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: P1455768

Luminaire Tested: GLAN-SB4B-740-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: | P1455768 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/21/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB4B-740-U-T2LG |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 450mA 4xLight Square PACKAGE 70CRI 4000K FIXTURE w/ TYPE II LOW GLARE |
| Light Source: | (104) 4000K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 23098.4 lumens |
| Efficiency: | N/A |
| Efficacy: | 157.1 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): | 147 |
| 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: P1455768
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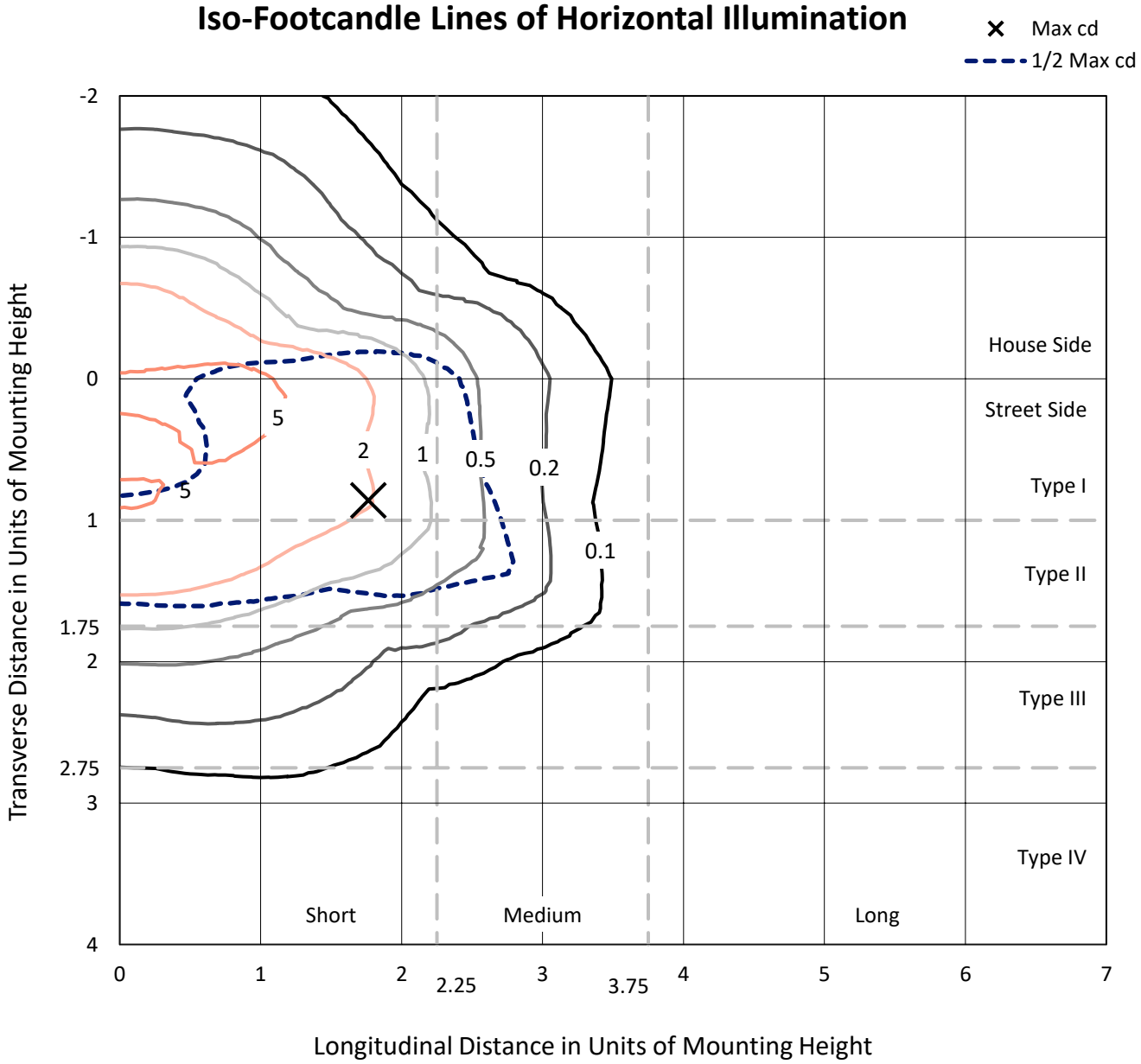
## Iso-Footcandle Lines of Horizontal Illumination




Based on 25 foot mounting height. Maximum calculated value = 8.7 fc
Type II - Short - N/A

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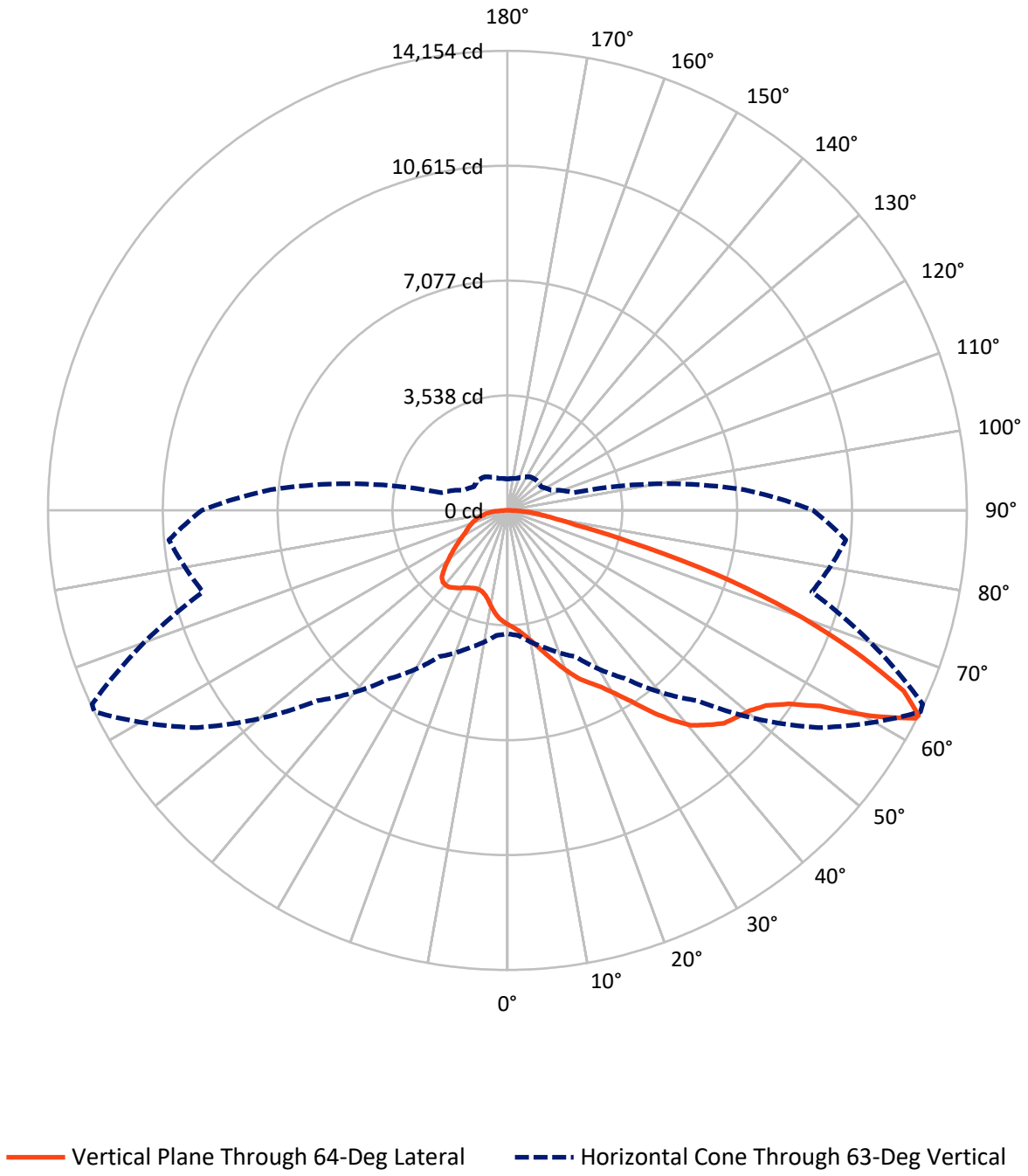
## Luminous Intensity Polar Plot



