

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: P1063375

Luminaire Tested: **GLAN-SA2C-730-U-T2BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1063375  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: GLAN-SA2C-730-U-T2BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 1050mA 2xLight Square PACKAGE  
70CRI 3000K FIXTURE w/ TYPE II ANGLED BACKLIGHT CONTROL  
Light Source: (28) 3000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 11002.1 lumens  
Efficiency: N/A  
Efficacy: 114.4 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B0 - U0 - G2

Input Watts (W): 96.2  
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

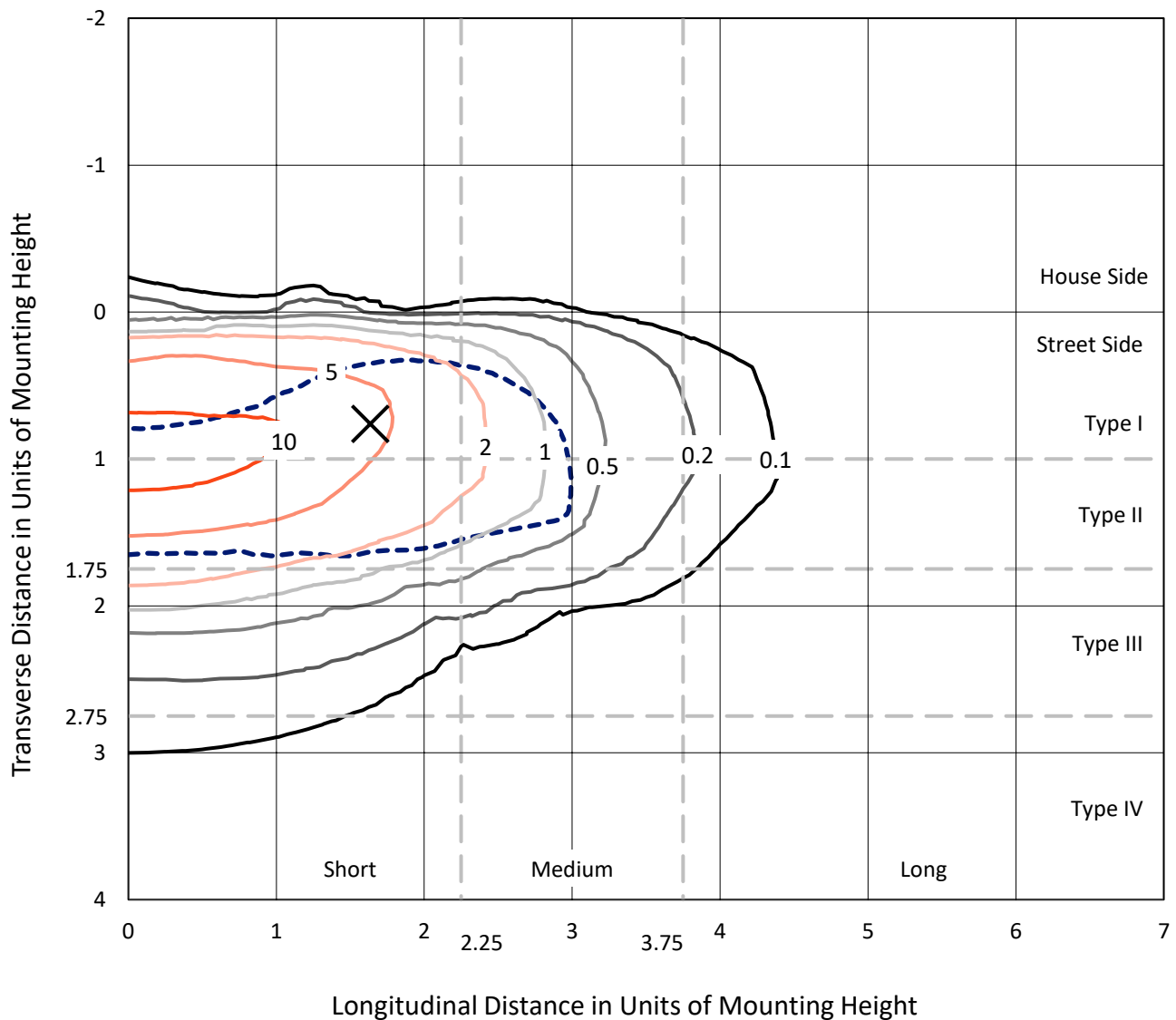


REPORT NUMBER: P1063375

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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

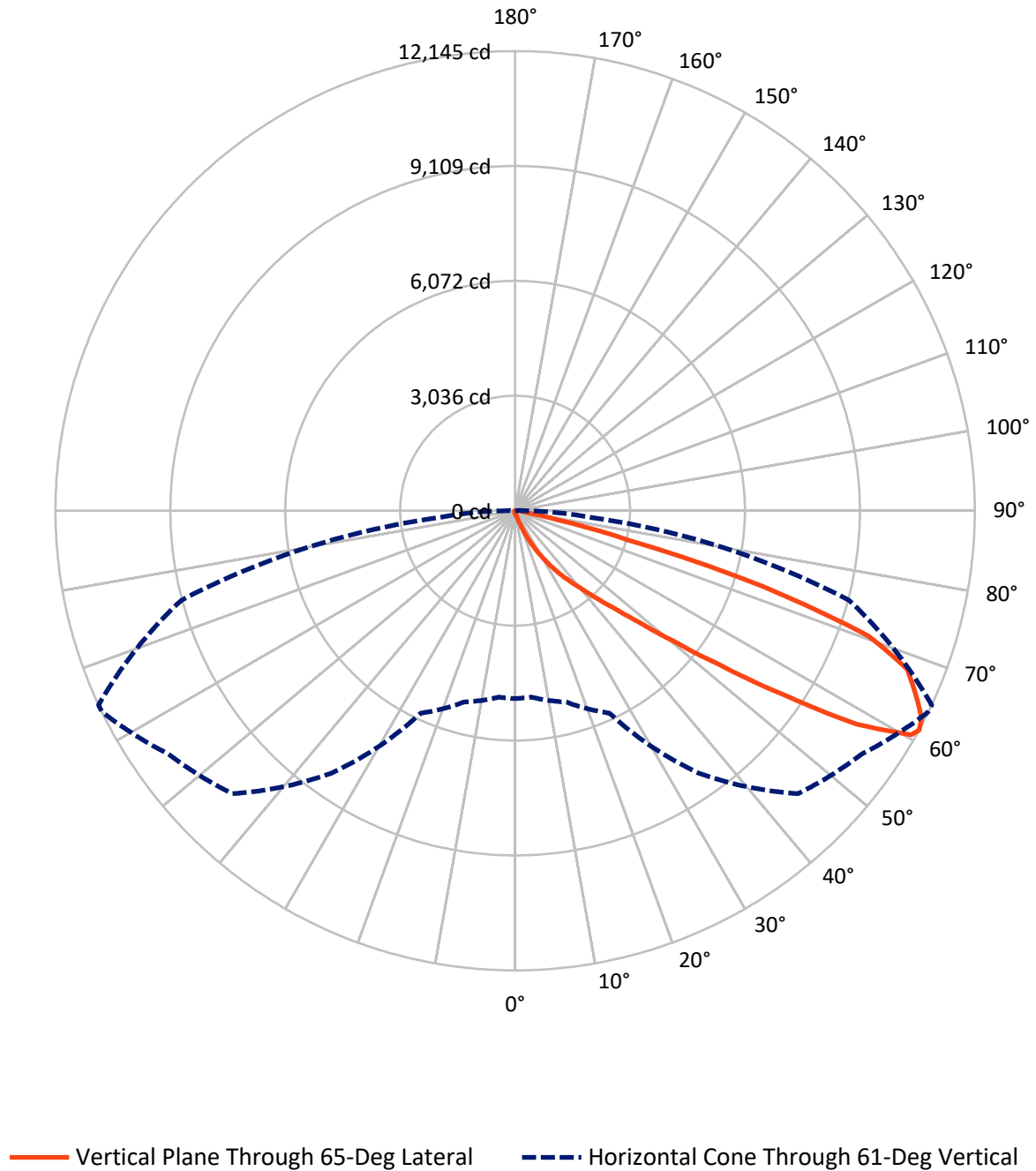


Based on 15 foot mounting height. Maximum calculated value = 14.6 fc  
 Type II - Short - N/A

REPORT NUMBER: P1063375

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## Luminous Intensity Polar Plot



