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: P1458603

Luminaire Tested: GLAN-SB2A-940-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: | P1458603 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/22/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB2A-940-U-T3LG-HSS |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 350mA 2xLight Square PACKAGE 90CRI 4000K FIXTURE w/ TYPE III LOW GLARE WITH HOUSE SIDE SHIELD |
| Light Source: | (52) 4000K CCT, 90 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 4969 lumens |
| Efficiency: | N/A |
| Efficacy: | 86.7 lumens/watt |
| Luminous Opening: | Rectangular (W 1' x L: 1' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B1 - U0 - G1 |

| | |
|---|---|
| Input Watts (W): | 57.3 |
| 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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REPORT NUMBER: P1458603
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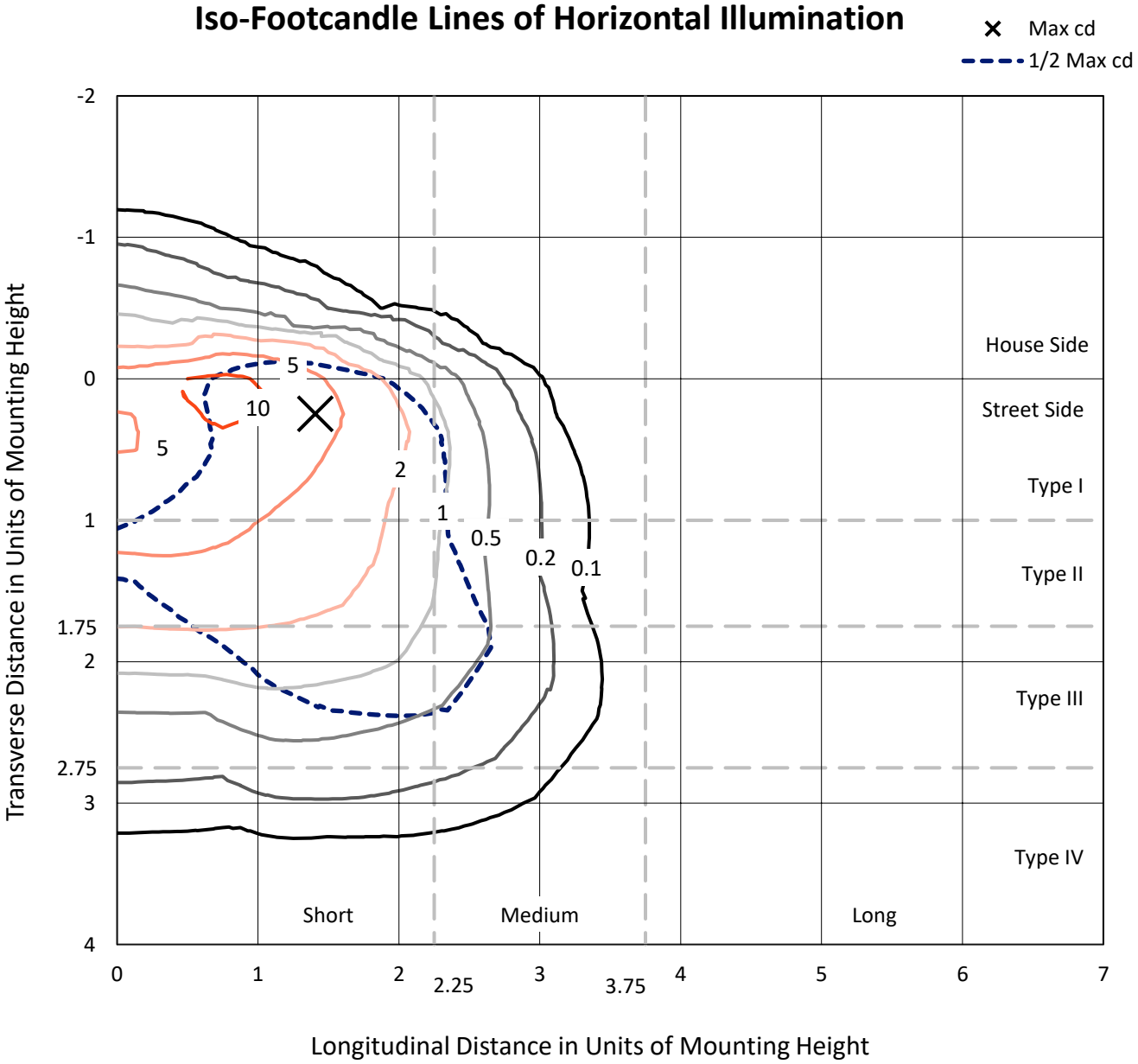
## Iso-Footcandle Lines of Horizontal Illumination




Based on 10 foot mounting height. Maximum calculated value = 12.3 fc
Type III - Short - N/A

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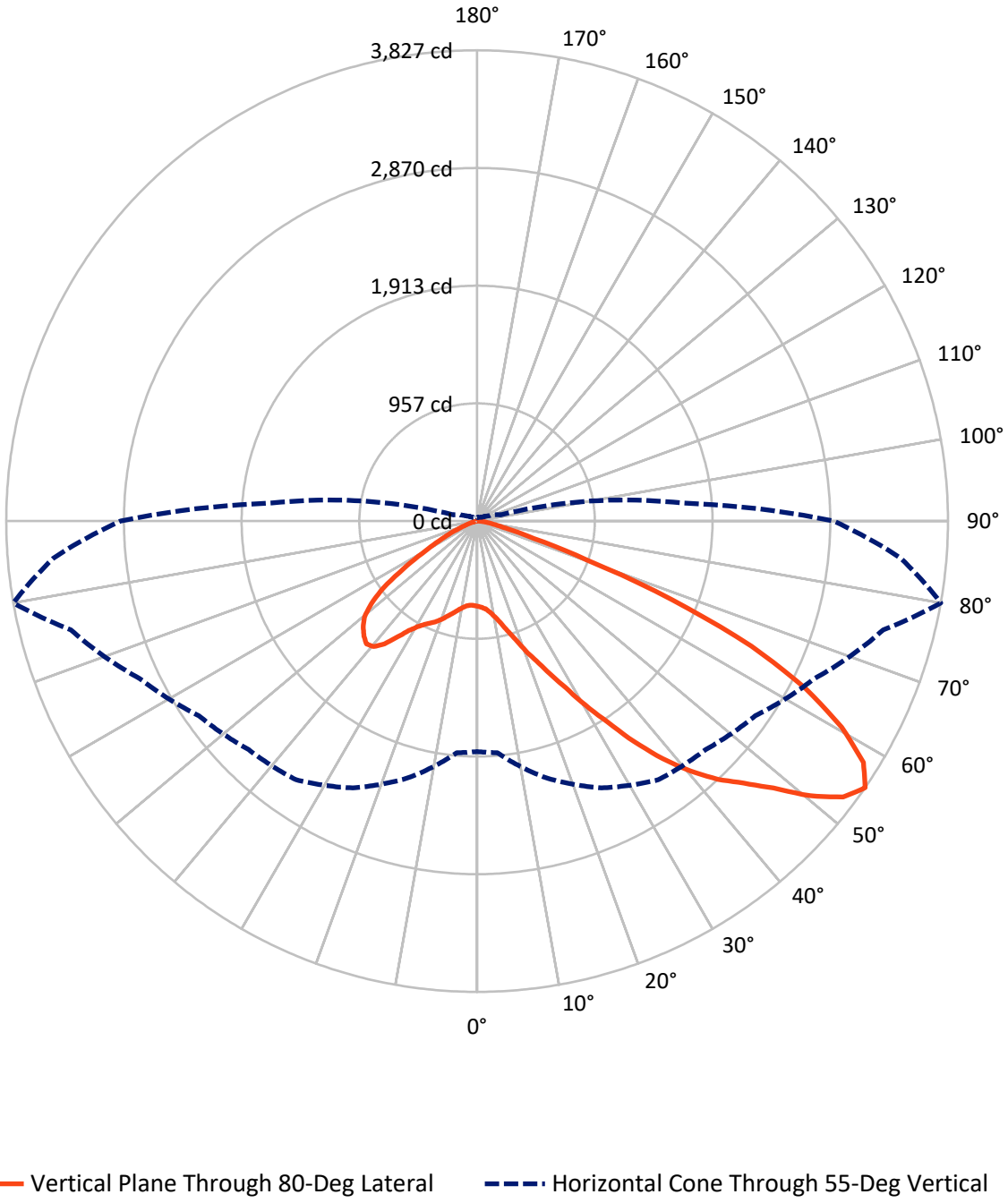
## Luminous Intensity Polar Plot



