

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: P1057432

Luminaire Tested: **GAP-SA1A-722-U-T3BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1057432  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: GAP-SA1A-722-U-T3BC  
Description: GALLEON PEDESTRAIAN COMPANION 615mA 1xLight Square PACKAGE 70CRI  
2200K FIXTURE w/ TYPE III ANGLED BACKLIGHT CONTROL  
Light Source: (14) 2200K CCT, 70 CRI LEDs  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2733.4 lumens  
Efficiency: N/A  
Efficacy: 93.0 lumens/watt  
Luminous Opening: Rectangular (W 0.67' x L: 0.67' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B0 - U0 - G1

Input Watts (W): 29.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

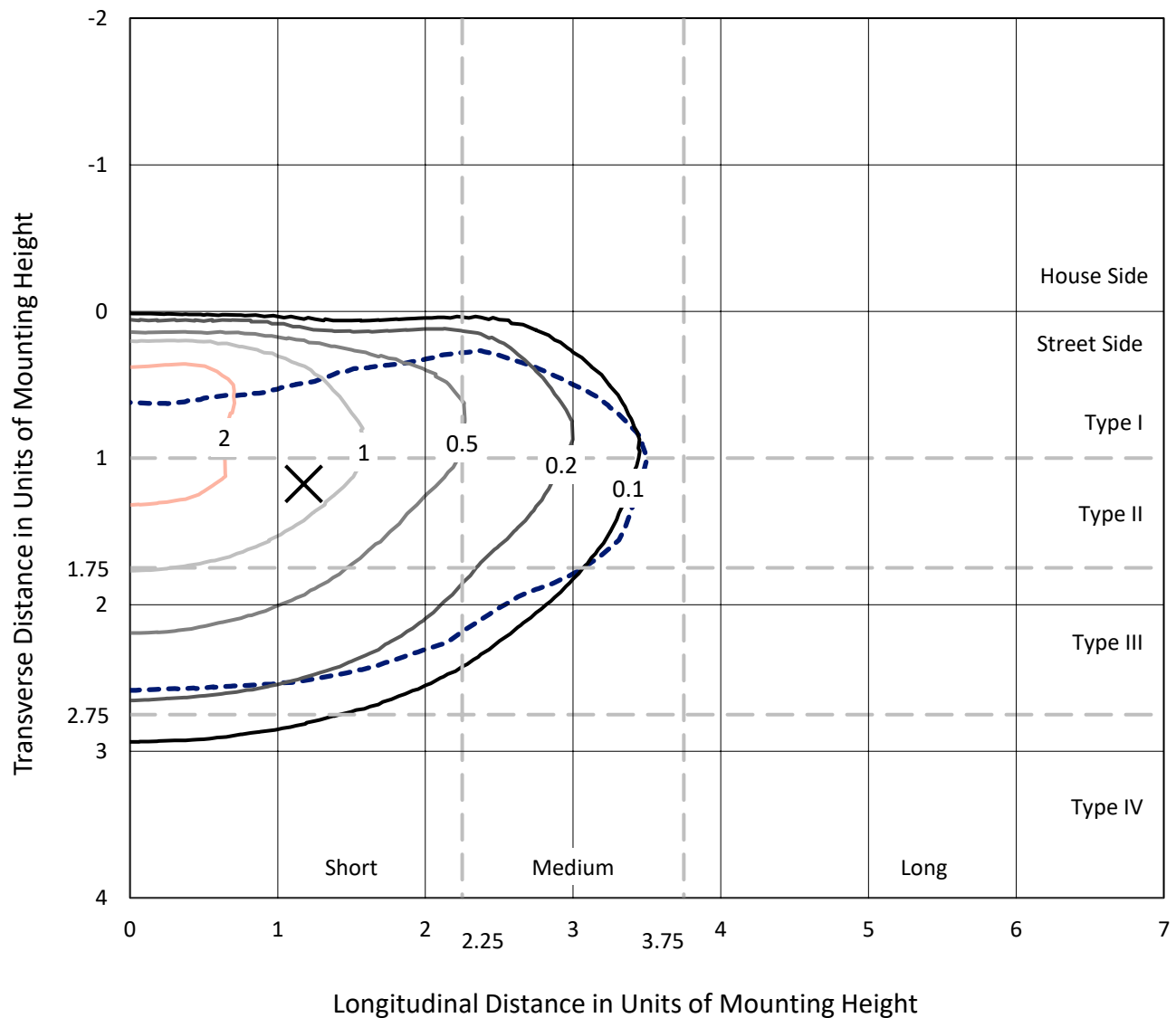


REPORT NUMBER: P1057432

CATALOG NUMBER: GAP-SA1A-722-U-T3BC

## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

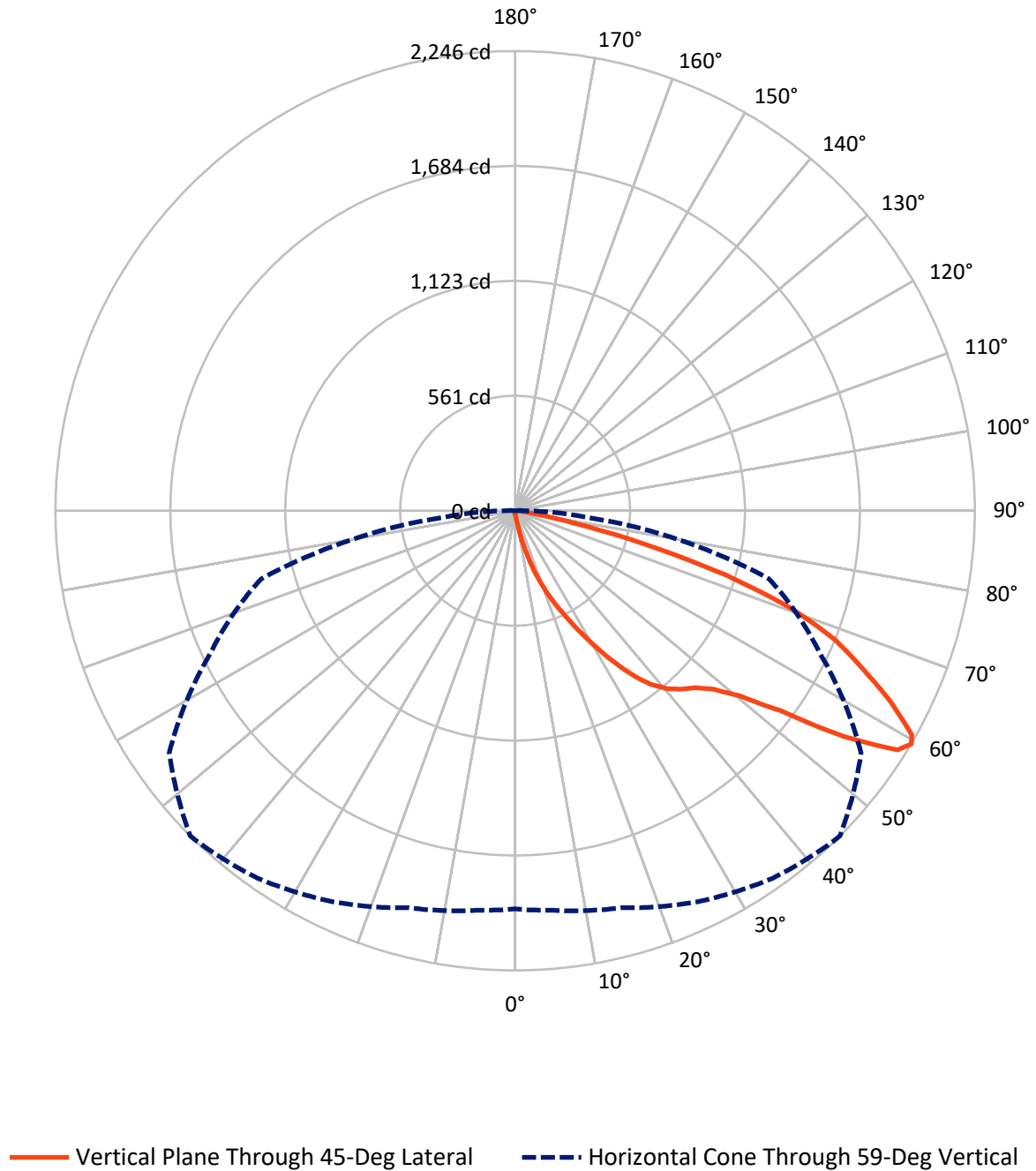


Based on 15 foot mounting height. Maximum calculated value = 3.1 fc  
 Type III - Short - N/A

