

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: STREETWORKS

Report Number: P1064071

Luminaire Tested: **GLAN-SA5C-750-U-T4BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1064071  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: GLAN-SA5C-750-U-T4BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 1050mA 5xLight Square PACKAGE  
70CRI 5000K FIXTURE w/ TYPE IV ANGLED BACKLIGHT CONTROL  
Light Source: (70) 5000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 28194.6 lumens  
Efficiency: N/A  
Efficacy: 119.5 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B0 - U0 - G5

Input Watts (W): 236  
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

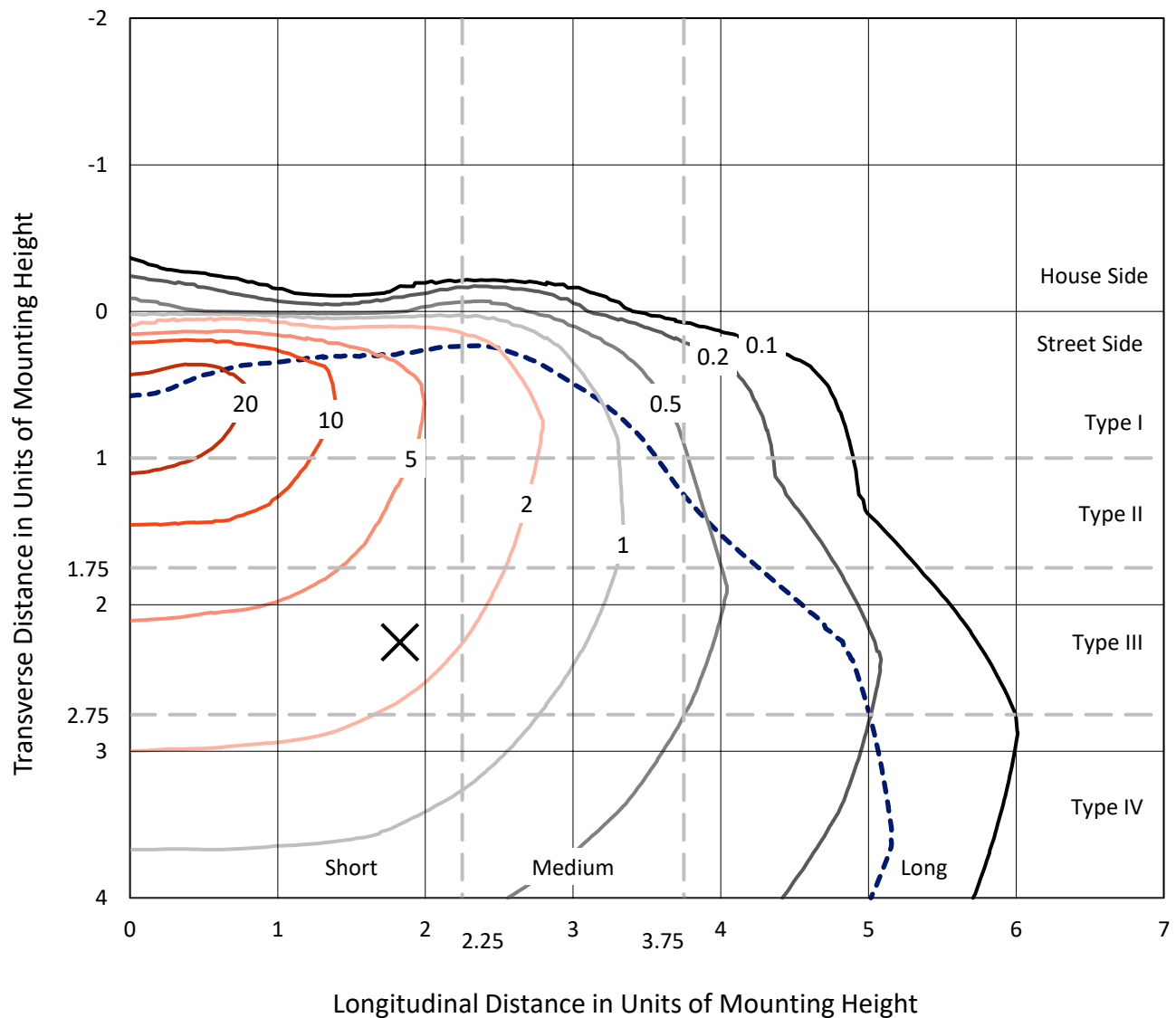


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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

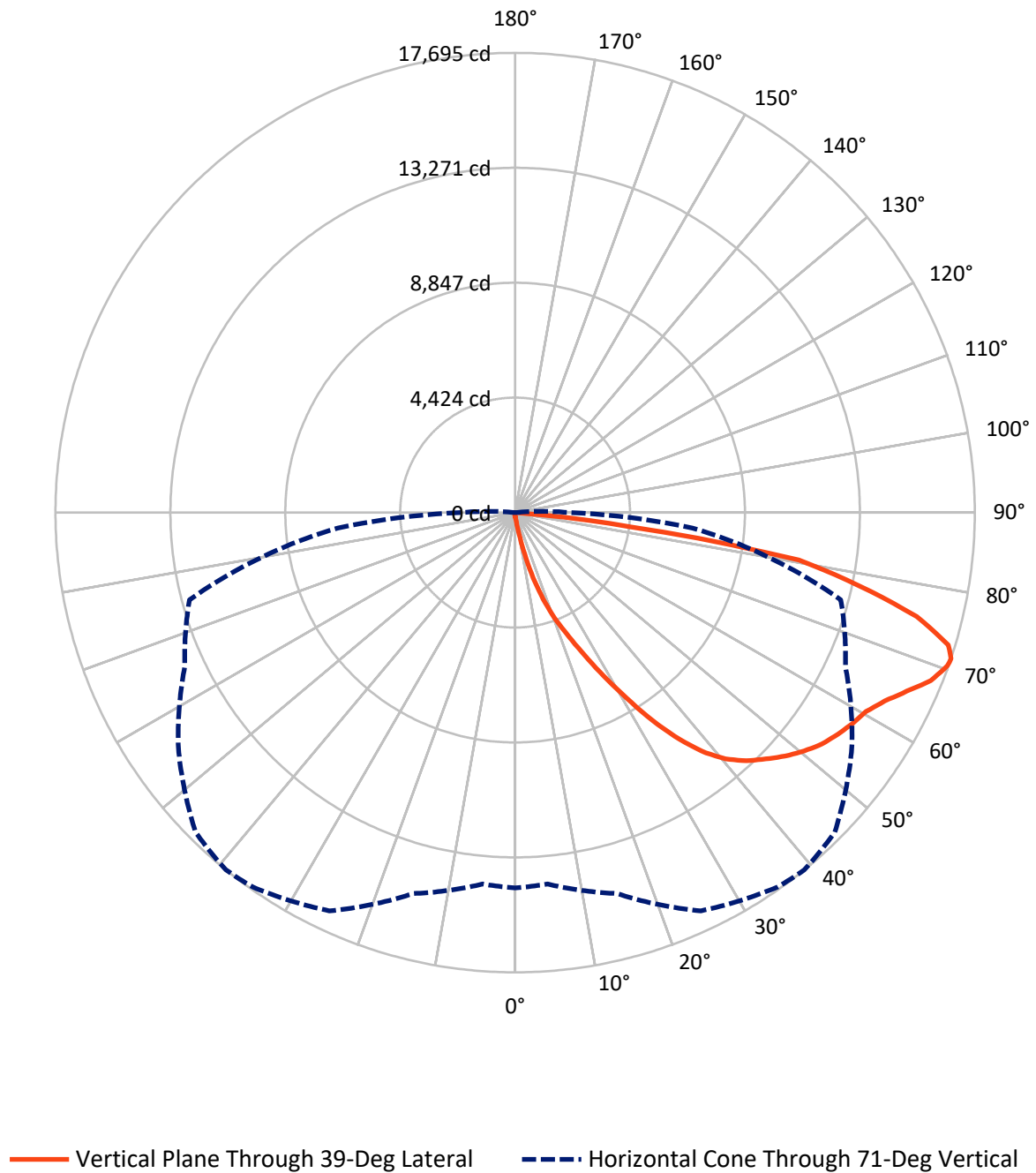


Based on 15 foot mounting height. Maximum calculated value = 29 fc  
 Type IV - Short - N/A

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CATALOG NUMBER: GLAN-SA5C-750-U-T4BC