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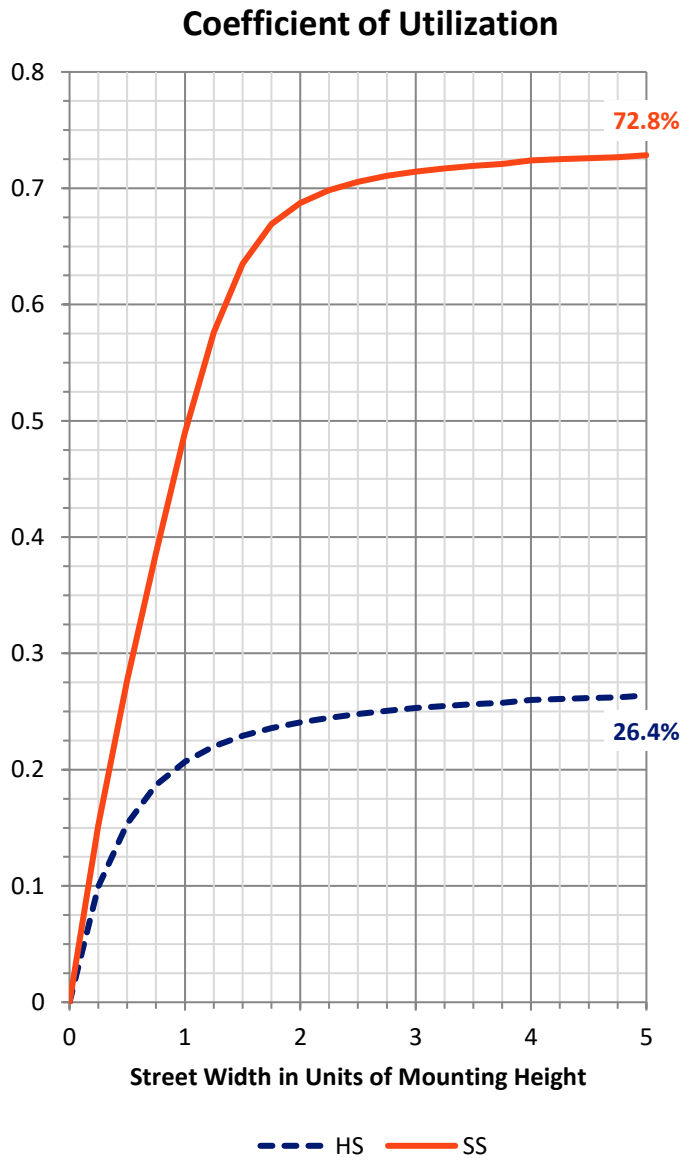
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 6205.9 | 0.0 | 6205.9 |
| | % Fixture | 26.9 | 0.0 | 26.9 |
| **Street Side** | Lumens | 16892.5 | 0.0 | 16892.5 |
| | % Fixture | 73.1 | 0.0 | 73.1 |
| **Total** | Lumens | 23098.4 | 0.0 | 23098.4 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 323.0 | 1.4 |
| 10°-20° | 994.3 | 4.3 |
| 20°-30° | 1818.2 | 7.9 |
| 30°-40° | 3127.5 | 13.5 |
| 40°-50° | 4612.3 | 20.0 |
| 50°-60° | 5528.1 | 23.9 |
| 60°-70° | 4436.8 | 19.2 |
| 70°-80° | 1782.8 | 7.7 |
| 80°-90° | 475.4 | 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° | 23098.4 | 100.0 |
| 0°-180° | 23098.4 | 100.0 |



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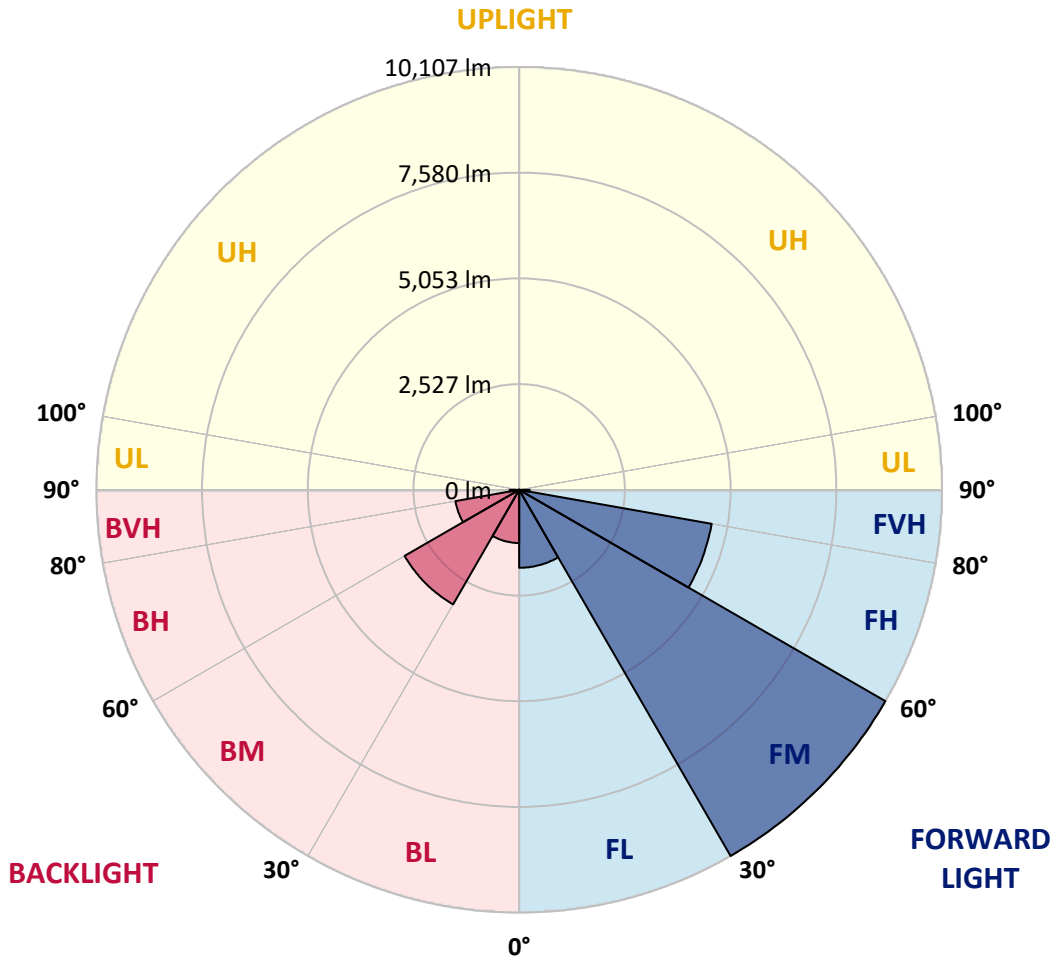
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1863.6 | 8.1 | | | |
| FM | (30°-60°) | 10106.8 | 43.8 | | | |
| FH | (60°-80°) | 4672.4 | 20.2 | | | G2/5000 |
| FVH | (80°-90°) | 249.8 | 1.1 | | | G3/500 |
| BL | (0°-30°) | 1271.8 | 5.5 | B3/2500 | | |
| BM | (30°-60°) | 3161.1 | 13.7 | B3/5000 | | |
| BH | (60°-80°) | 1547.3 | 6.7 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 225.6 | 1.0 | | | G3/500 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