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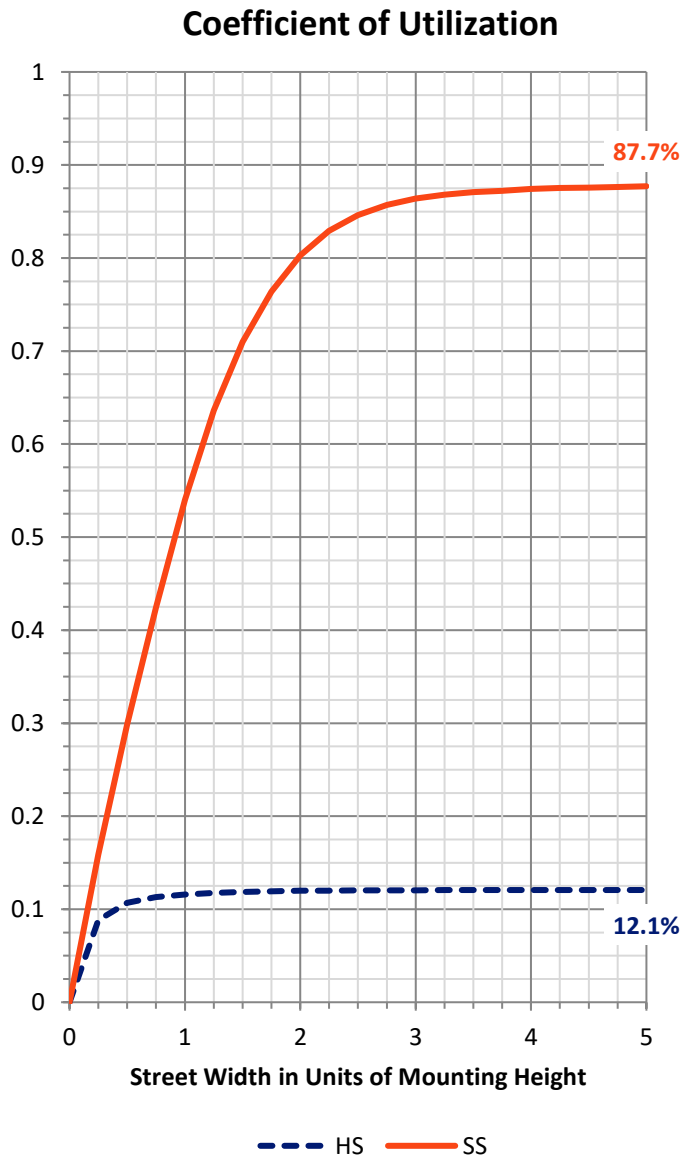
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 604.0 | 0.0 | 604.0 |
| | % Fixture | 12.2 | 0.0 | 12.2 |
| **Street Side** | Lumens | 4364.9 | 0.0 | 4364.9 |
| | % Fixture | 87.8 | 0.0 | 87.8 |
| **Total** | Lumens | 4969.0 | 0.0 | 4969.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 58.1 | 1.2 |
| 10°-20° | 153.1 | 3.1 |
| 20°-30° | 299.8 | 6.0 |
| 30°-40° | 609.9 | 12.3 |
| 40°-50° | 1028.2 | 20.7 |
| 50°-60° | 1313.8 | 26.4 |
| 60°-70° | 1121.7 | 22.6 |
| 70°-80° | 358.4 | 7.2 |
| 80°-90° | 25.9 | 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° | 4969.0 | 100.0 |
| 0°-180° | 4969.0 | 100.0 |



