

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: P1065958

Luminaire Tested: **NVN-SA3B-740-U-T2BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1065958  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: NVN-SA3B-740-U-T2BC  
Description: Navion AREA AND ROADWAY LUMINAIRE 800mA 3xLight Square PACKAGE  
70CRI 4000K FIXTURE w/ TYPE II ANGLED BACKLIGHT CONTROL  
Light Source: (42) 4000K CCT, 70 CRI LEDs  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 13201.5 lumens  
Efficiency: N/A  
Efficacy: 124.3 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B0 - U0 - G2

Input Watts (W): 106.2  
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



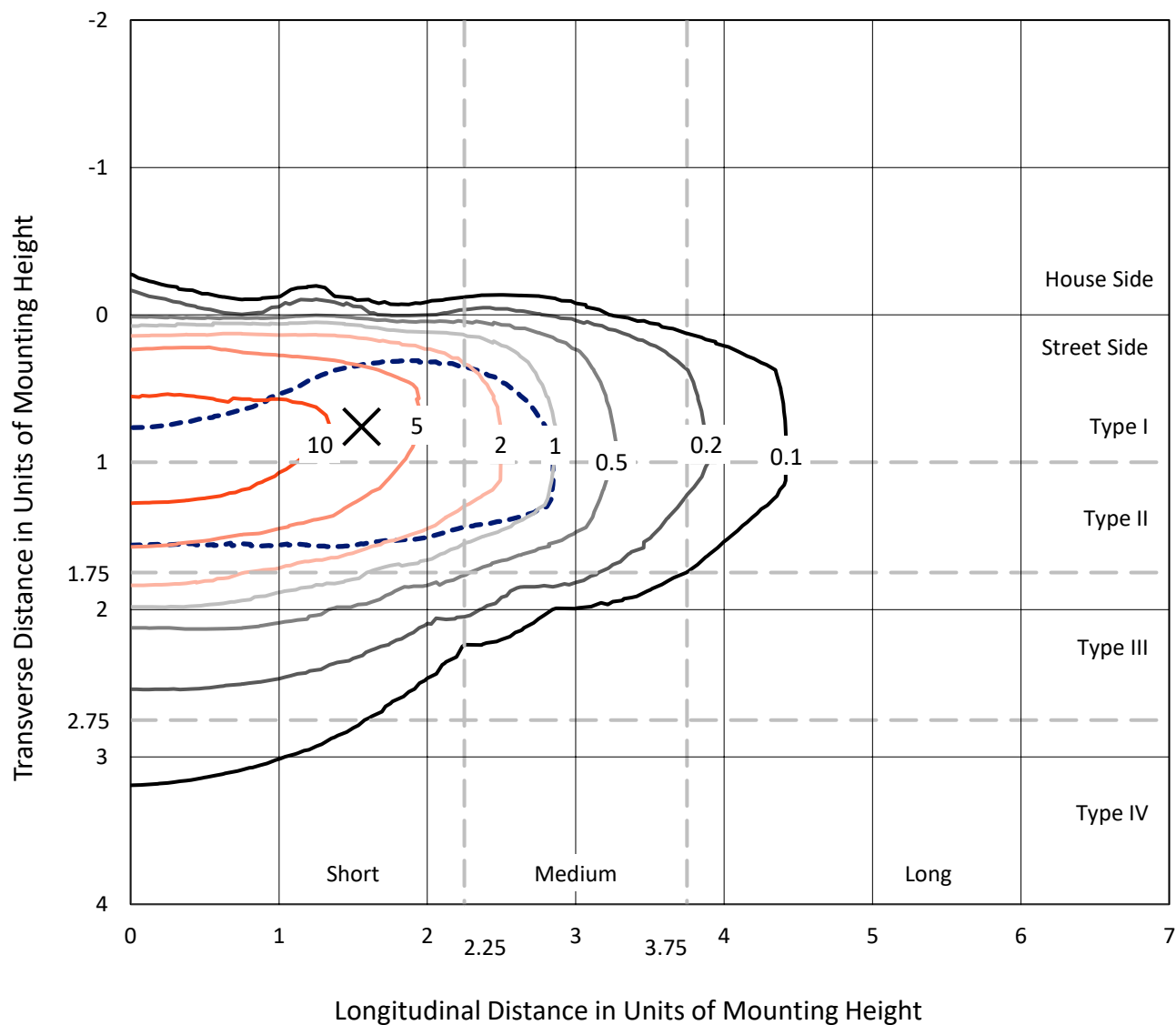
REPORT NUMBER: P1065958

CATALOG NUMBER: NVN-SA3B-740-U-T2BC

## Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

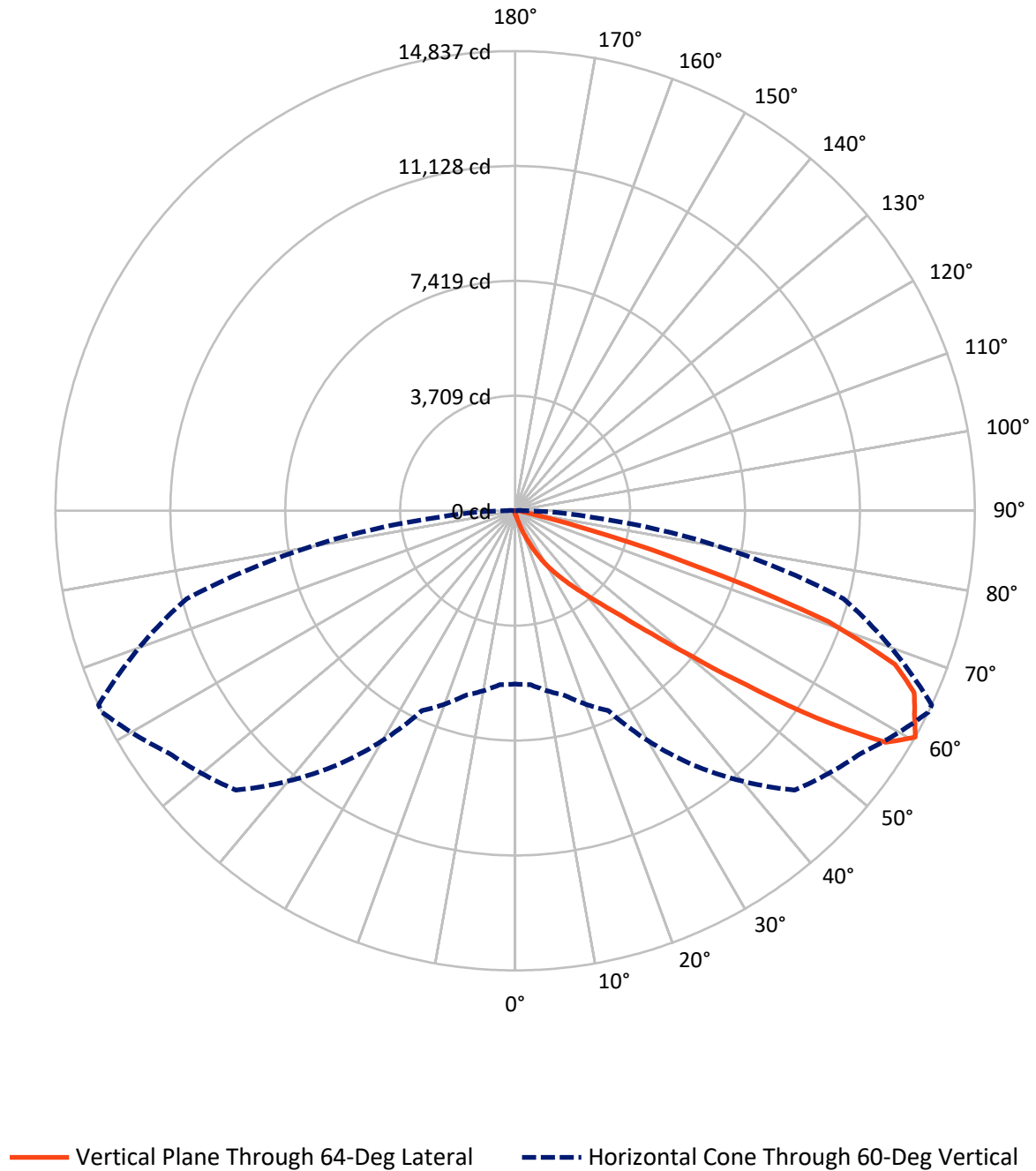


Based on 15 foot mounting height. Maximum calculated value = 18.9 fc  
 Type II - Short - N/A