REPORT NUMBER: P1057432

CATALOG NUMBER: GAP-SA1A-722-U-T3BC

## Luminous Intensity Polar Plot



REPORT NUMBER: P1057432

CATALOG NUMBER: GAP-SA1A-722-U-T3BC

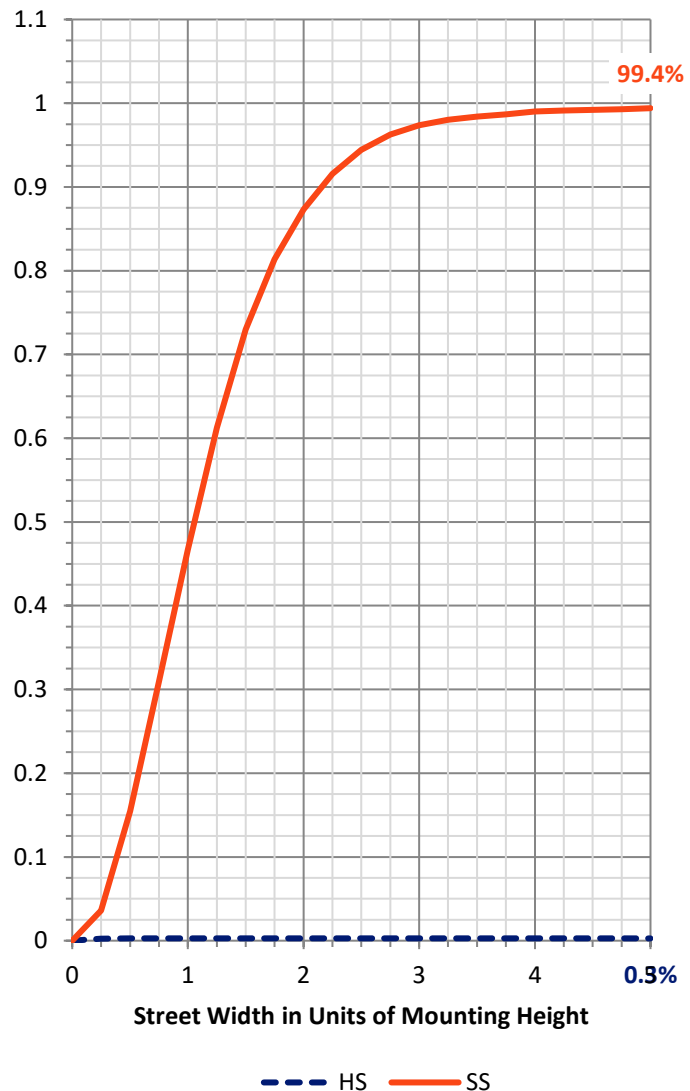
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 7.4      | 0.0    | 7.4    |
|                    | % Fixture | 0.3      | 0.0    | 0.3    |
| <b>Street Side</b> | Lumens    | 2726.0   | 0.0    | 2726.0 |
|                    | % Fixture | 99.7     | 0.0    | 99.7   |
| <b>Total</b>       | Lumens    | 2733.4   | 0.0    | 2733.4 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 2.7    | 0.1       |
| 10°-20°   | 31.6   | 1.2       |
| 20°-30°   | 111.9  | 4.1       |
| 30°-40°   | 257.9  | 9.4       |
| 40°-50°   | 435.0  | 15.9      |
| 50°-60°   | 717.2  | 26.2      |
| 60°-70°   | 814.8  | 29.8      |
| 70°-80°   | 335.0  | 12.3      |
| 80°-90°   | 27.3   | 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°    | 2733.4 | 100.0     |
| 0°-180°   | 2733.4 | 100.0     |



REPORT NUMBER: P1057432

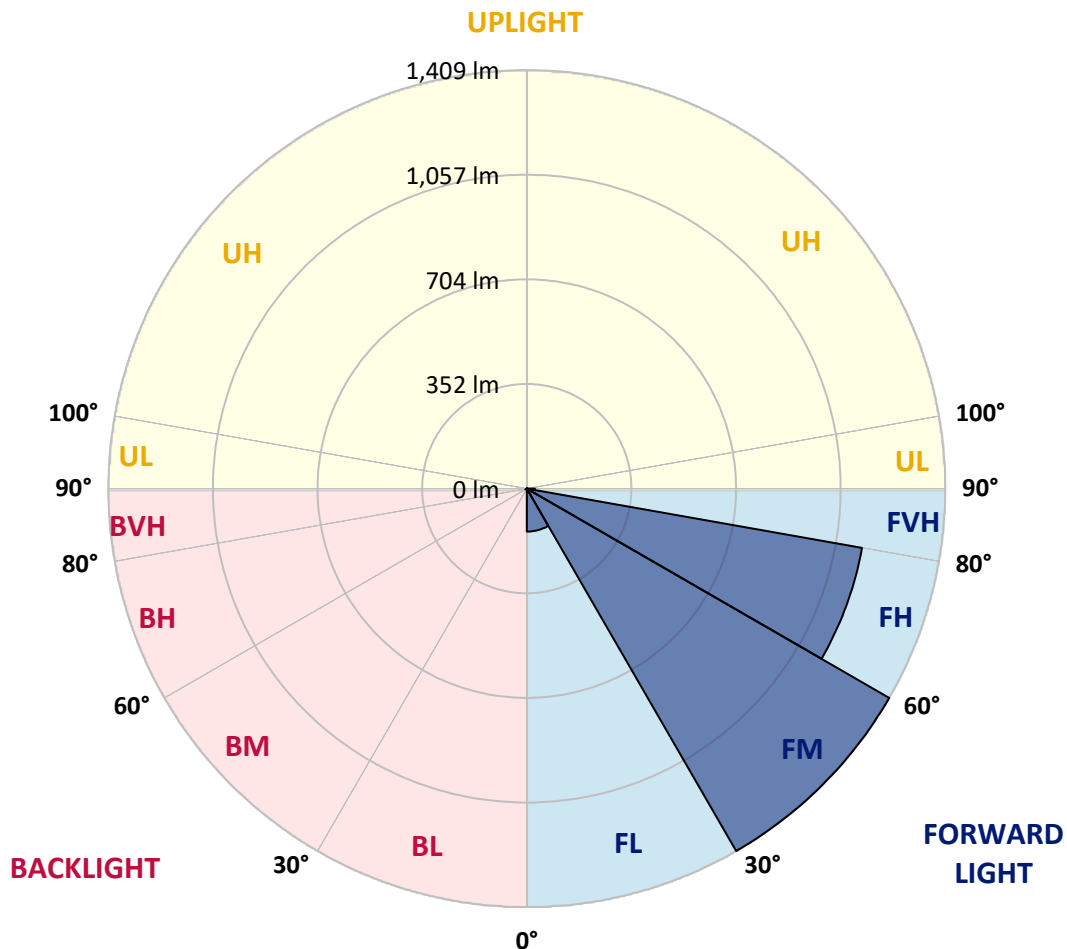
CATALOG NUMBER: GAP-SA1A-722-U-T3BC

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 144.6  | 5.3       |                         |      |         |
| FM   | (30°-60°)   | 1408.7 | 51.5      |                         |      |         |
| FH   | (60°-80°)   | 1145.6 | 41.9      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 27.1   | 1.0       |                         |      | G1/100  |
| BL   | (0°-30°)    | 1.6    | 0.1       | B0/110                  |      |         |
| BM   | (30°-60°)   | 1.4    | 0.1       | B0/220                  |      |         |
| BH   | (60°-80°)   | 4.2    | 0.2       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 0.2    | 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-G1**

