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: P1456240

Luminaire Tested: GLAN-SB5B-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: | P1456240 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/22/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB5B-930-U-T2LG |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 450mA 5xLight Square PACKAGE 90CRI 3000K FIXTURE w/ TYPE II LOW GLARE |
| Light Source: | (130) 3000K CCT, 90 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 19156.5 lumens |
| Efficiency: | N/A |
| Efficacy: | 104.9 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1' x H: 0') |
| IES Classification: | Type II - Short |
| BUG Rating: | B3 - U0 - G3 |

| | |
|---|---|
| Input Watts (W): | 182.7 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.97 |
| Total Harmonic Distortion (THDi): | NR |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1456240
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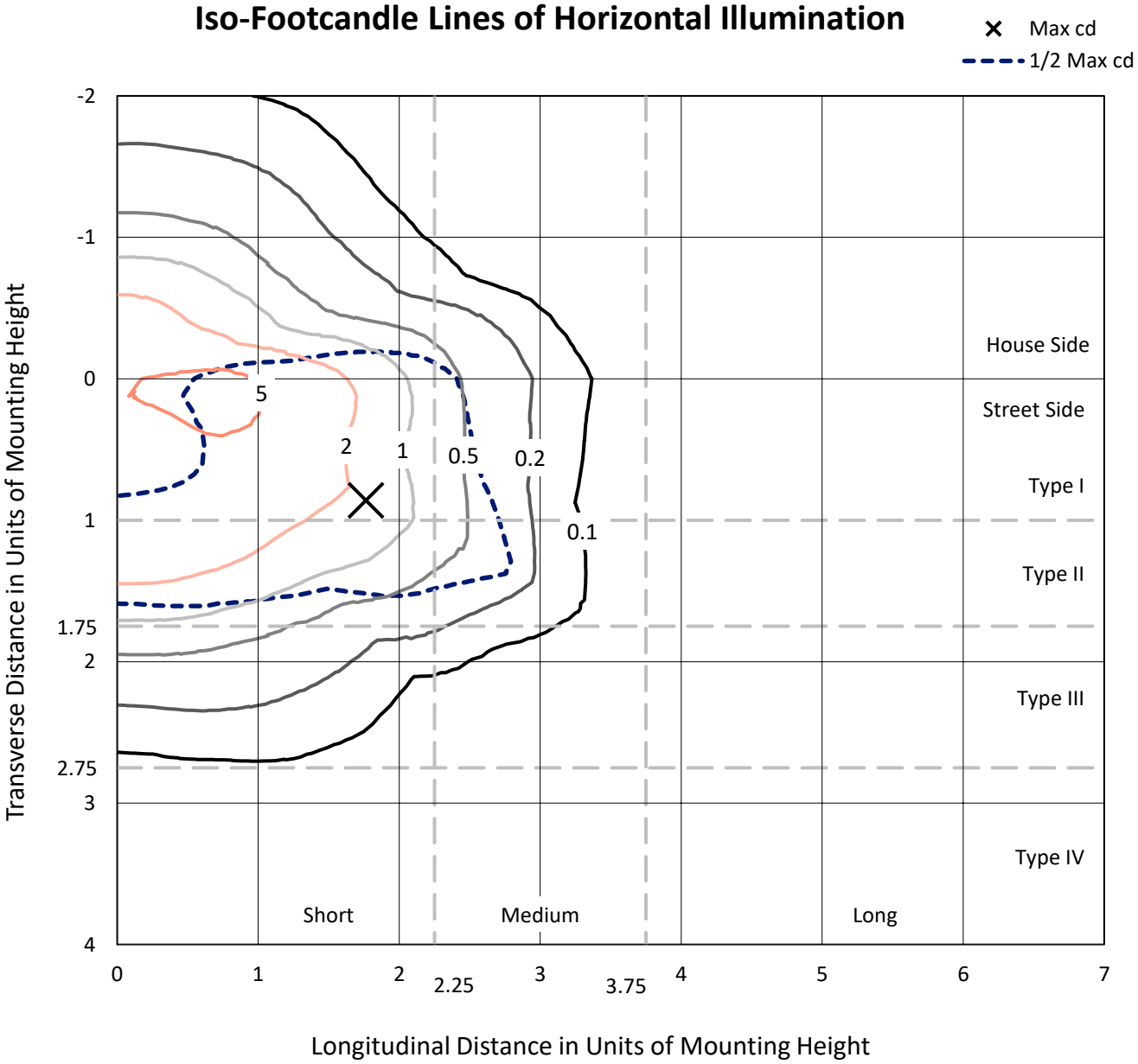
## Iso-Footcandle Lines of Horizontal Illumination




Based on 25 foot mounting height. Maximum calculated value = 7.2 fc
Type II - Short - N/A

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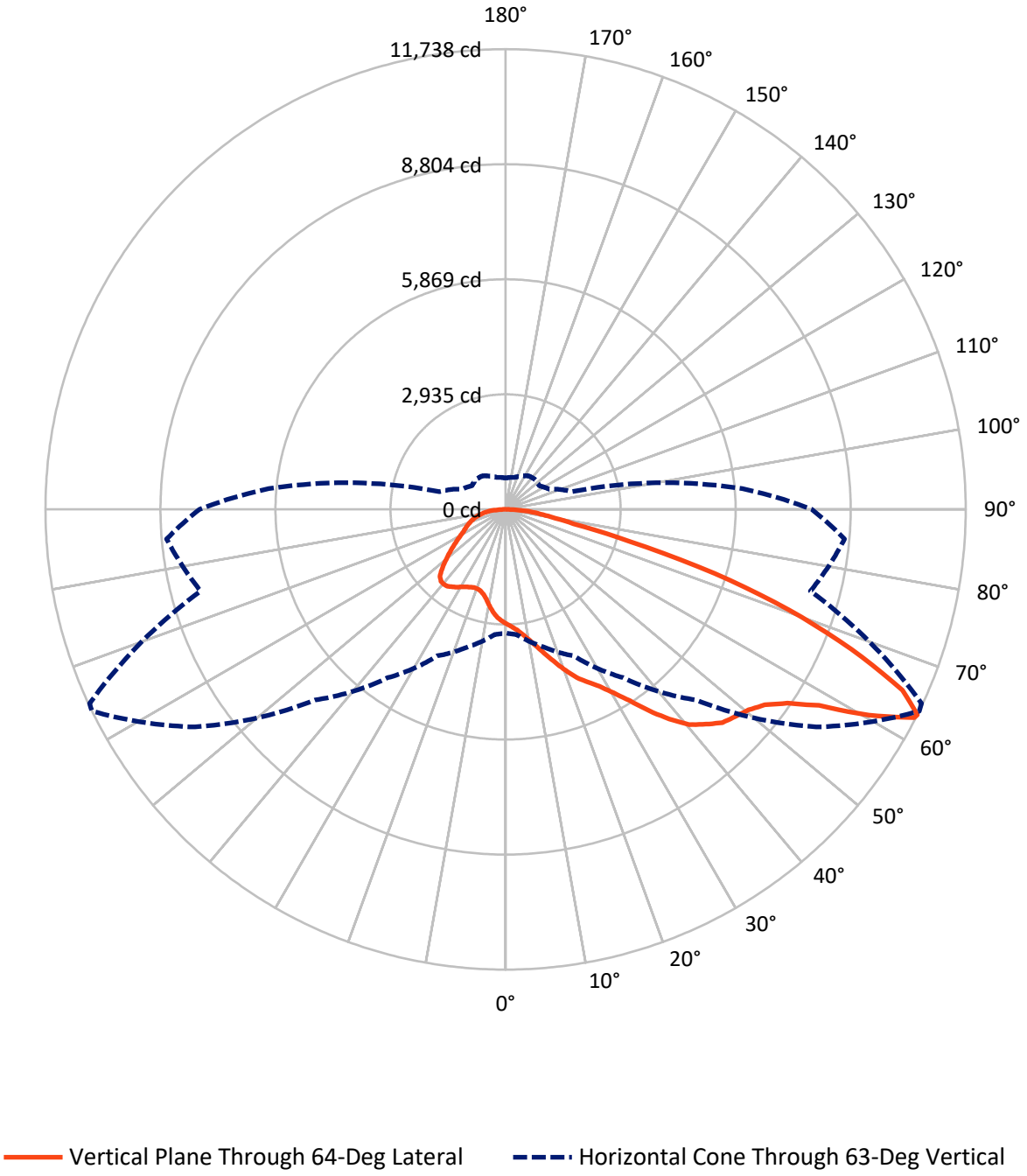
## Luminous Intensity Polar Plot



