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: P1459083

Luminaire Tested: GLAN-SB5A-927-U-T4LG-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: | P1459083 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/22/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB5A-927-U-T4LG-HSS |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 350mA 5xLight Square PACKAGE 90CRI 2700K FIXTURE w/ TYPE IV LOW GLARE WITH HOUSE SIDE SHIELD |
| Light Source: | (130) 2700K CCT, 90 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 9995.6 lumens |
| Efficiency: | N/A |
| Efficacy: | 70.5 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B1 - U0 - G2 |

| | |
|---|---|
| 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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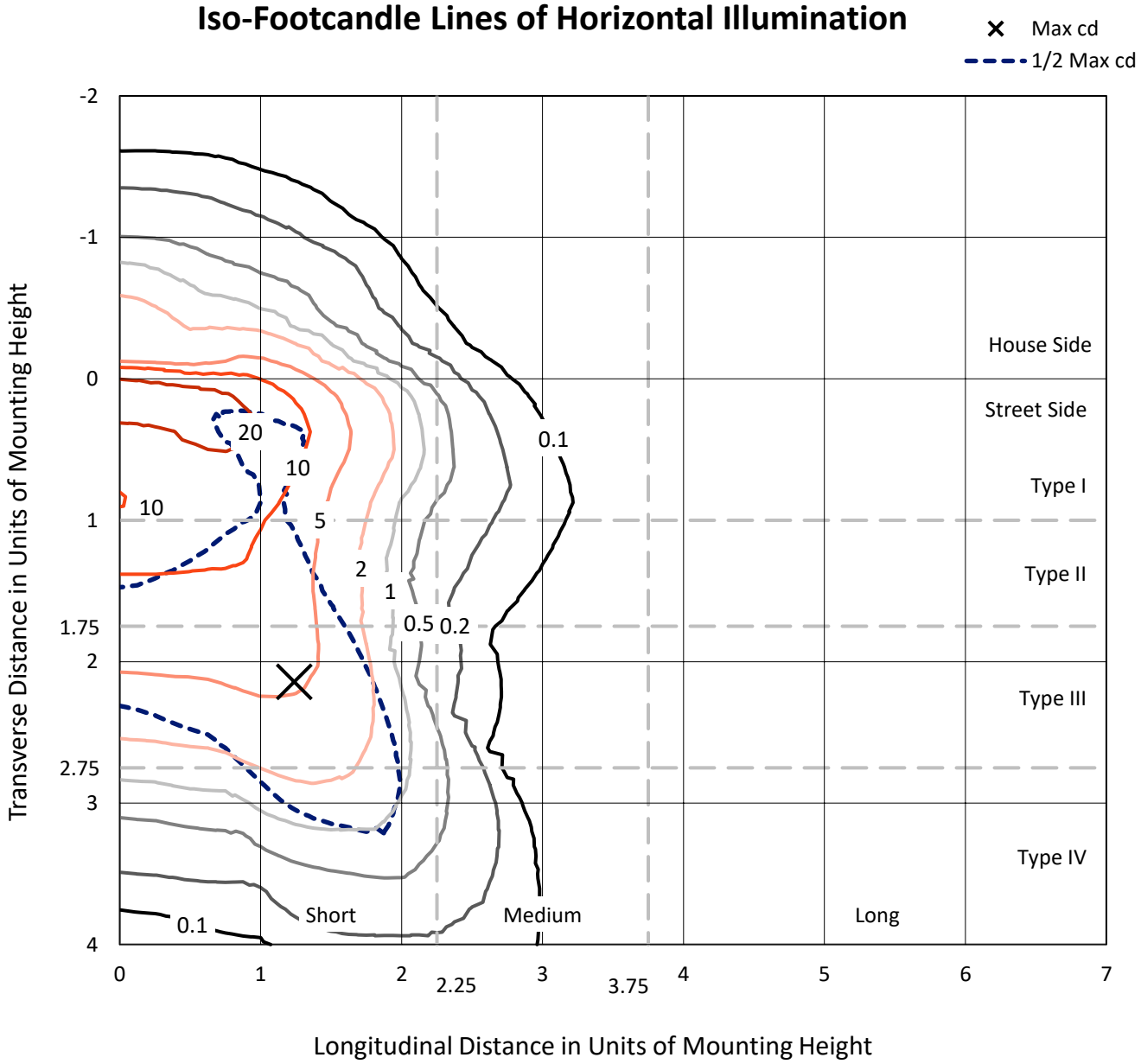
REPORT NUMBER: P1459083
CATALOG NUMBER: GLAN-SB5A-927-U-T4LG-HSS

## Iso-Footcandle Lines of Horizontal Illumination




Based on 10 foot mounting height. Maximum calculated value = 30.1 fc
Type IV - Short - N/A

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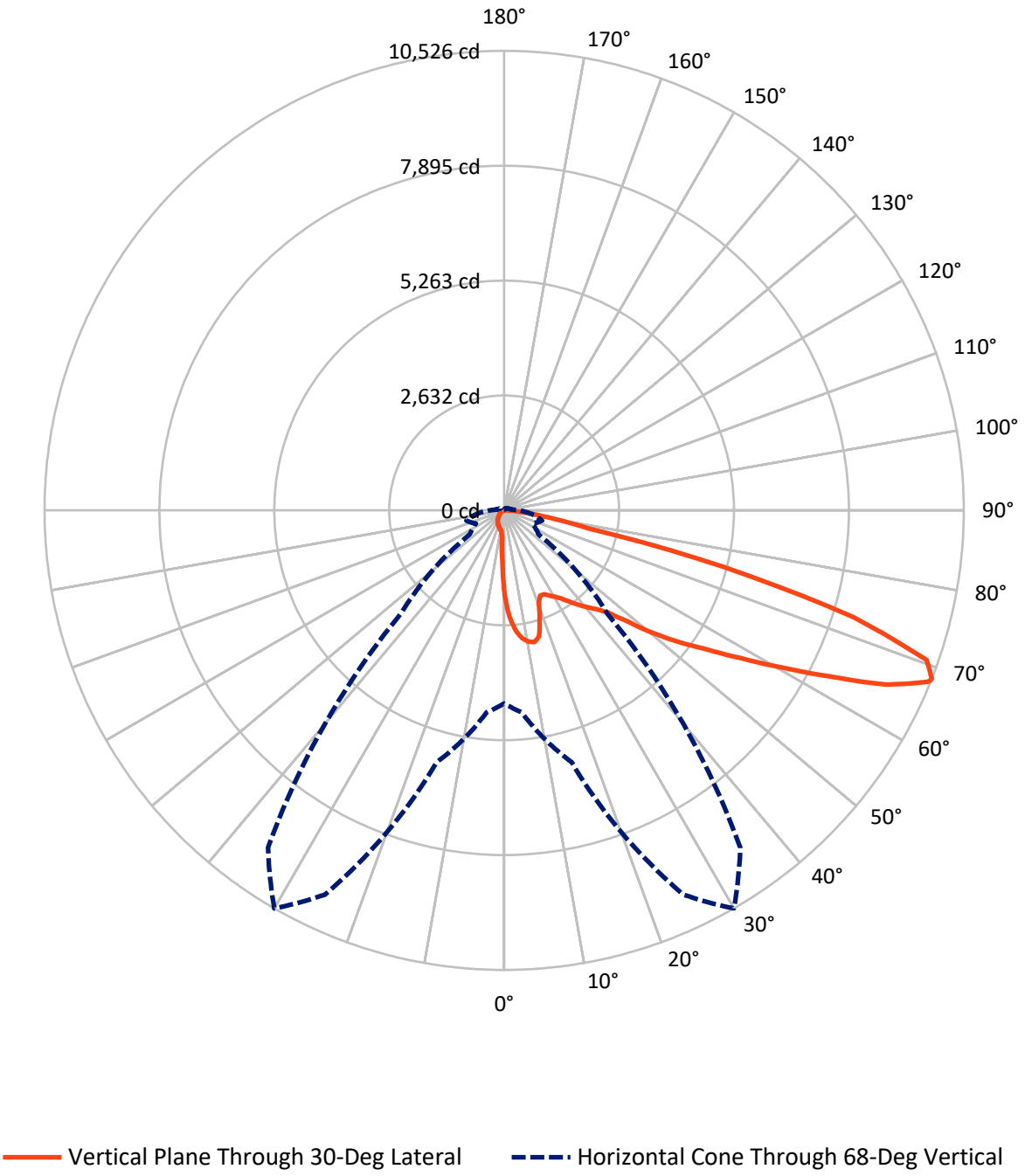
## Luminous Intensity Polar Plot



