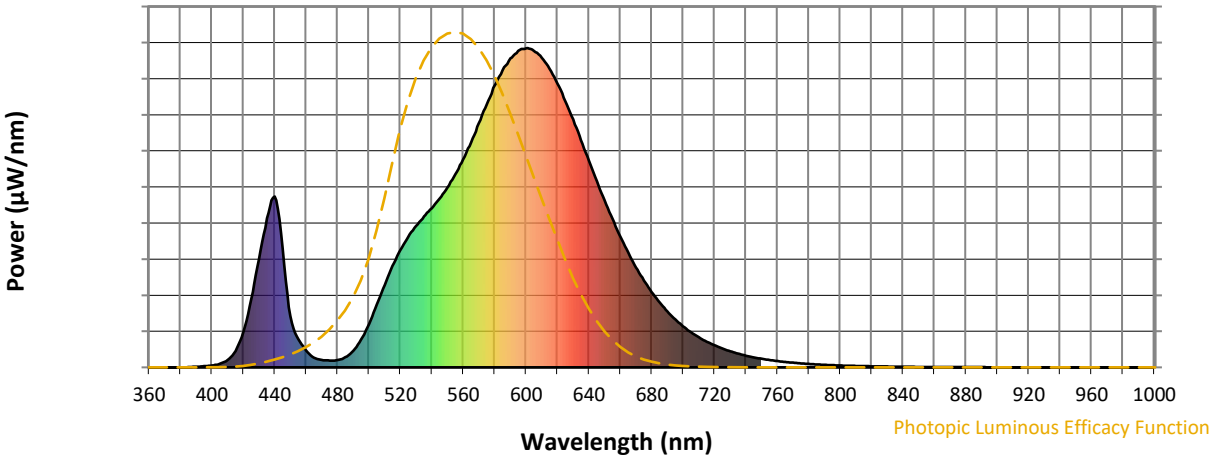
## Photopic Flux vs. Wavelength




## Photopic Lumens: NR

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 52 | NR | 620 | 888 | NR | 750 | 27 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 87 | NR | 625 | 834 | NR | 755 | 23 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 135 | NR | 630 | 776 | NR | 760 | 20 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 196 | NR | 635 | 712 | NR | 765 | 17 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 258 | NR | 640 | 648 | NR | 770 | 15 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 317 | NR | 645 | 583 | NR | 775 | 12 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 368 | NR | 650 | 523 | NR | 780 | 11 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 408 | NR | 655 | 465 | NR | 785 | 9 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 443 | NR | 660 | 410 | NR | 790 | 8 | NR | 920 | 0 | NR |
| 405 | 11 | NR | 535 | 473 | NR | 665 | 360 | NR | 795 | 7 | NR | 925 | 0 | NR |
| 410 | 23 | NR | 540 | 498 | NR | 670 | 313 | NR | 800 | 6 | NR | 930 | 0 | NR |
| 415 | 51 | NR | 545 | 530 | NR | 675 | 272 | NR | 805 | 5 | NR | 935 | 0 | NR |
| 420 | 111 | NR | 550 | 563 | NR | 680 | 236 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 214 | NR | 555 | 605 | NR | 685 | 203 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 339 | NR | 560 | 651 | NR | 690 | 175 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 467 | NR | 565 | 705 | NR | 695 | 150 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 535 | NR | 570 | 765 | NR | 700 | 128 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 372 | NR | 575 | 824 | NR | 705 | 110 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 160 | NR | 580 | 882 | NR | 710 | 94 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 89 | NR | 585 | 930 | NR | 715 | 80 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 53 | NR | 590 | 968 | NR | 720 | 69 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 31 | NR | 595 | 991 | NR | 725 | 59 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 23 | NR | 600 | 999 | NR | 730 | 50 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 21 | NR | 605 | 992 | NR | 735 | 43 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 23 | NR | 610 | 969 | NR | 740 | 36 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 32 | NR | 615 | 935 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