## Luminous Intensity Polar Plot



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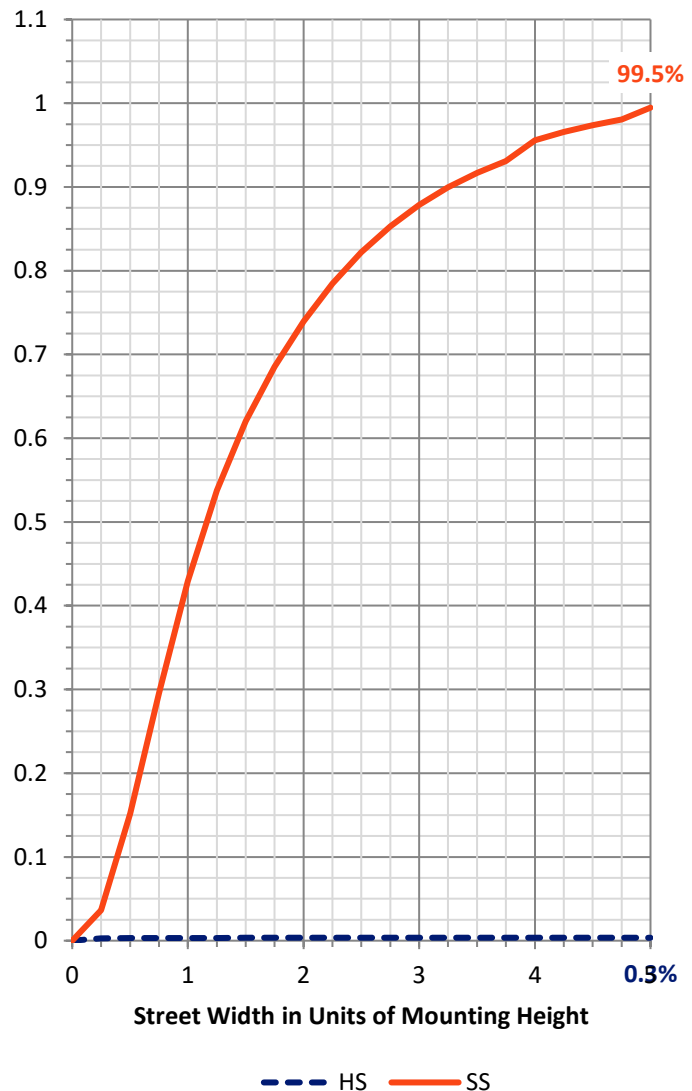
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 100.2    | 0.0    | 100.2   |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 28094.5  | 0.0    | 28094.5 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 28194.6  | 0.0    | 28194.6 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 23.6    | 0.1       |
| 10°-20°   | 301.3   | 1.1       |
| 20°-30°   | 1073.2  | 3.8       |
| 30°-40°   | 2586.4  | 9.2       |
| 40°-50°   | 4328.6  | 15.4      |
| 50°-60°   | 5559.5  | 19.7      |
| 60°-70°   | 7035.6  | 25.0      |
| 70°-80°   | 6272.5  | 22.2      |
| 80°-90°   | 1013.9  | 3.6       |
| 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°    | 28194.6 | 100.0     |
| 0°-180°   | 28194.6 | 100.0     |



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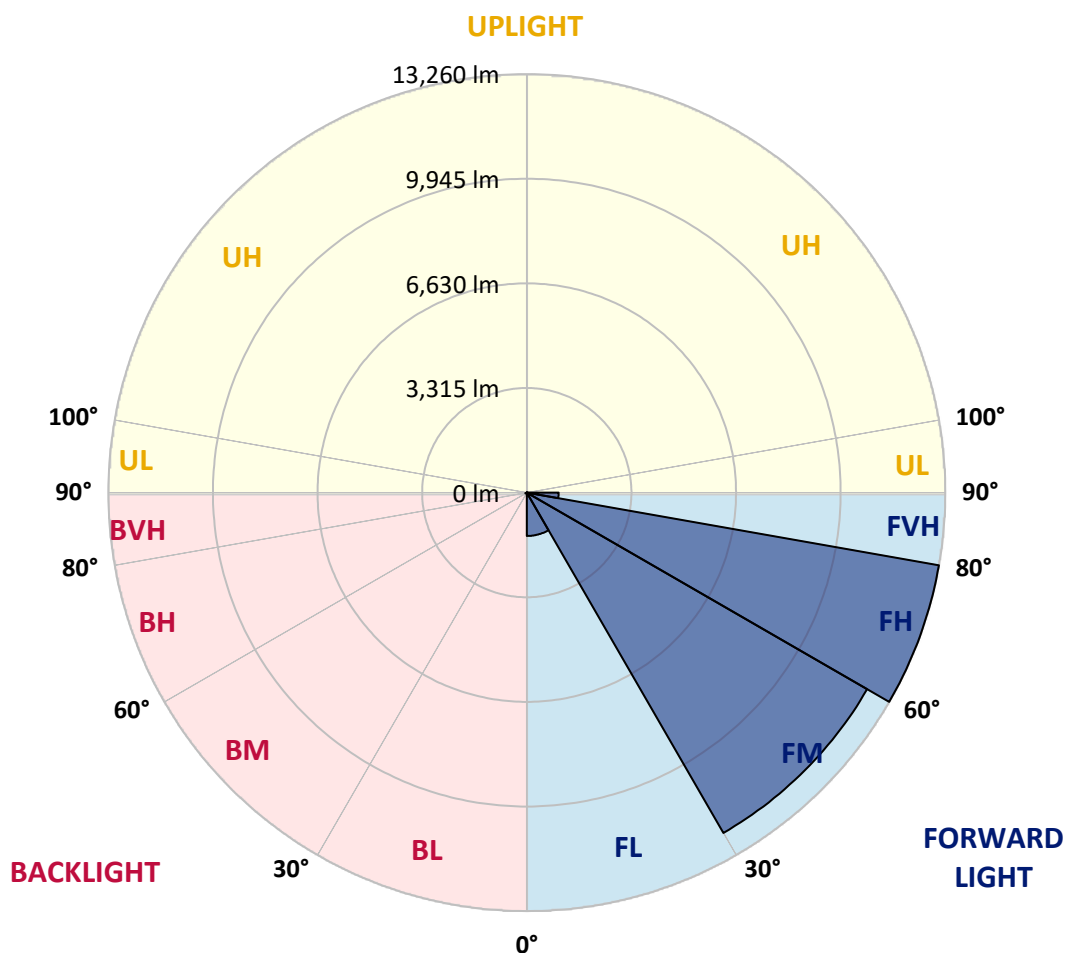
CATALOG NUMBER: GLAN-SA5C-750-U-T4BC

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |        |
|------|-------------|---------|-----------|-------------------------|------|--------|
|      |             |         |           | B                       | U    | G      |
| FL   | (0°-30°)    | 1373.8  | 4.9       |                         |      |        |
| FM   | (30°-60°)   | 12451.3 | 44.2      |                         |      |        |
| FH   | (60°-80°)   | 13260.0 | 47.0      |                         |      | G5     |
| FVH  | (80°-90°)   | 1009.3  | 3.6       |                         |      | G5     |
| BL   | (0°-30°)    | 24.2    | 0.1       | B0/110                  |      |        |
| BM   | (30°-60°)   | 23.2    | 0.1       | B0/220                  |      |        |
| BH   | (60°-80°)   | 48.2    | 0.2       | B0/110                  |      | G0/110 |
| BVH  | (80°-90°)   | 4.6     | 0.0       |                         |      | G0/10  |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |        |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |        |

