

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: P1064073

Luminaire Tested: **GLAN-SA6A-750-U-T4BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1064073  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: GLAN-SA6A-750-U-T4BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 615mA 6xLight Square PACKAGE  
70CRI 5000K FIXTURE w/ TYPE IV ANGLED BACKLIGHT CONTROL  
Light Source: (84) 5000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 21708.5 lumens  
Efficiency: N/A  
Efficacy: 133.3 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B0 - U0 - G5

Input Watts (W): 162.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

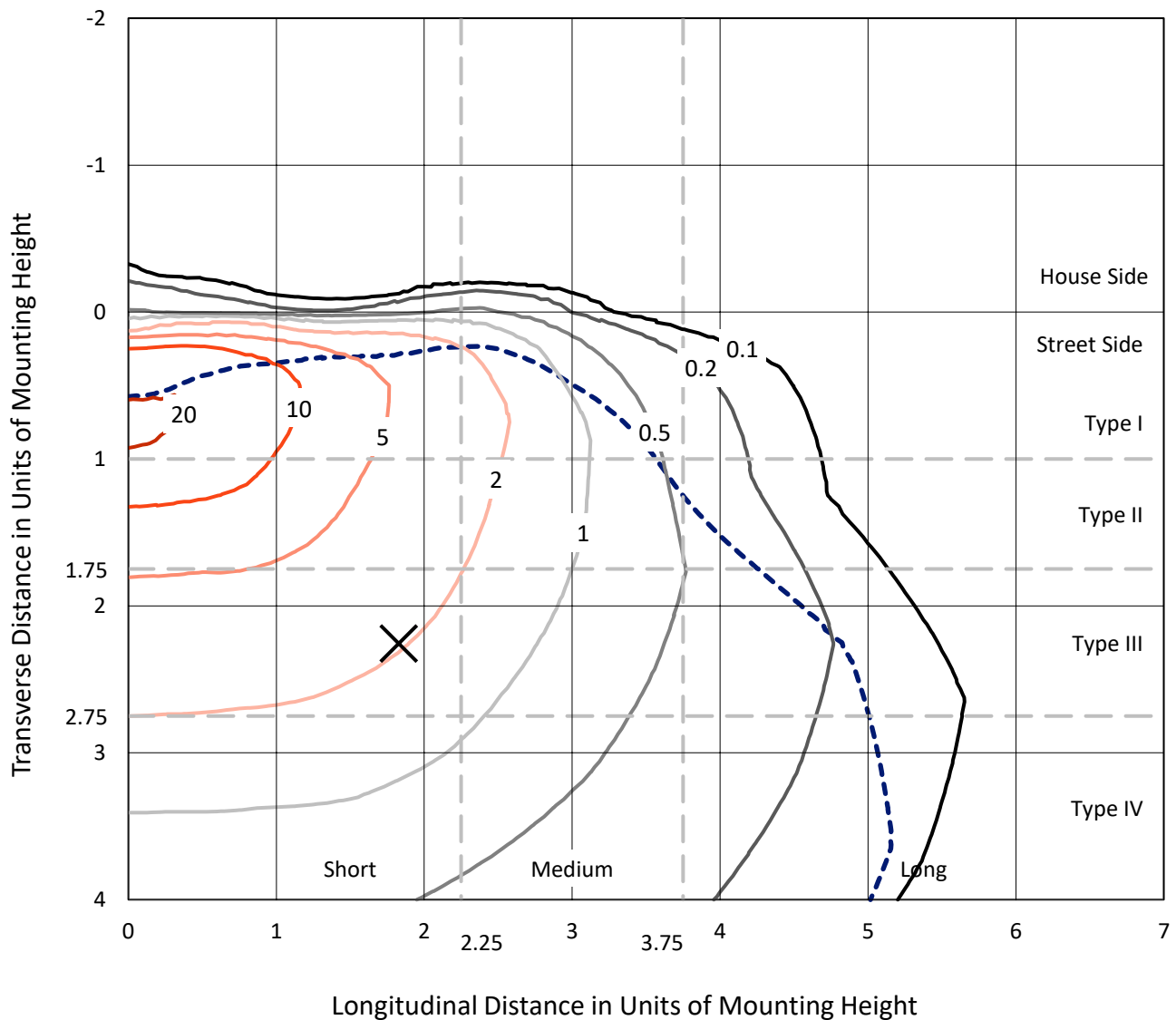


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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