REPORT NUMBER: P1065958

CATALOG NUMBER: NVN-SA3B-740-U-T2BC

## Luminous Intensity Polar Plot



REPORT NUMBER: P1065958

CATALOG NUMBER: NVN-SA3B-740-U-T2BC

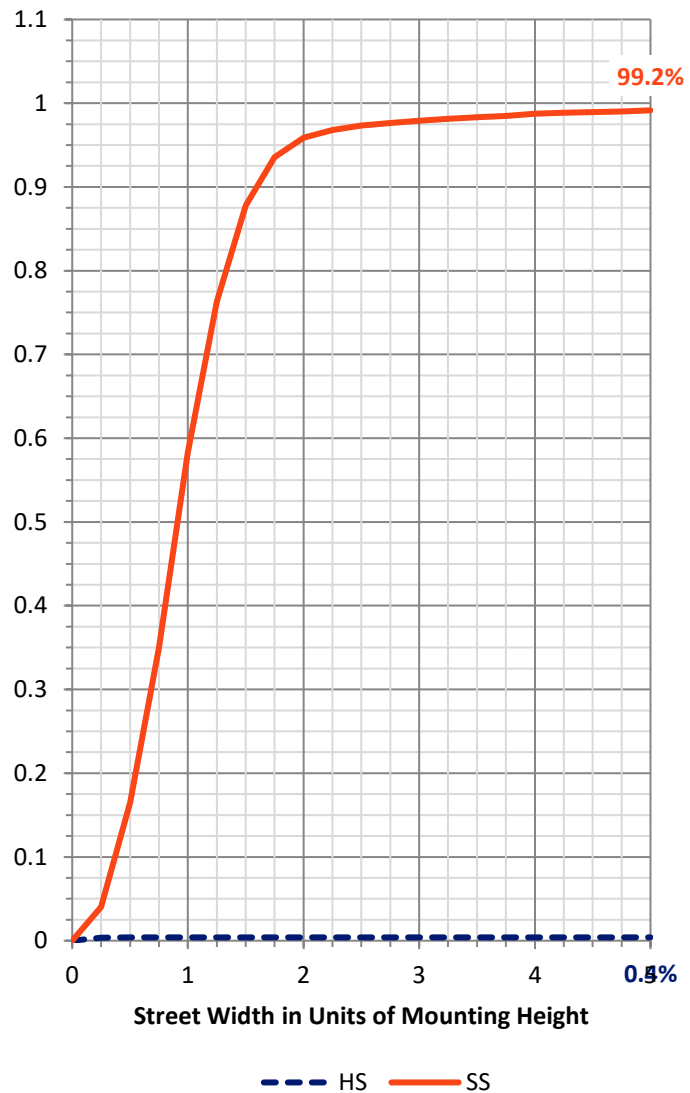
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 53.5     | 0.0    | 53.5    |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 13148.0  | 0.0    | 13148.0 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 13201.5  | 0.0    | 13201.5 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 13.1    | 0.1       |
| 10°-20°   | 129.7   | 1.0       |
| 20°-30°   | 430.9   | 3.3       |
| 30°-40°   | 1149.7  | 8.7       |
| 40°-50°   | 2922.2  | 22.1      |
| 50°-60°   | 4259.9  | 32.3      |
| 60°-70°   | 3290.4  | 24.9      |
| 70°-80°   | 903.6   | 6.8       |
| 80°-90°   | 102.0   | 0.8       |
| 90°-100°  | 0.0     | 0.0       |
| 100°-110° | 0.0     | 0.0       |
| 110°-120° | 0.0     | 0.0       |
| 120°-130° | 0.0     | 0.0       |
| 130°-140° | 0.0     | 0.0       |
| 140°-150° | 0.0     | 0.0       |
| 150°-160° | 0.0     | 0.0       |
| 160°-170° | 0.0     | 0.0       |
| 170°-180° | 0.0     | 0.0       |
| 0°-90°    | 13201.5 | 100.0     |
| 0°-180°   | 13201.5 | 100.0     |



REPORT NUMBER: P1065958

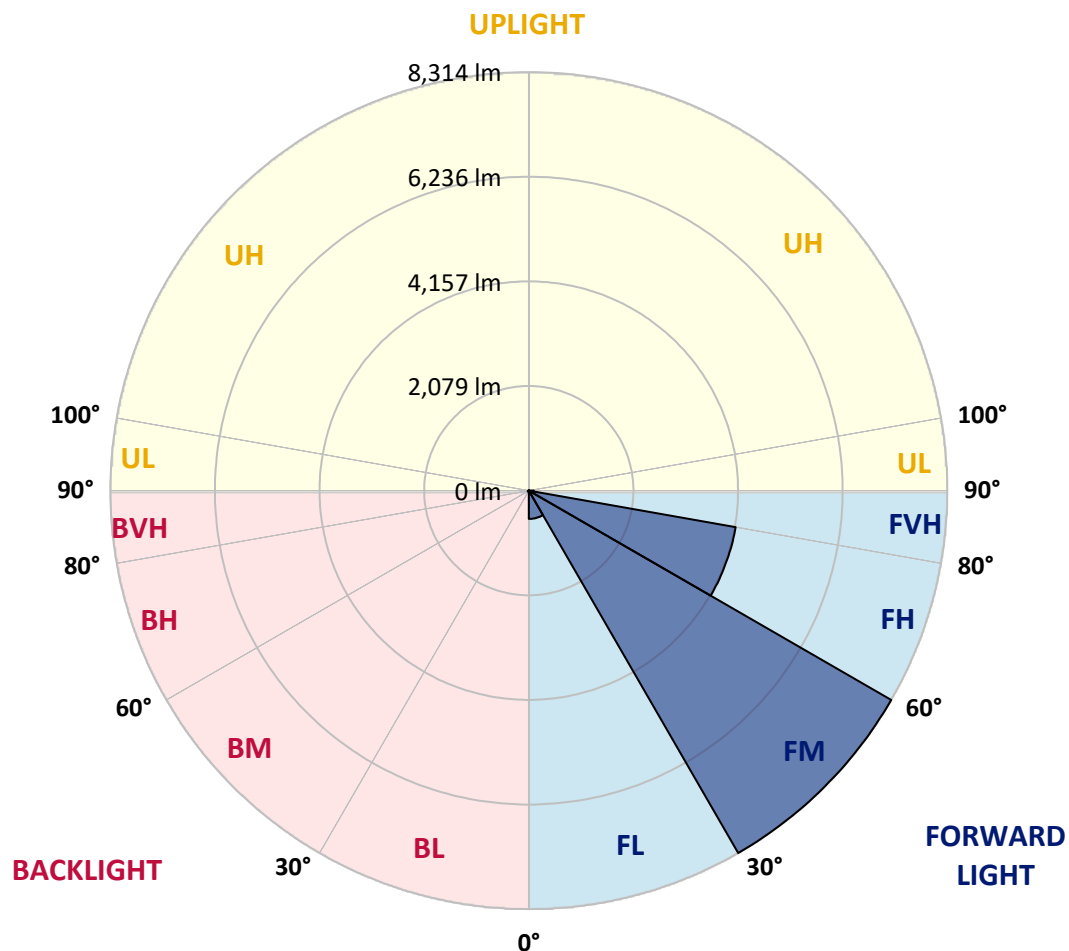
CATALOG NUMBER: NVN-SA3B-740-U-T2BC

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 561.7  | 4.3       |                         |      |         |
| FM   | (30°-60°)   | 8314.1 | 63.0      |                         |      |         |
| FH   | (60°-80°)   | 4172.6 | 31.6      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 99.6   | 0.8       |                         |      | G1/100  |
| BL   | (0°-30°)    | 12.0   | 0.1       | B0/110                  |      |         |
| BM   | (30°-60°)   | 17.7   | 0.1       | B0/220                  |      |         |
| BH   | (60°-80°)   | 21.3   | 0.2       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 2.4    | 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