**BUG Rating: B0-U0-G5**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 39°     | 45°     | 55°     | 65°     | 75°     | 85°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0°    | 154.6   | 154.6   | 154.6   | 154.6   | 154.6   | 154.6   | 154.6   | 154.6   | 154.6   | 154.6   | 154.6  |
| 2.5°  | 177.5   | 177.5   | 177.5   | 171.8   | 171.8   | 169.9   | 168.0   | 168.0   | 164.1   | 162.2   | 158.4  |
| 5°    | 269.1   | 263.4   | 250.0   | 242.4   | 227.1   | 217.6   | 208.0   | 194.7   | 181.3   | 171.8   | 160.3  |
| 7.5°  | 608.9   | 622.2   | 578.3   | 496.2   | 412.3   | 376.0   | 314.9   | 253.8   | 209.9   | 181.3   | 162.2  |
| 10°   | 1551.7  | 1544.1  | 1395.2  | 1231.1  | 950.5   | 837.9   | 656.6   | 414.2   | 271.0   | 198.5   | 164.1  |
| 12.5° | 2639.6  | 2632.0  | 2456.4  | 2233.1  | 1862.8  | 1628.1  | 1284.5  | 773.0   | 389.4   | 225.2   | 164.1  |
| 15°   | 3553.9  | 3523.3  | 3468.0  | 3246.6  | 2813.3  | 2616.7  | 2162.5  | 1366.6  | 629.8   | 271.0   | 168.0  |
| 17.5° | 4158.9  | 4132.2  | 4080.6  | 4000.5  | 3725.6  | 3492.8  | 3128.2  | 2147.2  | 1019.2  | 351.2   | 175.6  |
| 20°   | 4714.3  | 4695.2  | 4653.2  | 4638.0  | 4460.5  | 4336.4  | 4034.8  | 3044.3  | 1588.0  | 477.2   | 187.0  |
| 22.5° | 5477.8  | 5437.7  | 5454.9  | 5363.2  | 5189.6  | 5040.7  | 4855.5  | 3983.3  | 2282.7  | 687.1   | 208.0  |
| 25°   | 6413.0  | 6393.9  | 6346.2  | 6281.3  | 6040.8  | 5911.0  | 5626.6  | 4868.9  | 3059.5  | 961.9   | 230.9  |
| 27.5° | 7542.9  | 7521.9  | 7510.4  | 7361.6  | 7084.8  | 6943.6  | 6546.6  | 5704.9  | 3933.7  | 1347.5  | 261.5  |
| 30°   | 8844.6  | 8854.1  | 8779.7  | 8588.8  | 8266.3  | 8067.8  | 7659.3  | 6580.9  | 4828.8  | 1799.8  | 293.9  |
| 32.5° | 10192.1 | 10173.0 | 10058.5 | 9833.2  | 9545.0  | 9359.9  | 8840.8  | 7541.0  | 5767.9  | 2397.2  | 332.1  |
| 35°   | 11644.5 | 11608.3 | 11306.7 | 11049.0 | 10802.8 | 10570.0 | 10096.6 | 8655.6  | 6706.9  | 3067.2  | 383.6  |
| 37.5° | 13110.4 | 12940.5 | 12335.5 | 12009.1 | 11839.2 | 11648.3 | 11207.5 | 9844.7  | 7640.2  | 3815.3  | 446.6  |
| 40°   | 14217.4 | 14085.7 | 13368.0 | 12766.8 | 12631.3 | 12469.1 | 12140.8 | 10871.5 | 8632.7  | 4618.9  | 523.0  |
| 42.5° | 14830.0 | 14757.5 | 14112.4 | 13518.8 | 13200.1 | 13056.9 | 12776.3 | 11768.6 | 9613.8  | 5506.4  | 633.7  |
| 45°   | 15091.5 | 14978.9 | 14547.6 | 14270.8 | 13763.1 | 13526.4 | 13192.4 | 12446.2 | 10638.7 | 6514.1  | 788.3  |
| 47.5° | 15011.3 | 14946.5 | 14637.3 | 14738.4 | 14370.1 | 14001.7 | 13511.2 | 12965.3 | 11514.7 | 7670.8  | 1000.1 |
| 50°   | 14507.5 | 14452.1 | 14356.7 | 14904.5 | 14858.7 | 14423.5 | 13923.4 | 13375.7 | 12230.5 | 8863.7  | 1328.4 |
| 52.5° | 13549.3 | 13526.4 | 13770.7 | 14774.7 | 15135.4 | 14795.7 | 14320.4 | 13738.3 | 12898.5 | 10110.0 | 1797.9 |
| 55°   | 12314.5 | 12408.0 | 13106.5 | 14572.4 | 15276.6 | 15070.5 | 14671.6 | 14078.0 | 13434.8 | 11224.6 | 2490.8 |
| 57.5° | 11806.8 | 11831.6 | 12703.8 | 14429.2 | 15339.6 | 15312.9 | 15013.3 | 14402.5 | 13927.2 | 12116.0 | 3548.1 |
| 60°   | 12400.3 | 12362.2 | 12822.2 | 14538.0 | 15465.6 | 15530.5 | 15316.7 | 14704.1 | 14354.8 | 12881.3 | 4956.7 |
| 62.5° | 13473.0 | 13452.0 | 13599.0 | 15001.8 | 15834.0 | 15965.7 | 15738.5 | 14921.6 | 14732.7 | 13385.2 | 6563.8 |
| 65°   | 14431.1 | 14387.2 | 14660.2 | 15824.4 | 16481.0 | 16574.5 | 16376.0 | 15293.8 | 14898.7 | 13751.7 | 8073.5 |
| 67.5° | 14845.3 | 14835.8 | 15274.7 | 16607.0 | 17160.5 | 17261.6 | 17087.9 | 15807.2 | 14860.6 | 13868.1 | 8739.6 |
| 70°   | 14656.3 | 14620.1 | 15322.5 | 16939.1 | 17544.1 | 17658.6 | 17490.7 | 15998.1 | 14446.4 | 13499.7 | 7752.8 |
| 71°   | 14448.3 | 14351.0 | 15179.3 | 16916.2 | 17597.5 | 17694.9 | 17400.9 | 15824.4 | 14030.3 | 12976.8 | 6857.7 |
| 72.5° | 13803.2 | 13820.4 | 14786.1 | 16677.6 | 17469.7 | 17441.0 | 16893.3 | 15202.2 | 13528.3 | 11789.6 | 5508.3 |
| 75°   | 12215.2 | 12316.4 | 13513.1 | 15675.6 | 16328.3 | 15963.8 | 15125.9 | 14013.1 | 12520.6 | 8453.3  | 3824.9 |
| 77.5° | 9982.1  | 10132.9 | 11447.9 | 13747.8 | 13562.7 | 13526.4 | 13492.1 | 12346.9 | 10692.1 | 4540.6  | 2660.6 |
| 80°   | 4765.8  | 5092.2  | 6905.4  | 9814.2  | 10661.6 | 11071.9 | 10814.3 | 9949.7  | 8268.2  | 2162.5  | 1589.9 |
| 82.5° | 311.1   | 307.3   | 435.2   | 824.5   | 3475.6  | 4492.9  | 7138.3  | 7111.5  | 5764.1  | 1053.6  | 648.9  |
| 85°   | 147.0   | 150.8   | 166.1   | 189.0   | 219.5   | 240.5   | 332.1   | 1946.8  | 2758.0  | 502.0   | 141.2  |
| 87.5° | 85.9    | 87.8    | 103.1   | 131.7   | 171.8   | 190.9   | 227.1   | 292.0   | 358.8   | 276.8   | 30.5   |
| 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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CATALOG NUMBER: GLAN-SA5C-750-U-T4BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 154.6  | 154.6 | 154.6 | 154.6 | 154.6 | 154.6 | 154.6 | 154.6 | 154.6 | 154.6 | 154.6 |
| 2.5°  | 156.5  | 154.6 | 148.9 | 143.1 | 137.4 | 133.6 | 131.7 | 133.6 | 133.6 | 135.5 | 135.5 |
| 5°    | 156.5  | 150.8 | 141.2 | 129.8 | 122.2 | 114.5 | 110.7 | 108.8 | 110.7 | 110.7 | 110.7 |
| 7.5°  | 154.6  | 145.1 | 131.7 | 118.3 | 108.8 | 99.2  | 95.4  | 93.5  | 93.5  | 95.4  | 95.4  |
| 10°   | 150.8  | 141.2 | 124.1 | 108.8 | 97.3  | 85.9  | 80.2  | 74.4  | 74.4  | 74.4  | 76.3  |
| 12.5° | 148.9  | 135.5 | 114.5 | 99.2  | 84.0  | 70.6  | 59.2  | 53.4  | 55.4  | 55.4  | 55.4  |
| 15°   | 145.1  | 129.8 | 108.8 | 89.7  | 70.6  | 53.4  | 43.9  | 38.2  | 40.1  | 42.0  | 40.1  |
| 17.5° | 145.1  | 127.9 | 101.2 | 78.3  | 55.4  | 40.1  | 32.4  | 28.6  | 28.6  | 30.5  | 30.5  |
| 20°   | 145.1  | 124.1 | 95.4  | 66.8  | 42.0  | 30.5  | 22.9  | 21.0  | 21.0  | 24.8  | 26.7  |
| 22.5° | 148.9  | 124.1 | 87.8  | 55.4  | 34.4  | 22.9  | 17.2  | 15.3  | 17.2  | 21.0  | 22.9  |
| 25°   | 154.6  | 122.2 | 80.2  | 49.6  | 28.6  | 17.2  | 13.4  | 9.5   | 11.5  | 15.3  | 17.2  |
| 27.5° | 160.3  | 120.2 | 72.5  | 43.9  | 22.9  | 13.4  | 9.5   | 7.6   | 5.7   | 7.6   | 7.6   |
| 30°   | 166.1  | 120.2 | 64.9  | 36.3  | 19.1  | 9.5   | 5.7   | 3.8   | 1.9   | 0.0   | 0.0   |
| 32.5° | 169.9  | 116.4 | 59.2  | 28.6  | 15.3  | 7.6   | 3.8   | 1.9   | 0.0   | 0.0   | 0.0   |
| 35°   | 173.7  | 112.6 | 51.5  | 22.9  | 11.5  | 5.7   | 1.9   | 0.0   | 0.0   | 0.0   | 0.0   |
| 37.5° | 177.5  | 106.9 | 43.9  | 19.1  | 9.5   | 3.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 40°   | 181.3  | 99.2  | 36.3  | 17.2  | 5.7   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 42.5° | 185.1  | 93.5  | 30.5  | 13.4  | 3.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 45°   | 194.7  | 89.7  | 24.8  | 11.5  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 47.5° | 211.9  | 85.9  | 22.9  | 7.6   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 50°   | 236.7  | 82.1  | 21.0  | 5.7   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 52.5° | 271.0  | 80.2  | 19.1  | 3.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 55°   | 332.1  | 78.3  | 17.2  | 3.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 57.5° | 437.1  | 76.3  | 17.2  | 3.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 60°   | 669.9  | 72.5  | 17.2  | 3.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 62.5° | 1196.7 | 70.6  | 15.3  | 3.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 65°   | 2086.1 | 72.5  | 15.3  | 3.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 67.5° | 2990.8 | 76.3  | 13.4  | 5.7   | 1.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 70°   | 2559.5 | 66.8  | 13.4  | 7.6   | 3.8   | 1.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 71°   | 2086.1 | 59.2  | 13.4  | 7.6   | 3.8   | 1.9   | 1.9   | 0.0   | 0.0   | 0.0   | 0.0   |
| 72.5° | 1341.8 | 45.8  | 11.5  | 7.6   | 3.8   | 3.8   | 1.9   | 0.0   | 0.0   | 0.0   | 0.0   |
| 75°   | 566.9  | 38.2  | 11.5  | 7.6   | 5.7   | 3.8   | 3.8   | 1.9   | 0.0   | 0.0   | 0.0   |
| 77.5° | 242.4  | 28.6  | 11.5  | 9.5   | 7.6   | 5.7   | 5.7   | 3.8   | 1.9   | 0.0   | 0.0   |
| 80°   | 91.6   | 22.9  | 13.4  | 11.5  | 9.5   | 9.5   | 7.6   | 3.8   | 1.9   | 0.0   | 0.0   |
| 82.5° | 42.0   | 19.1  | 13.4  | 11.5  | 11.5  | 9.5   | 7.6   | 5.7   | 3.8   | 0.0   | 0.0   |
| 85°   | 26.7   | 17.2  | 13.4  | 11.5  | 11.5  | 9.5   | 9.5   | 5.7   | 3.8   | 0.0   | 0.0   |
| 87.5° | 21.0   | 17.2  | 13.4  | 13.4  | 11.5  | 11.5  | 7.6   | 5.7   | 1.9   | 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   |



LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-6

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-750-U-5WQ

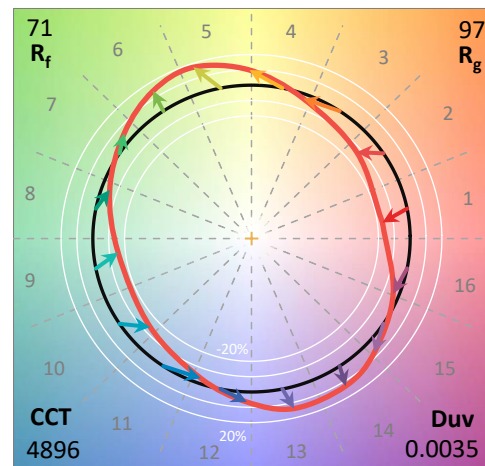
Data in this report applies to families of products including GSS-SB1A-750-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-6  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 10/15/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: McGraw-Edison  
 Catalog Number: **GSS-SB1A-750-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 5000K CCT 26 LEDS

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 4896     | CRI (Ra): | 70.2 |      |       |
| CIE u':                   | 0.2101   | R1:       | 68.1 | R9:  | -35.1 |
| CIE v':                   | 0.4901   | R2:       | 73.9 | R10: | 39.3  |
| Duv:                      | 0.0035   | R3:       | 79.4 | R11: | 71.1  |
| CIE x:                    | 0.3489   | R4:       | 72.1 | R12: | 43.8  |
| CIE y:                    | 0.3618   | R5:       | 69.2 | R13: | 68.1  |
| CIE z:                    | 0.2893   | R6:       | 65.7 | R14: | 88.4  |
| Peak Wavelength (nm):     | 443      | R7:       | 78.1 | R15: | 59.7  |
| Dominant Wavelength (nm): | 570      | R8:       | 55.3 |      |       |
| Purity:                   | 13.25435 |           |      |      |       |
| Rf:                       | 70.7     |           |      |      |       |
| Rg:                       | 96.8     |           |      |      |       |



### Test Conditions

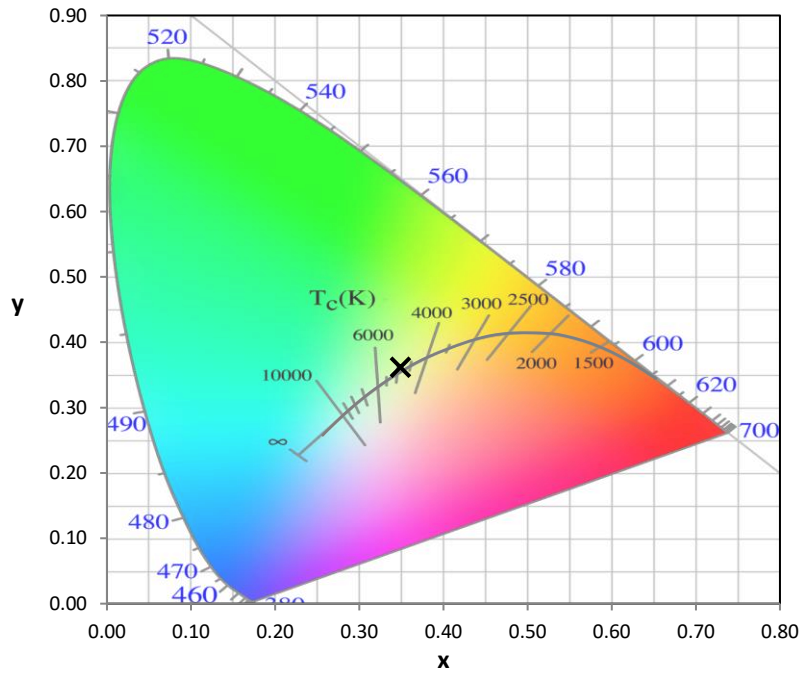
Stabilization Time: 21M  
 Operation Time: 1H 21M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-6

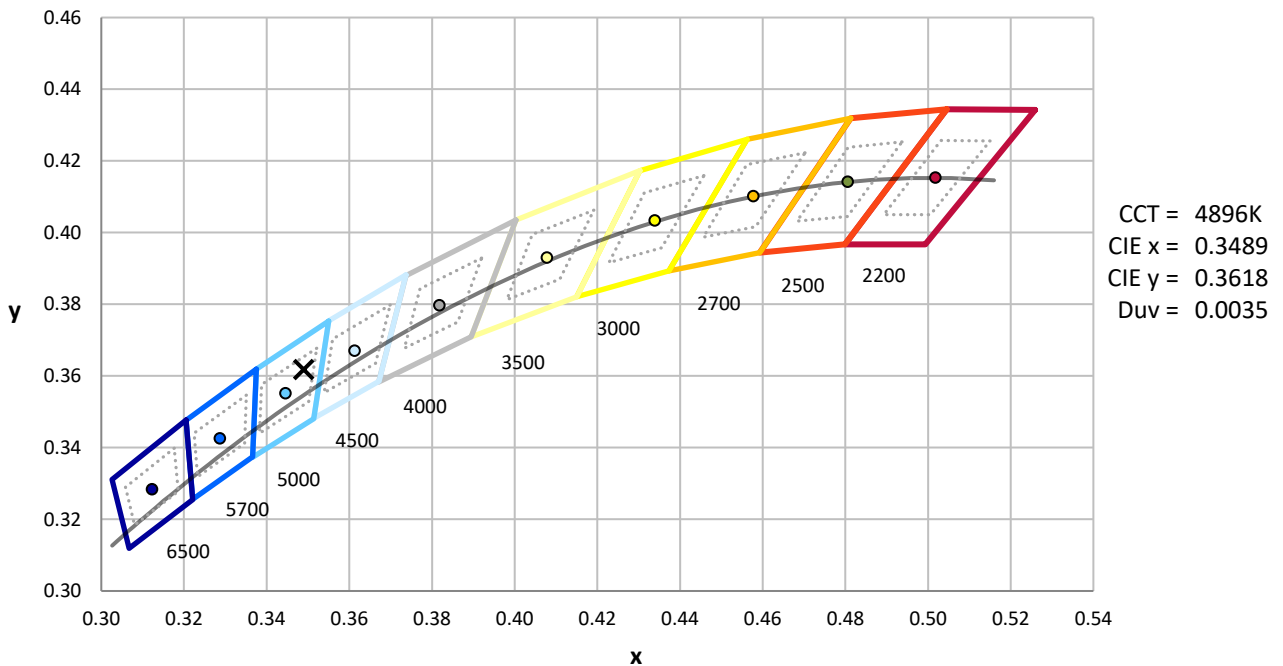
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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**