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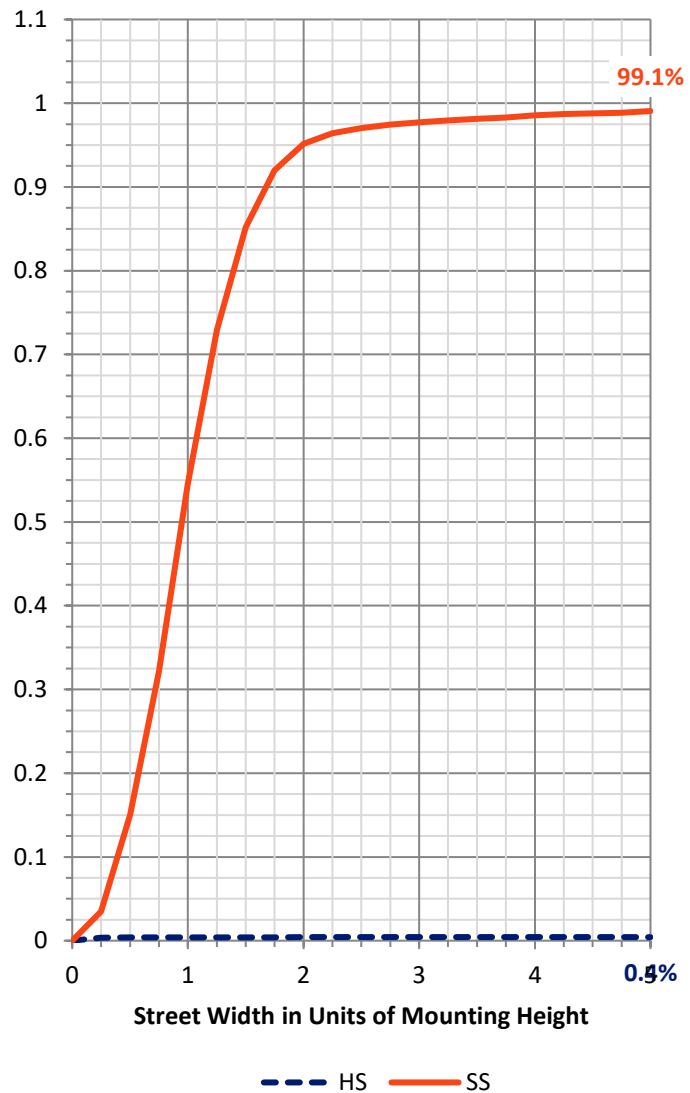
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 47.0     | 0.0    | 47.0    |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 10955.2  | 0.0    | 10955.2 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 11002.1  | 0.0    | 11002.1 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 8.6     | 0.1       |
| 10°-20°   | 90.5    | 0.8       |
| 20°-30°   | 324.7   | 3.0       |
| 30°-40°   | 864.4   | 7.9       |
| 40°-50°   | 2270.9  | 20.6      |
| 50°-60°   | 3518.1  | 32.0      |
| 60°-70°   | 2949.8  | 26.8      |
| 70°-80°   | 868.1   | 7.9       |
| 80°-90°   | 107.1   | 1.0       |
| 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°    | 11002.1 | 100.0     |
| 0°-180°   | 11002.1 | 100.0     |



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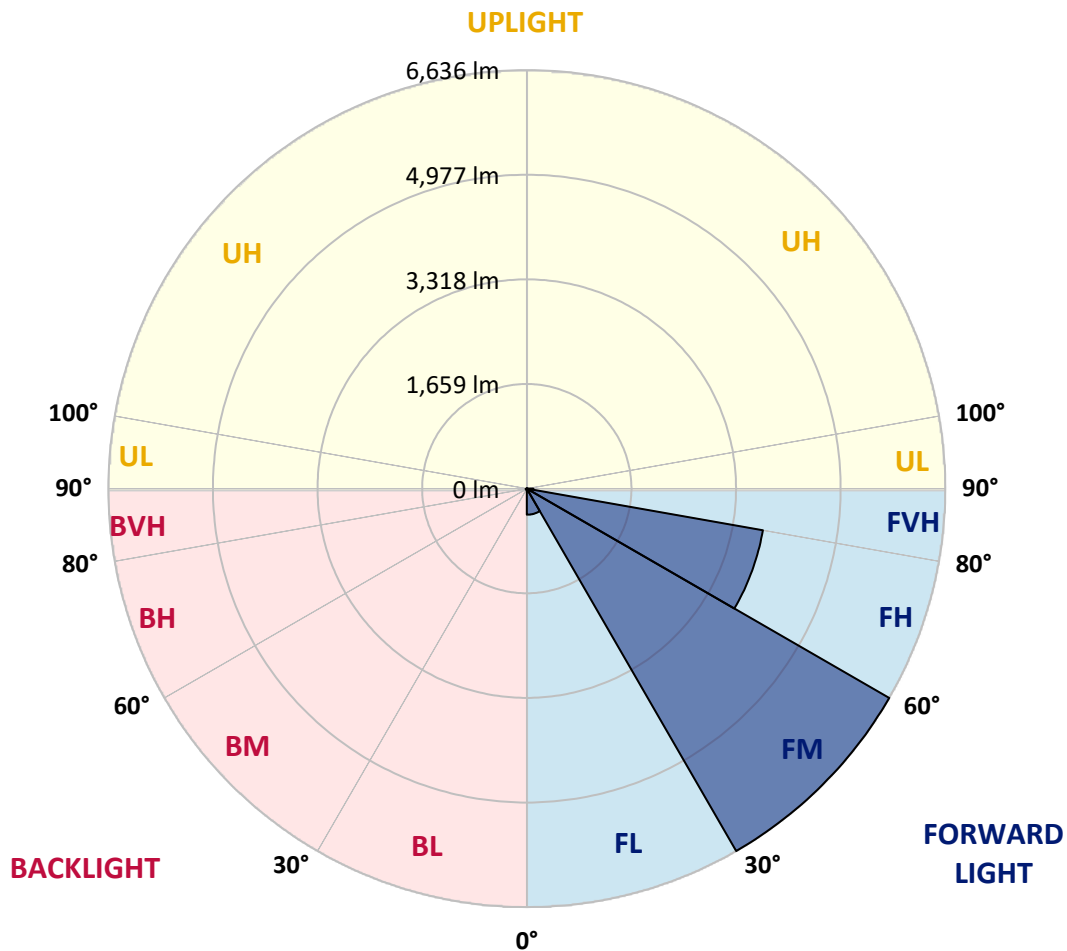
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 413.2  | 3.8       |                         |      |         |
| FM   | (30°-60°)   | 6635.5 | 60.3      |                         |      |         |
| FH   | (60°-80°)   | 3801.4 | 34.6      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 105.1  | 1.0       |                         |      | G2/225  |
| BL   | (0°-30°)    | 10.5   | 0.1       | B0/110                  |      |         |
| BM   | (30°-60°)   | 17.9   | 0.2       | B0/220                  |      |         |
| BH   | (60°-80°)   | 16.6   | 0.2       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 2.0    | 0.0       |                         |      | G0/10   |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B0-U0-G2**