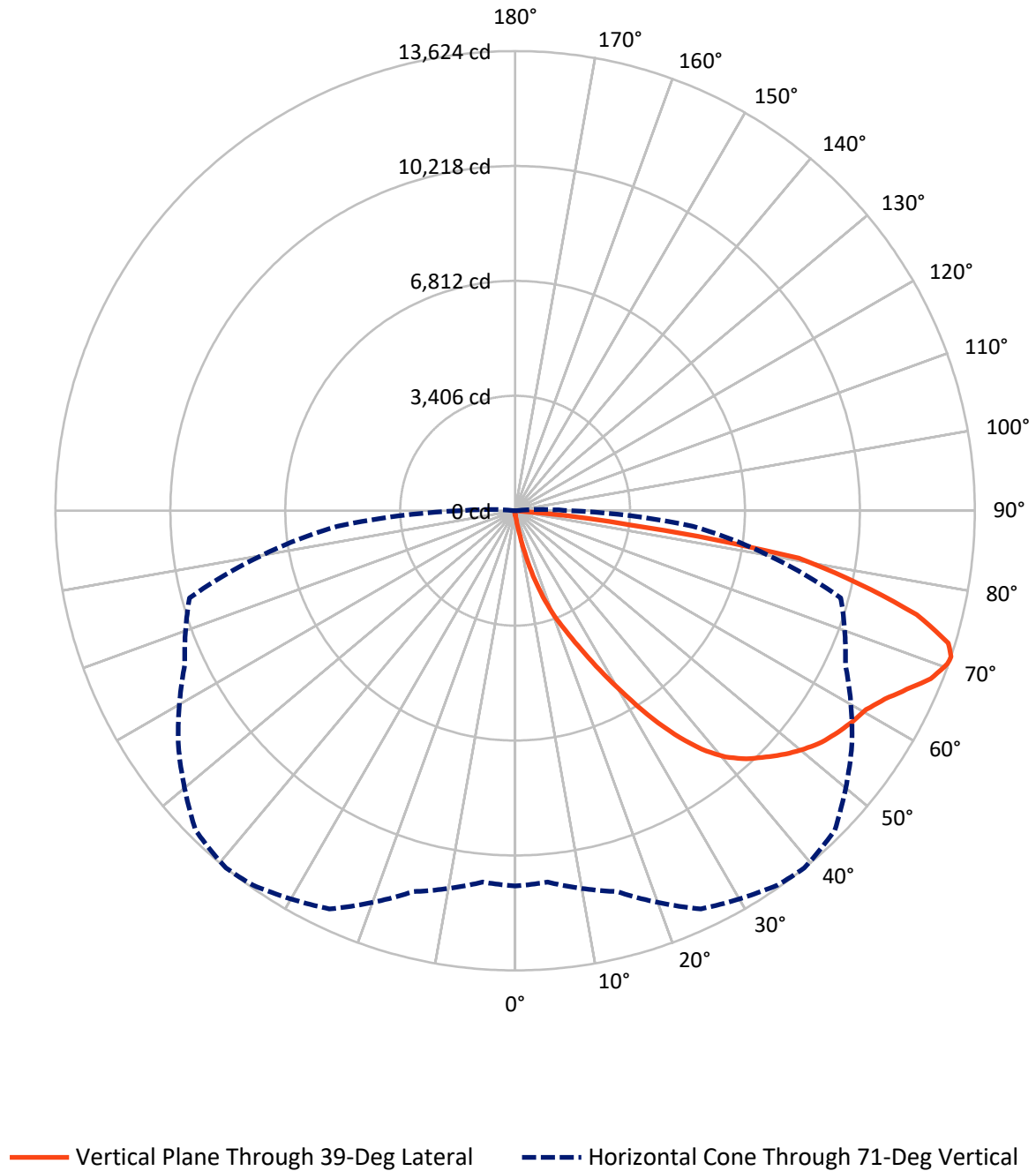


Based on 15 foot mounting height. Maximum calculated value = 22.3 fc  
 Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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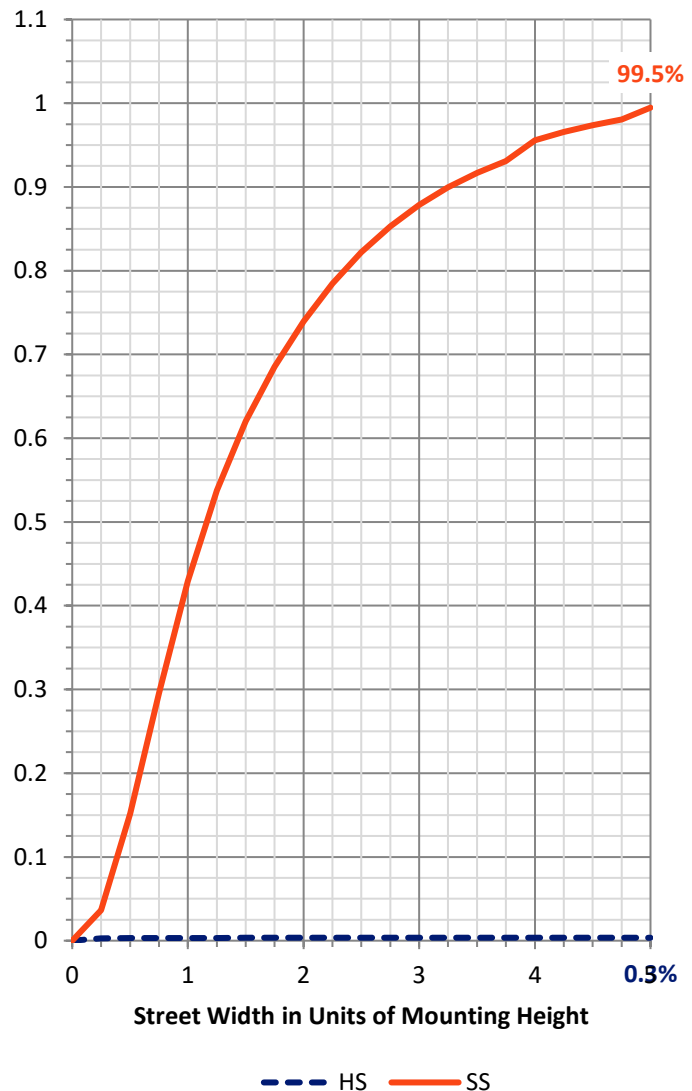
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 77.1     | 0.0    | 77.1    |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 21631.4  | 0.0    | 21631.4 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 21708.5  | 0.0    | 21708.5 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 18.1    | 0.1       |
| 10°-20°   | 232.0   | 1.1       |
| 20°-30°   | 826.3   | 3.8       |
| 30°-40°   | 1991.4  | 9.2       |