REPORT NUMBER: P1065958

CATALOG NUMBER: NVN-SA3B-740-U-T2BC

**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 64°     | 65°     | 75°     | 85°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0°    | 87.2    | 87.2    | 87.2    | 87.2    | 87.2    | 87.2    | 87.2    | 87.2    | 87.2    | 87.2    | 87.2   |
| 2.5°  | 116.3   | 116.3   | 116.3   | 112.7   | 109.0   | 109.0   | 105.4   | 101.7   | 101.7   | 94.5    | 90.8   |
| 5°    | 178.1   | 178.1   | 170.8   | 163.5   | 152.6   | 138.1   | 123.6   | 112.7   | 112.7   | 101.7   | 94.5   |
| 7.5°  | 348.9   | 359.8   | 327.1   | 287.1   | 232.6   | 196.2   | 156.3   | 130.8   | 127.2   | 109.0   | 94.5   |
| 10°   | 755.9   | 748.6   | 697.7   | 599.6   | 472.4   | 341.6   | 218.0   | 159.9   | 152.6   | 116.3   | 94.5   |
| 12.5° | 1137.4  | 1148.3  | 1093.8  | 984.8   | 832.2   | 606.9   | 374.3   | 207.1   | 199.9   | 127.2   | 94.5   |
| 15°   | 1464.5  | 1464.5  | 1428.1  | 1373.6  | 1206.5  | 970.3   | 603.2   | 308.9   | 283.4   | 138.1   | 90.8   |
| 17.5° | 1689.8  | 1686.1  | 1671.6  | 1657.1  | 1558.9  | 1315.5  | 923.0   | 494.2   | 436.1   | 163.5   | 90.8   |
| 20°   | 1944.1  | 1933.2  | 1951.4  | 1922.3  | 1846.0  | 1653.4  | 1261.0  | 734.1   | 679.5   | 207.1   | 90.8   |
| 22.5° | 2209.4  | 2220.3  | 2234.9  | 2205.8  | 2122.2  | 1955.0  | 1617.1  | 1042.9  | 984.8   | 287.1   | 94.5   |
| 25°   | 2547.4  | 2540.1  | 2572.8  | 2547.4  | 2442.0  | 2245.8  | 1951.4  | 1380.9  | 1297.3  | 399.7   | 101.7  |
| 27.5° | 2961.6  | 2947.1  | 2968.9  | 2903.5  | 2765.4  | 2565.5  | 2249.4  | 1726.1  | 1628.0  | 574.2   | 116.3  |
| 30°   | 3510.4  | 3521.3  | 3423.1  | 3346.8  | 3150.6  | 2885.3  | 2580.1  | 2096.8  | 1995.0  | 781.3   | 130.8  |
| 32.5° | 4375.2  | 4298.9  | 4146.3  | 3837.4  | 3579.4  | 3241.4  | 2910.8  | 2420.2  | 2329.3  | 1046.6  | 152.6  |
| 35°   | 5723.4  | 5737.9  | 5403.6  | 4640.5  | 4080.9  | 3688.4  | 3274.2  | 2776.3  | 2710.9  | 1348.2  | 181.7  |
| 37.5° | 7365.9  | 7326.0  | 7031.6  | 6068.6  | 4814.9  | 4244.4  | 3688.4  | 3165.1  | 3070.7  | 1675.2  | 218.0  |
| 40°   | 9226.5  | 9059.3  | 8888.5  | 8234.4  | 6344.8  | 4942.1  | 4211.7  | 3615.7  | 3543.1  | 2053.2  | 276.2  |
| 42.5° | 10716.4 | 10672.8 | 10701.9 | 10429.3 | 8895.8  | 6130.4  | 4905.8  | 4168.1  | 4080.9  | 2521.9  | 377.9  |
| 45°   | 11450.5 | 11388.7 | 11563.1 | 11766.6 | 11374.1 | 8659.6  | 6025.0  | 4873.1  | 4756.8  | 3074.3  | 534.2  |
| 47.5° | 11254.2 | 11210.6 | 11584.9 | 11984.6 | 12507.9 | 11592.2 | 7852.9  | 5926.9  | 5727.0  | 3782.9  | 766.8  |
| 50°   | 10287.6 | 10291.2 | 10905.4 | 11650.3 | 12478.9 | 13078.4 | 10560.1 | 7369.6  | 7118.8  | 4724.1  | 1130.1 |
| 52.5° | 9346.4  | 9375.5  | 10026.0 | 11112.5 | 12046.4 | 13252.9 | 12936.7 | 9313.7  | 8906.7  | 5832.4  | 1558.9 |
| 55°   | 8379.8  | 8394.3  | 8968.5  | 10498.4 | 11842.9 | 12733.2 | 14157.7 | 11817.5 | 11385.0 | 7213.3  | 1976.8 |
| 57.5° | 7449.5  | 7449.5  | 7663.9  | 9023.0  | 11621.2 | 12686.0 | 14012.4 | 14106.8 | 13754.4 | 8790.4  | 2285.7 |
| 60°   | 5596.2  | 5632.6  | 6166.7  | 7118.8  | 10022.3 | 12755.0 | 13641.7 | 14837.3 | 14837.3 | 10978.0 | 2521.9 |
| 62.5° | 2827.2  | 2881.7  | 3546.7  | 4473.3  | 6875.4  | 11802.9 | 13699.8 | 14470.2 | 14528.4 | 12907.7 | 3059.8 |
| 65°   | 1326.4  | 1388.2  | 1744.3  | 2398.4  | 3699.3  | 8307.1  | 13096.6 | 14157.7 | 14139.5 | 12540.6 | 4193.5 |
| 67.5° | 952.1   | 970.3   | 1090.2  | 1399.1  | 1991.4  | 3641.2  | 9996.9  | 13223.8 | 13231.1 | 10654.6 | 4822.2 |
| 70°   | 854.0   | 854.0   | 883.0   | 973.9   | 1199.2  | 1628.0  | 4858.5  | 10709.1 | 11228.8 | 8227.2  | 4469.7 |
| 72.5° | 843.1   | 835.8   | 828.5   | 832.2   | 810.4   | 817.6   | 1668.0  | 6046.8  | 6788.1  | 5756.1  | 3564.9 |
| 75°   | 821.3   | 821.3   | 814.0   | 788.6   | 646.8   | 526.9   | 574.2   | 2445.6  | 2827.2  | 3844.7  | 2645.5 |
| 77.5° | 650.5   | 715.9   | 792.2   | 745.0   | 592.3   | 396.1   | 334.3   | 708.6   | 893.9   | 2358.4  | 1918.7 |
| 80°   | 301.6   | 305.2   | 301.6   | 316.2   | 377.9   | 283.4   | 247.1   | 345.2   | 348.9   | 1308.2  | 1188.3 |
| 82.5° | 218.0   | 221.7   | 210.8   | 189.0   | 167.2   | 152.6   | 203.5   | 254.4   | 272.5   | 599.6   | 443.3  |
| 85°   | 65.4    | 61.8    | 72.7    | 98.1    | 116.3   | 134.5   | 170.8   | 214.4   | 225.3   | 221.7   | 65.4   |
| 87.5° | 29.1    | 29.1    | 36.3    | 50.9    | 69.0    | 101.7   | 149.0   | 196.2   | 199.9   | 228.9   | 18.2   |
| 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: P1065958

