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

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1121 Highway 74 South
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: P1457463

Luminaire Tested: GLAN-SB5A-940-U-T4LG

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: | P1457463 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/22/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB5A-940-U-T4LG |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 350mA 5xLight Square PACKAGE 90CRI 4000K FIXTURE w/ TYPE IV LOW GLARE |
| Light Source: | (130) 4000K CCT, 90 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 16071.2 lumens |
| Efficiency: | N/A |
| Efficacy: | 113.4 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B3 - U0 - G3 |

| | |
|---|---|
| Input Watts (W): | 141.7 |
| 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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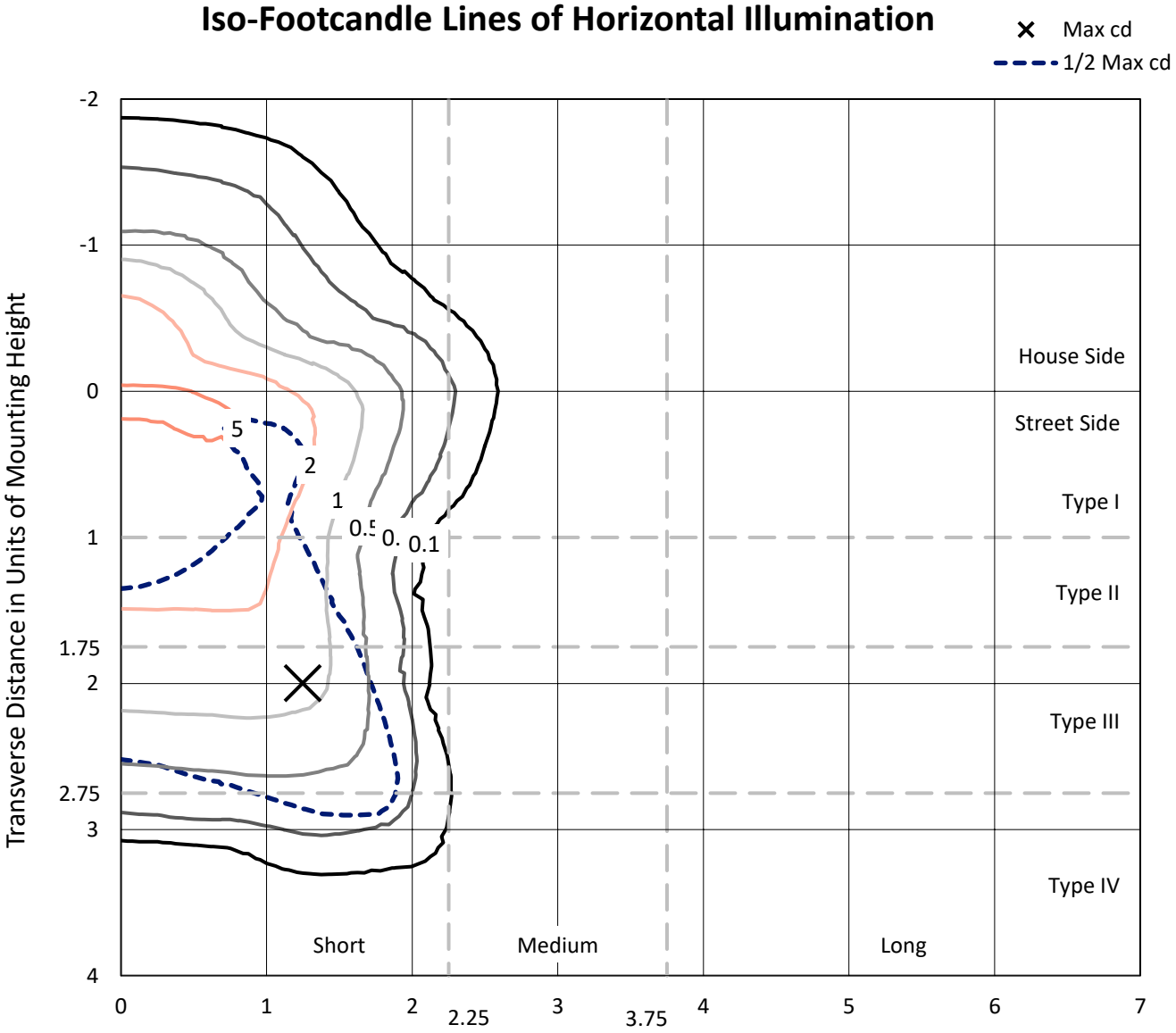
Scaled Data Report

REPORT NUMBER: P1457463
CATALOG NUMBER: GLAN-SB5A-940-U-T4LG

## Iso-Footcandle Lines of Horizontal Illumination




Based on 25 foot mounting height. Maximum calculated value = 6.3 fc
Type IV - Short - N/A

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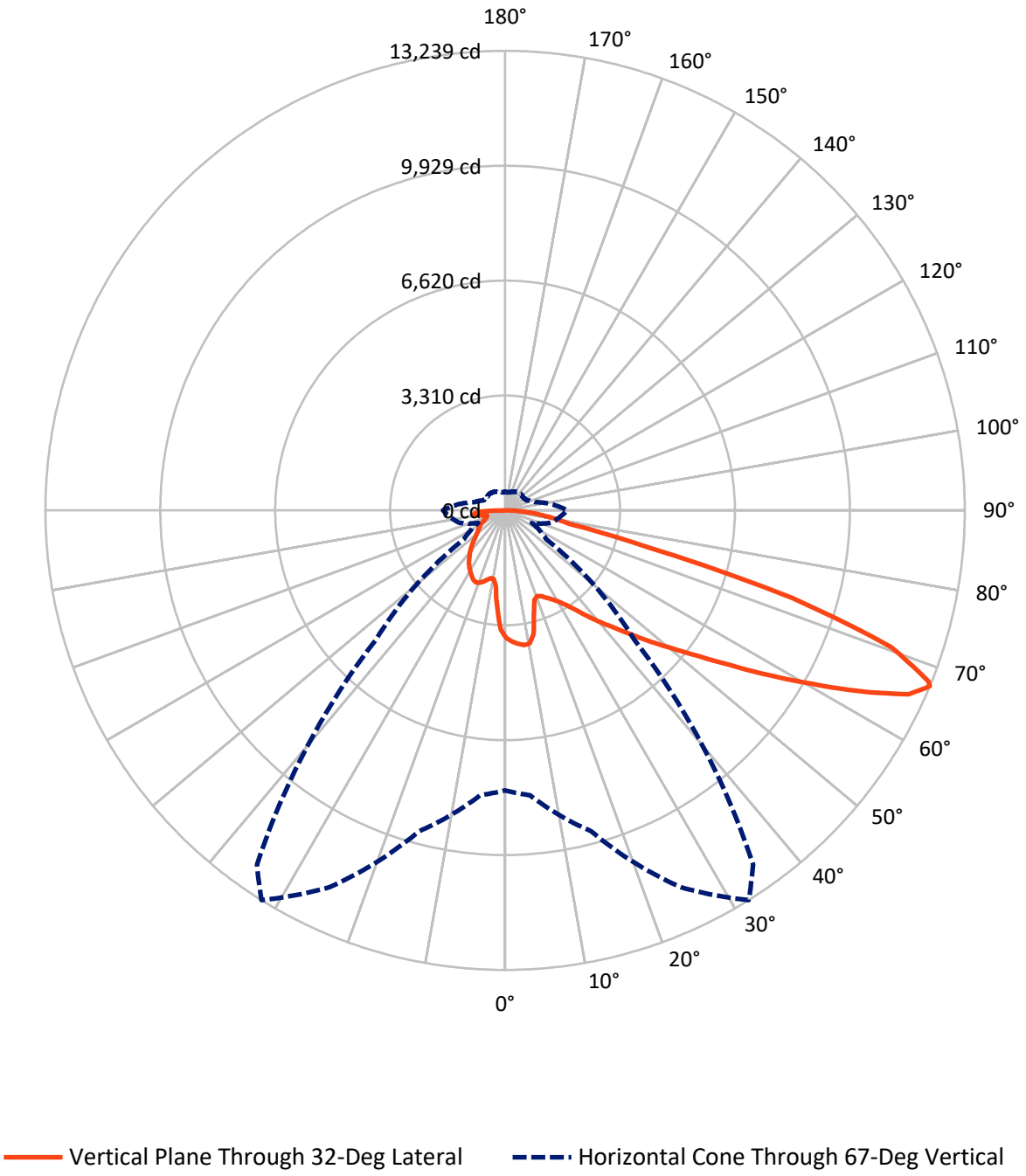
## Luminous Intensity Polar Plot