| 40°-50°   | 3332.8  | 15.4      |
| 50°-60°   | 4280.6  | 19.7      |
| 60°-70°   | 5417.1  | 25.0      |
| 70°-80°   | 4829.5  | 22.2      |
| 80°-90°   | 780.7   | 3.6       |
| 90°-100°  | 0.0     | 0.0       |
| 100°-110° | 0.0     | 0.0       |
| 110°-120° | 0.0     | 0.0       |
| 120°-130° | 0.0     | 0.0       |
| 130°-140° | 0.0     | 0.0       |
| 140°-150° | 0.0     | 0.0       |
| 150°-160° | 0.0     | 0.0       |
| 160°-170° | 0.0     | 0.0       |
| 170°-180° | 0.0     | 0.0       |
| 0°-90°    | 21708.5 | 100.0     |
| 0°-180°   | 21708.5 | 100.0     |



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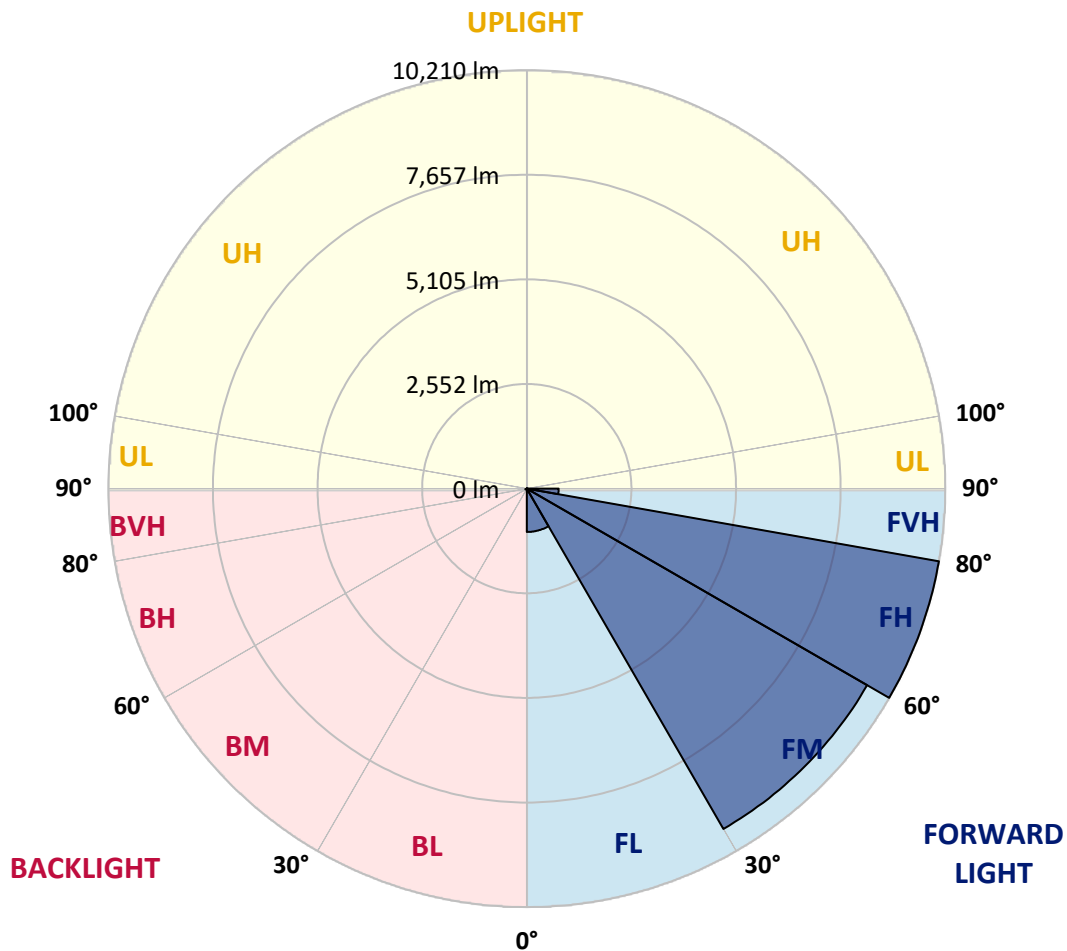
CATALOG NUMBER: GLAN-SA6A-750-U-T4BC