Type II Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°     | 45°     | 55°     | 64°     | 65°     | 75°     | 85°    |
|-------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|--------|
| 0°    | 67.4   | 67.4   | 67.4   | 67.4   | 67.4    | 67.4    | 67.4    | 67.4    | 67.4    | 67.4    | 67.4   |
| 2.5°  | 81.7   | 82.5   | 81.0   | 78.0   | 75.7    | 75.7    | 74.9    | 72.7    | 72.7    | 70.4    | 68.9   |
| 5°    | 114.3  | 112.8  | 109.7  | 103.7  | 98.4    | 93.1    | 87.8    | 82.5    | 81.7    | 74.9    | 70.4   |
| 7.5°  | 186.9  | 188.5  | 178.6  | 159.7  | 143.8   | 123.4   | 104.4   | 93.1    | 91.6    | 80.2    | 71.1   |
| 10°   | 410.2  | 398.8  | 376.1  | 302.7  | 249.0   | 187.7   | 139.3   | 108.2   | 106.7   | 86.3    | 72.7   |
| 12.5° | 747.7  | 738.7  | 697.0  | 621.4  | 482.9   | 336.0   | 203.6   | 134.0   | 129.4   | 91.6    | 73.4   |
| 15°   | 1077.7 | 1063.3 | 1040.6 | 964.2  | 802.2   | 602.4   | 333.0   | 183.2   | 171.0   | 99.1    | 72.7   |
| 17.5° | 1288.1 | 1290.4 | 1270.0 | 1237.4 | 1133.0  | 891.5   | 575.2   | 273.2   | 249.8   | 112.8   | 71.1   |
| 20°   | 1472.0 | 1466.7 | 1478.1 | 1460.7 | 1387.3  | 1211.7  | 837.1   | 432.9   | 392.8   | 134.7   | 71.9   |
| 22.5° | 1683.9 | 1696.8 | 1705.1 | 1701.4 | 1620.4  | 1470.5  | 1134.5  | 647.8   | 597.1   | 174.8   | 74.2   |
| 25°   | 1967.8 | 1966.2 | 1967.0 | 1957.2 | 1878.4  | 1711.9  | 1432.7  | 915.0   | 863.5   | 239.9   | 79.5   |
| 27.5° | 2265.2 | 2274.3 | 2278.1 | 2242.5 | 2139.6  | 1976.1  | 1708.9  | 1207.1  | 1146.6  | 344.4   | 86.3   |
| 30°   | 2671.6 | 2664.0 | 2646.6 | 2574.0 | 2449.1  | 2246.3  | 1981.4  | 1513.7  | 1450.1  | 490.4   | 96.9   |
| 32.5° | 3219.5 | 3211.2 | 3123.4 | 2963.0 | 2776.0  | 2527.8  | 2255.4  | 1820.9  | 1743.7  | 672.8   | 111.3  |
| 35°   | 4122.4 | 4135.3 | 3919.6 | 3504.1 | 3168.8  | 2866.1  | 2558.8  | 2126.7  | 2058.6  | 897.6   | 130.9  |
| 37.5° | 5505.2 | 5434.8 | 5141.9 | 4407.8 | 3685.8  | 3288.4  | 2848.7  | 2435.5  | 2376.4  | 1174.6  | 156.7  |
| 40°   | 6848.5 | 6778.9 | 6694.2 | 5998.6 | 4584.1  | 3753.9  | 3254.4  | 2798.0  | 2721.6  | 1487.2  | 194.5  |
| 42.5° | 8260.8 | 8222.2 | 8218.4 | 7693.9 | 6223.4  | 4485.7  | 3742.5  | 3222.6  | 3157.5  | 1830.0  | 256.6  |
| 45°   | 9261.3 | 9222.7 | 9303.7 | 9395.3 | 8456.0  | 6053.9  | 4592.4  | 3774.3  | 3679.7  | 2246.3  | 355.7  |
| 47.5° | 9396.0 | 9397.5 | 9614.0 | 9900.8 | 10115.0 | 8479.5  | 5724.7  | 4505.4  | 4390.4  | 2841.9  | 522.2  |
| 50°   | 8948.0 | 8965.4 | 9309.8 | 9822.9 | 10399.6 | 10514.6 | 7721.2  | 5566.5  | 5396.2  | 3548.0  | 758.3  |
| 52.5° | 8095.0 | 8114.7 | 8594.5 | 9438.4 | 10137.7 | 11003.5 | 10071.9 | 6954.5  | 6758.5  | 4429.0  | 1091.3 |
| 55°   | 7326.9 | 7339.0 | 7889.2 | 8955.6 | 9822.1  | 10737.9 | 11467.5 | 8808.0  | 8550.7  | 5512.7  | 1419.8 |
| 57.5° | 6566.2 | 6538.2 | 6896.2 | 8117.0 | 9768.4  | 10411.7 | 11673.3 | 10920.3 | 10636.5 | 6697.2  | 1675.6 |
| 60°   | 5549.1 | 5502.1 | 5789.7 | 6566.2 | 9061.5  | 10625.9 | 11288.1 | 12088.8 | 12024.5 | 8346.3  | 1873.2 |
| 61°   | 4964.0 | 4944.4 | 5233.5 | 5899.5 | 8466.6  | 10571.4 | 11195.8 | 12138.0 | 12144.8 | 9126.6  | 1961.7 |
| 62.5° | 3545.0 | 3601.0 | 4043.0 | 4908.8 | 7091.5  | 10217.9 | 11207.9 | 11985.9 | 12053.3 | 10163.5 | 2191.0 |
| 65°   | 1575.7 | 1665.8 | 2009.4 | 2714.0 | 4124.0  | 8499.9  | 11100.4 | 11652.1 | 11618.8 | 10448.0 | 2981.1 |
| 67.5° | 934.7  | 948.3  | 1119.3 | 1537.9 | 2184.2  | 4572.0  | 9795.6  | 11210.9 | 11166.3 | 9095.6  | 3709.2 |
| 70°   | 736.4  | 743.2  | 797.7  | 965.0  | 1267.7  | 1751.3  | 5590.7  | 9699.5  | 9894.0  | 7375.3  | 3631.3 |
| 72.5° | 698.6  | 697.0  | 704.6  | 734.1  | 798.5   | 868.8   | 2164.5  | 6447.4  | 6843.2  | 5311.4  | 3044.7 |
| 75°   | 689.5  | 686.4  | 678.9  | 667.5  | 578.2   | 511.6   | 670.6   | 2851.7  | 3081.1  | 3629.0  | 2292.4 |
| 77.5° | 669.0  | 669.8  | 671.3  | 640.3  | 495.7   | 361.8   | 324.7   | 915.0   | 1125.4  | 2303.0  | 1629.5 |
| 80°   | 452.6  | 459.4  | 470.7  | 458.6  | 445.8   | 261.9   | 229.3   | 325.4   | 330.0   | 1292.7  | 1076.2 |
| 82.5° | 229.3  | 229.3  | 224.0  | 199.8  | 172.6   | 170.3   | 182.4   | 236.1   | 239.2   | 653.9   | 506.3  |
| 85°   | 138.5  | 146.1  | 149.1  | 135.5  | 124.1   | 114.3   | 139.3   | 187.7   | 194.5   | 253.5   | 118.1  |
| 87.5° | 31.0   | 31.8   | 34.8   | 46.2   | 67.4    | 91.6    | 129.4   | 171.8   | 174.8   | 162.7   | 14.4   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0    |

