Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Cooper Lighting Solutions Photometric Lab
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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: P1456252

Luminaire Tested: GLAN-SB8B-930-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: | P1456252 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/22/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB8B-930-U-T2LG |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 450mA 8xLight Square PACKAGE 90CRI 3000K FIXTURE w/ TYPE II LOW GLARE |
| Light Source: | (208) 3000K CCT, 90 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 30665.6 lumens |
| Efficiency: | N/A |
| Efficacy: | 104.7 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1.5' x H: 0') |
| IES Classification: | Type II - Short |
| BUG Rating: | B3 - U0 - G3 |

| | |
|---|---|
| Input Watts (W): | 292.8 |
| 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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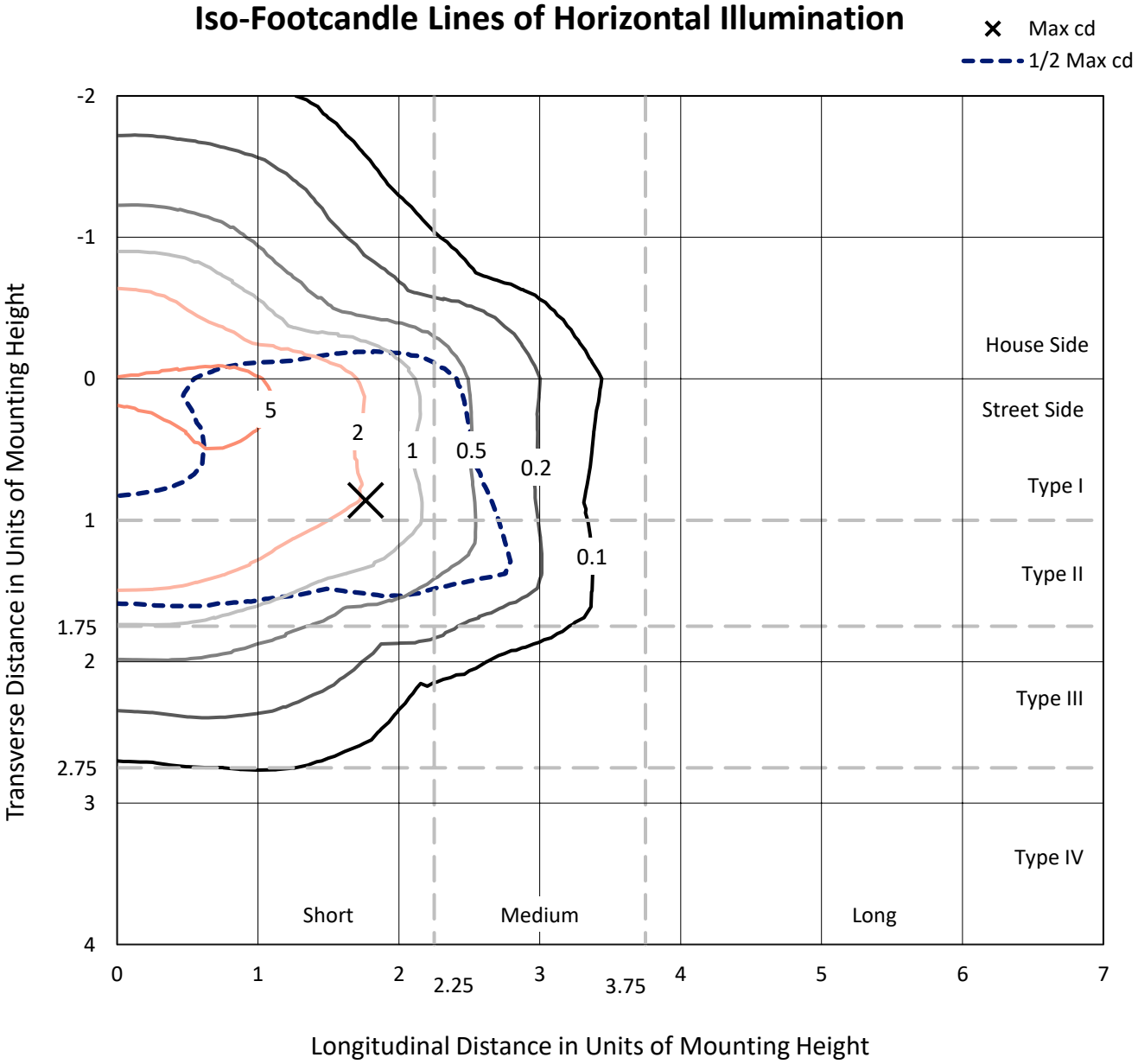
Scaled Data Report

REPORT NUMBER: P1456252
CATALOG NUMBER: GLAN-SB8B-930-U-T2LG

## Iso-Footcandle Lines of Horizontal Illumination




Based on 30 foot mounting height. Maximum calculated value = 8 fc
Type II - Short - N/A

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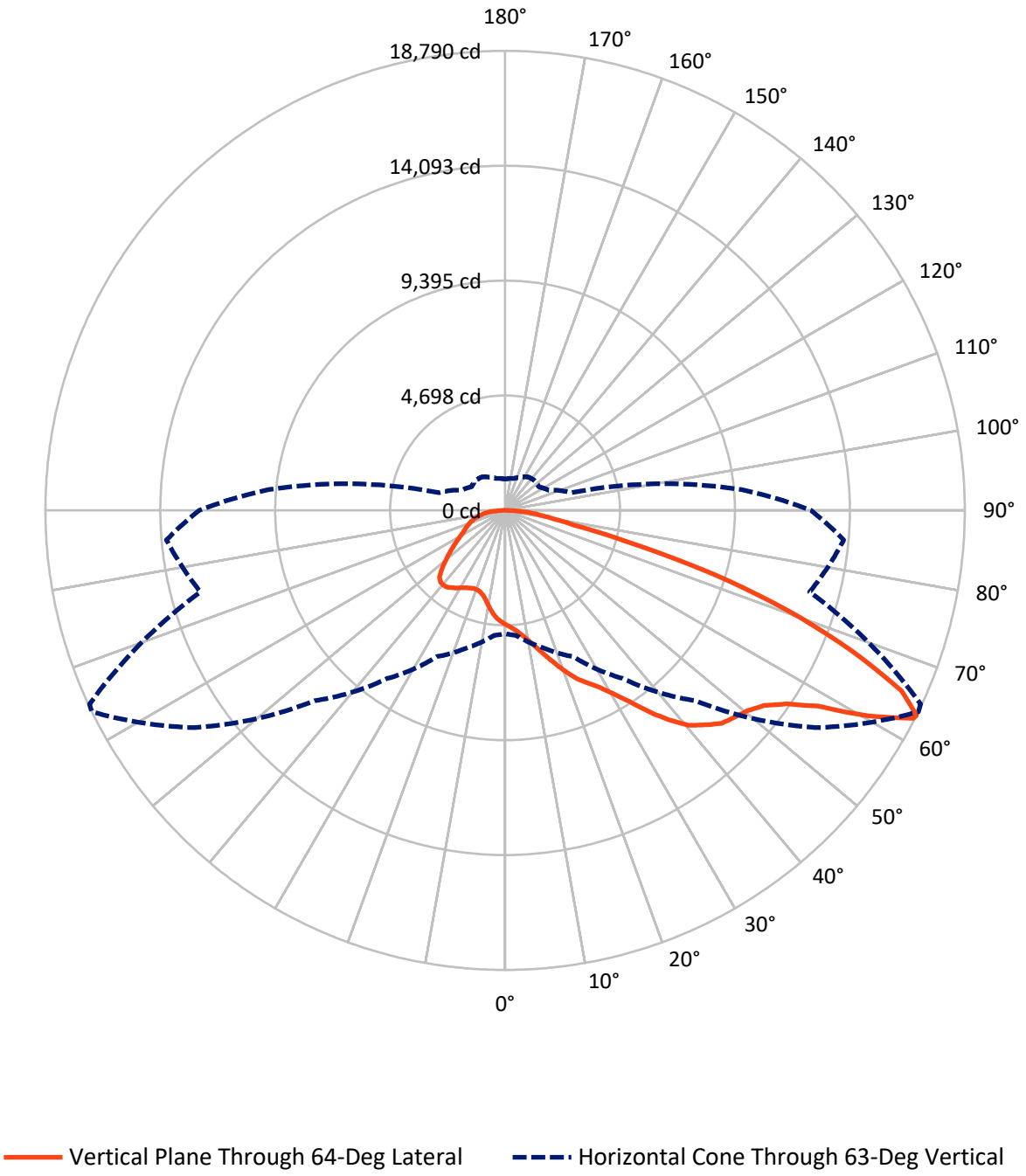
## Luminous Intensity Polar Plot