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

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|---------|-----------|-------------------------|------|----------|
|      |             |         |           | B                       | U    | G        |
| FL   | (0°-30°)    | 1057.8  | 4.9       |                         |      |          |
| FM   | (30°-60°)   | 9586.9  | 44.2      |                         |      |          |
| FH   | (60°-80°)   | 10209.5 | 47.0      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 777.1   | 3.6       |                         |      | G5       |
| BL   | (0°-30°)    | 18.7    | 0.1       | B0/110                  |      |          |
| BM   | (30°-60°)   | 17.8    | 0.1       | B0/220                  |      |          |
| BH   | (60°-80°)   | 37.1    | 0.2       | B0/110                  |      | G0/110   |
| BVH  | (80°-90°)   | 3.5     | 0.0       |                         |      | G0/10    |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |          |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |          |

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

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 39°     | 45°     | 55°     | 65°     | 75°     | 85°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0°    | 119.0   | 119.0   | 119.0   | 119.0   | 119.0   | 119.0   | 119.0   | 119.0   | 119.0   | 119.0   | 119.0  |
| 2.5°  | 136.7   | 136.7   | 136.7   | 132.3   | 132.3   | 130.8   | 129.3   | 129.3   | 126.4   | 124.9   | 122.0  |
| 5°    | 207.2   | 202.8   | 192.5   | 186.6   | 174.9   | 167.5   | 160.2   | 149.9   | 139.6   | 132.3   | 123.4  |
| 7.5°  | 468.8   | 479.1   | 445.3   | 382.1   | 317.4   | 289.5   | 242.5   | 195.5   | 161.7   | 139.6   | 124.9  |
| 10°   | 1194.7  | 1188.9  | 1074.2  | 947.9   | 731.8   | 645.1   | 505.5   | 318.9   | 208.7   | 152.8   | 126.4  |
| 12.5° | 2032.4  | 2026.5  | 1891.3  | 1719.4  | 1434.3  | 1253.5  | 989.0   | 595.2   | 299.8   | 173.4   | 126.4  |
| 15°   | 2736.3  | 2712.8  | 2670.2  | 2499.7  | 2166.1  | 2014.8  | 1665.0  | 1052.2  | 485.0   | 208.7   | 129.3  |
| 17.5° | 3202.2  | 3181.6  | 3141.9  | 3080.2  | 2868.6  | 2689.3  | 2408.6  | 1653.2  | 784.7   | 270.4   | 135.2  |
| 20°   | 3629.8  | 3615.1  | 3582.8  | 3571.0  | 3434.3  | 3338.8  | 3106.6  | 2343.9  | 1222.7  | 367.4   | 144.0  |
| 22.5° | 4217.6  | 4186.7  | 4200.0  | 4129.4  | 3995.7  | 3881.1  | 3738.5  | 3067.0  | 1757.6  | 529.0   | 160.2  |
| 25°   | 4937.7  | 4923.0  | 4886.3  | 4836.3  | 4651.1  | 4551.2  | 4332.2  | 3748.8  | 2355.7  | 740.7   | 177.8  |
| 27.5° | 5807.7  | 5791.5  | 5782.7  | 5668.1  | 5455.0  | 5346.2  | 5040.6  | 4392.5  | 3028.7  | 1037.5  | 201.3  |
| 30°   | 6809.9  | 6817.2  | 6759.9  | 6613.0  | 6364.6  | 6211.8  | 5897.3  | 5067.0  | 3718.0  | 1385.8  | 226.3  |