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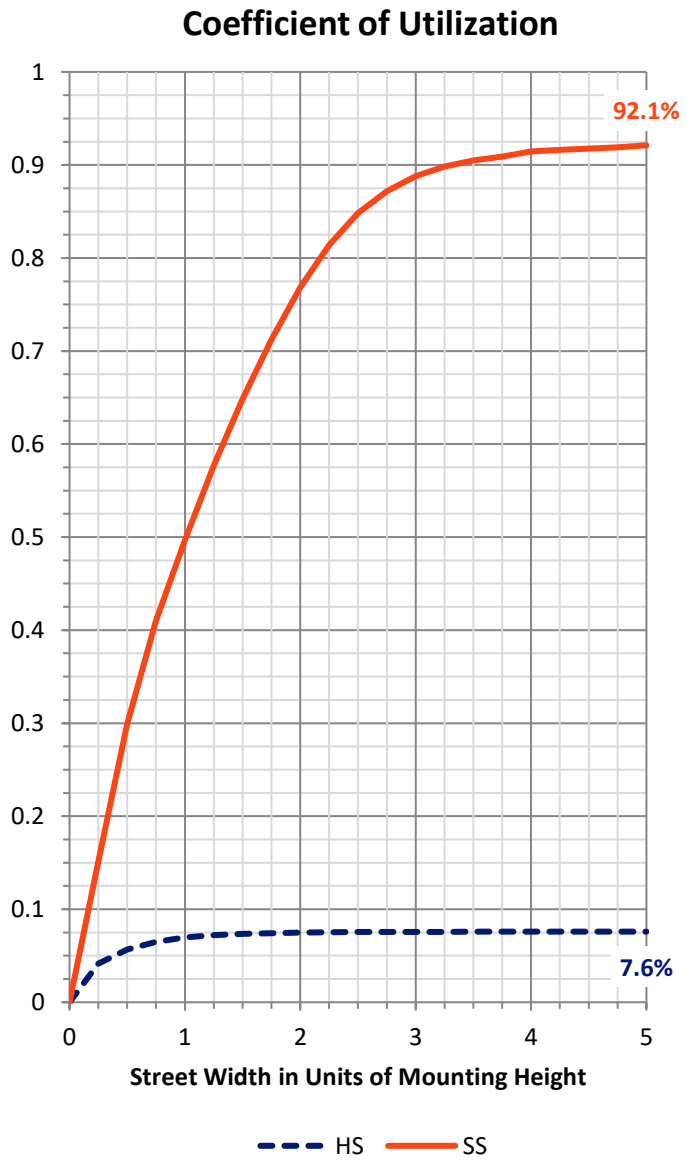
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 762.9 | 0.0 | 762.9 |
| | % Fixture | 7.6 | 0.0 | 7.6 |
| **Street Side** | Lumens | 9232.7 | 0.0 | 9232.7 |
| | % Fixture | 92.4 | 0.0 | 92.4 |
| **Total** | Lumens | 9995.6 | 0.0 | 9995.6 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 170.1 | 1.7 |
| 10°-20° | 485.6 | 4.9 |
| 20°-30° | 763.0 | 7.6 |
| 30°-40° | 1196.8 | 12.0 |
| 40°-50° | 1788.8 | 17.9 |
| 50°-60° | 2379.7 | 23.8 |
| 60°-70° | 2300.4 | 23.0 |
| 70°-80° | 826.9 | 8.3 |
| 80°-90° | 84.4 | 0.8 |
| 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° | 9995.6 | 100.0 |
| 0°-180° | 9995.6 | 100.0 |



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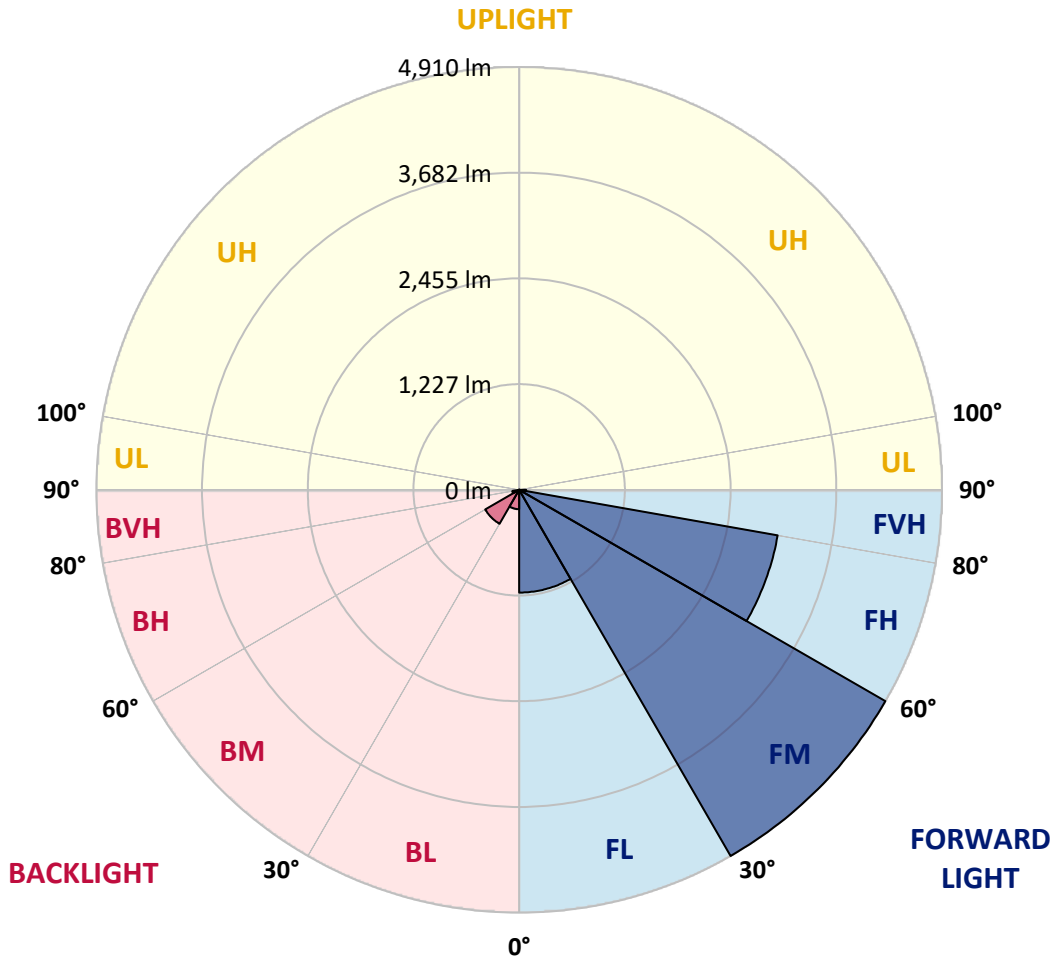
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1193.5 | 11.9 | | | |
| FM | (30°-60°) | 4909.8 | 49.1 | | | |
| FH | (60°-80°) | 3048.0 | 30.5 | | | G2/5000 |
| FVH | (80°-90°) | 81.4 | 0.8 | | | G1/100 |
| BL | (0°-30°) | 225.2 | 2.3 | B1/500 | | |
| BM | (30°-60°) | 455.4 | 4.6 | B1/1000 | | |
| BH | (60°-80°) | 79.4 | 0.8 | B0/110 | | G0/110 |
| BVH | (80°-90°) | 3.0 | 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-G2**
Type IV Short