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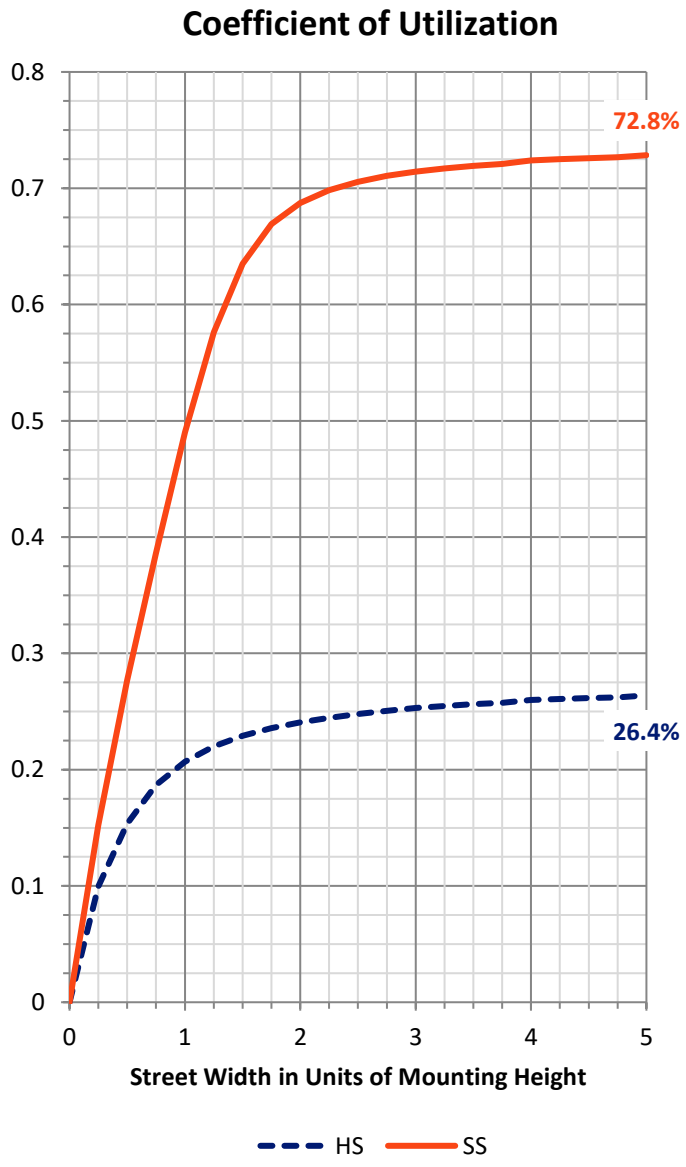
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 8239.0 | 0.0 | 8239.0 |
| | % Fixture | 26.9 | 0.0 | 26.9 |
| **Street Side** | Lumens | 22426.6 | 0.0 | 22426.6 |
| | % Fixture | 73.1 | 0.0 | 73.1 |
| **Total** | Lumens | 30665.6 | 0.0 | 30665.6 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 428.8 | 1.4 |
| 10°-20° | 1320.0 | 4.3 |
| 20°-30° | 2413.8 | 7.9 |
| 30°-40° | 4152.1 | 13.5 |
| 40°-50° | 6123.3 | 20.0 |
| 50°-60° | 7339.1 | 23.9 |
| 60°-70° | 5890.4 | 19.2 |
| 70°-80° | 2366.9 | 7.7 |
| 80°-90° | 631.1 | 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° | 30665.6 | 100.0 |
| 0°-180° | 30665.6 | 100.0 |



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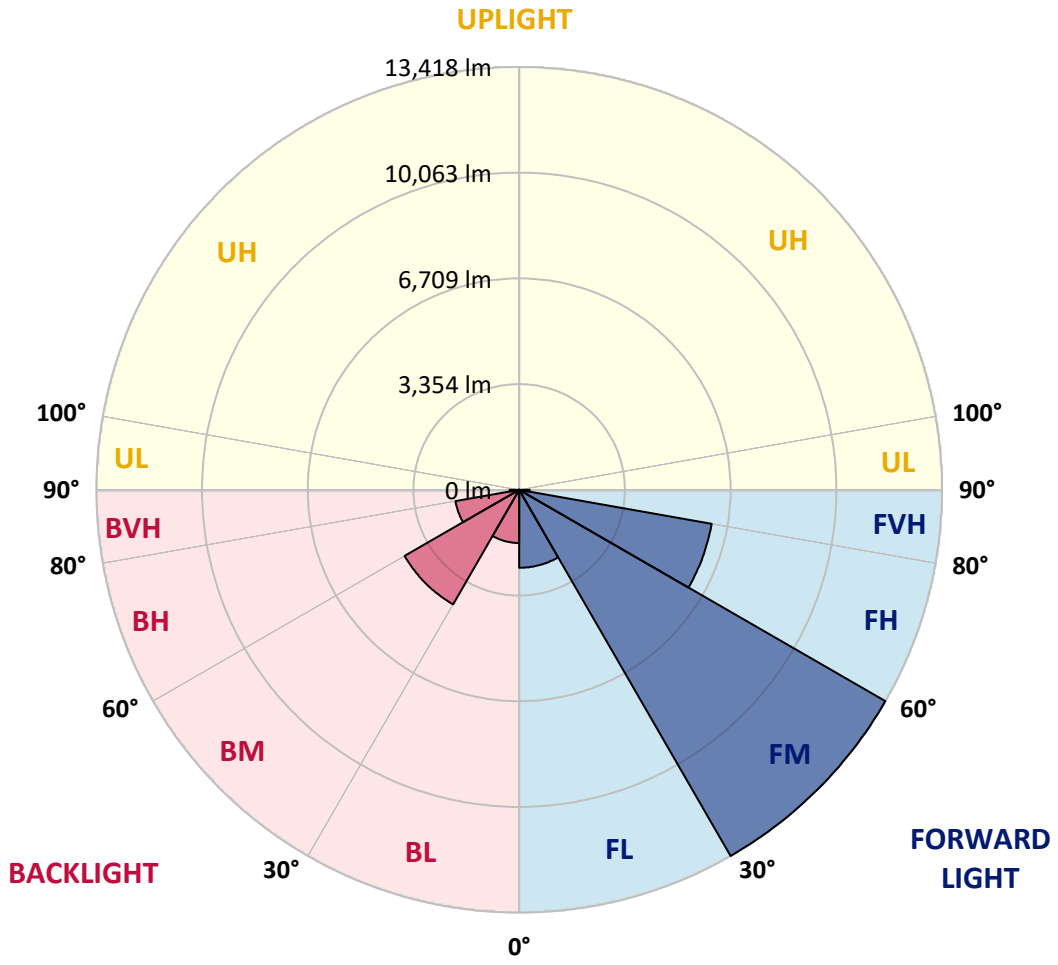
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 2474.1 | 8.1 | | | |
| FM | (30°-60°) | 13417.8 | 43.8 | | | |
| FH | (60°-80°) | 6203.1 | 20.2 | | | G3/7500 |
| FVH | (80°-90°) | 331.6 | 1.1 | | | G3/500 |
| BL | (0°-30°) | 1688.5 | 5.5 | B3/2500 | | |
| BM | (30°-60°) | 4196.8 | 13.7 | B3/5000 | | |
| BH | (60°-80°) | 2054.2 | 6.7 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 299.5 | 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: P1456252
CATALOG NUMBER: GLAN-SB8B-930-U-T2LG