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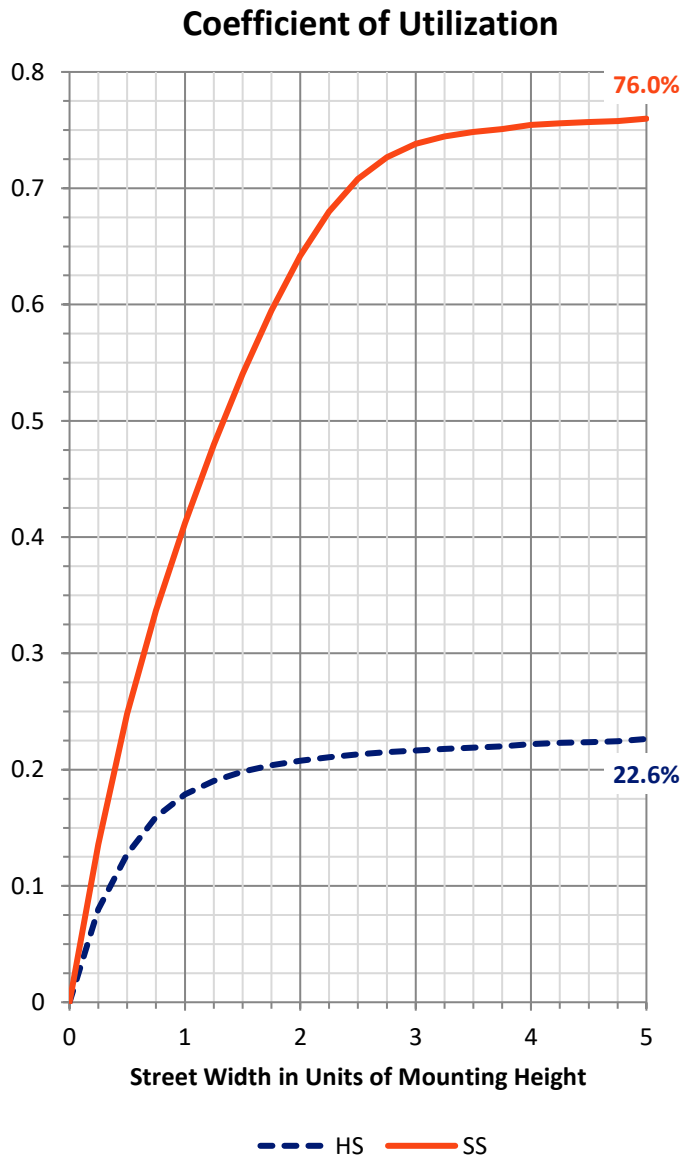
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 3804.8 | 0.0 | 3804.8 |
| | % Fixture | 23.7 | 0.0 | 23.7 |
| **Street Side** | Lumens | 12266.4 | 0.0 | 12266.4 |
| | % Fixture | 76.3 | 0.0 | 76.3 |
| **Total** | Lumens | 16071.2 | 0.0 | 16071.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 320.8 | 2.0 |
| 10°-20° | 851.8 | 5.3 |
| 20°-30° | 1391.1 | 8.7 |
| 30°-40° | 2050.4 | 12.8 |
| 40°-50° | 2827.6 | 17.6 |
| 50°-60° | 3572.1 | 22.2 |
| 60°-70° | 3457.1 | 21.5 |
| 70°-80° | 1233.8 | 7.7 |
| 80°-90° | 366.4 | 2.3 |
| 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° | 16071.2 | 100.0 |
| 0°-180° | 16071.2 | 100.0 |



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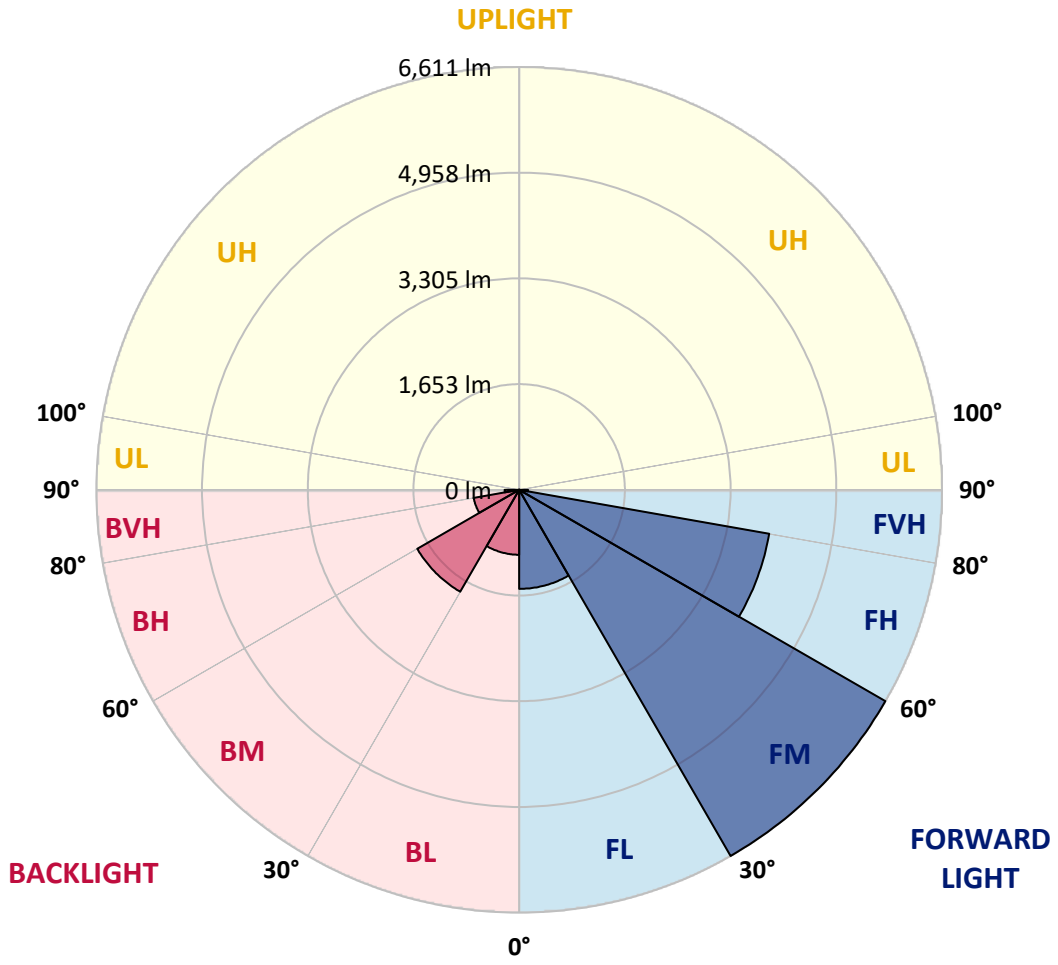
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1548.5 | 9.6 | | | |
| FM | (30°-60°) | 6610.6 | 41.1 | | | |
| FH | (60°-80°) | 3969.3 | 24.7 | | | G2/5000 |
| FVH | (80°-90°) | 138.1 | 0.9 | | | G2/225 |
| BL | (0°-30°) | 1015.3 | 6.3 | B3/2500 | | |
| BM | (30°-60°) | 1839.4 | 11.4 | B2/2500 | | |
| BH | (60°-80°) | 721.7 | 4.5 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 228.3 | 1.4 | | | 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 IV Short