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REPORT NUMBER: P1459083
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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 30° | 35° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1971.0 | 1971.0 | 1971.0 | 1971.0 | *1971.0* | 1971.0 | 1971.0 | 1971.0 | 1971.0 | 1971.0 | 1971.0 |
| 2.5° | 2519.2 | 2519.2 | 2501.2 | 2477.2 | *2450.3* | 2441.3 | 2390.4 | 2318.5 | 2243.6 | 2156.7 | 2030.9 |
| 5° | 2842.7 | 2839.7 | 2803.8 | 2803.8 | *2767.8* | 2734.9 | 2683.9 | 2579.1 | 2459.3 | 2303.5 | 2084.8 |
| 7.5° | 2986.5 | 2992.5 | 2977.5 | 2977.5 | *2956.5* | 2932.6 | 2902.6 | 2800.8 | 2660.0 | 2450.3 | 2138.8 |
| 10° | 3037.4 | 3040.4 | 3040.4 | 3061.4 | *3055.4* | 3052.4 | 3049.4 | 2992.5 | 2845.7 | 2600.1 | 2195.7 |
| 12.5° | 2914.6 | 2929.6 | 2971.5 | 3064.4 | *3094.3* | 3127.3 | 3172.2 | 3154.2 | 3052.4 | 2788.8 | 2282.5 |
| 15° | 2519.2 | 2522.2 | 2639.0 | 2869.7 | *2992.5* | 3118.3 | 3292.0 | 3328.0 | 3262.1 | 2992.5 | 2372.4 |
| 17.5° | 2078.9 | 2087.8 | 2180.7 | 2438.3 | *2636.0* | 2926.6 | 3360.9 | 3507.7 | 3483.7 | 3193.2 | 2456.3 |
| 20° | 1896.1 | 1908.1 | 1953.0 | 2114.8 | *2264.6* | 2534.2 | 3292.0 | 3678.4 | 3687.4 | 3393.9 | 2534.2 |
| 22.5° | 1854.2 | 1863.2 | 1899.1 | 2024.9 | *2117.8* | 2297.5 | 3058.4 | 3813.2 | 3918.1 | 3624.5 | 2627.0 |
| 25° | 1842.2 | 1851.2 | 1905.1 | 2042.9 | *2129.8* | 2279.5 | 2845.7 | 3885.1 | 4190.7 | 3864.1 | 2716.9 |
| 27.5° | 1833.2 | 1845.2 | 1932.1 | 2108.8 | *2210.7* | 2354.4 | 2806.7 | 3900.1 | 4451.3 | 4118.8 | 2863.7 |
| 30° | 1845.2 | 1863.2 | 1977.0 | 2177.7 | *2294.5* | 2456.3 | 2899.6 | 3915.1 | 4738.8 | 4409.3 | 3049.4 |
| 32.5° | 1893.1 | 1908.1 | 2045.9 | 2270.6 | *2405.4* | 2588.1 | 3058.4 | 4004.9 | 5011.4 | 4705.9 | 3226.1 |
| 35° | 1947.1 | 1968.0 | 2132.8 | 2402.4 | *2564.1* | 2770.8 | 3274.0 | 4181.7 | 5272.0 | 4987.4 | 3408.8 |
| 37.5° | 2013.0 | 2036.9 | 2234.6 | 2552.1 | *2737.9* | 2971.5 | 3507.7 | 4427.3 | 5502.7 | 5218.1 | 3591.6 |
| 40° | 2102.8 | 2129.8 | 2351.4 | 2710.9 | *2911.6* | 3145.2 | 3738.3 | 4669.9 | 5679.4 | 5355.9 | 3711.4 |
| 42.5° | 2456.3 | 2492.2 | 2585.1 | 2866.7 | *3091.3* | 3331.0 | 3966.0 | 4900.6 | 5745.3 | 5400.8 | 3735.3 |
| 45° | 3115.3 | 3151.2 | 3127.3 | 3181.2 | *3331.0* | 3555.6 | 4214.6 | 5122.2 | 5754.3 | 5388.8 | 3723.4 |
| 47.5° | 3777.3 | 3819.2 | 3798.2 | 3768.3 | *3801.2* | 3909.1 | 4493.2 | 5263.0 | 5706.4 | 5382.8 | 3723.4 |
| 50° | 4409.3 | 4385.4 | 4388.4 | 4379.4 | *4409.3* | 4466.2 | 4762.8 | 5290.0 | 5694.4 | 5439.8 | 3756.3 |
| 52.5° | 4747.8 | 4759.8 | 4834.7 | 4945.5 | *5011.4* | 5068.3 | 5071.3 | 5331.9 | 5607.5 | 5343.9 | 3717.4 |
| 55° | 5080.3 | 5104.3 | 5278.0 | 5466.7 | *5613.5* | 5721.3 | 5379.9 | 5305.0 | 5089.3 | 5023.4 | 3513.7 |
| 57.5° | 5454.7 | 5487.7 | 5733.3 | 6122.7 | *6380.3* | 6437.3 | 5685.4 | 4801.7 | 4307.5 | 4565.1 | 3118.3 |
| 60° | 5970.0 | 6008.9 | 6335.4 | 6919.5 | *7302.9* | 7186.1 | 5709.4 | 4001.9 | 3420.8 | 3789.3 | 2573.1 |
| 62.5° | 6374.3 | 6452.2 | 7042.3 | 7953.0 | *8375.3* | 8003.9 | 5263.0 | 3067.4 | 2390.4 | 2663.0 | 1878.2 |
| 65° | 5943.0 | 6092.8 | 7054.3 | 9136.2 | *9624.4* | 8965.4 | 4562.1 | 2093.8 | 1348.0 | 1722.4 | 1201.2 |
| 67.5° | 4804.7 | 5014.4 | 6263.5 | 9711.3 | *10481.1* | 9471.7 | 3591.6 | 1111.3 | 772.8 | 1000.5 | 632.0 |
| 68° | *4421.3* | *4649.0* | *5973.0* | *9711.3* | *10526.1* | *9426.7* | *3334.0* | *961.5* | *712.9* | *898.6* | *548.2* |
| 70° | 3055.4 | 3217.1 | 4592.0 | 9166.1 | *10262.5* | 8594.0 | 2195.7 | 551.2 | 536.2 | 617.1 | 362.5 |
| 72.5° | 1497.7 | 1671.5 | 2456.3 | 7264.0 | *8360.3* | 6605.0 | 1000.5 | 365.4 | 407.4 | 452.3 | 284.6 |
| 75° | 596.1 | 632.0 | 967.5 | 3582.6 | *5224.1* | 4214.6 | 524.2 | 275.6 | 350.5 | 353.5 | 224.7 |
| 77.5° | 341.5 | 362.5 | 536.2 | 1318.0 | *1959.0* | 1884.1 | 338.5 | 197.7 | 278.6 | 254.6 | 146.8 |
| 80° | 191.7 | 194.7 | 302.5 | 694.9 | *1120.3* | 1003.5 | 230.7 | 143.8 | 212.7 | 179.7 | 98.9 |
| 82.5° | 95.9 | 107.8 | 191.7 | 383.4 | *623.1* | 638.0 | 122.8 | 101.8 | 170.7 | 128.8 | 80.9 |
| 85° | 68.9 | 74.9 | 137.8 | 212.7 | *287.6* | 431.3 | 74.9 | 50.9 | 128.8 | 86.9 | 56.9 |
| 87.5° | 35.9 | 44.9 | 86.9 | 104.8 | *116.8* | 146.8 | 35.9 | 24.0 | 71.9 | 50.9 | 30.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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Scaled Data Report