REPORT NUMBER: P1063375

CATALOG NUMBER: GLAN-SA2C-730-U-T2BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°   | 95°   | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|-------|-------|------|------|------|------|------|------|------|------|------|
| 0°    | 67.4  | 67.4  | 67.4 | 67.4 | 67.4 | 67.4 | 67.4 | 67.4 | 67.4 | 67.4 | 67.4 |
| 2.5°  | 68.1  | 66.6  | 65.8 | 63.6 | 61.3 | 59.0 | 57.5 | 56.8 | 57.5 | 58.3 | 58.3 |
| 5°    | 67.4  | 65.1  | 61.3 | 57.5 | 54.5 | 51.5 | 48.4 | 47.7 | 47.7 | 48.4 | 48.4 |
| 7.5°  | 67.4  | 63.6  | 58.3 | 53.7 | 49.2 | 44.7 | 42.4 | 40.9 | 41.6 | 41.6 | 41.6 |
| 10°   | 67.4  | 62.8  | 56.0 | 49.2 | 43.9 | 38.6 | 34.8 | 33.3 | 33.3 | 33.3 | 33.3 |
| 12.5° | 66.6  | 62.1  | 53.7 | 45.4 | 37.8 | 31.8 | 27.2 | 25.0 | 25.7 | 25.7 | 25.7 |
| 15°   | 65.1  | 59.8  | 50.7 | 38.6 | 30.3 | 24.2 | 19.7 | 17.4 | 18.2 | 19.7 | 20.4 |
| 17.5° | 62.8  | 57.5  | 45.4 | 32.5 | 24.2 | 18.2 | 13.6 | 12.1 | 12.9 | 15.1 | 15.1 |
| 20°   | 62.1  | 55.2  | 40.1 | 26.5 | 18.2 | 12.9 | 9.1  | 7.6  | 8.3  | 11.4 | 12.1 |
| 22.5° | 62.1  | 53.7  | 36.3 | 21.9 | 13.6 | 8.3  | 5.3  | 3.0  | 3.0  | 5.3  | 5.3  |
| 25°   | 62.8  | 53.0  | 33.3 | 18.2 | 9.8  | 6.1  | 3.0  | 1.5  | 3.0  | 8.3  | 9.8  |
| 27.5° | 64.3  | 52.2  | 31.8 | 15.1 | 7.6  | 5.3  | 2.3  | 5.3  | 9.1  | 9.1  | 9.1  |
| 30°   | 65.8  | 50.7  | 29.5 | 12.9 | 6.8  | 3.8  | 3.8  | 7.6  | 7.6  | 9.1  | 9.8  |
| 32.5° | 68.1  | 50.0  | 28.0 | 11.4 | 5.3  | 3.0  | 5.3  | 4.5  | 4.5  | 5.3  | 6.1  |
| 35°   | 72.7  | 50.7  | 26.5 | 11.4 | 5.3  | 3.8  | 4.5  | 2.3  | 1.5  | 1.5  | 1.5  |
| 37.5° | 78.7  | 51.5  | 24.2 | 9.8  | 4.5  | 4.5  | 2.3  | 0.0  | 0.0  | 0.0  | 0.0  |
| 40°   | 88.5  | 53.7  | 22.7 | 9.1  | 3.8  | 3.8  | 0.8  | 0.0  | 0.0  | 0.0  | 0.0  |
| 42.5° | 105.2 | 58.3  | 21.9 | 8.3  | 3.8  | 3.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 45°   | 138.5 | 68.9  | 20.4 | 7.6  | 3.8  | 1.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 47.5° | 199.0 | 93.8  | 19.7 | 6.1  | 2.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 50°   | 290.6 | 127.1 | 18.9 | 5.3  | 0.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 52.5° | 370.8 | 134.0 | 12.9 | 4.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 55°   | 379.9 | 92.3  | 9.8  | 3.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 57.5° | 302.7 | 59.8  | 8.3  | 2.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 60°   | 229.3 | 45.4  | 7.6  | 0.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 61°   | 220.2 | 40.9  | 7.6  | 0.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 62.5° | 242.9 | 35.6  | 6.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 65°   | 395.1 | 29.5  | 6.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 67.5° | 686.4 | 25.7  | 5.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 70°   | 867.3 | 24.2  | 4.5  | 0.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 72.5° | 756.1 | 21.9  | 4.5  | 1.5  | 0.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 75°   | 454.9 | 18.9  | 4.5  | 3.0  | 1.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 77.5° | 238.4 | 14.4  | 4.5  | 3.8  | 2.3  | 0.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 80°   | 115.8 | 12.9  | 5.3  | 3.8  | 3.0  | 1.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 82.5° | 45.4  | 10.6  | 6.1  | 5.3  | 3.8  | 2.3  | 0.8  | 0.0  | 0.0  | 0.0  | 0.0  |
| 85°   | 20.4  | 9.1   | 6.8  | 6.1  | 5.3  | 3.0  | 0.8  | 0.0  | 0.0  | 0.0  | 0.0  |
| 87.5° | 10.6  | 8.3   | 7.6  | 6.8  | 5.3  | 3.8  | 1.5  | 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  |



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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-4

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-730-U-5WQ

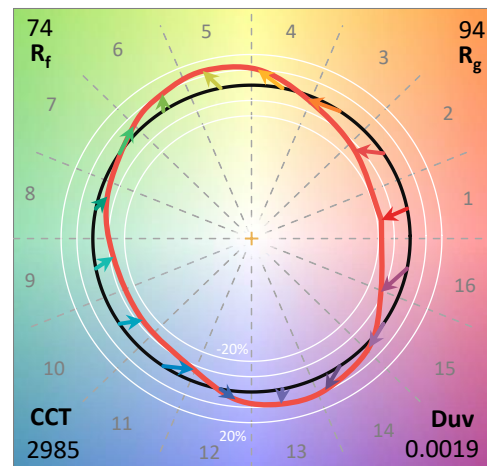
Data in this report applies to families of products including GSS-SB1A-730-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-4  
 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-730-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 3000K CCT 26 LEDS

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 2985     | CRI (Ra): | 70.8 |      |       |
| CIE u':                   | 0.2504   | R1:       | 66.3 | R9:  | -43.2 |
| CIE v':                   | 0.5243   | R2:       | 80.6 | R10: | 57.6  |
| Duv:                      | 0.0019   | R3:       | 94.5 | R11: | 64.8  |
| CIE x:                    | 0.4408   | R4:       | 68.2 | R12: | 53.5  |
| CIE y:                    | 0.4101   | R5:       | 66.5 | R13: | 68.7  |
| CIE z:                    | 0.1491   | R6:       | 74.7 | R14: | 97.0  |
| Peak Wavelength (nm):     | 595      | R7:       | 76.2 | R15: | 56.4  |
| Dominant Wavelength (nm): | 582      | R8:       | 39.6 |      |       |
| Purity:                   | 55.41818 |           |      |      |       |
| Rf:                       | 73.8     |           |      |      |       |
| Rg:                       | 94.4     |           |      |      |       |



### Test Conditions

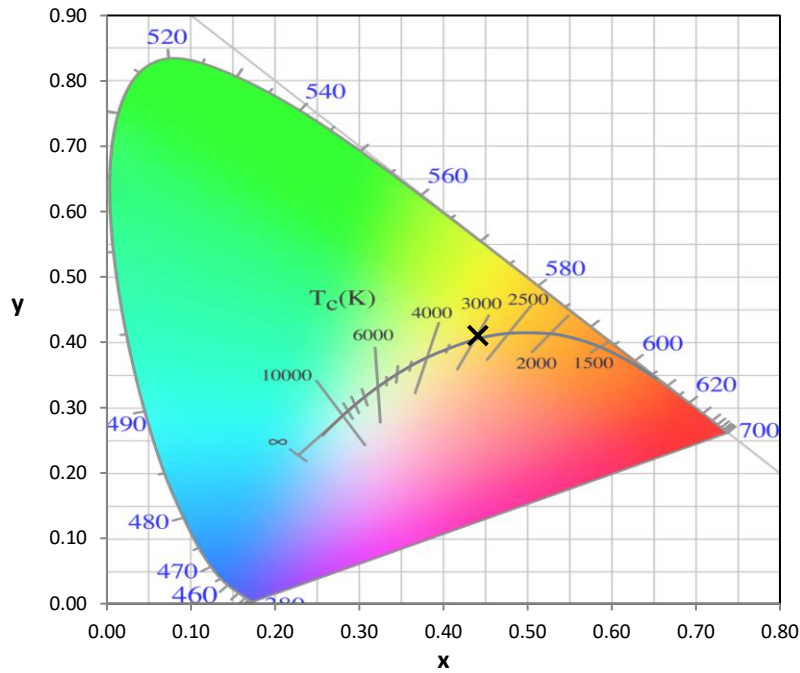
Stabilization Time: 36M  
 Operation Time: 1H 36M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-4

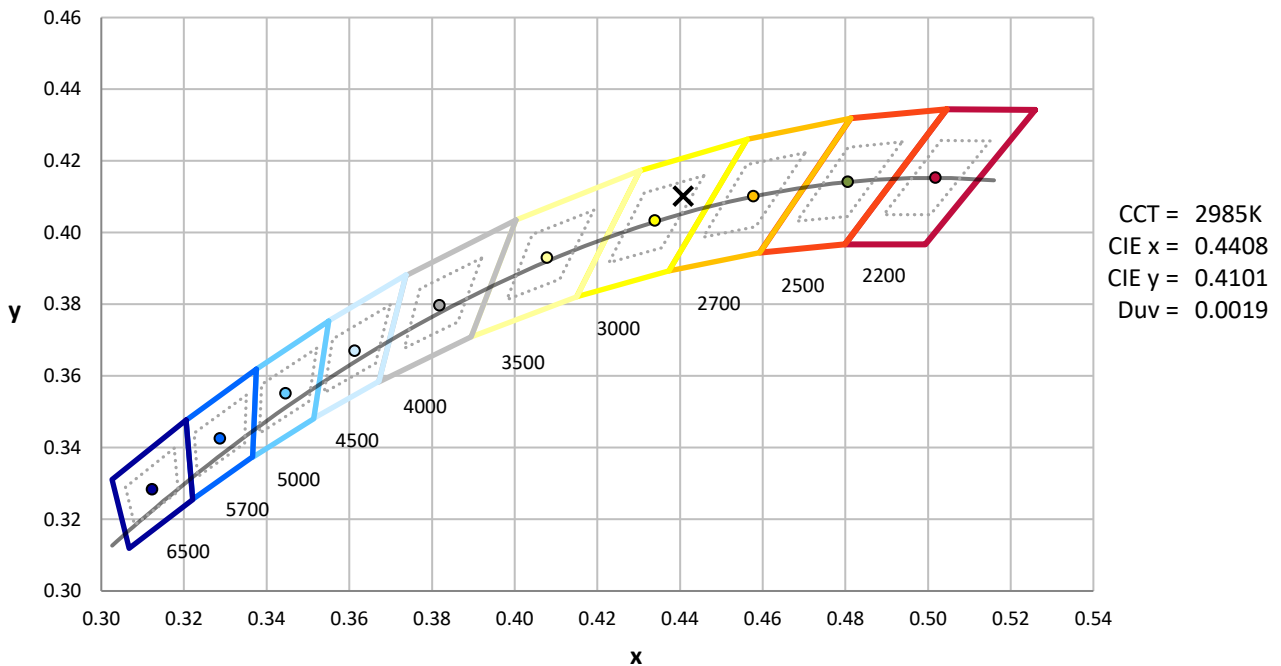
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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: SP1-2407-184-4

