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: P1456300

Luminaire Tested: GLAN-SB2B-940-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: | P1456300 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/22/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB2B-940-U-T2LG |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 450mA 2xLight Square PACKAGE 90CRI 4000K FIXTURE w/ TYPE II LOW GLARE |
| Light Source: | (52) 4000K CCT, 90 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 7895.2 lumens |
| Efficiency: | N/A |
| Efficacy: | 106.8 lumens/watt |
| Luminous Opening: | Rectangular (W 1' x L: 1' x H: 0') |
| IES Classification: | Type II - Short |
| BUG Rating: | B2 - U0 - G2 |

| | |
|---|---|
| Input Watts (W): | 73.9 |
| 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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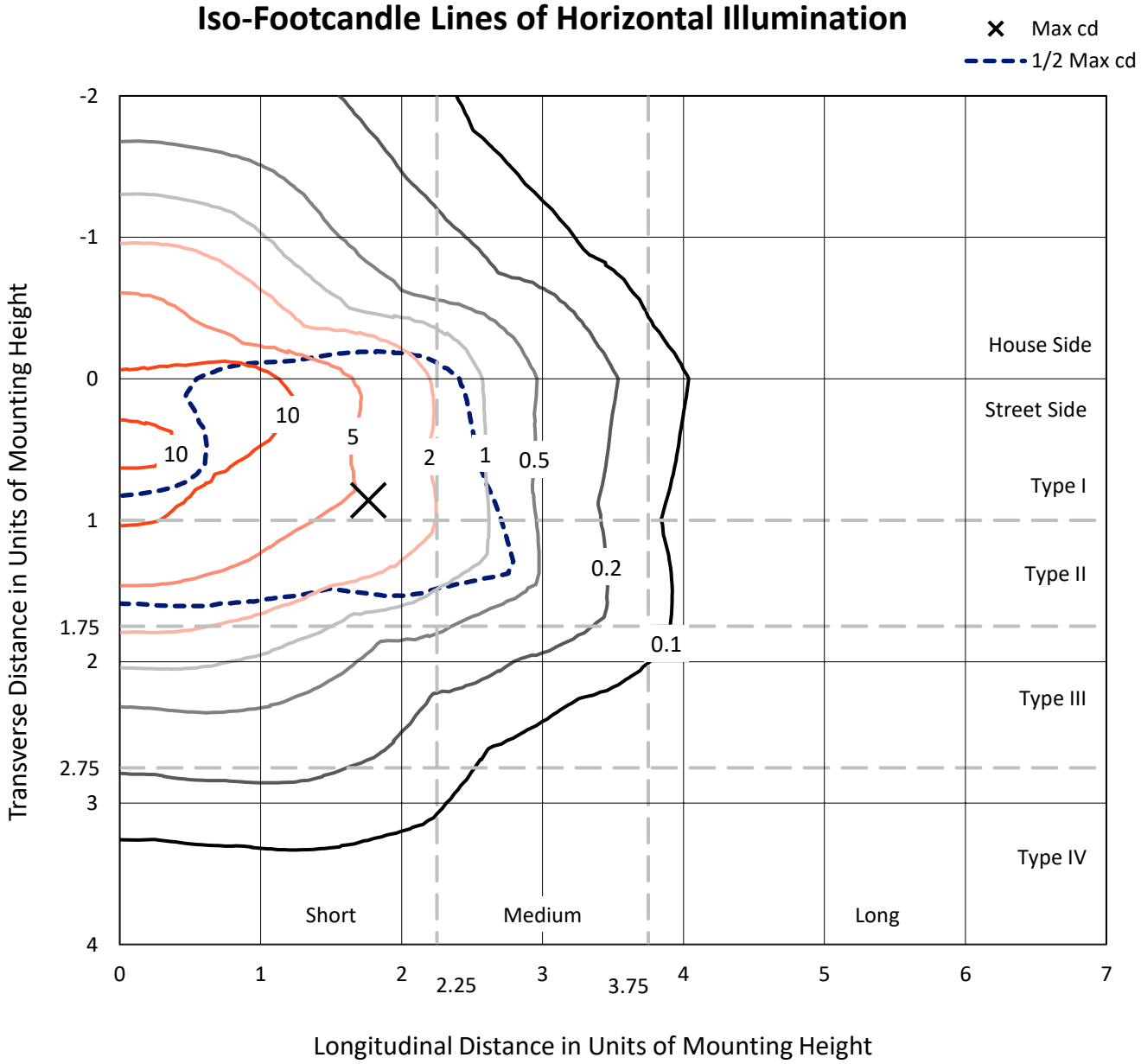
Scaled Data Report

REPORT NUMBER: P1456300
CATALOG NUMBER: GLAN-SB2B-940-U-T2LG

## Iso-Footcandle Lines of Horizontal Illumination




Based on 10 foot mounting height. Maximum calculated value = 18.5 fc
Type II - Short - N/A

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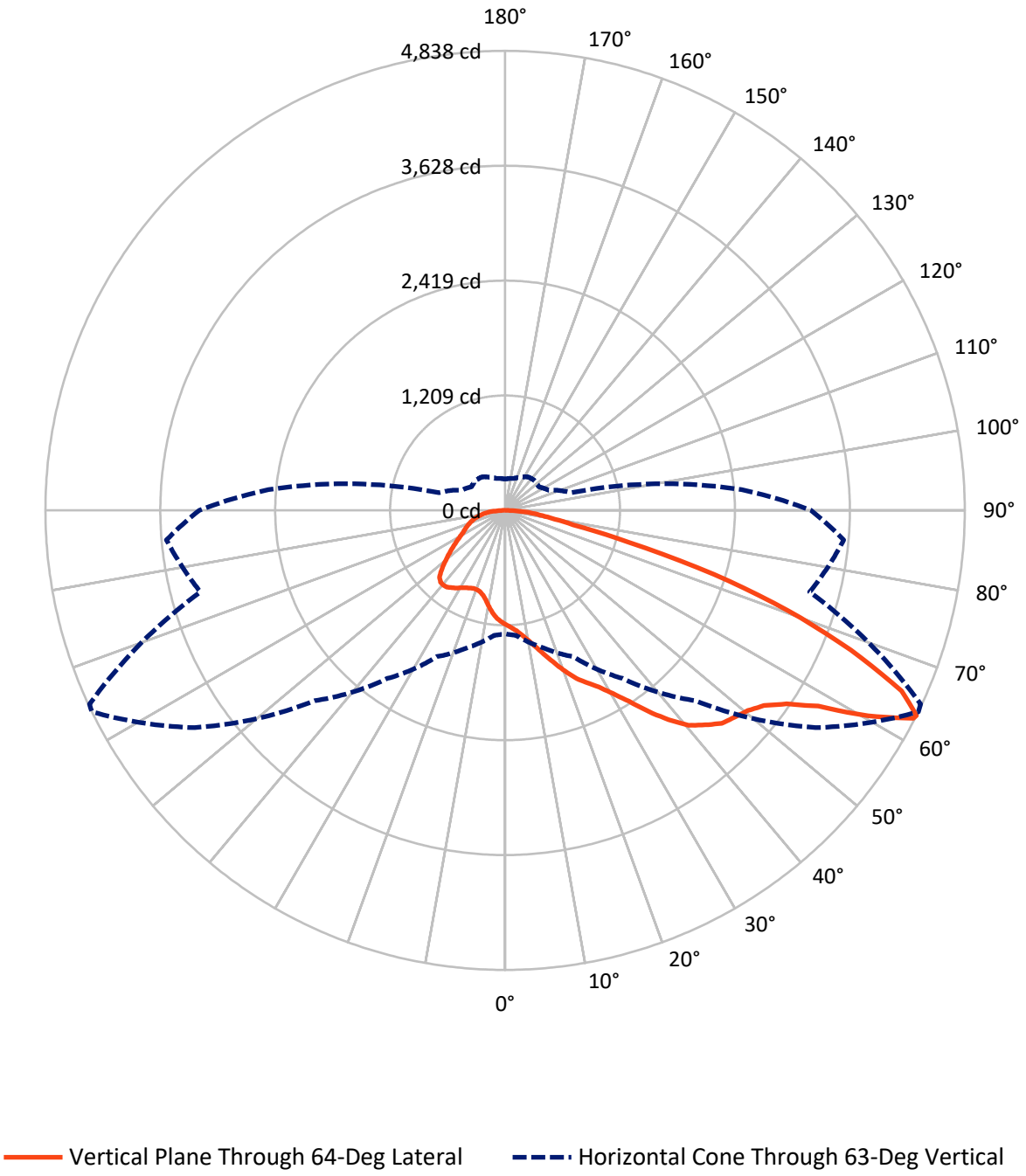
## Luminous Intensity Polar Plot