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



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REPORT NUMBER: P1455768
CATALOG NUMBER: GLAN-SB4B-740-U-T2LG

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 64° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 3517.6 | 3517.6 | 3517.6 | 3517.6 | 3517.6 | 3517.6 | 3517.6 | *3517.6* | 3517.6 | 3517.6 | 3517.6 |
| 2.5° | 3662.9 | 3668.1 | 3652.5 | 3647.3 | 3657.7 | 3637.0 | 3631.8 | *3611.0* | 3600.6 | 3579.9 | 3553.9 |
| 5° | 3766.7 | 3771.8 | 3761.5 | 3761.5 | 3771.8 | 3756.3 | 3751.1 | *3730.3* | 3720.0 | 3699.2 | 3647.3 |
| 7.5° | 3761.5 | 3766.7 | 3777.0 | 3818.5 | 3870.4 | 3891.2 | 3906.7 | *3891.2* | 3886.0 | 3854.9 | 3803.0 |
| 10° | 3678.5 | 3683.6 | 3709.6 | 3771.8 | 3901.6 | 3994.9 | 4093.5 | *4093.5* | 4103.9 | 4078.0 | 3984.6 |
| 12.5° | 3564.3 | 3569.5 | 3631.8 | 3730.3 | 3901.6 | 4062.4 | 4264.7 | *4347.7* | 4342.6 | 4327.0 | 4218.0 |
| 15° | 3289.3 | 3289.3 | 3382.7 | 3569.5 | 3844.5 | 4109.1 | 4410.0 | *4633.1* | 4638.3 | 4653.8 | 4524.1 |
| 17.5° | 3055.9 | 3061.1 | 3138.9 | 3304.9 | 3662.9 | 4083.1 | 4565.6 | *4949.6* | 4965.1 | 5053.3 | 4866.6 |
| 20° | 3076.6 | 3076.6 | 3102.6 | 3175.2 | 3465.7 | 3979.4 | 4653.8 | *5286.8* | 5338.7 | 5546.2 | 5312.8 |
| 22.5° | 3237.5 | 3237.5 | 3258.2 | 3253.0 | 3429.4 | 3911.9 | 4710.9 | *5624.0* | 5717.4 | 6148.1 | 5847.1 |
| 25° | 3533.2 | 3528.0 | 3507.2 | 3476.1 | 3579.9 | 3984.6 | 4840.6 | *5883.5* | 6065.0 | 6812.2 | 6464.5 |
| 27.5° | 3896.4 | 3886.0 | 3854.9 | 3803.0 | 3875.6 | 4202.5 | 5063.7 | *6158.4* | 6355.6 | 7538.5 | 7118.3 |
| 30° | 4347.7 | 4316.6 | 4285.5 | 4218.0 | 4295.9 | 4560.5 | 5395.8 | *6547.6* | 6734.3 | 8363.4 | 7906.9 |
| 32.5° | 4882.1 | 4918.4 | 4814.7 | 4721.3 | 4804.3 | 5048.2 | 5888.6 | *7009.3* | 7211.6 | 9224.7 | 8726.6 |
| 35° | 5681.1 | 5790.1 | 5758.9 | 5286.8 | 5364.6 | 5634.4 | 6464.5 | *7606.0* | 7787.5 | 10008.1 | 9567.1 |
| 37.5° | 6469.7 | 6443.8 | 6469.7 | 6075.4 | 5950.9 | 6277.8 | 7081.9 | *8176.7* | 8353.1 | 10646.3 | 10309.0 |
| 40° | 7102.7 | 7180.5 | 7180.5 | 6858.8 | 6698.0 | 6915.9 | 7642.3 | *8700.7* | 8871.9 | 10999.1 | 10843.4 |
| 42.5° | 7792.7 | 7803.1 | 7782.4 | 7502.2 | 7439.9 | 7497.0 | 8135.2 | *9032.7* | 9172.8 | 11180.6 | 11206.6 |
| 45° | 8571.0 | 8565.8 | 8477.6 | 8244.1 | 8150.7 | 8098.8 | 8441.3 | *9354.4* | 9494.5 | 11263.7 | 11403.7 |
| 47.5° | 9214.3 | 9240.2 | 9245.4 | 8996.4 | 8840.8 | 8617.7 | 8705.9 | *9515.2* | 9676.1 | 11170.3 | 11445.2 |
| 50° | 9250.6 | 9292.1 | 9489.3 | 9561.9 | 9530.8 | 9172.8 | 8949.7 | *9686.4* | 9847.3 | 11191.0 | 11595.7 |
| 52.5° | 9022.3 | 9063.8 | 9318.1 | 9619.0 | 9982.2 | 9810.9 | 9333.6 | *9982.2* | 10148.2 | 11393.4 | 11938.1 |
| 55° | 8410.1 | 8477.6 | 8856.3 | 9276.6 | 9925.1 | 10168.9 | 10013.3 | *10516.5* | 10672.2 | 11554.2 | 12337.6 |
| 57.5° | 7320.6 | 7403.6 | 7927.6 | 8596.9 | 9484.1 | 10085.9 | 10999.1 | *11372.6* | 11502.3 | 11668.3 | 12342.8 |
| 60° | 5473.6 | 5541.0 | 6360.8 | 7263.5 | 8596.9 | 9567.1 | 11585.3 | *12840.9* | 12913.5 | 11050.9 | 11642.4 |
| 62.5° | 4031.3 | 4098.7 | 4648.7 | 5297.2 | 6755.1 | 8612.5 | 11699.5 | *14112.0* | 14122.4 | 9935.5 | 10677.4 |
| 63° | *3797.8* | *3865.2* | *4363.3* | *4970.3* | *6319.3* | *8290.8* | *11663.1* | *14153.5* | *14117.2* | *9707.2* | *10464.7* |
| 65° | 2957.3 | 3076.6 | 3595.4 | 4057.2 | 4736.9 | 6599.4 | 11196.2 | *13416.8* | 13468.7 | 9032.7 | 9395.9 |
| 67.5° | 2013.0 | 2101.2 | 2760.1 | 3294.5 | 3579.9 | 4202.5 | 9183.2 | *11481.6* | 11564.6 | 8332.3 | 7497.0 |
| 70° | 1556.5 | 1598.0 | 1981.9 | 2609.7 | 2895.0 | 2671.9 | 5987.2 | *9245.4* | 9245.4 | 6506.0 | 5312.8 |
| 72.5° | 1219.2 | 1234.8 | 1494.2 | 2039.0 | 2329.5 | 2054.5 | 3336.0 | *6724.0* | 6474.9 | 3860.0 | 3543.6 |
| 75° | 871.6 | 892.4 | 1125.8 | 1520.2 | 1857.4 | 1618.7 | 2132.4 | *3917.1* | 3766.7 | 2220.6 | 2365.8 |
| 77.5° | 690.0 | 700.4 | 840.5 | 1120.7 | 1504.6 | 1234.8 | 1623.9 | *2137.6* | 2116.8 | 1561.7 | 1520.2 |
| 80° | 544.8 | 565.5 | 658.9 | 804.2 | 1162.2 | 965.0 | 1208.9 | *1411.2* | 1369.7 | 1074.0 | 975.4 |
| 82.5° | 389.1 | 425.4 | 508.4 | 612.2 | 861.2 | 690.0 | 793.8 | *996.1* | 996.1 | 809.4 | 643.3 |
| 85° | 238.7 | 269.8 | 300.9 | 378.7 | 612.2 | 446.2 | 420.2 | *643.3* | 658.9 | 607.0 | 415.1 |
| 87.5° | 114.1 | 124.5 | 145.3 | 160.8 | 223.1 | 202.3 | 166.0 | *243.8* | 249.0 | 269.8 | 171.2 |
| 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: P1455768
CATALOG NUMBER: GLAN-SB4B-740-U-T2LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 3517.6 | 3517.6 | 3517.6 | 3517.6 | 3517.6 | 3517.6 | 3517.6 | 3517.6 | 3517.6 | 3517.6 | 3517.6 |
| 2.5° | 3548.8 | 3538.4 | 3486.5 | 3434.6 | 3377.5 | 3325.7 | 3273.8 | 3232.3 | 3185.6 | 3196.0 | 3201.1 |
| 5° | 3616.2 | 3590.3 | 3476.1 | 3341.2 | 3164.8 | 2998.8 | 2838.0 | 2723.8 | 2651.2 | 2630.4 | 2588.9 |
| 7.5° | 3761.5 | 3699.2 | 3491.7 | 3206.3 | 2879.5 | 2620.1 | 2469.6 | 2402.2 | 2381.4 | 2386.6 | 2376.2 |
| 10° | 3927.5 | 3834.1 | 3512.4 | 3045.5 | 2630.4 | 2454.0 | 2433.3 | 2474.8 | 2495.5 | 2516.3 | 2521.5 |
| 12.5° | 4145.4 | 3994.9 | 3502.1 | 2869.1 | 2511.1 | 2480.0 | 2557.8 | 2635.6 | 2682.3 | 2713.4 | 2708.3 |
| 15° | 4399.6 | 4197.3 | 3470.9 | 2723.8 | 2495.5 | 2578.6 | 2677.1 | 2765.3 | 2822.4 | 2853.5 | 2838.0 |
| 17.5° | 4705.7 | 4435.9 | 3434.6 | 2630.4 | 2542.2 | 2640.8 | 2744.6 | 2832.8 | 2895.0 | 2915.8 | 2900.2 |
| 20° | 5084.5 | 4705.7 | 3372.4 | 2588.9 | 2578.6 | 2666.8 | 2760.1 | 2843.2 | 2895.0 | 2915.8 | 2895.0 |
| 22.5° | 5530.7 | 5027.4 | 3320.5 | 2588.9 | 2594.1 | 2666.8 | 2734.2 | 2796.5 | 2843.2 | 2858.7 | 2832.8 |
| 25° | 6101.4 | 5401.0 | 3299.7 | 2630.4 | 2599.3 | 2640.8 | 2677.1 | 2713.4 | 2739.4 | 2749.8 | 2739.4 |
| 27.5° | 6682.4 | 5831.6 | 3310.1 | 2682.3 | 2594.1 | 2604.5 | 2604.5 | 2609.7 | 2614.9 | 2620.1 | 2614.9 |
| 30° | 7351.7 | 6267.4 | 3351.6 | 2749.8 | 2604.5 | 2552.6 | 2537.0 | 2505.9 | 2480.0 | 2459.2 | 2438.5 |
| 32.5° | 8000.3 | 6682.4 | 3424.2 | 2848.3 | 2594.1 | 2495.5 | 2464.4 | 2386.6 | 2314.0 | 2251.7 | 2251.7 |
| 35° | 8700.7 | 7113.1 | 3553.9 | 2921.0 | 2583.7 | 2443.7 | 2355.5 | 2267.3 | 2189.4 | 2101.2 | 2101.2 |
| 37.5° | 9302.5 | 7481.4 | 3657.7 | 3004.0 | 2573.4 | 2381.4 | 2241.3 | 2142.7 | 2059.7 | 1971.5 | 1961.2 |
| 40° | 9722.7 | 7694.2 | 3720.0 | 3035.1 | 2537.0 | 2298.4 | 2132.4 | 2007.8 | 1888.5 | 1769.2 | 1764.0 |
| 42.5° | 9925.1 | 7683.8 | 3683.6 | 3024.7 | 2469.6 | 2194.6 | 2039.0 | 1873.0 | 1712.1 | 1603.2 | 1592.8 |
| 45° | 10034.0 | 7616.3 | 3543.6 | 2936.5 | 2360.6 | 2085.7 | 1919.6 | 1743.2 | 1582.4 | 1483.8 | 1463.1 |
| 47.5° | 10013.3 | 7450.3 | 3351.6 | 2718.6 | 2215.4 | 1966.3 | 1800.3 | 1618.7 | 1489.0 | 1432.0 | 1432.0 |
| 50° | 10070.4 | 7320.6 | 3133.7 | 2469.6 | 2018.2 | 1826.3 | 1691.4 | 1525.3 | 1447.5 | 1374.9 | 1348.9 |
| 52.5° | 10324.6 | 7429.6 | 2946.9 | 2236.1 | 1831.4 | 1691.4 | 1598.0 | 1457.9 | 1359.3 | 1312.6 | 1297.1 |
| 55° | 10661.8 | 7663.0 | 2770.5 | 2028.6 | 1649.9 | 1572.0 | 1525.3 | 1395.6 | 1281.5 | 1234.8 | 1208.9 |
| 57.5° | 10724.1 | 7823.9 | 2599.3 | 1826.3 | 1499.4 | 1478.6 | 1463.1 | 1286.7 | 1193.3 | 1157.0 | 1136.2 |
| 60° | 10293.5 | 7704.5 | 2376.2 | 1644.7 | 1380.1 | 1390.4 | 1348.9 | 1219.2 | 1110.3 | 1074.0 | 1053.2 |
| 62.5° | 9561.9 | 7393.2 | 2153.1 | 1489.0 | 1286.7 | 1307.4 | 1265.9 | 1136.2 | 1027.3 | 991.0 | 980.6 |
| 63° | *9416.6* | *7310.2* | *2101.2* | *1473.5* | *1265.9* | *1291.9* | *1255.6* | *1125.8* | *1016.9* | *980.6* | *965.0* |
| 65° | 8550.2 | 6812.2 | 1919.6 | 1390.4 | 1198.5 | 1198.5 | 1203.7 | 1074.0 | 980.6 | 965.0 | 954.6 |
| 67.5° | 6973.0 | 5686.3 | 1722.5 | 1291.9 | 1125.8 | 1141.4 | 1167.4 | 1094.7 | 1058.4 | 1048.0 | 1037.6 |
| 70° | 5271.2 | 4280.3 | 1551.3 | 1198.5 | 1048.0 | 1099.9 | 1276.3 | 1245.2 | 1110.3 | 1016.9 | 996.1 |
| 72.5° | 3735.5 | 2915.8 | 1400.8 | 1105.1 | 954.6 | 1084.3 | 1323.0 | 1188.1 | 1001.3 | 892.4 | 871.6 |
| 75° | 2500.7 | 1878.1 | 1250.4 | 1006.5 | 850.9 | 1001.3 | 1250.4 | 1084.3 | 871.6 | 845.7 | 814.6 |
| 77.5° | 1572.0 | 1338.6 | 1099.9 | 892.4 | 736.7 | 892.4 | 1136.2 | 965.0 | 752.3 | 762.7 | 716.0 |
| 80° | 959.8 | 954.6 | 923.5 | 757.5 | 591.5 | 710.8 | 954.6 | 814.6 | 601.8 | 601.8 | 534.4 |
| 82.5° | 570.7 | 690.0 | 783.4 | 627.8 | 430.6 | 508.4 | 690.0 | 612.2 | 503.3 | 487.7 | 456.6 |
| 85° | 383.9 | 466.9 | 622.6 | 482.5 | 275.0 | 311.3 | 477.3 | 513.6 | 461.8 | 404.7 | 378.7 |
| 87.5° | 140.1 | 186.8 | 285.4 | 197.2 | 119.3 | 186.8 | 358.0 | 373.6 | 280.2 | 217.9 | 197.2 |
| 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: SP1-2407-184-1