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 32° | 35° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 3672.0 | 3672.0 | 3672.0 | 3672.0 | 3672.0 | 3672.0 | 3672.0 | 3672.0 | 3672.0 | 3672.0 | 3672.0 |
| 2.5° | 3811.1 | 3800.4 | 3789.7 | 3796.9 | 3782.6 | 3779.0 | 3761.2 | 3754.0 | 3732.6 | 3729.0 | 3689.8 |
| 5° | 3889.6 | 3868.2 | 3864.7 | 3871.8 | 3857.5 | 3857.5 | 3843.2 | 3832.5 | 3800.4 | 3782.6 | 3725.5 |
| 7.5° | 3889.6 | 3886.1 | 3893.2 | 3918.2 | 3921.7 | 3921.7 | 3921.7 | 3925.3 | 3893.2 | 3868.2 | 3779.0 |
| 10° | 3668.4 | 3632.7 | 3711.2 | 3836.1 | 3896.8 | 3932.5 | 3996.7 | 4035.9 | 4011.0 | 3993.1 | 3871.8 |
| 12.5° | 3008.2 | 3011.8 | 3136.7 | 3404.3 | 3647.0 | 3750.5 | 4018.1 | 4160.8 | 4171.5 | 4143.0 | 3989.5 |
| 15° | 2551.5 | 2569.3 | 2633.5 | 2826.2 | 3104.6 | 3258.0 | 3893.2 | 4271.5 | 4357.1 | 4328.6 | 4132.3 |
| 17.5° | 2412.3 | 2423.0 | 2451.5 | 2562.2 | 2719.2 | 2844.1 | 3554.2 | 4342.8 | 4581.9 | 4546.2 | 4292.9 |
| 20° | 2390.9 | 2398.0 | 2433.7 | 2526.5 | 2633.5 | 2704.9 | 3208.1 | 4285.7 | 4792.5 | 4778.2 | 4439.2 |
| 22.5° | 2394.4 | 2401.6 | 2448.0 | 2576.4 | 2687.1 | 2747.7 | 3097.4 | 4153.7 | 5013.7 | 5028.0 | 4589.1 |
| 25° | 2401.6 | 2405.1 | 2476.5 | 2647.8 | 2787.0 | 2861.9 | 3168.8 | 4035.9 | 5199.3 | 5320.6 | 4753.2 |
| 27.5° | 2440.8 | 2451.5 | 2547.9 | 2740.6 | 2904.7 | 2990.4 | 3336.5 | 4075.2 | 5402.7 | 5652.5 | 4949.5 |
| 30° | 2547.9 | 2555.0 | 2672.8 | 2872.6 | 3051.0 | 3140.3 | 3536.4 | 4232.2 | 5652.5 | 5995.0 | 5142.2 |
| 32.5° | 2715.6 | 2722.7 | 2858.3 | 3065.3 | 3258.0 | 3365.1 | 3796.9 | 4532.0 | 5930.8 | 6355.4 | 5334.9 |
| 35° | 2947.6 | 2951.1 | 3104.6 | 3325.8 | 3529.2 | 3650.5 | 4100.2 | 4871.0 | 6219.8 | 6662.3 | 5477.6 |
| 37.5° | 3222.3 | 3247.3 | 3404.3 | 3636.3 | 3875.4 | 3986.0 | 4457.0 | 5267.1 | 6476.8 | 6922.8 | 5559.7 |
| 40° | 3600.6 | 3607.7 | 3761.2 | 3986.0 | 4239.3 | 4346.4 | 4813.9 | 5641.7 | 6758.7 | 7076.3 | 5634.6 |
| 42.5° | 3989.5 | 4050.2 | 4178.7 | 4428.5 | 4617.6 | 4703.2 | 5220.7 | 5984.3 | 6983.5 | 7083.4 | 5602.5 |
| 45° | 4510.5 | 4556.9 | 4685.4 | 4906.6 | 5095.8 | 5195.7 | 5659.6 | 6298.3 | 7097.7 | 7022.7 | 5531.1 |
| 47.5° | 5106.5 | 5135.0 | 5238.5 | 5438.3 | 5648.9 | 5720.3 | 6116.4 | 6476.8 | 7140.5 | 6979.9 | 5499.0 |
| 50° | 5809.5 | 5809.5 | 5884.4 | 6055.7 | 6248.4 | 6348.3 | 6537.4 | 6583.8 | 7265.4 | 6905.0 | 5581.1 |
| 52.5° | 6401.8 | 6430.4 | 6530.3 | 6773.0 | 6965.7 | 7079.8 | 6865.7 | 6748.0 | 7012.0 | 6487.5 | 5606.1 |
| 55° | 6969.2 | 7001.3 | 7226.1 | 7529.5 | 7857.8 | 7982.7 | 7276.1 | 6665.9 | 6159.2 | 5877.3 | 5434.8 |
| 57.5° | 7511.6 | 7579.4 | 7861.3 | 8453.7 | 8949.7 | 8939.0 | 7797.1 | 5930.8 | 5028.0 | 5202.8 | 5060.1 |
| 60° | 8268.1 | 8339.5 | 8789.1 | 9534.9 | 10141.6 | 9888.2 | 7804.2 | 4935.2 | 3918.2 | 4153.7 | 4357.1 |
| 62.5° | 8899.8 | 9021.1 | 9681.3 | 10923.1 | 11479.8 | 11083.7 | 7158.3 | 3779.0 | 2601.4 | 2897.6 | 3368.6 |
| 65° | 8842.7 | 9003.2 | 10027.4 | 11943.7 | 12775.1 | 12407.6 | 6212.7 | 2390.9 | 1341.7 | 1980.5 | 2358.8 |
| 67° | 8064.7 | 8239.6 | 9567.1 | 11979.3 | 13239.0 | 12454.0 | 5245.6 | 1445.2 | 852.9 | 1373.9 | 1637.9 |
| 67.5° | 7618.7 | 7875.6 | 9338.7 | 11911.5 | 13153.4 | 12257.7 | 4810.3 | 1209.7 | 802.9 | 1277.5 | 1491.6 |
| 70° | 4685.4 | 5099.3 | 7008.5 | 10530.6 | 11790.2 | 10259.3 | 2672.8 | 685.1 | 653.0 | 856.4 | 1031.3 |
| 72.5° | 1409.5 | 1534.4 | 2704.9 | 6755.1 | 8653.5 | 7604.4 | 1202.6 | 528.1 | 585.2 | 688.7 | 795.8 |
| 75° | 685.1 | 731.5 | 1116.9 | 2762.0 | 4214.4 | 4193.0 | 670.9 | 453.2 | 542.4 | 578.1 | 628.1 |
| 77.5° | 438.9 | 467.5 | 695.9 | 1545.1 | 1930.5 | 1720.0 | 485.3 | 396.1 | 481.7 | 474.6 | 467.5 |
| 80° | 274.8 | 289.0 | 446.1 | 895.7 | 1423.8 | 1188.3 | 356.8 | 324.7 | 413.9 | 367.6 | 331.9 |
| 82.5° | 178.4 | 196.3 | 285.5 | 546.0 | 1017.0 | 885.0 | 235.5 | 232.0 | 342.6 | 292.6 | 256.9 |
| 85° | 117.8 | 132.0 | 182.0 | 321.2 | 603.1 | 631.6 | 153.4 | 160.6 | 264.1 | 221.2 | 196.3 |
| 87.5° | 42.8 | 53.5 | 92.8 | 142.7 | 281.9 | 349.7 | 64.2 | 60.7 | 128.5 | 103.5 | 82.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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Scaled Data Report