CATALOG NUMBER: NVN-SA3B-740-U-T2BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°   | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|-------|------|------|------|------|------|------|------|------|------|
| 0°    | 87.2   | 87.2  | 87.2 | 87.2 | 87.2 | 87.2 | 87.2 | 87.2 | 87.2 | 87.2 | 87.2 |
| 2.5°  | 90.8   | 87.2  | 83.6 | 79.9 | 76.3 | 72.7 | 69.0 | 69.0 | 72.7 | 72.7 | 72.7 |
| 5°    | 87.2   | 83.6  | 76.3 | 69.0 | 65.4 | 61.8 | 58.1 | 58.1 | 61.8 | 61.8 | 61.8 |
| 7.5°  | 87.2   | 79.9  | 72.7 | 65.4 | 58.1 | 54.5 | 50.9 | 50.9 | 50.9 | 54.5 | 54.5 |
| 10°   | 87.2   | 79.9  | 69.0 | 58.1 | 50.9 | 47.2 | 43.6 | 40.0 | 43.6 | 43.6 | 43.6 |
| 12.5° | 83.6   | 76.3  | 65.4 | 54.5 | 43.6 | 36.3 | 32.7 | 32.7 | 32.7 | 32.7 | 32.7 |
| 15°   | 79.9   | 72.7  | 61.8 | 47.2 | 36.3 | 29.1 | 21.8 | 21.8 | 21.8 | 25.4 | 25.4 |
| 17.5° | 76.3   | 69.0  | 54.5 | 36.3 | 25.4 | 18.2 | 14.5 | 14.5 | 14.5 | 18.2 | 18.2 |
| 20°   | 76.3   | 65.4  | 47.2 | 29.1 | 18.2 | 10.9 | 7.3  | 7.3  | 7.3  | 10.9 | 14.5 |
| 22.5° | 76.3   | 65.4  | 43.6 | 21.8 | 10.9 | 7.3  | 3.6  | 3.6  | 3.6  | 3.6  | 3.6  |
| 25°   | 76.3   | 61.8  | 40.0 | 18.2 | 7.3  | 3.6  | 0.0  | 0.0  | 3.6  | 7.3  | 10.9 |
| 27.5° | 76.3   | 58.1  | 32.7 | 10.9 | 7.3  | 3.6  | 0.0  | 3.6  | 7.3  | 7.3  | 7.3  |
| 30°   | 76.3   | 58.1  | 29.1 | 10.9 | 3.6  | 0.0  | 0.0  | 3.6  | 7.3  | 7.3  | 10.9 |
| 32.5° | 79.9   | 54.5  | 25.4 | 7.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 35°   | 83.6   | 50.9  | 21.8 | 7.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 37.5° | 90.8   | 50.9  | 14.5 | 3.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 40°   | 101.7  | 54.5  | 14.5 | 3.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 42.5° | 127.2  | 58.1  | 10.9 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 45°   | 178.1  | 72.7  | 10.9 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 47.5° | 261.6  | 109.0 | 10.9 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 50°   | 381.6  | 149.0 | 7.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 52.5° | 468.8  | 149.0 | 7.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 55°   | 465.1  | 94.5  | 3.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 57.5° | 356.1  | 65.4  | 3.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 60°   | 301.6  | 47.2  | 3.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 62.5° | 363.4  | 36.3  | 3.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 65°   | 646.8  | 32.7  | 3.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 67.5° | 1039.3 | 32.7  | 3.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 70°   | 1162.9 | 32.7  | 3.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 72.5° | 908.5  | 29.1  | 3.6  | 3.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 75°   | 497.8  | 25.4  | 3.6  | 3.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 77.5° | 250.7  | 18.2  | 7.3  | 3.6  | 3.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 80°   | 105.4  | 14.5  | 7.3  | 3.6  | 3.6  | 3.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 82.5° | 36.3   | 14.5  | 7.3  | 7.3  | 3.6  | 3.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 85°   | 18.2   | 10.9  | 10.9 | 7.3  | 7.3  | 3.6  | 3.6  | 0.0  | 0.0  | 0.0  | 0.0  |
| 87.5° | 10.9   | 10.9  | 10.9 | 7.3  | 7.3  | 3.6  | 3.6  | 0.0  | 0.0  | 0.0  | 3.6  |
| 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: SP1-2407-184-1

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-740-U-5WQ

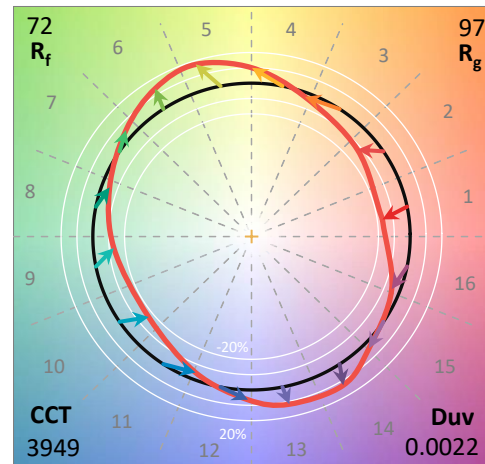
Data in this report applies to families of products including GSS-SB1A-740-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-1  
 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-740-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 4000K CCT 26 LEDS

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 3949     | CRI (Ra): | 70.7 |      |       |
| CIE u':                   | 0.2248   | R1:       | 68.0 | R9:  | -36.7 |
| CIE v':                   | 0.5053   | R2:       | 76.0 | R10: | 45.1  |
| Duv:                      | 0.0022   | R3:       | 84.3 | R11: | 70.7  |
| CIE x:                    | 0.3844   | R4:       | 72.0 | R12: | 47.1  |
| CIE y:                    | 0.3840   | R5:       | 68.6 | R13: | 68.5  |
| CIE z:                    | 0.2316   | R6:       | 68.3 | R14: | 91.1  |
| Peak Wavelength (nm):     | 440      | R7:       | 77.9 | R15: | 58.7  |
| Dominant Wavelength (nm): | 578      | R8:       | 50.3 |      |       |
| Purity:                   | 30.60026 |           |      |      |       |
| Rf:                       | 71.8     |           |      |      |       |
| Rg:                       | 96.5     |           |      |      |       |



### Test Conditions

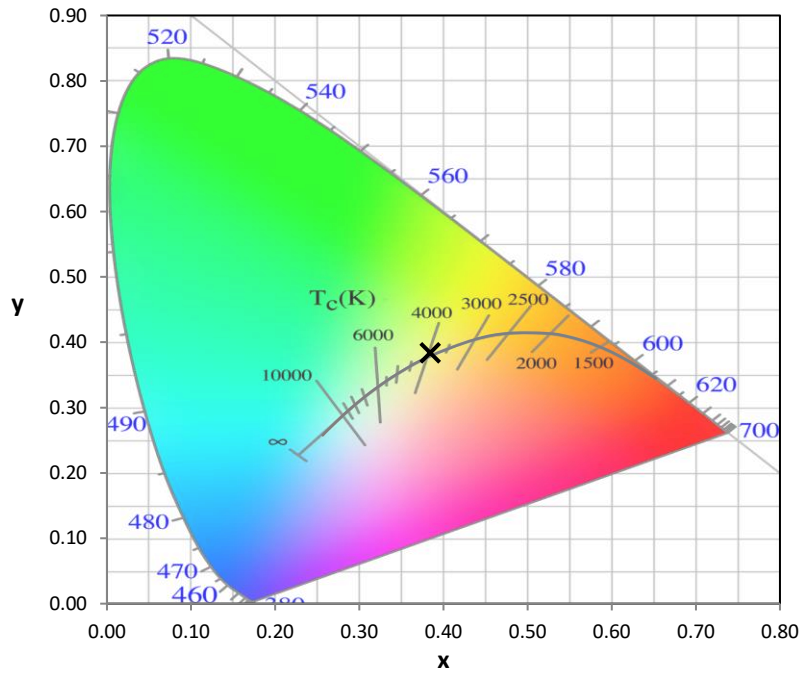
Stabilization Time: 34M  
 Operation Time: 1H 34M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-1

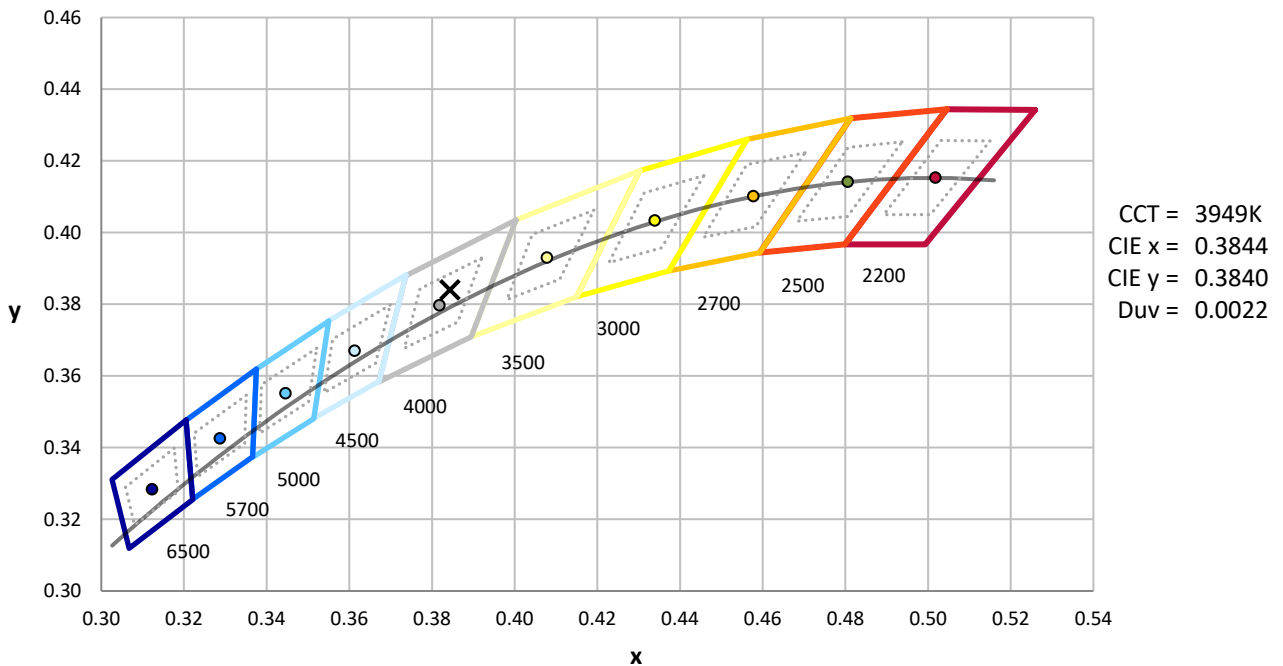
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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: SP1-2407-184-1