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-740-U-5WQ

Data in this report applies to families of products including GSS-SB1A-740-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

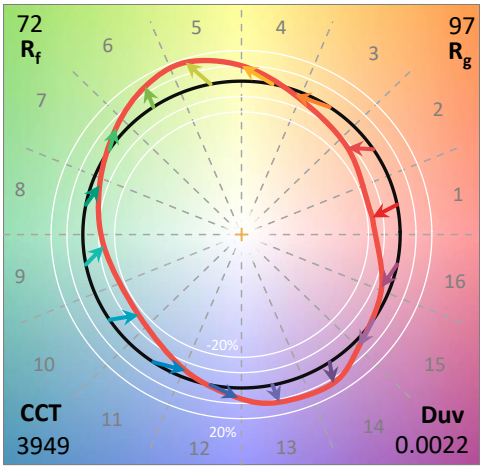
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-1 |
| 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-740-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 4000K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3949 |
| CIE u': | 0.2248 |
| CIE v': | 0.5053 |
| Duv: | 0.0022 |
| CIE x: | 0.3844 |
| CIE y: | 0.3840 |
| CIE z: | 0.2316 |
| Peak Wavelength (nm): | 440 |
| Dominant Wavelength (nm): | 578 |
| Purity: | 30.60026 |
| Rf: | 71.8 |
| Rg: | 96.5 |

