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: P1458577

Luminaire Tested: GLAN-SB4C-935-U-T3LG-HSS

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: | P1458577 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/22/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB4C-935-U-T3LG-HSS |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 615mA 4xLight Square PACKAGE 90CRI 3500K FIXTURE w/ TYPE III LOW GLARE WITH HOUSE SIDE SHIELD |
| Light Source: | (104) 3500K CCT, 90 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 15970 lumens |
| Efficiency: | N/A |
| Efficacy: | 79.6 lumens/watt |
| Luminous Opening: | Rectangular (W 1' x L: 1' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B2 - U0 - G2 |

| | |
|---|---|
| Input Watts (W): | 200.7 |
| 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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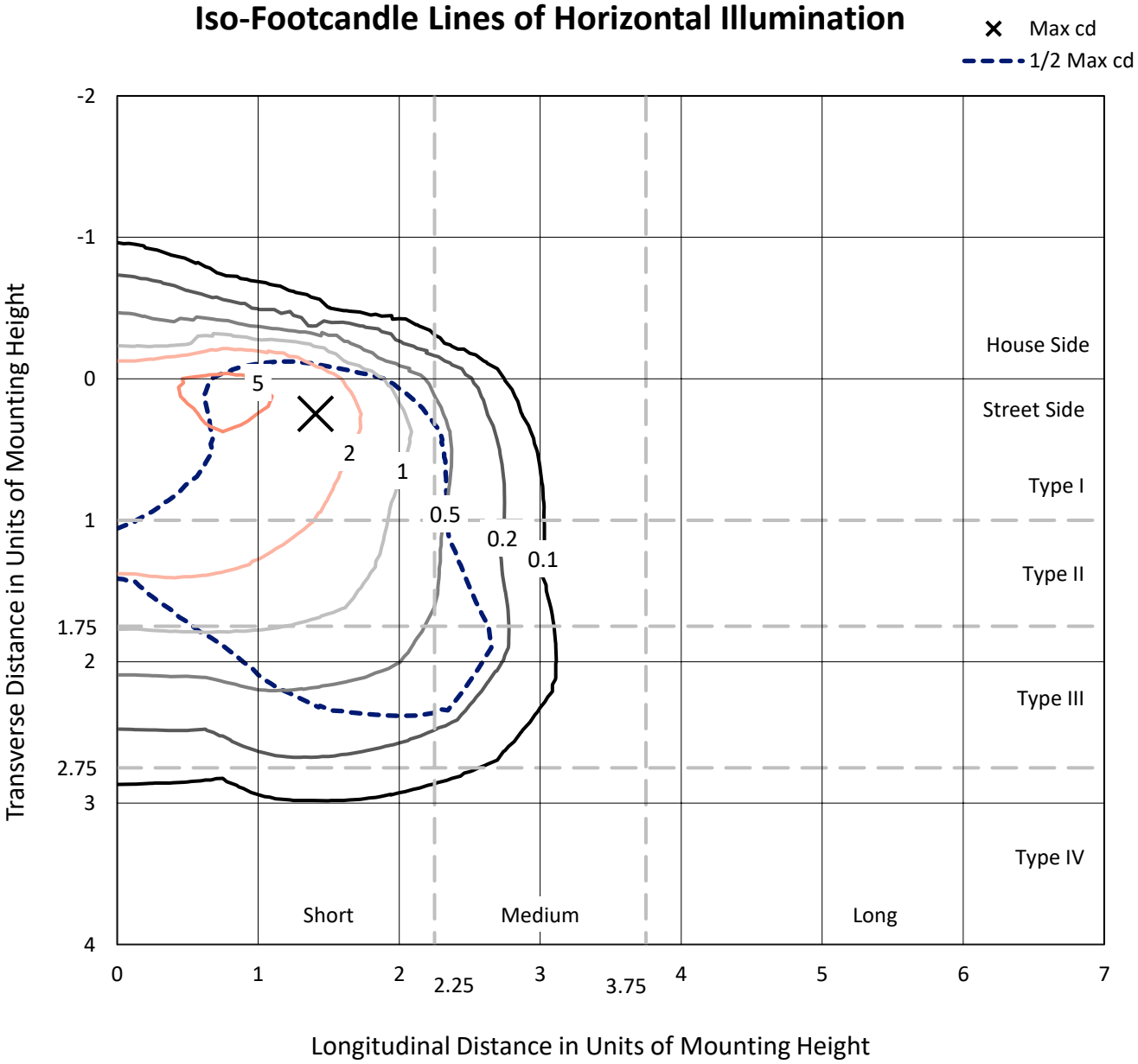
Scaled Data Report

REPORT NUMBER: P1458577
CATALOG NUMBER: GLAN-SB4C-935-U-T3LG-HSS

## Iso-Footcandle Lines of Horizontal Illumination




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

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REPORT NUMBER: P1458577
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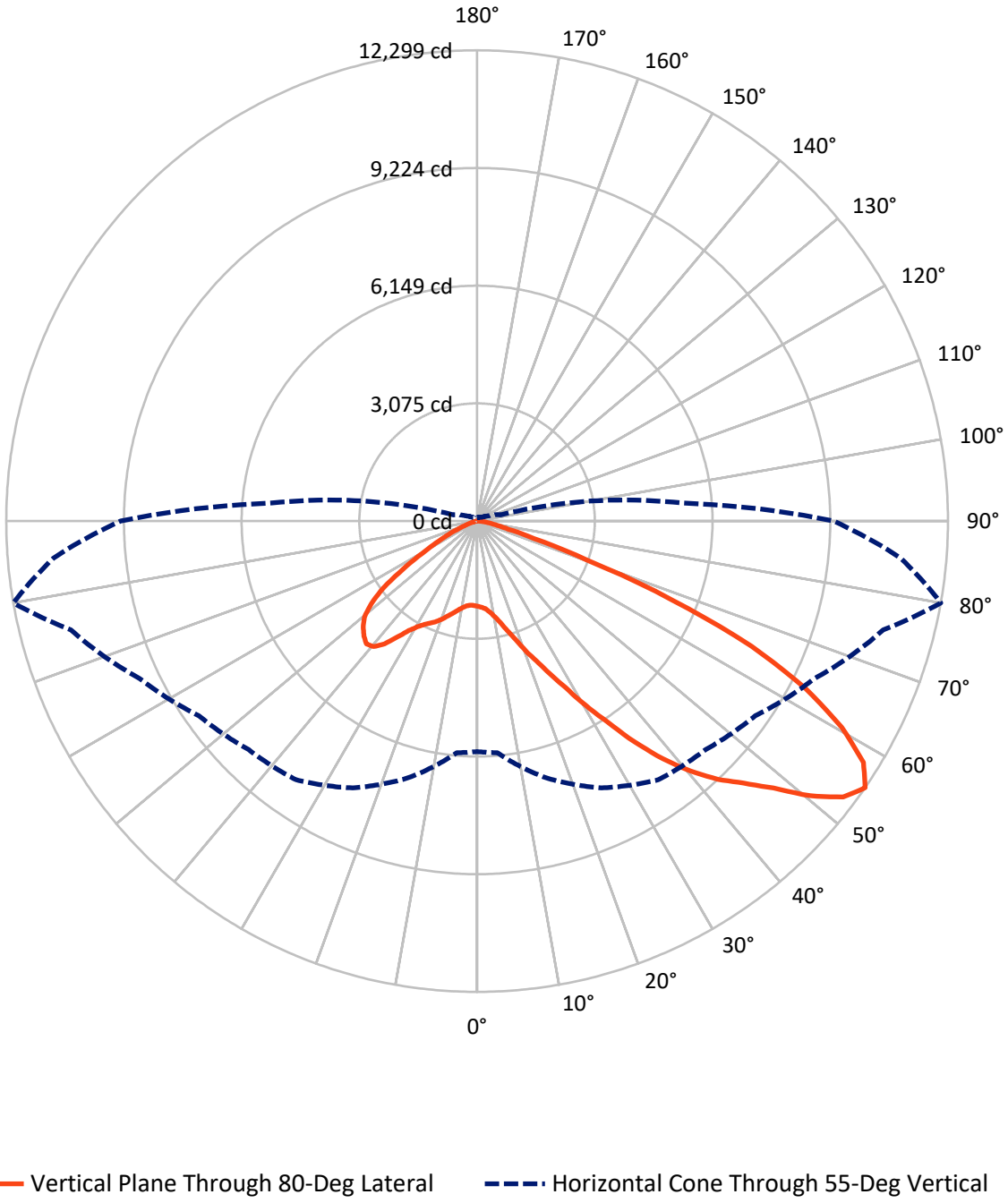
## Luminous Intensity Polar Plot