REPORT NUMBER: P1459083
CATALOG NUMBER: GLAN-SB5A-927-U-T4LG-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1971.0 | 1971.0 | 1971.0 | 1971.0 | 1971.0 | 1971.0 | 1971.0 | 1971.0 | 1971.0 | 1971.0 | 1971.0 |
| 2.5° | 1971.0 | 1902.1 | 1761.3 | 1596.6 | 1467.8 | 1336.0 | 1228.1 | 1126.3 | 1078.4 | 1072.4 | 1084.4 |
| 5° | 1962.0 | 1812.3 | 1491.7 | 1177.2 | 919.6 | 739.9 | 641.0 | 590.1 | 563.1 | 551.2 | 554.2 |
| 7.5° | 1944.1 | 1716.4 | 1204.2 | 796.8 | 596.1 | 518.2 | 494.3 | 485.3 | 482.3 | 482.3 | 482.3 |
| 10° | 1926.1 | 1587.6 | 922.6 | 584.1 | 488.3 | 467.3 | 461.3 | 461.3 | 458.3 | 458.3 | 461.3 |
| 12.5° | 1917.1 | 1467.8 | 715.9 | 488.3 | 455.3 | 446.3 | 440.3 | 437.3 | 437.3 | 437.3 | 440.3 |
| 15° | 1896.1 | 1336.0 | 578.1 | 452.3 | 434.3 | 422.4 | 419.4 | 416.4 | 416.4 | 416.4 | 416.4 |
| 17.5° | 1878.2 | 1207.2 | 503.2 | 428.4 | 413.4 | 401.4 | 398.4 | 395.4 | 395.4 | 398.4 | 398.4 |
| 20° | 1851.2 | 1084.4 | 452.3 | 404.4 | 392.4 | 380.4 | 377.4 | 374.4 | 377.4 | 377.4 | 377.4 |
| 22.5° | 1818.2 | 982.5 | 422.4 | 386.4 | 371.4 | 359.5 | 359.5 | 359.5 | 359.5 | 359.5 | 362.5 |
| 25° | 1797.3 | 910.6 | 401.4 | 365.4 | 350.5 | 341.5 | 338.5 | 338.5 | 344.5 | 344.5 | 347.5 |
| 27.5° | 1830.2 | 892.6 | 404.4 | 359.5 | 332.5 | 323.5 | 320.5 | 320.5 | 326.5 | 329.5 | 332.5 |
| 30° | 1929.1 | 925.6 | 440.3 | 377.4 | 320.5 | 305.5 | 302.5 | 302.5 | 311.5 | 314.5 | 317.5 |
| 32.5° | 2042.9 | 994.5 | 494.3 | 401.4 | 311.5 | 287.6 | 281.6 | 281.6 | 290.6 | 293.6 | 296.6 |
| 35° | 2198.7 | 1102.3 | 566.1 | 422.4 | 317.5 | 269.6 | 257.6 | 257.6 | 263.6 | 269.6 | 272.6 |
| 37.5° | 2399.4 | 1279.1 | 650.0 | 437.3 | 317.5 | 248.6 | 233.6 | 230.7 | 236.6 | 236.6 | 239.6 |
| 40° | 2609.0 | 1509.7 | 736.9 | 437.3 | 302.5 | 227.7 | 212.7 | 203.7 | 206.7 | 203.7 | 206.7 |
| 42.5° | 2725.9 | 1695.4 | 811.8 | 410.4 | 284.6 | 206.7 | 191.7 | 179.7 | 176.7 | 170.7 | 173.7 |
| 45° | 2791.8 | 1779.3 | 790.8 | 380.4 | 266.6 | 191.7 | 173.7 | 158.8 | 152.8 | 143.8 | 143.8 |
| 47.5° | 2791.8 | 1788.3 | 677.0 | 356.5 | 248.6 | 179.7 | 155.8 | 140.8 | 131.8 | 122.8 | 125.8 |
| 50° | 2758.8 | 1707.4 | 536.2 | 332.5 | 227.7 | 167.7 | 140.8 | 128.8 | 116.8 | 110.8 | 110.8 |
| 52.5° | 2621.0 | 1443.8 | 410.4 | 302.5 | 203.7 | 152.8 | 125.8 | 113.8 | 101.8 | 98.9 | 98.9 |
| 55° | 2384.4 | 1060.4 | 332.5 | 272.6 | 182.7 | 140.8 | 113.8 | 104.8 | 92.9 | 86.9 | 86.9 |
| 57.5° | 1938.1 | 724.9 | 275.6 | 245.6 | 161.8 | 125.8 | 101.8 | 92.9 | 77.9 | 71.9 | 71.9 |
| 60° | 1437.8 | 473.3 | 233.6 | 215.7 | 137.8 | 113.8 | 89.9 | 77.9 | 65.9 | 59.9 | 56.9 |
| 62.5° | 970.5 | 320.5 | 194.7 | 170.7 | 116.8 | 98.9 | 77.9 | 65.9 | 50.9 | 38.9 | 38.9 |
| 65° | 605.1 | 248.6 | 161.8 | 134.8 | 101.8 | 86.9 | 65.9 | 50.9 | 35.9 | 27.0 | 24.0 |
| 67.5° | 347.5 | 200.7 | 131.8 | 104.8 | 86.9 | 68.9 | 50.9 | 41.9 | 30.0 | 21.0 | 18.0 |
| 68° | *320.5* | *191.7* | *122.8* | *98.9* | *80.9* | *65.9* | *47.9* | *38.9* | *27.0* | *18.0* | *18.0* |
| 70° | 260.6 | 170.7 | 104.8 | 80.9 | 68.9 | 53.9 | 41.9 | 33.0 | 21.0 | 12.0 | 12.0 |
| 72.5° | 230.7 | 143.8 | 89.9 | 62.9 | 47.9 | 44.9 | 33.0 | 24.0 | 15.0 | 9.0 | 6.0 |
| 75° | 188.7 | 113.8 | 71.9 | 47.9 | 33.0 | 33.0 | 24.0 | 15.0 | 6.0 | 0.0 | 0.0 |
| 77.5° | 122.8 | 83.9 | 56.9 | 30.0 | 18.0 | 21.0 | 15.0 | 6.0 | 0.0 | 0.0 | 0.0 |
| 80° | 80.9 | 62.9 | 38.9 | 15.0 | 9.0 | 9.0 | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 56.9 | 41.9 | 24.0 | 6.0 | 3.0 | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 35.9 | 18.0 | 9.0 | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 15.0 | 6.0 | 3.0 | 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: SP1-2407-184-13

Test Date: 10/11/2024

Luminaire Tested: GSS-SB1A-927-U-5WQ

Data in this report applies to families of products including GSS-SB1A-927-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

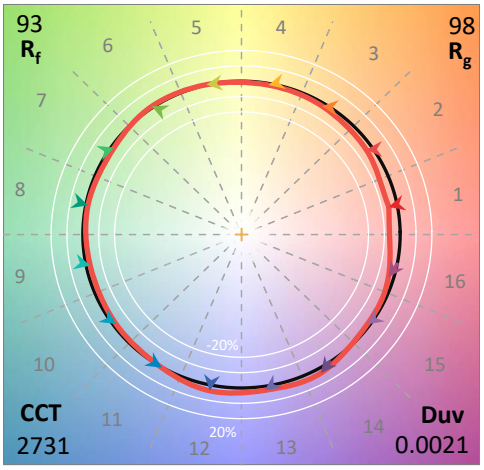
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-13 |
| 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-927-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 90 CRI 2700K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 2731 |
| CIE u': | 0.2605 |
| CIE v': | 0.5298 |
| Duv: | 0.0021 |
| CIE x: | 0.4610 |
| CIE y: | 0.4166 |
| CIE z: | 0.1224 |
| Peak Wavelength (nm): | 622 |
| Dominant Wavelength (nm): | 583 |
| Purity: | 63.43685 |
| Rf: | 92.6 |
| Rg: | 98 |

| | | | | | |
|---|---|---|---|---|---|
| CRI (Ra): | 91.8 | | | | |
| R1: | 91.4 | R9: | 54.7 | | |
| R2: | 95.1 | R10: | 87.7 | | |
| R3: | 97.6 | R11: | 92.9 | | |
| R4: | 92.3 | R12: | 84.0 | | |
| R5: | 91.1 | R13: | 92.2 | | |
| R6: | 94.7 | R14: | 97.8 | | |
| R7: | 92.3 | R15: | 86.8 | | |
| R8: | 80.0 | | | | |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | M |
| Operation Time: | 1H 0M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-13