Type III Short



REPORT NUMBER: P1057432

CATALOG NUMBER: GAP-SA1A-722-U-T3BC

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 44°    | 45°    | 55°    | 65°    | 75°    | 85°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 0°    | 15.3   | 15.3   | 15.3   | 15.3   | 15.3   | 15.3   | 15.3   | 15.3   | 15.3   | 15.3   | 15.3  |
| 2.5°  | 20.4   | 20.6   | 20.4   | 20.2   | 19.3   | 18.4   | 18.4   | 17.7   | 17.1   | 16.4   | 15.7  |
| 5°    | 35.9   | 35.0   | 34.2   | 32.2   | 28.4   | 25.1   | 24.6   | 21.7   | 19.3   | 17.5   | 16.0  |
| 7.5°  | 91.2   | 88.7   | 80.3   | 70.3   | 53.4   | 41.0   | 40.6   | 30.8   | 23.3   | 19.1   | 16.2  |
| 10°   | 190.3  | 183.6  | 170.8  | 149.5  | 115.5  | 84.5   | 77.8   | 47.5   | 30.6   | 21.1   | 16.4  |
| 12.5° | 289.2  | 289.4  | 277.2  | 248.2  | 206.7  | 156.8  | 148.2  | 85.8   | 43.7   | 24.6   | 16.6  |
| 15°   | 376.1  | 373.9  | 363.3  | 342.7  | 297.9  | 240.2  | 232.4  | 147.5  | 66.1   | 29.5   | 17.1  |
| 17.5° | 442.7  | 439.6  | 433.1  | 419.2  | 386.3  | 329.6  | 321.4  | 222.4  | 102.5  | 35.9   | 17.3  |
| 20°   | 520.7  | 518.5  | 510.3  | 491.0  | 461.1  | 415.8  | 404.1  | 304.5  | 156.1  | 46.6   | 17.7  |
| 22.5° | 617.4  | 611.0  | 601.0  | 576.4  | 539.4  | 490.8  | 486.8  | 387.9  | 222.0  | 63.2   | 18.6  |
| 25°   | 729.2  | 720.1  | 708.4  | 677.3  | 631.6  | 572.6  | 567.8  | 469.7  | 293.0  | 88.3   | 20.0  |
| 27.5° | 864.7  | 856.3  | 835.2  | 795.1  | 740.3  | 669.8  | 664.2  | 553.3  | 371.7  | 122.4  | 21.7  |
| 30°   | 1011.5 | 1000.7 | 965.9  | 913.7  | 861.6  | 778.2  | 764.9  | 639.0  | 450.4  | 165.0  | 24.2  |
| 32.5° | 1148.4 | 1134.4 | 1091.4 | 1029.7 | 975.2  | 887.1  | 875.4  | 735.7  | 533.2  | 215.8  | 27.9  |
| 35°   | 1269.7 | 1253.3 | 1193.6 | 1126.4 | 1071.7 | 994.0  | 983.4  | 829.7  | 613.4  | 273.5  | 32.6  |
| 37.5° | 1366.2 | 1355.3 | 1272.8 | 1197.0 | 1152.4 | 1083.6 | 1076.5 | 930.6  | 702.8  | 340.0  | 39.0  |
| 40°   | 1465.8 | 1451.3 | 1354.4 | 1258.8 | 1208.3 | 1151.0 | 1142.6 | 1011.8 | 788.7  | 411.8  | 47.0  |
| 42.5° | 1550.0 | 1536.5 | 1445.4 | 1344.0 | 1265.0 | 1197.0 | 1191.6 | 1079.9 | 871.8  | 486.6  | 57.4  |
| 45°   | 1639.2 | 1627.0 | 1545.4 | 1466.0 | 1347.5 | 1242.6 | 1233.6 | 1136.2 | 953.0  | 574.0  | 71.2  |
| 47.5° | 1761.6 | 1745.4 | 1667.6 | 1606.6 | 1471.1 | 1313.0 | 1302.7 | 1191.4 | 1035.3 | 665.3  | 90.3  |
| 50°   | 1914.9 | 1903.1 | 1846.8 | 1798.2 | 1654.5 | 1441.1 | 1419.4 | 1263.0 | 1113.3 | 770.0  | 115.1 |
| 52.5° | 2063.7 | 2059.7 | 2063.7 | 2046.4 | 1937.0 | 1663.6 | 1621.2 | 1383.5 | 1212.7 | 879.4  | 147.5 |
| 55°   | 2082.3 | 2094.5 | 2142.6 | 2198.1 | 2179.9 | 1982.3 | 1946.6 | 1566.9 | 1335.6 | 1017.3 | 196.9 |
| 57.5° | 2014.9 | 2021.8 | 2083.2 | 2181.0 | 2239.8 | 2209.6 | 2205.2 | 1870.5 | 1509.0 | 1181.2 | 271.2 |
| 59°   | 1945.9 | 1959.4 | 2008.5 | 2108.3 | 2192.5 | 2242.2 | 2245.8 | 2063.2 | 1641.0 | 1283.2 | 332.5 |
| 60°   | 1907.5 | 1911.8 | 1949.7 | 2047.9 | 2138.4 | 2216.9 | 2227.1 | 2161.9 | 1745.0 | 1360.2 | 387.2 |
| 62.5° | 1786.5 | 1788.7 | 1809.1 | 1886.5 | 1966.5 | 2038.8 | 2060.4 | 2222.0 | 2033.7 | 1553.1 | 580.8 |
| 65°   | 1628.1 | 1631.0 | 1661.8 | 1736.1 | 1812.4 | 1861.0 | 1870.1 | 2053.5 | 2185.9 | 1754.1 | 851.2 |
| 67.5° | 1342.7 | 1358.9 | 1398.1 | 1515.2 | 1622.6 | 1680.7 | 1687.3 | 1756.3 | 2102.7 | 1890.0 | 994.2 |
| 70°   | 909.1  | 893.8  | 991.1  | 1154.2 | 1348.2 | 1435.6 | 1436.0 | 1466.2 | 1790.0 | 1856.5 | 829.0 |
| 72.5° | 397.0  | 421.4  | 492.4  | 635.8  | 870.9  | 1081.6 | 1077.2 | 1179.7 | 1427.6 | 1577.3 | 616.3 |
| 75°   | 174.3  | 179.9  | 209.8  | 285.9  | 396.1  | 587.5  | 655.1  | 947.0  | 1074.5 | 1031.5 | 448.2 |
| 77.5° | 93.8   | 95.1   | 103.1  | 119.5  | 151.5  | 277.4  | 293.0  | 599.9  | 761.8  | 594.6  | 289.6 |
| 80°   | 35.7   | 35.7   | 37.3   | 42.8   | 63.2   | 108.5  | 116.4  | 271.0  | 525.6  | 303.8  | 146.4 |
| 82.5° | 22.4   | 22.0   | 22.2   | 22.4   | 25.7   | 37.0   | 39.5   | 107.8  | 248.2  | 149.9  | 38.6  |
| 85°   | 11.3   | 11.8   | 13.1   | 15.7   | 18.6   | 22.8   | 23.5   | 33.7   | 75.4   | 35.0   | 10.0  |
| 87.5° | 7.3    | 7.5    | 8.2    | 10.6   | 13.1   | 16.6   | 17.1   | 23.5   | 29.9   | 24.6   | 2.0   |
| 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: P1057432

CATALOG NUMBER: GAP-SA1A-722-U-T3BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°   | 95°  | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|-------|------|------|------|------|------|------|------|------|------|------|
| 0°    | 15.3  | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 |
| 2.5°  | 15.5  | 15.1 | 14.4 | 13.8 | 13.1 | 12.0 | 11.1 | 10.6 | 10.4 | 10.2 | 10.2 |
| 5°    | 15.3  | 14.6 | 13.3 | 12.2 | 11.1 | 9.8  | 8.6  | 8.0  | 7.8  | 7.5  | 7.5  |
| 7.5°  | 15.1  | 14.0 | 12.4 | 10.9 | 9.3  | 7.8  | 6.4  | 5.8  | 5.5  | 5.3  | 5.1  |
| 10°   | 14.9  | 13.5 | 11.3 | 9.5  | 7.8  | 6.0  | 4.7  | 3.8  | 3.5  | 3.3  | 3.3  |
| 12.5° | 14.6  | 12.9 | 10.4 | 8.4  | 6.2  | 4.2  | 3.1  | 2.2  | 1.8  | 1.6  | 1.6  |
| 15°   | 14.4  | 12.2 | 9.8  | 7.1  | 4.7  | 2.7  | 1.3  | 0.7  | 0.2  | 0.2  | 0.2  |
| 17.5° | 13.8  | 11.5 | 8.6  | 5.5  | 3.1  | 1.3  | 0.4  | 0.0  | 0.0  | 0.0  | 0.0  |
| 20°   | 13.3  | 10.9 | 7.5  | 4.2  | 1.8  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 22.5° | 13.1  | 10.4 | 6.4  | 2.9  | 1.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 25°   | 13.1  | 10.0 | 5.3  | 2.2  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 27.5° | 13.3  | 9.5  | 4.2  | 1.6  | 0.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 30°   | 12.9  | 9.1  | 3.1  | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 32.5° | 12.9  | 8.2  | 2.2  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 35°   | 13.1  | 7.1  | 1.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 37.5° | 13.8  | 6.2  | 1.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 40°   | 14.9  | 5.8  | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 42.5° | 16.4  | 5.5  | 0.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 45°   | 18.2  | 5.5  | 0.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 47.5° | 20.8  | 5.8  | 0.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 50°   | 24.0  | 6.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 52.5° | 27.5  | 6.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 55°   | 31.3  | 6.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 57.5° | 36.4  | 5.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 59°   | 41.7  | 5.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 60°   | 47.2  | 4.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 62.5° | 76.3  | 4.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 65°   | 149.7 | 4.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 67.5° | 255.9 | 4.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 70°   | 271.9 | 4.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 72.5° | 178.5 | 3.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 75°   | 90.9  | 3.5  | 0.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 77.5° | 40.8  | 3.5  | 0.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 80°   | 16.4  | 2.0  | 0.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 82.5° | 6.7   | 1.3  | 0.7  | 0.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 85°   | 2.7   | 1.3  | 0.9  | 0.4  | 0.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 87.5° | 1.8   | 1.3  | 1.1  | 0.9  | 0.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 90°   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |