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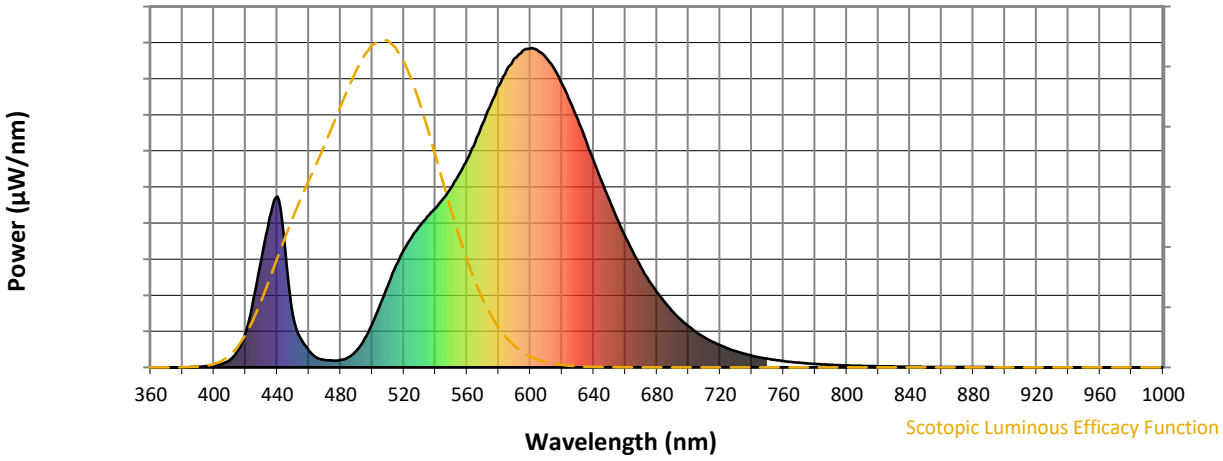
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.02**

| 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 | 52 | NR | 620 | 888 | NR | 750 | 27 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 87 | NR | 625 | 834 | NR | 755 | 23 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 135 | NR | 630 | 776 | NR | 760 | 20 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 196 | NR | 635 | 712 | NR | 765 | 17 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 258 | NR | 640 | 648 | NR | 770 | 15 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 317 | NR | 645 | 583 | NR | 775 | 12 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 368 | NR | 650 | 523 | NR | 780 | 11 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 408 | NR | 655 | 465 | NR | 785 | 9 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 443 | NR | 660 | 410 | NR | 790 | 8 | NR | 920 | 0 | NR |
| 405 | 11 | NR | 535 | 473 | NR | 665 | 360 | NR | 795 | 7 | NR | 925 | 0 | NR |
| 410 | 23 | NR | 540 | 498 | NR | 670 | 313 | NR | 800 | 6 | NR | 930 | 0 | NR |
| 415 | 51 | NR | 545 | 530 | NR | 675 | 272 | NR | 805 | 5 | NR | 935 | 0 | NR |
| 420 | 111 | NR | 550 | 563 | NR | 680 | 236 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 214 | NR | 555 | 605 | NR | 685 | 203 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 339 | NR | 560 | 651 | NR | 690 | 175 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 467 | NR | 565 | 705 | NR | 695 | 150 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 535 | NR | 570 | 765 | NR | 700 | 128 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 372 | NR | 575 | 824 | NR | 705 | 110 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 160 | NR | 580 | 882 | NR | 710 | 94 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 89 | NR | 585 | 930 | NR | 715 | 80 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 53 | NR | 590 | 968 | NR | 720 | 69 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 31 | NR | 595 | 991 | NR | 725 | 59 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 23 | NR | 600 | 999 | NR | 730 | 50 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 21 | NR | 605 | 992 | NR | 735 | 43 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 23 | NR | 610 | 969 | NR | 740 | 36 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 32 | NR | 615 | 935 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