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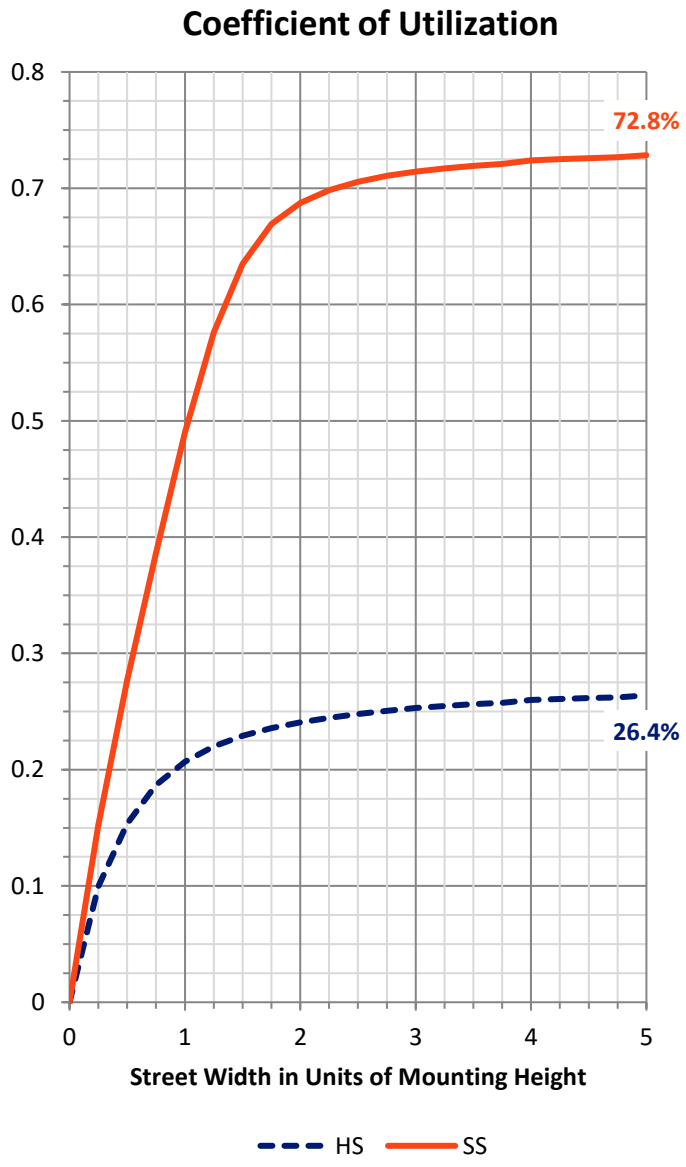
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 2121.2 | 0.0 | 2121.2 |
| | % Fixture | 26.9 | 0.0 | 26.9 |
| **Street Side** | Lumens | 5773.9 | 0.0 | 5773.9 |
| | % Fixture | 73.1 | 0.0 | 73.1 |
| **Total** | Lumens | 7895.2 | 0.0 | 7895.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 110.4 | 1.4 |
| 10°-20° | 339.8 | 4.3 |
| 20°-30° | 621.5 | 7.9 |
| 30°-40° | 1069.0 | 13.5 |
| 40°-50° | 1576.5 | 20.0 |
| 50°-60° | 1889.5 | 23.9 |
| 60°-70° | 1516.5 | 19.2 |
| 70°-80° | 609.4 | 7.7 |
| 80°-90° | 162.5 | 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° | 7895.2 | 100.0 |
| 0°-180° | 7895.2 | 100.0 |



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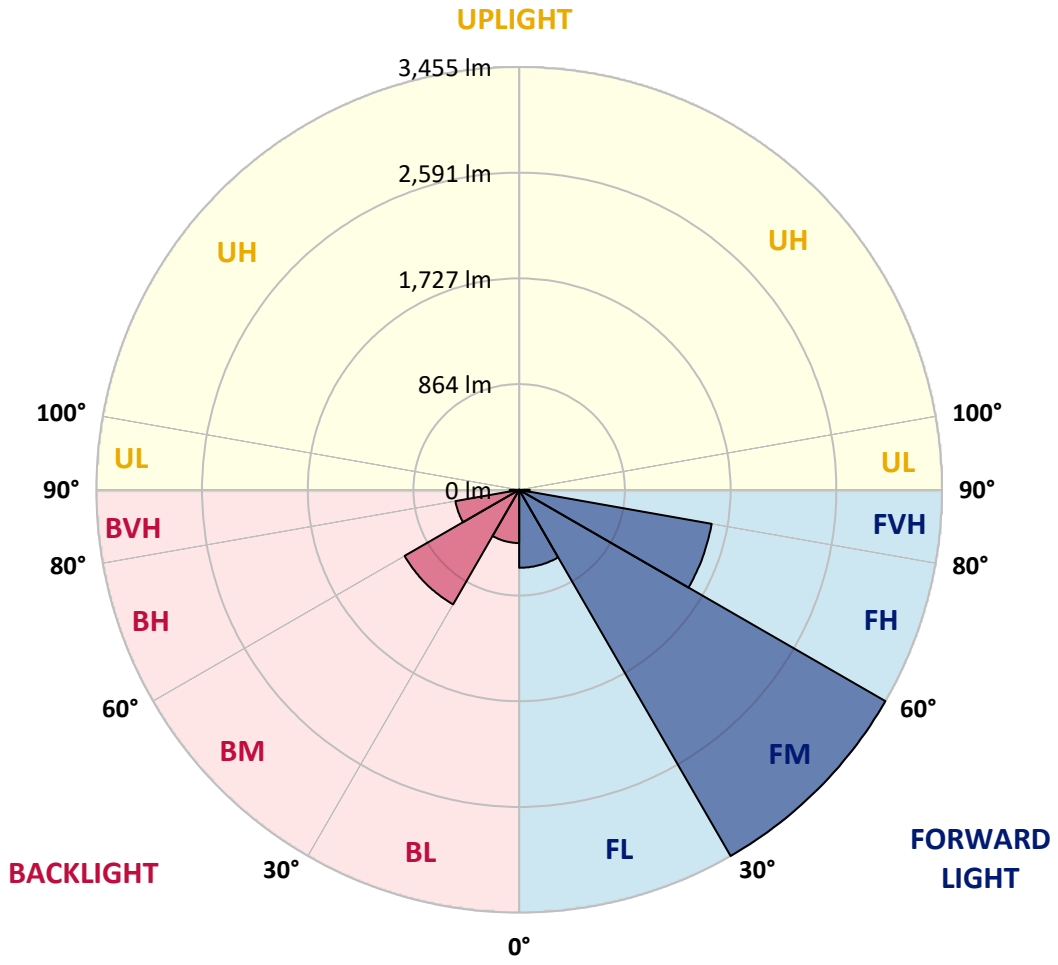
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 637.0 | 8.1 | | | |
| FM | (30°-60°) | 3454.5 | 43.8 | | | |
| FH | (60°-80°) | 1597.0 | 20.2 | | | G1/1800 |
| FVH | (80°-90°) | 85.4 | 1.1 | | | G1/100 |
| BL | (0°-30°) | 434.7 | 5.5 | B1/500 | | |
| BM | (30°-60°) | 1080.5 | 13.7 | B2/2500 | | |
| BH | (60°-80°) | 528.9 | 6.7 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 77.1 | 1.0 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