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 64° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 4670.0 | 4670.0 | 4670.0 | 4670.0 | 4670.0 | 4670.0 | 4670.0 | *4670.0* | 4670.0 | 4670.0 | 4670.0 |
| 2.5° | 4862.9 | 4869.8 | 4849.1 | 4842.2 | 4856.0 | 4828.4 | 4821.6 | *4794.0* | 4780.2 | 4752.7 | 4718.2 |
| 5° | 5000.6 | 5007.5 | 4993.8 | 4993.8 | 5007.5 | 4986.9 | 4980.0 | *4952.4* | 4938.6 | 4911.1 | 4842.2 |
| 7.5° | 4993.8 | 5000.6 | 5014.4 | 5069.5 | 5138.4 | 5165.9 | 5186.6 | *5165.9* | 5159.1 | 5117.7 | 5048.9 |
| 10° | 4883.5 | 4890.4 | 4924.9 | 5007.5 | 5179.7 | 5303.7 | 5434.6 | *5434.6* | 5448.4 | 5413.9 | 5289.9 |
| 12.5° | 4732.0 | 4738.9 | 4821.6 | 4952.4 | 5179.7 | 5393.3 | 5661.9 | *5772.1* | 5765.2 | 5744.5 | 5599.9 |
| 15° | 4366.9 | 4366.9 | 4490.9 | 4738.9 | 5104.0 | 5455.2 | 5854.7 | *6150.9* | 6157.8 | 6178.5 | 6006.3 |
| 17.5° | 4057.0 | 4063.9 | 4167.2 | 4387.6 | 4862.9 | 5420.8 | 6061.4 | *6571.1* | 6591.8 | 6708.8 | 6460.9 |
| 20° | 4084.5 | 4084.5 | 4119.0 | 4215.4 | 4601.1 | 5283.0 | 6178.5 | *7018.8* | 7087.7 | 7363.2 | 7053.2 |
| 22.5° | 4298.1 | 4298.1 | 4325.6 | 4318.7 | 4552.9 | 5193.5 | 6254.2 | *7466.5* | 7590.5 | 8162.2 | 7762.7 |
| 25° | 4690.7 | 4683.8 | 4656.2 | 4614.9 | 4752.7 | 5289.9 | 6426.4 | *7810.9* | 8052.0 | 9043.9 | 8582.4 |
| 27.5° | 5172.8 | 5159.1 | 5117.7 | 5048.9 | 5145.3 | 5579.2 | 6722.6 | *8176.0* | 8437.7 | 10008.2 | 9450.2 |
| 30° | 5772.1 | 5730.8 | 5689.4 | 5599.9 | 5703.2 | 6054.5 | 7163.4 | *8692.6* | 8940.5 | 11103.3 | 10497.2 |
| 32.5° | 6481.5 | 6529.8 | 6392.0 | 6268.0 | 6378.2 | 6702.0 | 7817.8 | *9305.6* | 9574.2 | 12246.7 | 11585.5 |
| 35° | 7542.3 | 7686.9 | 7645.6 | 7018.8 | 7122.1 | 7480.3 | 8582.4 | *10097.7* | 10338.8 | 13286.8 | 12701.3 |
| 37.5° | 8589.3 | 8554.8 | 8589.3 | 8065.8 | 7900.5 | 8334.4 | 9402.0 | *10855.4* | 11089.6 | 14134.0 | 13686.3 |
| 40° | 9429.6 | 9532.9 | 9532.9 | 9105.8 | 8892.3 | 9181.6 | 10145.9 | *11551.1* | 11778.4 | 14602.4 | 14395.8 |
| 42.5° | 10345.7 | 10359.5 | 10331.9 | 9960.0 | 9877.3 | 9953.1 | 10800.3 | *11991.9* | 12177.9 | 14843.5 | 14877.9 |
| 45° | 11378.9 | 11372.0 | 11254.9 | 10944.9 | 10820.9 | 10752.1 | 11206.7 | *12418.9* | 12604.9 | 14953.7 | 15139.7 |
| 47.5° | 12233.0 | 12267.4 | 12274.3 | 11943.7 | 11737.0 | 11440.9 | 11558.0 | *12632.5* | 12846.0 | 14829.7 | 15194.8 |
| 50° | 12281.2 | 12336.3 | 12598.0 | 12694.5 | 12653.1 | 12177.9 | 11881.7 | *12859.8* | 13073.3 | 14857.3 | 15394.5 |
| 52.5° | 11978.1 | 12033.2 | 12370.7 | 12770.2 | 13252.4 | 13025.1 | 12391.4 | *13252.4* | 13472.8 | 15125.9 | 15849.1 |
| 55° | 11165.3 | 11254.9 | 11757.7 | 12315.6 | 13176.6 | 13500.3 | 13293.7 | *13961.8* | 14168.5 | 15339.4 | 16379.5 |
| 57.5° | 9718.9 | 9829.1 | 10524.8 | 11413.3 | 12591.1 | 13390.1 | 14602.4 | *15098.3* | 15270.5 | 15491.0 | 16386.4 |
| 60° | 7266.8 | 7356.3 | 8444.6 | 9643.1 | 11413.3 | 12701.3 | 15380.8 | *17047.6* | 17144.1 | 14671.3 | 15456.5 |
| 62.5° | 5351.9 | 5441.5 | 6171.6 | 7032.6 | 8968.1 | 11434.0 | 15532.3 | *18735.2* | 18749.0 | 13190.4 | 14175.4 |
| 63° | *5042.0* | *5131.5* | *5792.8* | *6598.6* | *8389.5* | *11006.9* | *15484.1* | *18790.3* | *18742.1* | *12887.3* | *13893.0* |
| 65° | 3926.1 | 4084.5 | 4773.3 | 5386.4 | 6288.7 | 8761.5 | 14864.2 | *17812.2* | 17881.1 | 11991.9 | 12474.0 |
| 67.5° | 2672.5 | 2789.6 | 3664.4 | 4373.8 | 4752.7 | 5579.2 | 12191.6 | *15243.0* | 15353.2 | 11062.0 | 9953.1 |
| 70° | 2066.4 | 2121.5 | 2631.2 | 3464.6 | 3843.5 | 3547.3 | 7948.7 | *12274.3* | 12274.3 | 8637.5 | 7053.2 |
| 72.5° | 1618.7 | 1639.3 | 1983.7 | 2707.0 | 3092.7 | 2727.6 | 4428.9 | *8926.8* | 8596.1 | 5124.6 | 4704.5 |
| 75° | 1157.2 | 1184.7 | 1494.7 | 2018.2 | 2465.9 | 2149.0 | 2830.9 | *5200.4* | 5000.6 | 2948.0 | 3140.9 |
| 77.5° | 916.1 | 929.9 | 1115.8 | 1487.8 | 1997.5 | 1639.3 | 2155.9 | *2837.8* | 2810.3 | 2073.3 | 2018.2 |
| 80° | 723.2 | 750.8 | 874.8 | 1067.6 | 1542.9 | 1281.2 | 1604.9 | *1873.5* | 1818.4 | 1425.8 | 1294.9 |
| 82.5° | 516.6 | 564.8 | 675.0 | 812.8 | 1143.4 | 916.1 | 1053.9 | *1322.5* | 1322.5 | 1074.5 | 854.1 |
| 85° | 316.8 | 358.2 | 399.5 | 502.8 | 812.8 | 592.4 | 557.9 | *854.1* | 874.8 | 805.9 | 551.0 |
| 87.5° | 151.5 | 165.3 | 192.9 | 213.5 | 296.2 | 268.6 | 220.4 | *323.7* | 330.6 | 358.2 | 227.3 |
| 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: P1456252
CATALOG NUMBER: GLAN-SB8B-930-U-T2LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 4670.0 | 4670.0 | 4670.0 | 4670.0 | 4670.0 | 4670.0 | 4670.0 | 4670.0 | 4670.0 | 4670.0 | 4670.0 |
| 2.5° | 4711.3 | 4697.6 | 4628.7 | 4559.8 | 4484.0 | 4415.2 | 4346.3 | 4291.2 | 4229.2 | 4243.0 | 4249.9 |
| 5° | 4800.9 | 4766.4 | 4614.9 | 4435.8 | 4201.6 | 3981.2 | 3767.7 | 3616.2 | 3519.7 | 3492.2 | 3437.1 |
| 7.5° | 4993.8 | 4911.1 | 4635.6 | 4256.7 | 3822.8 | 3478.4 | 3278.7 | 3189.1 | 3161.6 | 3168.4 | 3154.7 |
| 10° | 5214.2 | 5090.2 | 4663.1 | 4043.2 | 3492.2 | 3258.0 | 3230.4 | 3285.5 | 3313.1 | 3340.6 | 3347.5 |
| 12.5° | 5503.5 | 5303.7 | 4649.4 | 3809.0 | 3333.8 | 3292.4 | 3395.8 | 3499.1 | 3561.1 | 3602.4 | 3595.5 |
| 15° | 5841.0 | 5572.3 | 4608.0 | 3616.2 | 3313.1 | 3423.3 | 3554.2 | 3671.3 | 3747.0 | 3788.4 | 3767.7 |
| 17.5° | 6247.4 | 5889.2 | 4559.8 | 3492.2 | 3375.1 | 3506.0 | 3643.7 | 3760.8 | 3843.5 | 3871.0 | 3850.4 |
| 20° | 6750.2 | 6247.4 | 4477.2 | 3437.1 | 3423.3 | 3540.4 | 3664.4 | 3774.6 | 3843.5 | 3871.0 | 3843.5 |
| 22.5° | 7342.5 | 6674.4 | 4408.3 | 3437.1 | 3444.0 | 3540.4 | 3629.9 | 3712.6 | 3774.6 | 3795.3 | 3760.8 |
| 25° | 8100.2 | 7170.3 | 4380.7 | 3492.2 | 3450.9 | 3506.0 | 3554.2 | 3602.4 | 3636.8 | 3650.6 | 3636.8 |
| 27.5° | 8871.7 | 7742.0 | 4394.5 | 3561.1 | 3444.0 | 3457.7 | 3457.7 | 3464.6 | 3471.5 | 3478.4 | 3471.5 |
| 30° | 9760.2 | 8320.6 | 4449.6 | 3650.6 | 3457.7 | 3388.9 | 3368.2 | 3326.9 | 3292.4 | 3264.9 | 3237.3 |
| 32.5° | 10621.2 | 8871.7 | 4546.0 | 3781.5 | 3444.0 | 3313.1 | 3271.8 | 3168.4 | 3072.0 | 2989.4 | 2989.4 |
| 35° | 11551.1 | 9443.4 | 4718.2 | 3877.9 | 3430.2 | 3244.2 | 3127.1 | 3010.0 | 2906.7 | 2789.6 | 2789.6 |
| 37.5° | 12350.1 | 9932.4 | 4856.0 | 3988.1 | 3416.4 | 3161.6 | 2975.6 | 2844.7 | 2734.5 | 2617.4 | 2603.6 |
| 40° | 12908.0 | 10214.8 | 4938.6 | 4029.4 | 3368.2 | 3051.4 | 2830.9 | 2665.6 | 2507.2 | 2348.8 | 2341.9 |
| 42.5° | 13176.6 | 10201.0 | 4890.4 | 4015.7 | 3278.7 | 2913.6 | 2707.0 | 2486.5 | 2273.0 | 2128.4 | 2114.6 |
| 45° | 13321.3 | 10111.5 | 4704.5 | 3898.6 | 3134.0 | 2768.9 | 2548.5 | 2314.3 | 2100.8 | 1969.9 | 1942.4 |
| 47.5° | 13293.7 | 9891.1 | 4449.6 | 3609.3 | 2941.1 | 2610.5 | 2390.1 | 2149.0 | 1976.8 | 1901.1 | 1901.1 |
| 50° | 13369.5 | 9718.9 | 4160.3 | 3278.7 | 2679.4 | 2424.6 | 2245.5 | 2025.1 | 1921.7 | 1825.3 | 1790.9 |
| 52.5° | 13707.0 | 9863.5 | 3912.3 | 2968.7 | 2431.4 | 2245.5 | 2121.5 | 1935.5 | 1804.6 | 1742.6 | 1722.0 |
| 55° | 14154.7 | 10173.5 | 3678.2 | 2693.2 | 2190.4 | 2087.0 | 2025.1 | 1852.9 | 1701.3 | 1639.3 | 1604.9 |
| 57.5° | 14237.4 | 10387.0 | 3450.9 | 2424.6 | 1990.6 | 1963.1 | 1942.4 | 1708.2 | 1584.2 | 1536.0 | 1508.5 |
| 60° | 13665.7 | 10228.6 | 3154.7 | 2183.5 | 1832.2 | 1846.0 | 1790.9 | 1618.7 | 1474.0 | 1425.8 | 1398.3 |
| 62.5° | 12694.5 | 9815.3 | 2858.5 | 1976.8 | 1708.2 | 1735.8 | 1680.7 | 1508.5 | 1363.8 | 1315.6 | 1301.8 |
| 63° | *12501.6* | *9705.1* | *2789.6* | *1956.2* | *1680.7* | *1715.1* | *1666.9* | *1494.7* | *1350.0* | *1301.8* | *1281.2* |
| 65° | 11351.3 | 9043.9 | 2548.5 | 1846.0 | 1591.1 | 1591.1 | 1598.0 | 1425.8 | 1301.8 | 1281.2 | 1267.4 |
| 67.5° | 9257.4 | 7549.2 | 2286.8 | 1715.1 | 1494.7 | 1515.3 | 1549.8 | 1453.4 | 1405.1 | 1391.4 | 1377.6 |
| 70° | 6998.1 | 5682.5 | 2059.5 | 1591.1 | 1391.4 | 1460.2 | 1694.4 | 1653.1 | 1474.0 | 1350.0 | 1322.5 |
| 72.5° | 4959.3 | 3871.0 | 1859.7 | 1467.1 | 1267.4 | 1439.6 | 1756.4 | 1577.3 | 1329.4 | 1184.7 | 1157.2 |
| 75° | 3320.0 | 2493.4 | 1660.0 | 1336.3 | 1129.6 | 1329.4 | 1660.0 | 1439.6 | 1157.2 | 1122.7 | 1081.4 |
| 77.5° | 2087.0 | 1777.1 | 1460.2 | 1184.7 | 978.1 | 1184.7 | 1508.5 | 1281.2 | 998.8 | 1012.5 | 950.5 |
| 80° | 1274.3 | 1267.4 | 1226.1 | 1005.6 | 785.2 | 943.6 | 1267.4 | 1081.4 | 799.0 | 799.0 | 709.5 |
| 82.5° | 757.7 | 916.1 | 1040.1 | 833.4 | 571.7 | 675.0 | 916.1 | 812.8 | 668.1 | 647.5 | 606.1 |
| 85° | 509.7 | 619.9 | 826.6 | 640.6 | 365.1 | 413.3 | 633.7 | 681.9 | 613.0 | 537.3 | 502.8 |
| 87.5° | 186.0 | 248.0 | 378.8 | 261.7 | 158.4 | 248.0 | 475.3 | 495.9 | 371.9 | 289.3 | 261.7 |
| 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: SP1-2407-184-14