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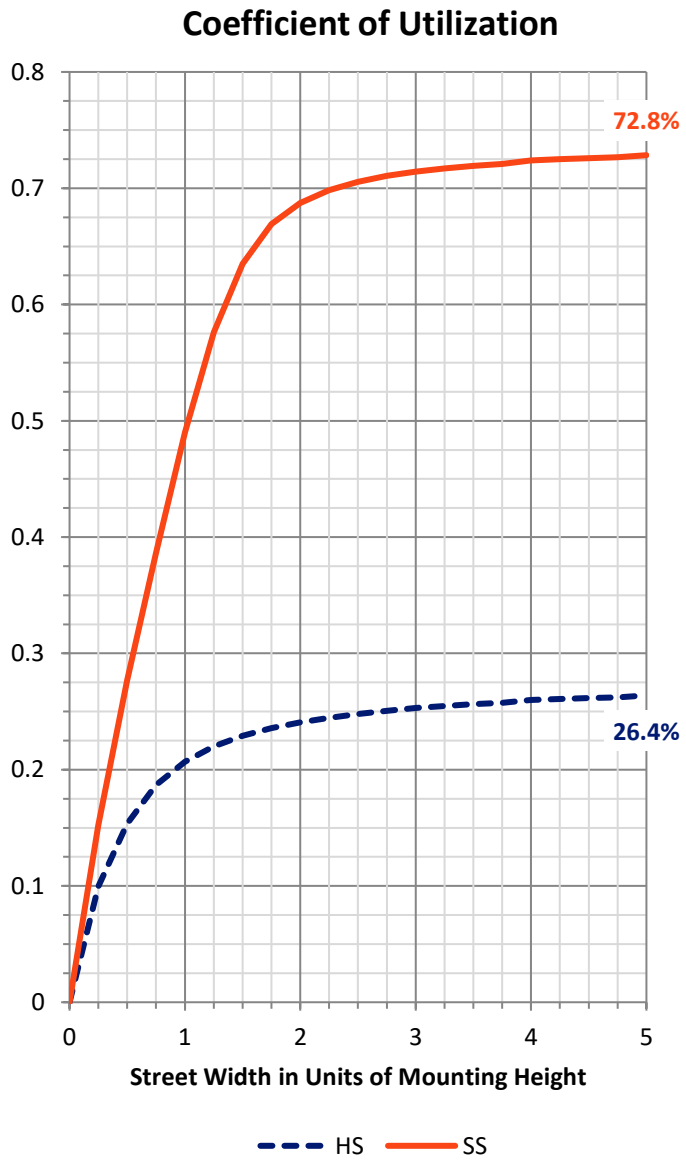
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 5146.8 | 0.0 | 5146.8 |
| | % Fixture | 26.9 | 0.0 | 26.9 |
| **Street Side** | Lumens | 14009.7 | 0.0 | 14009.7 |
| | % Fixture | 73.1 | 0.0 | 73.1 |
| **Total** | Lumens | 19156.5 | 0.0 | 19156.5 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 267.9 | 1.4 |
| 10°-20° | 824.6 | 4.3 |
| 20°-30° | 1507.9 | 7.9 |
| 30°-40° | 2593.8 | 13.5 |
| 40°-50° | 3825.2 | 20.0 |
| 50°-60° | 4584.7 | 23.9 |
| 60°-70° | 3679.7 | 19.2 |
| 70°-80° | 1478.6 | 7.7 |
| 80°-90° | 394.3 | 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° | 19156.5 | 100.0 |
| 0°-180° | 19156.5 | 100.0 |



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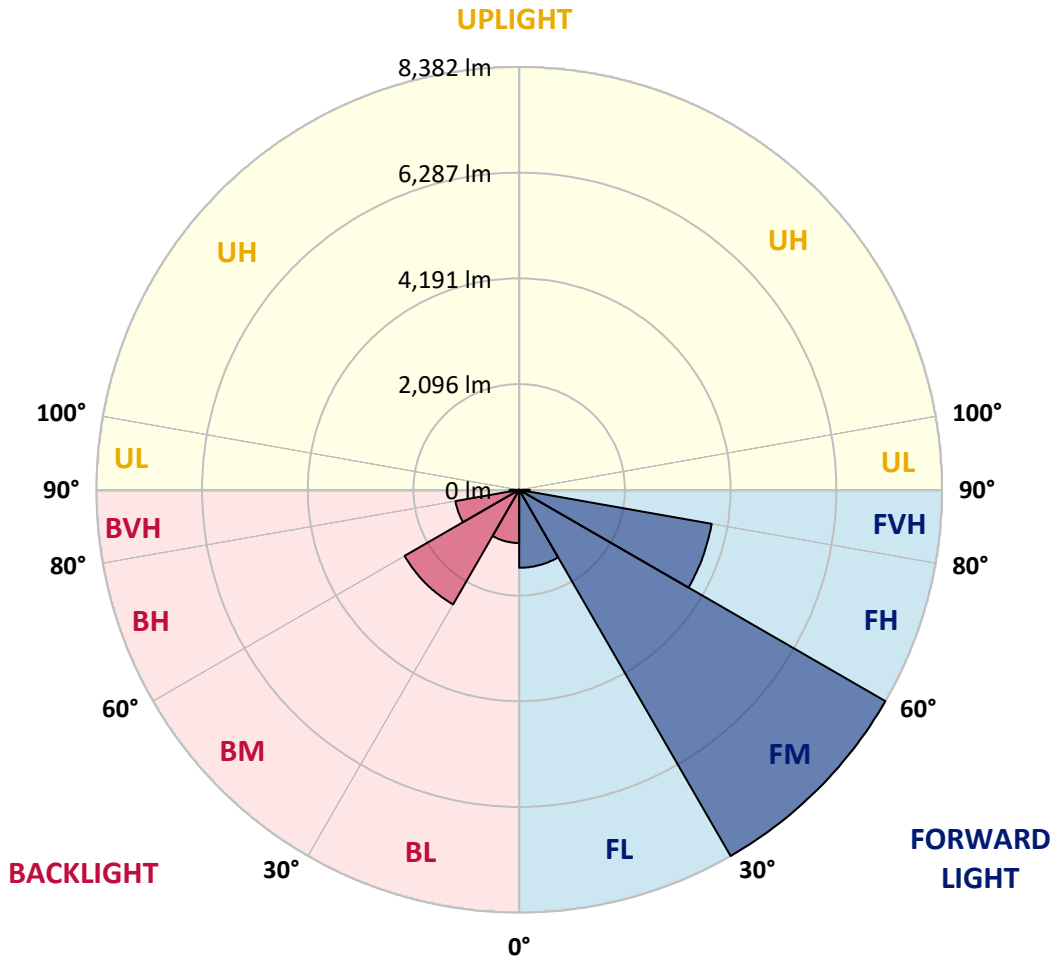
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1545.6 | 8.1 | | | |
| FM | (30°-60°) | 8382.0 | 43.8 | | | |
| FH | (60°-80°) | 3875.0 | 20.2 | | | G2/5000 |
| FVH | (80°-90°) | 207.1 | 1.1 | | | G2/225 |
| BL | (0°-30°) | 1054.8 | 5.5 | B3/2500 | | |
| BM | (30°-60°) | 2621.7 | 13.7 | B3/5000 | | |
| BH | (60°-80°) | 1283.3 | 6.7 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 187.1 | 1.0 | | | G2/225 |
| 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: P1456240
CATALOG NUMBER: GLAN-SB5B-930-U-T2LG