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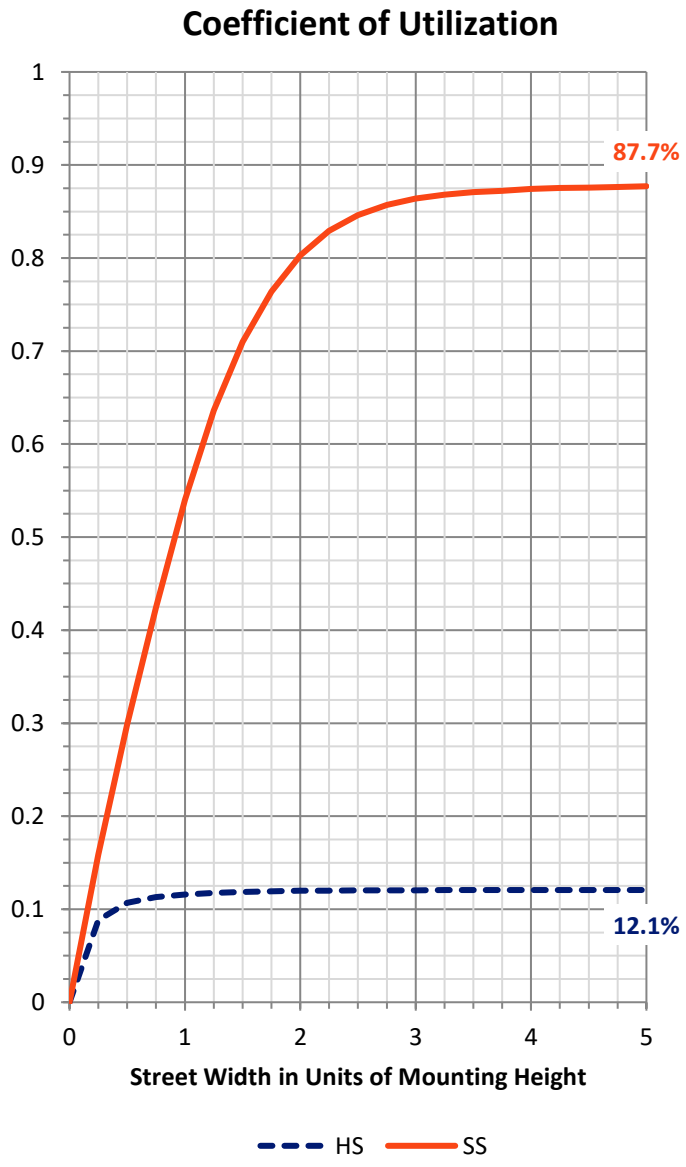
REPORT NUMBER: P1458577
CATALOG NUMBER: GLAN-SB4C-935-U-T3LG-HSS

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 1941.3 | 0.0 | 1941.3 |
| | % Fixture | 12.2 | 0.0 | 12.2 |
| **Street Side** | Lumens | 14028.7 | 0.0 | 14028.7 |
| | % Fixture | 87.8 | 0.0 | 87.8 |
| **Total** | Lumens | 15970.0 | 0.0 | 15970.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 186.7 | 1.2 |
| 10°-20° | 492.2 | 3.1 |
| 20°-30° | 963.5 | 6.0 |
| 30°-40° | 1960.3 | 12.3 |
| 40°-50° | 3304.7 | 20.7 |
| 50°-60° | 4222.4 | 26.4 |
| 60°-70° | 3605.0 | 22.6 |
| 70°-80° | 1152.0 | 7.2 |
| 80°-90° | 83.2 | 0.5 |
| 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° | 15970.0 | 100.0 |
| 0°-180° | 15970.0 | 100.0 |



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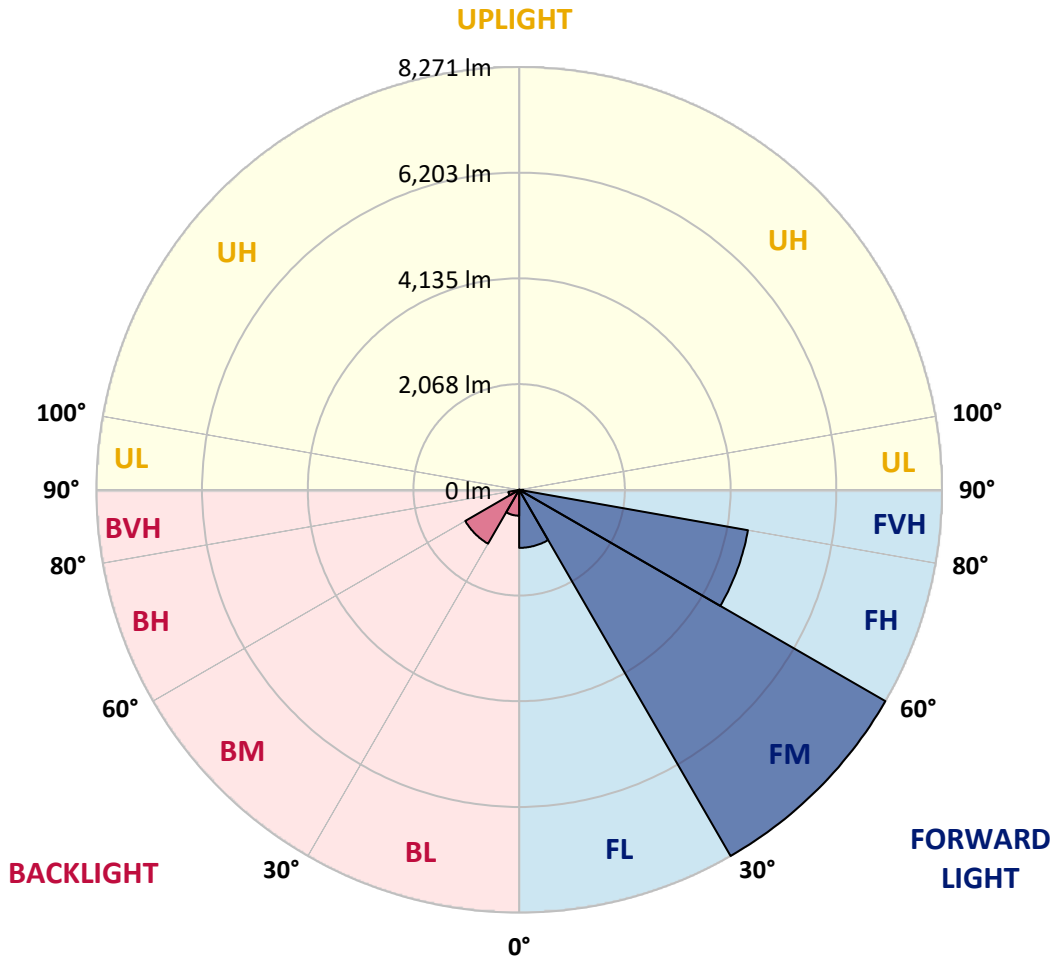
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1135.5 | 7.1 | | | |
| FM | (30°-60°) | 8270.7 | 51.8 | | | |
| FH | (60°-80°) | 4543.6 | 28.5 | | | G2/5000 |
| FVH | (80°-90°) | 78.8 | 0.5 | | | G1/100 |
| BL | (0°-30°) | 506.9 | 3.2 | B2/1000 | | |
| BM | (30°-60°) | 1216.7 | 7.6 | B2/2500 | | |
| BH | (60°-80°) | 213.4 | 1.3 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 4.3 | 0.0 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B2-U0-G2**
Type III Short