| 32.5° | 7847.4  | 7832.7  | 7744.5  | 7571.1  | 7349.2  | 7206.7  | 6807.0  | 5806.2  | 4441.0  | 1845.8  | 255.7  |
| 35°   | 8965.7  | 8937.8  | 8705.6  | 8507.2  | 8317.7  | 8138.4  | 7773.9  | 6664.4  | 5164.0  | 2361.6  | 295.4  |
| 37.5° | 10094.3 | 9963.6  | 9497.7  | 9246.4  | 9115.6  | 8968.7  | 8629.2  | 7579.9  | 5882.6  | 2937.6  | 343.9  |
| 40°   | 10946.7 | 10845.3 | 10292.7 | 9829.8  | 9725.5  | 9600.6  | 9347.8  | 8370.6  | 6646.8  | 3556.3  | 402.7  |
| 42.5° | 11418.4 | 11362.6 | 10865.9 | 10408.8 | 10163.4 | 10053.2 | 9837.2  | 9061.2  | 7402.1  | 4239.7  | 487.9  |
| 45°   | 11619.7 | 11533.0 | 11200.9 | 10987.8 | 10596.9 | 10414.7 | 10157.5 | 9582.9  | 8191.3  | 5015.6  | 606.9  |
| 47.5° | 11558.0 | 11508.0 | 11270.0 | 11347.9 | 11064.2 | 10780.6 | 10402.9 | 9982.7  | 8865.8  | 5906.1  | 770.0  |
| 50°   | 11170.1 | 11127.4 | 11054.0 | 11475.7 | 11440.5 | 11105.4 | 10720.4 | 10298.6 | 9416.9  | 6824.6  | 1022.8 |
| 52.5° | 10432.3 | 10414.7 | 10602.8 | 11375.8 | 11653.5 | 11392.0 | 11026.0 | 10577.8 | 9931.2  | 7784.2  | 1384.3 |
| 55°   | 9481.5  | 9553.5  | 10091.4 | 11220.0 | 11762.3 | 11603.6 | 11296.4 | 10839.4 | 10344.2 | 8642.4  | 1917.8 |
| 57.5° | 9090.6  | 9109.7  | 9781.3  | 11109.8 | 11810.8 | 11790.2 | 11559.5 | 11089.2 | 10723.3 | 9328.7  | 2731.9 |
| 60°   | 9547.7  | 9518.3  | 9872.4  | 11193.6 | 11907.8 | 11957.7 | 11793.1 | 11321.4 | 11052.5 | 9918.0  | 3816.4 |
| 62.5° | 10373.6 | 10357.4 | 10470.5 | 11550.7 | 12191.4 | 12292.8 | 12117.9 | 11488.9 | 11343.5 | 10306.0 | 5053.8 |
| 65°   | 11111.3 | 11077.5 | 11287.6 | 12184.0 | 12689.6 | 12761.6 | 12608.7 | 11775.5 | 11471.3 | 10588.1 | 6216.2 |
| 67.5° | 11430.2 | 11422.8 | 11760.8 | 12786.6 | 13212.7 | 13290.6 | 13156.9 | 12170.8 | 11441.9 | 10677.8 | 6729.1 |
| 70°   | 11284.7 | 11256.8 | 11797.6 | 13042.3 | 13508.1 | 13596.3 | 13467.0 | 12317.8 | 11123.0 | 10394.1 | 5969.3 |
| 71°   | 11124.5 | 11049.5 | 11687.3 | 13024.6 | 13549.3 | 13624.2 | 13397.9 | 12184.0 | 10802.7 | 9991.5  | 5280.1 |
| 72.5° | 10627.8 | 10641.0 | 11384.6 | 12840.9 | 13450.8 | 13428.8 | 13007.0 | 11705.0 | 10416.2 | 9077.4  | 4241.1 |
| 75°   | 9405.1  | 9483.0  | 10404.4 | 12069.4 | 12572.0 | 12291.3 | 11646.2 | 10789.4 | 9640.3  | 6508.6  | 2945.0 |
| 77.5° | 7685.7  | 7801.8  | 8814.4  | 10585.2 | 10442.6 | 10414.7 | 10388.3 | 9506.5  | 8232.4  | 3496.1  | 2048.6 |
| 80°   | 3669.5  | 3920.8  | 5316.8  | 7556.4  | 8208.9  | 8524.9  | 8326.5  | 7660.8  | 6366.1  | 1665.0  | 1224.1 |
| 82.5° | 239.5   | 236.6   | 335.1   | 634.8   | 2676.1  | 3459.3  | 5496.1  | 5475.5  | 4438.0  | 811.2   | 499.6  |
| 85°   | 113.2   | 116.1   | 127.9   | 145.5   | 169.0   | 185.2   | 255.7   | 1498.9  | 2123.5  | 386.5   | 108.7  |
| 87.5° | 66.1    | 67.6    | 79.4    | 101.4   | 132.3   | 147.0   | 174.9   | 224.8   | 276.3   | 213.1   | 23.5   |
| 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: P1064073