Test Date: 10/11/2024

Luminaire Tested: GSS-SB1A-930-U-5WQ

Data in this report applies to families of products including GSS-SB1A-930-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

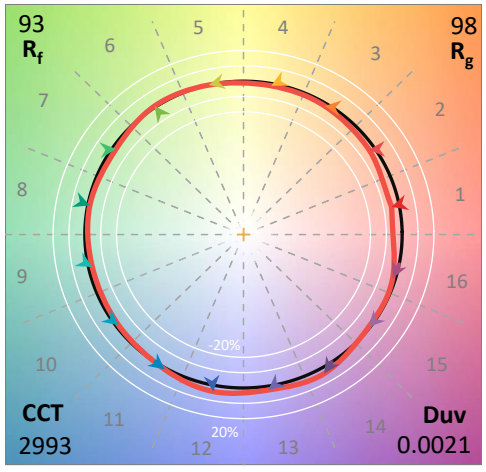
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-14 |
| 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-930-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 90 CRI 3000K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 2993 |
| CIE u': | 0.2501 |
| CIE v': | 0.5245 |
| Duv: | 0.0021 |
| CIE x: | 0.4406 |
| CIE y: | 0.4107 |
| CIE z: | 0.1487 |
| Peak Wavelength (nm): | 621 |
| Dominant Wavelength (nm): | 582 |
| Purity: | 55.53327 |
| Rf: | 92.6 |
| Rg: | 98.5 |