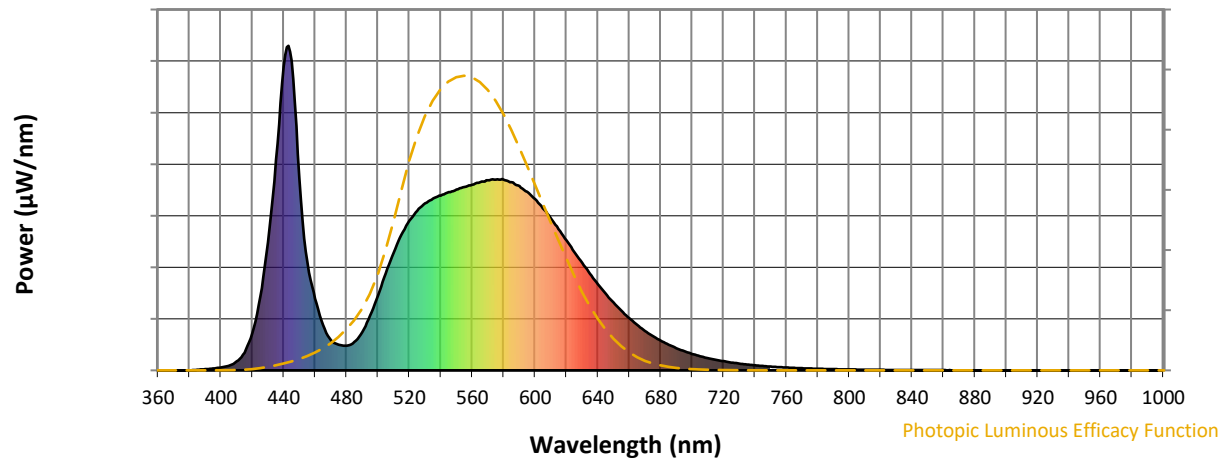
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 5000K 4-step quadrangle

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### Photopic Flux vs. Wavelength

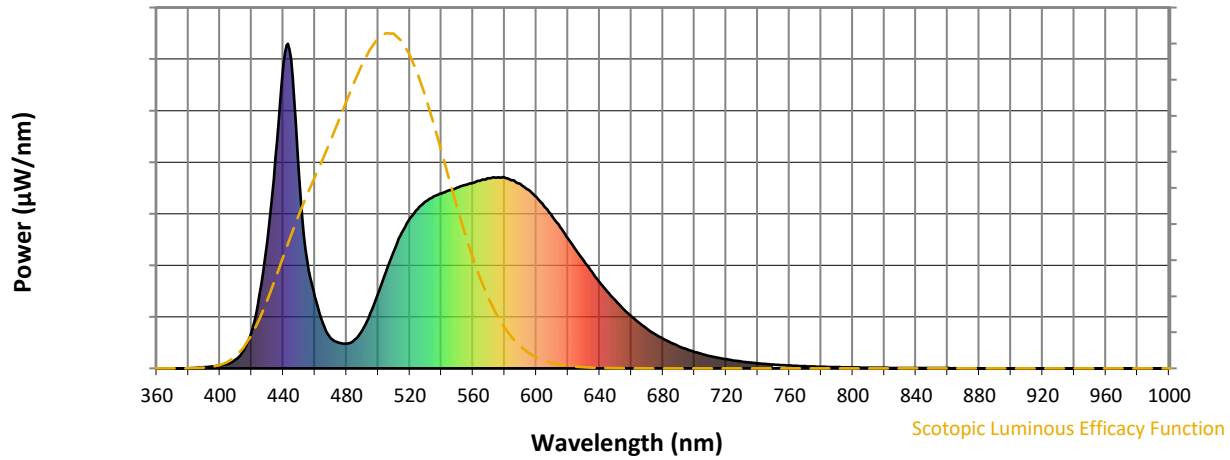


### Photopic Lumens: NR

| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 118                         | NR               | 620       | 401                         | NR               | 750       | 12                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 168                         | NR               | 625       | 365                         | NR               | 755       | 10                          | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 230                         | NR               | 630       | 331                         | NR               | 760       | 9                           | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 299                         | NR               | 635       | 298                         | NR               | 765       | 8                           | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 362                         | NR               | 640       | 266                         | NR               | 770       | 6                           | NR               | 900       | 0                           | NR               |
| 385       | 2                           | NR               | 515       | 418                         | NR               | 645       | 236                         | NR               | 775       | 6                           | NR               | 905       | 0                           | NR               |
| 390       | 4                           | NR               | 520       | 461                         | NR               | 650       | 209                         | NR               | 780       | 5                           | NR               | 910       | 0                           | NR               |
| 395       | 6                           | NR               | 525       | 491                         | NR               | 655       | 184                         | NR               | 785       | 4                           | NR               | 915       | 0                           | NR               |
| 400       | 9                           | NR               | 530       | 514                         | NR               | 660       | 160                         | NR               | 790       | 4                           | NR               | 920       | 0                           | NR               |
| 405       | 14                          | NR               | 535       | 530                         | NR               | 665       | 140                         | NR               | 795       | 3                           | NR               | 925       | 0                           | NR               |
| 410       | 27                          | NR               | 540       | 539                         | NR               | 670       | 122                         | NR               | 800       | 3                           | NR               | 930       | 0                           | NR               |
| 415       | 55                          | NR               | 545       | 549                         | NR               | 675       | 106                         | NR               | 805       | 2                           | NR               | 935       | 0                           | NR               |
| 420       | 115                         | NR               | 550       | 557                         | NR               | 680       | 92                          | NR               | 810       | 2                           | NR               | 940       | 0                           | NR               |
| 425       | 226                         | NR               | 555       | 565                         | NR               | 685       | 79                          | NR               | 815       | 2                           | NR               | 945       | 0                           | NR               |
| 430       | 395                         | NR               | 560       | 572                         | NR               | 690       | 68                          | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 648                         | NR               | 565       | 580                         | NR               | 695       | 59                          | NR               | 825       | 1                           | NR               | 955       | 0                           | NR               |
| 440       | 937                         | NR               | 570       | 586                         | NR               | 700       | 51                          | NR               | 830       | 1                           | NR               | 960       | 0                           | NR               |
| 445       | 953                         | NR               | 575       | 588                         | NR               | 705       | 44                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 591                         | NR               | 580       | 588                         | NR               | 710       | 38                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 334                         | NR               | 585       | 580                         | NR               | 715       | 32                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 221                         | NR               | 590       | 568                         | NR               | 720       | 28                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 140                         | NR               | 595       | 550                         | NR               | 725       | 24                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 93                          | NR               | 600       | 527                         | NR               | 730       | 21                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 79                          | NR               | 605       | 499                         | NR               | 735       | 18                          | NR               | 865       | 0                           | NR               | 995       | 0                           | NR               |
| 480       | 76                          | NR               | 610       | 469                         | NR               | 740       | 15                          | NR               | 870       | 0                           | NR               | 1000      | 0                           | NR               |
| 485       | 87                          | NR               | 615       | 435                         | NR               | 745       | 13                          | NR               | 875       | 0                           | NR               |           |                             |                  |

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### Scotopic Flux vs. Wavelength