| | |
|---|---|
| CRI (Ra): | 70.7 |
| R1: | 68.0 |
| R2: | 76.0 |
| R3: | 84.3 |
| R4: | 72.0 |
| R5: | 68.6 |
| R6: | 68.3 |
| R7: | 77.9 |
| R8: | 50.3 |
| R9: | -36.7 |
| R10: | 45.1 |
| R11: | 70.7 |
| R12: | 47.1 |
| R13: | 68.5 |
| R14: | 91.1 |
| R15: | 58.7 |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 34M |
| Operation Time: | 1H 34M |
| 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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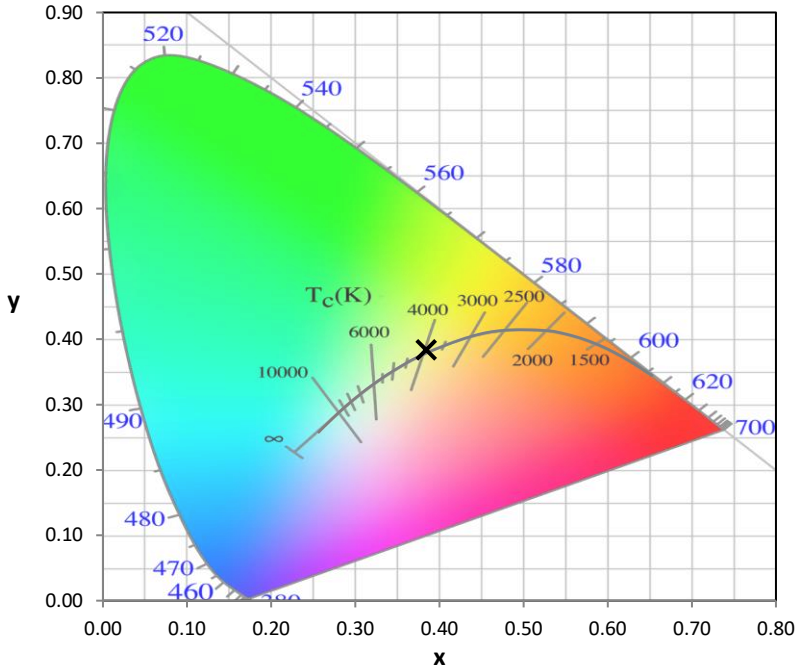
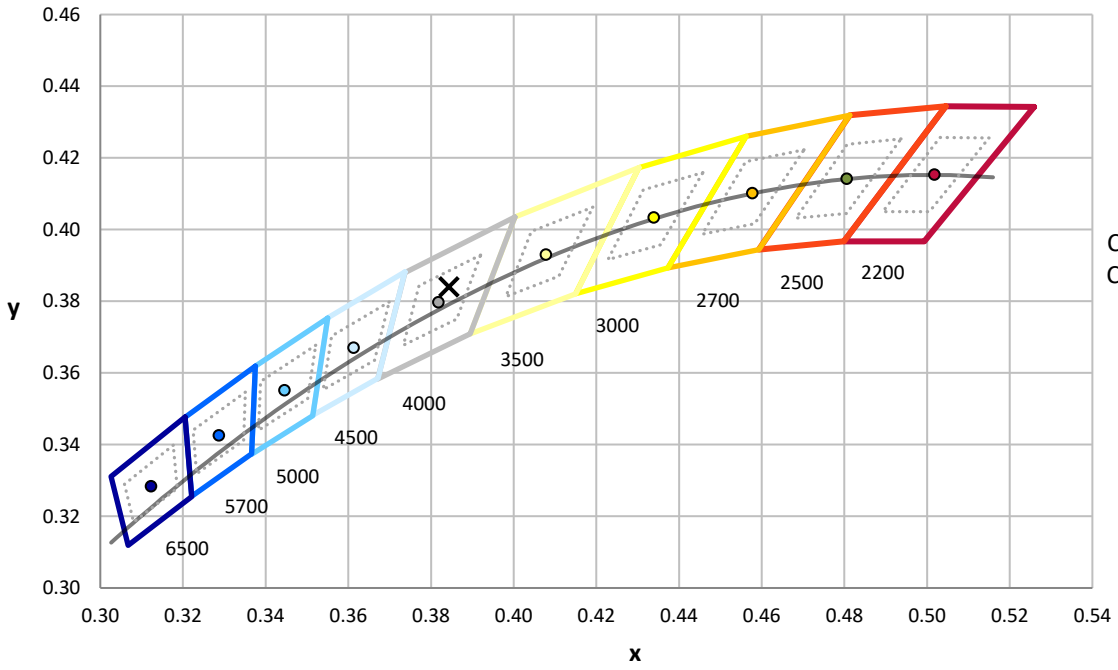
## CIE 1931 Chromaticity Diagram




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




CCT = 3949K
CIE x = 0.3844
CIE y = 0.3840
Duv = 0.0022

Point lies inside the ANSI 4000K 4-step quadrangle

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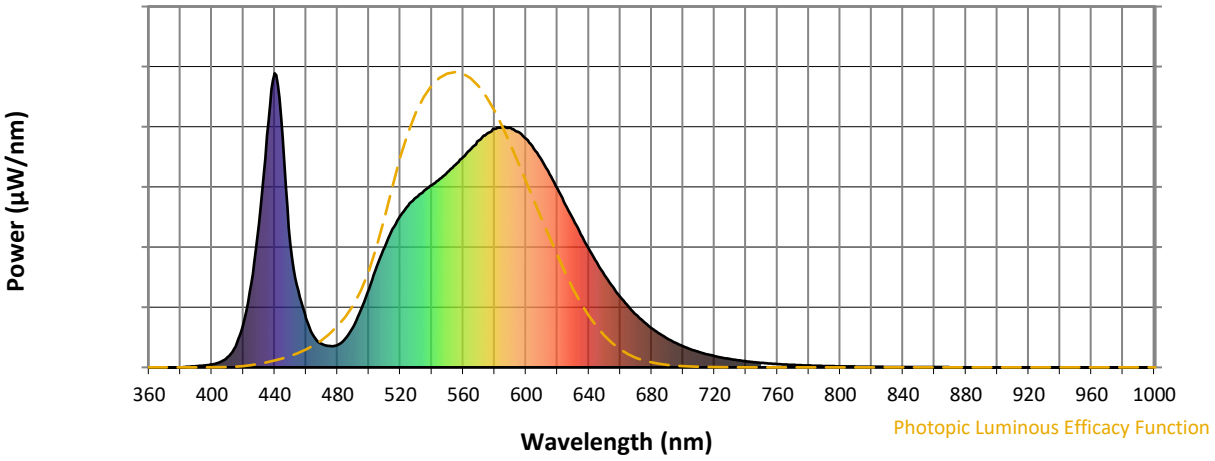
## Photopic Flux vs. Wavelength




## 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 | 139 | NR | 620 | 607 | NR | 750 | 15 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 198 | NR | 625 | 554 | NR | 755 | 13 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 267 | NR | 630 | 504 | NR | 760 | 11 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 343 | NR | 635 | 452 | NR | 765 | 10 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 410 | NR | 640 | 403 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 470 | NR | 645 | 357 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 516 | NR | 650 | 314 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 7 | NR | 525 | 550 | NR | 655 | 275 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 10 | NR | 530 | 578 | NR | 660 | 240 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 17 | NR | 535 | 601 | NR | 665 | 208 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 35 | NR | 540 | 620 | NR | 670 | 179 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 70 | NR | 545 | 641 | NR | 675 | 155 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 147 | NR | 550 | 664 | NR | 680 | 133 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 285 | NR | 555 | 689 | NR | 685 | 114 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 487 | NR | 560 | 715 | NR | 690 | 98 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 787 | NR | 565 | 743 | NR | 695 | 84 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 1000 | NR | 570 | 771 | NR | 700 | 72 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 783 | NR | 575 | 794 | NR | 705 | 61 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 417 | NR | 580 | 811 | NR | 710 | 52 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 261 | NR | 585 | 817 | NR | 715 | 45 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 167 | NR | 590 | 815 | NR | 720 | 39 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 104 | NR | 595 | 801 | NR | 725 | 33 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 777 | NR | 730 | 28 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 73 | NR | 605 | 744 | NR | 735 | 24 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 704 | NR | 740 | 21 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 98 | NR | 615 | 657 | NR | 745 | 18 | NR | 875 | 1 | NR | | | |