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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-2

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-722-U-5WQ

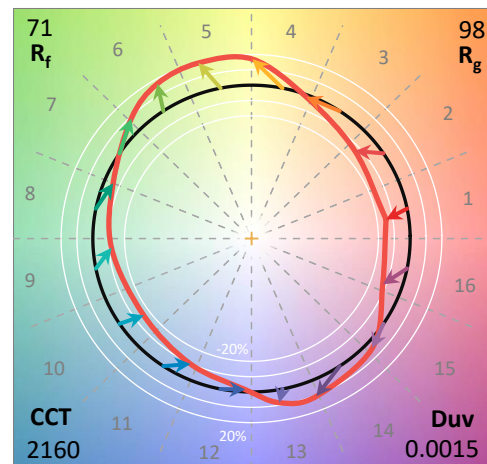
Data in this report applies to families of products including GSS-SB1A-722-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-2  
 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-722-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 2200K CCT 26 LEDS

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 2160     | CRI (Ra): | 71.9 |      |       |
| CIE u':                   | 0.2927   | R1:       | 68.7 | R9:  | -17.8 |
| CIE v':                   | 0.5388   | R2:       | 82.6 | R10: | 60.5  |
| Duv:                      | 0.0015   | R3:       | 95.5 | R11: | 60.2  |
| CIE x:                    | 0.5130   | R4:       | 66.4 | R12: | 48.2  |
| CIE y:                    | 0.4197   | R5:       | 65.4 | R13: | 70.7  |
| CIE z:                    | 0.0674   | R6:       | 75.9 | R14: | 96.8  |
| Peak Wavelength (nm):     | 609      | R7:       | 77.2 | R15: | 61.8  |
| Dominant Wavelength (nm): | 587      | R8:       | 43.5 |      |       |
| Purity:                   | 79.96089 |           |      |      |       |
| Rf:                       | 70.6     |           |      |      |       |
| Rg:                       | 97.6     |           |      |      |       |



### Test Conditions

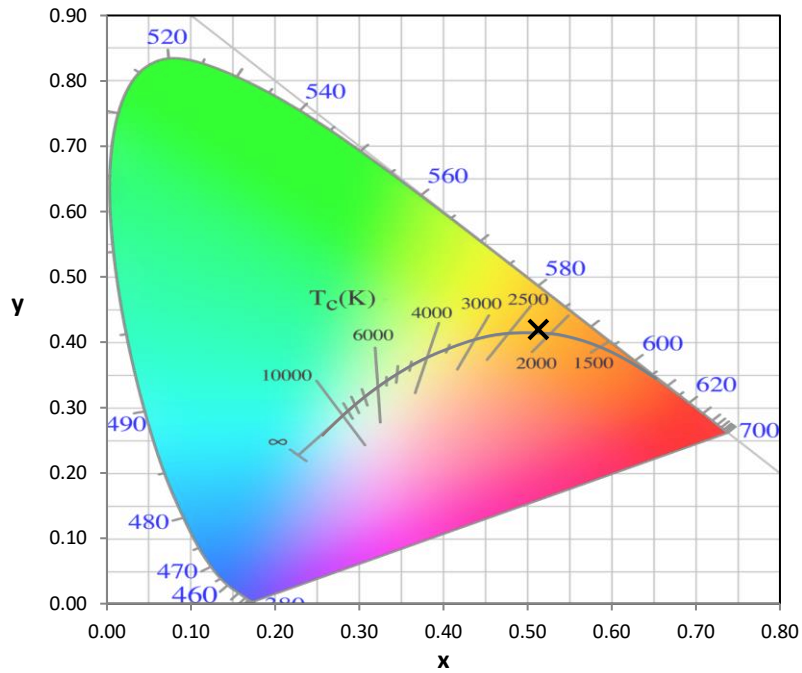
Stabilization Time: 21M  
 Operation Time: 1H 21M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-2

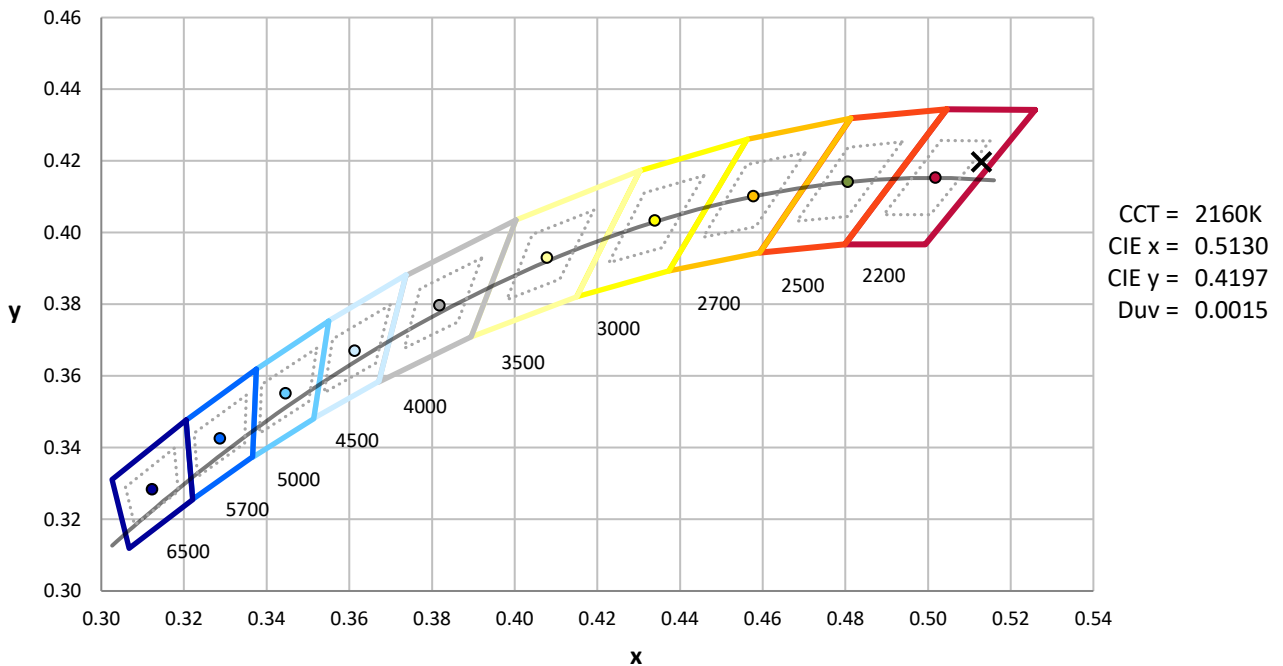
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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: SP1-2407-184-2

**CIE 1931 Chromaticity Diagram**



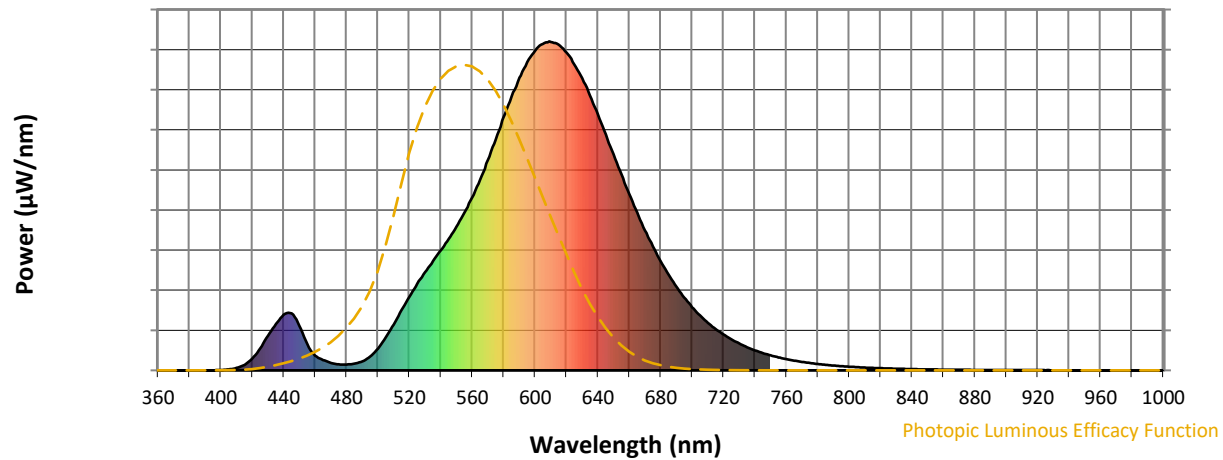
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 2200K 7-step quadrangle