| | |
|---|---|
| CRI (Ra): | 92.4 |
| R1: | 92.2 |
| R2: | 95.2 |
| R3: | 97.0 |
| R4: | 93.1 |
| R5: | 91.7 |
| R6: | 94.2 |
| R7: | 93.3 |
| R8: | 82.3 |
| R9: | 58.2 |
| R10: | 87.7 |
| R11: | 93.5 |
| R12: | 81.7 |
| R13: | 92.9 |
| R14: | 97.6 |
| R15: | 88.1 |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 20M |
| Operation Time: | 1H 20M |
| 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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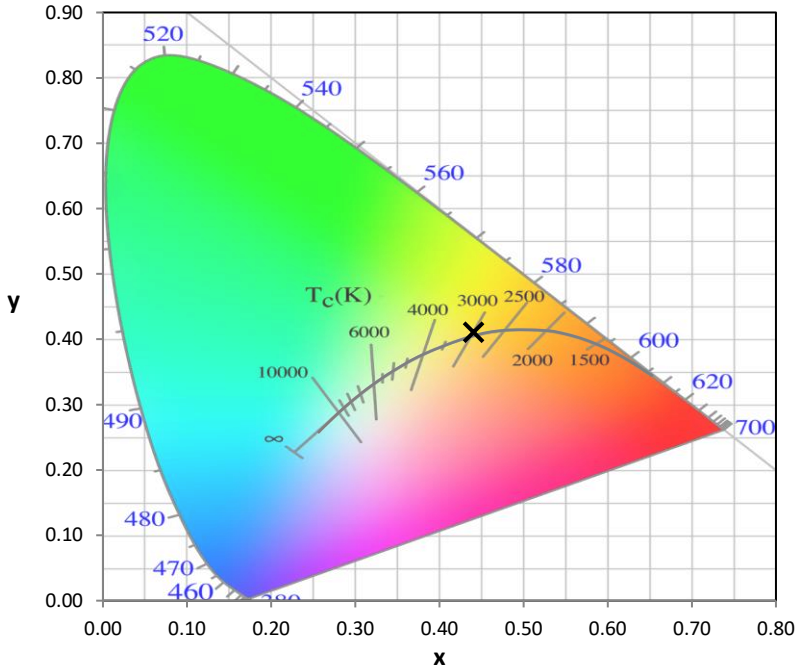
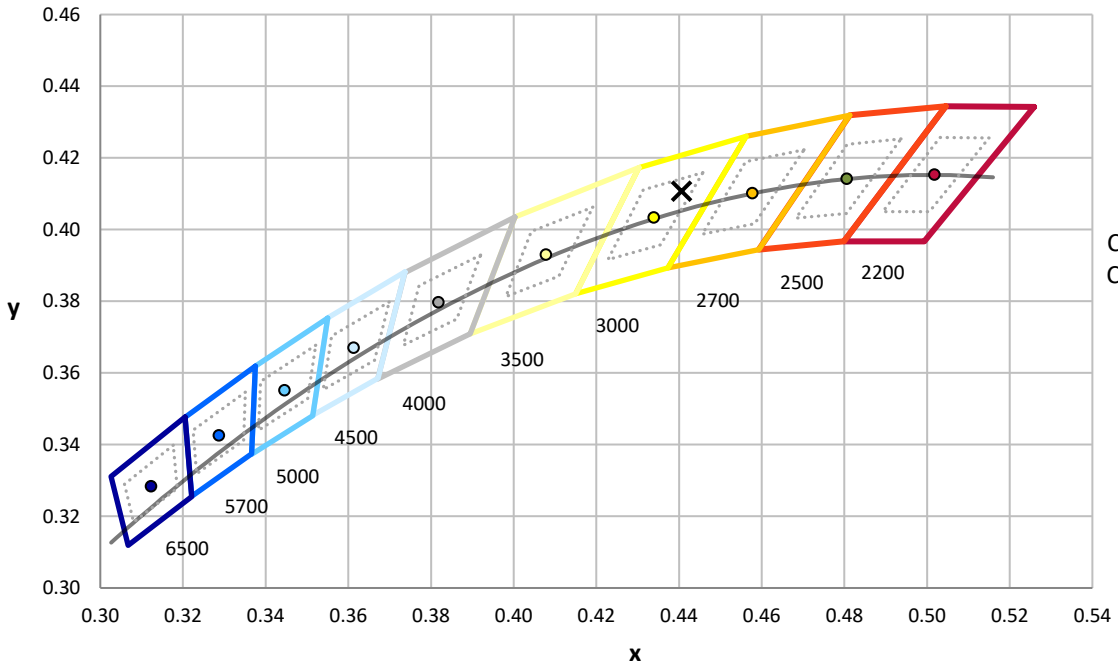
## CIE 1931 Chromaticity Diagram




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




CCT = 2993K
CIE x = 0.4406
CIE y = 0.4107
Duv = 0.0021

Point lies inside the ANSI 3000K 4-step quadrangle

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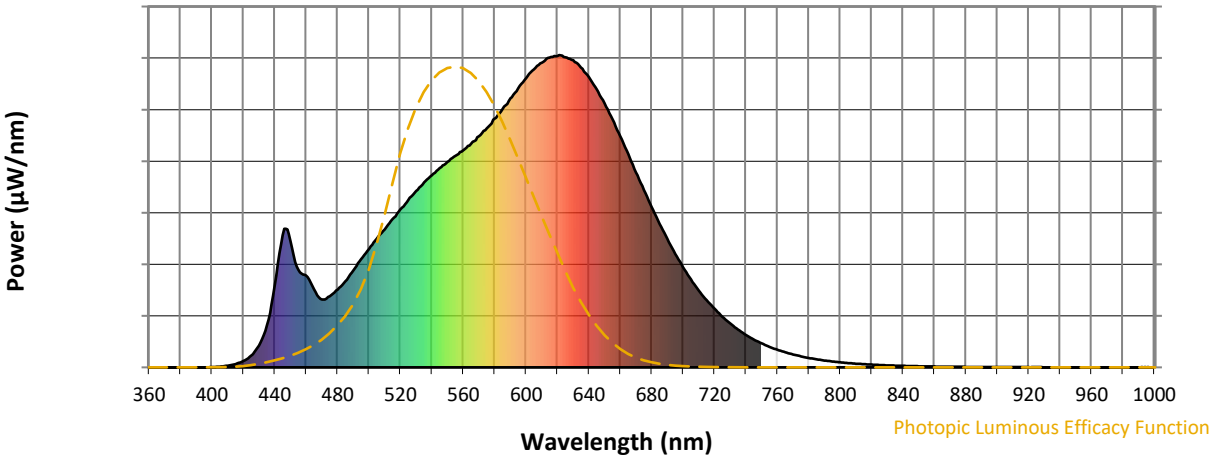
## Photopic Flux vs. Wavelength




## 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 | 310 | NR | 620 | 998 | NR | 750 | 77 | NR | 880 | 2 | NR |
| 365 | 0 | NR | 495 | 347 | NR | 625 | 993 | NR | 755 | 66 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 379 | NR | 630 | 983 | NR | 760 | 56 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 412 | NR | 635 | 960 | NR | 765 | 48 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 442 | NR | 640 | 930 | NR | 770 | 41 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 475 | NR | 645 | 889 | NR | 775 | 35 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 506 | NR | 650 | 846 | NR | 780 | 30 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 535 | NR | 655 | 794 | NR | 785 | 26 | NR | 915 | 1 | NR |
| 400 | 1 | NR | 530 | 565 | NR | 660 | 740 | NR | 790 | 22 | NR | 920 | 1 | NR |
| 405 | 2 | NR | 535 | 592 | NR | 665 | 684 | NR | 795 | 19 | NR | 925 | 1 | NR |
| 410 | 6 | NR | 540 | 615 | NR | 670 | 624 | NR | 800 | 16 | NR | 930 | 0 | NR |
| 415 | 10 | NR | 545 | 638 | NR | 675 | 567 | NR | 805 | 14 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 658 | NR | 680 | 513 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 38 | NR | 555 | 678 | NR | 685 | 459 | NR | 815 | 10 | NR | 945 | 0 | NR |
| 430 | 70 | NR | 560 | 695 | NR | 690 | 412 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 136 | NR | 565 | 716 | NR | 695 | 363 | NR | 825 | 8 | NR | 955 | 0 | NR |
| 440 | 262 | NR | 570 | 740 | NR | 700 | 320 | NR | 830 | 7 | NR | 960 | 0 | NR |
| 445 | 424 | NR | 575 | 765 | NR | 705 | 281 | NR | 835 | 6 | NR | 965 | 0 | NR |
| 450 | 406 | NR | 580 | 796 | NR | 710 | 245 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 313 | NR | 585 | 827 | NR | 715 | 215 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 294 | NR | 590 | 861 | NR | 720 | 188 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 250 | NR | 595 | 894 | NR | 725 | 162 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 217 | NR | 600 | 927 | NR | 730 | 140 | NR | 860 | 3 | NR | 990 | 0 | NR |
| 475 | 228 | NR | 605 | 954 | NR | 735 | 121 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 249 | NR | 610 | 976 | NR | 740 | 104 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 276 | NR | 615 | 992 | NR | 745 | 89 | NR | 875 | 2 | NR | | | |