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 64° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2917.3 | 2917.3 | 2917.3 | 2917.3 | 2917.3 | 2917.3 | 2917.3 | *2917.3* | 2917.3 | 2917.3 | 2917.3 |
| 2.5° | 3037.8 | 3042.1 | 3029.2 | 3024.9 | 3033.5 | 3016.3 | 3012.0 | *2994.8* | 2986.2 | 2969.0 | 2947.4 |
| 5° | 3123.9 | 3128.2 | 3119.6 | 3119.6 | 3128.2 | 3115.3 | 3111.0 | *3093.7* | 3085.1 | 3067.9 | 3024.9 |
| 7.5° | 3119.6 | 3123.9 | 3132.5 | 3166.9 | 3209.9 | 3227.1 | 3240.0 | *3227.1* | 3222.8 | 3197.0 | 3154.0 |
| 10° | 3050.7 | 3055.0 | 3076.5 | 3128.2 | 3235.7 | 3313.2 | 3394.9 | *3394.9* | 3403.5 | 3382.0 | 3304.6 |
| 12.5° | 2956.0 | 2960.4 | 3012.0 | 3093.7 | 3235.7 | 3369.1 | 3536.9 | *3605.8* | 3601.5 | 3588.6 | 3498.2 |
| 15° | 2728.0 | 2728.0 | 2805.5 | 2960.4 | 3188.4 | 3407.8 | 3657.4 | *3842.4* | 3846.7 | 3859.6 | 3752.1 |
| 17.5° | 2534.4 | 2538.7 | 2603.2 | 2740.9 | 3037.8 | 3386.3 | 3786.5 | *4104.9* | 4117.8 | 4191.0 | 4036.1 |
| 20° | 2551.6 | 2551.6 | 2573.1 | 2633.3 | 2874.3 | 3300.3 | 3859.6 | *4384.6* | 4427.6 | 4599.7 | 4406.1 |
| 22.5° | 2685.0 | 2685.0 | 2702.2 | 2697.9 | 2844.2 | 3244.3 | 3907.0 | *4664.3* | 4741.7 | 5098.9 | 4849.3 |
| 25° | 2930.2 | 2925.9 | 2908.7 | 2882.9 | 2969.0 | 3304.6 | 4014.5 | *4879.4* | 5030.0 | 5649.6 | 5361.3 |
| 27.5° | 3231.4 | 3222.8 | 3197.0 | 3154.0 | 3214.2 | 3485.3 | 4199.6 | *5107.5* | 5271.0 | 6252.0 | 5903.5 |
| 30° | 3605.8 | 3580.0 | 3554.1 | 3498.2 | 3562.7 | 3782.2 | 4475.0 | *5430.2* | 5585.1 | 6936.2 | 6557.5 |
| 32.5° | 4049.0 | 4079.1 | 3993.0 | 3915.6 | 3984.4 | 4186.7 | 4883.7 | *5813.1* | 5980.9 | 7650.4 | 7237.4 |
| 35° | 4711.6 | 4802.0 | 4776.1 | 4384.6 | 4449.1 | 4672.9 | 5361.3 | *6308.0* | 6458.6 | 8300.2 | 7934.4 |
| 37.5° | 5365.6 | 5344.1 | 5365.6 | 5038.6 | 4935.4 | 5206.4 | 5873.4 | *6781.3* | 6927.6 | 8829.4 | 8549.7 |
| 40° | 5890.6 | 5955.1 | 5955.1 | 5688.4 | 5555.0 | 5735.7 | 6338.1 | *7215.9* | 7357.9 | 9122.0 | 8992.9 |
| 42.5° | 6462.9 | 6471.5 | 6454.3 | 6221.9 | 6170.3 | 6217.6 | 6746.8 | *7491.2* | 7607.4 | 9272.6 | 9294.1 |
| 45° | 7108.3 | 7104.0 | 7030.8 | 6837.2 | 6759.8 | 6716.7 | 7000.7 | *7758.0* | 7874.2 | 9341.5 | 9457.6 |
| 47.5° | 7641.8 | 7663.4 | 7667.7 | 7461.1 | 7332.0 | 7147.0 | 7220.2 | *7891.4* | 8024.8 | 9264.0 | 9492.1 |
| 50° | 7672.0 | 7706.4 | 7869.9 | 7930.1 | 7904.3 | 7607.4 | 7422.4 | *8033.4* | 8166.8 | 9281.2 | 9616.8 |
| 52.5° | 7482.6 | 7517.1 | 7727.9 | 7977.5 | 8278.7 | 8136.7 | 7740.8 | *8278.7* | 8416.4 | 9449.0 | 9900.8 |
| 55° | 6974.9 | 7030.8 | 7344.9 | 7693.5 | 8231.3 | 8433.6 | 8304.5 | *8721.9* | 8850.9 | 9582.4 | 10232.1 |
| 57.5° | 6071.3 | 6140.1 | 6574.7 | 7129.8 | 7865.6 | 8364.7 | 9122.0 | *9431.8* | 9539.4 | 9677.1 | 10236.5 |
| 60° | 4539.5 | 4595.4 | 5275.3 | 6024.0 | 7129.8 | 7934.4 | 9608.2 | *10649.5* | 10709.8 | 9165.0 | 9655.6 |
| 62.5° | 3343.3 | 3399.2 | 3855.3 | 4393.2 | 5602.3 | 7142.7 | 9702.9 | *11703.7* | 11712.3 | 8239.9 | 8855.2 |
| 63° | *3149.7* | *3205.6* | *3618.7* | *4122.1* | *5240.9* | *6875.9* | *9672.8* | *11738.1* | *11708.0* | *8050.6* | *8678.8* |
| 65° | 2452.6 | 2551.6 | 2981.9 | 3364.8 | 3928.5 | 5473.2 | 9285.5 | *11127.1* | 11170.2 | 7491.2 | 7792.4 |
| 67.5° | 1669.5 | 1742.6 | 2289.1 | 2732.3 | 2969.0 | 3485.3 | 7616.0 | *9522.2* | 9591.0 | 6910.4 | 6217.6 |
| 70° | 1290.9 | 1325.3 | 1643.7 | 2164.3 | 2401.0 | 2216.0 | 4965.5 | *7667.7* | 7667.7 | 5395.8 | 4406.1 |
| 72.5° | 1011.2 | 1024.1 | 1239.2 | 1691.0 | 1932.0 | 1703.9 | 2766.7 | *5576.5* | 5369.9 | 3201.3 | 2938.8 |
| 75° | 722.9 | 740.1 | 933.7 | 1260.7 | 1540.4 | 1342.5 | 1768.5 | *3248.6* | 3123.9 | 1841.6 | 1962.1 |
| 77.5° | 572.3 | 580.9 | 697.1 | 929.4 | 1247.8 | 1024.1 | 1346.8 | *1772.8* | 1755.6 | 1295.2 | 1260.7 |
| 80° | 451.8 | 469.0 | 546.5 | 666.9 | 963.8 | 800.3 | 1002.6 | *1170.4* | 1135.9 | 890.7 | 808.9 |
| 82.5° | 322.7 | 352.8 | 421.7 | 507.7 | 714.3 | 572.3 | 658.3 | *826.1* | 826.1 | 671.2 | 533.6 |
| 85° | 197.9 | 223.7 | 249.6 | 314.1 | 507.7 | 370.0 | 348.5 | *533.6* | 546.5 | 503.4 | 344.2 |
| 87.5° | 94.7 | 103.3 | 120.5 | 133.4 | 185.0 | 167.8 | 137.7 | *202.2* | 206.5 | 223.7 | 142.0 |