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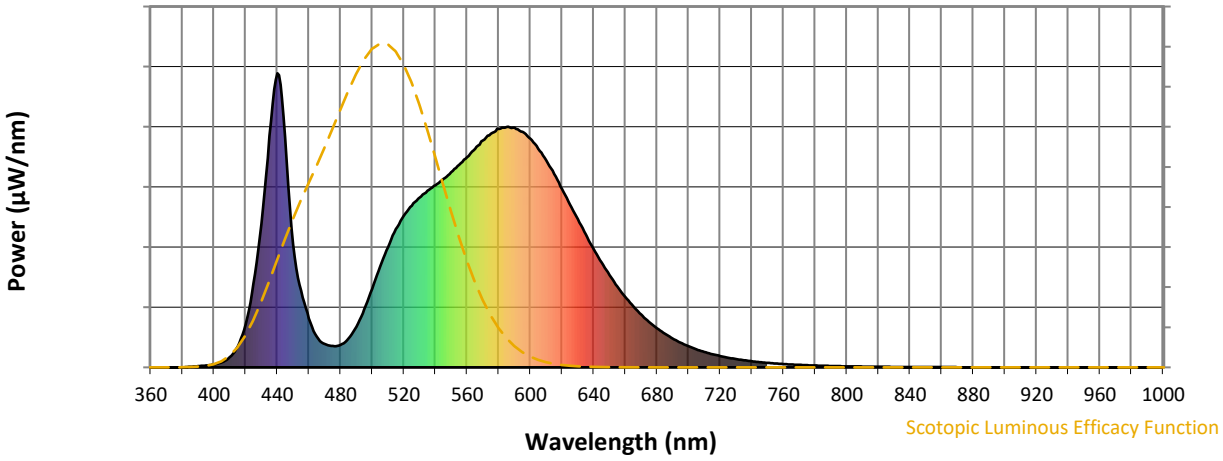
## Scotopic Flux vs. Wavelength

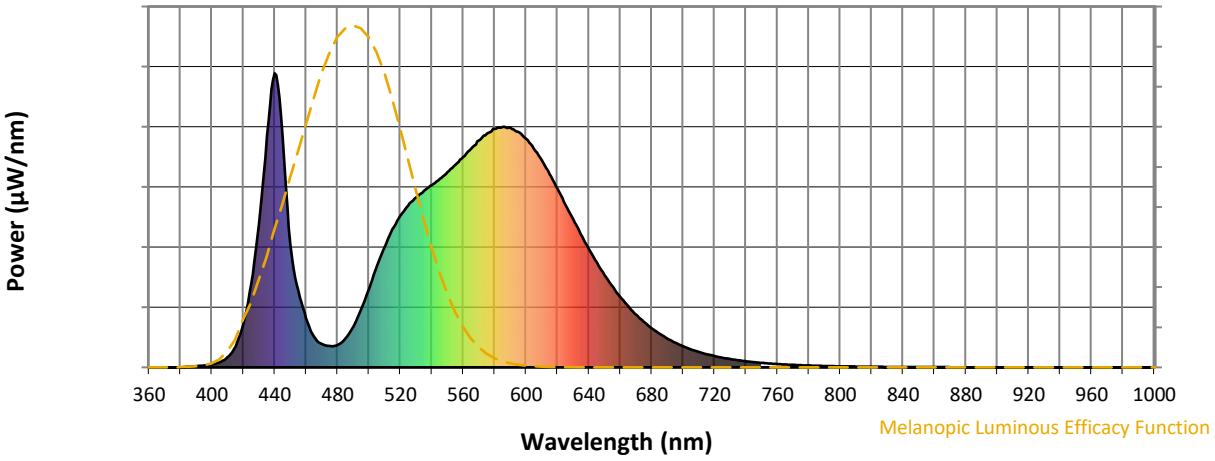



**Scotopic Lumens: NR** **S/P: 1.47**

| 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 | 139 | NR | 620 | 607 | NR | 750 | 15 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 198 | NR | 625 | 554 | NR | 755 | 13 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 267 | NR | 630 | 504 | NR | 760 | 11 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 343 | NR | 635 | 452 | NR | 765 | 10 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 410 | NR | 640 | 403 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 470 | NR | 645 | 357 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 516 | NR | 650 | 314 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 7 | NR | 525 | 550 | NR | 655 | 275 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 10 | NR | 530 | 578 | NR | 660 | 240 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 17 | NR | 535 | 601 | NR | 665 | 208 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 35 | NR | 540 | 620 | NR | 670 | 179 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 70 | NR | 545 | 641 | NR | 675 | 155 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 147 | NR | 550 | 664 | NR | 680 | 133 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 285 | NR | 555 | 689 | NR | 685 | 114 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 487 | NR | 560 | 715 | NR | 690 | 98 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 787 | NR | 565 | 743 | NR | 695 | 84 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 1000 | NR | 570 | 771 | NR | 700 | 72 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 783 | NR | 575 | 794 | NR | 705 | 61 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 417 | NR | 580 | 811 | NR | 710 | 52 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 261 | NR | 585 | 817 | NR | 715 | 45 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 167 | NR | 590 | 815 | NR | 720 | 39 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 104 | NR | 595 | 801 | NR | 725 | 33 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 777 | NR | 730 | 28 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 73 | NR | 605 | 744 | NR | 735 | 24 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 704 | NR | 740 | 21 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 98 | NR | 615 | 657 | NR | 745 | 18 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-184-1

## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.78**

| 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 | 139 | NR | 620 | 607 | NR | 750 | 15 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 198 | NR | 625 | 554 | NR | 755 | 13 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 267 | NR | 630 | 504 | NR | 760 | 11 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 343 | NR | 635 | 452 | NR | 765 | 10 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 410 | NR | 640 | 403 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 470 | NR | 645 | 357 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 516 | NR | 650 | 314 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 7 | NR | 525 | 550 | NR | 655 | 275 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 10 | NR | 530 | 578 | NR | 660 | 240 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 17 | NR | 535 | 601 | NR | 665 | 208 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 35 | NR | 540 | 620 | NR | 670 | 179 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 70 | NR | 545 | 641 | NR | 675 | 155 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 147 | NR | 550 | 664 | NR | 680 | 133 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 285 | NR | 555 | 689 | NR | 685 | 114 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 487 | NR | 560 | 715 | NR | 690 | 98 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 787 | NR | 565 | 743 | NR | 695 | 84 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 1000 | NR | 570 | 771 | NR | 700 | 72 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 783 | NR | 575 | 794 | NR | 705 | 61 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 417 | NR | 580 | 811 | NR | 710 | 52 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 261 | NR | 585 | 817 | NR | 715 | 45 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 167 | NR | 590 | 815 | NR | 720 | 39 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 104 | NR | 595 | 801 | NR | 725 | 33 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 777 | NR | 730 | 28 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 73 | NR | 605 | 744 | NR | 735 | 24 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 704 | NR | 740 | 21 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 98 | NR | 615 | 657 | NR | 745 | 18 | NR | 875 | 1 | NR | | | |

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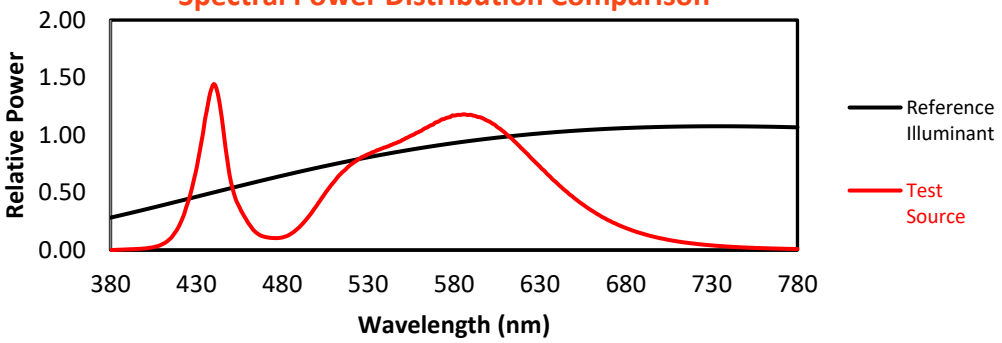
# TM-30-18