REPORT NUMBER: P1457463
CATALOG NUMBER: GLAN-SB5A-940-U-T4LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 3672.0 | 3672.0 | 3672.0 | 3672.0 | 3672.0 | 3672.0 | 3672.0 | 3672.0 | 3672.0 | 3672.0 | 3672.0 |
| 2.5° | 3682.7 | 3672.0 | 3622.0 | 3579.2 | 3547.1 | 3504.2 | 3457.8 | 3404.3 | 3368.6 | 3375.8 | 3365.1 |
| 5° | 3700.5 | 3672.0 | 3575.6 | 3429.3 | 3286.6 | 3108.1 | 2879.8 | 2744.2 | 2640.7 | 2587.1 | 2601.4 |
| 7.5° | 3739.8 | 3689.8 | 3486.4 | 3190.2 | 2819.1 | 2455.1 | 2230.3 | 2101.8 | 2041.2 | 2016.2 | 2012.6 |
| 10° | 3807.6 | 3721.9 | 3372.2 | 2819.1 | 2333.8 | 2087.6 | 2005.5 | 1969.8 | 1962.7 | 1962.7 | 1959.1 |
| 12.5° | 3889.6 | 3754.0 | 3179.5 | 2458.7 | 2101.8 | 2012.6 | 1998.3 | 2001.9 | 2012.6 | 2023.3 | 2005.5 |
| 15° | 3989.5 | 3768.3 | 2940.4 | 2241.0 | 2055.4 | 2034.0 | 2055.4 | 2080.4 | 2098.3 | 2112.5 | 2094.7 |
| 17.5° | 4089.5 | 3754.0 | 2715.6 | 2137.5 | 2062.6 | 2091.1 | 2133.9 | 2173.2 | 2183.9 | 2205.3 | 2191.0 |
| 20° | 4160.8 | 3704.1 | 2522.9 | 2098.3 | 2080.4 | 2144.6 | 2198.2 | 2241.0 | 2262.4 | 2276.7 | 2262.4 |
| 22.5° | 4214.4 | 3639.8 | 2383.7 | 2059.0 | 2080.4 | 2158.9 | 2223.2 | 2273.1 | 2298.1 | 2312.4 | 2294.5 |
| 25° | 4260.8 | 3550.6 | 2276.7 | 2001.9 | 2037.6 | 2112.5 | 2183.9 | 2233.9 | 2269.5 | 2291.0 | 2280.3 |
| 27.5° | 4317.8 | 3479.3 | 2176.8 | 1916.3 | 1948.4 | 2019.8 | 2094.7 | 2155.4 | 2223.2 | 2258.8 | 2251.7 |
| 30° | 4382.1 | 3443.6 | 2080.4 | 1823.5 | 1844.9 | 1916.3 | 2005.5 | 2087.6 | 2180.3 | 2226.7 | 2226.7 |
| 32.5° | 4457.0 | 3418.6 | 1991.2 | 1734.3 | 1752.1 | 1830.6 | 1916.3 | 1991.2 | 2091.1 | 2166.1 | 2162.5 |
| 35° | 4489.1 | 3390.0 | 1919.8 | 1652.2 | 1687.9 | 1752.1 | 1819.9 | 1869.9 | 1973.4 | 2062.6 | 2069.7 |
| 37.5° | 4521.2 | 3379.3 | 1884.2 | 1588.0 | 1616.5 | 1666.5 | 1702.2 | 1727.1 | 1823.5 | 1916.3 | 1919.8 |
| 40° | 4560.5 | 3429.3 | 1909.1 | 1545.1 | 1520.2 | 1570.1 | 1588.0 | 1602.2 | 1652.2 | 1712.9 | 1712.9 |
| 42.5° | 4535.5 | 3465.0 | 1966.2 | 1505.9 | 1402.4 | 1459.5 | 1466.6 | 1463.1 | 1466.6 | 1470.2 | 1466.6 |
| 45° | 4471.3 | 3429.3 | 1966.2 | 1445.2 | 1277.5 | 1338.2 | 1334.6 | 1316.8 | 1288.2 | 1213.3 | 1202.6 |
| 47.5° | 4457.0 | 3407.9 | 1891.3 | 1345.3 | 1152.6 | 1202.6 | 1209.7 | 1174.0 | 1092.0 | 1013.4 | 988.5 |
| 50° | 4517.7 | 3447.1 | 1773.5 | 1224.0 | 1045.6 | 1088.4 | 1106.2 | 1045.6 | 952.8 | 870.7 | 856.4 |
| 52.5° | 4606.9 | 3497.1 | 1602.2 | 1092.0 | 956.3 | 999.2 | 1020.6 | 952.8 | 856.4 | 792.2 | 785.1 |
| 55° | 4596.2 | 3497.1 | 1409.5 | 970.6 | 888.5 | 920.7 | 956.3 | 885.0 | 810.0 | 774.4 | 770.8 |
| 57.5° | 4364.2 | 3365.1 | 1266.8 | 885.0 | 824.3 | 852.9 | 899.3 | 831.5 | 760.1 | 767.2 | 777.9 |
| 60° | 3911.0 | 3022.5 | 1159.8 | 827.9 | 767.2 | 795.8 | 845.7 | 767.2 | 674.4 | 649.5 | 649.5 |
| 62.5° | 3222.3 | 2490.8 | 1074.1 | 770.8 | 713.7 | 749.4 | 774.4 | 670.9 | 610.2 | 581.7 | 581.7 |
| 65° | 2415.9 | 1927.0 | 984.9 | 724.4 | 667.3 | 706.6 | 678.0 | 628.1 | 567.4 | 546.0 | 549.5 |
| 67° | *1791.4* | *1495.2* | *910.0* | *685.1* | *638.8* | *656.6* | *635.2* | *599.5* | *538.8* | *521.0* | *538.8* |
| 67.5° | 1609.4 | 1420.3 | 892.1 | 674.4 | 631.6 | 645.9 | 624.5 | 595.9 | 531.7 | 513.9 | 531.7 |
| 70° | 1106.2 | 1092.0 | 795.8 | 624.5 | 592.4 | 578.1 | 588.8 | 553.1 | 499.6 | 492.4 | 510.3 |
| 72.5° | 842.2 | 870.7 | 713.7 | 581.7 | 549.5 | 531.7 | 556.7 | 521.0 | 467.5 | 478.2 | 496.0 |
| 75° | 660.2 | 703.0 | 638.8 | 521.0 | 499.6 | 503.2 | 553.1 | 538.8 | 496.0 | 506.7 | 510.3 |
| 77.5° | 488.9 | 567.4 | 546.0 | 453.2 | 435.4 | 485.3 | 624.5 | 667.3 | 592.4 | 574.5 | 549.5 |
| 80° | 356.8 | 406.8 | 460.3 | 374.7 | 364.0 | 467.5 | 770.8 | 852.9 | 731.5 | 660.2 | 642.3 |
| 82.5° | 264.1 | 285.5 | 378.3 | 299.8 | 264.1 | 417.5 | 856.4 | 1002.7 | 870.7 | 735.1 | 713.7 |
| 85° | 189.1 | 221.2 | 299.8 | 221.2 | 174.9 | 342.6 | 838.6 | 981.3 | 863.6 | 695.9 | 678.0 |
| 87.5° | 67.8 | 96.3 | 128.5 | 99.9 | 89.2 | 235.5 | 692.3 | 706.6 | 538.8 | 246.2 | 249.8 |
| 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: SP1-2407-184-16

Test Date: 10/11/2024

Luminaire Tested: GSS-SB1A-940-U-5WQ

Data in this report applies to families of products including GSS-SB1A-940-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

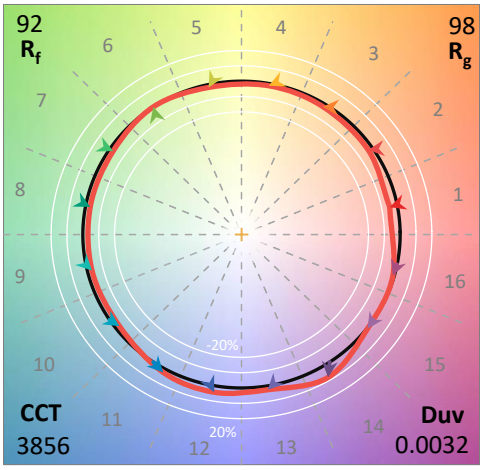
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-16 |
| 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-940-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 90 CRI 4000K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3856 |
| CIE u': | 0.2261 |
| CIE v': | 0.5084 |
| Duv: | 0.0032 |
| CIE x: | 0.3896 |
| CIE y: | 0.3894 |
| CIE z: | 0.2211 |
| Peak Wavelength (nm): | 614 |
| Dominant Wavelength (nm): | 578 |
| Purity: | 33.77304 |
| Rf: | 91.8 |
| Rg: | 98.4 |

| | |
|---|---|
| CRI (Ra): | 92.1 |
| R1: | 91.8 |
| R2: | 94.1 |
| R3: | 95.3 |
| R4: | 92.8 |
| R5: | 91.0 |
| R6: | 91.6 |
| R7: | 95.0 |
| R8: | 85.2 |
| R9: | 60.7 |
| R10: | 85.2 |
| R11: | 92.4 |
| R12: | 74.5 |
| R13: | 92.3 |
| R14: | 97.0 |
| R15: | 88.5 |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 23M |
| Operation Time: | 1H 23M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-16