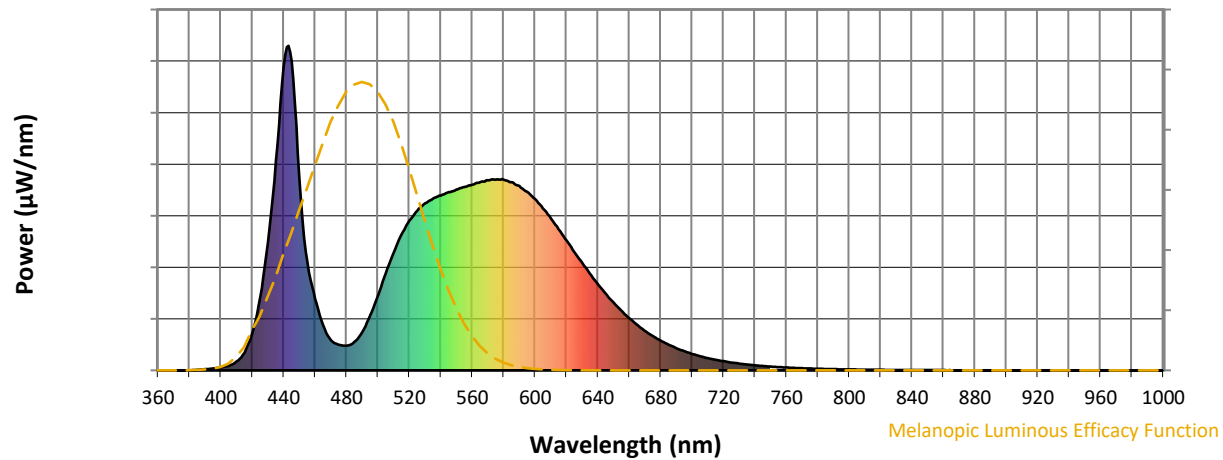
Scotopic Lumens: NR

S/P: 1.7

| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(Φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 118                         | NR               | 620       | 401                         | NR               | 750       | 12                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 168                         | NR               | 625       | 365                         | NR               | 755       | 10                          | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 230                         | NR               | 630       | 331                         | NR               | 760       | 9                           | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 299                         | NR               | 635       | 298                         | NR               | 765       | 8                           | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 362                         | NR               | 640       | 266                         | NR               | 770       | 6                           | NR               | 900       | 0                           | NR               |
| 385       | 2                           | NR               | 515       | 418                         | NR               | 645       | 236                         | NR               | 775       | 6                           | NR               | 905       | 0                           | NR               |
| 390       | 4                           | NR               | 520       | 461                         | NR               | 650       | 209                         | NR               | 780       | 5                           | NR               | 910       | 0                           | NR               |
| 395       | 6                           | NR               | 525       | 491                         | NR               | 655       | 184                         | NR               | 785       | 4                           | NR               | 915       | 0                           | NR               |
| 400       | 9                           | NR               | 530       | 514                         | NR               | 660       | 160                         | NR               | 790       | 4                           | NR               | 920       | 0                           | NR               |
| 405       | 14                          | NR               | 535       | 530                         | NR               | 665       | 140                         | NR               | 795       | 3                           | NR               | 925       | 0                           | NR               |
| 410       | 27                          | NR               | 540       | 539                         | NR               | 670       | 122                         | NR               | 800       | 3                           | NR               | 930       | 0                           | NR               |
| 415       | 55                          | NR               | 545       | 549                         | NR               | 675       | 106                         | NR               | 805       | 2                           | NR               | 935       | 0                           | NR               |
| 420       | 115                         | NR               | 550       | 557                         | NR               | 680       | 92                          | NR               | 810       | 2                           | NR               | 940       | 0                           | NR               |
| 425       | 226                         | NR               | 555       | 565                         | NR               | 685       | 79                          | NR               | 815       | 2                           | NR               | 945       | 0                           | NR               |
| 430       | 395                         | NR               | 560       | 572                         | NR               | 690       | 68                          | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 648                         | NR               | 565       | 580                         | NR               | 695       | 59                          | NR               | 825       | 1                           | NR               | 955       | 0                           | NR               |
| 440       | 937                         | NR               | 570       | 586                         | NR               | 700       | 51                          | NR               | 830       | 1                           | NR               | 960       | 0                           | NR               |
| 445       | 953                         | NR               | 575       | 588                         | NR               | 705       | 44                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 591                         | NR               | 580       | 588                         | NR               | 710       | 38                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 334                         | NR               | 585       | 580                         | NR               | 715       | 32                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 221                         | NR               | 590       | 568                         | NR               | 720       | 28                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 140                         | NR               | 595       | 550                         | NR               | 725       | 24                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 93                          | NR               | 600       | 527                         | NR               | 730       | 21                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 79                          | NR               | 605       | 499                         | NR               | 735       | 18                          | NR               | 865       | 0                           | NR               | 995       | 0                           | NR               |
| 480       | 76                          | NR               | 610       | 469                         | NR               | 740       | 15                          | NR               | 870       | 0                           | NR               | 1000      | 0                           | NR               |
| 485       | 87                          | NR               | 615       | 435                         | NR               | 745       | 13                          | NR               | 875       | 0                           | NR               |           |                             |                  |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 3.37

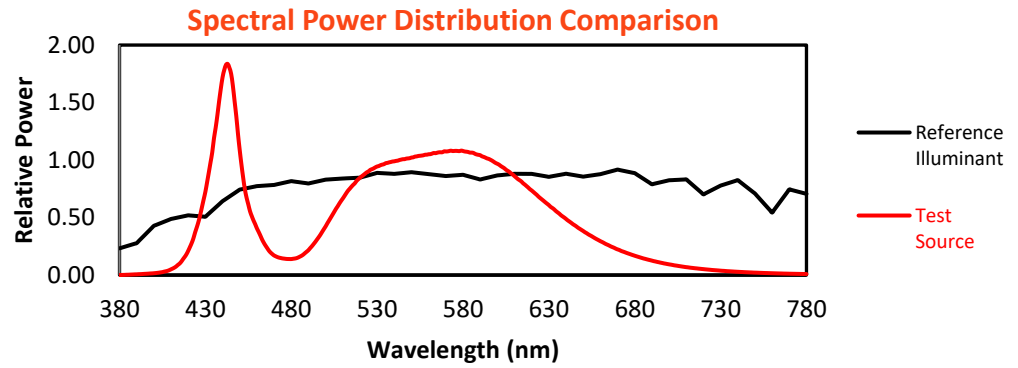
| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 118                         | NR               | 620       | 401                         | NR               | 750       | 12                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 168                         | NR               | 625       | 365                         | NR               | 755       | 10                          | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 230                         | NR               | 630       | 331                         | NR               | 760       | 9                           | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 299                         | NR               | 635       | 298                         | NR               | 765       | 8                           | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 362                         | NR               | 640       | 266                         | NR               | 770       | 6                           | NR               | 900       | 0                           | NR               |
| 385       | 2                           | NR               | 515       | 418                         | NR               | 645       | 236                         | NR               | 775       | 6                           | NR               | 905       | 0                           | NR               |
| 390       | 4                           | NR               | 520       | 461                         | NR               | 650       | 209                         | NR               | 780       | 5                           | NR               | 910       | 0                           | NR               |
| 395       | 6                           | NR               | 525       | 491                         | NR               | 655       | 184                         | NR               | 785       | 4                           | NR               | 915       | 0                           | NR               |
| 400       | 9                           | NR               | 530       | 514                         | NR               | 660       | 160                         | NR               | 790       | 4                           | NR               | 920       | 0                           | NR               |
| 405       | 14                          | NR               | 535       | 530                         | NR               | 665       | 140                         | NR               | 795       | 3                           | NR               | 925       | 0                           | NR               |
| 410       | 27                          | NR               | 540       | 539                         | NR               | 670       | 122                         | NR               | 800       | 3                           | NR               | 930       | 0                           | NR               |
| 415       | 55                          | NR               | 545       | 549                         | NR               | 675       | 106                         | NR               | 805       | 2                           | NR               | 935       | 0                           | NR               |
| 420       | 115                         | NR               | 550       | 557                         | NR               | 680       | 92                          | NR               | 810       | 2                           | NR               | 940       | 0                           | NR               |
| 425       | 226                         | NR               | 555       | 565                         | NR               | 685       | 79                          | NR               | 815       | 2                           | NR               | 945       | 0                           | NR               |
| 430       | 395                         | NR               | 560       | 572                         | NR               | 690       | 68                          | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 648                         | NR               | 565       | 580                         | NR               | 695       | 59                          | NR               | 825       | 1                           | NR               | 955       | 0                           | NR               |
| 440       | 937                         | NR               | 570       | 586                         | NR               | 700       | 51                          | NR               | 830       | 1                           | NR               | 960       | 0                           | NR               |
| 445       | 953                         | NR               | 575       | 588                         | NR               | 705       | 44                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 591                         | NR               | 580       | 588                         | NR               | 710       | 38                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 334                         | NR               | 585       | 580                         | NR               | 715       | 32                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 221                         | NR               | 590       | 568                         | NR               | 720       | 28                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 140                         | NR               | 595       | 550                         | NR               | 725       | 24                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 93                          | NR               | 600       | 527                         | NR               | 730       | 21                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 79                          | NR               | 605       | 499                         | NR               | 735       | 18                          | NR               | 865       | 0                           | NR               | 995       | 0                           | NR               |
| 480       | 76                          | NR               | 610       | 469                         | NR               | 740       | 15                          | NR               | 870       | 0                           | NR               | 1000      | 0                           | NR               |
| 485       | 87                          | NR               | 615       | 435                         | NR               | 745       | 13                          | NR               | 875       | 0                           | NR               |           |                             |                  |