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REPORT NUMBER: P1458577
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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 80° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2224.6 | 2224.6 | 2224.6 | 2224.6 | 2224.6 | 2224.6 | 2224.6 | 2224.6 | 2224.6 | *2224.6* | 2224.6 |
| 2.5° | 2238.2 | 2242.8 | 2238.2 | 2242.8 | 2251.8 | 2247.3 | 2265.5 | 2260.9 | 2260.9 | *2256.4* | 2238.2 |
| 5° | 2111.1 | 2115.6 | 2124.7 | 2147.4 | 2179.2 | 2211.0 | 2251.8 | 2279.1 | 2306.3 | *2301.8* | 2283.6 |
| 7.5° | 1861.4 | 1870.5 | 1906.8 | 1952.2 | 2056.6 | 2152.0 | 2256.4 | 2324.5 | 2383.5 | *2401.7* | 2388.0 |
| 10° | 1720.7 | 1729.7 | 1752.4 | 1797.8 | 1893.2 | 2052.1 | 2256.4 | 2397.1 | 2501.5 | *2537.9* | 2542.4 |
| 12.5° | 1707.0 | 1711.6 | 1729.7 | 1779.7 | 1861.4 | 1997.6 | 2251.8 | 2492.5 | 2669.5 | *2724.0* | 2742.2 |
| 15° | 1716.1 | 1725.2 | 1743.4 | 1784.2 | 1879.6 | 2033.9 | 2288.2 | 2642.3 | 2892.0 | *2969.2* | 2973.7 |
| 17.5° | 1752.4 | 1761.5 | 1784.2 | 1829.6 | 1934.0 | 2129.3 | 2401.7 | 2796.6 | 3159.8 | *3246.1* | 3296.0 |
| 20° | 1825.1 | 1829.6 | 1856.9 | 1915.9 | 2033.9 | 2247.3 | 2569.6 | 3005.5 | 3482.2 | *3609.3* | 3645.6 |
| 22.5° | 1920.4 | 1934.0 | 1970.4 | 2043.0 | 2192.8 | 2410.7 | 2801.2 | 3259.7 | 3836.3 | *3968.0* | 4031.5 |
| 25° | 2024.8 | 2043.0 | 2097.5 | 2215.5 | 2406.2 | 2660.4 | 3087.2 | 3595.7 | 4254.0 | *4412.9* | 4499.1 |
| 27.5° | 2238.2 | 2242.8 | 2279.1 | 2428.9 | 2674.1 | 2987.3 | 3450.4 | 4027.0 | 4744.3 | *4930.4* | 5025.8 |
| 30° | 2705.8 | 2710.4 | 2678.6 | 2719.5 | 2969.2 | 3373.2 | 3877.2 | 4530.9 | 5316.3 | *5575.1* | 5652.3 |
| 32.5° | 3277.9 | 3300.6 | 3296.0 | 3268.8 | 3382.3 | 3759.1 | 4385.6 | 5134.7 | 5988.2 | *6260.6* | 6333.3 |
| 35° | 3927.1 | 3981.6 | 3968.0 | 3958.9 | 3972.5 | 4254.0 | 4966.8 | 5802.1 | 6751.0 | *7082.4* | 7141.4 |
| 37.5° | 4562.7 | 4576.3 | 4639.9 | 4717.1 | 4726.1 | 4921.4 | 5638.7 | 6510.3 | 7459.2 | *7881.4* | 7972.2 |
| 40° | 5053.0 | 5098.4 | 5257.3 | 5411.7 | 5570.6 | 5724.9 | 6192.5 | 7082.4 | 8022.2 | *8589.7* | 8630.5 |
| 42.5° | 5434.4 | 5543.3 | 5774.9 | 6015.5 | 6337.8 | 6510.3 | 6719.2 | 7486.4 | 8480.7 | *9220.7* | 9202.6 |
| 45° | 5897.4 | 5942.8 | 6269.7 | 6587.5 | 6914.4 | 7177.7 | 7173.2 | 7826.9 | 8839.4 | *9761.0* | 9647.5 |
| 47.5° | 6210.7 | 6265.2 | 6710.1 | 7082.4 | 7418.3 | 7550.0 | 7577.2 | 8194.7 | 9334.2 | *10414.7* | 10146.9 |
| 50° | 6378.7 | 6474.0 | 6959.8 | 7432.0 | 7795.2 | 7836.0 | 7958.6 | 8675.9 | 9983.4 | *11281.9* | 10777.9 |
| 52.5° | 6396.8 | 6487.6 | 7046.1 | 7654.4 | 8049.4 | 8131.1 | 8340.0 | 9220.7 | 10614.5 | *11976.5* | 11141.1 |
| 55° | *6020.0* | *6074.5* | *6941.6* | *7690.7* | *8249.2* | *8439.8* | *8866.6* | *9724.7* | *10982.2* | *12298.8* | *11109.4* |
| 57.5° | 5665.9 | 5720.4 | 6474.0 | 7627.2 | 8453.5 | 8843.9 | 9429.6 | 10069.7 | 10696.2 | *11899.3* | 10401.1 |
| 60° | 5361.7 | 5389.0 | 6074.5 | 7332.1 | 8530.6 | 9238.9 | 9915.3 | 9729.2 | 9956.2 | *10941.4* | 9188.9 |
| 62.5° | 4789.7 | 4807.9 | 5620.5 | 6800.9 | 8376.3 | 9543.1 | 10083.3 | 9007.3 | 9143.5 | *9620.2* | 7763.4 |
| 65° | 3618.4 | 3686.5 | 4431.0 | 6401.4 | 8122.0 | 9683.8 | 9692.9 | 8126.6 | 7985.8 | *7872.3* | 6106.3 |
| 67.5° | 2456.1 | 2533.3 | 2982.8 | 5756.7 | 7708.9 | 9742.8 | 8934.7 | 6987.0 | 6083.6 | *5497.9* | 3999.7 |
| 70° | 1961.3 | 1961.3 | 2115.6 | 4626.3 | 6728.3 | 8989.2 | 7994.9 | 5275.5 | 3863.5 | *3037.3* | 2142.9 |
| 72.5° | 1289.4 | 1293.9 | 1439.2 | 2937.4 | 4771.5 | 6855.4 | 6519.4 | 3050.9 | 2006.7 | *1548.1* | 1057.8 |
| 75° | 467.6 | 467.6 | 631.1 | 1175.9 | 2524.2 | 4081.5 | 3972.5 | 1457.3 | 1089.6 | *844.4* | 640.1 |
| 77.5° | 249.7 | 258.8 | 304.2 | 485.8 | 967.0 | 1661.6 | 1552.7 | 744.6 | 617.4 | *526.6* | 399.5 |
| 80° | 168.0 | 172.5 | 204.3 | 299.6 | 467.6 | 640.1 | 499.4 | 417.7 | 417.7 | *354.1* | 267.9 |
| 82.5° | 90.8 | 95.3 | 136.2 | 195.2 | 249.7 | 299.6 | 240.6 | 245.2 | 295.1 | *240.6* | 154.4 |
| 85° | 63.6 | 63.6 | 104.4 | 140.7 | 140.7 | 145.3 | 104.4 | 154.4 | 172.5 | *149.8* | 104.4 |
| 87.5° | 36.3 | 36.3 | 59.0 | 68.1 | 68.1 | 63.6 | 31.8 | 54.5 | 68.1 | *77.2* | 45.4 |
| 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: P1458577
CATALOG NUMBER: GLAN-SB4C-935-U-T3LG-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2224.6 | 2224.6 | 2224.6 | 2224.6 | 2224.6 | 2224.6 | 2224.6 | 2224.6 | 2224.6 | 2224.6 | 2224.6 |
| 2.5° | 2233.7 | 2220.1 | 2192.8 | 2138.3 | 2111.1 | 2074.8 | 2043.0 | 2002.1 | 1993.1 | 1988.5 | 1970.4 |
| 5° | 2270.0 | 2242.8 | 2161.0 | 2043.0 | 1943.1 | 1847.8 | 1752.4 | 1698.0 | 1652.6 | 1629.9 | 1625.3 |
| 7.5° | 2360.8 | 2306.3 | 2156.5 | 1947.7 | 1761.5 | 1598.1 | 1457.3 | 1334.8 | 1271.2 | 1216.7 | 1221.3 |
| 10° | 2497.0 | 2410.7 | 2165.6 | 1856.9 | 1579.9 | 1316.6 | 1112.3 | 935.2 | 808.1 | 749.1 | 744.6 |
| 12.5° | 2678.6 | 2556.0 | 2197.4 | 1766.1 | 1357.5 | 989.7 | 730.9 | 626.5 | 599.3 | 594.7 | 590.2 |
| 15° | 2901.1 | 2728.5 | 2229.1 | 1648.0 | 1057.8 | 685.5 | 594.7 | 572.0 | 567.5 | 563.0 | 563.0 |
| 17.5° | 3168.9 | 2928.3 | 2247.3 | 1448.3 | 771.8 | 590.2 | 558.4 | 544.8 | 540.3 | 535.7 | 535.7 |
| 20° | 3504.9 | 3150.8 | 2270.0 | 1194.0 | 653.8 | 567.5 | 531.2 | 513.0 | 508.5 | 508.5 | 503.9 |
| 22.5° | 3836.3 | 3400.5 | 2251.8 | 971.6 | 631.1 | 540.3 | 499.4 | 481.2 | 472.2 | 472.2 | 467.6 |
| 25° | 4217.7 | 3654.7 | 2197.4 | 876.2 | 626.5 | 517.6 | 467.6 | 440.4 | 426.8 | 422.2 | 422.2 |
| 27.5° | 4653.5 | 3945.3 | 2111.1 | 880.8 | 626.5 | 499.4 | 426.8 | 390.4 | 381.4 | 372.3 | 372.3 |
| 30° | 5152.9 | 4299.4 | 2047.5 | 939.8 | 635.6 | 481.2 | 390.4 | 345.0 | 331.4 | 322.3 | 326.9 |
| 32.5° | 5724.9 | 4694.4 | 2043.0 | 1035.1 | 649.2 | 454.0 | 349.6 | 299.6 | 286.0 | 281.5 | 286.0 |
| 35° | 6374.1 | 5184.7 | 2147.4 | 1107.8 | 612.9 | 395.0 | 299.6 | 258.8 | 245.2 | 245.2 | 249.7 |
| 37.5° | 7096.0 | 5747.6 | 2288.2 | 1089.6 | 494.9 | 313.3 | 258.8 | 227.0 | 213.4 | 217.9 | 222.5 |
| 40° | 7754.3 | 6188.0 | 2310.9 | 930.7 | 372.3 | 267.9 | 222.5 | 199.8 | 190.7 | 195.2 | 199.8 |
| 42.5° | 8253.7 | 6542.1 | 2092.9 | 721.9 | 313.3 | 227.0 | 190.7 | 172.5 | 168.0 | 177.1 | 177.1 |
| 45° | 8657.8 | 6682.9 | 1747.9 | 535.7 | 276.9 | 195.2 | 168.0 | 158.9 | 149.8 | 154.4 | 154.4 |
| 47.5° | 9080.0 | 6705.6 | 1425.6 | 431.3 | 245.2 | 177.1 | 154.4 | 145.3 | 136.2 | 136.2 | 136.2 |
| 50° | 9488.6 | 6651.1 | 1089.6 | 381.4 | 227.0 | 158.9 | 140.7 | 131.7 | 122.6 | 118.0 | 118.0 |
| 52.5° | 9588.5 | 6215.2 | 799.0 | 354.1 | 208.8 | 149.8 | 131.7 | 122.6 | 113.5 | 109.0 | 109.0 |
| 55° | *9311.5* | *5389.0* | *626.5* | *317.8* | *190.7* | *136.2* | *122.6* | *113.5* | *99.9* | *95.3* | *95.3* |
| 57.5° | 8399.0 | 4108.7 | 499.4 | 272.4 | 172.5 | 131.7 | 113.5 | 104.4 | 90.8 | 86.3 | 86.3 |
| 60° | 7214.0 | 2914.7 | 404.1 | 222.5 | 158.9 | 118.0 | 104.4 | 90.8 | 81.7 | 72.6 | 72.6 |
| 62.5° | 5902.0 | 2092.9 | 326.9 | 186.1 | 149.8 | 104.4 | 95.3 | 81.7 | 63.6 | 49.9 | 49.9 |
| 65° | 4526.4 | 1502.7 | 254.2 | 149.8 | 136.2 | 90.8 | 81.7 | 68.1 | 49.9 | 36.3 | 36.3 |
| 67.5° | 2928.3 | 971.6 | 190.7 | 131.7 | 104.4 | 77.2 | 63.6 | 54.5 | 45.4 | 31.8 | 27.2 |
| 70° | 1543.6 | 567.5 | 140.7 | 113.5 | 77.2 | 59.0 | 54.5 | 45.4 | 36.3 | 22.7 | 22.7 |
| 72.5° | 799.0 | 372.3 | 104.4 | 99.9 | 59.0 | 40.9 | 45.4 | 36.3 | 27.2 | 13.6 | 13.6 |
| 75° | 513.0 | 249.7 | 77.2 | 81.7 | 36.3 | 31.8 | 31.8 | 22.7 | 13.6 | 9.1 | 4.5 |
| 77.5° | 331.4 | 168.0 | 54.5 | 68.1 | 22.7 | 18.2 | 18.2 | 9.1 | 4.5 | 0.0 | 0.0 |
| 80° | 195.2 | 104.4 | 36.3 | 45.4 | 9.1 | 9.1 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 99.9 | 54.5 | 18.2 | 18.2 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 63.6 | 27.2 | 4.5 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 31.8 | 9.1 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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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# LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-15