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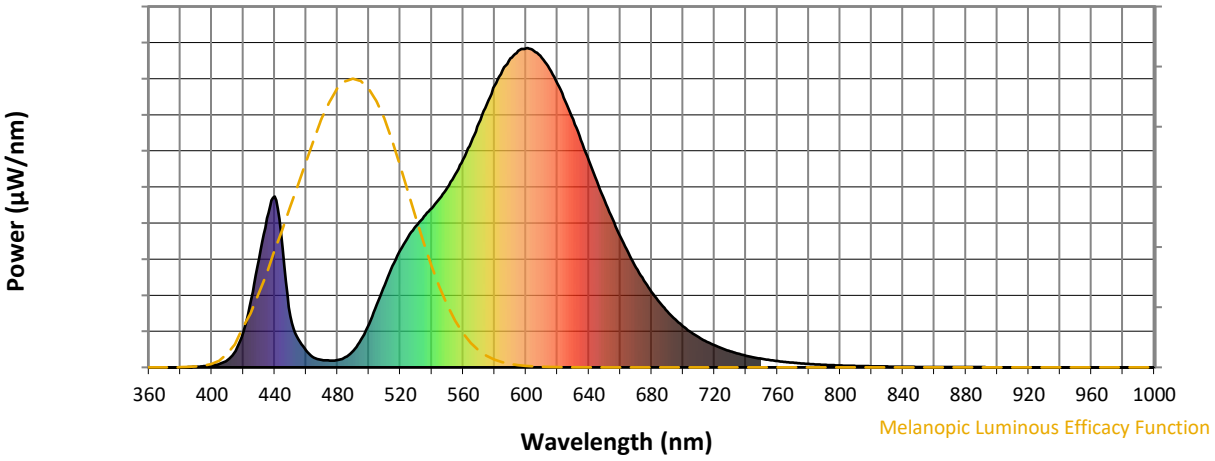
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 1.71**

| 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 | 52 | NR | 620 | 888 | NR | 750 | 27 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 87 | NR | 625 | 834 | NR | 755 | 23 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 135 | NR | 630 | 776 | NR | 760 | 20 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 196 | NR | 635 | 712 | NR | 765 | 17 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 258 | NR | 640 | 648 | NR | 770 | 15 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 317 | NR | 645 | 583 | NR | 775 | 12 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 368 | NR | 650 | 523 | NR | 780 | 11 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 408 | NR | 655 | 465 | NR | 785 | 9 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 443 | NR | 660 | 410 | NR | 790 | 8 | NR | 920 | 0 | NR |
| 405 | 11 | NR | 535 | 473 | NR | 665 | 360 | NR | 795 | 7 | NR | 925 | 0 | NR |
| 410 | 23 | NR | 540 | 498 | NR | 670 | 313 | NR | 800 | 6 | NR | 930 | 0 | NR |
| 415 | 51 | NR | 545 | 530 | NR | 675 | 272 | NR | 805 | 5 | NR | 935 | 0 | NR |
| 420 | 111 | NR | 550 | 563 | NR | 680 | 236 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 214 | NR | 555 | 605 | NR | 685 | 203 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 339 | NR | 560 | 651 | NR | 690 | 175 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 467 | NR | 565 | 705 | NR | 695 | 150 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 535 | NR | 570 | 765 | NR | 700 | 128 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 372 | NR | 575 | 824 | NR | 705 | 110 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 160 | NR | 580 | 882 | NR | 710 | 94 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 89 | NR | 585 | 930 | NR | 715 | 80 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 53 | NR | 590 | 968 | NR | 720 | 69 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 31 | NR | 595 | 991 | NR | 725 | 59 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 23 | NR | 600 | 999 | NR | 730 | 50 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 21 | NR | 605 | 992 | NR | 735 | 43 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 23 | NR | 610 | 969 | NR | 740 | 36 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 32 | NR | 615 | 935 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

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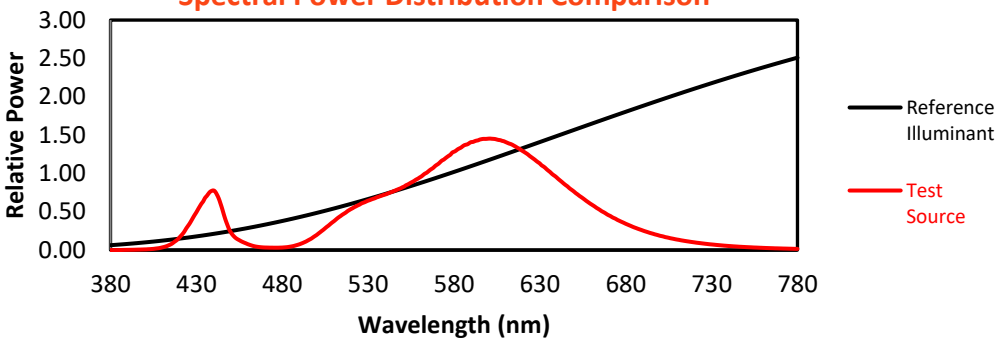
# TM-30-18