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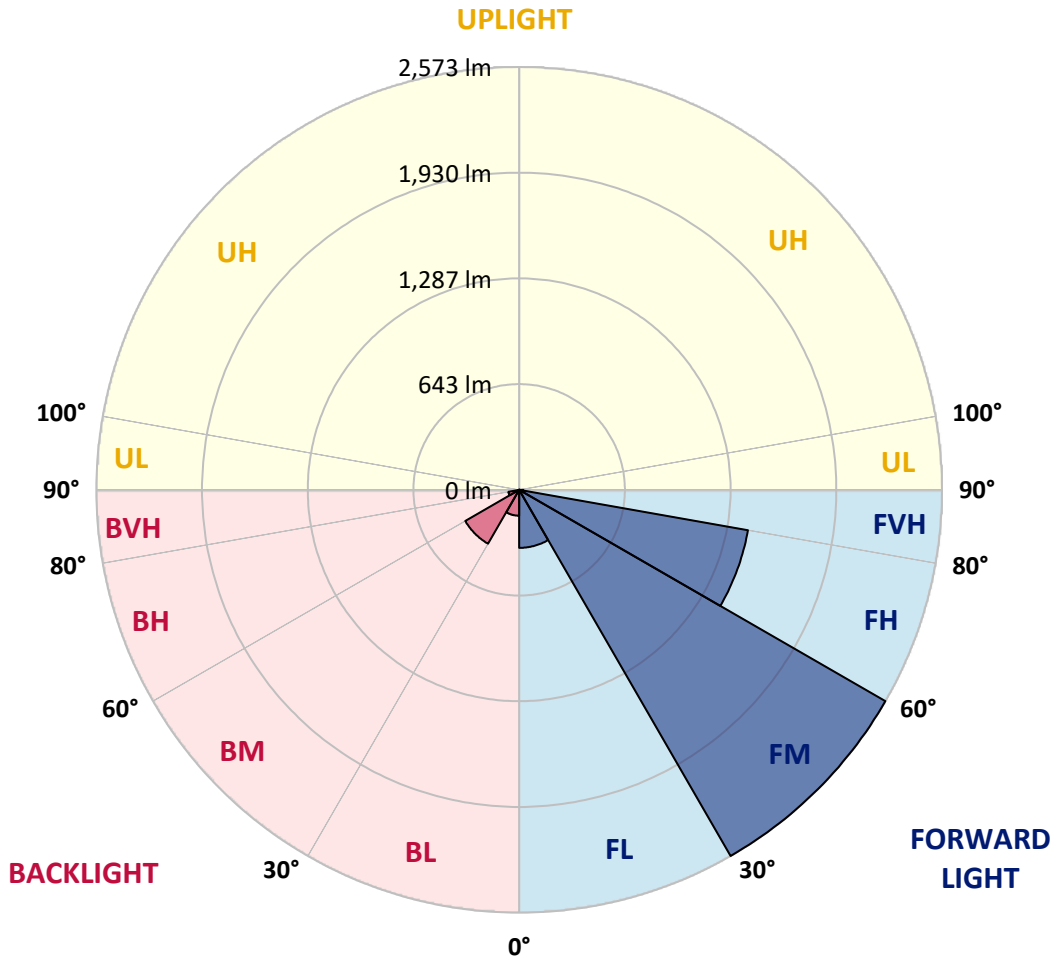
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 353.3 | 7.1 | | | |
| FM | (30°-60°) | 2573.4 | 51.8 | | | |
| FH | (60°-80°) | 1413.7 | 28.5 | | | G1/1800 |
| FVH | (80°-90°) | 24.5 | 0.5 | | | G1/100 |
| BL | (0°-30°) | 157.7 | 3.2 | B1/500 | | |
| BM | (30°-60°) | 378.6 | 7.6 | B1/1000 | | |
| BH | (60°-80°) | 66.4 | 1.3 | B0/110 | | G0/110 |
| BVH | (80°-90°) | 1.3 | 0.0 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B1-U0-G1**
Type III Short