**CIE 1931 Chromaticity Diagram**



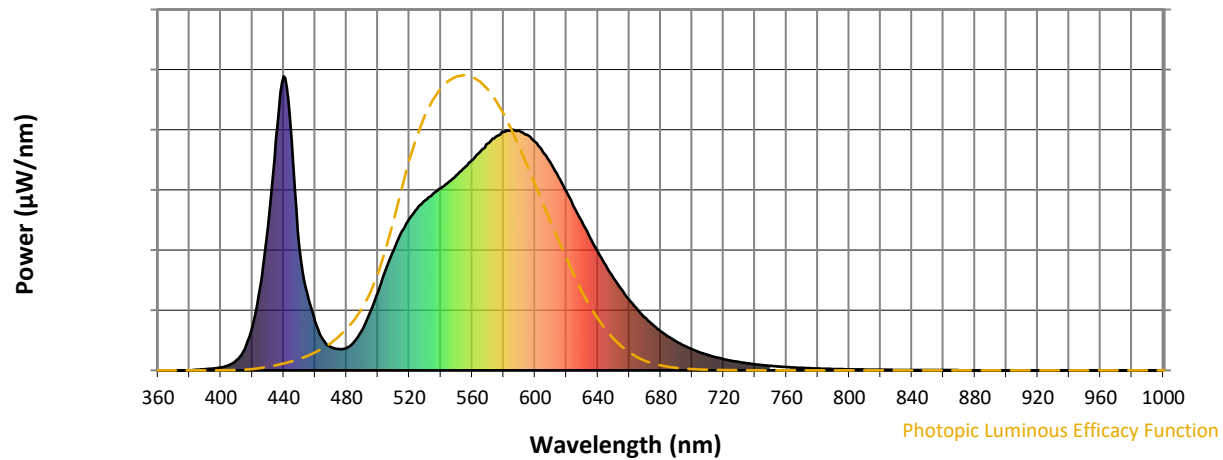
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2407-184-1

### Photopic Flux vs. Wavelength

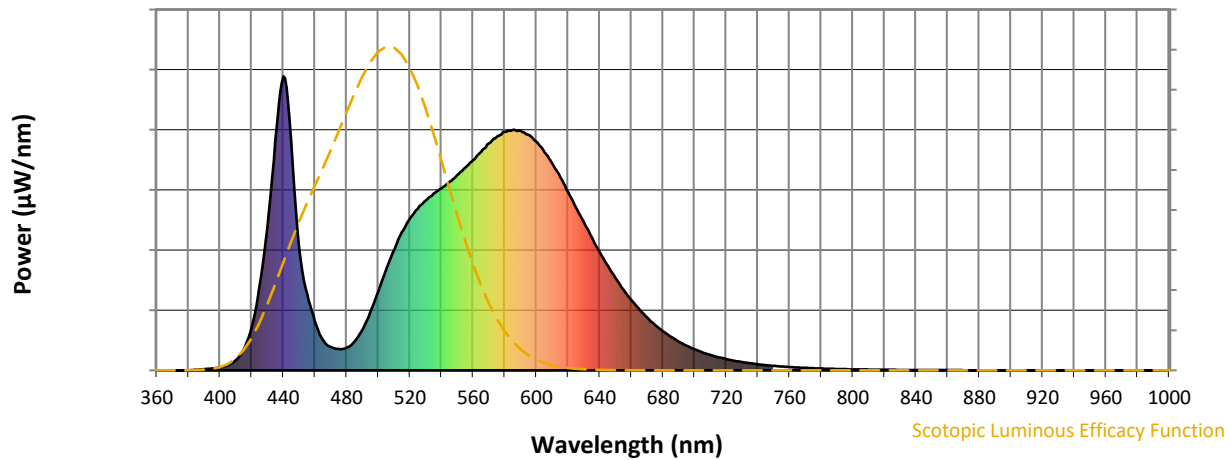


### Photopic Lumens: NR

| $\lambda$<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               | 139                                  | NR                             | 620               | 607                                  | NR                             | 750               | 15                                   | NR                             | 880               | 0                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 198                                  | NR                             | 625               | 554                                  | NR                             | 755               | 13                                   | NR                             | 885               | 0                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 267                                  | NR                             | 630               | 504                                  | NR                             | 760               | 11                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 343                                  | NR                             | 635               | 452                                  | NR                             | 765               | 10                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 410                                  | NR                             | 640               | 403                                  | NR                             | 770               | 8                                    | NR                             | 900               | 0                                    | NR                             |
| 385               | 2                                    | NR                             | 515               | 470                                  | NR                             | 645               | 357                                  | NR                             | 775               | 7                                    | NR                             | 905               | 0                                    | NR                             |
| 390               | 4                                    | NR                             | 520               | 516                                  | NR                             | 650               | 314                                  | NR                             | 780               | 6                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 7                                    | NR                             | 525               | 550                                  | NR                             | 655               | 275                                  | NR                             | 785               | 5                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 10                                   | NR                             | 530               | 578                                  | NR                             | 660               | 240                                  | NR                             | 790               | 5                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 17                                   | NR                             | 535               | 601                                  | NR                             | 665               | 208                                  | NR                             | 795               | 4                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 35                                   | NR                             | 540               | 620                                  | NR                             | 670               | 179                                  | NR                             | 800               | 4                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 70                                   | NR                             | 545               | 641                                  | NR                             | 675               | 155                                  | NR                             | 805               | 3                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 147                                  | NR                             | 550               | 664                                  | NR                             | 680               | 133                                  | NR                             | 810               | 3                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 285                                  | NR                             | 555               | 689                                  | NR                             | 685               | 114                                  | NR                             | 815               | 2                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 487                                  | NR                             | 560               | 715                                  | NR                             | 690               | 98                                   | NR                             | 820               | 2                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 787                                  | NR                             | 565               | 743                                  | NR                             | 695               | 84                                   | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 1000                                 | NR                             | 570               | 771                                  | NR                             | 700               | 72                                   | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 783                                  | NR                             | 575               | 794                                  | NR                             | 705               | 61                                   | NR                             | 835               | 1                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 417                                  | NR                             | 580               | 811                                  | NR                             | 710               | 52                                   | NR                             | 840               | 1                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 261                                  | NR                             | 585               | 817                                  | NR                             | 715               | 45                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 167                                  | NR                             | 590               | 815                                  | NR                             | 720               | 39                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 104                                  | NR                             | 595               | 801                                  | NR                             | 725               | 33                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 79                                   | NR                             | 600               | 777                                  | NR                             | 730               | 28                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 73                                   | NR                             | 605               | 744                                  | NR                             | 735               | 24                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 76                                   | NR                             | 610               | 704                                  | NR                             | 740               | 21                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 98                                   | NR                             | 615               | 657                                  | NR                             | 745               | 18                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