**CIE 1931 Chromaticity Diagram**



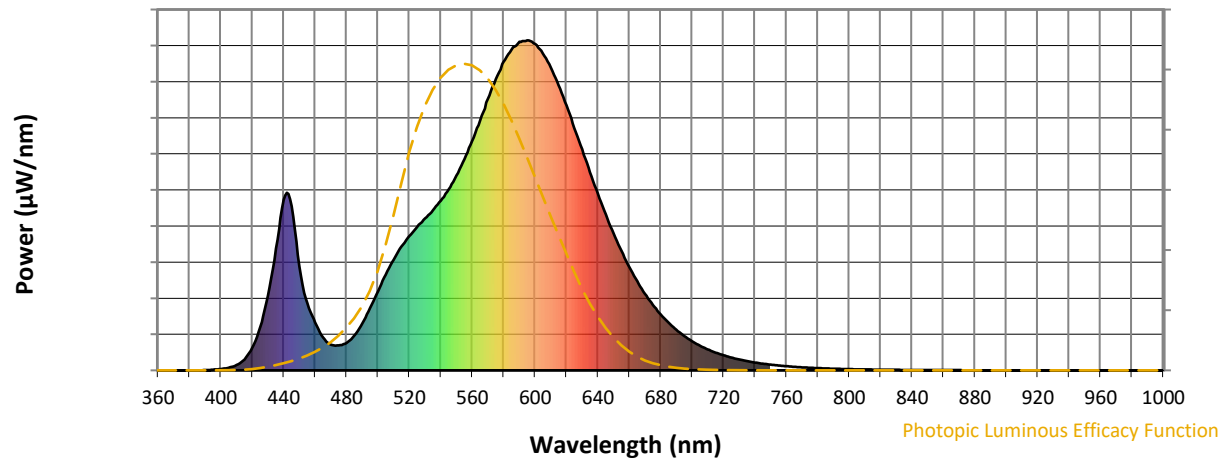
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-184-4

### Photopic Flux vs. Wavelength

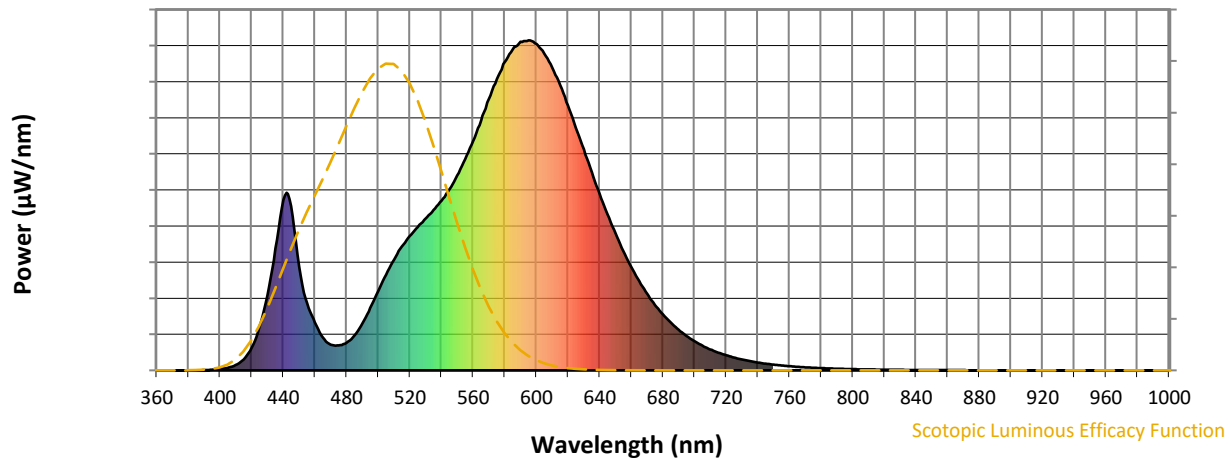


### Photopic Lumens: NR

| λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 142                      | NR            | 620    | 803                      | NR            | 750    | 17                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 189                      | NR            | 625    | 734                      | NR            | 755    | 15                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 240                      | NR            | 630    | 670                      | NR            | 760    | 13                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 290                      | NR            | 635    | 600                      | NR            | 765    | 11                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 335                      | NR            | 640    | 535                      | NR            | 770    | 9                        | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 375                      | NR            | 645    | 473                      | NR            | 775    | 8                        | NR            | 905    | 0                        | NR            |
| 390    | 1                        | NR            | 520    | 408                      | NR            | 650    | 415                      | NR            | 780    | 7                        | NR            | 910    | 0                        | NR            |
| 395    | 2                        | NR            | 525    | 434                      | NR            | 655    | 362                      | NR            | 785    | 6                        | NR            | 915    | 0                        | NR            |
| 400    | 4                        | NR            | 530    | 461                      | NR            | 660    | 313                      | NR            | 790    | 5                        | NR            | 920    | 0                        | NR            |
| 405    | 8                        | NR            | 535    | 486                      | NR            | 665    | 271                      | NR            | 795    | 4                        | NR            | 925    | 0                        | NR            |
| 410    | 16                       | NR            | 540    | 514                      | NR            | 670    | 231                      | NR            | 800    | 4                        | NR            | 930    | 0                        | NR            |
| 415    | 33                       | NR            | 545    | 549                      | NR            | 675    | 198                      | NR            | 805    | 3                        | NR            | 935    | 0                        | NR            |
| 420    | 69                       | NR            | 550    | 591                      | NR            | 680    | 169                      | NR            | 810    | 3                        | NR            | 940    | 0                        | NR            |
| 425    | 131                      | NR            | 555    | 640                      | NR            | 685    | 144                      | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 227                      | NR            | 560    | 695                      | NR            | 690    | 123                      | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 369                      | NR            | 565    | 757                      | NR            | 695    | 104                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 517                      | NR            | 570    | 822                      | NR            | 700    | 88                       | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 498                      | NR            | 575    | 882                      | NR            | 705    | 75                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 315                      | NR            | 580    | 935                      | NR            | 710    | 63                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 204                      | NR            | 585    | 972                      | NR            | 715    | 54                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 145                      | NR            | 590    | 996                      | NR            | 720    | 46                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 100                      | NR            | 595    | 1000                     | NR            | 725    | 39                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 78                       | NR            | 600    | 989                      | NR            | 730    | 33                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 76                       | NR            | 605    | 960                      | NR            | 735    | 28                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 83                       | NR            | 610    | 918                      | NR            | 740    | 24                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 105                      | NR            | 615    | 864                      | NR            | 745    | 20                       | NR            | 875    | 1                        | NR            |        |                          |               |