REPORT NUMBER: SP1-2407-184-2

### Photopic Flux vs. Wavelength

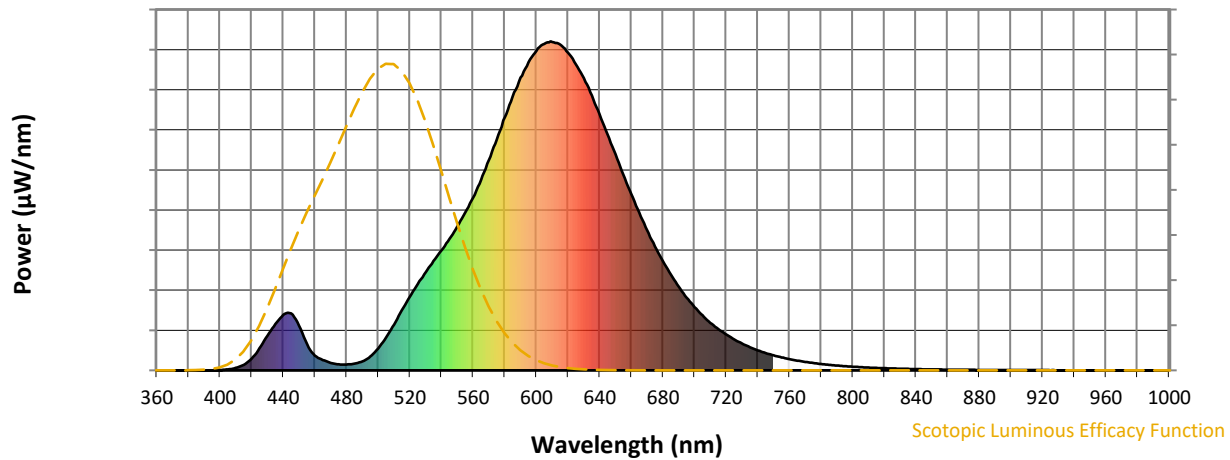


### Photopic Lumens: NR

| $\lambda$<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               | 27                                   | NR                             | 620               | 966                                  | NR                             | 750               | 46                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 42                                   | NR                             | 625               | 930                                  | NR                             | 755               | 39                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 67                                   | NR                             | 630               | 888                                  | NR                             | 760               | 34                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 101                                  | NR                             | 635               | 835                                  | NR                             | 765               | 30                                   | NR                             | 895               | 1                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 139                                  | NR                             | 640               | 778                                  | NR                             | 770               | 26                                   | NR                             | 900               | 1                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 183                                  | NR                             | 645               | 717                                  | NR                             | 775               | 22                                   | NR                             | 905               | 1                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 224                                  | NR                             | 650               | 656                                  | NR                             | 780               | 19                                   | NR                             | 910               | 1                                    | NR                             |
| 395               | 0                                    | NR                             | 525               | 262                                  | NR                             | 655               | 595                                  | NR                             | 785               | 17                                   | NR                             | 915               | 1                                    | NR                             |
| 400               | 1                                    | NR                             | 530               | 299                                  | NR                             | 660               | 536                                  | NR                             | 790               | 15                                   | NR                             | 920               | 1                                    | NR                             |
| 405               | 3                                    | NR                             | 535               | 332                                  | NR                             | 665               | 480                                  | NR                             | 795               | 13                                   | NR                             | 925               | 1                                    | NR                             |
| 410               | 7                                    | NR                             | 540               | 365                                  | NR                             | 670               | 425                                  | NR                             | 800               | 11                                   | NR                             | 930               | 1                                    | NR                             |
| 415               | 17                                   | NR                             | 545               | 400                                  | NR                             | 675               | 376                                  | NR                             | 805               | 10                                   | NR                             | 935               | 0                                    | NR                             |
| 420               | 36                                   | NR                             | 550               | 437                                  | NR                             | 680               | 332                                  | NR                             | 810               | 8                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 67                                   | NR                             | 555               | 479                                  | NR                             | 685               | 291                                  | NR                             | 815               | 8                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 105                                  | NR                             | 560               | 525                                  | NR                             | 690               | 255                                  | NR                             | 820               | 7                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 141                                  | NR                             | 565               | 579                                  | NR                             | 695               | 221                                  | NR                             | 825               | 6                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 169                                  | NR                             | 570               | 639                                  | NR                             | 700               | 192                                  | NR                             | 830               | 5                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 173                                  | NR                             | 575               | 703                                  | NR                             | 705               | 167                                  | NR                             | 835               | 4                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 136                                  | NR                             | 580               | 769                                  | NR                             | 710               | 144                                  | NR                             | 840               | 4                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 80                                   | NR                             | 585               | 832                                  | NR                             | 715               | 125                                  | NR                             | 845               | 3                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 45                                   | NR                             | 590               | 890                                  | NR                             | 720               | 109                                  | NR                             | 850               | 3                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 32                                   | NR                             | 595               | 937                                  | NR                             | 725               | 94                                   | NR                             | 855               | 3                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 23                                   | NR                             | 600               | 972                                  | NR                             | 730               | 81                                   | NR                             | 860               | 2                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 18                                   | NR                             | 605               | 992                                  | NR                             | 735               | 70                                   | NR                             | 865               | 2                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 18                                   | NR                             | 610               | 998                                  | NR                             | 740               | 61                                   | NR                             | 870               | 2                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 20                                   | NR                             | 615               | 990                                  | NR                             | 745               | 53                                   | NR                             | 875               | 2                                    | NR                             |                   |                                      |                                |