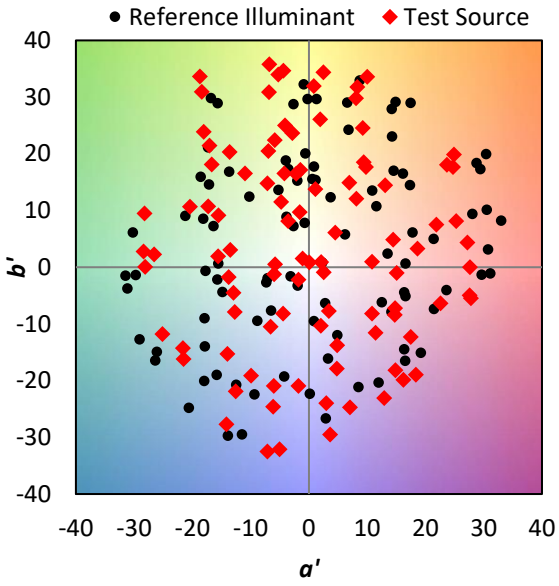
## Summary

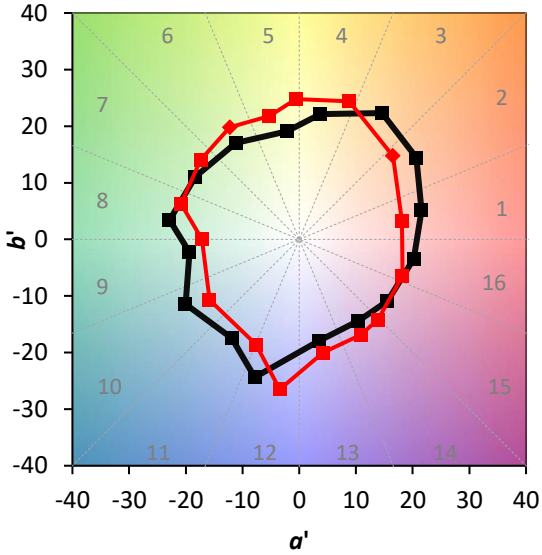
$R_f$ = 71.8
$R_g$ = 96.5
CIE $R_a$ = 70.7
$R_9$ = -36.7

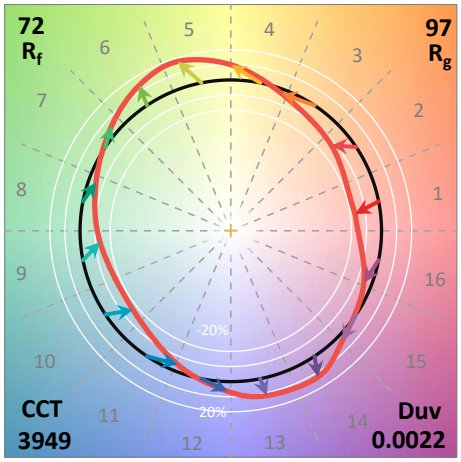
## Spectral Power Distribution Comparison

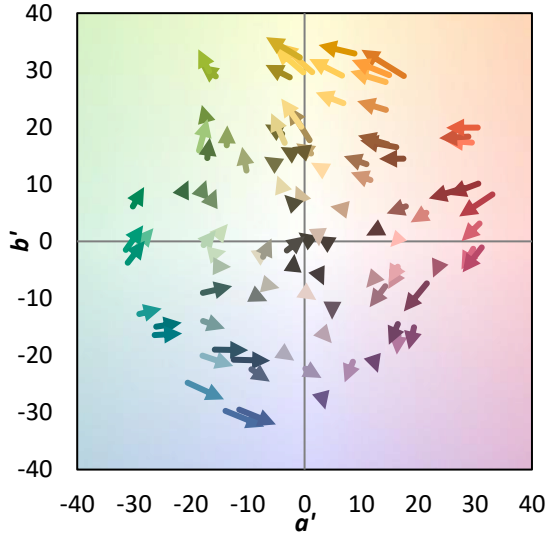



## Color Vector Graphics



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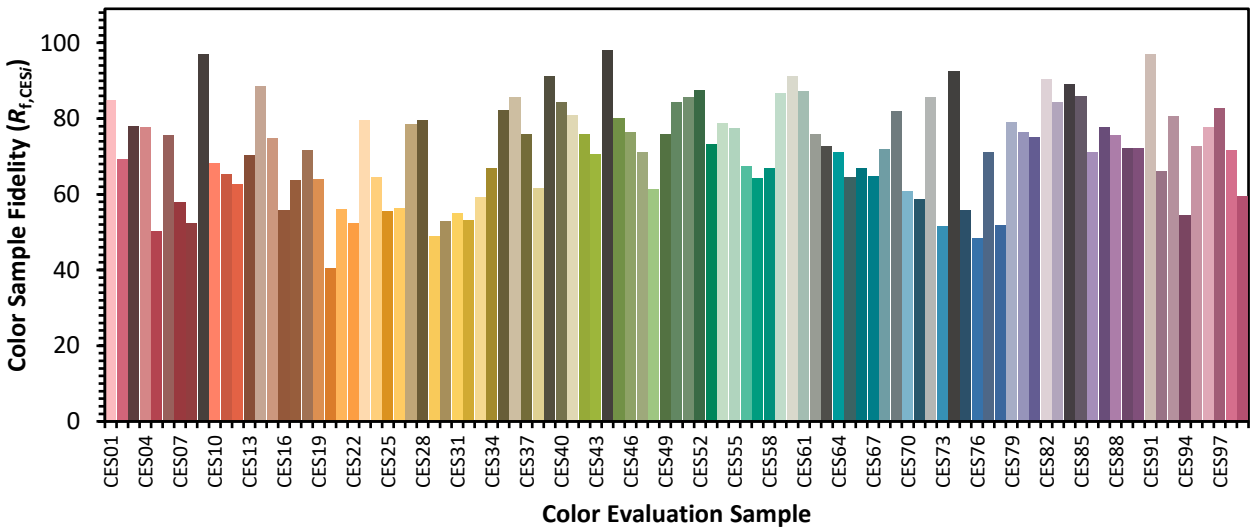
# TM-30-18

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

| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 56 | CES51 = 86 | CES76 = 48 |
| CES02 = 61 | CES27 = 79 | CES52 = 88 | CES77 = 71 |
| CES03 = 30 | CES28 = 80 | CES53 = 73 | CES78 = 52 |
| CES04 = 70 | CES29 = 49 | CES54 = 79 | CES79 = 79 |
| CES05 = 47 | CES30 = 53 | CES55 = 77 | CES80 = 77 |
| CES06 = 50 | CES31 = 55 | CES56 = 67 | CES81 = 75 |
| CES07 = 40 | CES32 = 53 | CES57 = 64 | CES82 = 90 |
| CES08 = 39 | CES33 = 59 | CES58 = 67 | CES83 = 84 |
| CES09 = 29 | CES34 = 67 | CES59 = 87 | CES84 = 89 |
| CES10 = 74 | CES35 = 82 | CES60 = 91 | CES85 = 86 |
| CES11 = 57 | CES36 = 86 | CES61 = 87 | CES86 = 71 |
| CES12 = 63 | CES37 = 76 | CES62 = 76 | CES87 = 78 |
| CES13 = 42 | CES38 = 62 | CES63 = 73 | CES88 = 76 |
| CES14 = 74 | CES39 = 91 | CES64 = 71 | CES89 = 72 |
| CES15 = 71 | CES40 = 84 | CES65 = 64 | CES90 = 72 |
| CES16 = 46 | CES41 = 81 | CES66 = 67 | CES91 = 97 |
| CES17 = 49 | CES42 = 76 | CES67 = 65 | CES92 = 66 |
| CES18 = 56 | CES43 = 71 | CES68 = 72 | CES93 = 81 |
| CES19 = 72 | CES44 = 98 | CES69 = 82 | CES94 = 55 |
| CES20 = 65 | CES45 = 80 | CES70 = 61 | CES95 = 73 |
| CES21 = 86 | CES46 = 76 | CES71 = 59 | CES96 = 78 |
| CES22 = 78 | CES47 = 71 | CES72 = 86 | CES97 = 83 |
| CES23 = 92 | CES48 = 61 | CES73 = 52 | CES98 = 72 |
| CES24 = 91 | CES49 = 76 | CES74 = 93 | CES99 = 60 |
| CES25 = 72 | CES50 = 84 | CES75 = 56 | |