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REPORT NUMBER: P1458603
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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 80° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 692.2 | 692.2 | 692.2 | 692.2 | 692.2 | 692.2 | 692.2 | 692.2 | 692.2 | *692.2* | 692.2 |
| 2.5° | 696.4 | 697.8 | 696.4 | 697.8 | 700.6 | 699.2 | 704.9 | 703.5 | 703.5 | *702.1* | 696.4 |
| 5° | 656.9 | 658.3 | 661.1 | 668.2 | 678.0 | 687.9 | 700.6 | 709.1 | 717.6 | *716.2* | 710.5 |
| 7.5° | 579.2 | 582.0 | 593.3 | 607.4 | 639.9 | 669.6 | 702.1 | 723.2 | 741.6 | *747.3* | 743.0 |
| 10° | 535.4 | 538.2 | 545.3 | 559.4 | 589.0 | 638.5 | 702.1 | 745.8 | 778.3 | *789.6* | 791.0 |
| 12.5° | 531.1 | 532.5 | 538.2 | 553.7 | 579.2 | 621.5 | 700.6 | 775.5 | 830.6 | *847.6* | 853.2 |
| 15° | 534.0 | 536.8 | 542.4 | 555.1 | 584.8 | 632.8 | 711.9 | 822.1 | 899.8 | *923.8* | 925.2 |
| 17.5° | 545.3 | 548.1 | 555.1 | 569.3 | 601.8 | 662.5 | 747.3 | 870.2 | 983.2 | *1010.0* | 1025.5 |
| 20° | 567.9 | 569.3 | 577.7 | 596.1 | 632.8 | 699.2 | 799.5 | 935.1 | 1083.5 | *1123.0* | 1134.3 |
| 22.5° | 597.5 | 601.8 | 613.1 | 635.7 | 682.3 | 750.1 | 871.6 | 1014.2 | 1193.6 | *1234.6* | 1254.4 |
| 25° | 630.0 | 635.7 | 652.6 | 689.3 | 748.7 | 827.8 | 960.6 | 1118.8 | 1323.6 | *1373.0* | 1399.9 |
| 27.5° | 696.4 | 697.8 | 709.1 | 755.7 | 832.0 | 929.5 | 1073.6 | 1253.0 | 1476.2 | *1534.1* | 1563.7 |
| 30° | 841.9 | 843.3 | 833.4 | 846.1 | 923.8 | 1049.6 | 1206.3 | 1409.8 | 1654.1 | *1734.7* | 1758.7 |
| 32.5° | 1019.9 | 1027.0 | 1025.5 | 1017.1 | 1052.4 | 1169.6 | 1364.6 | 1597.6 | 1863.2 | *1948.0* | 1970.6 |
| 35° | 1221.9 | 1238.8 | 1234.6 | 1231.8 | 1236.0 | 1323.6 | 1545.4 | 1805.3 | 2100.5 | *2203.6* | 2222.0 |
| 37.5° | 1419.7 | 1423.9 | 1443.7 | 1467.7 | 1470.5 | 1531.2 | 1754.4 | 2025.7 | 2320.9 | *2452.3* | 2480.5 |
| 40° | 1572.2 | 1586.3 | 1635.8 | 1683.8 | 1733.2 | 1781.3 | 1926.8 | 2203.6 | 2496.0 | *2672.6* | 2685.3 |
| 42.5° | 1690.9 | 1724.8 | 1796.8 | 1871.7 | 1972.0 | 2025.7 | 2090.6 | 2329.4 | 2638.7 | *2869.0* | 2863.3 |
| 45° | 1835.0 | 1849.1 | 1950.8 | 2049.7 | 2151.4 | 2233.3 | 2231.9 | 2435.3 | 2750.3 | *3037.1* | 3001.7 |
| 47.5° | 1932.4 | 1949.4 | 2087.8 | 2203.6 | 2308.2 | 2349.1 | 2357.6 | 2549.7 | 2904.3 | *3240.5* | 3157.1 |
| 50° | 1984.7 | 2014.3 | 2165.5 | 2312.4 | 2425.4 | 2438.1 | 2476.3 | 2699.5 | 3106.3 | *3510.3* | 3353.5 |
| 52.5° | 1990.3 | 2018.6 | 2192.3 | 2381.6 | 2504.5 | 2529.9 | 2594.9 | 2869.0 | 3302.6 | *3726.4* | 3466.5 |
| 55° | *1873.1* | *1890.0* | *2159.8* | *2392.9* | *2566.7* | *2626.0* | *2758.8* | *3025.8* | *3417.0* | *3826.7* | *3456.6* |
| 57.5° | 1762.9 | 1779.9 | 2014.3 | 2373.1 | 2630.2 | 2751.7 | 2933.9 | 3133.1 | 3328.1 | *3702.4* | 3236.2 |
| 60° | 1668.3 | 1676.7 | 1890.0 | 2281.3 | 2654.3 | 2874.6 | 3085.1 | 3027.2 | 3097.8 | *3404.3* | 2859.1 |
| 62.5° | 1490.3 | 1495.9 | 1748.8 | 2116.1 | 2606.2 | 2969.3 | 3137.4 | 2802.6 | 2845.0 | *2993.3* | 2415.5 |
| 65° | 1125.8 | 1147.0 | 1378.7 | 1991.7 | 2527.1 | 3013.0 | 3015.9 | 2528.5 | 2484.7 | *2449.4* | 1899.9 |
| 67.5° | 764.2 | 788.2 | 928.1 | 1791.2 | 2398.6 | 3031.4 | 2780.0 | 2174.0 | 1892.9 | *1710.6* | 1244.5 |
| 70° | 610.2 | 610.2 | 658.3 | 1439.4 | 2093.5 | 2796.9 | 2487.6 | 1641.4 | 1202.1 | *945.0* | 666.7 |
| 72.5° | 401.2 | 402.6 | 447.8 | 913.9 | 1484.6 | 2133.0 | 2028.5 | 949.3 | 624.4 | *481.7* | 329.1 |
| 75° | 145.5 | 145.5 | 196.3 | 365.9 | 785.4 | 1269.9 | 1236.0 | 453.4 | 339.0 | *262.7* | 199.2 |
| 77.5° | 77.7 | 80.5 | 94.6 | 151.1 | 300.9 | 517.0 | 483.1 | 231.7 | 192.1 | *163.9* | 124.3 |
| 80° | 52.3 | 53.7 | 63.6 | 93.2 | 145.5 | 199.2 | 155.4 | 130.0 | 130.0 | *110.2* | 83.3 |
| 82.5° | 28.3 | 29.7 | 42.4 | 60.7 | 77.7 | 93.2 | 74.9 | 76.3 | 91.8 | *74.9* | 48.0 |
| 85° | 19.8 | 19.8 | 32.5 | 43.8 | 43.8 | 45.2 | 32.5 | 48.0 | 53.7 | *46.6* | 32.5 |
| 87.5° | 11.3 | 11.3 | 18.4 | 21.2 | 21.2 | 19.8 | 9.9 | 17.0 | 21.2 | *24.0* | 14.1 |
| 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: P1458603
CATALOG NUMBER: GLAN-SB2A-940-U-T3LG-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 692.2 | 692.2 | 692.2 | 692.2 | 692.2 | 692.2 | 692.2 | 692.2 | 692.2 | 692.2 | 692.2 |
| 2.5° | 695.0 | 690.8 | 682.3 | 665.3 | 656.9 | 645.6 | 635.7 | 623.0 | 620.1 | 618.7 | 613.1 |
| 5° | 706.3 | 697.8 | 672.4 | 635.7 | 604.6 | 574.9 | 545.3 | 528.3 | 514.2 | 507.1 | 505.7 |
| 7.5° | 734.5 | 717.6 | 671.0 | 606.0 | 548.1 | 497.2 | 453.4 | 415.3 | 395.5 | 378.6 | 380.0 |
| 10° | 776.9 | 750.1 | 673.8 | 577.7 | 491.6 | 409.7 | 346.1 | 291.0 | 251.4 | 233.1 | 231.7 |
| 12.5° | 833.4 | 795.3 | 683.7 | 549.5 | 422.4 | 307.9 | 227.4 | 194.9 | 186.5 | 185.0 | 183.6 |
| 15° | 902.6 | 849.0 | 693.6 | 512.8 | 329.1 | 213.3 | 185.0 | 178.0 | 176.6 | 175.2 | 175.2 |
| 17.5° | 986.0 | 911.1 | 699.2 | 450.6 | 240.1 | 183.6 | 173.7 | 169.5 | 168.1 | 166.7 | 166.7 |
| 20° | 1090.5 | 980.3 | 706.3 | 371.5 | 203.4 | 176.6 | 165.3 | 159.6 | 158.2 | 158.2 | 156.8 |
| 22.5° | 1193.6 | 1058.0 | 700.6 | 302.3 | 196.3 | 168.1 | 155.4 | 149.7 | 146.9 | 146.9 | 145.5 |
| 25° | 1312.3 | 1137.1 | 683.7 | 272.6 | 194.9 | 161.0 | 145.5 | 137.0 | 132.8 | 131.4 | 131.4 |
| 27.5° | 1447.9 | 1227.5 | 656.9 | 274.0 | 194.9 | 155.4 | 132.8 | 121.5 | 118.7 | 115.8 | 115.8 |
| 30° | 1603.3 | 1337.7 | 637.1 | 292.4 | 197.8 | 149.7 | 121.5 | 107.4 | 103.1 | 100.3 | 101.7 |
| 32.5° | 1781.3 | 1460.6 | 635.7 | 322.1 | 202.0 | 141.3 | 108.8 | 93.2 | 89.0 | 87.6 | 89.0 |
| 35° | 1983.3 | 1613.2 | 668.2 | 344.7 | 190.7 | 122.9 | 93.2 | 80.5 | 76.3 | 76.3 | 77.7 |
| 37.5° | 2207.9 | 1788.3 | 711.9 | 339.0 | 154.0 | 97.5 | 80.5 | 70.6 | 66.4 | 67.8 | 69.2 |
| 40° | 2412.7 | 1925.4 | 719.0 | 289.6 | 115.8 | 83.3 | 69.2 | 62.2 | 59.3 | 60.7 | 62.2 |
| 42.5° | 2568.1 | 2035.5 | 651.2 | 224.6 | 97.5 | 70.6 | 59.3 | 53.7 | 52.3 | 55.1 | 55.1 |
| 45° | 2693.8 | 2079.3 | 543.8 | 166.7 | 86.2 | 60.7 | 52.3 | 49.4 | 46.6 | 48.0 | 48.0 |
| 47.5° | 2825.2 | 2086.4 | 443.6 | 134.2 | 76.3 | 55.1 | 48.0 | 45.2 | 42.4 | 42.4 | 42.4 |
| 50° | 2952.3 | 2069.4 | 339.0 | 118.7 | 70.6 | 49.4 | 43.8 | 41.0 | 38.1 | 36.7 | 36.7 |
| 52.5° | 2983.4 | 1933.8 | 248.6 | 110.2 | 65.0 | 46.6 | 41.0 | 38.1 | 35.3 | 33.9 | 33.9 |
| 55° | *2897.2* | *1676.7* | *194.9* | *98.9* | *59.3* | *42.4* | *38.1* | *35.3* | *31.1* | *29.7* | *29.7* |
| 57.5° | 2613.3 | 1278.4 | 155.4 | 84.8 | 53.7 | 41.0 | 35.3 | 32.5 | 28.3 | 26.8 | 26.8 |
| 60° | 2244.6 | 906.9 | 125.7 | 69.2 | 49.4 | 36.7 | 32.5 | 28.3 | 25.4 | 22.6 | 22.6 |
| 62.5° | 1836.4 | 651.2 | 101.7 | 57.9 | 46.6 | 32.5 | 29.7 | 25.4 | 19.8 | 15.5 | 15.5 |
| 65° | 1408.3 | 467.6 | 79.1 | 46.6 | 42.4 | 28.3 | 25.4 | 21.2 | 15.5 | 11.3 | 11.3 |
| 67.5° | 911.1 | 302.3 | 59.3 | 41.0 | 32.5 | 24.0 | 19.8 | 17.0 | 14.1 | 9.9 | 8.5 |
| 70° | 480.3 | 176.6 | 43.8 | 35.3 | 24.0 | 18.4 | 17.0 | 14.1 | 11.3 | 7.1 | 7.1 |
| 72.5° | 248.6 | 115.8 | 32.5 | 31.1 | 18.4 | 12.7 | 14.1 | 11.3 | 8.5 | 4.2 | 4.2 |
| 75° | 159.6 | 77.7 | 24.0 | 25.4 | 11.3 | 9.9 | 9.9 | 7.1 | 4.2 | 2.8 | 1.4 |
| 77.5° | 103.1 | 52.3 | 17.0 | 21.2 | 7.1 | 5.7 | 5.7 | 2.8 | 1.4 | 0.0 | 0.0 |
| 80° | 60.7 | 32.5 | 11.3 | 14.1 | 2.8 | 2.8 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 31.1 | 17.0 | 5.7 | 5.7 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 19.8 | 8.5 | 1.4 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 9.9 | 2.8 | 1.4 | 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: SP1-2407-184-16