REPORT NUMBER: SP1-2407-184-4

### Scotopic Flux vs. Wavelength



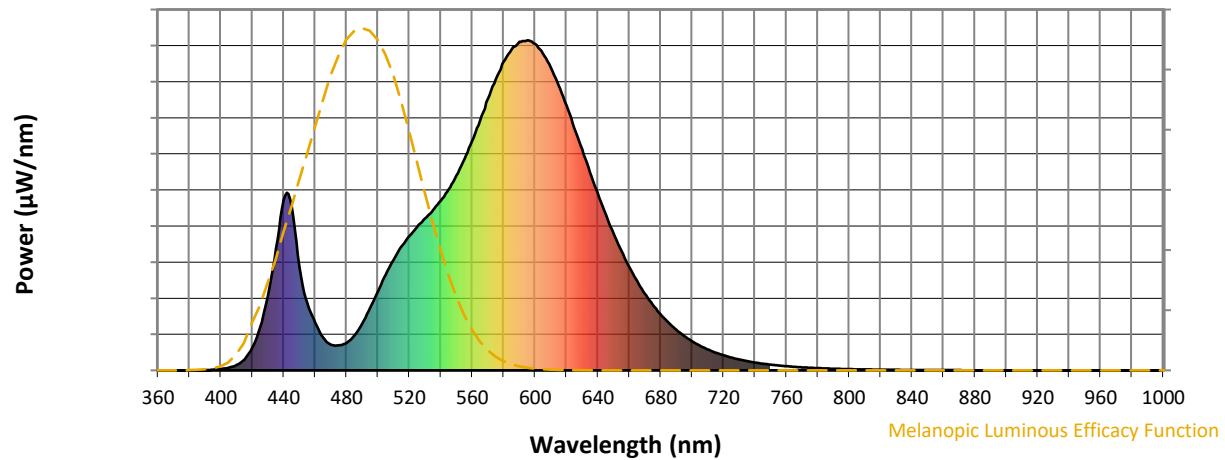
Scotopic Lumens: NR

S/P: 1.19

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 142                      | NR            | 620    | 803                      | NR            | 750    | 17                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 189                      | NR            | 625    | 734                      | NR            | 755    | 15                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 240                      | NR            | 630    | 670                      | NR            | 760    | 13                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 290                      | NR            | 635    | 600                      | NR            | 765    | 11                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 335                      | NR            | 640    | 535                      | NR            | 770    | 9                        | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 375                      | NR            | 645    | 473                      | NR            | 775    | 8                        | NR            | 905    | 0                        | NR            |
| 390    | 1                        | NR            | 520    | 408                      | NR            | 650    | 415                      | NR            | 780    | 7                        | NR            | 910    | 0                        | NR            |
| 395    | 2                        | NR            | 525    | 434                      | NR            | 655    | 362                      | NR            | 785    | 6                        | NR            | 915    | 0                        | NR            |
| 400    | 4                        | NR            | 530    | 461                      | NR            | 660    | 313                      | NR            | 790    | 5                        | NR            | 920    | 0                        | NR            |
| 405    | 8                        | NR            | 535    | 486                      | NR            | 665    | 271                      | NR            | 795    | 4                        | NR            | 925    | 0                        | NR            |
| 410    | 16                       | NR            | 540    | 514                      | NR            | 670    | 231                      | NR            | 800    | 4                        | NR            | 930    | 0                        | NR            |
| 415    | 33                       | NR            | 545    | 549                      | NR            | 675    | 198                      | NR            | 805    | 3                        | NR            | 935    | 0                        | NR            |
| 420    | 69                       | NR            | 550    | 591                      | NR            | 680    | 169                      | NR            | 810    | 3                        | NR            | 940    | 0                        | NR            |
| 425    | 131                      | NR            | 555    | 640                      | NR            | 685    | 144                      | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 227                      | NR            | 560    | 695                      | NR            | 690    | 123                      | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 369                      | NR            | 565    | 757                      | NR            | 695    | 104                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 517                      | NR            | 570    | 822                      | NR            | 700    | 88                       | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 498                      | NR            | 575    | 882                      | NR            | 705    | 75                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 315                      | NR            | 580    | 935                      | NR            | 710    | 63                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 204                      | NR            | 585    | 972                      | NR            | 715    | 54                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 145                      | NR            | 590    | 996                      | NR            | 720    | 46                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 100                      | NR            | 595    | 1000                     | NR            | 725    | 39                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 78                       | NR            | 600    | 989                      | NR            | 730    | 33                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 76                       | NR            | 605    | 960                      | NR            | 735    | 28                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 83                       | NR            | 610    | 918                      | NR            | 740    | 24                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 105                      | NR            | 615    | 864                      | NR            | 745    | 20                       | NR            | 875    | 1                        | NR            |        |                          |               |

REPORT NUMBER: SP1-2407-184-4

### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.13

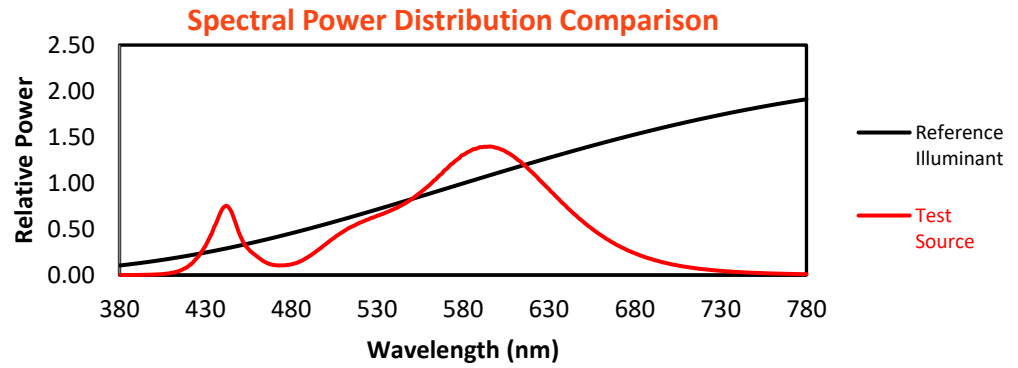
| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 142                                  | NR                             | 620               | 803                                  | NR                             | 750               | 17                                   | NR                             | 880               | 0                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 189                                  | NR                             | 625               | 734                                  | NR                             | 755               | 15                                   | NR                             | 885               | 0                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 240                                  | NR                             | 630               | 670                                  | NR                             | 760               | 13                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 290                                  | NR                             | 635               | 600                                  | NR                             | 765               | 11                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 335                                  | NR                             | 640               | 535                                  | NR                             | 770               | 9                                    | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 375                                  | NR                             | 645               | 473                                  | NR                             | 775               | 8                                    | NR                             | 905               | 0                                    | NR                             |
| 390               | 1                                    | NR                             | 520               | 408                                  | NR                             | 650               | 415                                  | NR                             | 780               | 7                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 2                                    | NR                             | 525               | 434                                  | NR                             | 655               | 362                                  | NR                             | 785               | 6                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 4                                    | NR                             | 530               | 461                                  | NR                             | 660               | 313                                  | NR                             | 790               | 5                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 8                                    | NR                             | 535               | 486                                  | NR                             | 665               | 271                                  | NR                             | 795               | 4                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 16                                   | NR                             | 540               | 514                                  | NR                             | 670               | 231                                  | NR                             | 800               | 4                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 33                                   | NR                             | 545               | 549                                  | NR                             | 675               | 198                                  | NR                             | 805               | 3                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 69                                   | NR                             | 550               | 591                                  | NR                             | 680               | 169                                  | NR                             | 810               | 3                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 131                                  | NR                             | 555               | 640                                  | NR                             | 685               | 144                                  | NR                             | 815               | 2                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 227                                  | NR                             | 560               | 695                                  | NR                             | 690               | 123                                  | NR                             | 820               | 2                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 369                                  | NR                             | 565               | 757                                  | NR                             | 695               | 104                                  | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 517                                  | NR                             | 570               | 822                                  | NR                             | 700               | 88                                   | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 498                                  | NR                             | 575               | 882                                  | NR                             | 705               | 75                                   | NR                             | 835               | 1                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 315                                  | NR                             | 580               | 935                                  | NR                             | 710               | 63                                   | NR                             | 840               | 1                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 204                                  | NR                             | 585               | 972                                  | NR                             | 715               | 54                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 145                                  | NR                             | 590               | 996                                  | NR                             | 720               | 46                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 100                                  | NR                             | 595               | 1000                                 | NR                             | 725               | 39                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 78                                   | NR                             | 600               | 989                                  | NR                             | 730               | 33                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 76                                   | NR                             | 605               | 960                                  | NR                             | 735               | 28                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 83                                   | NR                             | 610               | 918                                  | NR                             | 740               | 24                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 105                                  | NR                             | 615               | 864                                  | NR                             | 745               | 20                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