| 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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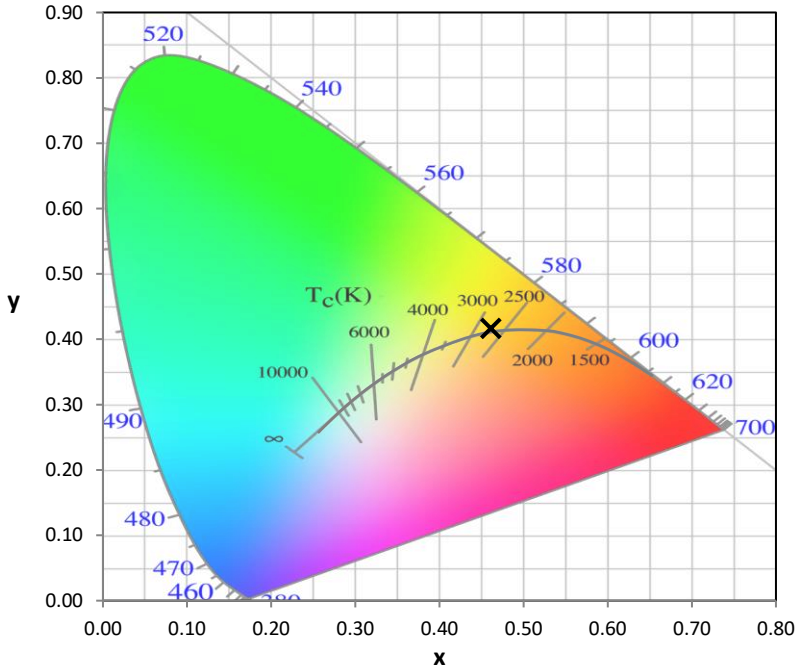
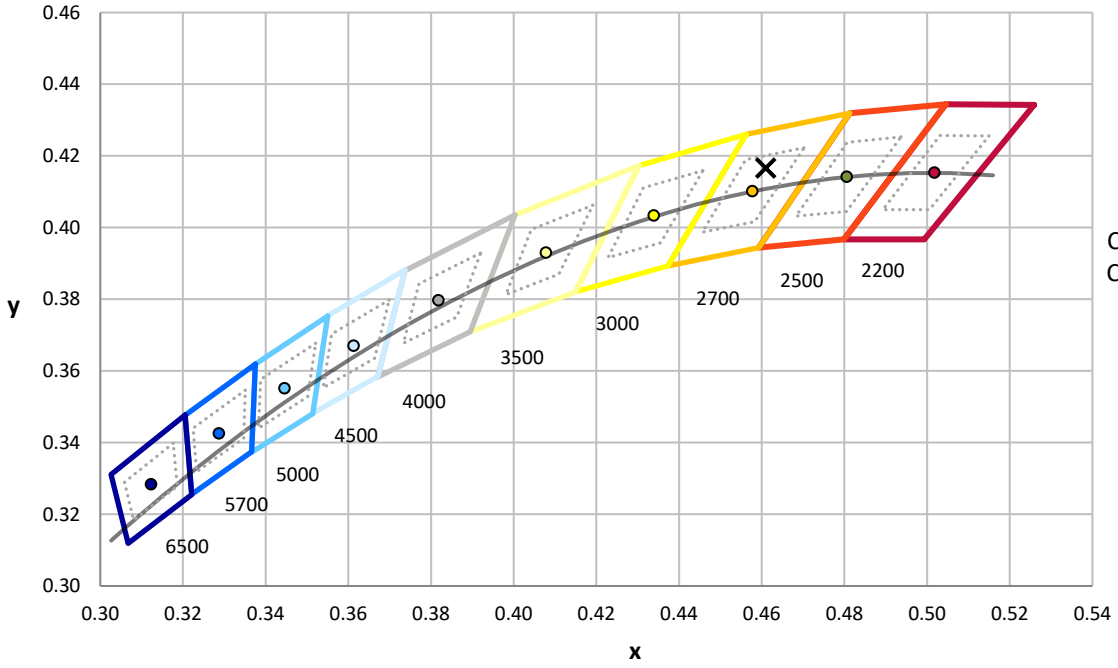
## CIE 1931 Chromaticity Diagram




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




CCT = 2731K
CIE x = 0.4610
CIE y = 0.4166
Duv = 0.0021

Point lies inside the ANSI 2700K 4-step quadrangle

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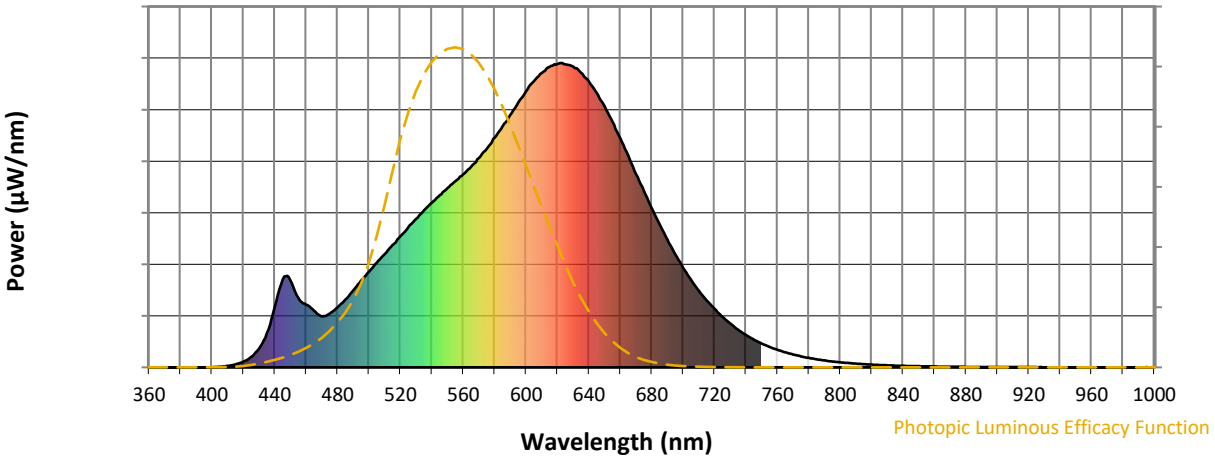
## Photopic Flux vs. Wavelength




## 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 | 253 | NR | 620 | 997 | NR | 750 | 78 | NR | 880 | 2 | NR |
| 365 | 0 | NR | 495 | 285 | NR | 625 | 996 | NR | 755 | 67 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 314 | NR | 630 | 989 | NR | 760 | 58 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 343 | NR | 635 | 969 | NR | 765 | 50 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 372 | NR | 640 | 939 | NR | 770 | 42 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 401 | NR | 645 | 901 | NR | 775 | 36 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 431 | NR | 650 | 858 | NR | 780 | 31 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 459 | NR | 655 | 806 | NR | 785 | 26 | NR | 915 | 1 | NR |
| 400 | 0 | NR | 530 | 488 | NR | 660 | 752 | NR | 790 | 23 | NR | 920 | 1 | NR |
| 405 | 2 | NR | 535 | 516 | NR | 665 | 696 | NR | 795 | 19 | NR | 925 | 1 | NR |
| 410 | 5 | NR | 540 | 540 | NR | 670 | 636 | NR | 800 | 17 | NR | 930 | 0 | NR |
| 415 | 10 | NR | 545 | 566 | NR | 675 | 579 | NR | 805 | 14 | NR | 935 | 0 | NR |
| 420 | 19 | NR | 550 | 589 | NR | 680 | 524 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 34 | NR | 555 | 612 | NR | 685 | 470 | NR | 815 | 11 | NR | 945 | 0 | NR |
| 430 | 61 | NR | 560 | 634 | NR | 690 | 421 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 113 | NR | 565 | 660 | NR | 695 | 371 | NR | 825 | 8 | NR | 955 | 0 | NR |
| 440 | 198 | NR | 570 | 688 | NR | 700 | 327 | NR | 830 | 7 | NR | 960 | 0 | NR |
| 445 | 288 | NR | 575 | 719 | NR | 705 | 288 | NR | 835 | 6 | NR | 965 | 0 | NR |
| 450 | 286 | NR | 580 | 754 | NR | 710 | 251 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 228 | NR | 585 | 791 | NR | 715 | 220 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 207 | NR | 590 | 831 | NR | 720 | 192 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 186 | NR | 595 | 870 | NR | 725 | 166 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 168 | NR | 600 | 907 | NR | 730 | 144 | NR | 860 | 3 | NR | 990 | 1 | NR |
| 475 | 177 | NR | 605 | 940 | NR | 735 | 124 | NR | 865 | 2 | NR | 995 | 1 | NR |
| 480 | 198 | NR | 610 | 967 | NR | 740 | 106 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 223 | NR | 615 | 988 | NR | 745 | 91 | NR | 875 | 2 | NR | | | |

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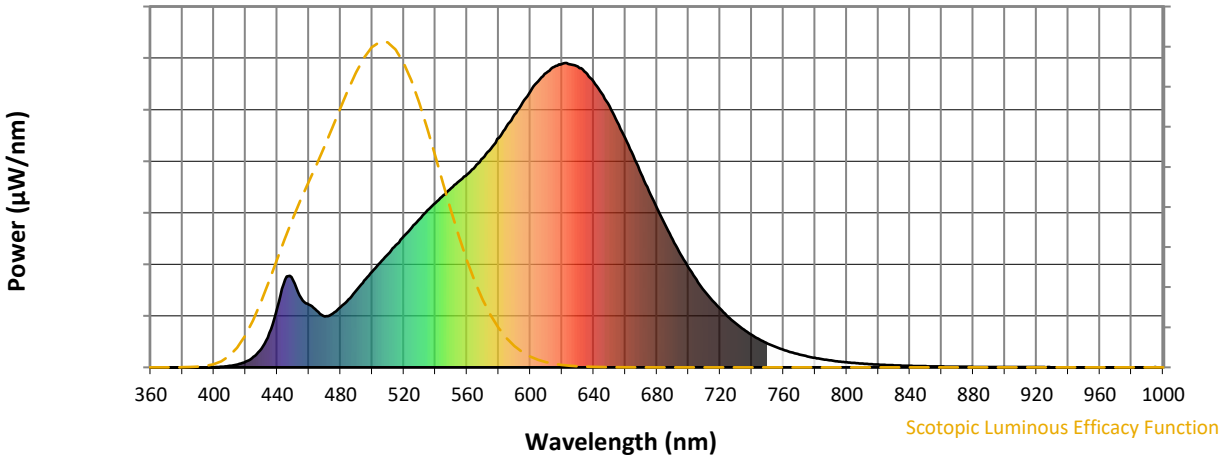
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.27**