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



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REPORT NUMBER: P1456300
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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 64° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1202.3 | 1202.3 | 1202.3 | 1202.3 | 1202.3 | 1202.3 | 1202.3 | *1202.3* | 1202.3 | 1202.3 | 1202.3 |
| 2.5° | 1252.0 | 1253.8 | 1248.4 | 1246.7 | 1250.2 | 1243.1 | 1241.4 | *1234.3* | 1230.7 | 1223.6 | 1214.8 |
| 5° | 1287.5 | 1289.2 | 1285.7 | 1285.7 | 1289.2 | 1283.9 | 1282.1 | *1275.0* | 1271.5 | 1264.4 | 1246.7 |
| 7.5° | 1285.7 | 1287.5 | 1291.0 | 1305.2 | 1322.9 | 1330.0 | 1335.3 | *1330.0* | 1328.3 | 1317.6 | 1299.9 |
| 10° | 1257.3 | 1259.1 | 1268.0 | 1289.2 | 1333.6 | 1365.5 | 1399.2 | *1399.2* | 1402.7 | 1393.9 | 1361.9 |
| 12.5° | 1218.3 | 1220.1 | 1241.4 | 1275.0 | 1333.6 | 1388.5 | 1457.7 | *1486.1* | 1484.3 | 1479.0 | 1441.7 |
| 15° | 1124.3 | 1124.3 | 1156.2 | 1220.1 | 1314.1 | 1404.5 | 1507.4 | *1583.6* | 1585.4 | 1590.7 | 1546.4 |
| 17.5° | 1044.5 | 1046.3 | 1072.9 | 1129.6 | 1252.0 | 1395.6 | 1560.6 | *1691.8* | 1697.1 | 1727.3 | 1663.4 |
| 20° | 1051.6 | 1051.6 | 1060.5 | 1085.3 | 1184.6 | 1360.2 | 1590.7 | *1807.1* | 1824.8 | 1895.7 | 1815.9 |
| 22.5° | 1106.6 | 1106.6 | 1113.7 | 1111.9 | 1172.2 | 1337.1 | 1610.2 | *1922.3* | 1954.2 | 2101.4 | 1998.6 |
| 25° | 1207.7 | 1205.9 | 1198.8 | 1188.2 | 1223.6 | 1361.9 | 1654.5 | *2011.0* | 2073.1 | 2328.4 | 2209.6 |
| 27.5° | 1331.8 | 1328.3 | 1317.6 | 1299.9 | 1324.7 | 1436.4 | 1730.8 | *2105.0* | 2172.4 | 2576.7 | 2433.1 |
| 30° | 1486.1 | 1475.4 | 1464.8 | 1441.7 | 1468.3 | 1558.8 | 1844.3 | *2238.0* | 2301.8 | 2858.7 | 2702.6 |
| 32.5° | 1668.7 | 1681.1 | 1645.7 | 1613.8 | 1642.1 | 1725.5 | 2012.8 | *2395.8* | 2465.0 | 3153.0 | 2982.8 |
| 35° | 1941.8 | 1979.1 | 1968.4 | 1807.1 | 1833.7 | 1925.9 | 2209.6 | *2599.8* | 2661.8 | 3420.8 | 3270.1 |
| 37.5° | 2211.4 | 2202.5 | 2211.4 | 2076.6 | 2034.0 | 2145.8 | 2420.6 | *2794.8* | 2855.1 | 3638.9 | 3523.7 |
| 40° | 2427.7 | 2454.3 | 2454.3 | 2344.4 | 2289.4 | 2363.9 | 2612.2 | *2973.9* | 3032.5 | 3759.5 | 3706.3 |
| 42.5° | 2663.6 | 2667.1 | 2660.0 | 2564.3 | 2543.0 | 2562.5 | 2780.6 | *3087.4* | 3135.3 | 3821.6 | 3830.5 |
| 45° | 2929.6 | 2927.8 | 2897.7 | 2817.9 | 2786.0 | 2768.2 | 2885.3 | *3197.4* | 3245.3 | 3850.0 | 3897.9 |
| 47.5° | 3149.5 | 3158.4 | 3160.1 | 3075.0 | 3021.8 | 2945.6 | 2975.7 | *3252.4* | 3307.3 | 3818.1 | 3912.0 |
| 50° | 3161.9 | 3176.1 | 3243.5 | 3268.3 | 3257.7 | 3135.3 | 3059.1 | *3310.9* | 3365.8 | 3825.1 | 3963.5 |
| 52.5° | 3083.9 | 3098.1 | 3185.0 | 3287.8 | 3412.0 | 3353.4 | 3190.3 | *3412.0* | 3468.7 | 3894.3 | 4080.5 |
| 55° | 2874.6 | 2897.7 | 3027.1 | 3170.8 | 3392.4 | 3475.8 | 3422.6 | *3594.6* | 3647.8 | 3949.3 | 4217.1 |
| 57.5° | 2502.2 | 2530.6 | 2709.7 | 2938.5 | 3241.7 | 3447.4 | 3759.5 | *3887.2* | 3931.5 | 3988.3 | 4218.8 |
| 60° | 1870.9 | 1894.0 | 2174.1 | 2482.7 | 2938.5 | 3270.1 | 3959.9 | *4389.1* | 4413.9 | 3777.3 | 3979.4 |
| 62.5° | 1377.9 | 1401.0 | 1588.9 | 1810.6 | 2308.9 | 2943.8 | 3998.9 | *4823.6* | 4827.1 | 3396.0 | 3649.6 |
| 63° | *1298.1* | *1321.2* | *1491.4* | *1698.9* | *2160.0* | *2833.8* | *3986.5* | *4837.7* | *4825.3* | *3318.0* | *3576.9* |
| 65° | 1010.8 | 1051.6 | 1228.9 | 1386.8 | 1619.1 | 2255.7 | 3826.9 | *4585.9* | 4603.7 | 3087.4 | 3211.6 |
| 67.5° | 688.1 | 718.2 | 943.4 | 1126.1 | 1223.6 | 1436.4 | 3138.9 | *3924.5* | 3952.8 | 2848.0 | 2562.5 |
| 70° | 532.0 | 546.2 | 677.4 | 892.0 | 989.5 | 913.3 | 2046.5 | *3160.1* | 3160.1 | 2223.8 | 1815.9 |
| 72.5° | 416.7 | 422.1 | 510.7 | 696.9 | 796.2 | 702.3 | 1140.3 | *2298.3* | 2213.2 | 1319.4 | 1211.2 |
| 75° | 297.9 | 305.0 | 384.8 | 519.6 | 634.9 | 553.3 | 728.9 | *1338.9* | 1287.5 | 759.0 | 808.7 |
| 77.5° | 235.9 | 239.4 | 287.3 | 383.0 | 514.3 | 422.1 | 555.1 | *730.6* | 723.5 | 533.8 | 519.6 |
| 80° | 186.2 | 193.3 | 225.2 | 274.9 | 397.2 | 329.8 | 413.2 | *482.4* | 468.2 | 367.1 | 333.4 |
| 82.5° | 133.0 | 145.4 | 173.8 | 209.3 | 294.4 | 235.9 | 271.3 | *340.5* | 340.5 | 276.6 | 219.9 |
| 85° | 81.6 | 92.2 | 102.9 | 129.5 | 209.3 | 152.5 | 143.6 | *219.9* | 225.2 | 207.5 | 141.9 |
| 87.5° | 39.0 | 42.6 | 49.7 | 55.0 | 76.3 | 69.2 | 56.7 | *83.3* | 85.1 | 92.2 | 58.5 |
| 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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Scaled Data Report