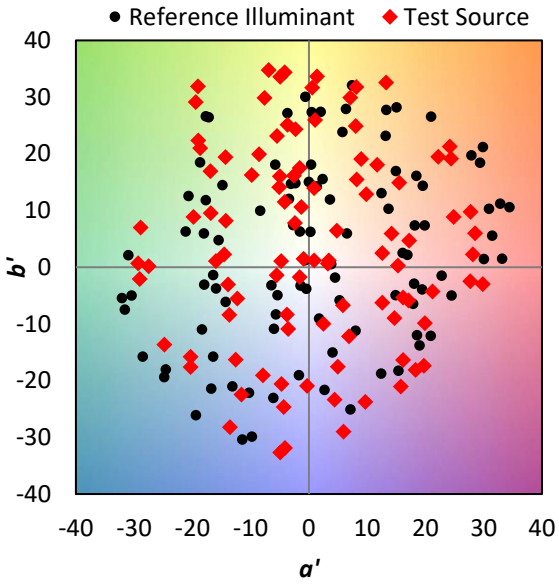
## Summary

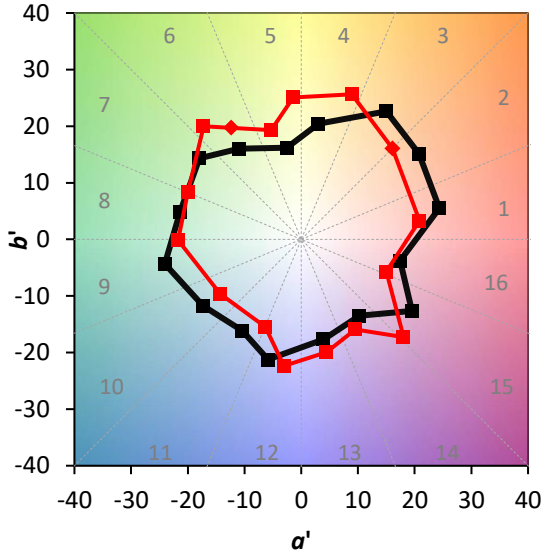
$R_f$ = 67.9
$R_g$ = 98.6
CIE $R_a$ = 71.1
$R_9$ = -27.8

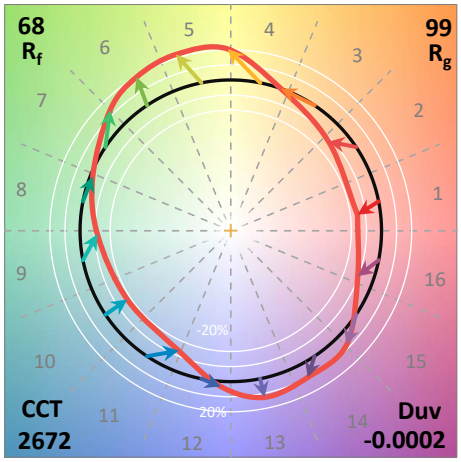
## Spectral Power Distribution Comparison