REPORT NUMBER: SP1-2407-184-2

### Scotopic Flux vs. Wavelength



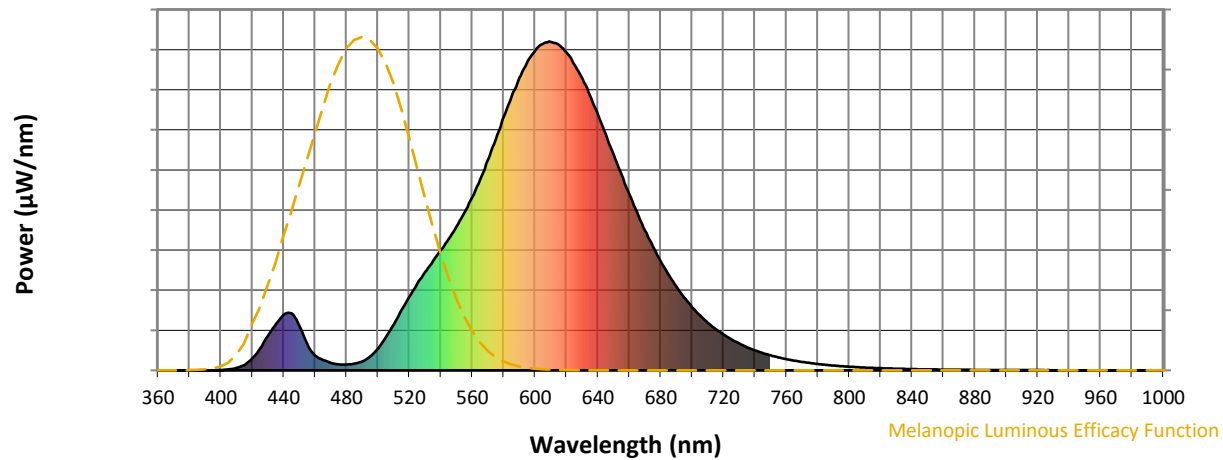
Scotopic Lumens: NR

S/P: 0.8

| 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       | 27                          | NR               | 620       | 966                         | NR               | 750       | 46                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 42                          | NR               | 625       | 930                         | NR               | 755       | 39                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 67                          | NR               | 630       | 888                         | NR               | 760       | 34                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 101                         | NR               | 635       | 835                         | NR               | 765       | 30                          | NR               | 895       | 1                           | NR               |
| 380       | 0                           | NR               | 510       | 139                         | NR               | 640       | 778                         | NR               | 770       | 26                          | NR               | 900       | 1                           | NR               |
| 385       | 0                           | NR               | 515       | 183                         | NR               | 645       | 717                         | NR               | 775       | 22                          | NR               | 905       | 1                           | NR               |
| 390       | 0                           | NR               | 520       | 224                         | NR               | 650       | 656                         | NR               | 780       | 19                          | NR               | 910       | 1                           | NR               |
| 395       | 0                           | NR               | 525       | 262                         | NR               | 655       | 595                         | NR               | 785       | 17                          | NR               | 915       | 1                           | NR               |
| 400       | 1                           | NR               | 530       | 299                         | NR               | 660       | 536                         | NR               | 790       | 15                          | NR               | 920       | 1                           | NR               |
| 405       | 3                           | NR               | 535       | 332                         | NR               | 665       | 480                         | NR               | 795       | 13                          | NR               | 925       | 1                           | NR               |
| 410       | 7                           | NR               | 540       | 365                         | NR               | 670       | 425                         | NR               | 800       | 11                          | NR               | 930       | 1                           | NR               |
| 415       | 17                          | NR               | 545       | 400                         | NR               | 675       | 376                         | NR               | 805       | 10                          | NR               | 935       | 0                           | NR               |
| 420       | 36                          | NR               | 550       | 437                         | NR               | 680       | 332                         | NR               | 810       | 8                           | NR               | 940       | 0                           | NR               |
| 425       | 67                          | NR               | 555       | 479                         | NR               | 685       | 291                         | NR               | 815       | 8                           | NR               | 945       | 0                           | NR               |
| 430       | 105                         | NR               | 560       | 525                         | NR               | 690       | 255                         | NR               | 820       | 7                           | NR               | 950       | 0                           | NR               |
| 435       | 141                         | NR               | 565       | 579                         | NR               | 695       | 221                         | NR               | 825       | 6                           | NR               | 955       | 0                           | NR               |
| 440       | 169                         | NR               | 570       | 639                         | NR               | 700       | 192                         | NR               | 830       | 5                           | NR               | 960       | 0                           | NR               |
| 445       | 173                         | NR               | 575       | 703                         | NR               | 705       | 167                         | NR               | 835       | 4                           | NR               | 965       | 0                           | NR               |
| 450       | 136                         | NR               | 580       | 769                         | NR               | 710       | 144                         | NR               | 840       | 4                           | NR               | 970       | 0                           | NR               |
| 455       | 80                          | NR               | 585       | 832                         | NR               | 715       | 125                         | NR               | 845       | 3                           | NR               | 975       | 0                           | NR               |
| 460       | 45                          | NR               | 590       | 890                         | NR               | 720       | 109                         | NR               | 850       | 3                           | NR               | 980       | 0                           | NR               |
| 465       | 32                          | NR               | 595       | 937                         | NR               | 725       | 94                          | NR               | 855       | 3                           | NR               | 985       | 0                           | NR               |
| 470       | 23                          | NR               | 600       | 972                         | NR               | 730       | 81                          | NR               | 860       | 2                           | NR               | 990       | 0                           | NR               |
| 475       | 18                          | NR               | 605       | 992                         | NR               | 735       | 70                          | NR               | 865       | 2                           | NR               | 995       | 0                           | NR               |
| 480       | 18                          | NR               | 610       | 998                         | NR               | 740       | 61                          | NR               | 870       | 2                           | NR               | 1000      | 0                           | NR               |
| 485       | 20                          | NR               | 615       | 990                         | NR               | 745       | 53                          | NR               | 875       | 2                           | NR               |           |                             |                  |

REPORT NUMBER: SP1-2407-184-2

### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 1.21

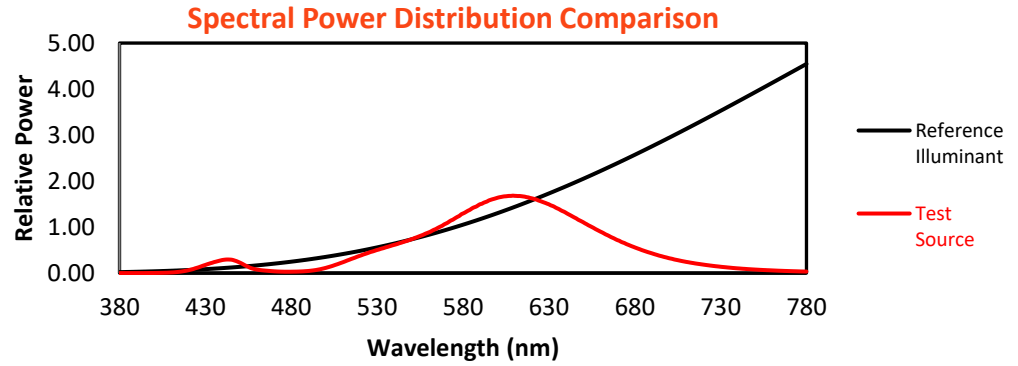
| $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | 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               | 27                                     | NR                             | 620               | 966                                    | NR                             | 750               | 46                                     | NR                             | 880               | 1                                      | NR                             |
| 365               | 0                                      | NR                             | 495               | 42                                     | NR                             | 625               | 930                                    | NR                             | 755               | 39                                     | NR                             | 885               | 1                                      | NR                             |
| 370               | 0                                      | NR                             | 500               | 67                                     | NR                             | 630               | 888                                    | NR                             | 760               | 34                                     | NR                             | 890               | 1                                      | NR                             |
| 375               | 0                                      | NR                             | 505               | 101                                    | NR                             | 635               | 835                                    | NR                             | 765               | 30                                     | NR                             | 895               | 1                                      | NR                             |
| 380               | 0                                      | NR                             | 510               | 139                                    | NR                             | 640               | 778                                    | NR                             | 770               | 26                                     | NR                             | 900               | 1                                      | NR                             |
| 385               | 0                                      | NR                             | 515               | 183                                    | NR                             | 645               | 717                                    | NR                             | 775               | 22                                     | NR                             | 905               | 1                                      | NR                             |
| 390               | 0                                      | NR                             | 520               | 224                                    | NR                             | 650               | 656                                    | NR                             | 780               | 19                                     | NR                             | 910               | 1                                      | NR                             |
| 395               | 0                                      | NR                             | 525               | 262                                    | NR                             | 655               | 595                                    | NR                             | 785               | 17                                     | NR                             | 915               | 1                                      | NR                             |
| 400               | 1                                      | NR                             | 530               | 299                                    | NR                             | 660               | 536                                    | NR                             | 790               | 15                                     | NR                             | 920               | 1                                      | NR                             |
| 405               | 3                                      | NR                             | 535               | 332                                    | NR                             | 665               | 480                                    | NR                             | 795               | 13                                     | NR                             | 925               | 1                                      | NR                             |
| 410               | 7                                      | NR                             | 540               | 365                                    | NR                             | 670               | 425                                    | NR                             | 800               | 11                                     | NR                             | 930               | 1                                      | NR                             |
| 415               | 17                                     | NR                             | 545               | 400                                    | NR                             | 675               | 376                                    | NR                             | 805               | 10                                     | NR                             | 935               | 0                                      | NR                             |
| 420               | 36                                     | NR                             | 550               | 437                                    | NR                             | 680               | 332                                    | NR                             | 810               | 8                                      | NR                             | 940               | 0                                      | NR                             |
| 425               | 67                                     | NR                             | 555               | 479                                    | NR                             | 685               | 291                                    | NR                             | 815               | 8                                      | NR                             | 945               | 0                                      | NR                             |
| 430               | 105                                    | NR                             | 560               | 525                                    | NR                             | 690               | 255                                    | NR                             | 820               | 7                                      | NR                             | 950               | 0                                      | NR                             |
| 435               | 141                                    | NR                             | 565               | 579                                    | NR                             | 695               | 221                                    | NR                             | 825               | 6                                      | NR                             | 955               | 0                                      | NR                             |
| 440               | 169                                    | NR                             | 570               | 639                                    | NR                             | 700               | 192                                    | NR                             | 830               | 5                                      | NR                             | 960               | 0                                      | NR                             |
| 445               | 173                                    | NR                             | 575               | 703                                    | NR                             | 705               | 167                                    | NR                             | 835               | 4                                      | NR                             | 965               | 0                                      | NR                             |
| 450               | 136                                    | NR                             | 580               | 769                                    | NR                             | 710               | 144                                    | NR                             | 840               | 4                                      | NR                             | 970               | 0                                      | NR                             |
| 455               | 80                                     | NR                             | 585               | 832                                    | NR                             | 715               | 125                                    | NR                             | 845               | 3                                      | NR                             | 975               | 0                                      | NR                             |
| 460               | 45                                     | NR                             | 590               | 890                                    | NR                             | 720               | 109                                    | NR                             | 850               | 3                                      | NR                             | 980               | 0                                      | NR                             |
| 465               | 32                                     | NR                             | 595               | 937                                    | NR                             | 725               | 94                                     | NR                             | 855               | 3                                      | NR                             | 985               | 0                                      | NR                             |
| 470               | 23                                     | NR                             | 600               | 972                                    | NR                             | 730               | 81                                     | NR                             | 860               | 2                                      | NR                             | 990               | 0                                      | NR                             |
| 475               | 18                                     | NR                             | 605               | 992                                    | NR                             | 735               | 70                                     | NR                             | 865               | 2                                      | NR                             | 995               | 0                                      | NR                             |
| 480               | 18                                     | NR                             | 610               | 998                                    | NR                             | 740               | 61                                     | NR                             | 870               | 2                                      | NR                             | 1000              | 0                                      | NR                             |
| 485               | 20                                     | NR                             | 615               | 990                                    | NR                             | 745               | 53                                     | NR                             | 875               | 2                                      | NR                             |                   |                                        |                                |