Test Date: 10/11/2024

Luminaire Tested: GSS-SB1A-935-U-5WQ

Data in this report applies to families of products including GSS-SB1A-935-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

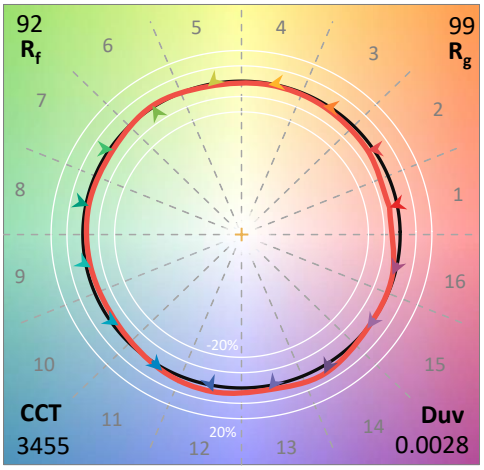
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-15 |
| 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-935-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 90 CRI 3500K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3455 |
| CIE u': | 0.2356 |
| CIE v': | 0.5159 |
| Duv: | 0.0028 |
| CIE x: | 0.4109 |
| CIE y: | 0.3999 |
| CIE z: | 0.1892 |
| Peak Wavelength (nm): | 616 |
| Dominant Wavelength (nm): | 579 |
| Purity: | 43.35383 |
| Rf: | 92.3 |
| Rg: | 98.5 |

| | | | |
|---|---|---|---|
| CRI (Ra): | 92.2 | | |
| R1: | 92.0 | R9: | 59.8 |
| R2: | 94.4 | R10: | 85.8 |
| R3: | 95.6 | R11: | 93.2 |
| R4: | 93.2 | R12: | 78.0 |
| R5: | 91.4 | R13: | 92.5 |
| R6: | 92.5 | R14: | 97.0 |
| R7: | 94.5 | R15: | 88.4 |
| R8: | 84.2 | | |




## Test Conditions

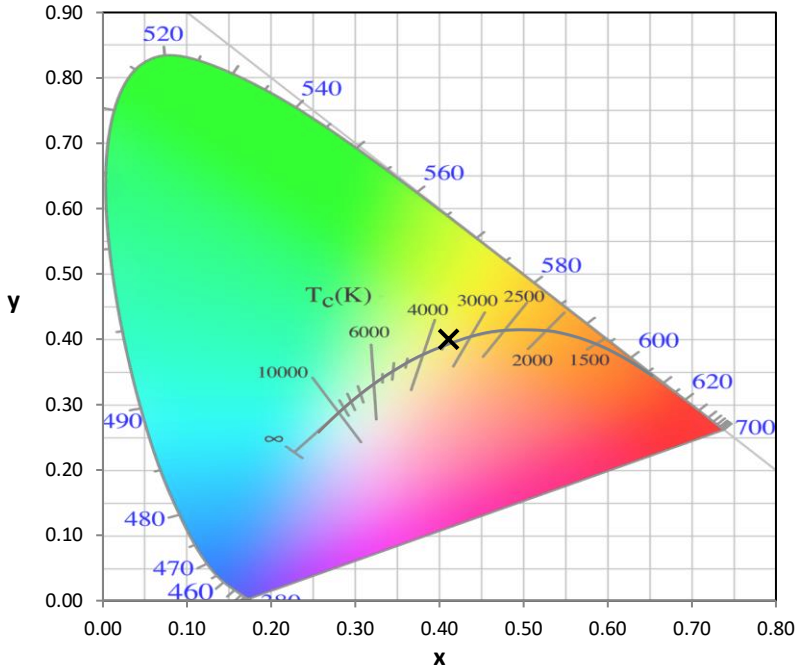
| | |
|---|---|
| Stabilization Time: | 20M |
| Operation Time: | 1H 20M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-15