| 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: P1456240
CATALOG NUMBER: GLAN-SB5B-930-U-T2LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2917.3 | 2917.3 | 2917.3 | 2917.3 | 2917.3 | 2917.3 | 2917.3 | 2917.3 | 2917.3 | 2917.3 | 2917.3 |
| 2.5° | 2943.1 | 2934.5 | 2891.5 | 2848.5 | 2801.1 | 2758.1 | 2715.1 | 2680.7 | 2641.9 | 2650.5 | 2654.9 |
| 5° | 2999.1 | 2977.6 | 2882.9 | 2771.0 | 2624.7 | 2487.0 | 2353.7 | 2259.0 | 2198.8 | 2181.5 | 2147.1 |
| 7.5° | 3119.6 | 3067.9 | 2895.8 | 2659.2 | 2388.1 | 2172.9 | 2048.2 | 1992.2 | 1975.0 | 1979.3 | 1970.7 |
| 10° | 3257.2 | 3179.8 | 2913.0 | 2525.8 | 2181.5 | 2035.2 | 2018.0 | 2052.5 | 2069.7 | 2086.9 | 2091.2 |
| 12.5° | 3438.0 | 3313.2 | 2904.4 | 2379.5 | 2082.6 | 2056.8 | 2121.3 | 2185.8 | 2224.6 | 2250.4 | 2246.1 |
| 15° | 3648.8 | 3481.0 | 2878.6 | 2259.0 | 2069.7 | 2138.5 | 2220.3 | 2293.4 | 2340.7 | 2366.6 | 2353.7 |
| 17.5° | 3902.7 | 3678.9 | 2848.5 | 2181.5 | 2108.4 | 2190.1 | 2276.2 | 2349.3 | 2401.0 | 2418.2 | 2405.3 |
| 20° | 4216.8 | 3902.7 | 2796.8 | 2147.1 | 2138.5 | 2211.7 | 2289.1 | 2358.0 | 2401.0 | 2418.2 | 2401.0 |
| 22.5° | 4586.8 | 4169.4 | 2753.8 | 2147.1 | 2151.4 | 2211.7 | 2267.6 | 2319.2 | 2358.0 | 2370.9 | 2349.3 |
| 25° | 5060.1 | 4479.3 | 2736.6 | 2181.5 | 2155.7 | 2190.1 | 2220.3 | 2250.4 | 2271.9 | 2280.5 | 2271.9 |
| 27.5° | 5542.1 | 4836.4 | 2745.2 | 2224.6 | 2151.4 | 2160.0 | 2160.0 | 2164.3 | 2168.6 | 2172.9 | 2168.6 |
| 30° | 6097.1 | 5197.8 | 2779.6 | 2280.5 | 2160.0 | 2117.0 | 2104.1 | 2078.3 | 2056.8 | 2039.5 | 2022.3 |
| 32.5° | 6635.0 | 5542.1 | 2839.9 | 2362.3 | 2151.4 | 2069.7 | 2043.8 | 1979.3 | 1919.1 | 1867.4 | 1867.4 |
| 35° | 7215.9 | 5899.2 | 2947.4 | 2422.5 | 2142.8 | 2026.6 | 1953.5 | 1880.3 | 1815.8 | 1742.6 | 1742.6 |
| 37.5° | 7715.0 | 6204.7 | 3033.5 | 2491.3 | 2134.2 | 1975.0 | 1858.8 | 1777.1 | 1708.2 | 1635.1 | 1626.5 |
| 40° | 8063.5 | 6381.1 | 3085.1 | 2517.2 | 2104.1 | 1906.2 | 1768.5 | 1665.2 | 1566.2 | 1467.3 | 1463.0 |
| 42.5° | 8231.3 | 6372.5 | 3055.0 | 2508.6 | 2048.2 | 1820.1 | 1691.0 | 1553.3 | 1419.9 | 1329.6 | 1321.0 |
| 45° | 8321.7 | 6316.6 | 2938.8 | 2435.4 | 1957.8 | 1729.7 | 1592.0 | 1445.8 | 1312.4 | 1230.6 | 1213.4 |
| 47.5° | 8304.5 | 6178.9 | 2779.6 | 2254.7 | 1837.3 | 1630.8 | 1493.1 | 1342.5 | 1234.9 | 1187.6 | 1187.6 |
| 50° | 8351.8 | 6071.3 | 2598.9 | 2048.2 | 1673.8 | 1514.6 | 1402.7 | 1265.0 | 1200.5 | 1140.3 | 1118.7 |
| 52.5° | 8562.6 | 6161.7 | 2444.0 | 1854.5 | 1518.9 | 1402.7 | 1325.3 | 1209.1 | 1127.3 | 1088.6 | 1075.7 |
| 55° | 8842.3 | 6355.3 | 2297.7 | 1682.4 | 1368.3 | 1303.8 | 1265.0 | 1157.5 | 1062.8 | 1024.1 | 1002.6 |
| 57.5° | 8894.0 | 6488.7 | 2155.7 | 1514.6 | 1243.5 | 1226.3 | 1213.4 | 1067.1 | 989.7 | 959.5 | 942.3 |
| 60° | 8536.8 | 6389.7 | 1970.7 | 1364.0 | 1144.6 | 1153.2 | 1118.7 | 1011.2 | 920.8 | 890.7 | 873.5 |
| 62.5° | 7930.1 | 6131.5 | 1785.7 | 1234.9 | 1067.1 | 1084.3 | 1049.9 | 942.3 | 852.0 | 821.8 | 813.2 |
| 63° | *7809.7* | *6062.7* | *1742.6* | *1222.0* | *1049.9* | *1071.4* | *1041.3* | *933.7* | *843.4* | *813.2* | *800.3* |
| 65° | 7091.1 | 5649.6 | 1592.0 | 1153.2 | 994.0 | 994.0 | 998.3 | 890.7 | 813.2 | 800.3 | 791.7 |
| 67.5° | 5783.0 | 4715.9 | 1428.5 | 1071.4 | 933.7 | 946.6 | 968.1 | 907.9 | 877.8 | 869.2 | 860.6 |
| 70° | 4371.7 | 3549.8 | 1286.5 | 994.0 | 869.2 | 912.2 | 1058.5 | 1032.7 | 920.8 | 843.4 | 826.1 |
| 72.5° | 3098.0 | 2418.2 | 1161.8 | 916.5 | 791.7 | 899.3 | 1097.2 | 985.3 | 830.4 | 740.1 | 722.9 |
| 75° | 2074.0 | 1557.6 | 1037.0 | 834.8 | 705.7 | 830.4 | 1037.0 | 899.3 | 722.9 | 701.4 | 675.5 |
| 77.5° | 1303.8 | 1110.1 | 912.2 | 740.1 | 611.0 | 740.1 | 942.3 | 800.3 | 623.9 | 632.5 | 593.8 |
| 80° | 796.0 | 791.7 | 765.9 | 628.2 | 490.5 | 589.5 | 791.7 | 675.5 | 499.1 | 499.1 | 443.2 |
| 82.5° | 473.3 | 572.3 | 649.7 | 520.6 | 357.1 | 421.7 | 572.3 | 507.7 | 417.4 | 404.5 | 378.6 |
| 85° | 318.4 | 387.3 | 516.3 | 400.2 | 228.1 | 258.2 | 395.9 | 426.0 | 383.0 | 335.6 | 314.1 |
| 87.5° | 116.2 | 154.9 | 236.7 | 163.5 | 99.0 | 154.9 | 296.9 | 309.8 | 232.4 | 180.7 | 163.5 |
| 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