REPORT NUMBER: SP1-2407-184-1

### Scotopic Flux vs. Wavelength



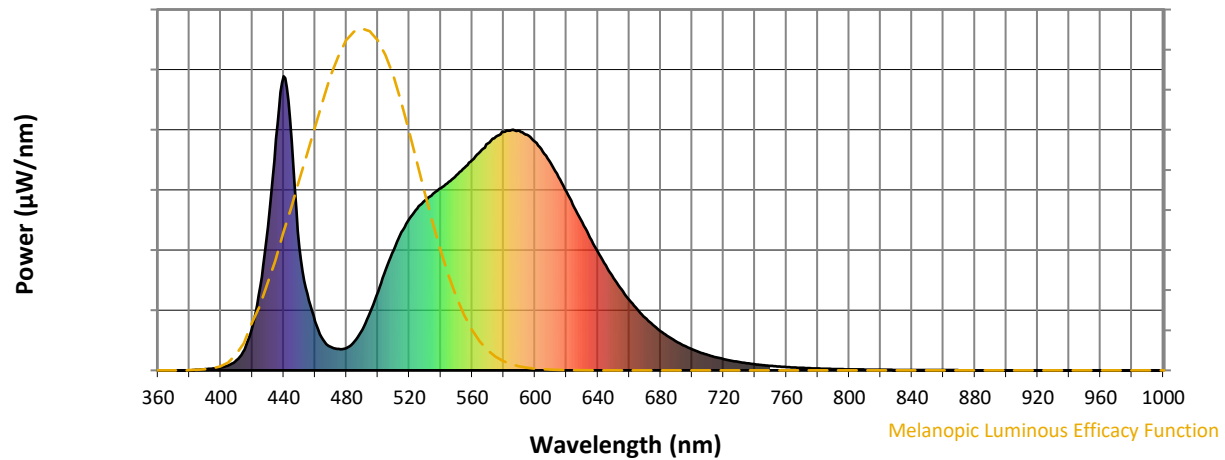
Scotopic Lumens: NR

S/P: 1.47

| 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       | 139                         | NR               | 620       | 607                         | NR               | 750       | 15                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 198                         | NR               | 625       | 554                         | NR               | 755       | 13                          | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 267                         | NR               | 630       | 504                         | NR               | 760       | 11                          | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 343                         | NR               | 635       | 452                         | NR               | 765       | 10                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 410                         | NR               | 640       | 403                         | NR               | 770       | 8                           | NR               | 900       | 0                           | NR               |
| 385       | 2                           | NR               | 515       | 470                         | NR               | 645       | 357                         | NR               | 775       | 7                           | NR               | 905       | 0                           | NR               |
| 390       | 4                           | NR               | 520       | 516                         | NR               | 650       | 314                         | NR               | 780       | 6                           | NR               | 910       | 0                           | NR               |
| 395       | 7                           | NR               | 525       | 550                         | NR               | 655       | 275                         | NR               | 785       | 5                           | NR               | 915       | 0                           | NR               |
| 400       | 10                          | NR               | 530       | 578                         | NR               | 660       | 240                         | NR               | 790       | 5                           | NR               | 920       | 0                           | NR               |
| 405       | 17                          | NR               | 535       | 601                         | NR               | 665       | 208                         | NR               | 795       | 4                           | NR               | 925       | 0                           | NR               |
| 410       | 35                          | NR               | 540       | 620                         | NR               | 670       | 179                         | NR               | 800       | 4                           | NR               | 930       | 0                           | NR               |
| 415       | 70                          | NR               | 545       | 641                         | NR               | 675       | 155                         | NR               | 805       | 3                           | NR               | 935       | 0                           | NR               |
| 420       | 147                         | NR               | 550       | 664                         | NR               | 680       | 133                         | NR               | 810       | 3                           | NR               | 940       | 0                           | NR               |
| 425       | 285                         | NR               | 555       | 689                         | NR               | 685       | 114                         | NR               | 815       | 2                           | NR               | 945       | 0                           | NR               |
| 430       | 487                         | NR               | 560       | 715                         | NR               | 690       | 98                          | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 787                         | NR               | 565       | 743                         | NR               | 695       | 84                          | NR               | 825       | 2                           | NR               | 955       | 0                           | NR               |
| 440       | 1000                        | NR               | 570       | 771                         | NR               | 700       | 72                          | NR               | 830       | 2                           | NR               | 960       | 0                           | NR               |
| 445       | 783                         | NR               | 575       | 794                         | NR               | 705       | 61                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 417                         | NR               | 580       | 811                         | NR               | 710       | 52                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 261                         | NR               | 585       | 817                         | NR               | 715       | 45                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 167                         | NR               | 590       | 815                         | NR               | 720       | 39                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 104                         | NR               | 595       | 801                         | NR               | 725       | 33                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 79                          | NR               | 600       | 777                         | NR               | 730       | 28                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 73                          | NR               | 605       | 744                         | NR               | 735       | 24                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 76                          | NR               | 610       | 704                         | NR               | 740       | 21                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 98                          | NR               | 615       | 657                         | NR               | 745       | 18                          | NR               | 875       | 1                           | NR               |           |                             |                  |

REPORT NUMBER: SP1-2407-184-1

### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.78

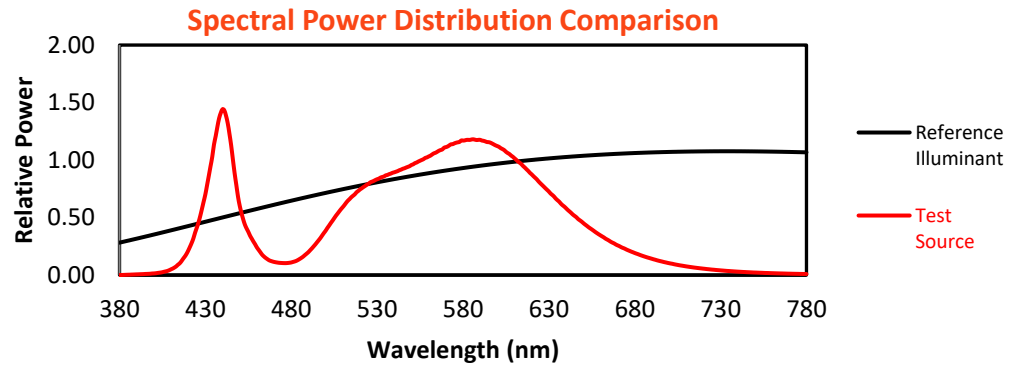
| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 139                         | NR               | 620       | 607                         | NR               | 750       | 15                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 198                         | NR               | 625       | 554                         | NR               | 755       | 13                          | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 267                         | NR               | 630       | 504                         | NR               | 760       | 11                          | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 343                         | NR               | 635       | 452                         | NR               | 765       | 10                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 410                         | NR               | 640       | 403                         | NR               | 770       | 8                           | NR               | 900       | 0                           | NR               |
| 385       | 2                           | NR               | 515       | 470                         | NR               | 645       | 357                         | NR               | 775       | 7                           | NR               | 905       | 0                           | NR               |
| 390       | 4                           | NR               | 520       | 516                         | NR               | 650       | 314                         | NR               | 780       | 6                           | NR               | 910       | 0                           | NR               |
| 395       | 7                           | NR               | 525       | 550                         | NR               | 655       | 275                         | NR               | 785       | 5                           | NR               | 915       | 0                           | NR               |
| 400       | 10                          | NR               | 530       | 578                         | NR               | 660       | 240                         | NR               | 790       | 5                           | NR               | 920       | 0                           | NR               |
| 405       | 17                          | NR               | 535       | 601                         | NR               | 665       | 208                         | NR               | 795       | 4                           | NR               | 925       | 0                           | NR               |
| 410       | 35                          | NR               | 540       | 620                         | NR               | 670       | 179                         | NR               | 800       | 4                           | NR               | 930       | 0                           | NR               |
| 415       | 70                          | NR               | 545       | 641                         | NR               | 675       | 155                         | NR               | 805       | 3                           | NR               | 935       | 0                           | NR               |
| 420       | 147                         | NR               | 550       | 664                         | NR               | 680       | 133                         | NR               | 810       | 3                           | NR               | 940       | 0                           | NR               |
| 425       | 285                         | NR               | 555       | 689                         | NR               | 685       | 114                         | NR               | 815       | 2                           | NR               | 945       | 0                           | NR               |
| 430       | 487                         | NR               | 560       | 715                         | NR               | 690       | 98                          | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 787                         | NR               | 565       | 743                         | NR               | 695       | 84                          | NR               | 825       | 2                           | NR               | 955       | 0                           | NR               |
| 440       | 1000                        | NR               | 570       | 771                         | NR               | 700       | 72                          | NR               | 830       | 2                           | NR               | 960       | 0                           | NR               |
| 445       | 783                         | NR               | 575       | 794                         | NR               | 705       | 61                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 417                         | NR               | 580       | 811                         | NR               | 710       | 52                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 261                         | NR               | 585       | 817                         | NR               | 715       | 45                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 167                         | NR               | 590       | 815                         | NR               | 720       | 39                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 104                         | NR               | 595       | 801                         | NR               | 725       | 33                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 79                          | NR               | 600       | 777                         | NR               | 730       | 28                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 73                          | NR               | 605       | 744                         | NR               | 735       | 24                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 76                          | NR               | 610       | 704                         | NR               | 740       | 21                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 98                          | NR               | 615       | 657                         | NR               | 745       | 18                          | NR               | 875       | 1                           | NR               |           |                             |                  |