CATALOG NUMBER: GLAN-SA6A-750-U-T4BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 119.0  | 119.0 | 119.0 | 119.0 | 119.0 | 119.0 | 119.0 | 119.0 | 119.0 | 119.0 | 119.0 |
| 2.5°  | 120.5  | 119.0 | 114.6 | 110.2 | 105.8 | 102.9 | 101.4 | 102.9 | 102.9 | 104.3 | 104.3 |
| 5°    | 120.5  | 116.1 | 108.7 | 99.9  | 94.1  | 88.2  | 85.2  | 83.8  | 85.2  | 85.2  | 85.2  |
| 7.5°  | 119.0  | 111.7 | 101.4 | 91.1  | 83.8  | 76.4  | 73.5  | 72.0  | 72.0  | 73.5  | 73.5  |
| 10°   | 116.1  | 108.7 | 95.5  | 83.8  | 74.9  | 66.1  | 61.7  | 57.3  | 57.3  | 57.3  | 58.8  |
| 12.5° | 114.6  | 104.3 | 88.2  | 76.4  | 64.7  | 54.4  | 45.6  | 41.1  | 42.6  | 42.6  | 42.6  |
| 15°   | 111.7  | 99.9  | 83.8  | 69.1  | 54.4  | 41.1  | 33.8  | 29.4  | 30.9  | 32.3  | 30.9  |
| 17.5° | 111.7  | 98.5  | 77.9  | 60.3  | 42.6  | 30.9  | 25.0  | 22.0  | 22.0  | 23.5  | 23.5  |
| 20°   | 111.7  | 95.5  | 73.5  | 51.4  | 32.3  | 23.5  | 17.6  | 16.2  | 16.2  | 19.1  | 20.6  |
| 22.5° | 114.6  | 95.5  | 67.6  | 42.6  | 26.5  | 17.6  | 13.2  | 11.8  | 13.2  | 16.2  | 17.6  |
| 25°   | 119.0  | 94.1  | 61.7  | 38.2  | 22.0  | 13.2  | 10.3  | 7.3   | 8.8   | 11.8  | 13.2  |
| 27.5° | 123.4  | 92.6  | 55.8  | 33.8  | 17.6  | 10.3  | 7.3   | 5.9   | 4.4   | 5.9   | 5.9   |
| 30°   | 127.9  | 92.6  | 50.0  | 27.9  | 14.7  | 7.3   | 4.4   | 2.9   | 1.5   | 0.0   | 0.0   |
| 32.5° | 130.8  | 89.6  | 45.6  | 22.0  | 11.8  | 5.9   | 2.9   | 1.5   | 0.0   | 0.0   | 0.0   |
| 35°   | 133.7  | 86.7  | 39.7  | 17.6  | 8.8   | 4.4   | 1.5   | 0.0   | 0.0   | 0.0   | 0.0   |
| 37.5° | 136.7  | 82.3  | 33.8  | 14.7  | 7.3   | 2.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 40°   | 139.6  | 76.4  | 27.9  | 13.2  | 4.4   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 42.5° | 142.5  | 72.0  | 23.5  | 10.3  | 2.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 45°   | 149.9  | 69.1  | 19.1  | 8.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 47.5° | 163.1  | 66.1  | 17.6  | 5.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 50°   | 182.2  | 63.2  | 16.2  | 4.4   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 52.5° | 208.7  | 61.7  | 14.7  | 2.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 55°   | 255.7  | 60.3  | 13.2  | 2.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 57.5° | 336.5  | 58.8  | 13.2  | 2.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 60°   | 515.8  | 55.8  | 13.2  | 2.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 62.5° | 921.4  | 54.4  | 11.8  | 2.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 65°   | 1606.2 | 55.8  | 11.8  | 2.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 67.5° | 2302.8 | 58.8  | 10.3  | 4.4   | 1.5   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 70°   | 1970.7 | 51.4  | 10.3  | 5.9   | 2.9   | 1.5   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 71°   | 1606.2 | 45.6  | 10.3  | 5.9   | 2.9   | 1.5   | 1.5   | 0.0   | 0.0   | 0.0   | 0.0   |
| 72.5° | 1033.1 | 35.3  | 8.8   | 5.9   | 2.9   | 2.9   | 1.5   | 0.0   | 0.0   | 0.0   | 0.0   |
| 75°   | 436.5  | 29.4  | 8.8   | 5.9   | 4.4   | 2.9   | 2.9   | 1.5   | 0.0   | 0.0   | 0.0   |
| 77.5° | 186.6  | 22.0  | 8.8   | 7.3   | 5.9   | 4.4   | 4.4   | 2.9   | 1.5   | 0.0   | 0.0   |
| 80°   | 70.5   | 17.6  | 10.3  | 8.8   | 7.3   | 7.3   | 5.9   | 2.9   | 1.5   | 0.0   | 0.0   |
| 82.5° | 32.3   | 14.7  | 10.3  | 8.8   | 8.8   | 7.3   | 5.9   | 4.4   | 2.9   | 0.0   | 0.0   |
| 85°   | 20.6   | 13.2  | 10.3  | 8.8   | 8.8   | 7.3   | 7.3   | 4.4   | 2.9   | 0.0   | 0.0   |
| 87.5° | 16.2   | 13.2  | 10.3  | 10.3  | 8.8   | 8.8   | 5.9   | 4.4   | 1.5   | 0.0   | 0.0   |
| 90°   | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |