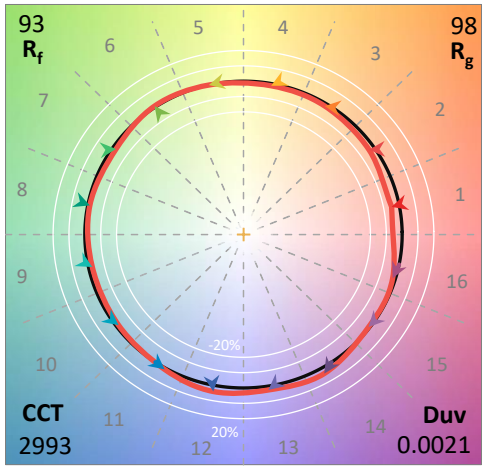
## Test Information

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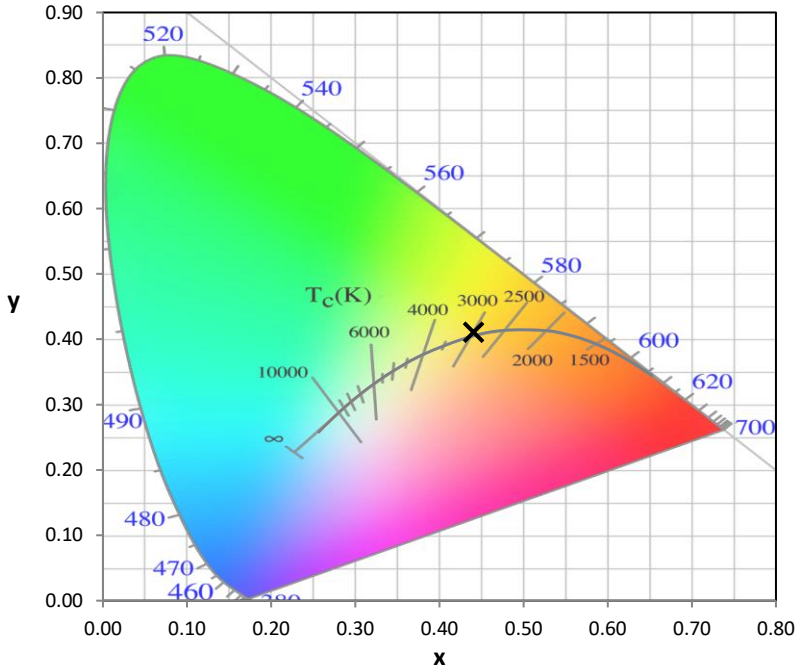
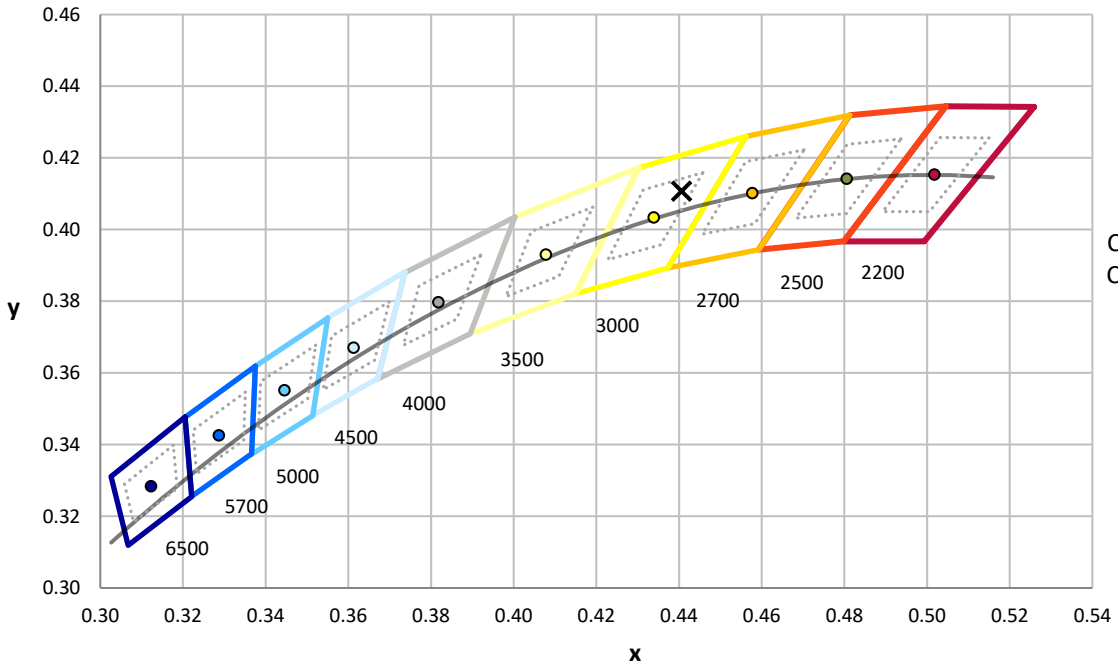
## CIE 1931 Chromaticity Diagram