| 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 | 253 | NR | 620 | 997 | NR | 750 | 78 | NR | 880 | 2 | NR |
| 365 | 0 | NR | 495 | 285 | NR | 625 | 996 | NR | 755 | 67 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 314 | NR | 630 | 989 | NR | 760 | 58 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 343 | NR | 635 | 969 | NR | 765 | 50 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 372 | NR | 640 | 939 | NR | 770 | 42 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 401 | NR | 645 | 901 | NR | 775 | 36 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 431 | NR | 650 | 858 | NR | 780 | 31 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 459 | NR | 655 | 806 | NR | 785 | 26 | NR | 915 | 1 | NR |
| 400 | 0 | NR | 530 | 488 | NR | 660 | 752 | NR | 790 | 23 | NR | 920 | 1 | NR |
| 405 | 2 | NR | 535 | 516 | NR | 665 | 696 | NR | 795 | 19 | NR | 925 | 1 | NR |
| 410 | 5 | NR | 540 | 540 | NR | 670 | 636 | NR | 800 | 17 | NR | 930 | 0 | NR |
| 415 | 10 | NR | 545 | 566 | NR | 675 | 579 | NR | 805 | 14 | NR | 935 | 0 | NR |
| 420 | 19 | NR | 550 | 589 | NR | 680 | 524 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 34 | NR | 555 | 612 | NR | 685 | 470 | NR | 815 | 11 | NR | 945 | 0 | NR |
| 430 | 61 | NR | 560 | 634 | NR | 690 | 421 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 113 | NR | 565 | 660 | NR | 695 | 371 | NR | 825 | 8 | NR | 955 | 0 | NR |
| 440 | 198 | NR | 570 | 688 | NR | 700 | 327 | NR | 830 | 7 | NR | 960 | 0 | NR |
| 445 | 288 | NR | 575 | 719 | NR | 705 | 288 | NR | 835 | 6 | NR | 965 | 0 | NR |
| 450 | 286 | NR | 580 | 754 | NR | 710 | 251 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 228 | NR | 585 | 791 | NR | 715 | 220 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 207 | NR | 590 | 831 | NR | 720 | 192 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 186 | NR | 595 | 870 | NR | 725 | 166 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 168 | NR | 600 | 907 | NR | 730 | 144 | NR | 860 | 3 | NR | 990 | 1 | NR |
| 475 | 177 | NR | 605 | 940 | NR | 735 | 124 | NR | 865 | 2 | NR | 995 | 1 | NR |
| 480 | 198 | NR | 610 | 967 | NR | 740 | 106 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 223 | NR | 615 | 988 | NR | 745 | 91 | NR | 875 | 2 | NR | | | |

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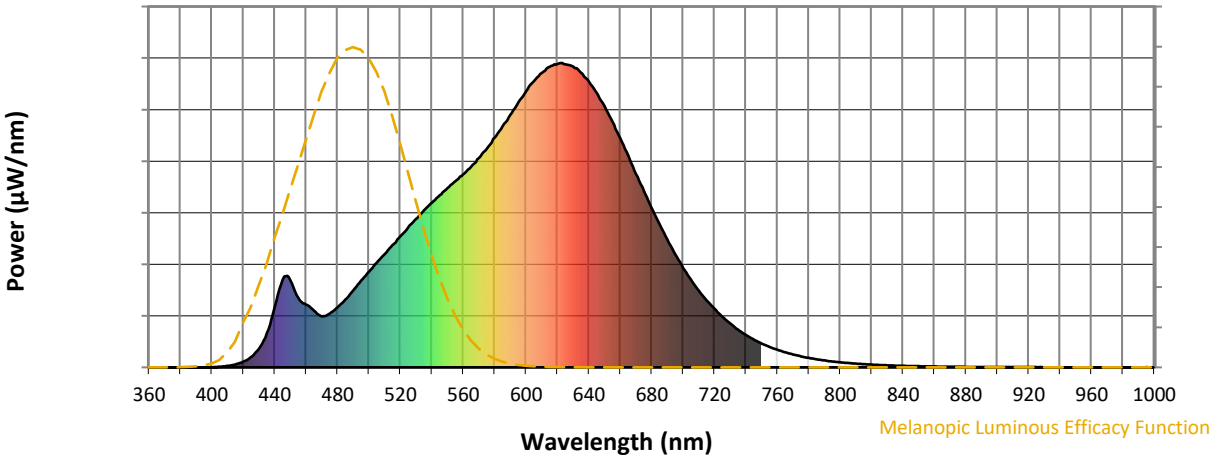
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.38**

| 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 | 253 | NR | 620 | 997 | NR | 750 | 78 | NR | 880 | 2 | NR |
| 365 | 0 | NR | 495 | 285 | NR | 625 | 996 | NR | 755 | 67 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 314 | NR | 630 | 989 | NR | 760 | 58 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 343 | NR | 635 | 969 | NR | 765 | 50 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 372 | NR | 640 | 939 | NR | 770 | 42 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 401 | NR | 645 | 901 | NR | 775 | 36 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 431 | NR | 650 | 858 | NR | 780 | 31 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 459 | NR | 655 | 806 | NR | 785 | 26 | NR | 915 | 1 | NR |
| 400 | 0 | NR | 530 | 488 | NR | 660 | 752 | NR | 790 | 23 | NR | 920 | 1 | NR |
| 405 | 2 | NR | 535 | 516 | NR | 665 | 696 | NR | 795 | 19 | NR | 925 | 1 | NR |
| 410 | 5 | NR | 540 | 540 | NR | 670 | 636 | NR | 800 | 17 | NR | 930 | 0 | NR |
| 415 | 10 | NR | 545 | 566 | NR | 675 | 579 | NR | 805 | 14 | NR | 935 | 0 | NR |
| 420 | 19 | NR | 550 | 589 | NR | 680 | 524 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 34 | NR | 555 | 612 | NR | 685 | 470 | NR | 815 | 11 | NR | 945 | 0 | NR |
| 430 | 61 | NR | 560 | 634 | NR | 690 | 421 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 113 | NR | 565 | 660 | NR | 695 | 371 | NR | 825 | 8 | NR | 955 | 0 | NR |
| 440 | 198 | NR | 570 | 688 | NR | 700 | 327 | NR | 830 | 7 | NR | 960 | 0 | NR |
| 445 | 288 | NR | 575 | 719 | NR | 705 | 288 | NR | 835 | 6 | NR | 965 | 0 | NR |
| 450 | 286 | NR | 580 | 754 | NR | 710 | 251 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 228 | NR | 585 | 791 | NR | 715 | 220 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 207 | NR | 590 | 831 | NR | 720 | 192 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 186 | NR | 595 | 870 | NR | 725 | 166 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 168 | NR | 600 | 907 | NR | 730 | 144 | NR | 860 | 3 | NR | 990 | 1 | NR |
| 475 | 177 | NR | 605 | 940 | NR | 735 | 124 | NR | 865 | 2 | NR | 995 | 1 | NR |
| 480 | 198 | NR | 610 | 967 | NR | 740 | 106 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 223 | NR | 615 | 988 | NR | 745 | 91 | NR | 875 | 2 | NR | | | |

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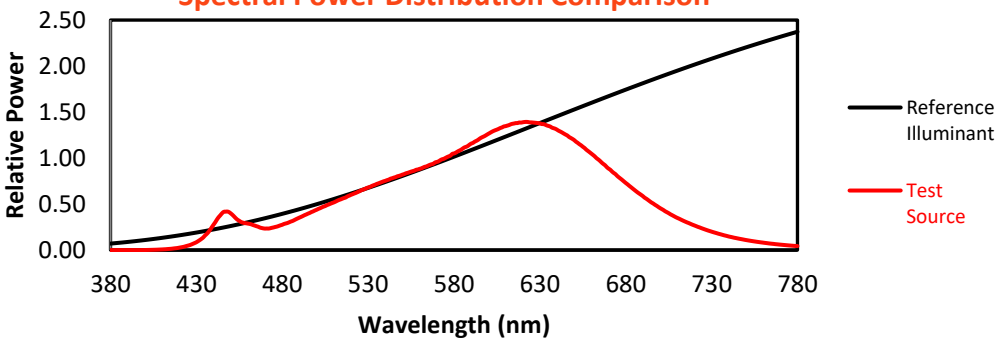
# TM-30-18