| 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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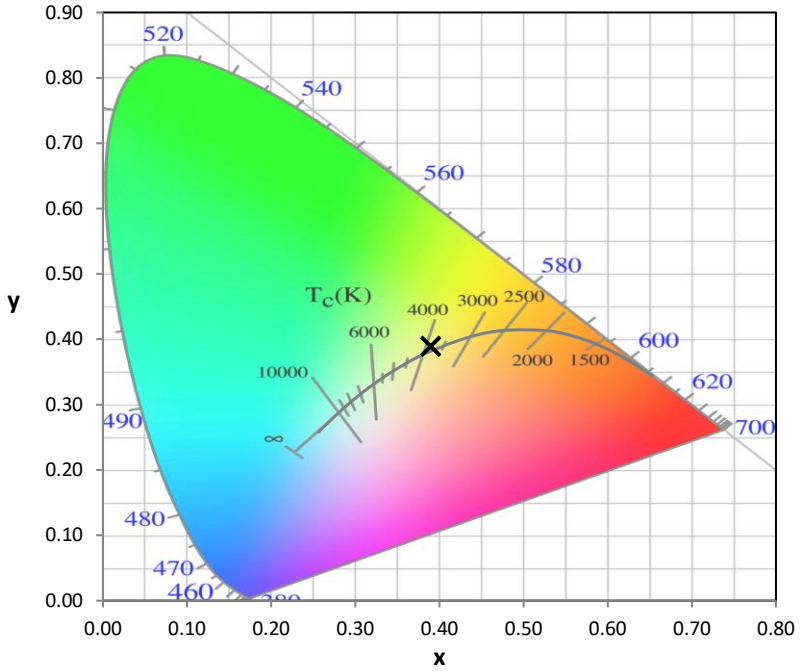
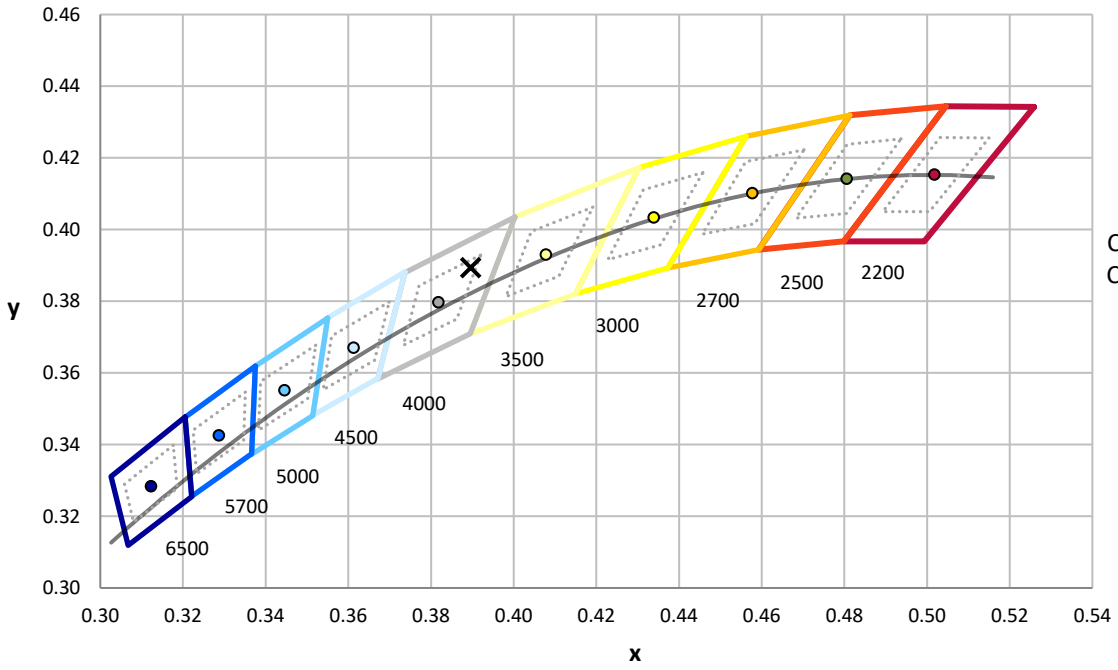
## CIE 1931 Chromaticity Diagram




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




CCT = 3856K
CIE x = 0.3896
CIE y = 0.3894
Duv = 0.0032

Point lies inside the ANSI 4000K 4-step quadrangle

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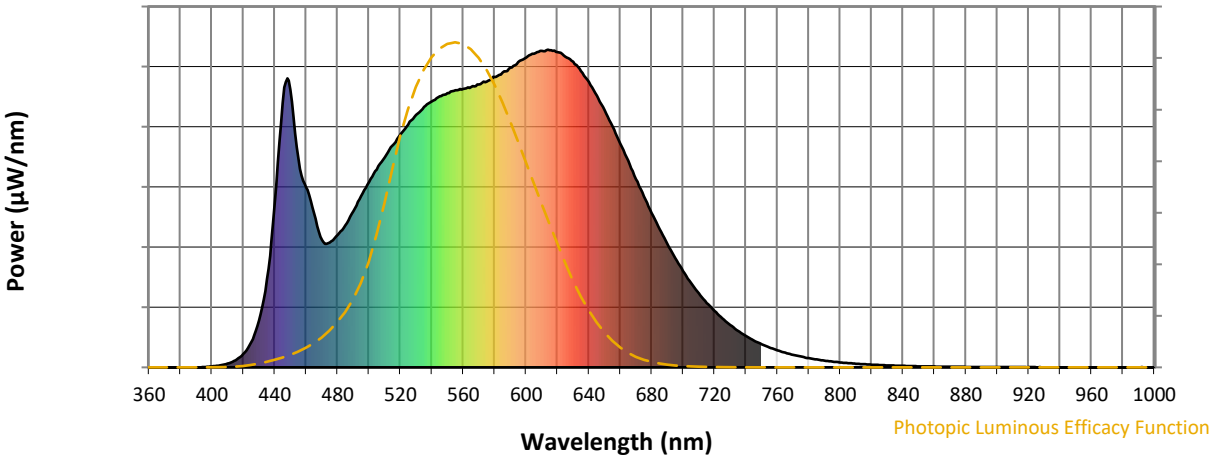
## Photopic Flux vs. Wavelength




## 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 | 492 | NR | 620 | 993 | NR | 750 | 73 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 539 | NR | 625 | 978 | NR | 755 | 62 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 583 | NR | 630 | 962 | NR | 760 | 54 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 623 | NR | 635 | 933 | NR | 765 | 46 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 661 | NR | 640 | 898 | NR | 770 | 39 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 698 | NR | 645 | 855 | NR | 775 | 34 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 733 | NR | 650 | 810 | NR | 780 | 29 | NR | 910 | 1 | NR |
| 395 | 1 | NR | 525 | 764 | NR | 655 | 759 | NR | 785 | 25 | NR | 915 | 1 | NR |
| 400 | 3 | NR | 530 | 794 | NR | 660 | 704 | NR | 790 | 21 | NR | 920 | 1 | NR |
| 405 | 6 | NR | 535 | 820 | NR | 665 | 651 | NR | 795 | 18 | NR | 925 | 1 | NR |
| 410 | 12 | NR | 540 | 837 | NR | 670 | 592 | NR | 800 | 16 | NR | 930 | 1 | NR |
| 415 | 22 | NR | 545 | 853 | NR | 675 | 538 | NR | 805 | 13 | NR | 935 | 0 | NR |
| 420 | 42 | NR | 550 | 864 | NR | 680 | 486 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 79 | NR | 555 | 872 | NR | 685 | 435 | NR | 815 | 10 | NR | 945 | 0 | NR |
| 430 | 147 | NR | 560 | 876 | NR | 690 | 389 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 278 | NR | 565 | 883 | NR | 695 | 344 | NR | 825 | 7 | NR | 955 | 0 | NR |
| 440 | 515 | NR | 570 | 891 | NR | 700 | 303 | NR | 830 | 6 | NR | 960 | 0 | NR |
| 445 | 832 | NR | 575 | 900 | NR | 705 | 266 | NR | 835 | 5 | NR | 965 | 0 | NR |
| 450 | 874 | NR | 580 | 914 | NR | 710 | 233 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 659 | NR | 585 | 927 | NR | 715 | 203 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 567 | NR | 590 | 944 | NR | 720 | 178 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 485 | NR | 595 | 961 | NR | 725 | 154 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 401 | NR | 600 | 975 | NR | 730 | 133 | NR | 860 | 3 | NR | 990 | 0 | NR |
| 475 | 393 | NR | 605 | 988 | NR | 735 | 115 | NR | 865 | 2 | NR | 995 | 1 | NR |
| 480 | 417 | NR | 610 | 996 | NR | 740 | 98 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 448 | NR | 615 | 998 | NR | 745 | 85 | NR | 875 | 2 | NR | | | |

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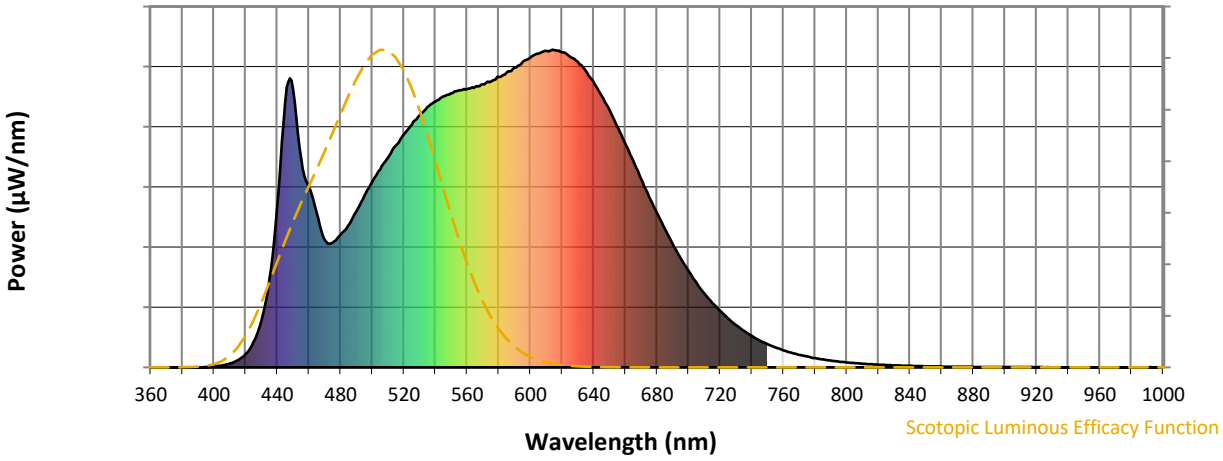
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.72**