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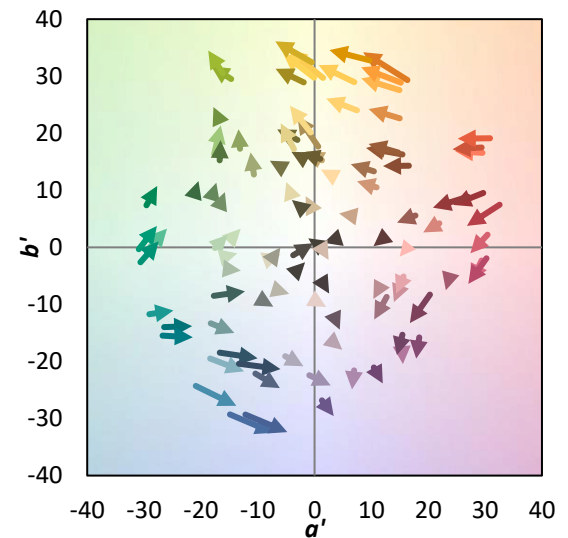
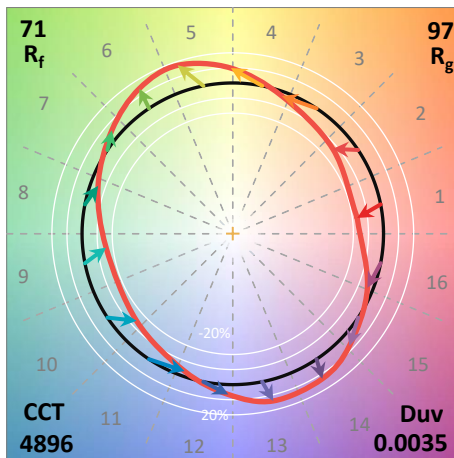
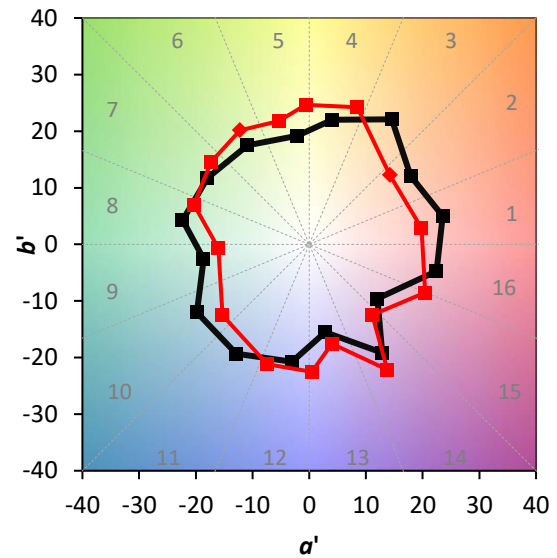
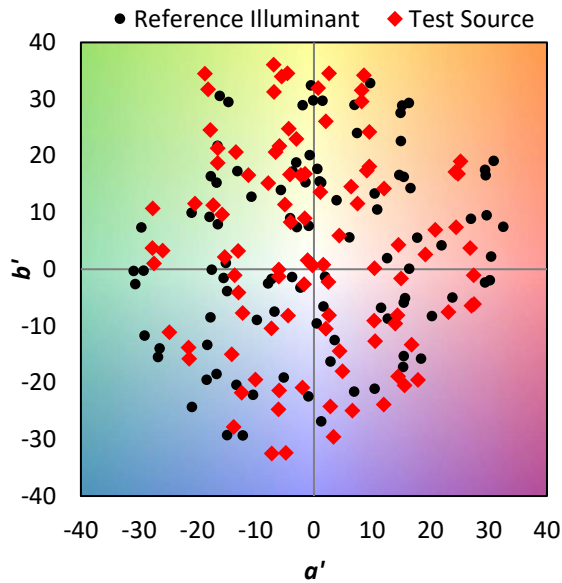
TM-30-18