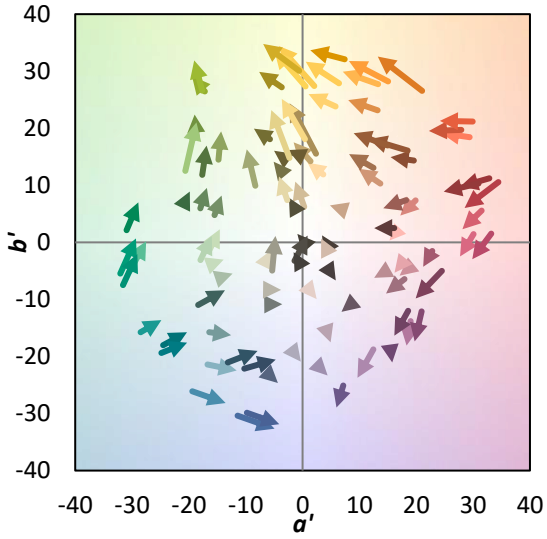



## Color Vector Graphics



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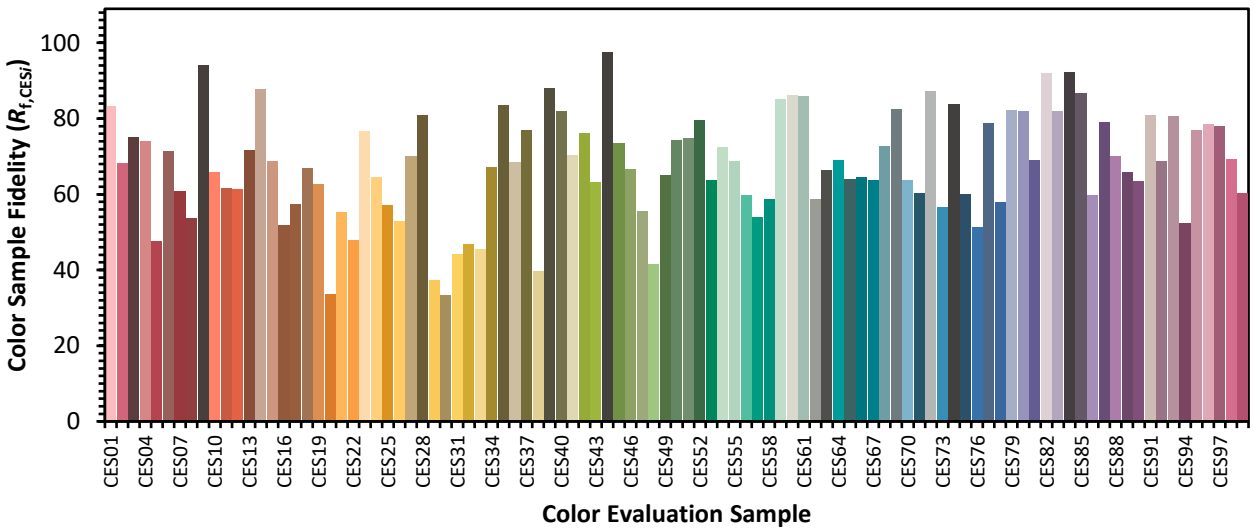
# TM-30-18

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

| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 53 | CES51 = 75 | CES76 = 51 |
| CES02 = 63 | CES27 = 70 | CES52 = 80 | CES77 = 79 |
| CES03 = 31 | CES28 = 81 | CES53 = 64 | CES78 = 58 |
| CES04 = 71 | CES29 = 37 | CES54 = 73 | CES79 = 82 |
| CES05 = 50 | CES30 = 33 | CES55 = 69 | CES80 = 82 |
| CES06 = 52 | CES31 = 44 | CES56 = 60 | CES81 = 69 |
| CES07 = 42 | CES32 = 47 | CES57 = 54 | CES82 = 92 |
| CES08 = 41 | CES33 = 45 | CES58 = 59 | CES83 = 82 |
| CES09 = 29 | CES34 = 67 | CES59 = 85 | CES84 = 92 |
| CES10 = 77 | CES35 = 84 | CES60 = 86 | CES85 = 87 |
| CES11 = 60 | CES36 = 68 | CES61 = 86 | CES86 = 60 |
| CES12 = 66 | CES37 = 77 | CES62 = 59 | CES87 = 79 |
| CES13 = 44 | CES38 = 40 | CES63 = 66 | CES88 = 70 |
| CES14 = 74 | CES39 = 88 | CES64 = 69 | CES89 = 66 |
| CES15 = 72 | CES40 = 82 | CES65 = 64 | CES90 = 64 |
| CES16 = 48 | CES41 = 70 | CES66 = 65 | CES91 = 81 |
| CES17 = 51 | CES42 = 76 | CES67 = 64 | CES92 = 69 |
| CES18 = 57 | CES43 = 63 | CES68 = 73 | CES93 = 81 |
| CES19 = 73 | CES44 = 97 | CES69 = 83 | CES94 = 53 |
| CES20 = 67 | CES45 = 74 | CES70 = 64 | CES95 = 77 |
| CES21 = 88 | CES46 = 67 | CES71 = 60 | CES96 = 79 |
| CES22 = 80 | CES47 = 55 | CES72 = 87 | CES97 = 78 |
| CES23 = 92 | CES48 = 42 | CES73 = 57 | CES98 = 69 |
| CES24 = 92 | CES49 = 65 | CES74 = 84 | CES99 = 60 |
| CES25 = 73 | CES50 = 74 | CES75 = 60 | |