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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-6

Test Date: 10/10/2024

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

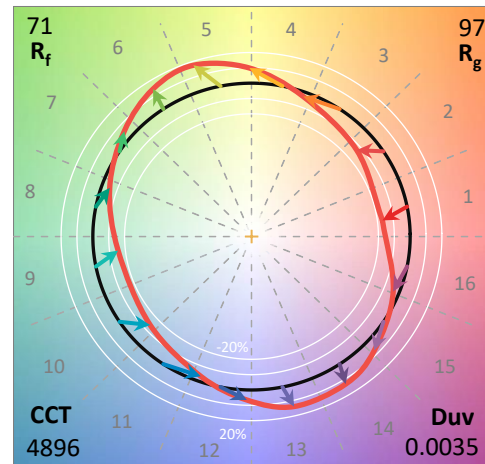
Data in this report applies to families of products including GSS-SB1A-750-U-5WQ

### Test Information

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

### Spectral Parameters

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



### Test Conditions

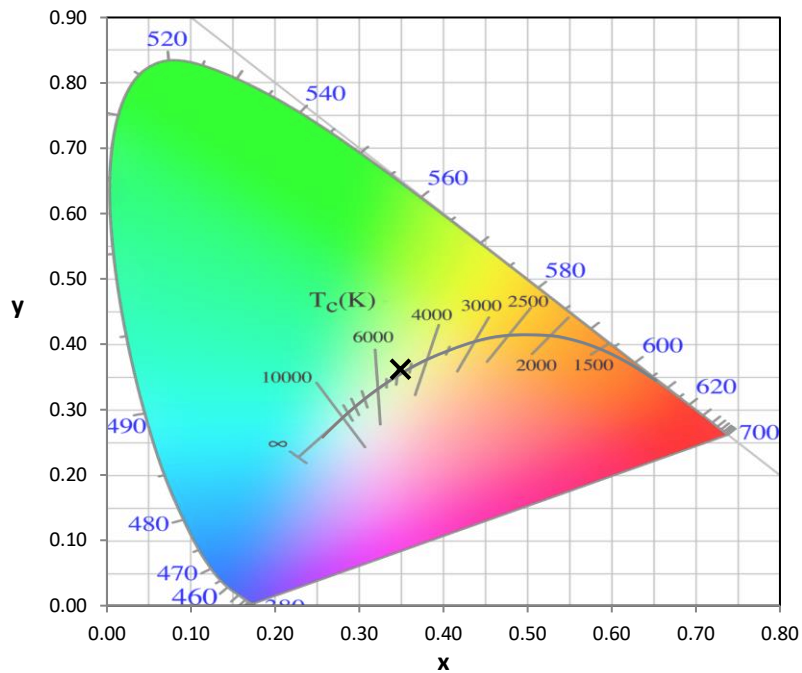
Stabilization Time: 21M  
 Operation Time: 1H 21M  
 Sphere Temperature (°C): 25.2