## 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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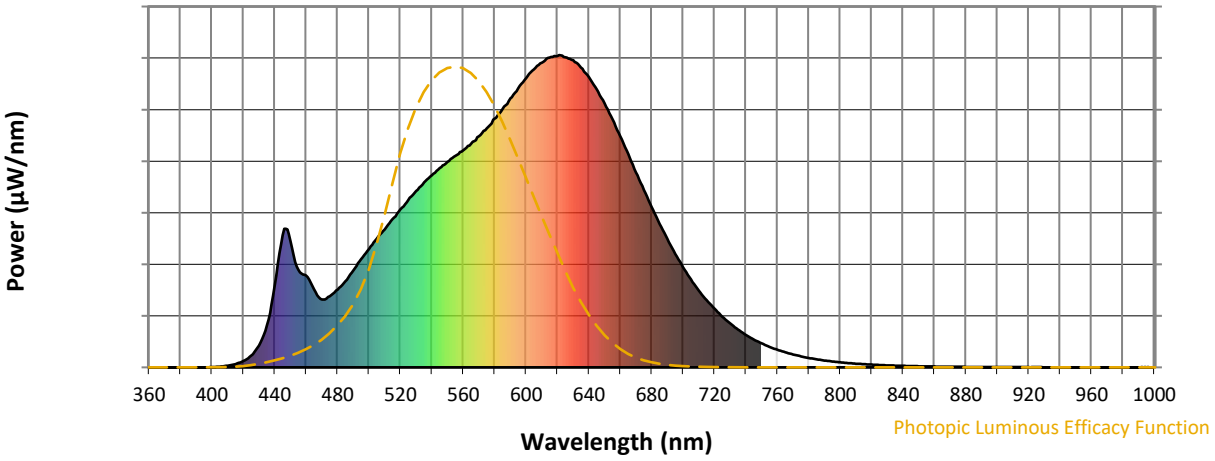
## Photopic Flux vs. Wavelength




## 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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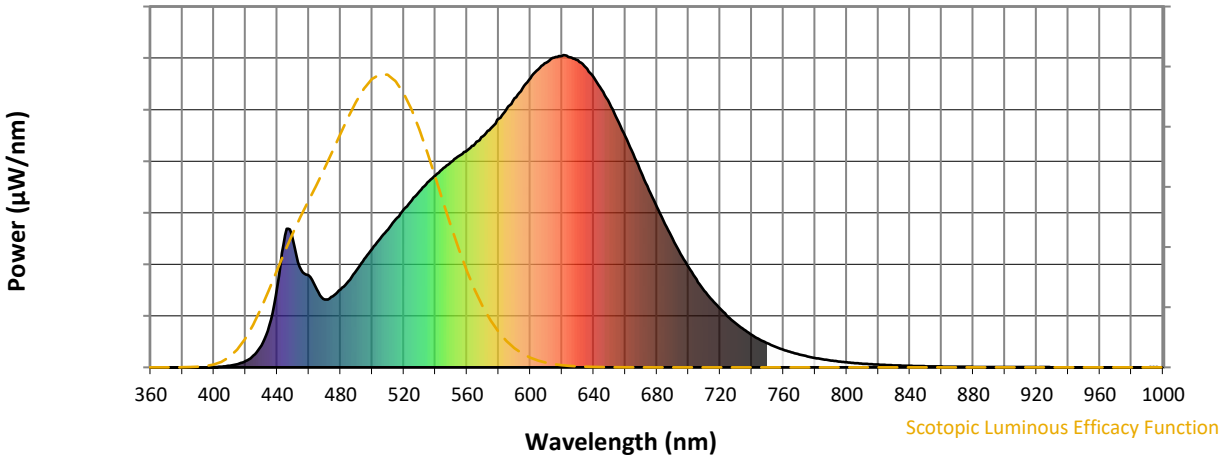
## Scotopic Flux vs. Wavelength




**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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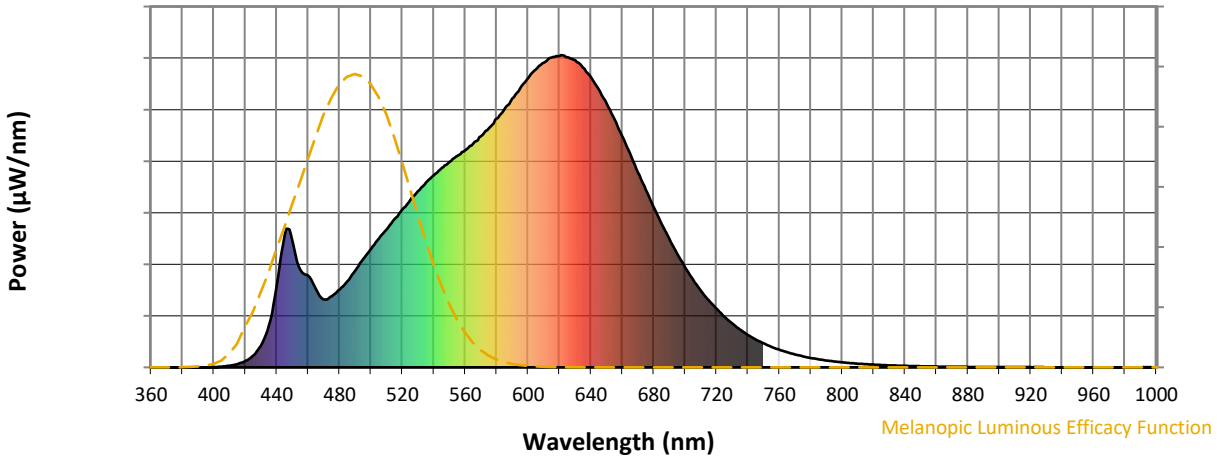
## Melanopic Flux vs. Wavelength




**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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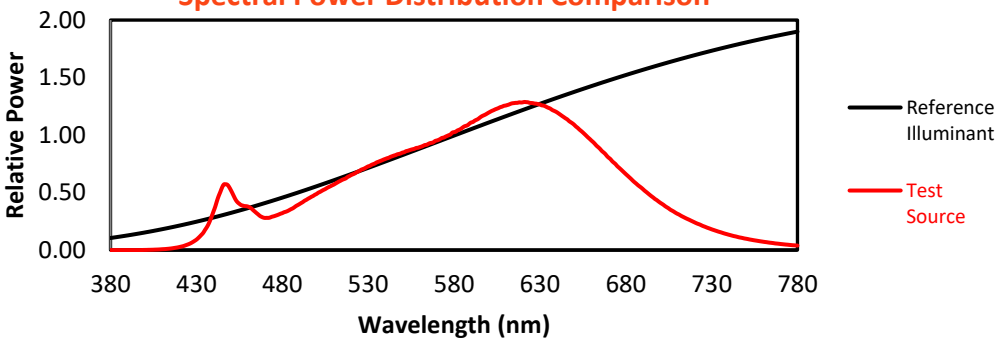
# TM-30-18