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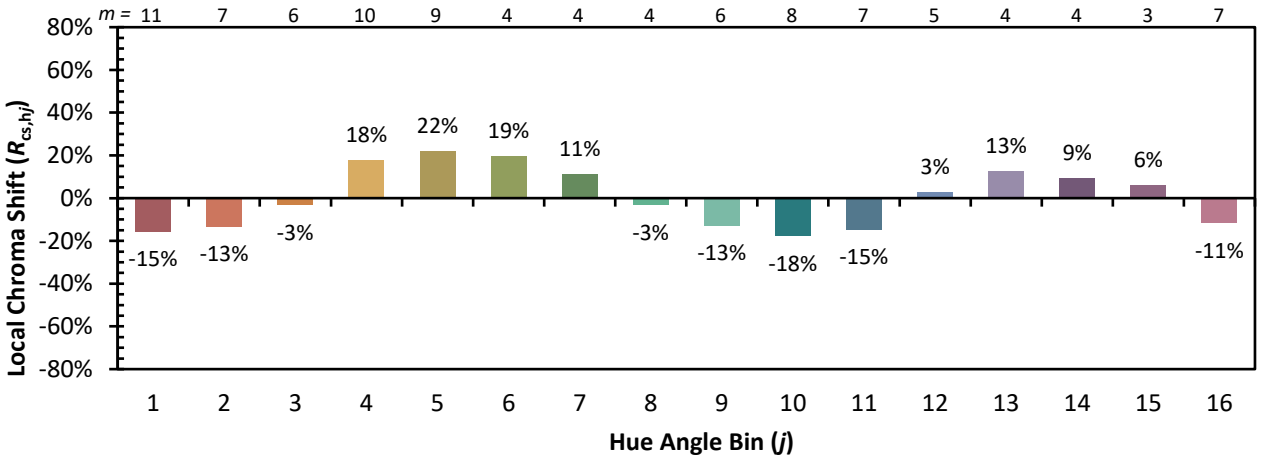
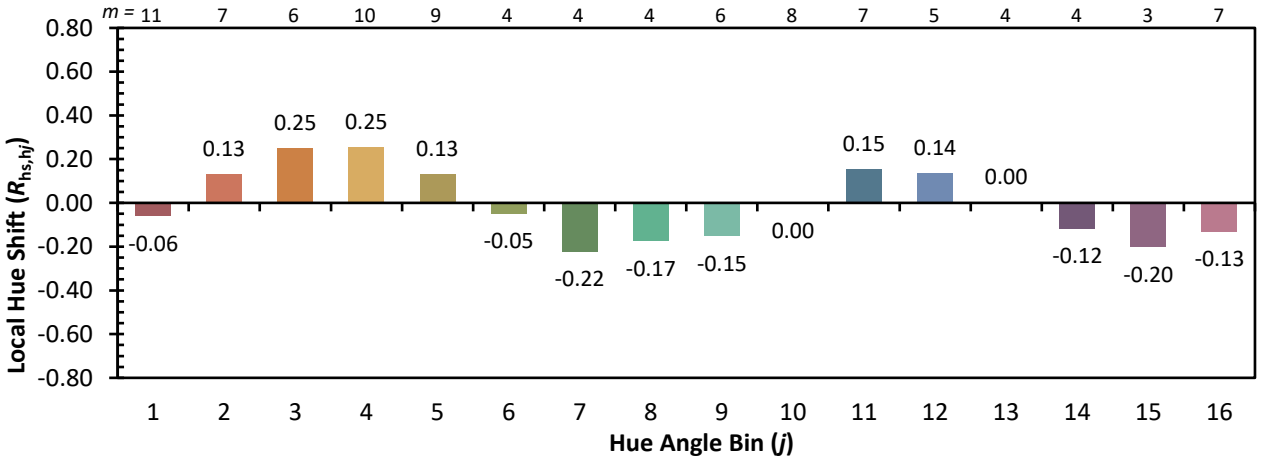
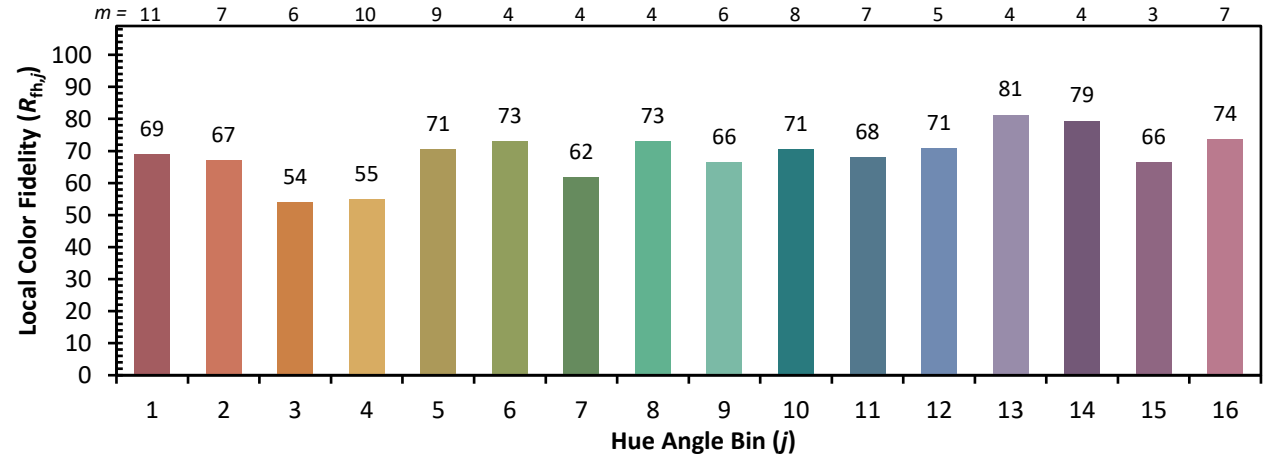
# TM-30-18