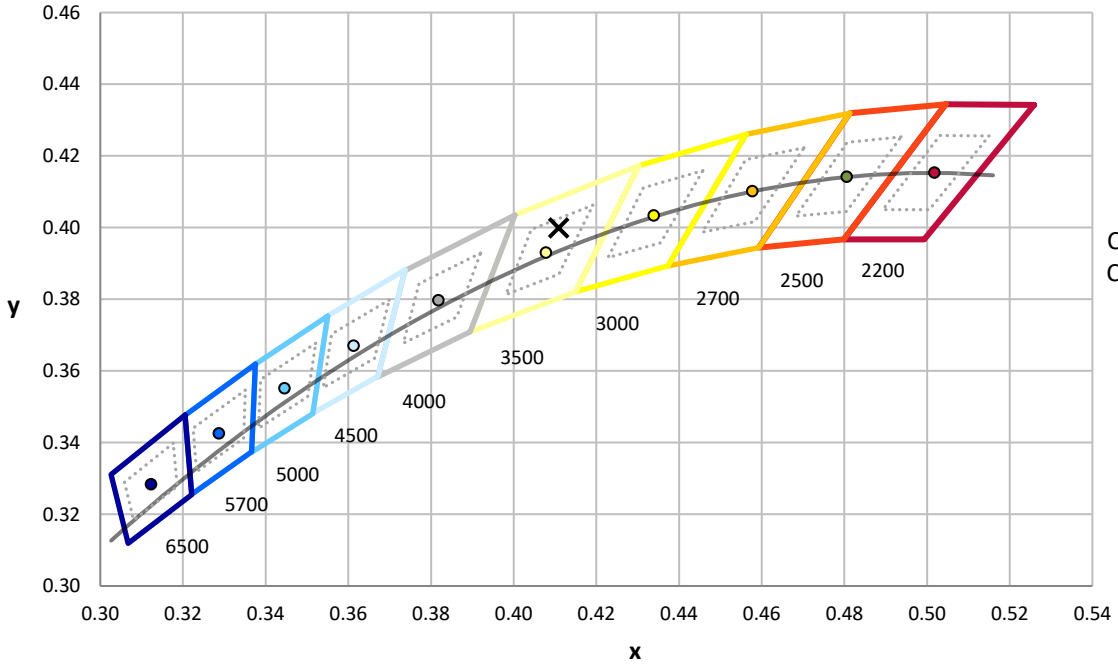
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC 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 |

REPORT NUMBER: SP1-2407-184-15

## CIE 1931 Chromaticity Diagram




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




CCT = 3455K
CIE x = 0.4109
CIE y = 0.3999
Duv = 0.0028

Point lies inside the ANSI 3500K 4-step quadrangle

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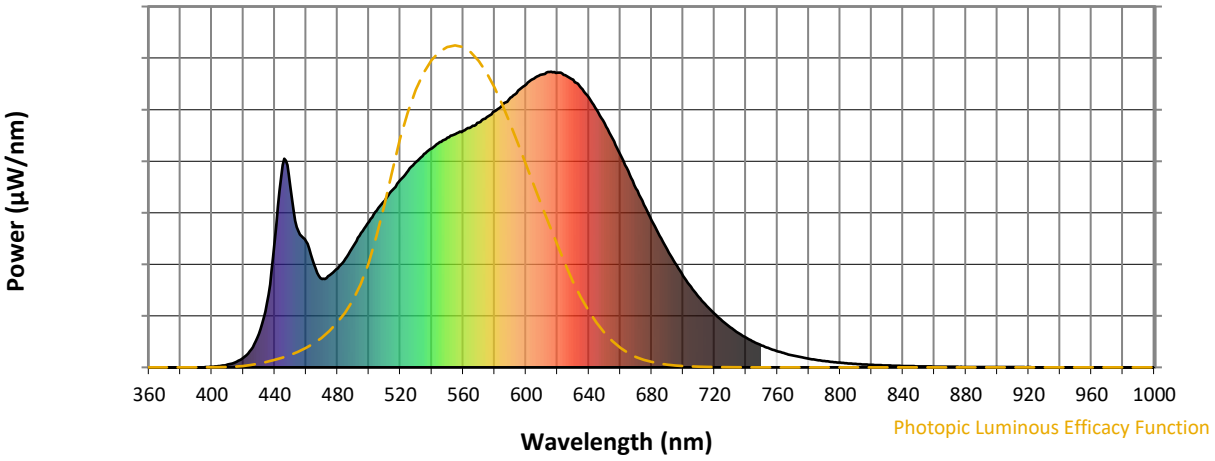
## Photopic Flux vs. Wavelength




## 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 | 410 | NR | 620 | 997 | NR | 750 | 74 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 454 | NR | 625 | 988 | NR | 755 | 64 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 493 | NR | 630 | 973 | NR | 760 | 54 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 530 | NR | 635 | 946 | NR | 765 | 47 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 564 | NR | 640 | 913 | NR | 770 | 40 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 599 | NR | 645 | 870 | NR | 775 | 34 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 634 | NR | 650 | 826 | NR | 780 | 29 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 664 | NR | 655 | 774 | NR | 785 | 25 | NR | 915 | 1 | NR |
| 400 | 2 | NR | 530 | 695 | NR | 660 | 720 | NR | 790 | 21 | NR | 920 | 1 | NR |
| 405 | 4 | NR | 535 | 722 | NR | 665 | 664 | NR | 795 | 18 | NR | 925 | 1 | NR |
| 410 | 9 | NR | 540 | 741 | NR | 670 | 605 | NR | 800 | 16 | NR | 930 | 0 | NR |
| 415 | 17 | NR | 545 | 762 | NR | 675 | 550 | NR | 805 | 13 | NR | 935 | 0 | NR |
| 420 | 32 | NR | 550 | 777 | NR | 680 | 497 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 61 | NR | 555 | 789 | NR | 685 | 445 | NR | 815 | 10 | NR | 945 | 0 | NR |
| 430 | 114 | NR | 560 | 800 | NR | 690 | 398 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 218 | NR | 565 | 813 | NR | 695 | 352 | NR | 825 | 7 | NR | 955 | 0 | NR |
| 440 | 427 | NR | 570 | 828 | NR | 700 | 309 | NR | 830 | 6 | NR | 960 | 0 | NR |
| 445 | 684 | NR | 575 | 846 | NR | 705 | 273 | NR | 835 | 5 | NR | 965 | 0 | NR |
| 450 | 611 | NR | 580 | 866 | NR | 710 | 237 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 461 | NR | 585 | 888 | NR | 715 | 208 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 427 | NR | 590 | 913 | NR | 720 | 181 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 349 | NR | 595 | 936 | NR | 725 | 157 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 298 | NR | 600 | 957 | NR | 730 | 136 | NR | 860 | 3 | NR | 990 | 1 | NR |
| 475 | 312 | NR | 605 | 976 | NR | 735 | 117 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 335 | NR | 610 | 990 | NR | 740 | 100 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 367 | NR | 615 | 999 | NR | 745 | 86 | NR | 875 | 2 | NR | | | |

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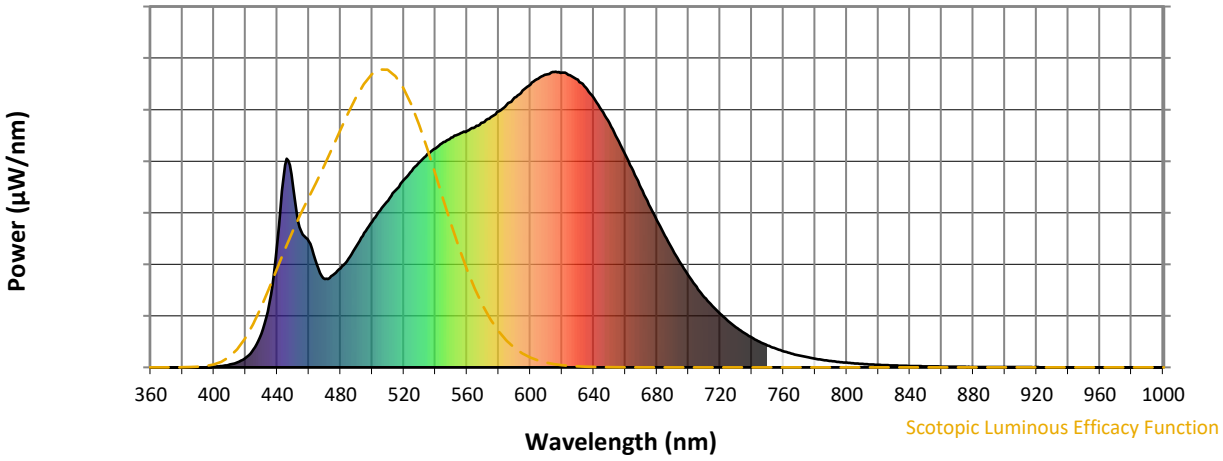
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.58**