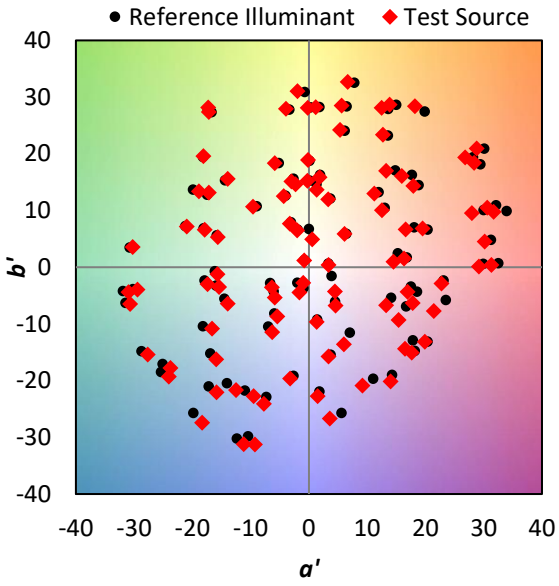
## Summary

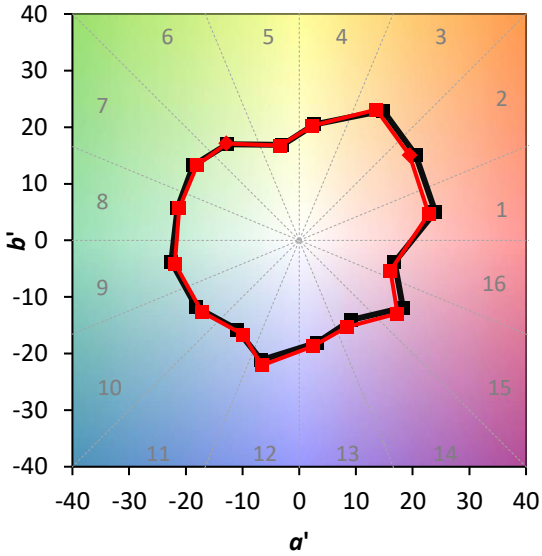
$R_f$ = 92.6
$R_g$ = 98.5
CIE $R_a$ = 92.4
$R_9$ = 58.2

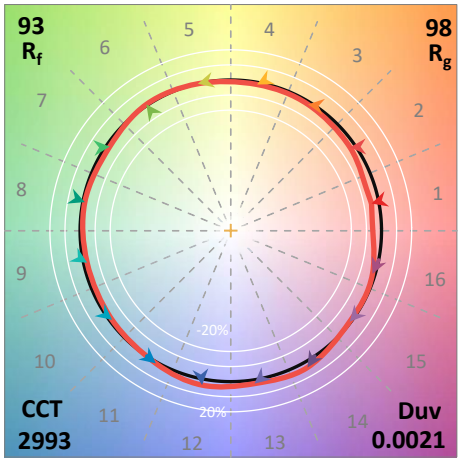
## Spectral Power Distribution Comparison

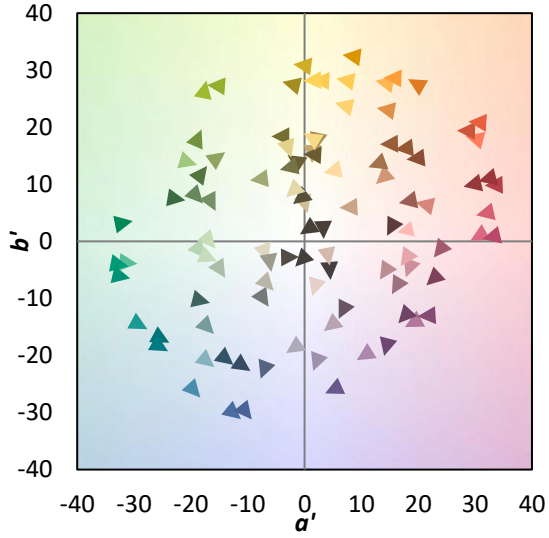



## Color Vector Graphics



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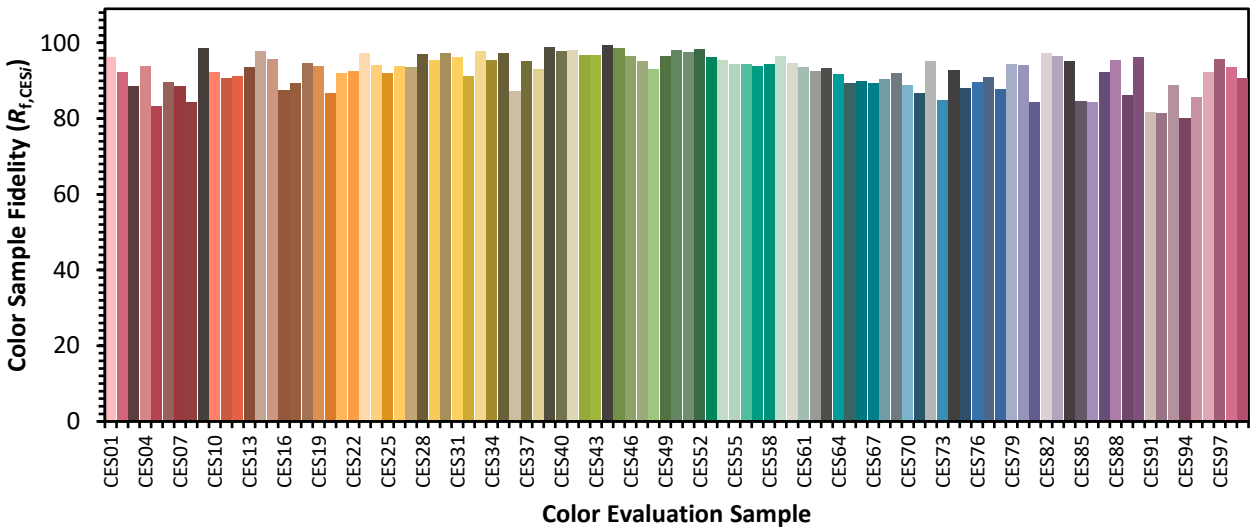
# TM-30-18