REPORT NUMBER: SP1-2407-184-1

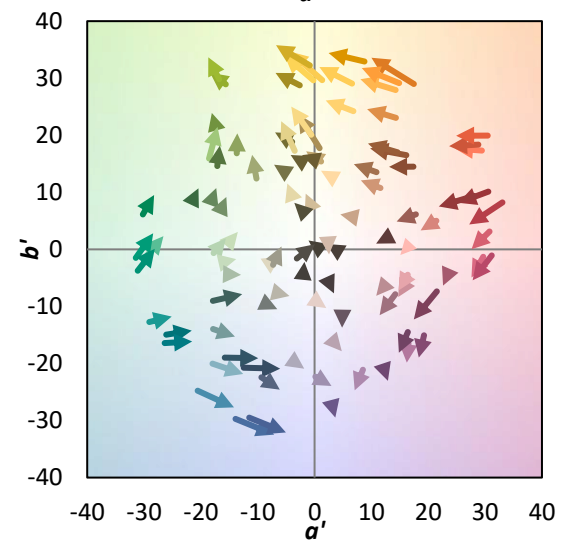
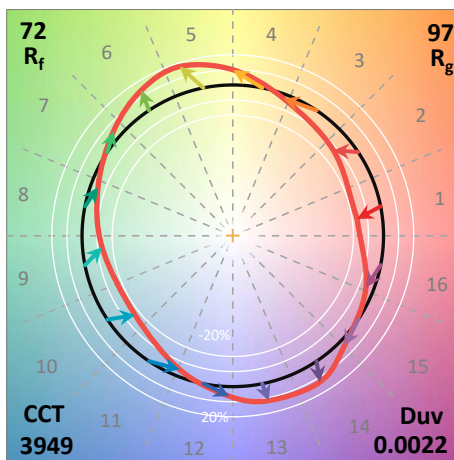
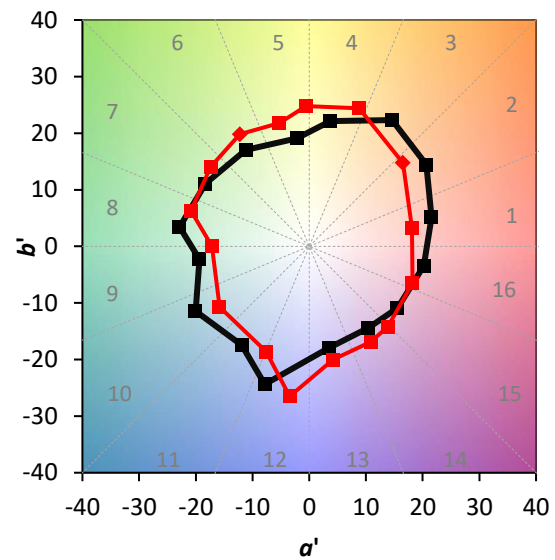
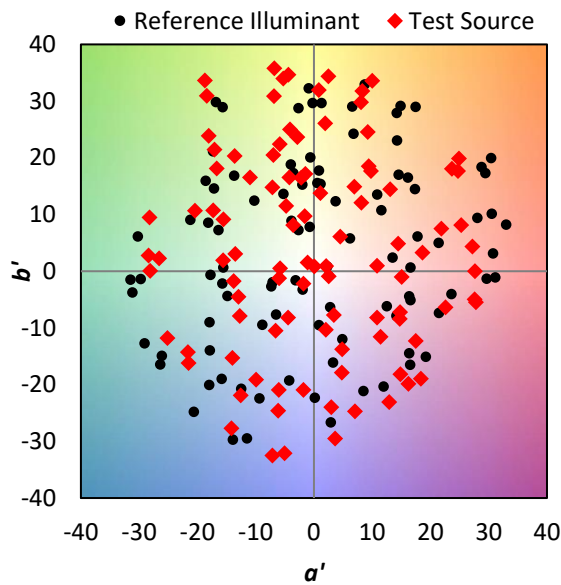
TM-30-18