REPORT NUMBER: SP1-2407-184-2

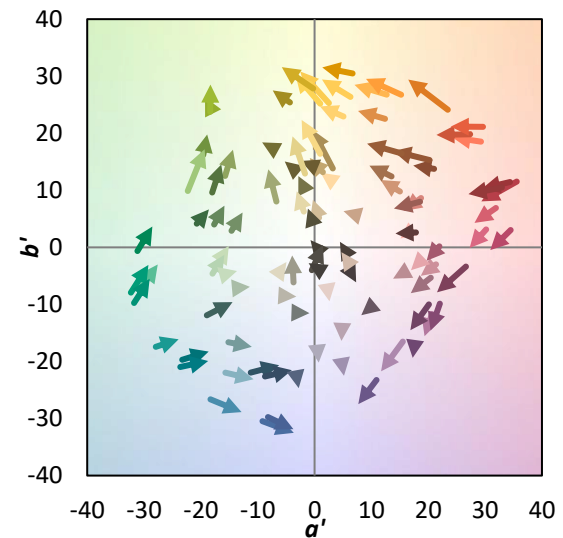
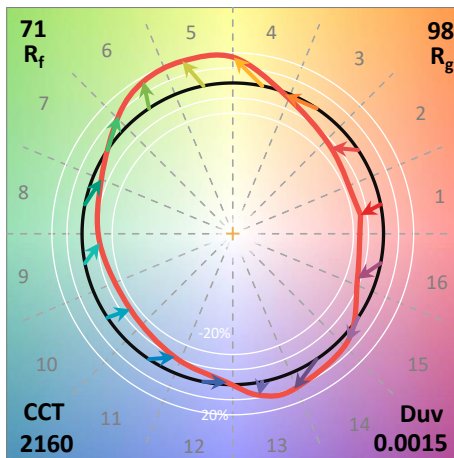
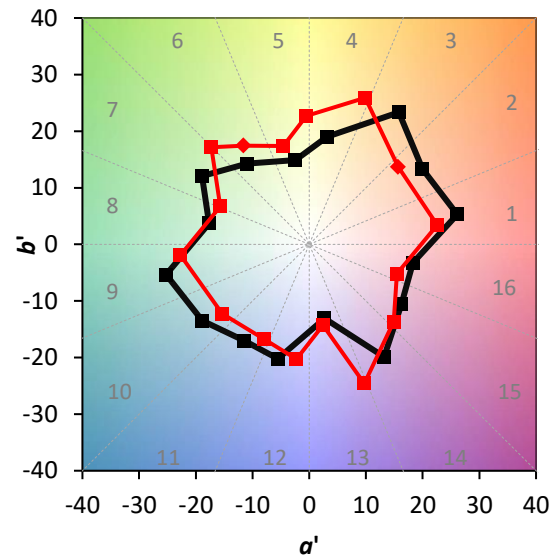
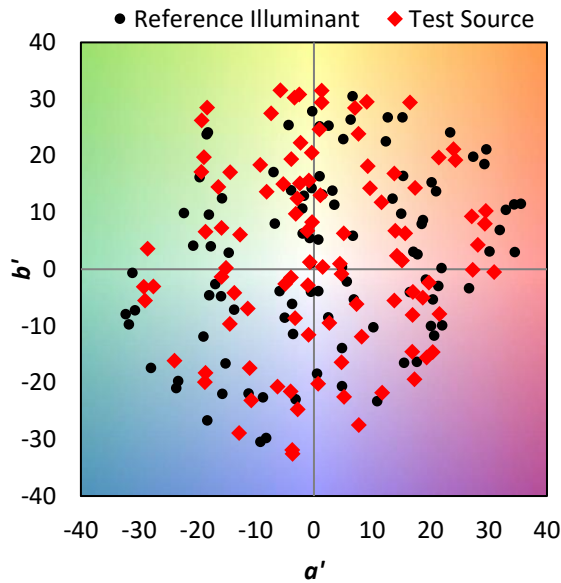
TM-30-18