**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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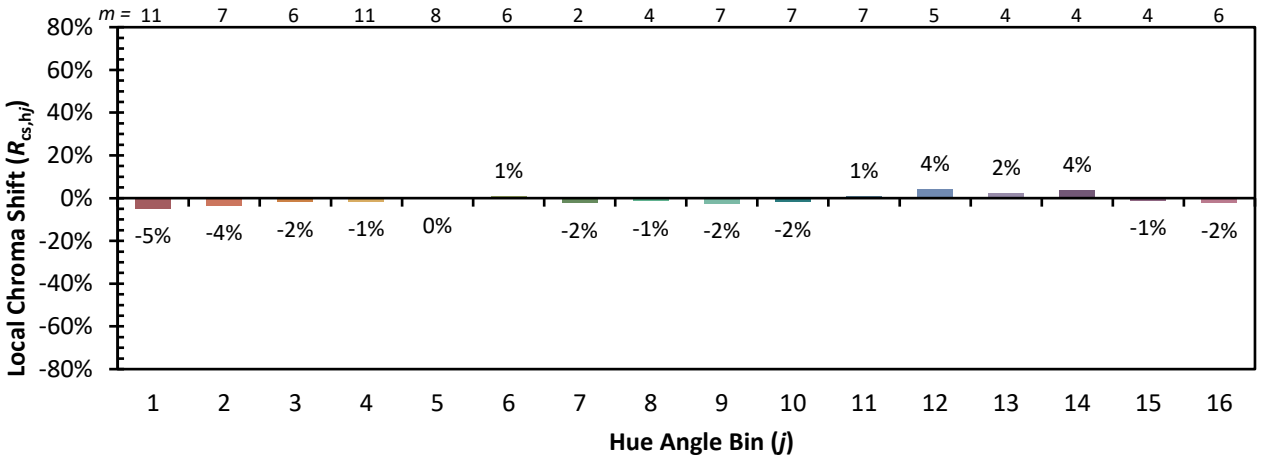
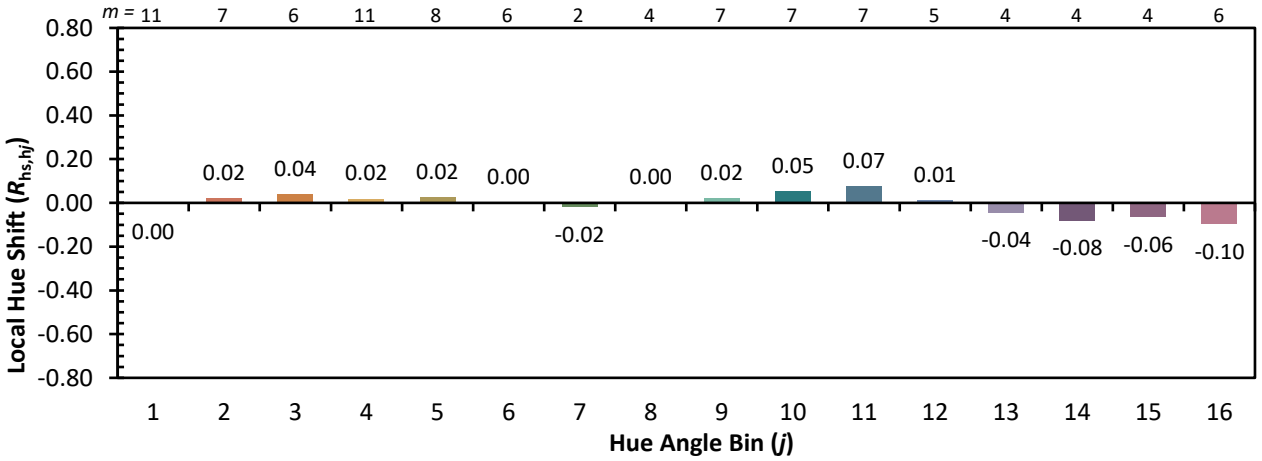
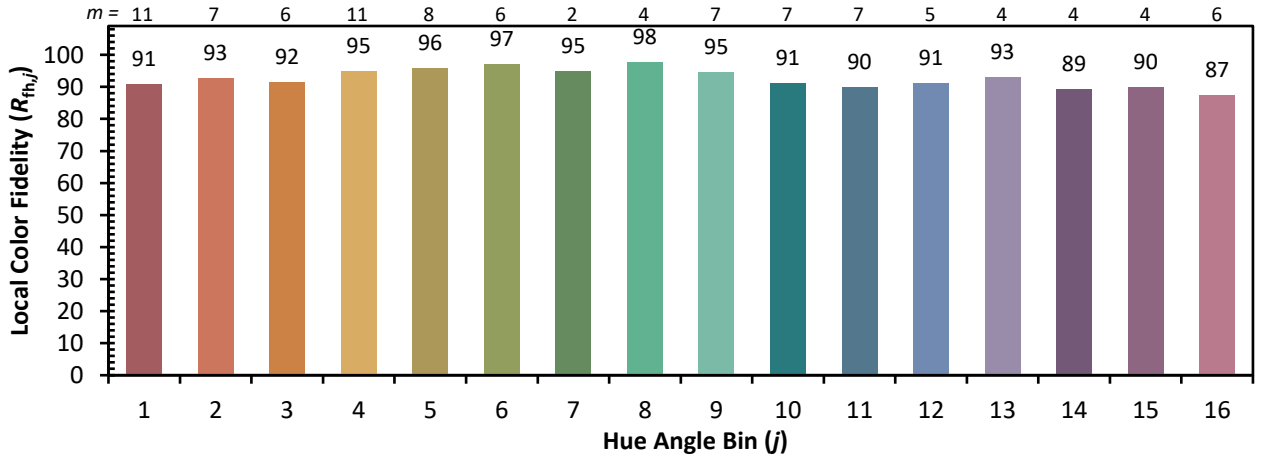
## Color Rendition by Hue-Angle Bin



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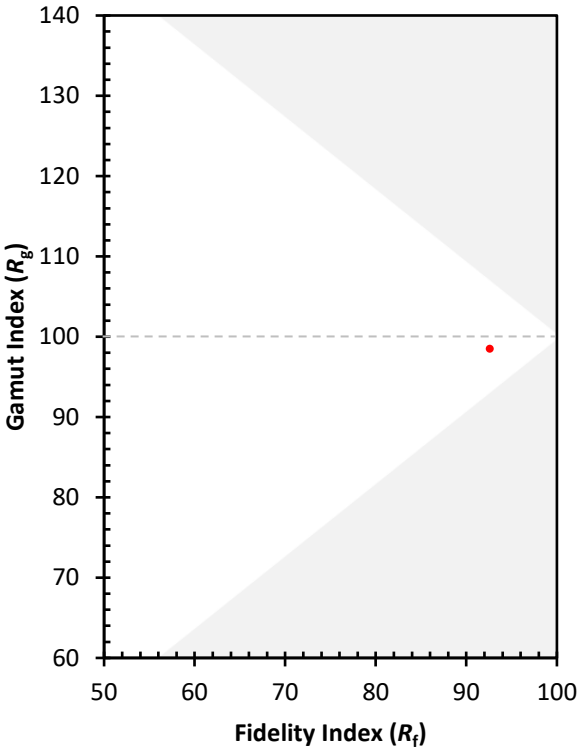
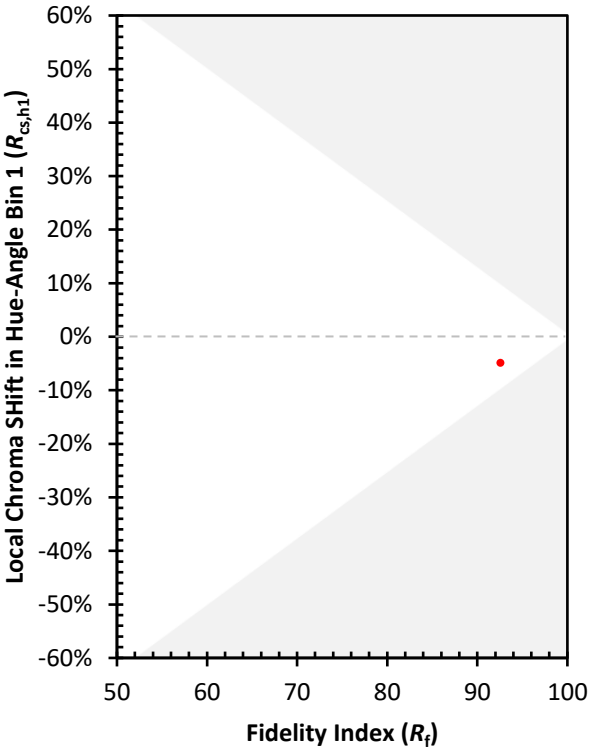
## Measure Comparisons




(END OF REPORT)