REPORT NUMBER: P1456300
CATALOG NUMBER: GLAN-SB2B-940-U-T2LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1202.3 | 1202.3 | 1202.3 | 1202.3 | 1202.3 | 1202.3 | 1202.3 | 1202.3 | 1202.3 | 1202.3 | 1202.3 |
| 2.5° | 1213.0 | 1209.4 | 1191.7 | 1174.0 | 1154.5 | 1136.7 | 1119.0 | 1104.8 | 1088.8 | 1092.4 | 1094.2 |
| 5° | 1236.0 | 1227.2 | 1188.2 | 1142.0 | 1081.8 | 1025.0 | 970.0 | 931.0 | 906.2 | 899.1 | 884.9 |
| 7.5° | 1285.7 | 1264.4 | 1193.5 | 1095.9 | 984.2 | 895.5 | 844.1 | 821.1 | 814.0 | 815.7 | 812.2 |
| 10° | 1342.4 | 1310.5 | 1200.6 | 1041.0 | 899.1 | 838.8 | 831.7 | 845.9 | 853.0 | 860.1 | 861.9 |
| 12.5° | 1416.9 | 1365.5 | 1197.0 | 980.7 | 858.3 | 847.7 | 874.3 | 900.9 | 916.8 | 927.5 | 925.7 |
| 15° | 1503.8 | 1434.7 | 1186.4 | 931.0 | 853.0 | 881.4 | 915.1 | 945.2 | 964.7 | 975.4 | 970.0 |
| 17.5° | 1608.4 | 1516.2 | 1174.0 | 899.1 | 868.9 | 902.6 | 938.1 | 968.3 | 989.5 | 996.6 | 991.3 |
| 20° | 1737.9 | 1608.4 | 1152.7 | 884.9 | 881.4 | 911.5 | 943.4 | 971.8 | 989.5 | 996.6 | 989.5 |
| 22.5° | 1890.4 | 1718.4 | 1135.0 | 884.9 | 886.7 | 911.5 | 934.6 | 955.8 | 971.8 | 977.1 | 968.3 |
| 25° | 2085.5 | 1846.1 | 1127.9 | 899.1 | 888.5 | 902.6 | 915.1 | 927.5 | 936.3 | 939.9 | 936.3 |
| 27.5° | 2284.1 | 1993.3 | 1131.4 | 916.8 | 886.7 | 890.2 | 890.2 | 892.0 | 893.8 | 895.5 | 893.8 |
| 30° | 2512.9 | 2142.2 | 1145.6 | 939.9 | 890.2 | 872.5 | 867.2 | 856.5 | 847.7 | 840.6 | 833.5 |
| 32.5° | 2734.5 | 2284.1 | 1170.4 | 973.6 | 886.7 | 853.0 | 842.3 | 815.7 | 790.9 | 769.6 | 769.6 |
| 35° | 2973.9 | 2431.3 | 1214.8 | 998.4 | 883.1 | 835.3 | 805.1 | 775.0 | 748.4 | 718.2 | 718.2 |
| 37.5° | 3179.6 | 2557.2 | 1250.2 | 1026.8 | 879.6 | 814.0 | 766.1 | 732.4 | 704.0 | 673.9 | 670.3 |
| 40° | 3323.3 | 2629.9 | 1271.5 | 1037.4 | 867.2 | 785.6 | 728.9 | 686.3 | 645.5 | 604.7 | 602.9 |
| 42.5° | 3392.4 | 2626.4 | 1259.1 | 1033.9 | 844.1 | 750.1 | 696.9 | 640.2 | 585.2 | 548.0 | 544.4 |
| 45° | 3429.7 | 2603.3 | 1211.2 | 1003.7 | 806.9 | 712.9 | 656.1 | 595.9 | 540.9 | 507.2 | 500.1 |
| 47.5° | 3422.6 | 2546.6 | 1145.6 | 929.2 | 757.2 | 672.1 | 615.4 | 553.3 | 509.0 | 489.4 | 489.4 |
| 50° | 3442.1 | 2502.2 | 1071.1 | 844.1 | 689.8 | 624.2 | 578.1 | 521.4 | 494.8 | 469.9 | 461.1 |
| 52.5° | 3529.0 | 2539.5 | 1007.3 | 764.3 | 626.0 | 578.1 | 546.2 | 498.3 | 464.6 | 448.7 | 443.3 |
| 55° | 3644.3 | 2619.3 | 947.0 | 693.4 | 563.9 | 537.3 | 521.4 | 477.0 | 438.0 | 422.1 | 413.2 |
| 57.5° | 3665.5 | 2674.2 | 888.5 | 624.2 | 512.5 | 505.4 | 500.1 | 439.8 | 407.9 | 395.5 | 388.4 |
| 60° | 3518.4 | 2633.4 | 812.2 | 562.2 | 471.7 | 475.3 | 461.1 | 416.7 | 379.5 | 367.1 | 360.0 |
| 62.5° | 3268.3 | 2527.0 | 735.9 | 509.0 | 439.8 | 446.9 | 432.7 | 388.4 | 351.1 | 338.7 | 335.2 |
| 63° | *3218.7* | *2498.7* | *718.2* | *503.6* | *432.7* | *441.6* | *429.2* | *384.8* | *347.6* | *335.2* | *329.8* |
| 65° | 2922.5 | 2328.4 | 656.1 | 475.3 | 409.6 | 409.6 | 411.4 | 367.1 | 335.2 | 329.8 | 326.3 |
| 67.5° | 2383.4 | 1943.6 | 588.8 | 441.6 | 384.8 | 390.1 | 399.0 | 374.2 | 361.8 | 358.2 | 354.7 |
| 70° | 1801.7 | 1463.0 | 530.2 | 409.6 | 358.2 | 376.0 | 436.2 | 425.6 | 379.5 | 347.6 | 340.5 |
| 72.5° | 1276.8 | 996.6 | 478.8 | 377.7 | 326.3 | 370.6 | 452.2 | 406.1 | 342.3 | 305.0 | 297.9 |
| 75° | 854.8 | 642.0 | 427.4 | 344.0 | 290.8 | 342.3 | 427.4 | 370.6 | 297.9 | 289.1 | 278.4 |
| 77.5° | 537.3 | 457.5 | 376.0 | 305.0 | 251.8 | 305.0 | 388.4 | 329.8 | 257.1 | 260.7 | 244.7 |
| 80° | 328.1 | 326.3 | 315.7 | 258.9 | 202.2 | 243.0 | 326.3 | 278.4 | 205.7 | 205.7 | 182.7 |
| 82.5° | 195.1 | 235.9 | 267.8 | 214.6 | 147.2 | 173.8 | 235.9 | 209.3 | 172.0 | 166.7 | 156.1 |
| 85° | 131.2 | 159.6 | 212.8 | 164.9 | 94.0 | 106.4 | 163.1 | 175.6 | 157.8 | 138.3 | 129.5 |
| 87.5° | 47.9 | 63.8 | 97.5 | 67.4 | 40.8 | 63.8 | 122.4 | 127.7 | 95.8 | 74.5 | 67.4 |
| 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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# 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