| 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 | 410 | NR | 620 | 997 | NR | 750 | 74 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 454 | NR | 625 | 988 | NR | 755 | 64 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 493 | NR | 630 | 973 | NR | 760 | 54 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 530 | NR | 635 | 946 | NR | 765 | 47 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 564 | NR | 640 | 913 | NR | 770 | 40 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 599 | NR | 645 | 870 | NR | 775 | 34 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 634 | NR | 650 | 826 | NR | 780 | 29 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 664 | NR | 655 | 774 | NR | 785 | 25 | NR | 915 | 1 | NR |
| 400 | 2 | NR | 530 | 695 | NR | 660 | 720 | NR | 790 | 21 | NR | 920 | 1 | NR |
| 405 | 4 | NR | 535 | 722 | NR | 665 | 664 | NR | 795 | 18 | NR | 925 | 1 | NR |
| 410 | 9 | NR | 540 | 741 | NR | 670 | 605 | NR | 800 | 16 | NR | 930 | 0 | NR |
| 415 | 17 | NR | 545 | 762 | NR | 675 | 550 | NR | 805 | 13 | NR | 935 | 0 | NR |
| 420 | 32 | NR | 550 | 777 | NR | 680 | 497 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 61 | NR | 555 | 789 | NR | 685 | 445 | NR | 815 | 10 | NR | 945 | 0 | NR |
| 430 | 114 | NR | 560 | 800 | NR | 690 | 398 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 218 | NR | 565 | 813 | NR | 695 | 352 | NR | 825 | 7 | NR | 955 | 0 | NR |
| 440 | 427 | NR | 570 | 828 | NR | 700 | 309 | NR | 830 | 6 | NR | 960 | 0 | NR |
| 445 | 684 | NR | 575 | 846 | NR | 705 | 273 | NR | 835 | 5 | NR | 965 | 0 | NR |
| 450 | 611 | NR | 580 | 866 | NR | 710 | 237 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 461 | NR | 585 | 888 | NR | 715 | 208 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 427 | NR | 590 | 913 | NR | 720 | 181 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 349 | NR | 595 | 936 | NR | 725 | 157 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 298 | NR | 600 | 957 | NR | 730 | 136 | NR | 860 | 3 | NR | 990 | 1 | NR |
| 475 | 312 | NR | 605 | 976 | NR | 735 | 117 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 335 | NR | 610 | 990 | NR | 740 | 100 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 367 | NR | 615 | 999 | NR | 745 | 86 | NR | 875 | 2 | NR | | | |

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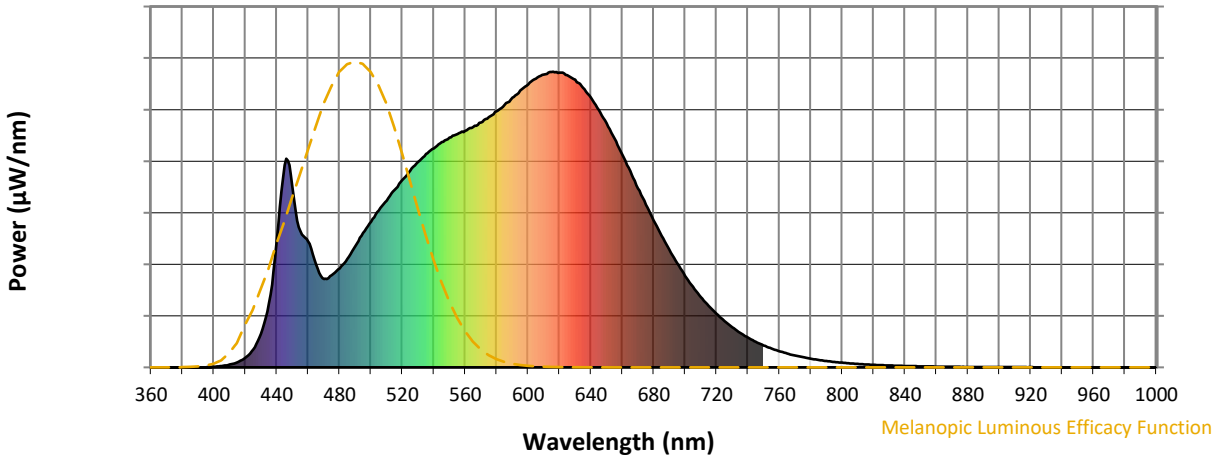
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 3.14**

| 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 | 410 | NR | 620 | 997 | NR | 750 | 74 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 454 | NR | 625 | 988 | NR | 755 | 64 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 493 | NR | 630 | 973 | NR | 760 | 54 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 530 | NR | 635 | 946 | NR | 765 | 47 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 564 | NR | 640 | 913 | NR | 770 | 40 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 599 | NR | 645 | 870 | NR | 775 | 34 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 634 | NR | 650 | 826 | NR | 780 | 29 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 664 | NR | 655 | 774 | NR | 785 | 25 | NR | 915 | 1 | NR |
| 400 | 2 | NR | 530 | 695 | NR | 660 | 720 | NR | 790 | 21 | NR | 920 | 1 | NR |
| 405 | 4 | NR | 535 | 722 | NR | 665 | 664 | NR | 795 | 18 | NR | 925 | 1 | NR |
| 410 | 9 | NR | 540 | 741 | NR | 670 | 605 | NR | 800 | 16 | NR | 930 | 0 | NR |
| 415 | 17 | NR | 545 | 762 | NR | 675 | 550 | NR | 805 | 13 | NR | 935 | 0 | NR |
| 420 | 32 | NR | 550 | 777 | NR | 680 | 497 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 61 | NR | 555 | 789 | NR | 685 | 445 | NR | 815 | 10 | NR | 945 | 0 | NR |
| 430 | 114 | NR | 560 | 800 | NR | 690 | 398 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 218 | NR | 565 | 813 | NR | 695 | 352 | NR | 825 | 7 | NR | 955 | 0 | NR |
| 440 | 427 | NR | 570 | 828 | NR | 700 | 309 | NR | 830 | 6 | NR | 960 | 0 | NR |
| 445 | 684 | NR | 575 | 846 | NR | 705 | 273 | NR | 835 | 5 | NR | 965 | 0 | NR |
| 450 | 611 | NR | 580 | 866 | NR | 710 | 237 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 461 | NR | 585 | 888 | NR | 715 | 208 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 427 | NR | 590 | 913 | NR | 720 | 181 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 349 | NR | 595 | 936 | NR | 725 | 157 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 298 | NR | 600 | 957 | NR | 730 | 136 | NR | 860 | 3 | NR | 990 | 1 | NR |
| 475 | 312 | NR | 605 | 976 | NR | 735 | 117 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 335 | NR | 610 | 990 | NR | 740 | 100 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 367 | NR | 615 | 999 | NR | 745 | 86 | NR | 875 | 2 | NR | | | |

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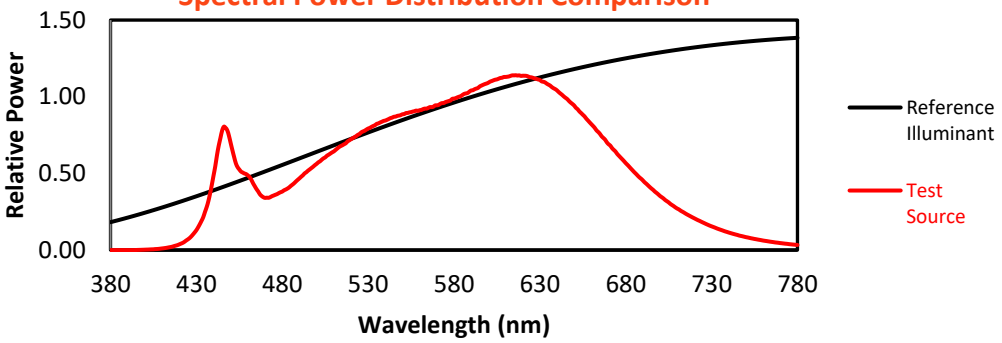
# TM-30-18