REPORT NUMBER: SP1-2407-184-4

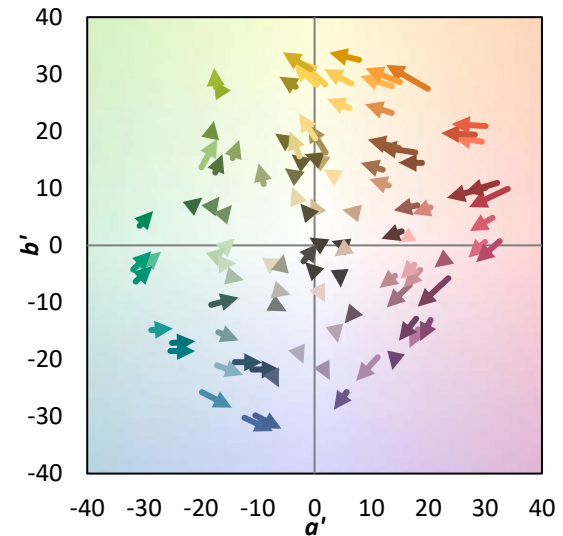
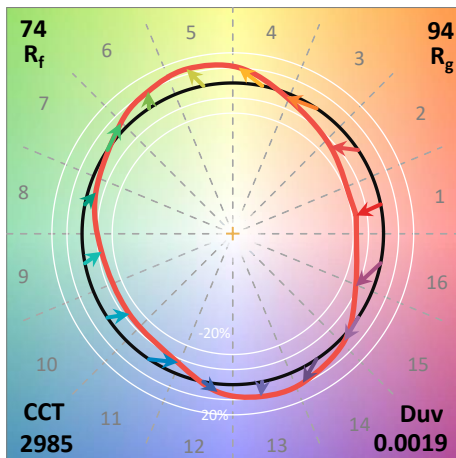
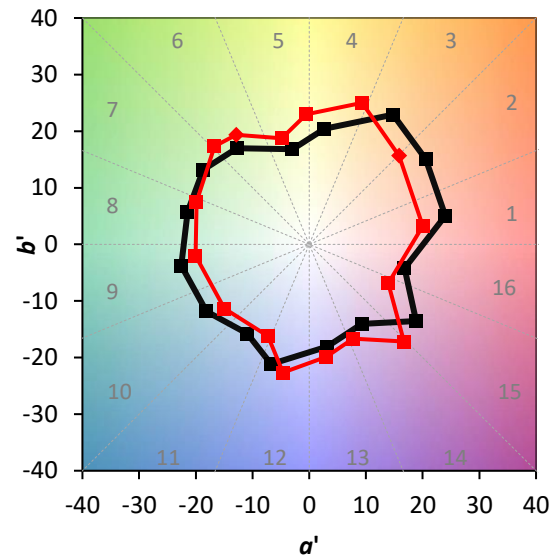
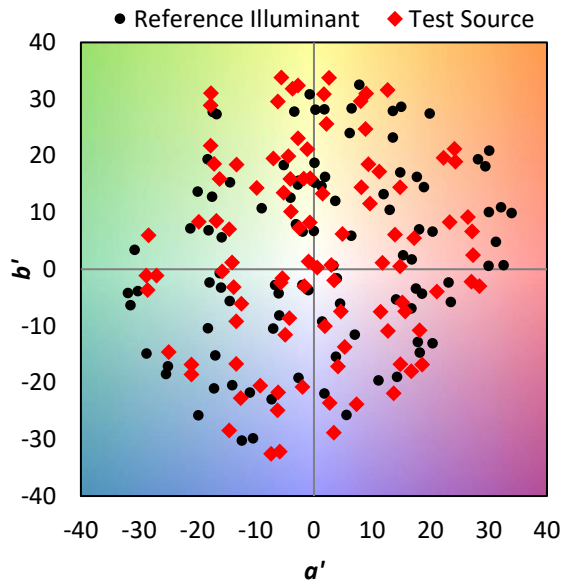
TM-30-18