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

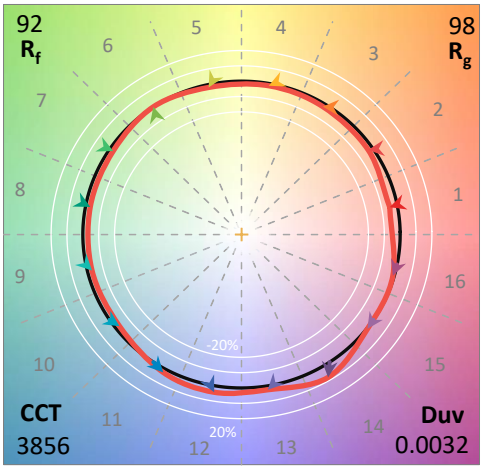
## Test Information

| | |
|---|---|
| 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

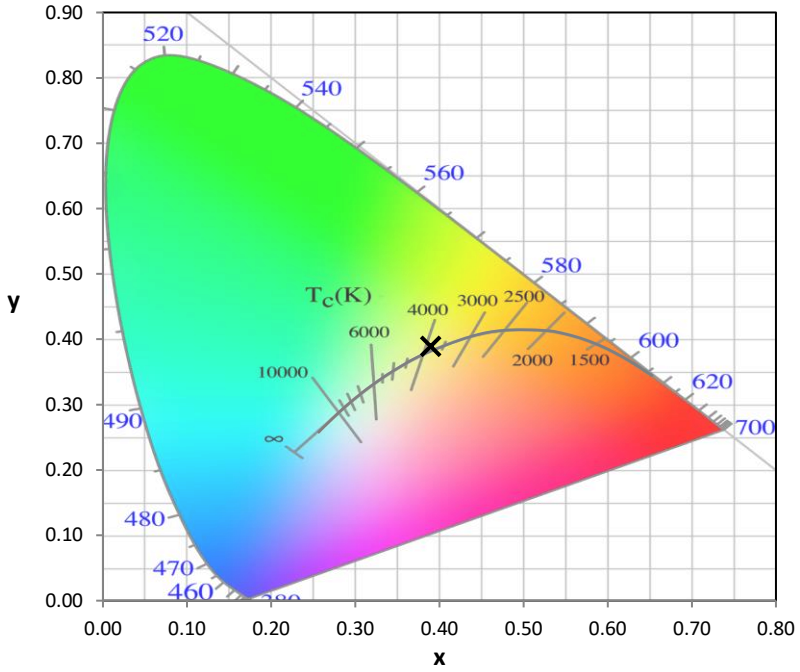
| | |
|---|---|
| Stabilization Time: | 23M |
| Operation Time: | 1H 23M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-16

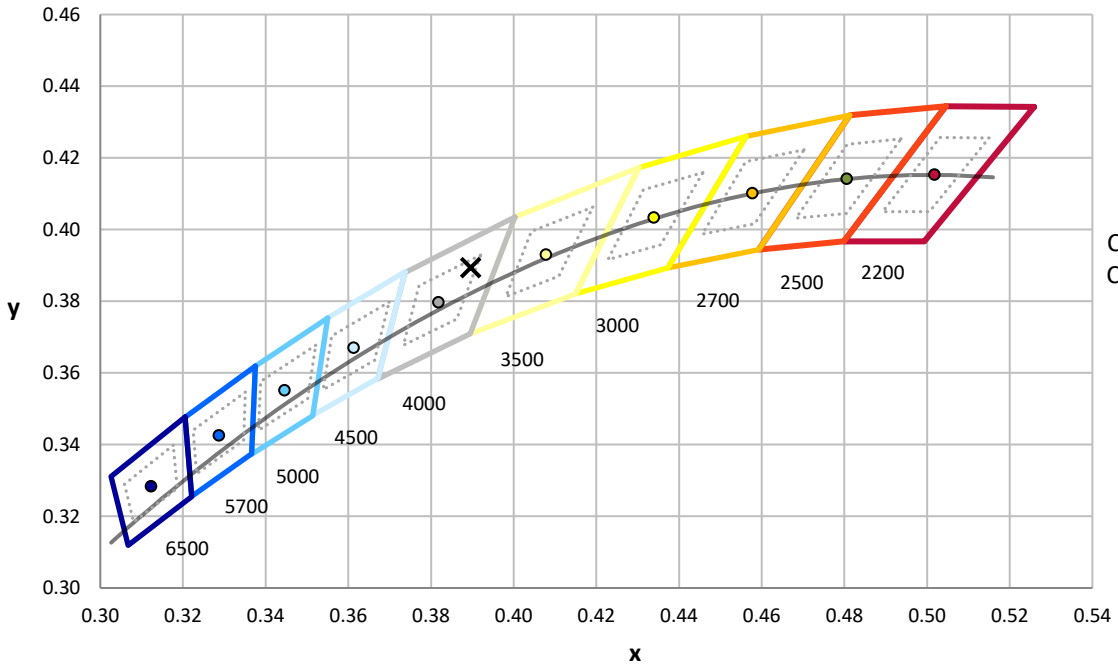
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