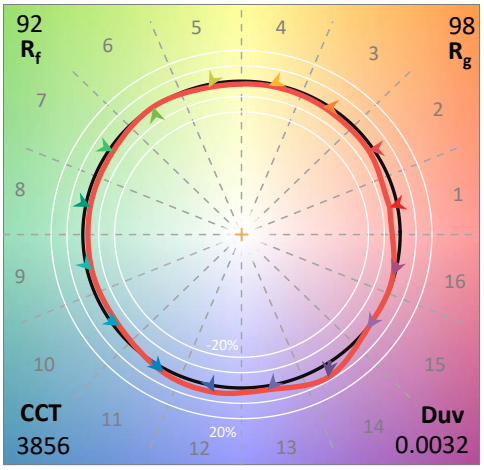
## Test Information

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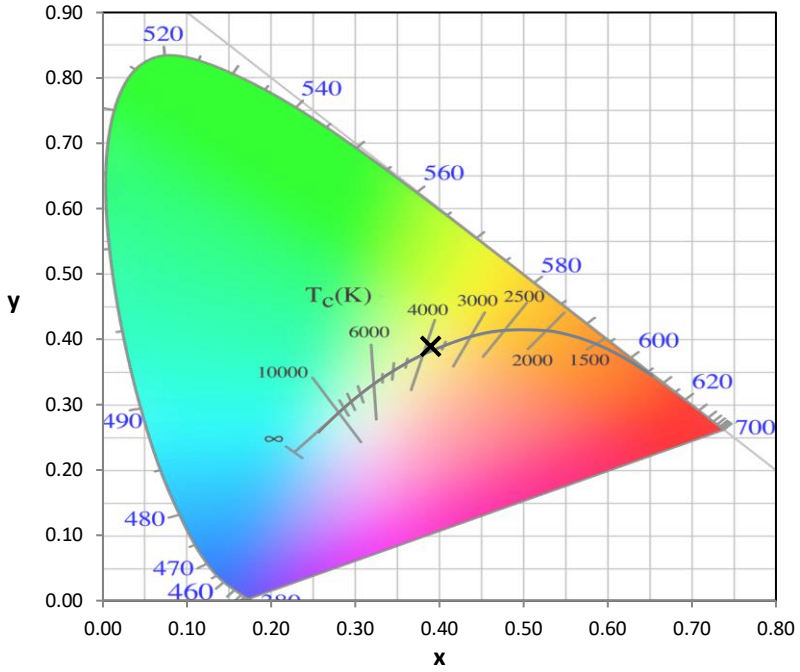
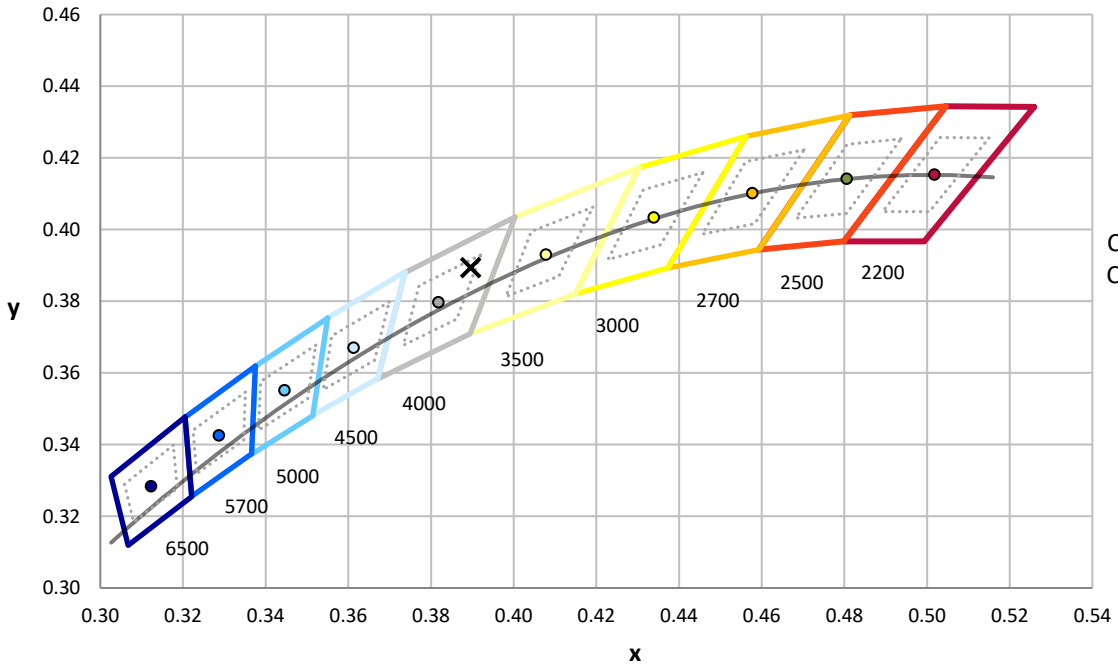
## CIE 1931 Chromaticity Diagram