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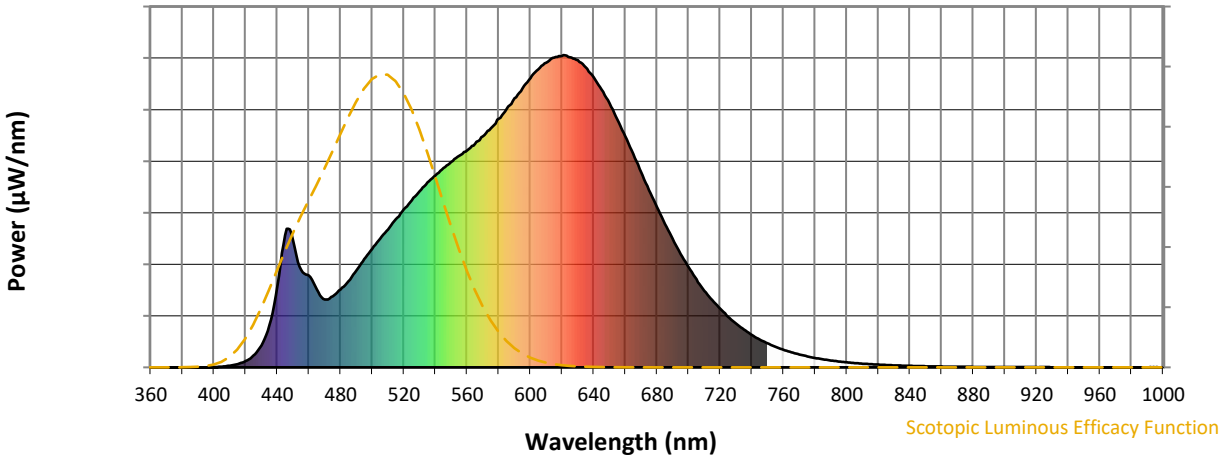
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.39**

| 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 | 310 | NR | 620 | 998 | NR | 750 | 77 | NR | 880 | 2 | NR |
| 365 | 0 | NR | 495 | 347 | NR | 625 | 993 | NR | 755 | 66 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 379 | NR | 630 | 983 | NR | 760 | 56 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 412 | NR | 635 | 960 | NR | 765 | 48 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 442 | NR | 640 | 930 | NR | 770 | 41 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 475 | NR | 645 | 889 | NR | 775 | 35 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 506 | NR | 650 | 846 | NR | 780 | 30 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 535 | NR | 655 | 794 | NR | 785 | 26 | NR | 915 | 1 | NR |
| 400 | 1 | NR | 530 | 565 | NR | 660 | 740 | NR | 790 | 22 | NR | 920 | 1 | NR |
| 405 | 2 | NR | 535 | 592 | NR | 665 | 684 | NR | 795 | 19 | NR | 925 | 1 | NR |
| 410 | 6 | NR | 540 | 615 | NR | 670 | 624 | NR | 800 | 16 | NR | 930 | 0 | NR |
| 415 | 10 | NR | 545 | 638 | NR | 675 | 567 | NR | 805 | 14 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 658 | NR | 680 | 513 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 38 | NR | 555 | 678 | NR | 685 | 459 | NR | 815 | 10 | NR | 945 | 0 | NR |
| 430 | 70 | NR | 560 | 695 | NR | 690 | 412 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 136 | NR | 565 | 716 | NR | 695 | 363 | NR | 825 | 8 | NR | 955 | 0 | NR |
| 440 | 262 | NR | 570 | 740 | NR | 700 | 320 | NR | 830 | 7 | NR | 960 | 0 | NR |
| 445 | 424 | NR | 575 | 765 | NR | 705 | 281 | NR | 835 | 6 | NR | 965 | 0 | NR |
| 450 | 406 | NR | 580 | 796 | NR | 710 | 245 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 313 | NR | 585 | 827 | NR | 715 | 215 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 294 | NR | 590 | 861 | NR | 720 | 188 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 250 | NR | 595 | 894 | NR | 725 | 162 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 217 | NR | 600 | 927 | NR | 730 | 140 | NR | 860 | 3 | NR | 990 | 0 | NR |
| 475 | 228 | NR | 605 | 954 | NR | 735 | 121 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 249 | NR | 610 | 976 | NR | 740 | 104 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 276 | NR | 615 | 992 | NR | 745 | 89 | NR | 875 | 2 | NR | | | |

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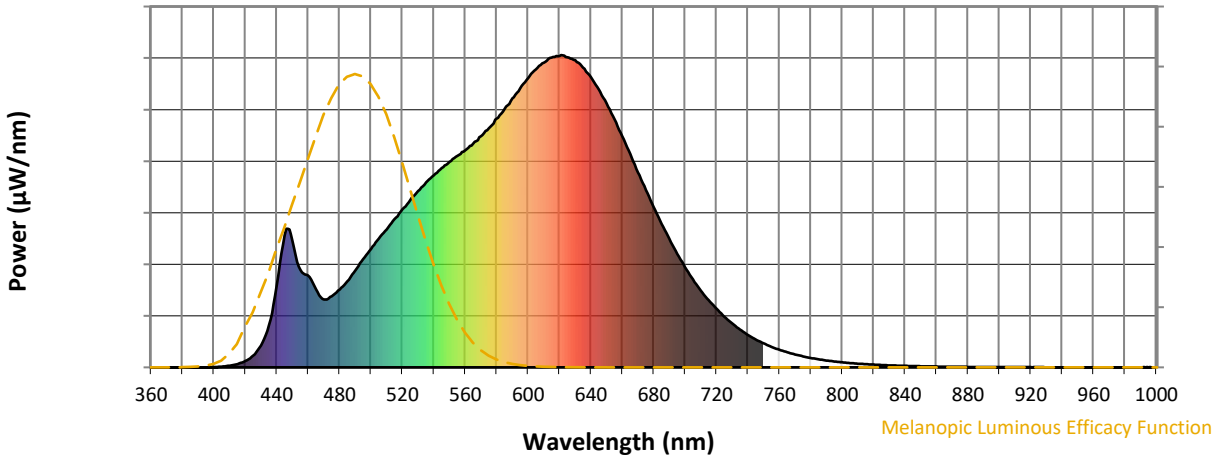
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.69**

| 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 | 310 | NR | 620 | 998 | NR | 750 | 77 | NR | 880 | 2 | NR |
| 365 | 0 | NR | 495 | 347 | NR | 625 | 993 | NR | 755 | 66 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 379 | NR | 630 | 983 | NR | 760 | 56 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 412 | NR | 635 | 960 | NR | 765 | 48 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 442 | NR | 640 | 930 | NR | 770 | 41 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 475 | NR | 645 | 889 | NR | 775 | 35 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 506 | NR | 650 | 846 | NR | 780 | 30 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 535 | NR | 655 | 794 | NR | 785 | 26 | NR | 915 | 1 | NR |
| 400 | 1 | NR | 530 | 565 | NR | 660 | 740 | NR | 790 | 22 | NR | 920 | 1 | NR |
| 405 | 2 | NR | 535 | 592 | NR | 665 | 684 | NR | 795 | 19 | NR | 925 | 1 | NR |
| 410 | 6 | NR | 540 | 615 | NR | 670 | 624 | NR | 800 | 16 | NR | 930 | 0 | NR |
| 415 | 10 | NR | 545 | 638 | NR | 675 | 567 | NR | 805 | 14 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 658 | NR | 680 | 513 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 38 | NR | 555 | 678 | NR | 685 | 459 | NR | 815 | 10 | NR | 945 | 0 | NR |
| 430 | 70 | NR | 560 | 695 | NR | 690 | 412 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 136 | NR | 565 | 716 | NR | 695 | 363 | NR | 825 | 8 | NR | 955 | 0 | NR |
| 440 | 262 | NR | 570 | 740 | NR | 700 | 320 | NR | 830 | 7 | NR | 960 | 0 | NR |
| 445 | 424 | NR | 575 | 765 | NR | 705 | 281 | NR | 835 | 6 | NR | 965 | 0 | NR |
| 450 | 406 | NR | 580 | 796 | NR | 710 | 245 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 313 | NR | 585 | 827 | NR | 715 | 215 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 294 | NR | 590 | 861 | NR | 720 | 188 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 250 | NR | 595 | 894 | NR | 725 | 162 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 217 | NR | 600 | 927 | NR | 730 | 140 | NR | 860 | 3 | NR | 990 | 0 | NR |
| 475 | 228 | NR | 605 | 954 | NR | 735 | 121 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 249 | NR | 610 | 976 | NR | 740 | 104 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 276 | NR | 615 | 992 | NR | 745 | 89 | NR | 875 | 2 | NR | | | |

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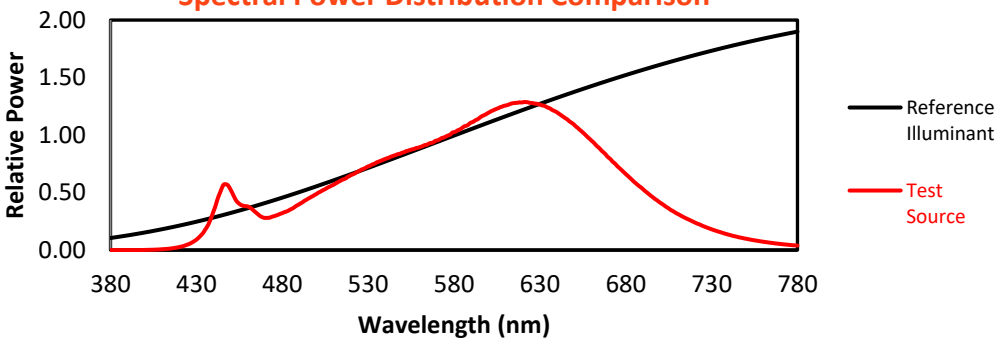
# TM-30-18