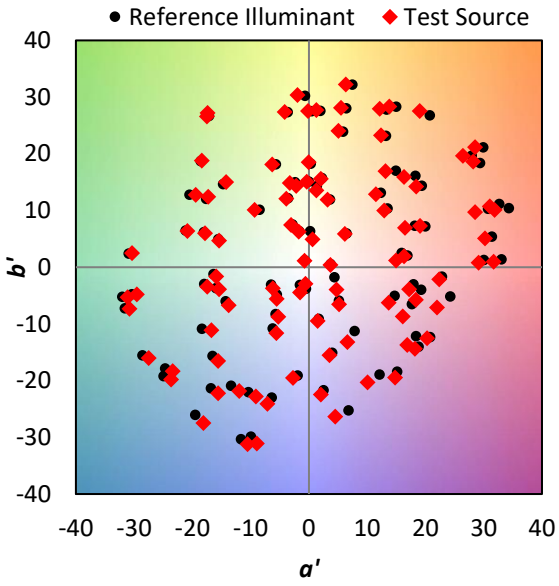
## Summary

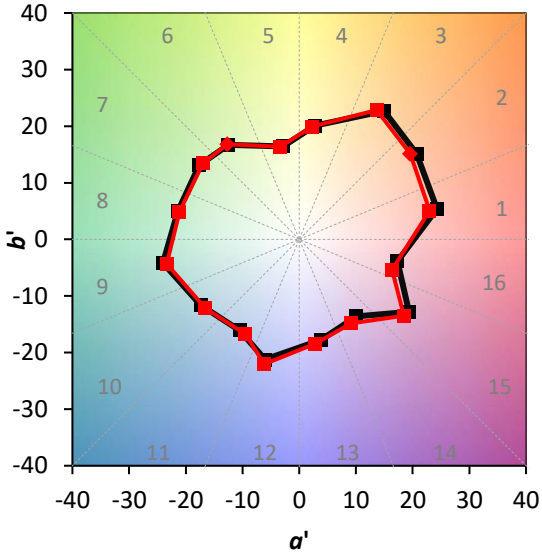
$R_f$ = 92.6
$R_g$ = 98
CIE $R_a$ = 91.8
$R_9$ = 54.7

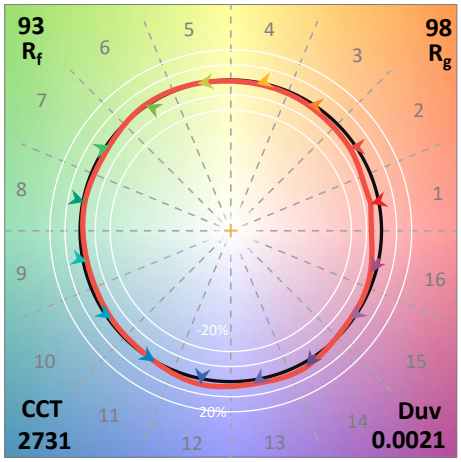
## Spectral Power Distribution Comparison

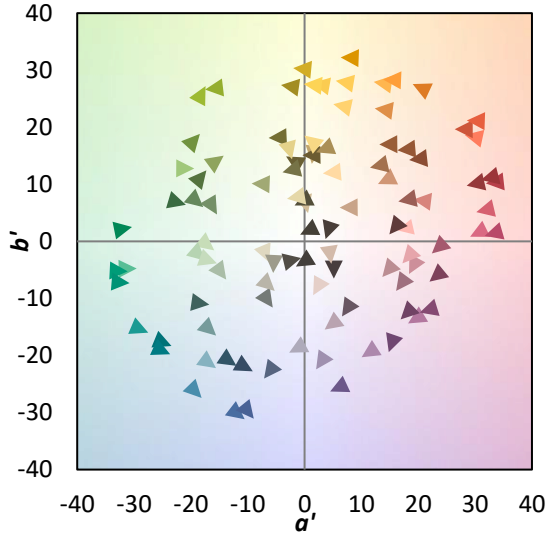



## Color Vector Graphics



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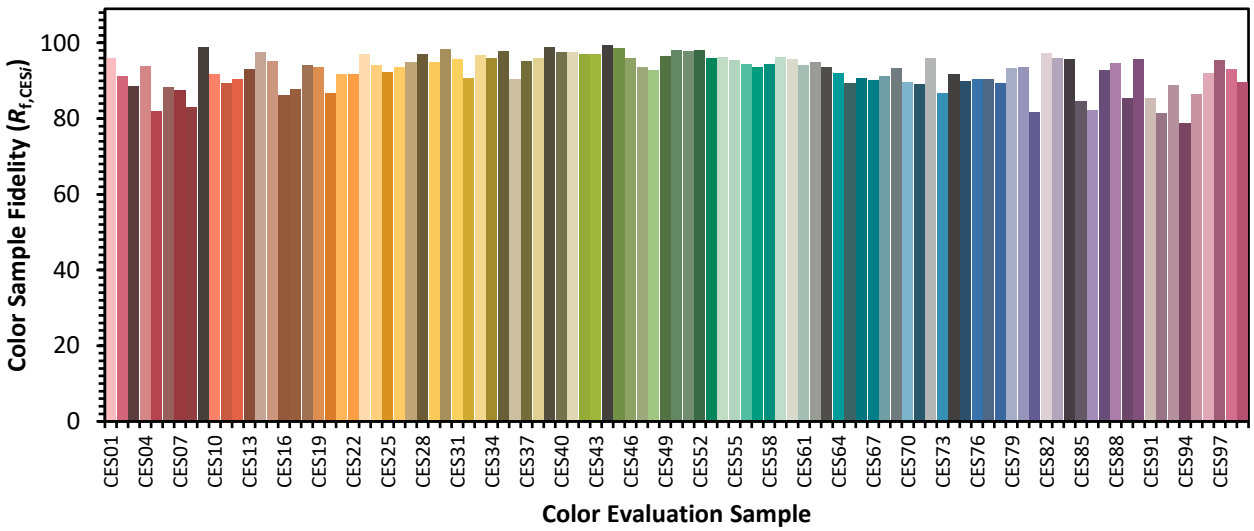
# TM-30-18

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

| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 94 | CES51 = 98 | CES76 = 90 |
| CES02 = 64 | CES27 = 95 | CES52 = 98 | CES77 = 90 |
| CES03 = 32 | CES28 = 97 | CES53 = 96 | CES78 = 89 |
| CES04 = 71 | CES29 = 95 | CES54 = 96 | CES79 = 93 |
| CES05 = 51 | CES30 = 98 | CES55 = 95 | CES80 = 94 |
| CES06 = 52 | CES31 = 96 | CES56 = 94 | CES81 = 82 |
| CES07 = 44 | CES32 = 91 | CES57 = 94 | CES82 = 97 |
| CES08 = 43 | CES33 = 97 | CES58 = 94 | CES83 = 96 |
| CES09 = 29 | CES34 = 96 | CES59 = 96 | CES84 = 96 |
| CES10 = 77 | CES35 = 98 | CES60 = 96 | CES85 = 85 |
| CES11 = 59 | CES36 = 90 | CES61 = 94 | CES86 = 82 |
| CES12 = 66 | CES37 = 95 | CES62 = 95 | CES87 = 93 |
| CES13 = 44 | CES38 = 96 | CES63 = 94 | CES88 = 95 |
| CES14 = 74 | CES39 = 99 | CES64 = 92 | CES89 = 85 |
| CES15 = 72 | CES40 = 98 | CES65 = 89 | CES90 = 96 |
| CES16 = 48 | CES41 = 98 | CES66 = 91 | CES91 = 85 |
| CES17 = 50 | CES42 = 97 | CES67 = 90 | CES92 = 82 |
| CES18 = 57 | CES43 = 97 | CES68 = 91 | CES93 = 89 |
| CES19 = 72 | CES44 = 99 | CES69 = 93 | CES94 = 79 |
| CES20 = 68 | CES45 = 99 | CES70 = 90 | CES95 = 87 |
| CES21 = 87 | CES46 = 96 | CES71 = 89 | CES96 = 92 |
| CES22 = 79 | CES47 = 94 | CES72 = 96 | CES97 = 96 |
| CES23 = 92 | CES48 = 93 | CES73 = 87 | CES98 = 93 |
| CES24 = 91 | CES49 = 96 | CES74 = 92 | CES99 = 90 |
| CES25 = 72 | CES50 = 98 | CES75 = 90 | |