## 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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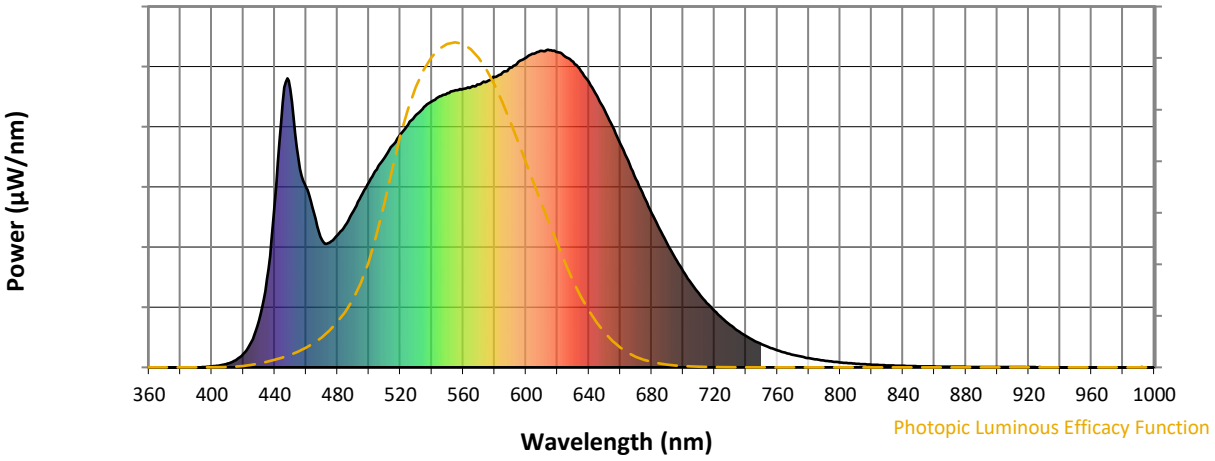
## Photopic Flux vs. Wavelength




## 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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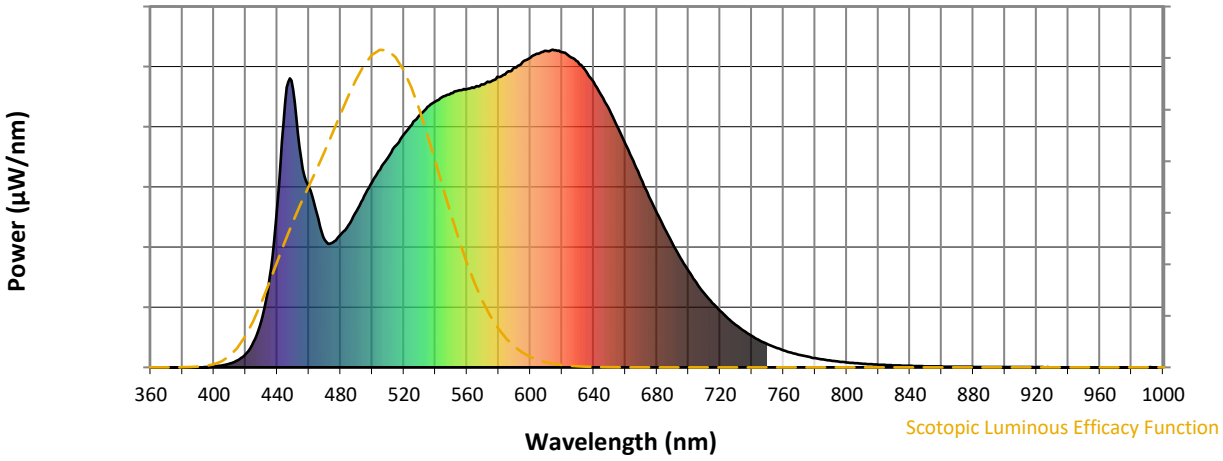
## Scotopic Flux vs. Wavelength




**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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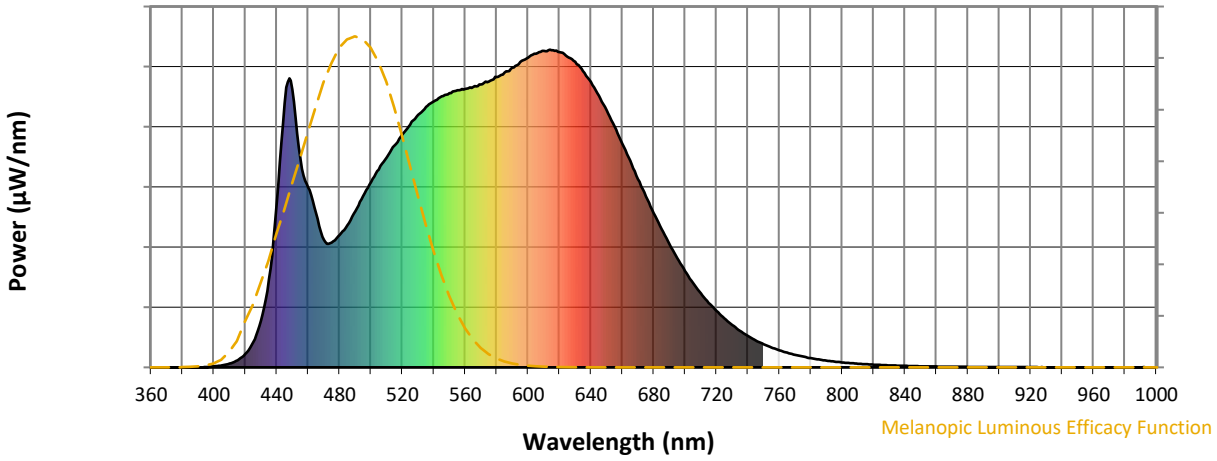
## Melanopic Flux vs. Wavelength




**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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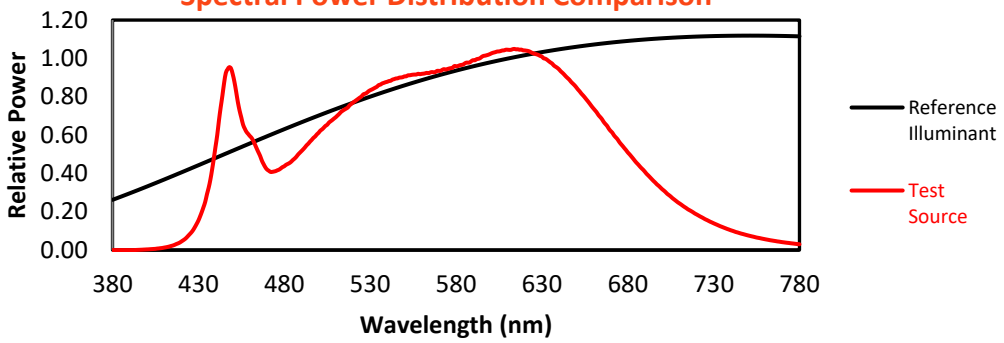
# TM-30-18