REPORT NUMBER: SP1-2407-184-16

## 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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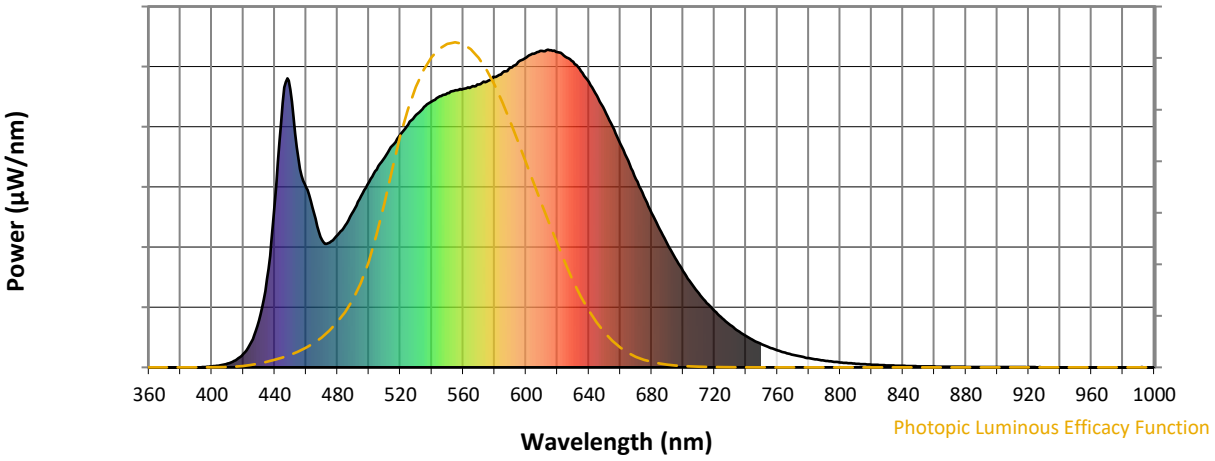
## Photopic Flux vs. Wavelength




## 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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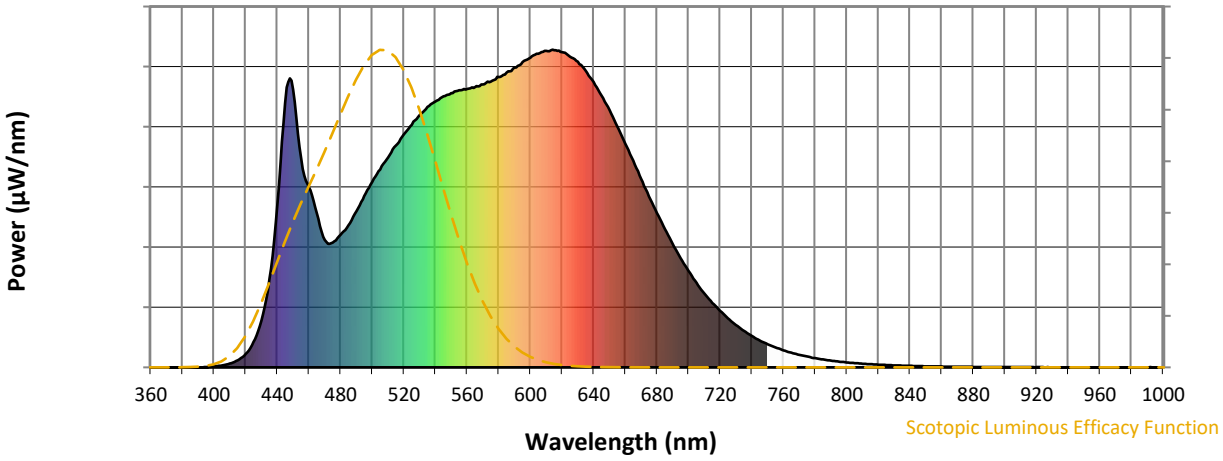
## Scotopic Flux vs. Wavelength




**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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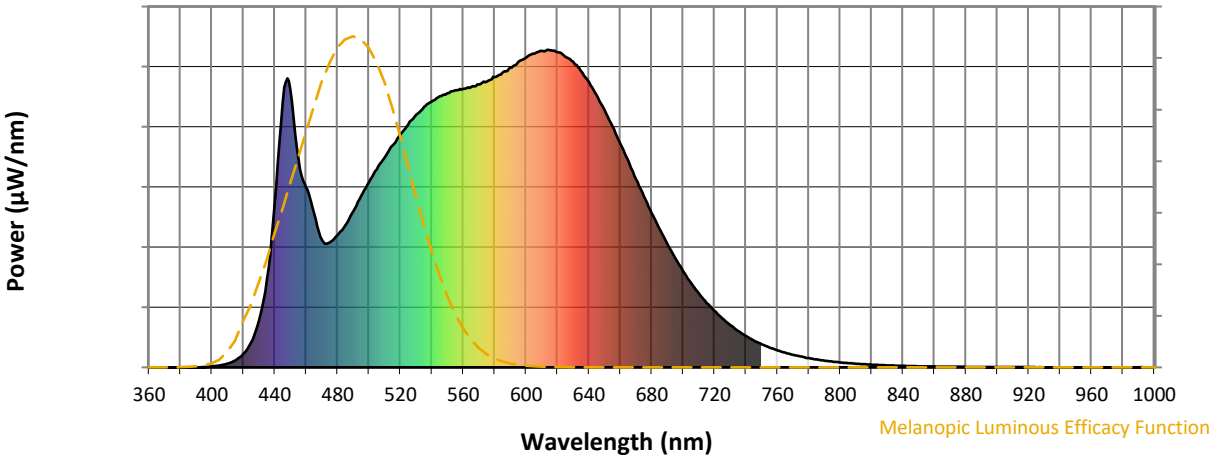
## Melanopic Flux vs. Wavelength




**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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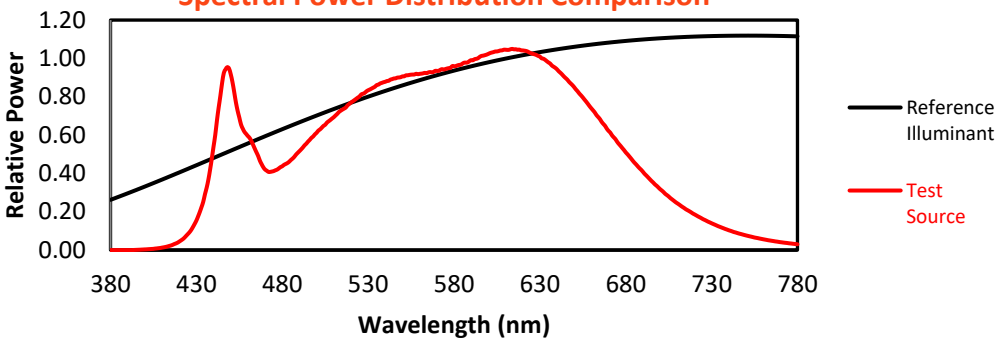
# TM-30-18