### Summary

$R_f = 73.8$   
 $R_g = 94.4$   
 $CIE R_a = 70.8$   
 $R_g = -43.2$



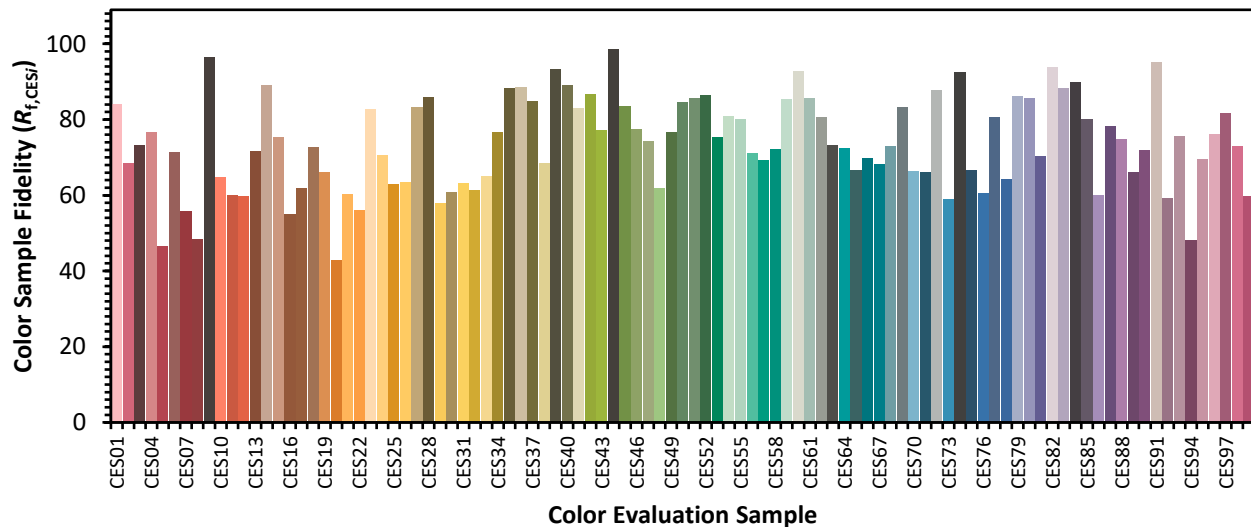
### Color Vector Graphics



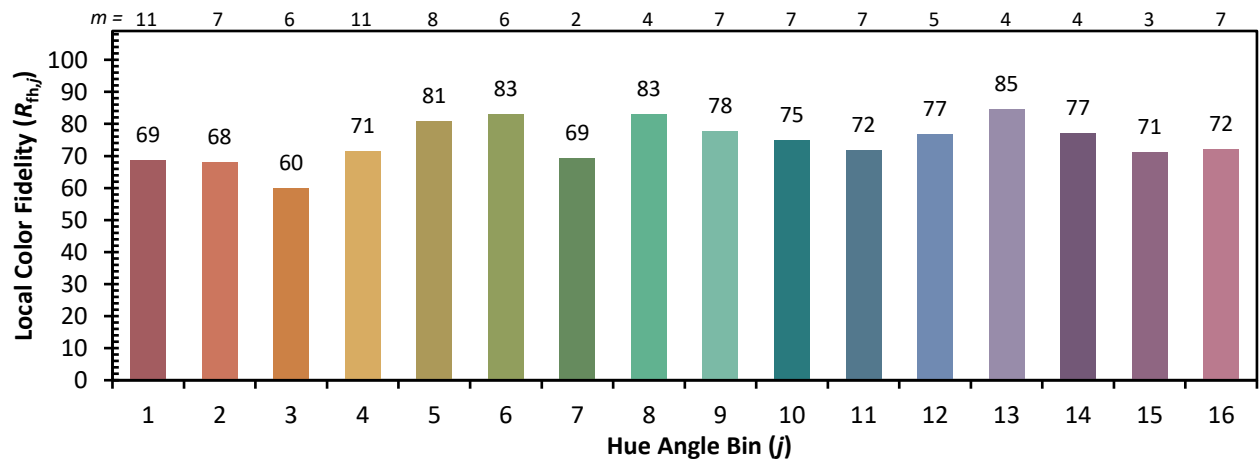
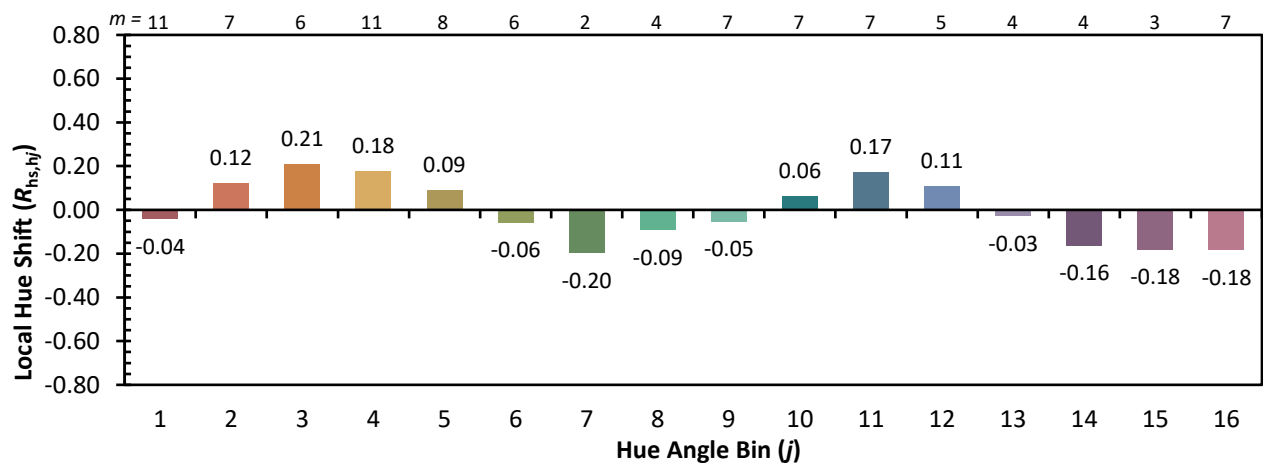
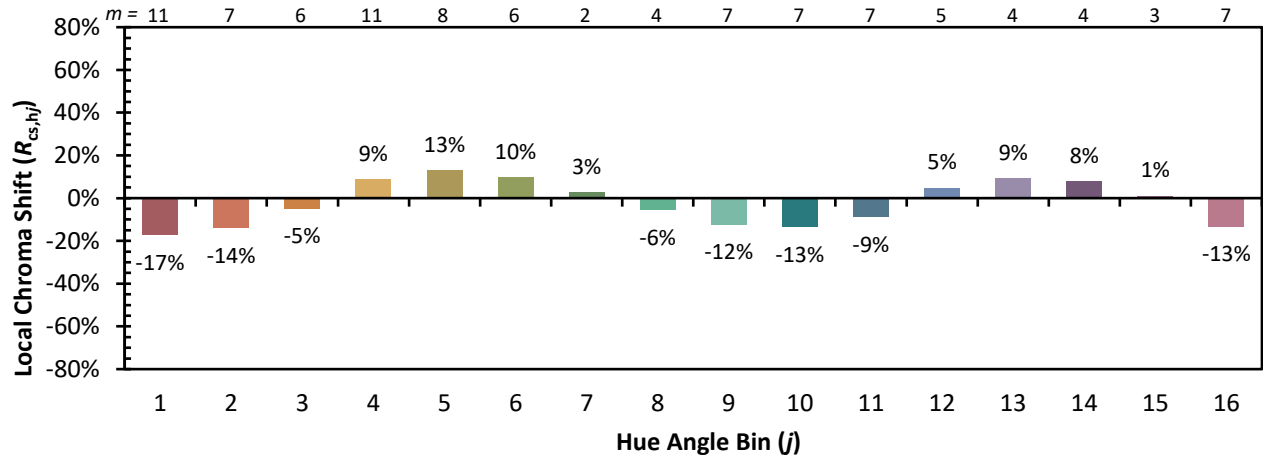


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

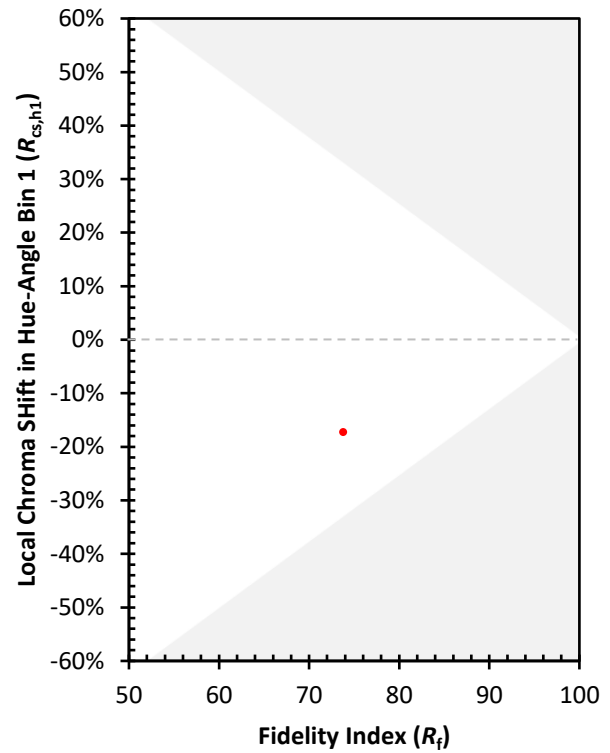
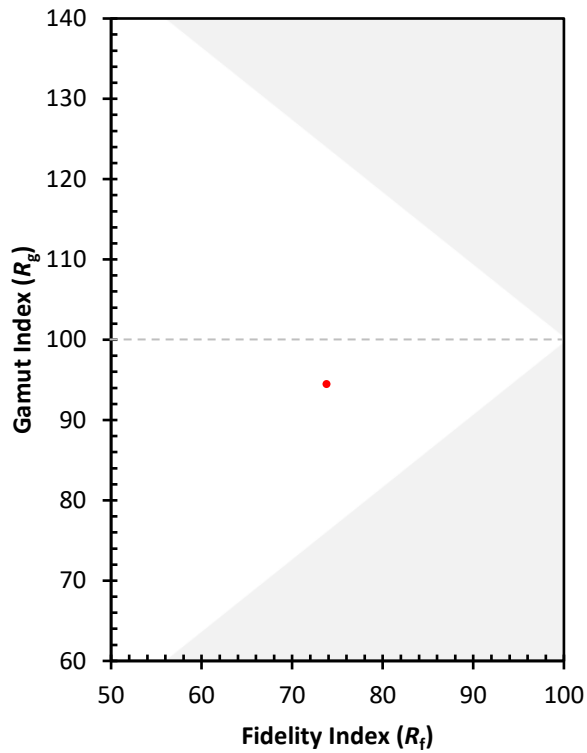
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 63 | CES51 = 86 | CES76 = 61 |
| CES02 = 62 | CES27 = 83 | CES52 = 86 | CES77 = 81 |
| CES03 = 31 | CES28 = 86 | CES53 = 75 | CES78 = 64 |
| CES04 = 71 | CES29 = 58 | CES54 = 81 | CES79 = 86 |
| CES05 = 49 | CES30 = 61 | CES55 = 80 | CES80 = 86 |
| CES06 = 51 | CES31 = 63 | CES56 = 71 | CES81 = 70 |
| CES07 = 41 | CES32 = 61 | CES57 = 69 | CES82 = 94 |
| CES08 = 40 | CES33 = 65 | CES58 = 72 | CES83 = 88 |
| CES09 = 29 | CES34 = 77 | CES59 = 85 | CES84 = 90 |
| CES10 = 76 | CES35 = 88 | CES60 = 93 | CES85 = 80 |
| CES11 = 59 | CES36 = 89 | CES61 = 86 | CES86 = 60 |
| CES12 = 65 | CES37 = 85 | CES62 = 81 | CES87 = 78 |
| CES13 = 43 | CES38 = 69 | CES63 = 73 | CES88 = 75 |
| CES14 = 74 | CES39 = 93 | CES64 = 72 | CES89 = 66 |
| CES15 = 71 | CES40 = 89 | CES65 = 67 | CES90 = 72 |
| CES16 = 47 | CES41 = 83 | CES66 = 70 | CES91 = 95 |
| CES17 = 50 | CES42 = 87 | CES67 = 68 | CES92 = 59 |
| CES18 = 56 | CES43 = 77 | CES68 = 73 | CES93 = 76 |
| CES19 = 73 | CES44 = 99 | CES69 = 83 | CES94 = 48 |
| CES20 = 66 | CES45 = 83 | CES70 = 66 | CES95 = 70 |
| CES21 = 87 | CES46 = 77 | CES71 = 66 | CES96 = 76 |
| CES22 = 79 | CES47 = 74 | CES72 = 88 | CES97 = 82 |
| CES23 = 92 | CES48 = 62 | CES73 = 59 | CES98 = 73 |
| CES24 = 91 | CES49 = 77 | CES74 = 93 | CES99 = 60 |
| CES25 = 73 | CES50 = 85 | CES75 = 67 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)