## Color Rendition by Hue-Angle Bin



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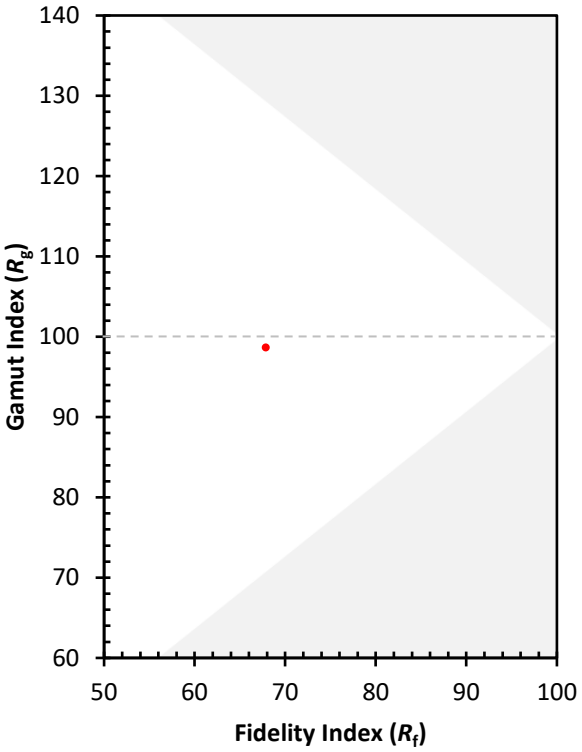
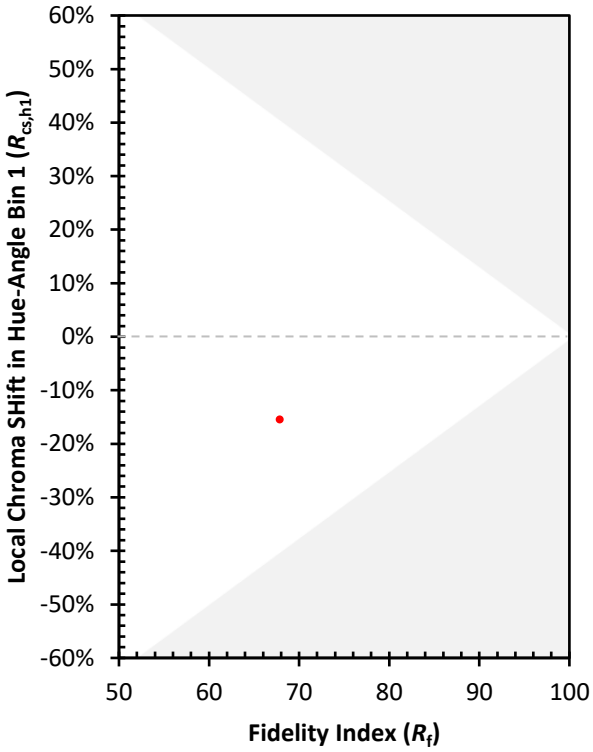
## Measure Comparisons




(END OF REPORT)