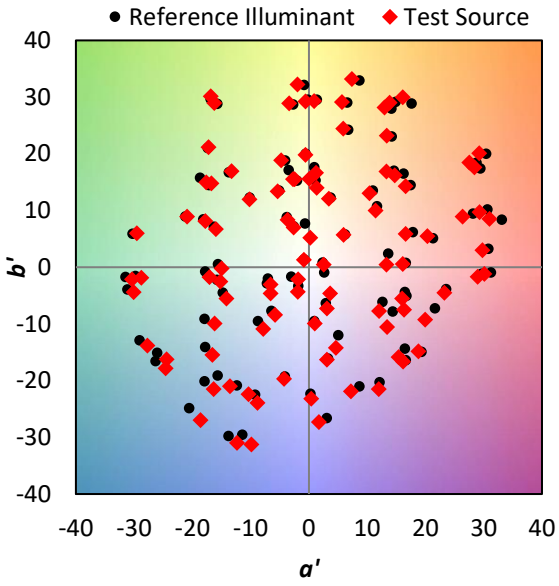
## Summary

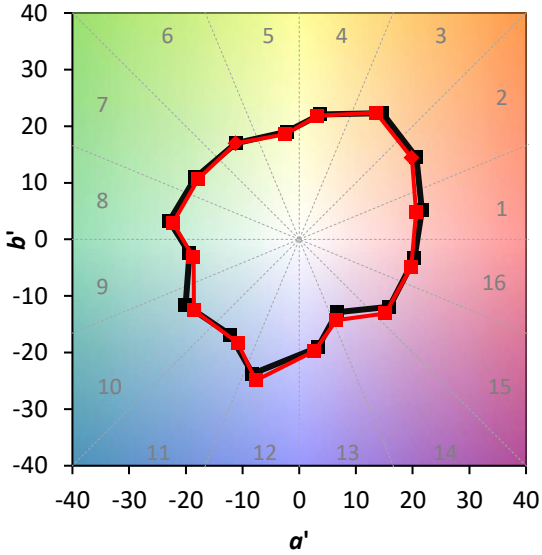
$R_f$ = 91.8
$R_g$ = 98.4
CIE $R_a$ = 92.1
$R_9$ = 60.7

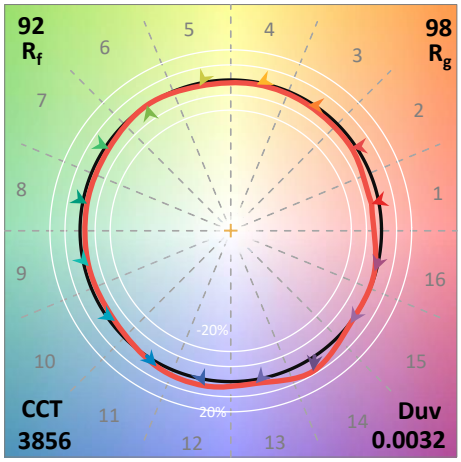
## Spectral Power Distribution Comparison

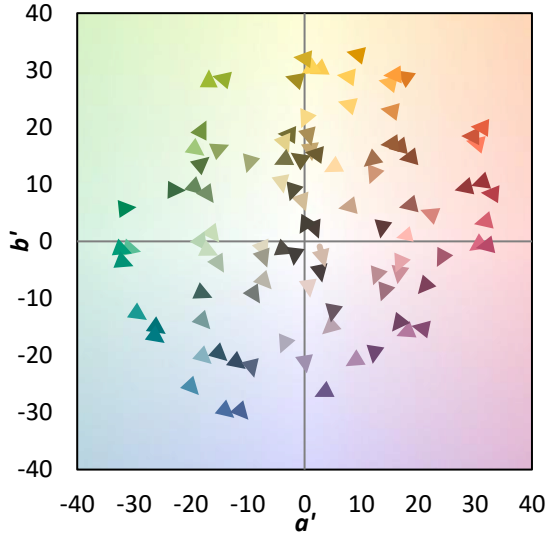



## Color Vector Graphics



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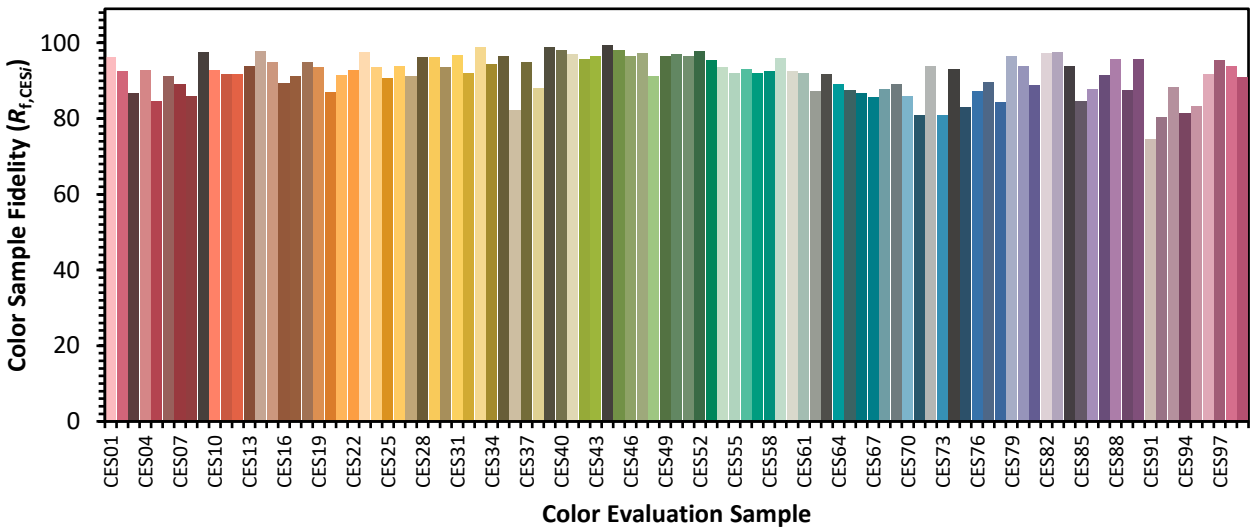
# TM-30-18