| 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 | 492 | NR | 620 | 993 | NR | 750 | 73 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 539 | NR | 625 | 978 | NR | 755 | 62 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 583 | NR | 630 | 962 | NR | 760 | 54 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 623 | NR | 635 | 933 | NR | 765 | 46 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 661 | NR | 640 | 898 | NR | 770 | 39 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 698 | NR | 645 | 855 | NR | 775 | 34 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 733 | NR | 650 | 810 | NR | 780 | 29 | NR | 910 | 1 | NR |
| 395 | 1 | NR | 525 | 764 | NR | 655 | 759 | NR | 785 | 25 | NR | 915 | 1 | NR |
| 400 | 3 | NR | 530 | 794 | NR | 660 | 704 | NR | 790 | 21 | NR | 920 | 1 | NR |
| 405 | 6 | NR | 535 | 820 | NR | 665 | 651 | NR | 795 | 18 | NR | 925 | 1 | NR |
| 410 | 12 | NR | 540 | 837 | NR | 670 | 592 | NR | 800 | 16 | NR | 930 | 1 | NR |
| 415 | 22 | NR | 545 | 853 | NR | 675 | 538 | NR | 805 | 13 | NR | 935 | 0 | NR |
| 420 | 42 | NR | 550 | 864 | NR | 680 | 486 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 79 | NR | 555 | 872 | NR | 685 | 435 | NR | 815 | 10 | NR | 945 | 0 | NR |
| 430 | 147 | NR | 560 | 876 | NR | 690 | 389 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 278 | NR | 565 | 883 | NR | 695 | 344 | NR | 825 | 7 | NR | 955 | 0 | NR |
| 440 | 515 | NR | 570 | 891 | NR | 700 | 303 | NR | 830 | 6 | NR | 960 | 0 | NR |
| 445 | 832 | NR | 575 | 900 | NR | 705 | 266 | NR | 835 | 5 | NR | 965 | 0 | NR |
| 450 | 874 | NR | 580 | 914 | NR | 710 | 233 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 659 | NR | 585 | 927 | NR | 715 | 203 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 567 | NR | 590 | 944 | NR | 720 | 178 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 485 | NR | 595 | 961 | NR | 725 | 154 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 401 | NR | 600 | 975 | NR | 730 | 133 | NR | 860 | 3 | NR | 990 | 0 | NR |
| 475 | 393 | NR | 605 | 988 | NR | 735 | 115 | NR | 865 | 2 | NR | 995 | 1 | NR |
| 480 | 417 | NR | 610 | 996 | NR | 740 | 98 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 448 | NR | 615 | 998 | NR | 745 | 85 | NR | 875 | 2 | NR | | | |

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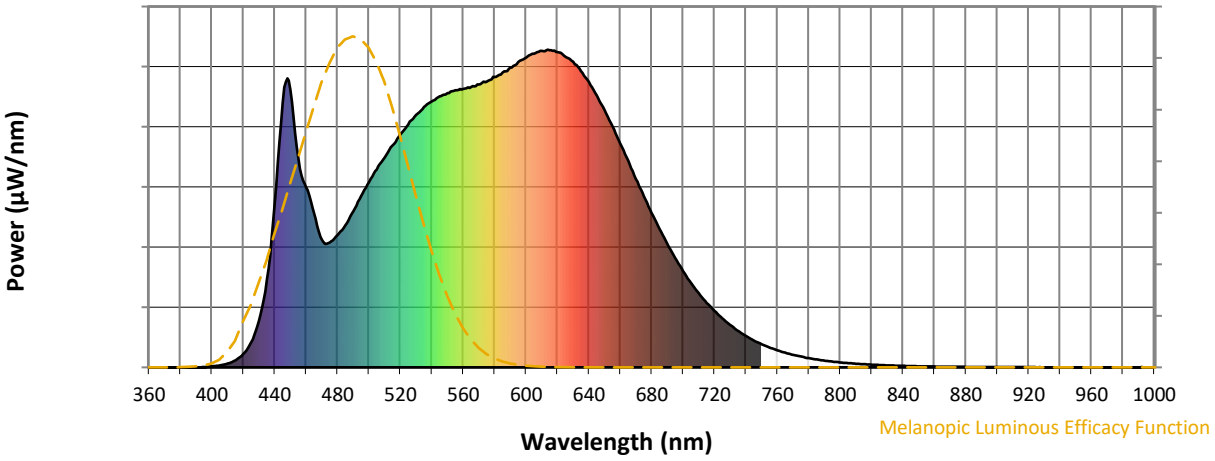
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 3.52**

| 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 | 492 | NR | 620 | 993 | NR | 750 | 73 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 539 | NR | 625 | 978 | NR | 755 | 62 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 583 | NR | 630 | 962 | NR | 760 | 54 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 623 | NR | 635 | 933 | NR | 765 | 46 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 661 | NR | 640 | 898 | NR | 770 | 39 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 698 | NR | 645 | 855 | NR | 775 | 34 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 733 | NR | 650 | 810 | NR | 780 | 29 | NR | 910 | 1 | NR |
| 395 | 1 | NR | 525 | 764 | NR | 655 | 759 | NR | 785 | 25 | NR | 915 | 1 | NR |
| 400 | 3 | NR | 530 | 794 | NR | 660 | 704 | NR | 790 | 21 | NR | 920 | 1 | NR |
| 405 | 6 | NR | 535 | 820 | NR | 665 | 651 | NR | 795 | 18 | NR | 925 | 1 | NR |
| 410 | 12 | NR | 540 | 837 | NR | 670 | 592 | NR | 800 | 16 | NR | 930 | 1 | NR |
| 415 | 22 | NR | 545 | 853 | NR | 675 | 538 | NR | 805 | 13 | NR | 935 | 0 | NR |
| 420 | 42 | NR | 550 | 864 | NR | 680 | 486 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 79 | NR | 555 | 872 | NR | 685 | 435 | NR | 815 | 10 | NR | 945 | 0 | NR |
| 430 | 147 | NR | 560 | 876 | NR | 690 | 389 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 278 | NR | 565 | 883 | NR | 695 | 344 | NR | 825 | 7 | NR | 955 | 0 | NR |
| 440 | 515 | NR | 570 | 891 | NR | 700 | 303 | NR | 830 | 6 | NR | 960 | 0 | NR |
| 445 | 832 | NR | 575 | 900 | NR | 705 | 266 | NR | 835 | 5 | NR | 965 | 0 | NR |
| 450 | 874 | NR | 580 | 914 | NR | 710 | 233 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 659 | NR | 585 | 927 | NR | 715 | 203 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 567 | NR | 590 | 944 | NR | 720 | 178 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 485 | NR | 595 | 961 | NR | 725 | 154 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 401 | NR | 600 | 975 | NR | 730 | 133 | NR | 860 | 3 | NR | 990 | 0 | NR |
| 475 | 393 | NR | 605 | 988 | NR | 735 | 115 | NR | 865 | 2 | NR | 995 | 1 | NR |
| 480 | 417 | NR | 610 | 996 | NR | 740 | 98 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 448 | NR | 615 | 998 | NR | 745 | 85 | NR | 875 | 2 | NR | | | |

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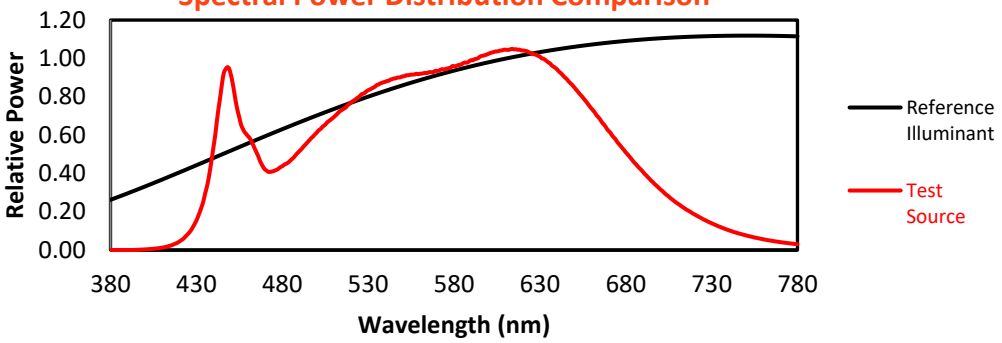
# TM-30-18