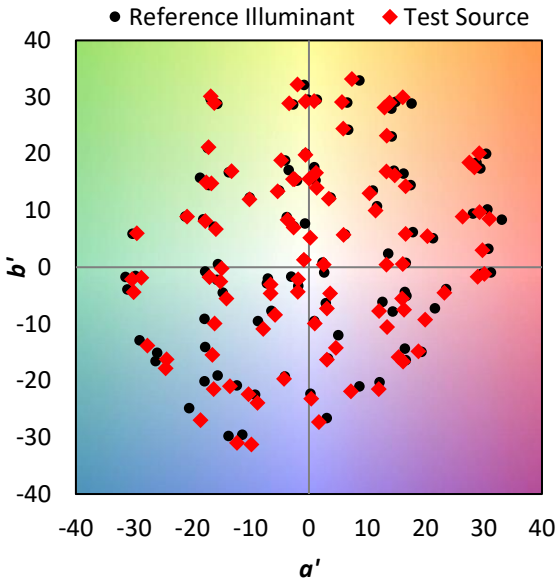
## Summary

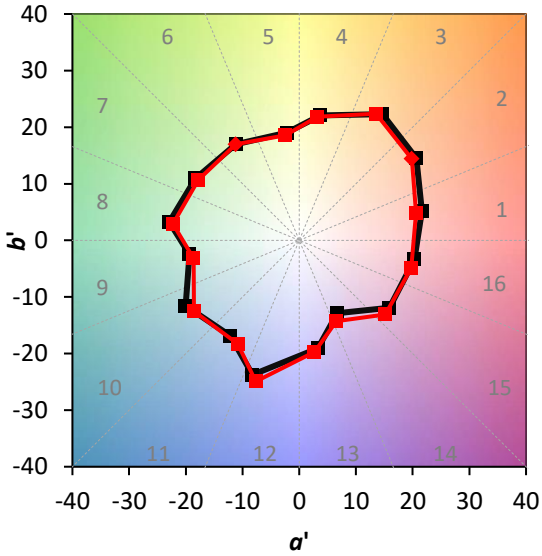
$R_f$ = 91.8
$R_g$ = 98.4
CIE $R_a$ = 92.1
$R_9$ = 60.7

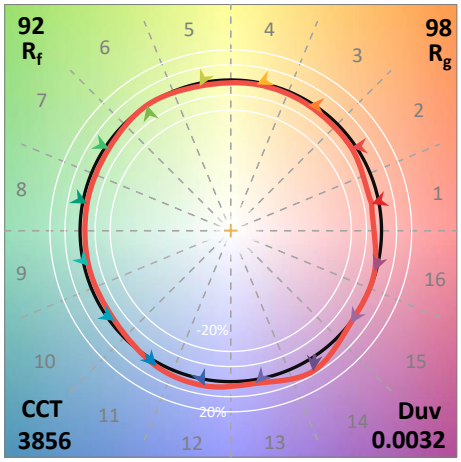
## Spectral Power Distribution Comparison

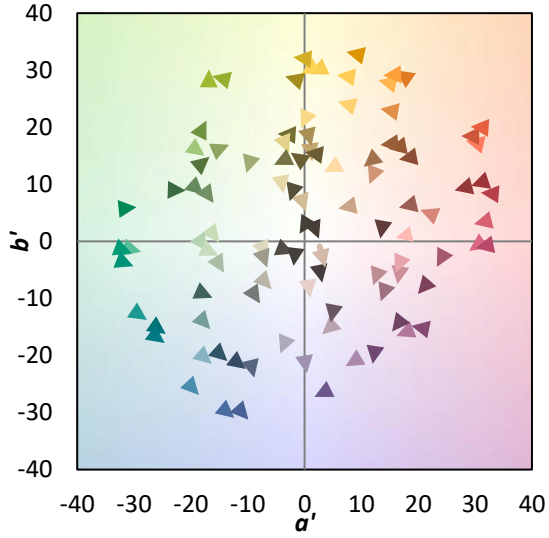



## Color Vector Graphics



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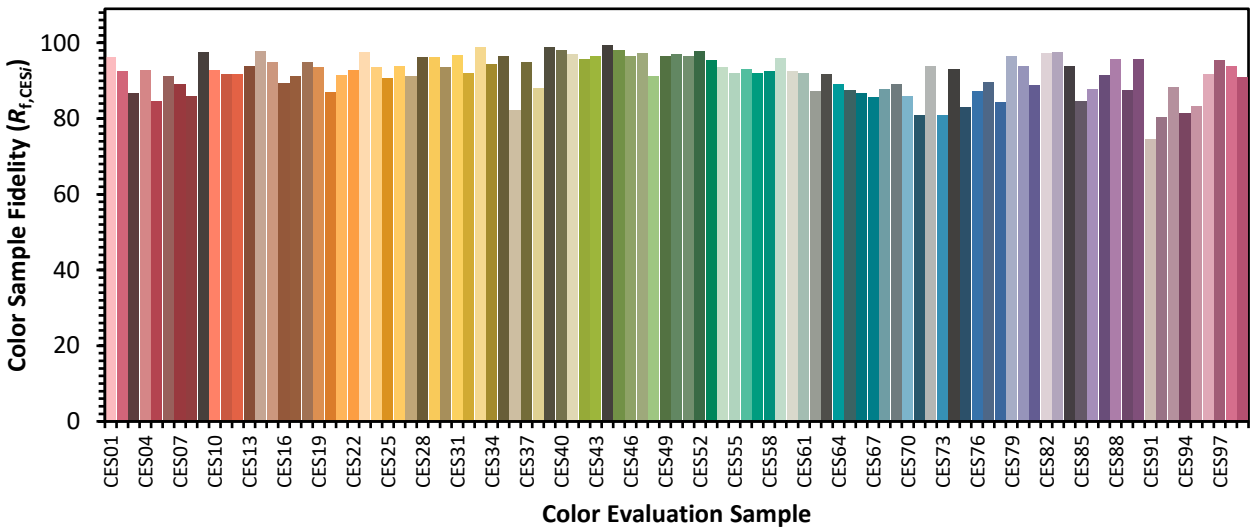
# TM-30-18