### Summary

$R_f = 70.6$   
 $R_g = 97.6$   
 $CIE R_a = 71.9$   
 $R_g = -17.8$



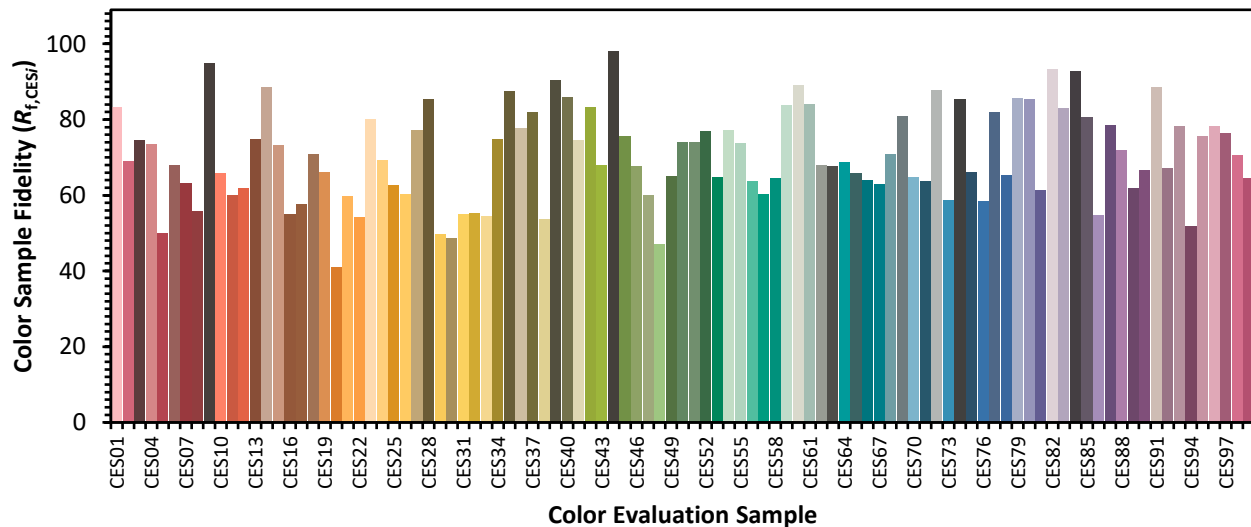
### Color Vector Graphics



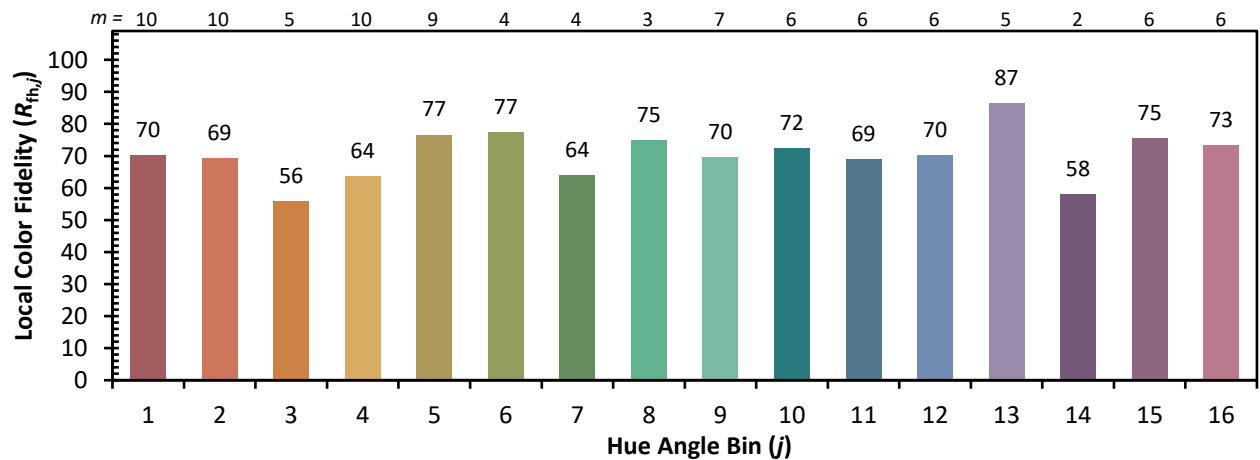
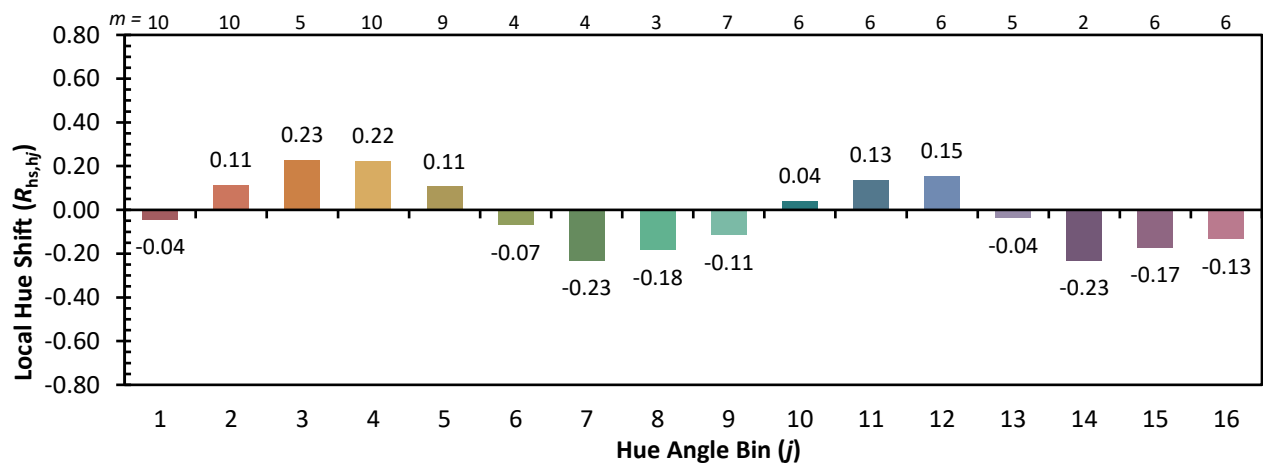
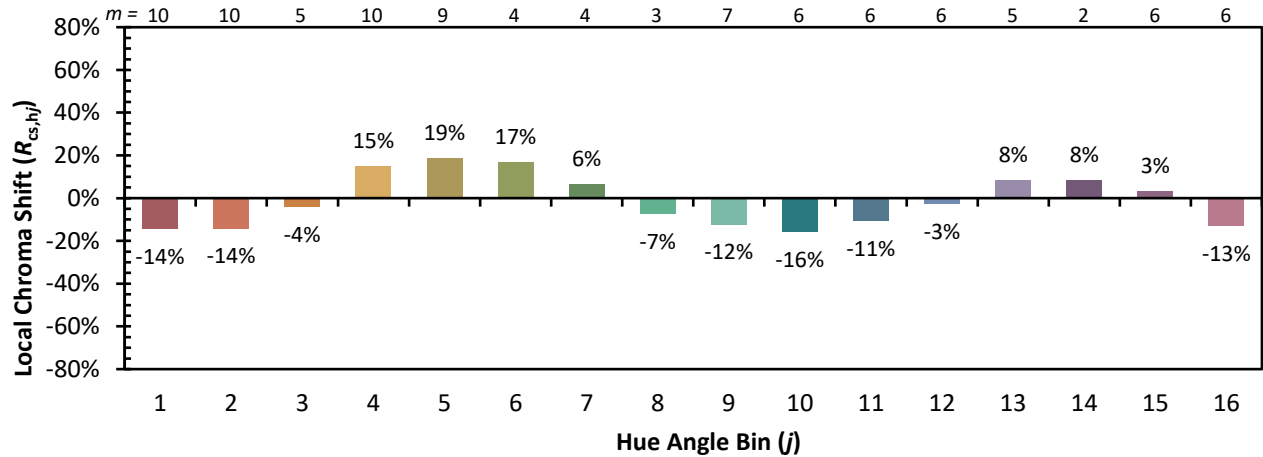


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

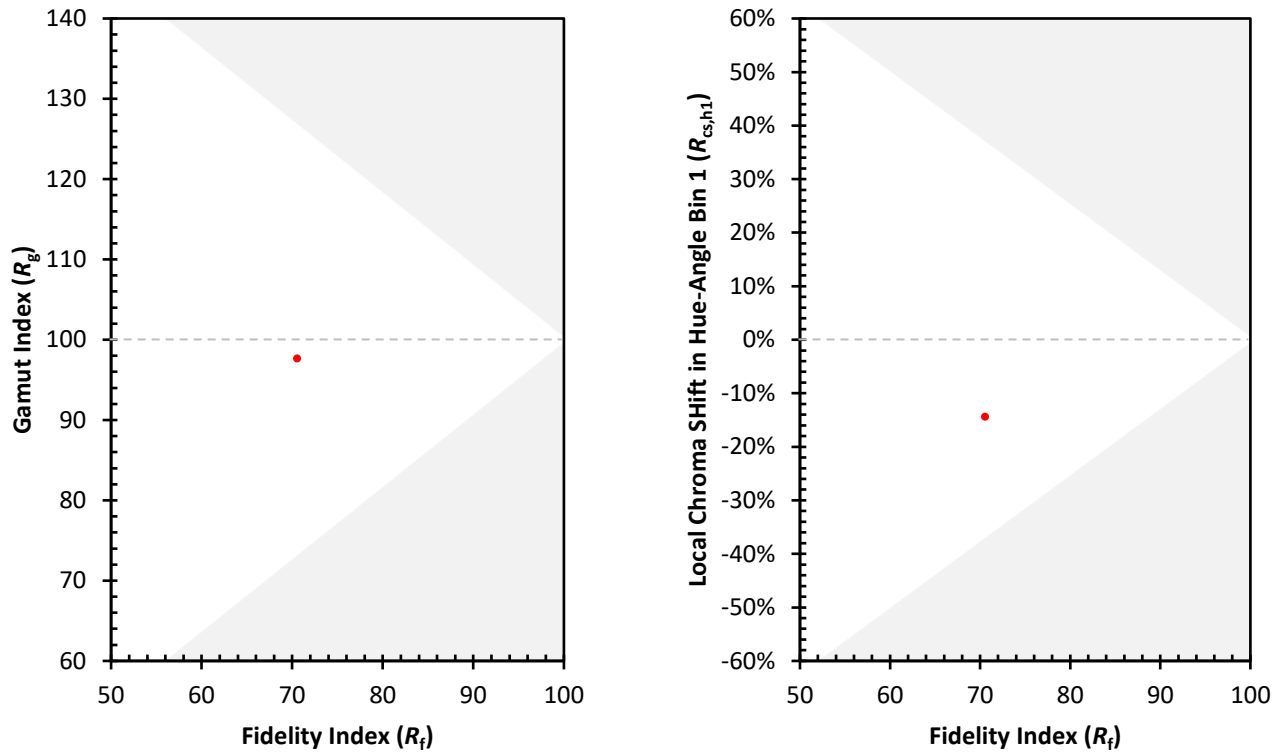
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 60 | CES51 = 74 | CES76 = 58 |
| CES02 = 65 | CES27 = 77 | CES52 = 77 | CES77 = 82 |
| CES03 = 32 | CES28 = 85 | CES53 = 65 | CES78 = 65 |
| CES04 = 72 | CES29 = 50 | CES54 = 77 | CES79 = 86 |
| CES05 = 52 | CES30 = 49 | CES55 = 74 | CES80 = 85 |
| CES06 = 53 | CES31 = 55 | CES56 = 64 | CES81 = 61 |
| CES07 = 44 | CES32 = 55 | CES57 = 60 | CES82 = 93 |
| CES08 = 43 | CES33 = 55 | CES58 = 64 | CES83 = 83 |
| CES09 = 29 | CES34 = 75 | CES59 = 84 | CES84 = 93 |
| CES10 = 79 | CES35 = 88 | CES60 = 89 | CES85 = 81 |
| CES11 = 62 | CES36 = 78 | CES61 = 84 | CES86 = 55 |
| CES12 = 68 | CES37 = 82 | CES62 = 68 | CES87 = 79 |
| CES13 = 45 | CES38 = 54 | CES63 = 68 | CES88 = 72 |
| CES14 = 75 | CES39 = 90 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 86 | CES65 = 66 | CES90 = 67 |
| CES16 = 49 | CES41 = 75 | CES66 = 64 | CES91 = 89 |
| CES17 = 51 | CES42 = 83 | CES67 = 63 | CES92 = 67 |
| CES18 = 57 | CES43 = 68 | CES68 = 71 | CES93 = 78 |
| CES19 = 74 | CES44 = 98 | CES69 = 81 | CES94 = 52 |
| CES20 = 68 | CES45 = 76 | CES70 = 65 | CES95 = 76 |
| CES21 = 89 | CES46 = 68 | CES71 = 64 | CES96 = 78 |
| CES22 = 81 | CES47 = 60 | CES72 = 88 | CES97 = 76 |
| CES23 = 92 | CES48 = 47 | CES73 = 59 | CES98 = 71 |
| CES24 = 92 | CES49 = 65 | CES74 = 85 | CES99 = 65 |
| CES25 = 74 | CES50 = 74 | CES75 = 66 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)