### Summary

$R_f = 71.8$   
 $R_g = 96.5$   
 $CIE R_a = 70.7$   
 $R_g = -36.7$



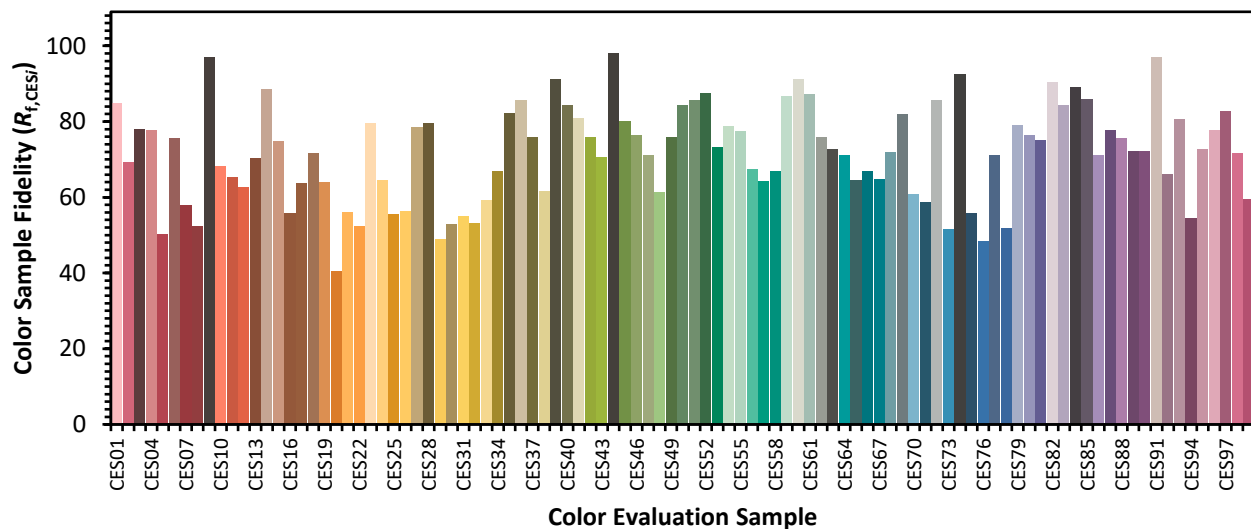
### Color Vector Graphics



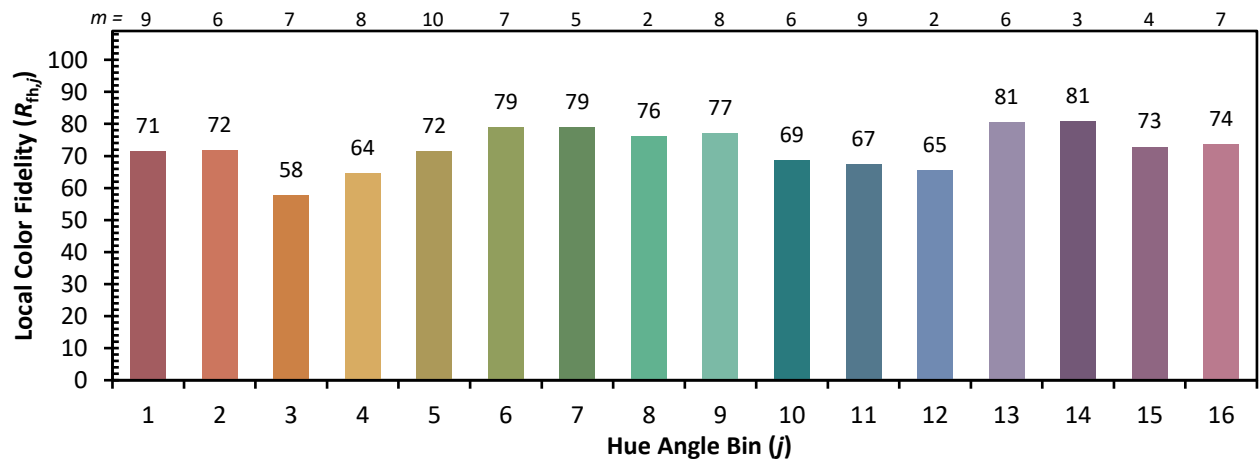
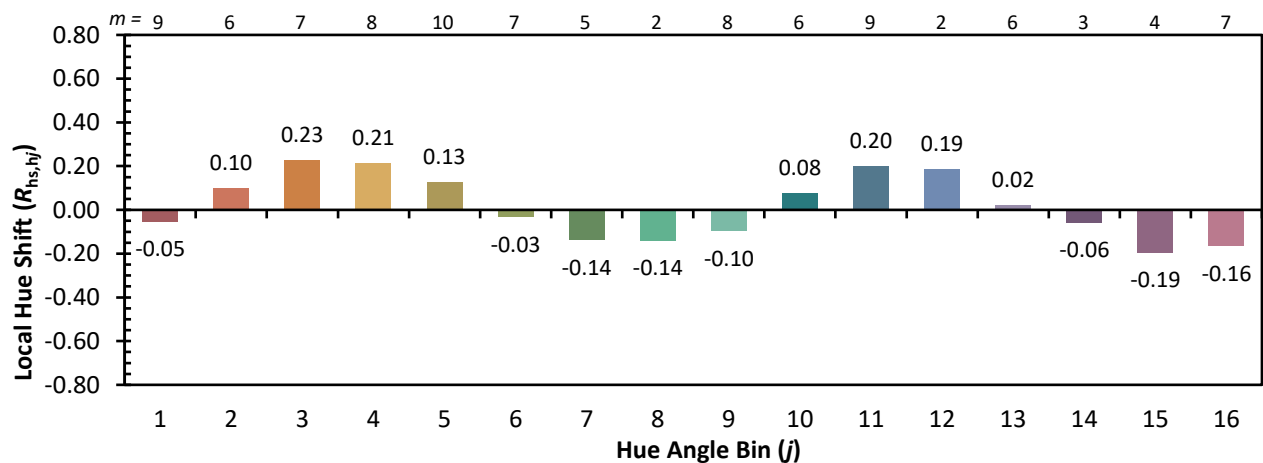
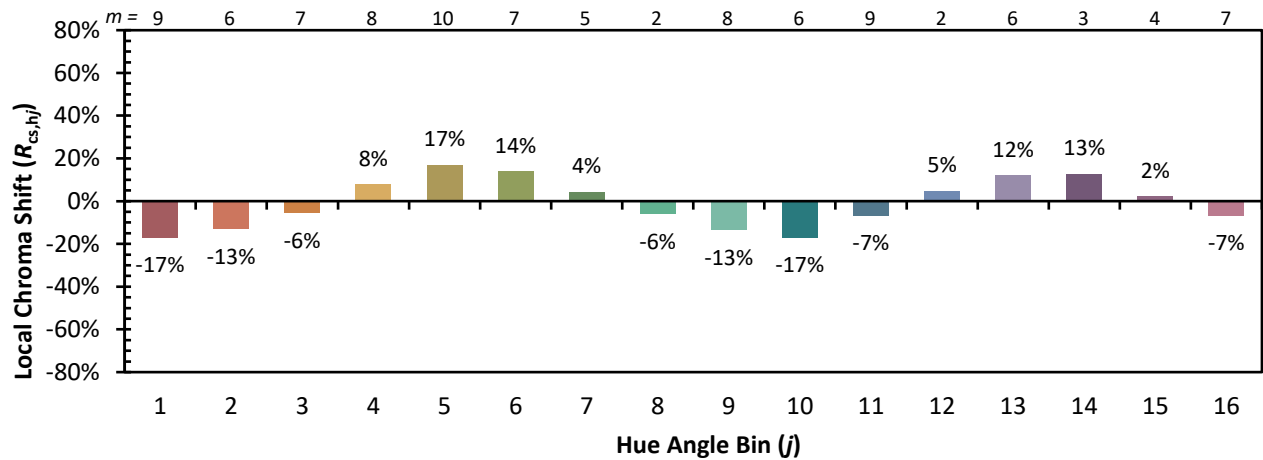


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

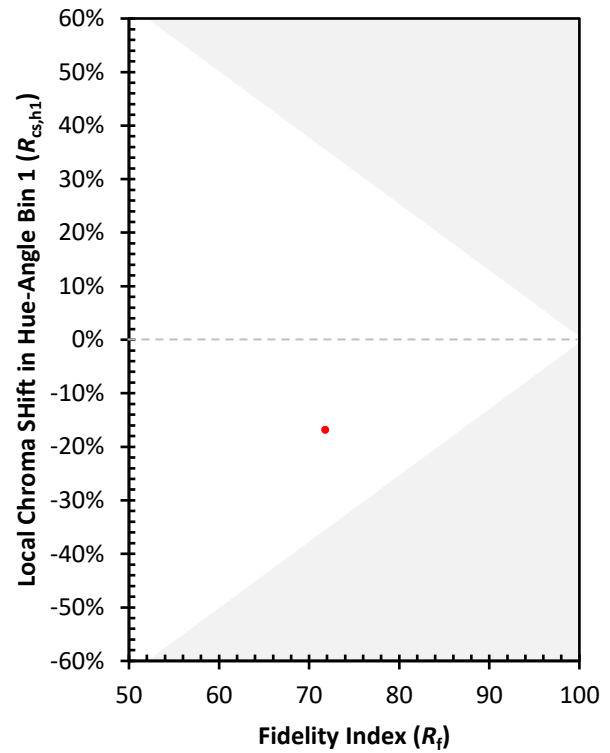
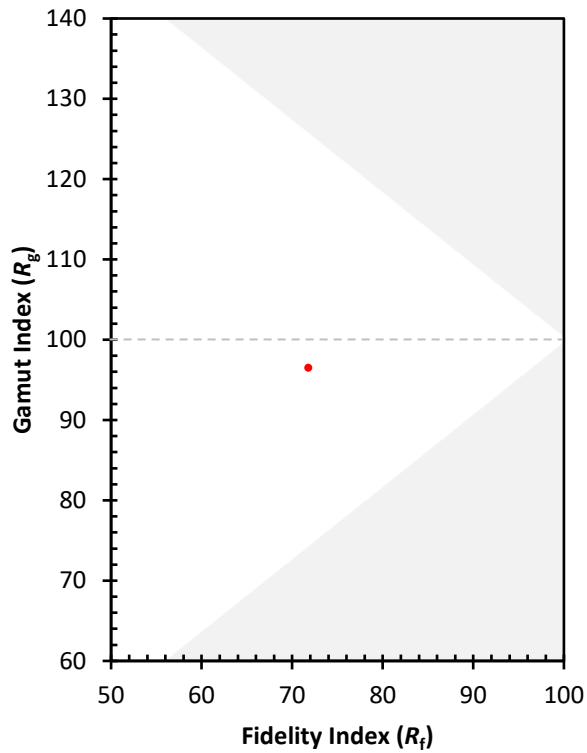
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 56 | CES51 = 86 | CES76 = 48 |
| CES02 = 61 | CES27 = 79 | CES52 = 88 | CES77 = 71 |
| CES03 = 30 | CES28 = 80 | CES53 = 73 | CES78 = 52 |
| CES04 = 70 | CES29 = 49 | CES54 = 79 | CES79 = 79 |
| CES05 = 47 | CES30 = 53 | CES55 = 77 | CES80 = 77 |
| CES06 = 50 | CES31 = 55 | CES56 = 67 | CES81 = 75 |
| CES07 = 40 | CES32 = 53 | CES57 = 64 | CES82 = 90 |
| CES08 = 39 | CES33 = 59 | CES58 = 67 | CES83 = 84 |
| CES09 = 29 | CES34 = 67 | CES59 = 87 | CES84 = 89 |
| CES10 = 74 | CES35 = 82 | CES60 = 91 | CES85 = 86 |
| CES11 = 57 | CES36 = 86 | CES61 = 87 | CES86 = 71 |
| CES12 = 63 | CES37 = 76 | CES62 = 76 | CES87 = 78 |
| CES13 = 42 | CES38 = 62 | CES63 = 73 | CES88 = 76 |
| CES14 = 74 | CES39 = 91 | CES64 = 71 | CES89 = 72 |
| CES15 = 71 | CES40 = 84 | CES65 = 64 | CES90 = 72 |
| CES16 = 46 | CES41 = 81 | CES66 = 67 | CES91 = 97 |
| CES17 = 49 | CES42 = 76 | CES67 = 65 | CES92 = 66 |
| CES18 = 56 | CES43 = 71 | CES68 = 72 | CES93 = 81 |
| CES19 = 72 | CES44 = 98 | CES69 = 82 | CES94 = 55 |
| CES20 = 65 | CES45 = 80 | CES70 = 61 | CES95 = 73 |
| CES21 = 86 | CES46 = 76 | CES71 = 59 | CES96 = 78 |
| CES22 = 78 | CES47 = 71 | CES72 = 86 | CES97 = 83 |
| CES23 = 92 | CES48 = 61 | CES73 = 52 | CES98 = 72 |
| CES24 = 91 | CES49 = 76 | CES74 = 93 | CES99 = 60 |
| CES25 = 72 | CES50 = 84 | CES75 = 56 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)