**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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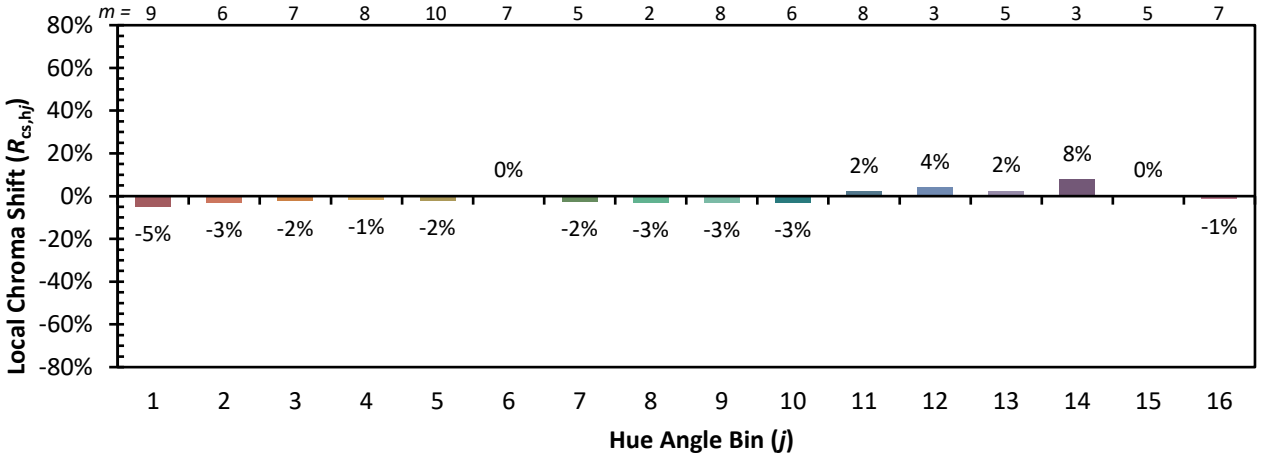
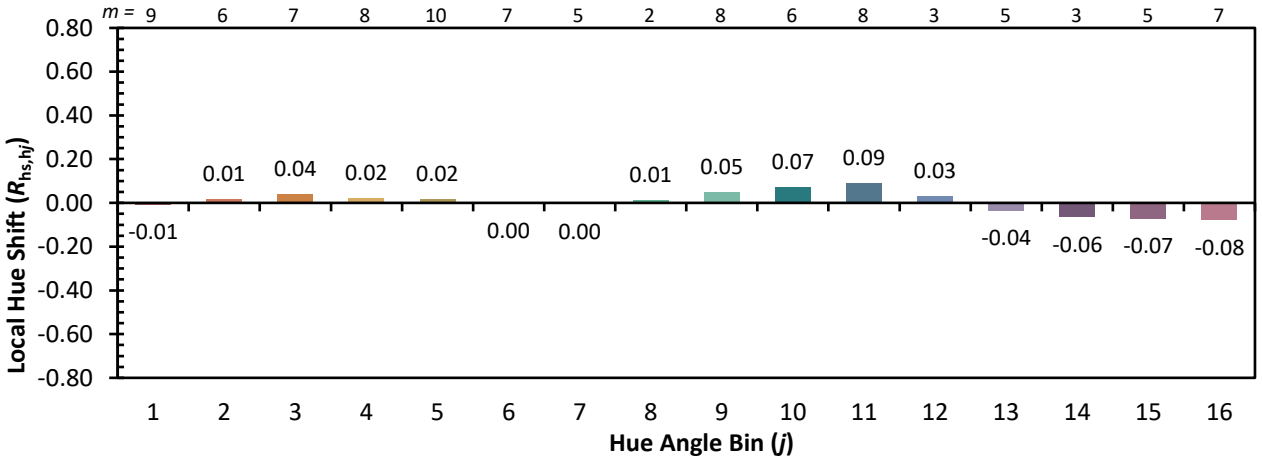
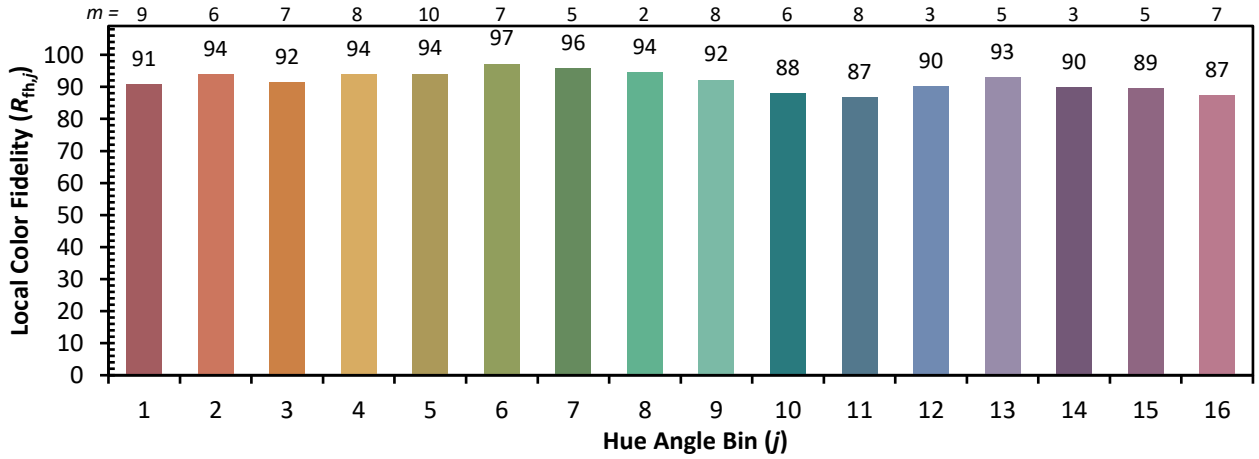
# TM-30-18

## Color Rendition by Hue-Angle Bin



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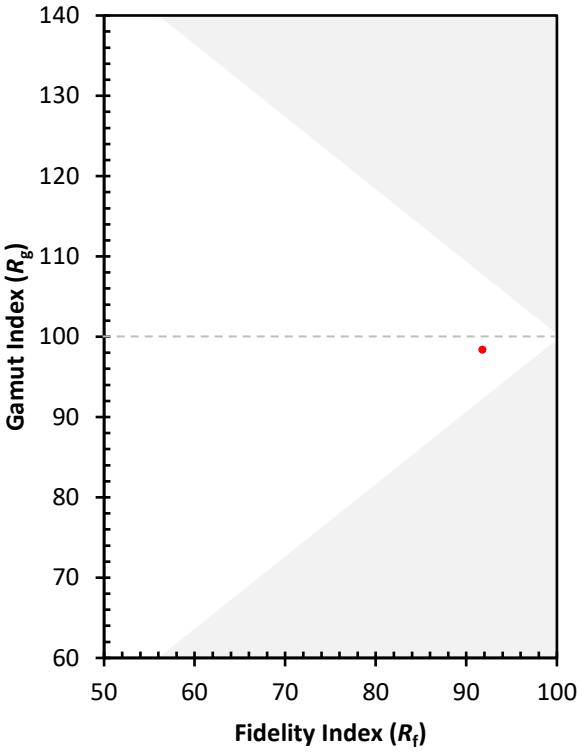
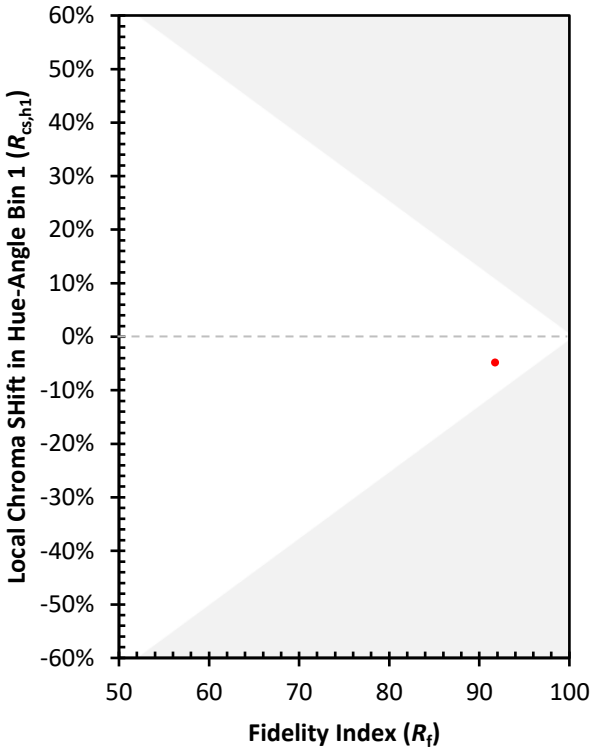
## Measure Comparisons




(END OF REPORT)