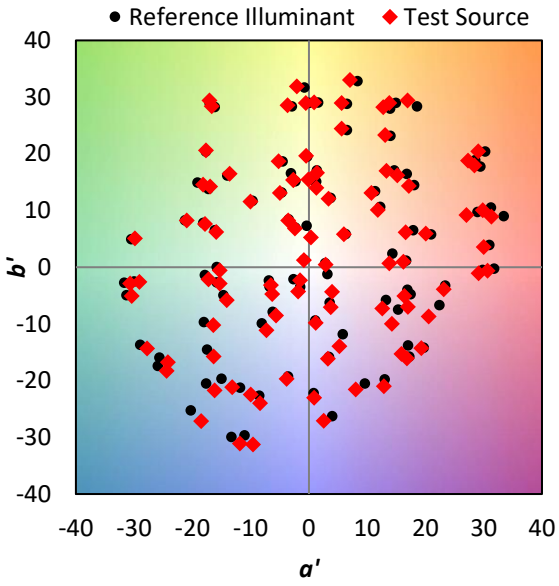
## Summary

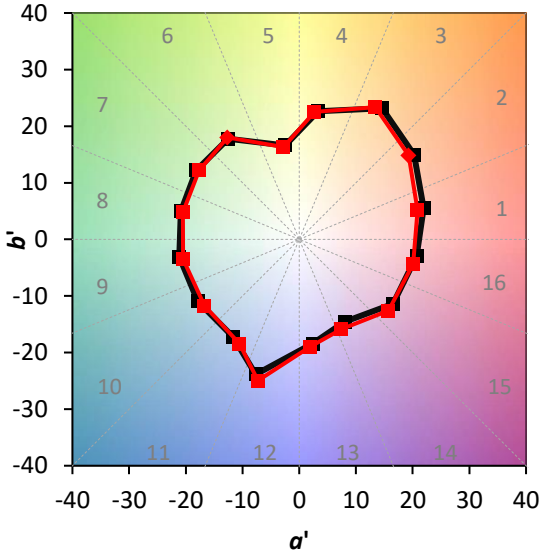
$R_f$ = 92.3
$R_g$ = 98.5
CIE $R_a$ = 92.2
$R_9$ = 59.8

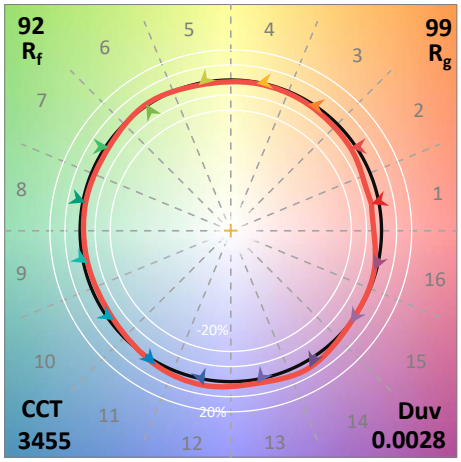
## Spectral Power Distribution Comparison

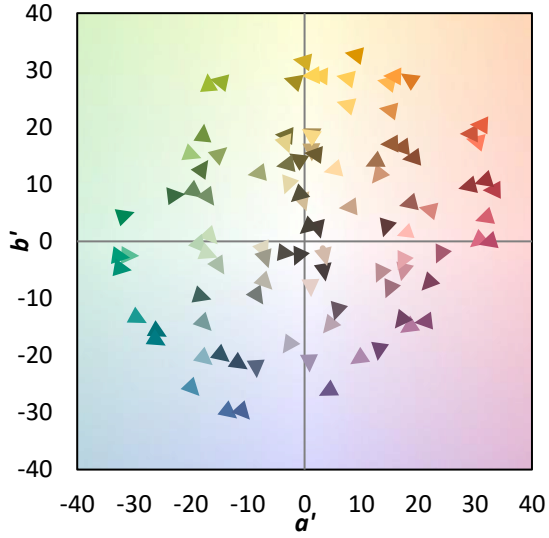



## Color Vector Graphics



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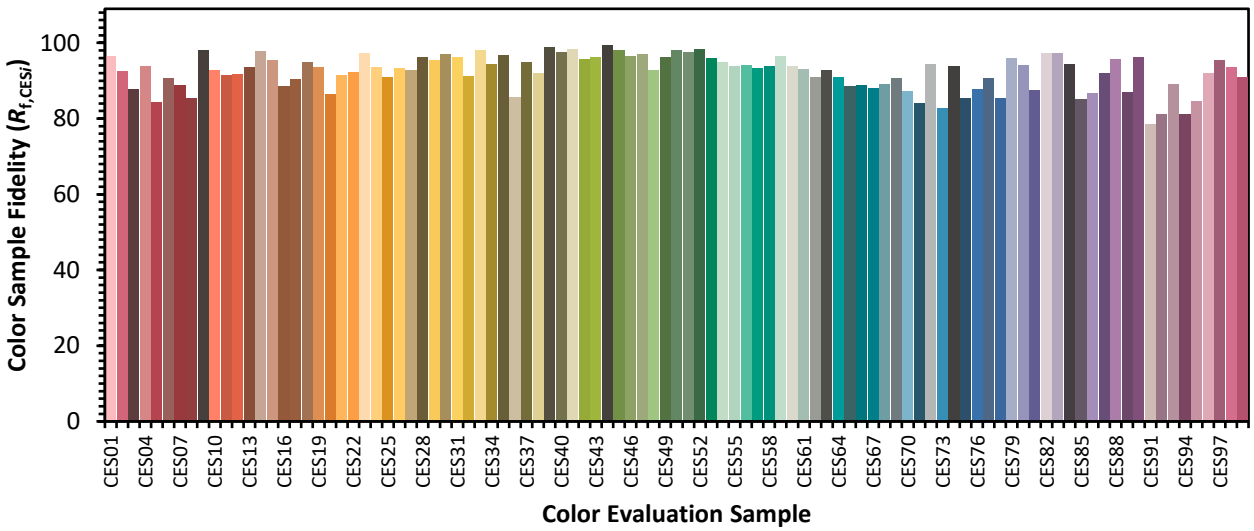
**Individual Sample Fidelity Index ($R_{f,i}$)**

| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 93 | CES51 = 97 | CES76 = 88 |
| CES02 = 62 | CES27 = 93 | CES52 = 98 | CES77 = 91 |
| CES03 = 31 | CES28 = 96 | CES53 = 96 | CES78 = 85 |
| CES04 = 70 | CES29 = 95 | CES54 = 95 | CES79 = 96 |
| CES05 = 50 | CES30 = 97 | CES55 = 94 | CES80 = 94 |
| CES06 = 51 | CES31 = 96 | CES56 = 94 | CES81 = 87 |
| CES07 = 42 | CES32 = 91 | CES57 = 93 | CES82 = 97 |
| CES08 = 41 | CES33 = 98 | CES58 = 94 | CES83 = 97 |
| CES09 = 29 | CES34 = 94 | CES59 = 96 | CES84 = 94 |
| CES10 = 75 | CES35 = 97 | CES60 = 94 | CES85 = 85 |
| CES11 = 58 | CES36 = 86 | CES61 = 93 | CES86 = 87 |
| CES12 = 64 | CES37 = 95 | CES62 = 91 | CES87 = 92 |
| CES13 = 43 | CES38 = 92 | CES63 = 93 | CES88 = 96 |
| CES14 = 74 | CES39 = 99 | CES64 = 91 | CES89 = 87 |
| CES15 = 71 | CES40 = 98 | CES65 = 89 | CES90 = 96 |
| CES16 = 47 | CES41 = 98 | CES66 = 89 | CES91 = 78 |
| CES17 = 49 | CES42 = 96 | CES67 = 88 | CES92 = 81 |
| CES18 = 56 | CES43 = 96 | CES68 = 89 | CES93 = 89 |
| CES19 = 71 | CES44 = 99 | CES69 = 91 | CES94 = 81 |
| CES20 = 66 | CES45 = 98 | CES70 = 87 | CES95 = 85 |
| CES21 = 86 | CES46 = 97 | CES71 = 84 | CES96 = 92 |
| CES22 = 78 | CES47 = 97 | CES72 = 95 | CES97 = 95 |
| CES23 = 91 | CES48 = 93 | CES73 = 83 | CES98 = 94 |
| CES24 = 90 | CES49 = 96 | CES74 = 94 | CES99 = 91 |
| CES25 = 71 | CES50 = 98 | CES75 = 85 | |