**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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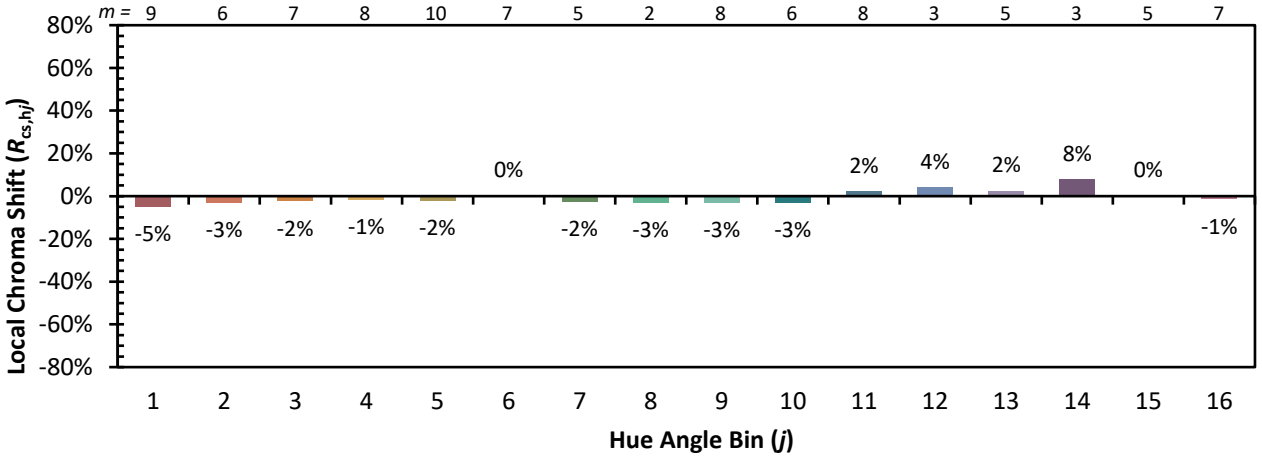
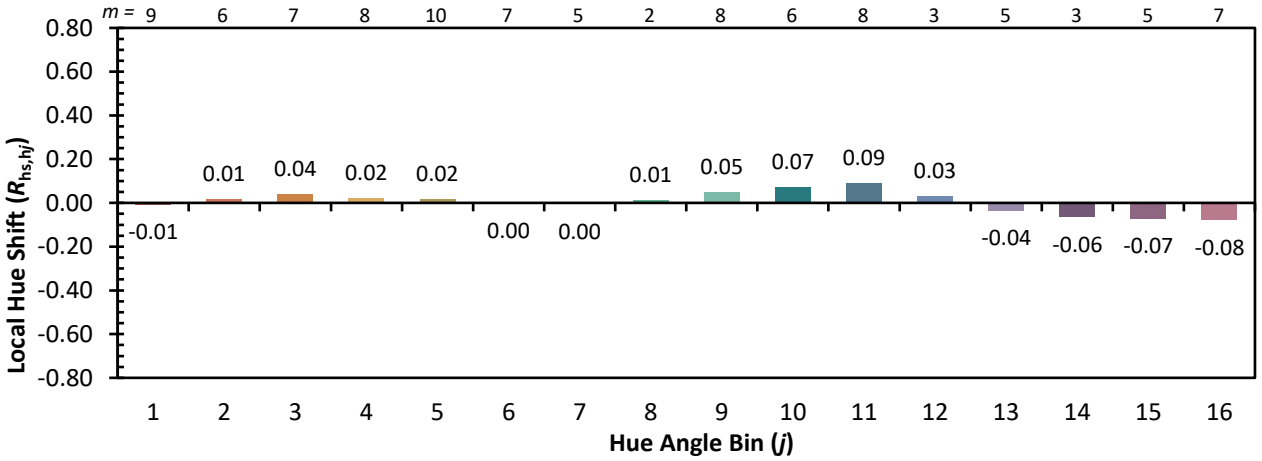
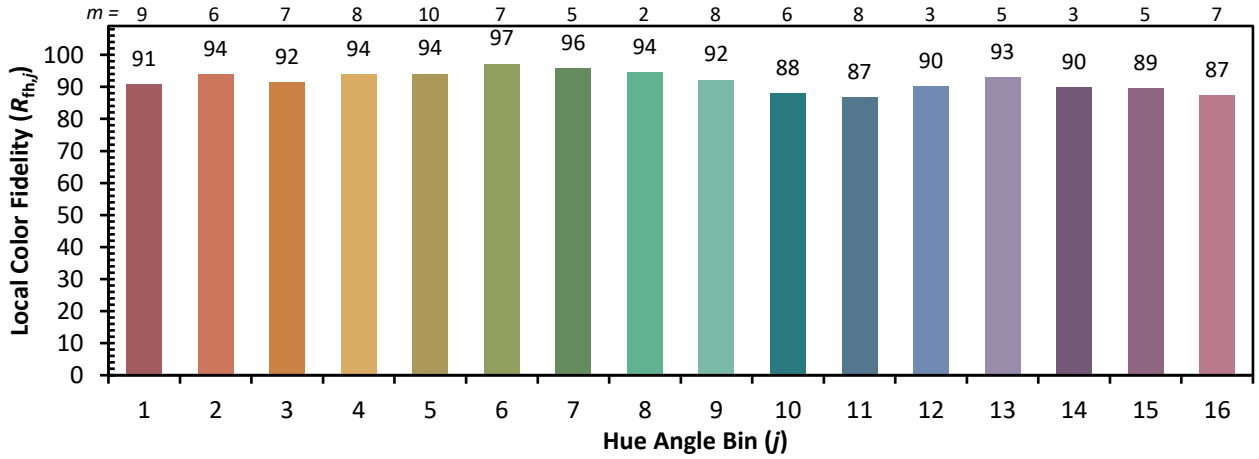
## Color Rendition by Hue-Angle Bin



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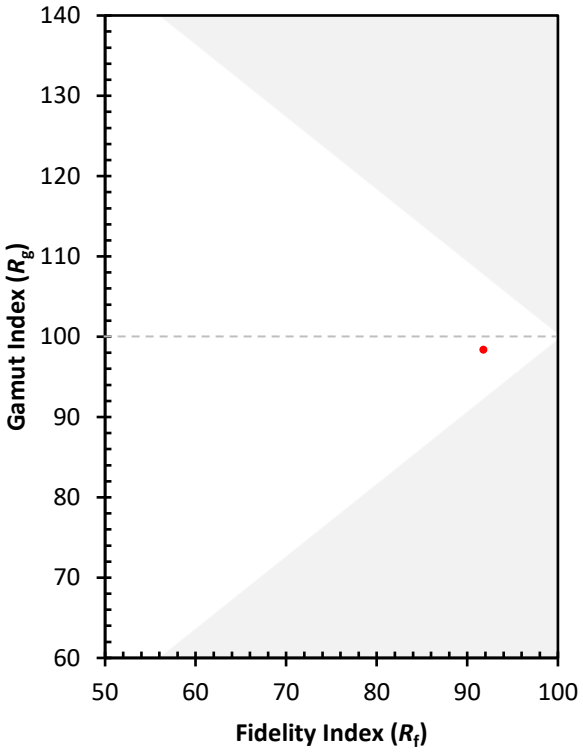
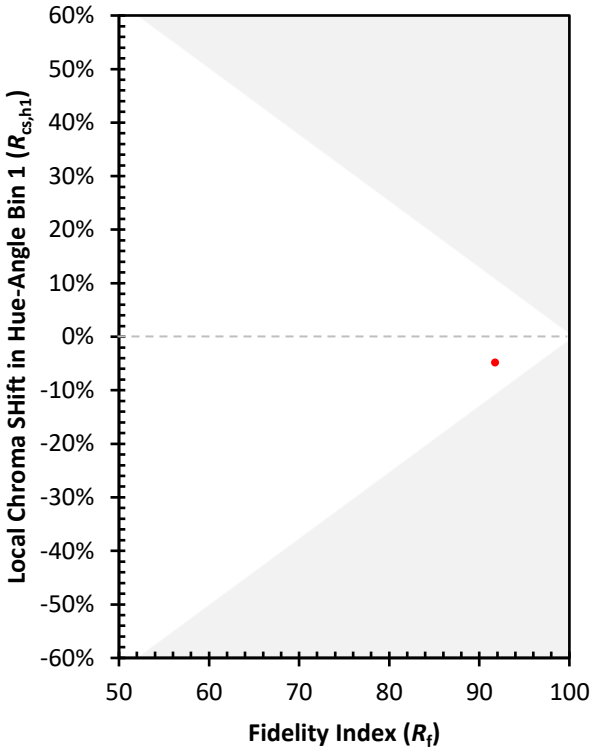
## Measure Comparisons

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