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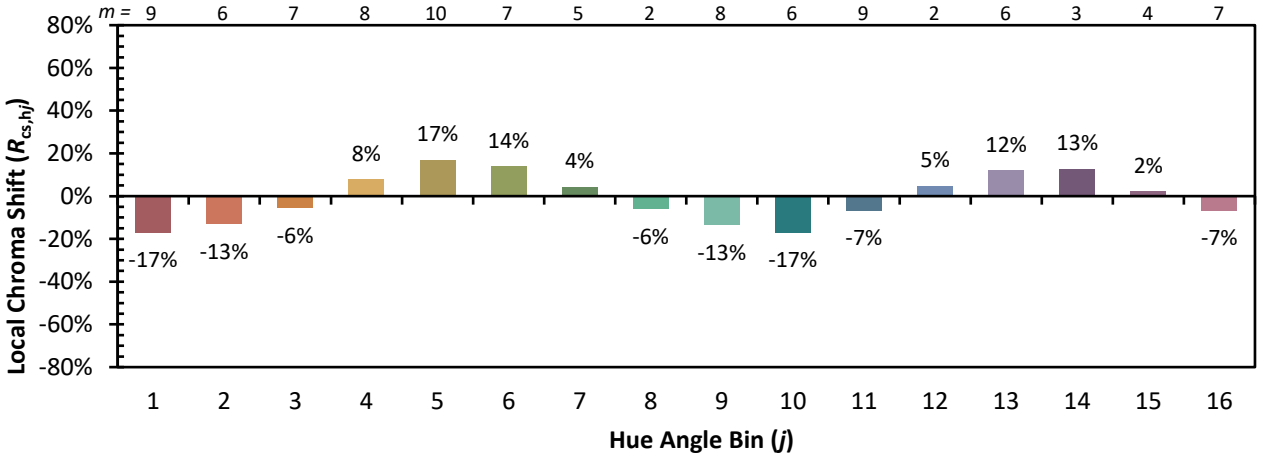
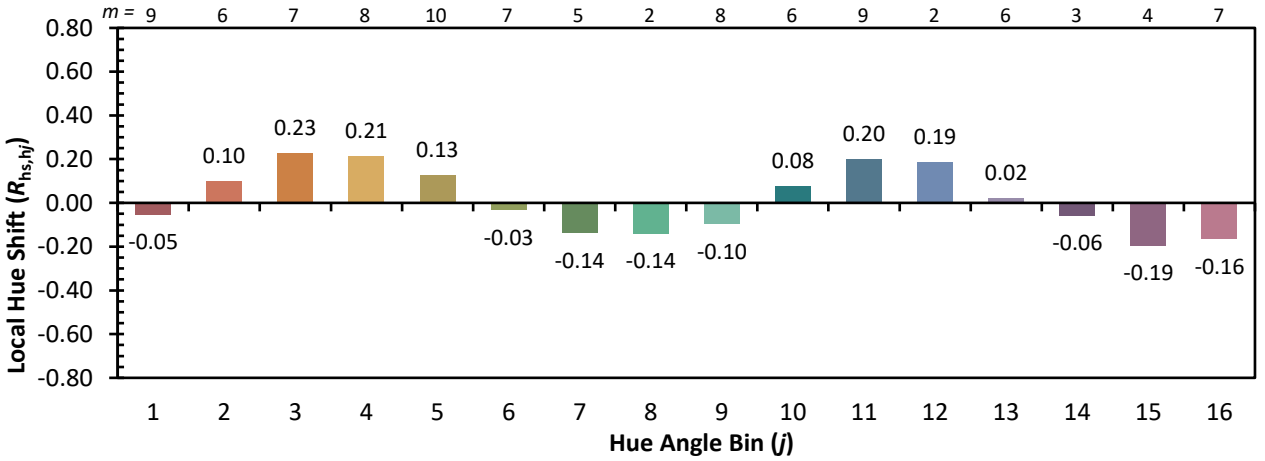
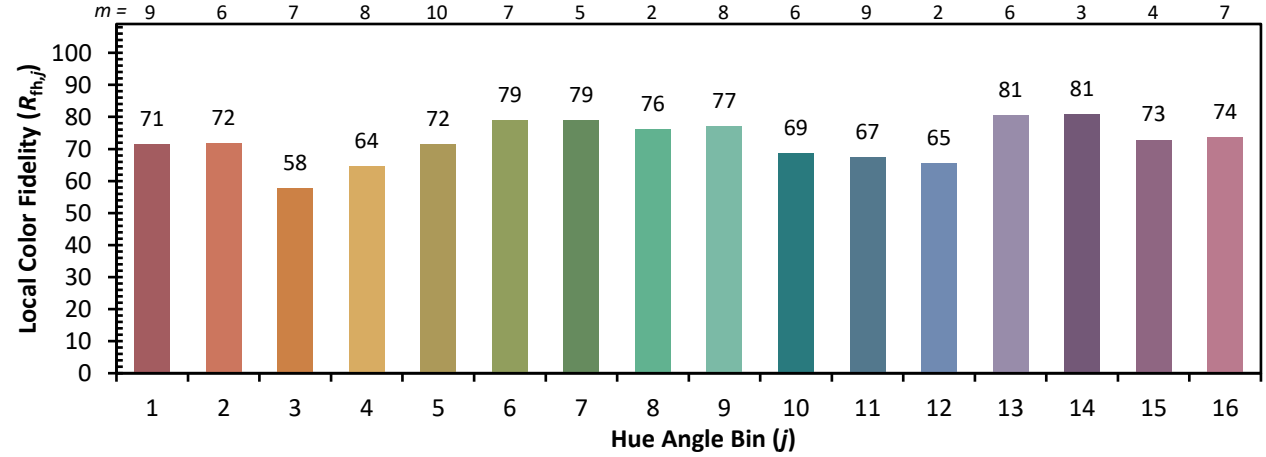
**TM-30-18**

## Color Rendition by Hue-Angle Bin



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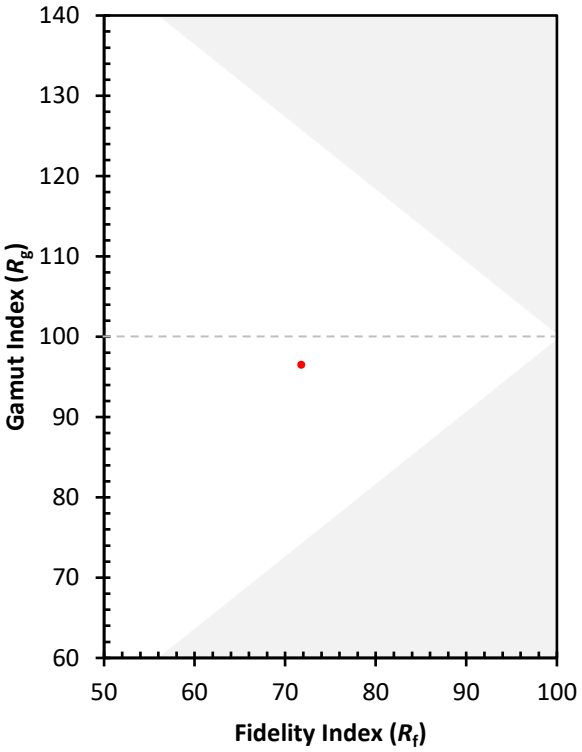
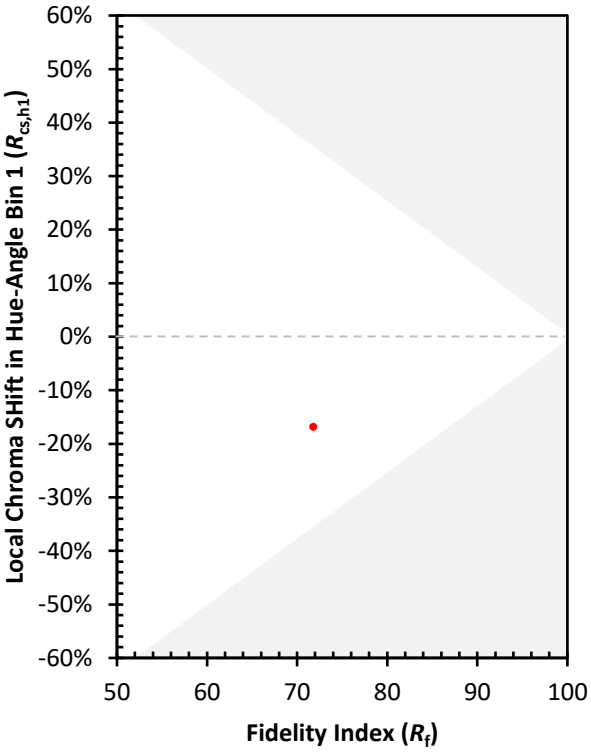
## Measure Comparisons




(END OF REPORT)