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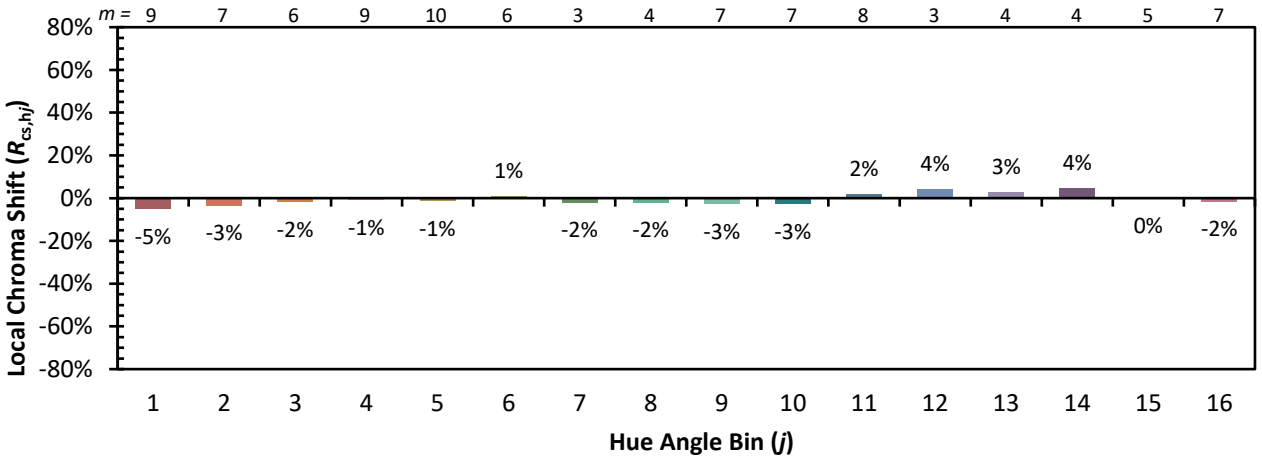
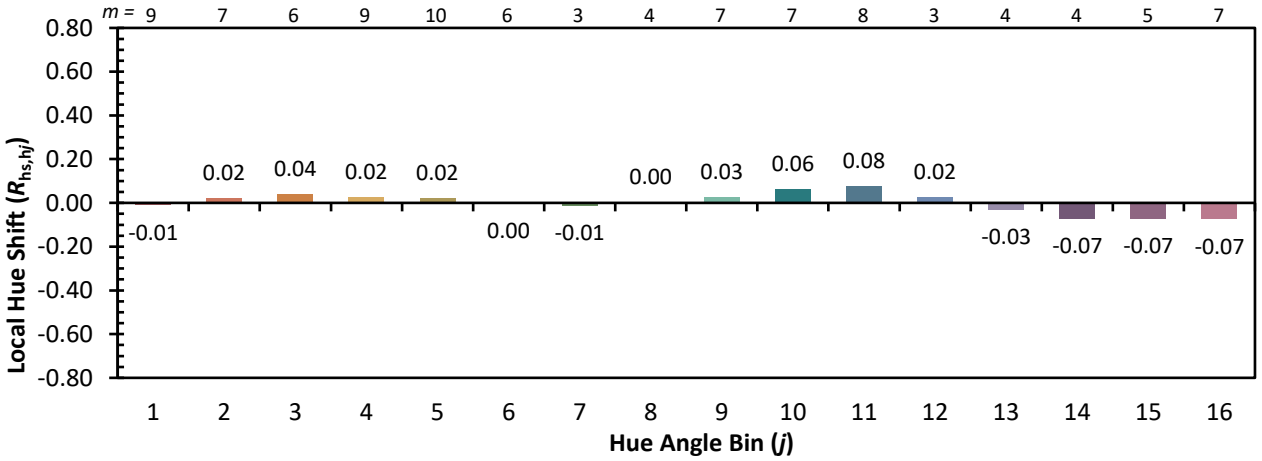
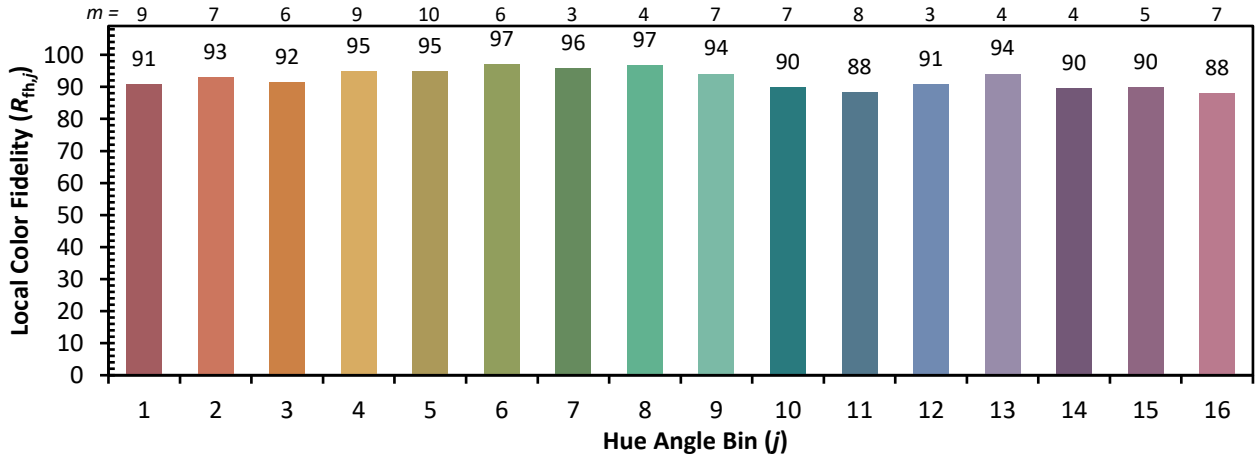
## Color Rendition by Hue-Angle Bin



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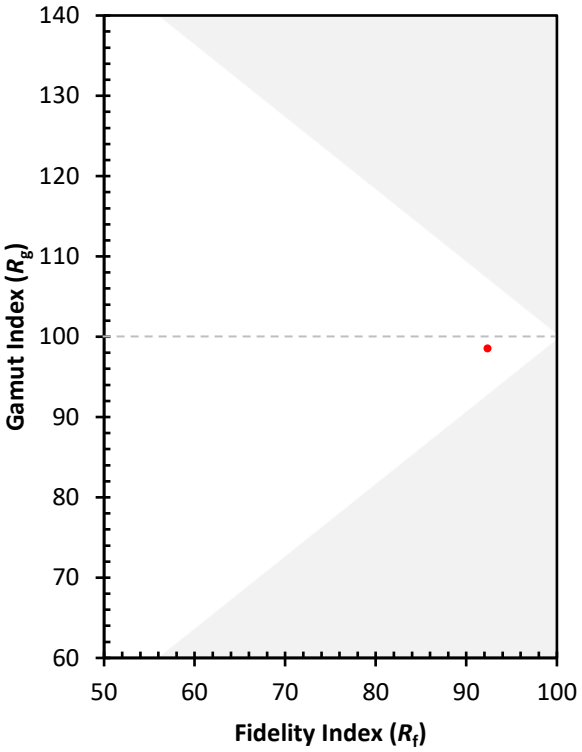
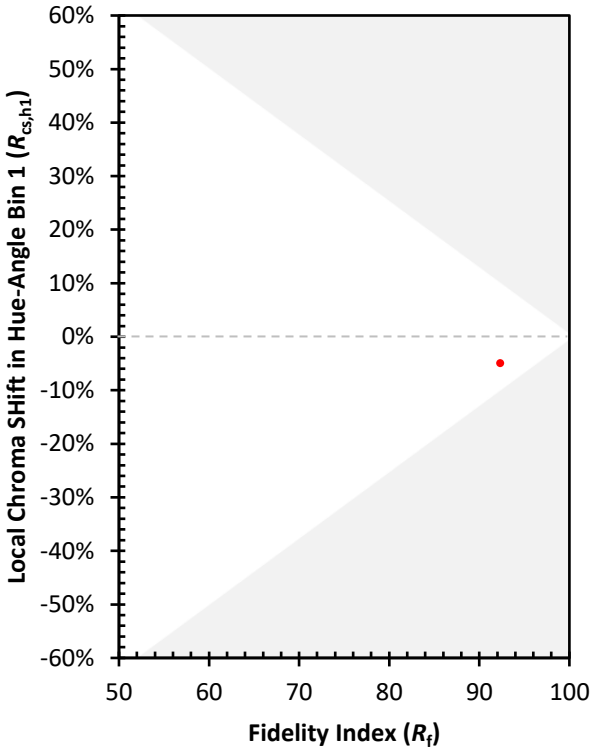
## Measure Comparisons




(END OF REPORT)