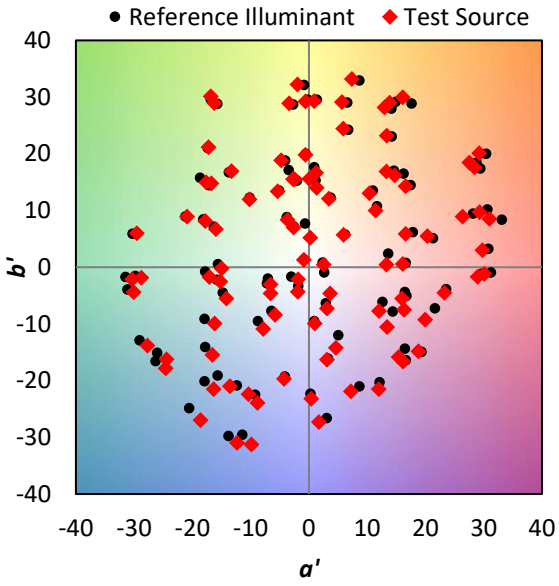
## Summary

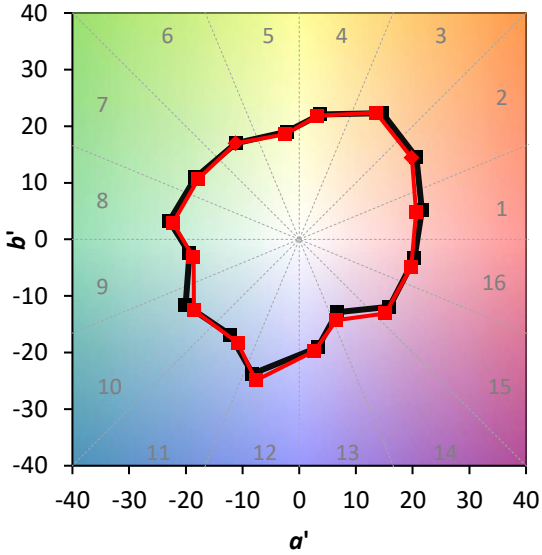
$R_f$ = 91.8
$R_g$ = 98.4
CIE $R_a$ = 92.1
$R_9$ = 60.7

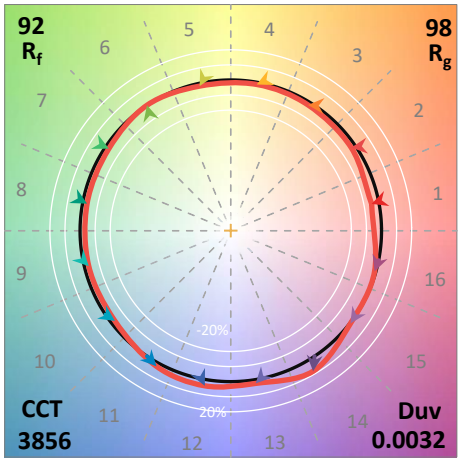
## Spectral Power Distribution Comparison

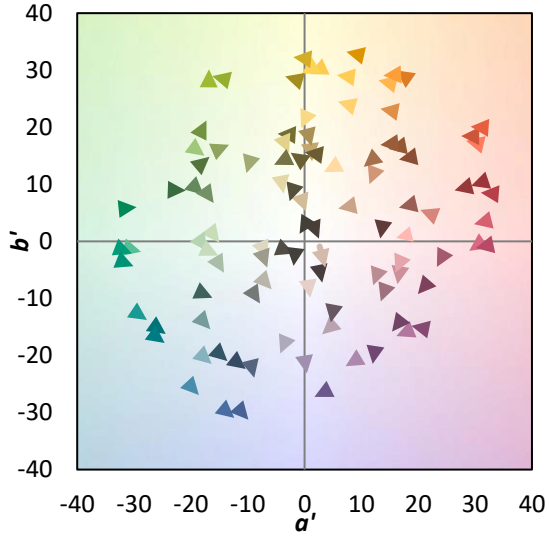



## Color Vector Graphics



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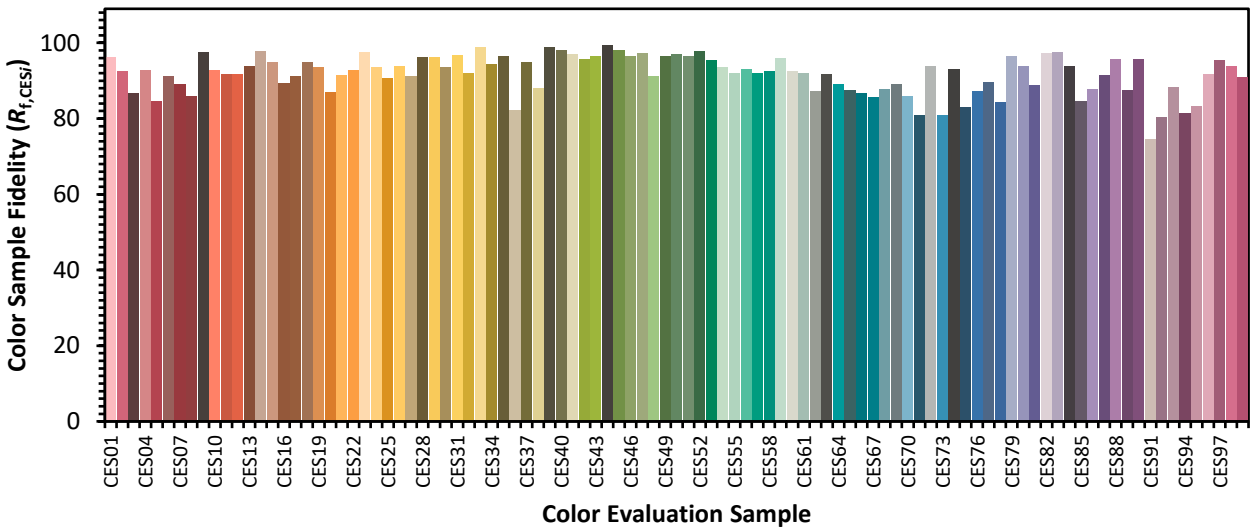
# TM-30-18

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

| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 94 | CES51 = 96 | CES76 = 87 |
| CES02 = 62 | CES27 = 91 | CES52 = 98 | CES77 = 90 |
| CES03 = 31 | CES28 = 96 | CES53 = 95 | CES78 = 84 |
| CES04 = 69 | CES29 = 96 | CES54 = 94 | CES79 = 96 |
| CES05 = 49 | CES30 = 93 | CES55 = 92 | CES80 = 94 |
| CES06 = 50 | CES31 = 97 | CES56 = 93 | CES81 = 89 |
| CES07 = 42 | CES32 = 92 | CES57 = 92 | CES82 = 97 |
| CES08 = 41 | CES33 = 99 | CES58 = 92 | CES83 = 98 |
| CES09 = 29 | CES34 = 94 | CES59 = 96 | CES84 = 94 |
| CES10 = 74 | CES35 = 96 | CES60 = 93 | CES85 = 85 |
| CES11 = 57 | CES36 = 82 | CES61 = 92 | CES86 = 88 |
| CES12 = 63 | CES37 = 95 | CES62 = 87 | CES87 = 92 |
| CES13 = 43 | CES38 = 88 | CES63 = 92 | CES88 = 96 |
| CES14 = 74 | CES39 = 99 | CES64 = 89 | CES89 = 87 |
| CES15 = 71 | CES40 = 98 | CES65 = 88 | CES90 = 96 |
| CES16 = 47 | CES41 = 97 | CES66 = 87 | CES91 = 74 |
| CES17 = 49 | CES42 = 96 | CES67 = 86 | CES92 = 80 |
| CES18 = 56 | CES43 = 96 | CES68 = 88 | CES93 = 88 |
| CES19 = 71 | CES44 = 99 | CES69 = 89 | CES94 = 82 |
| CES20 = 66 | CES45 = 98 | CES70 = 86 | CES95 = 83 |
| CES21 = 85 | CES46 = 97 | CES71 = 81 | CES96 = 92 |
| CES22 = 78 | CES47 = 97 | CES72 = 94 | CES97 = 95 |
| CES23 = 91 | CES48 = 91 | CES73 = 81 | CES98 = 94 |
| CES24 = 90 | CES49 = 96 | CES74 = 93 | CES99 = 91 |
| CES25 = 71 | CES50 = 97 | CES75 = 83 | |