### Summary

$R_f = 70.7$   
 $R_g = 96.8$   
 $CIE R_a = 70.2$   
 $R_g = -35.1$



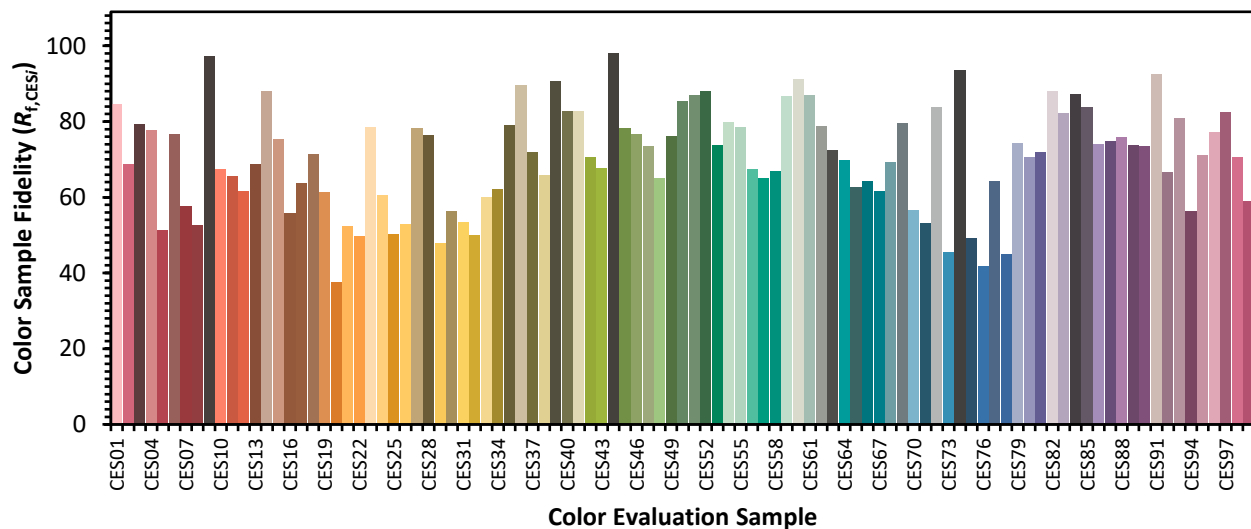
### Color Vector Graphics



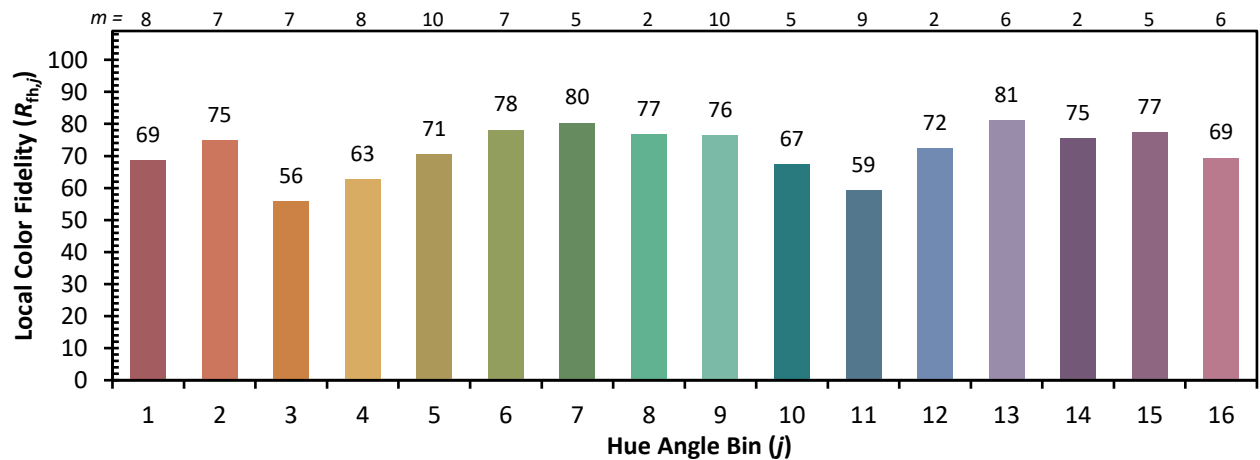
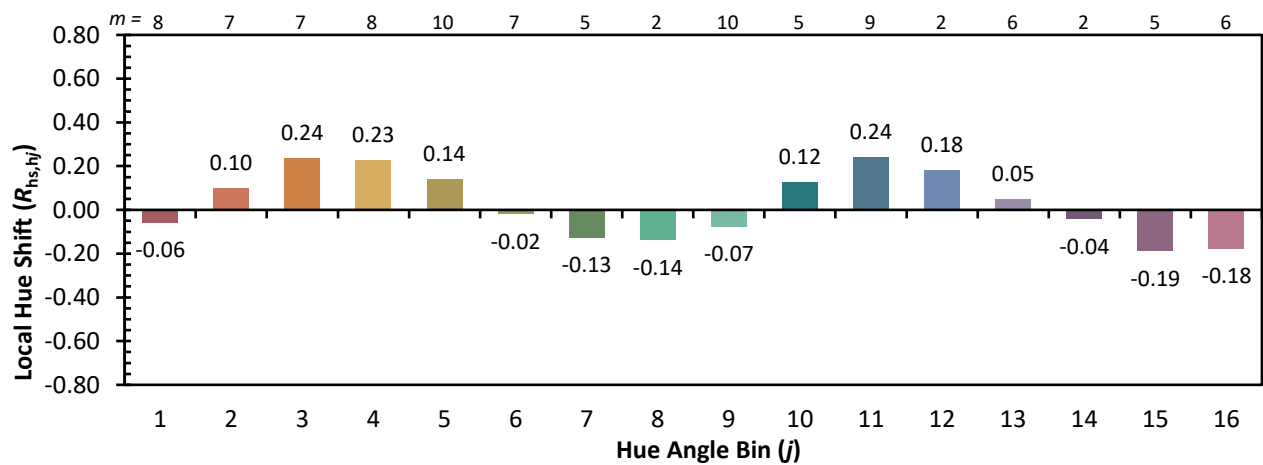
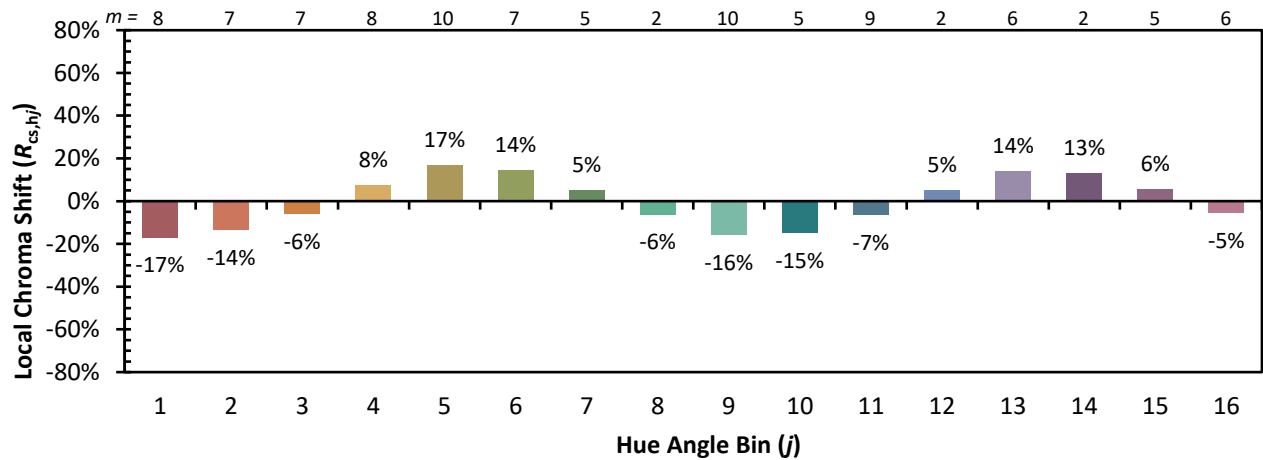


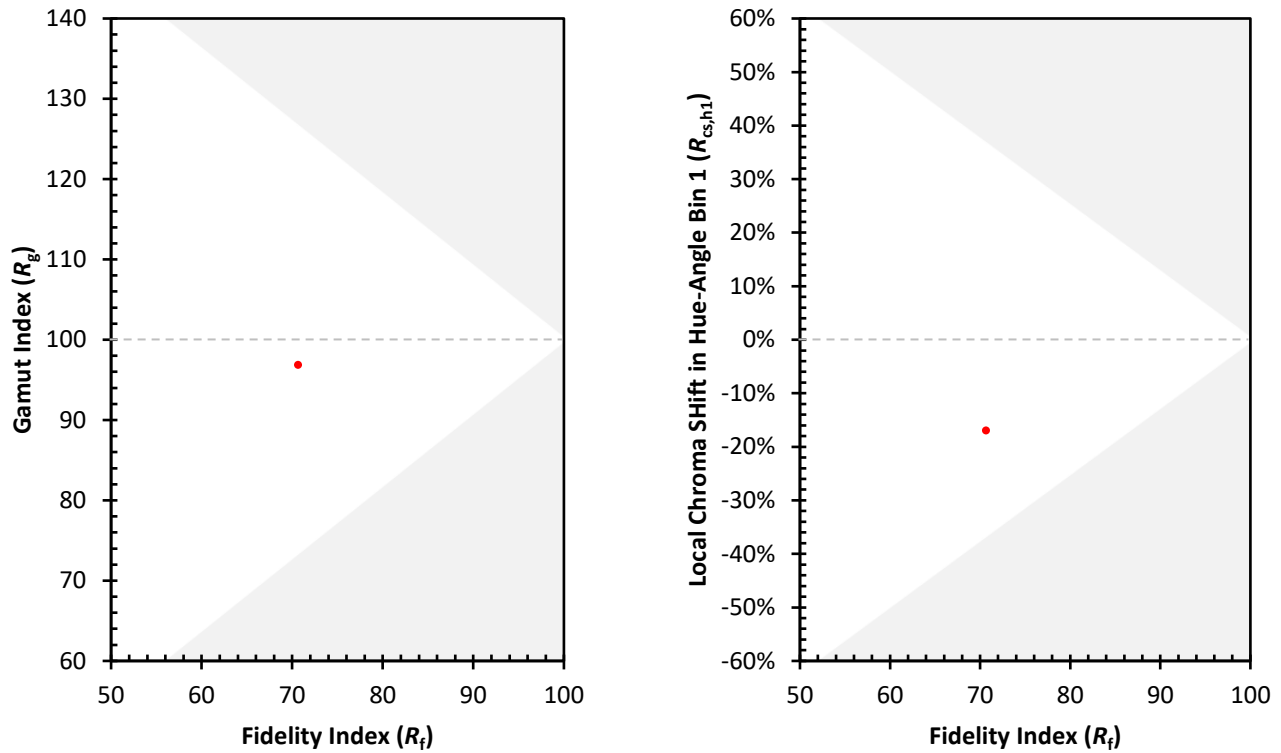
**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 53 | CES51 = 87 | CES76 = 42 |
| CES02 = 59 | CES27 = 78 | CES52 = 88 | CES77 = 64 |
| CES03 = 30 | CES28 = 76 | CES53 = 74 | CES78 = 45 |
| CES04 = 69 | CES29 = 48 | CES54 = 80 | CES79 = 74 |
| CES05 = 46 | CES30 = 56 | CES55 = 79 | CES80 = 71 |
| CES06 = 50 | CES31 = 54 | CES56 = 68 | CES81 = 72 |
| CES07 = 39 | CES32 = 50 | CES57 = 65 | CES82 = 88 |
| CES08 = 38 | CES33 = 60 | CES58 = 67 | CES83 = 82 |
| CES09 = 29 | CES34 = 62 | CES59 = 87 | CES84 = 87 |
| CES10 = 72 | CES35 = 79 | CES60 = 91 | CES85 = 84 |
| CES11 = 56 | CES36 = 90 | CES61 = 87 | CES86 = 74 |
| CES12 = 61 | CES37 = 72 | CES62 = 79 | CES87 = 75 |
| CES13 = 41 | CES38 = 66 | CES63 = 72 | CES88 = 76 |
| CES14 = 74 | CES39 = 91 | CES64 = 70 | CES89 = 74 |
| CES15 = 70 | CES40 = 83 | CES65 = 63 | CES90 = 73 |
| CES16 = 46 | CES41 = 83 | CES66 = 64 | CES91 = 92 |
| CES17 = 49 | CES42 = 70 | CES67 = 62 | CES92 = 67 |
| CES18 = 55 | CES43 = 68 | CES68 = 69 | CES93 = 81 |
| CES19 = 71 | CES44 = 98 | CES69 = 80 | CES94 = 56 |
| CES20 = 64 | CES45 = 78 | CES70 = 56 | CES95 = 71 |
| CES21 = 85 | CES46 = 77 | CES71 = 53 | CES96 = 77 |
| CES22 = 77 | CES47 = 73 | CES72 = 84 | CES97 = 82 |
| CES23 = 91 | CES48 = 65 | CES73 = 46 | CES98 = 71 |
| CES24 = 90 | CES49 = 76 | CES74 = 94 | CES99 = 59 |
| CES25 = 71 | CES50 = 85 | CES75 = 49 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**


(END OF REPORT)