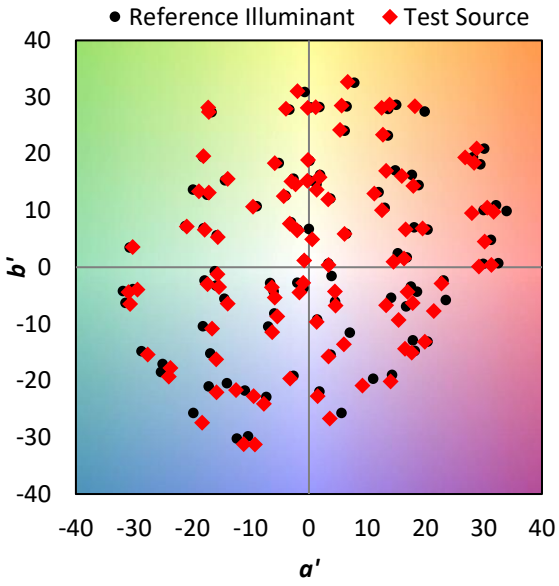
## Summary

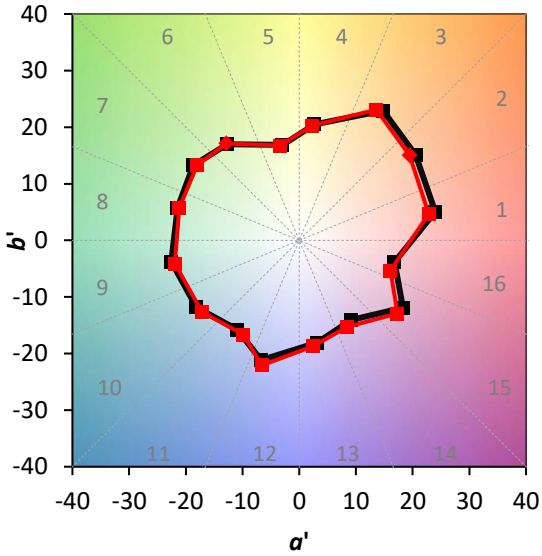
$R_f$ = 92.6
$R_g$ = 98.5
CIE $R_a$ = 92.4
$R_9$ = 58.2

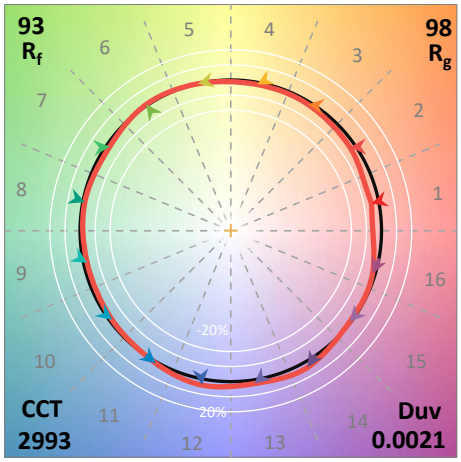
## Spectral Power Distribution Comparison

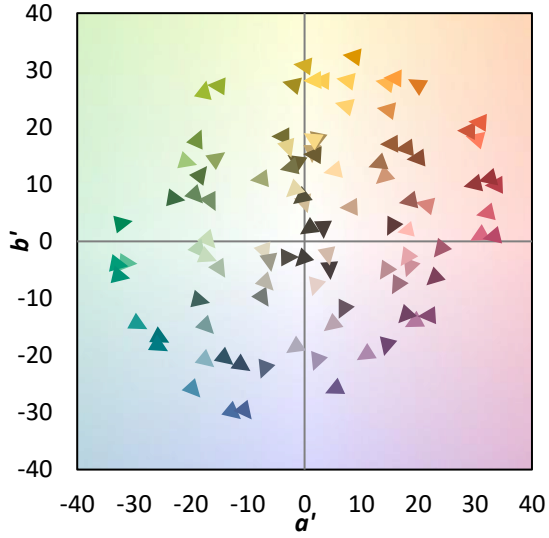



## Color Vector Graphics



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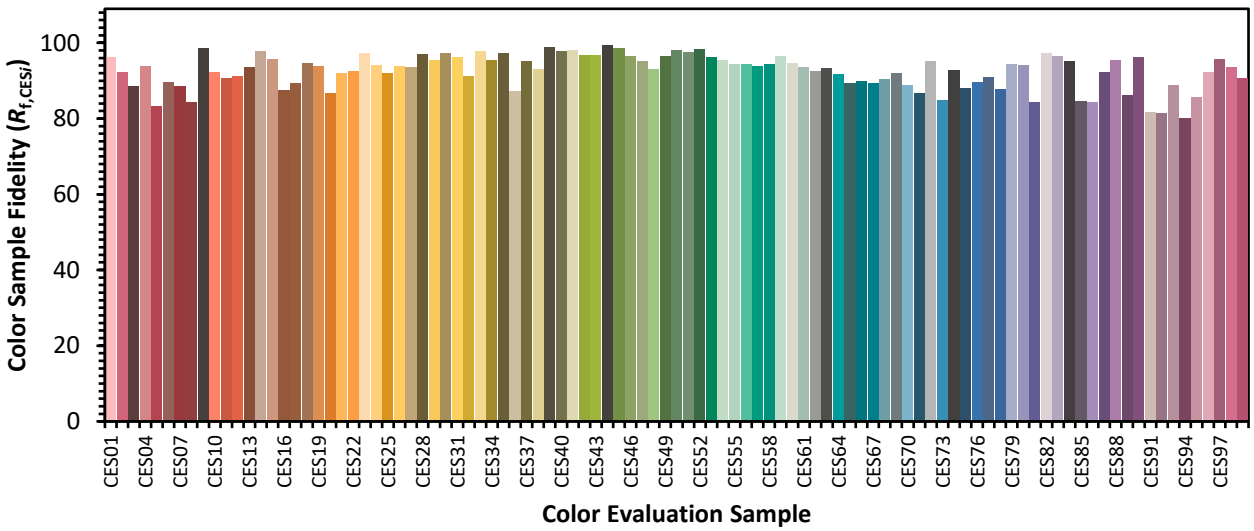
# TM-30-18

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

| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 94 | CES51 = 98 | CES76 = 90 |
| CES02 = 63 | CES27 = 94 | CES52 = 98 | CES77 = 91 |
| CES03 = 32 | CES28 = 97 | CES53 = 96 | CES78 = 88 |
| CES04 = 70 | CES29 = 95 | CES54 = 95 | CES79 = 94 |
| CES05 = 51 | CES30 = 97 | CES55 = 94 | CES80 = 94 |
| CES06 = 51 | CES31 = 96 | CES56 = 94 | CES81 = 84 |
| CES07 = 43 | CES32 = 91 | CES57 = 94 | CES82 = 97 |
| CES08 = 42 | CES33 = 98 | CES58 = 94 | CES83 = 97 |
| CES09 = 29 | CES34 = 96 | CES59 = 97 | CES84 = 95 |
| CES10 = 76 | CES35 = 97 | CES60 = 95 | CES85 = 85 |
| CES11 = 59 | CES36 = 87 | CES61 = 94 | CES86 = 84 |
| CES12 = 65 | CES37 = 95 | CES62 = 92 | CES87 = 92 |
| CES13 = 44 | CES38 = 93 | CES63 = 93 | CES88 = 95 |
| CES14 = 74 | CES39 = 99 | CES64 = 92 | CES89 = 86 |
| CES15 = 72 | CES40 = 98 | CES65 = 89 | CES90 = 96 |
| CES16 = 48 | CES41 = 98 | CES66 = 90 | CES91 = 82 |
| CES17 = 50 | CES42 = 97 | CES67 = 89 | CES92 = 81 |
| CES18 = 57 | CES43 = 97 | CES68 = 90 | CES93 = 89 |
| CES19 = 72 | CES44 = 99 | CES69 = 92 | CES94 = 80 |
| CES20 = 67 | CES45 = 99 | CES70 = 89 | CES95 = 86 |
| CES21 = 86 | CES46 = 96 | CES71 = 87 | CES96 = 92 |
| CES22 = 79 | CES47 = 95 | CES72 = 95 | CES97 = 96 |
| CES23 = 92 | CES48 = 93 | CES73 = 85 | CES98 = 94 |
| CES24 = 91 | CES49 = 97 | CES74 = 93 | CES99 = 91 |
| CES25 = 72 | CES50 = 98 | CES75 = 88 | |