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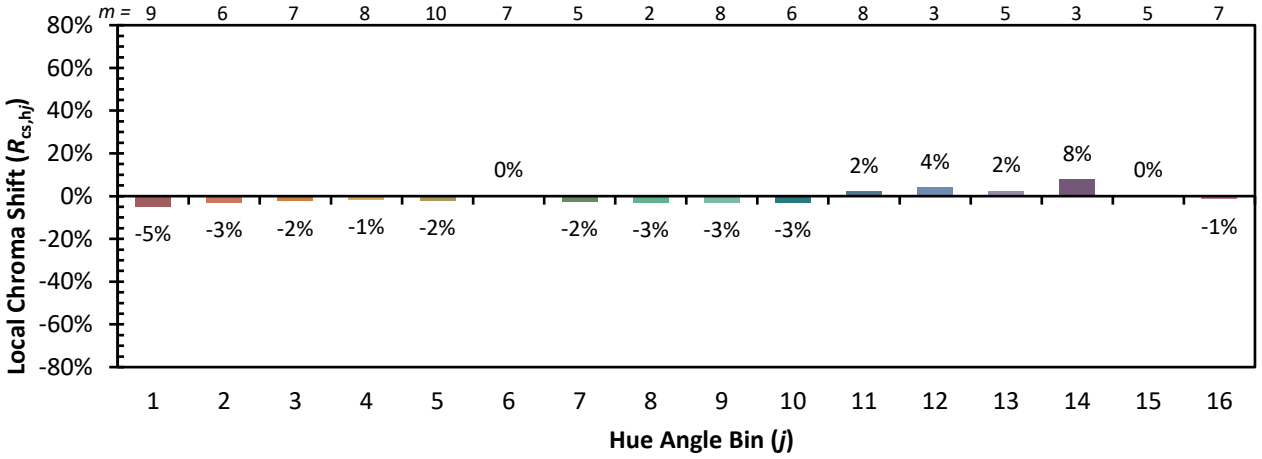
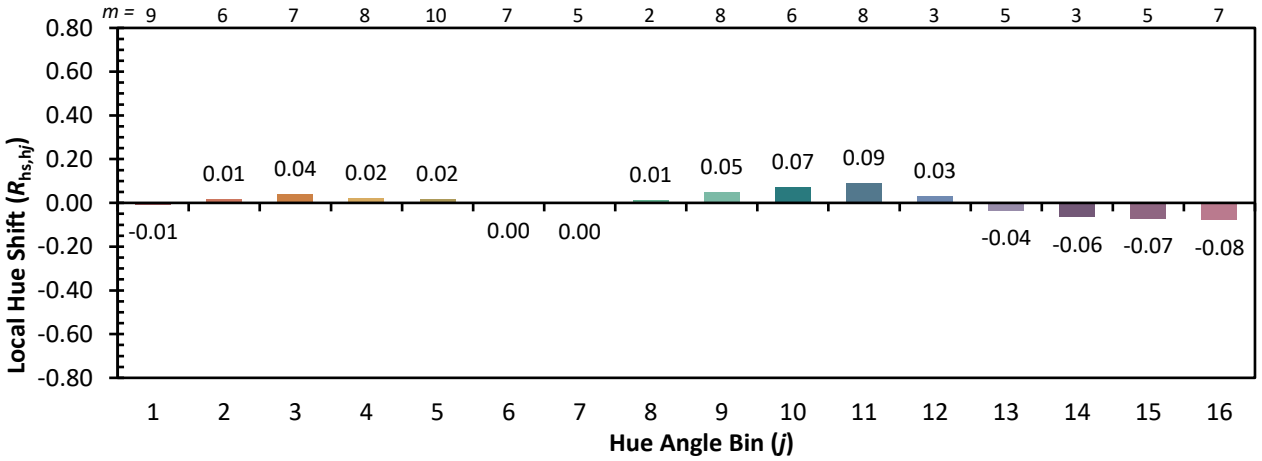
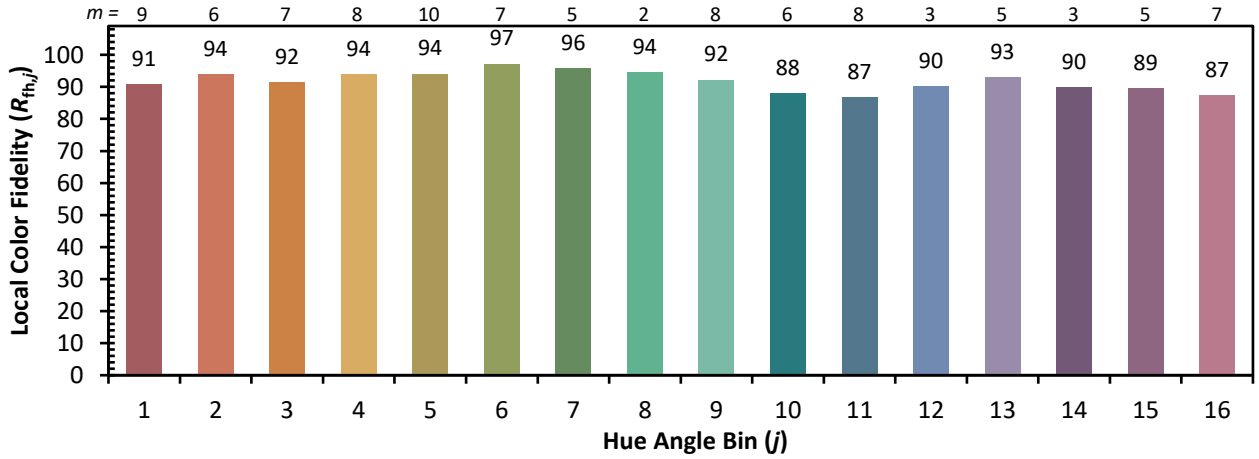
**TM-30-18**

## Color Rendition by Hue-Angle Bin



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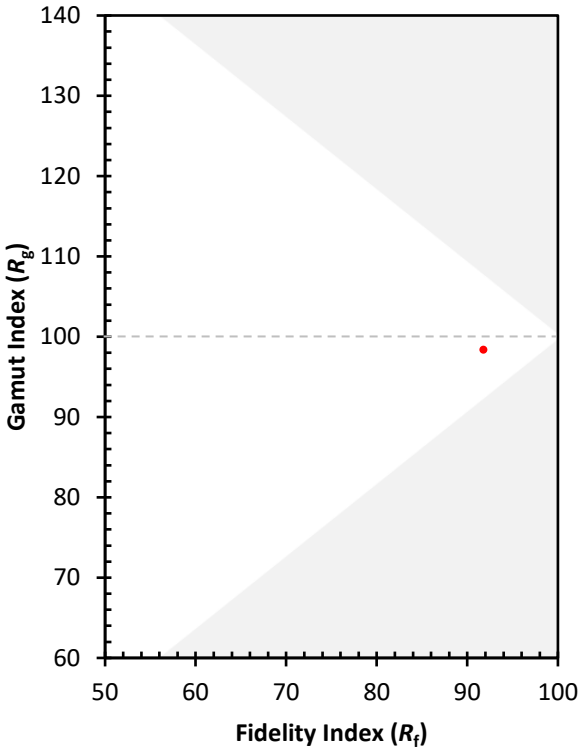
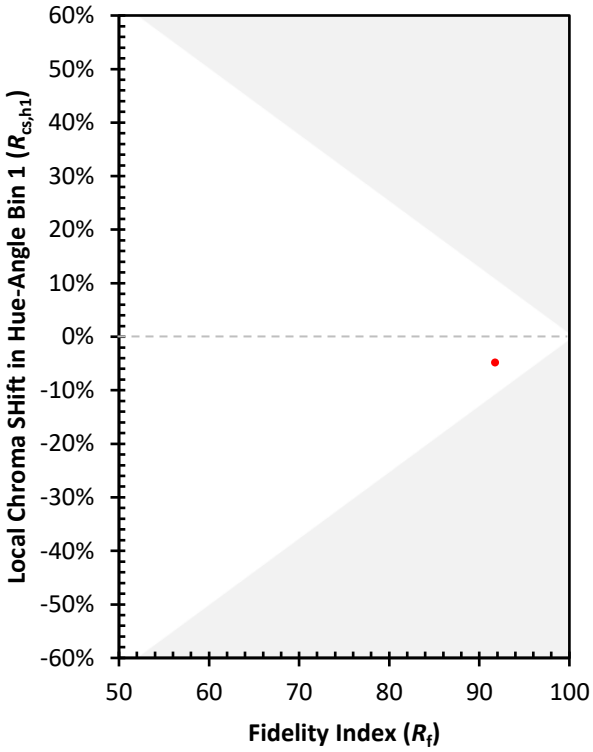
## Measure Comparisons




(END OF REPORT)