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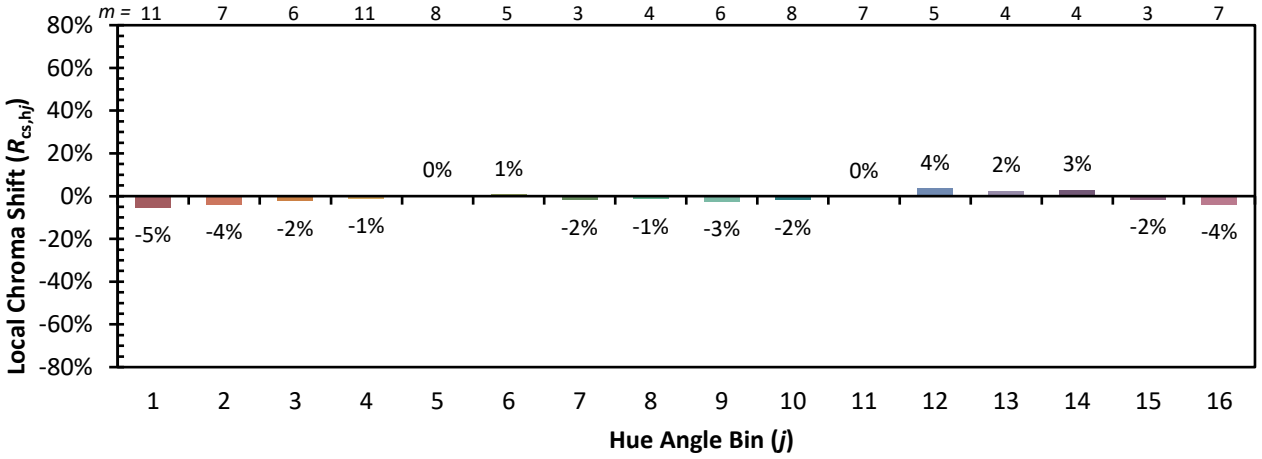
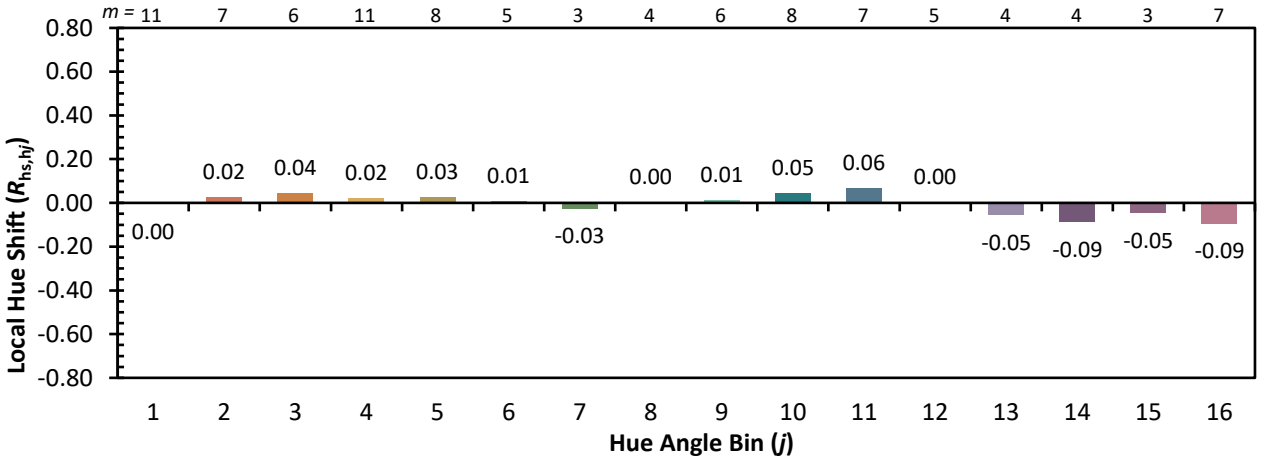
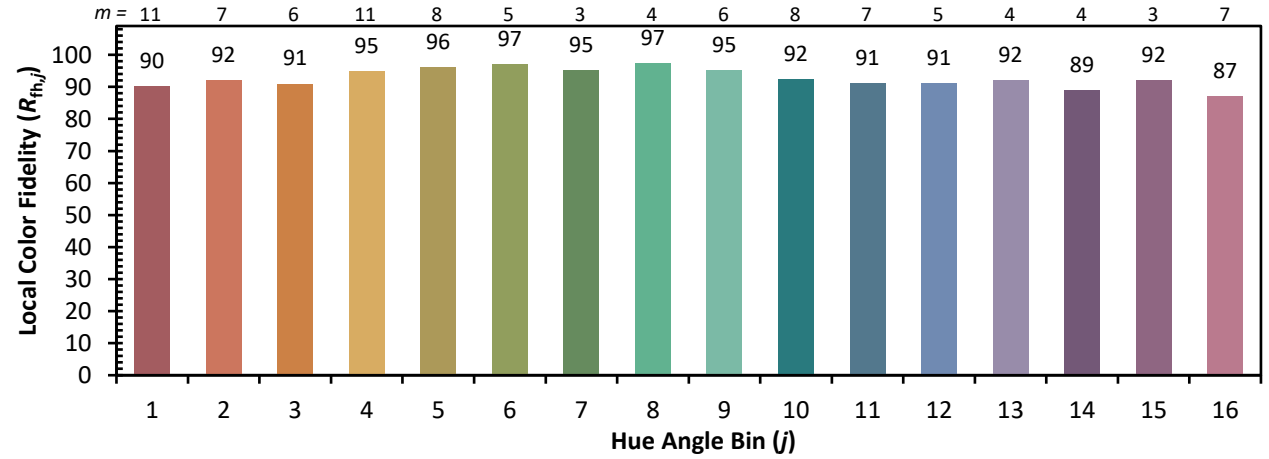
**TM-30-18**

## Color Rendition by Hue-Angle Bin



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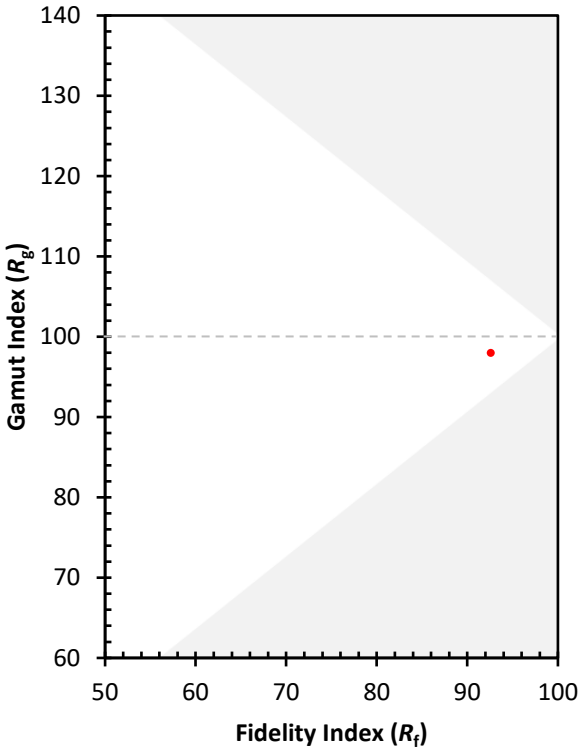
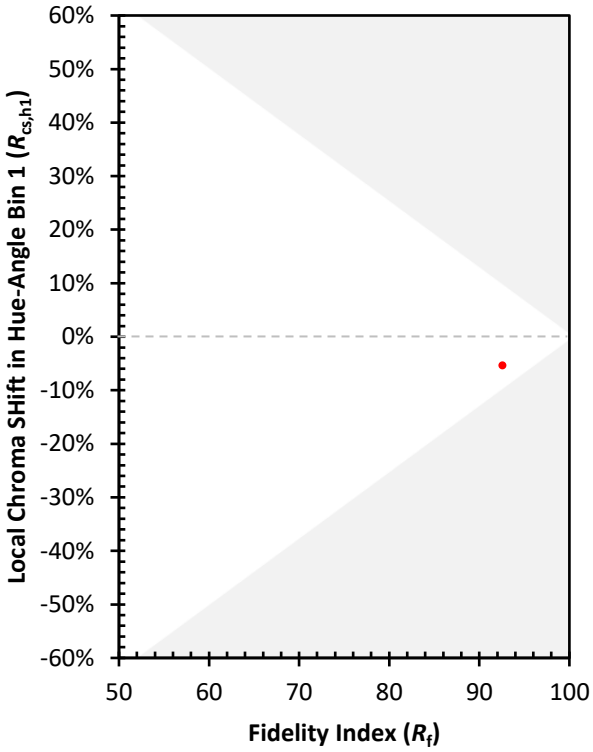
## Measure Comparisons




(END OF REPORT)