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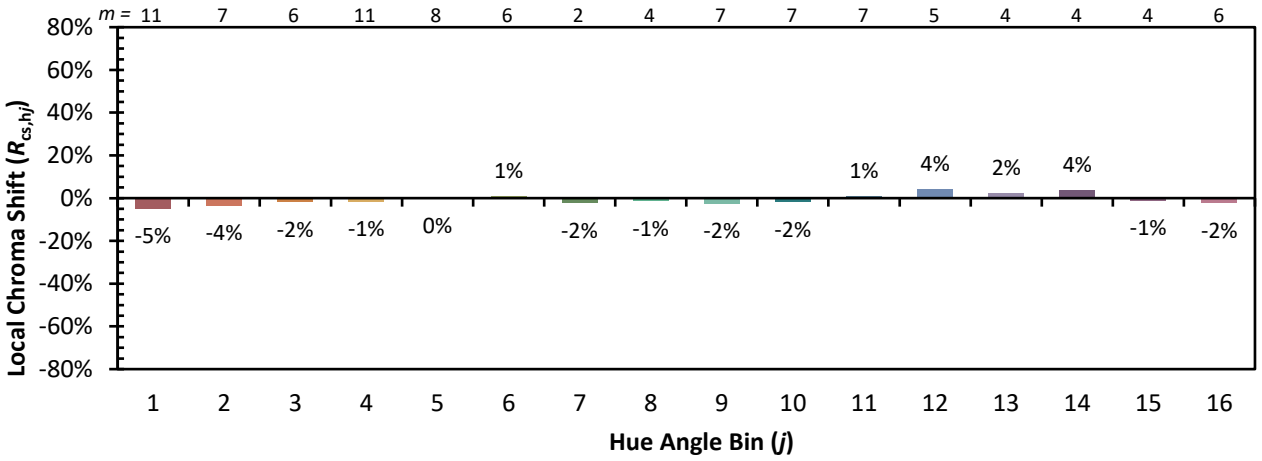
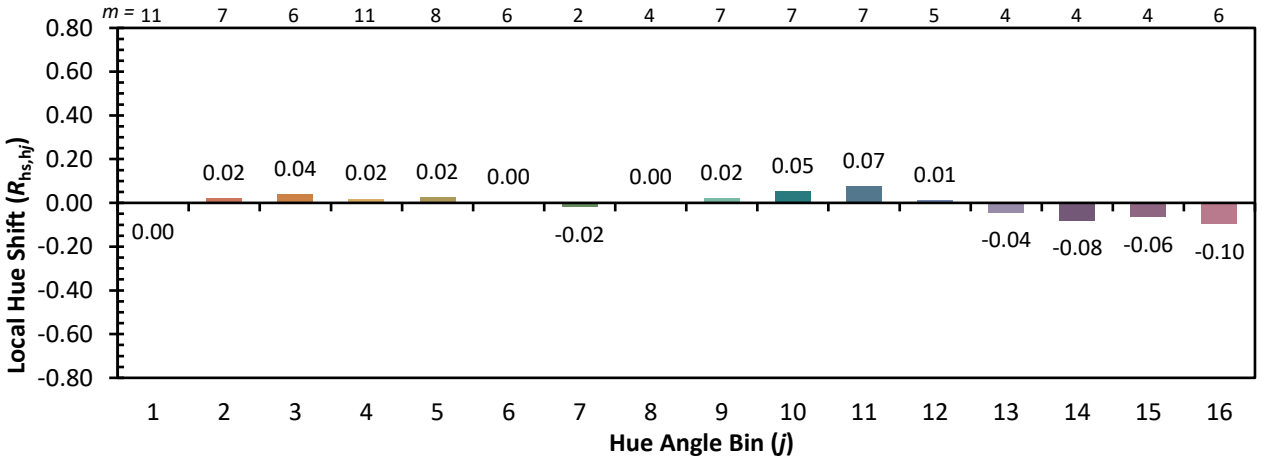
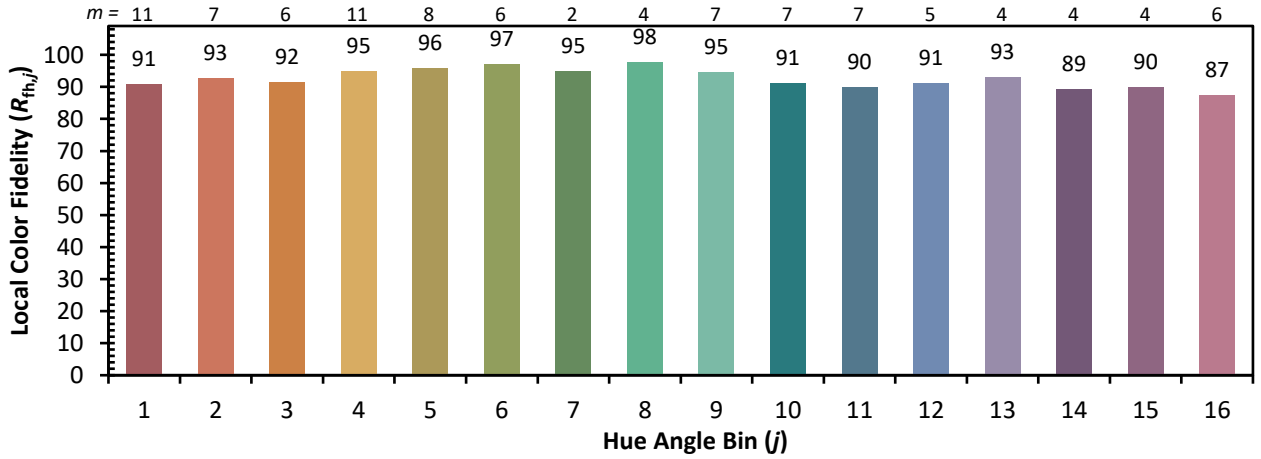
# TM-30-18

## Color Rendition by Hue-Angle Bin



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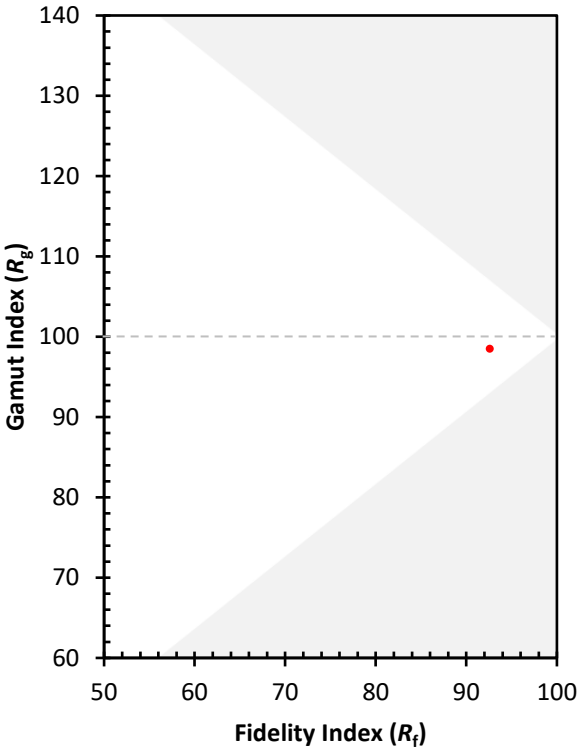
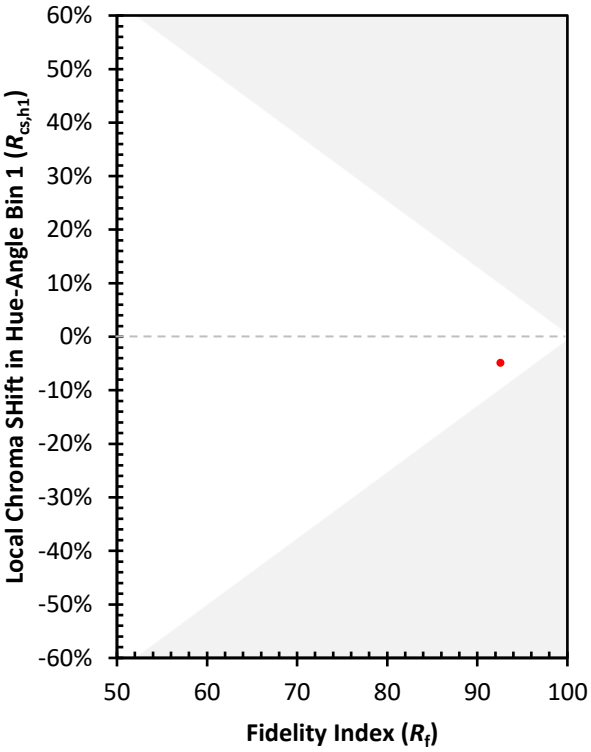
## Measure Comparisons




(END OF REPORT)