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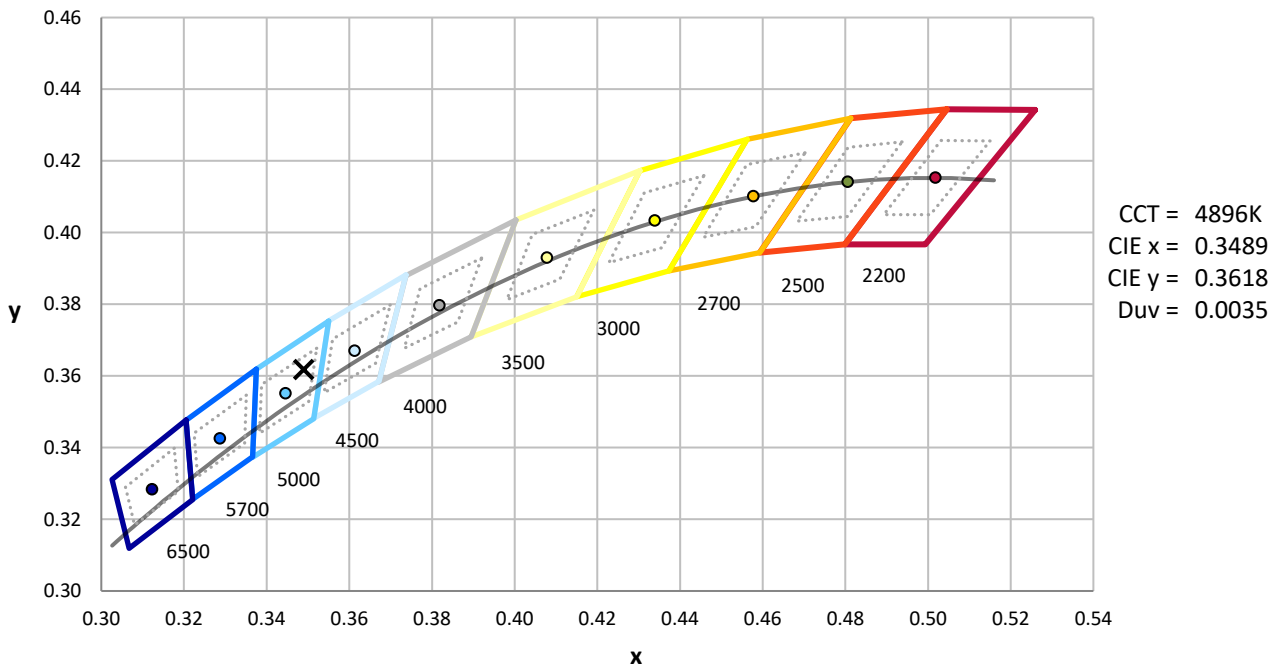
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 6/18/2024        | 12/18/2024           |
| Power Meter                    | INXT2011004           | 2/8/2024         | 2/8/2025             |
| AC Power Source                | IN0063                | 10/24/2023       | 10/24/2024           |
| DC Power Source                | IN0208                | 10/24/2023       | 10/24/2024           |
| Sphere Thermometer             | IN0085                | 10/24/2023       | 10/24/2024           |
| Room Thermometer               | IN0046                | 10/24/2023       | 10/24/2024           |

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**CIE 1931 Chromaticity Diagram**



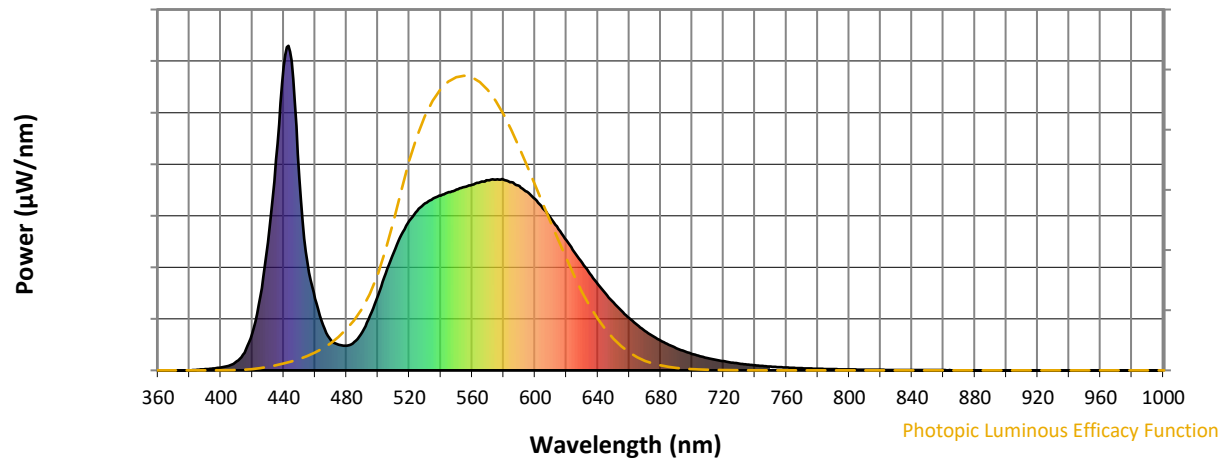
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 5000K 4-step quadrangle

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### Photopic Flux vs. Wavelength

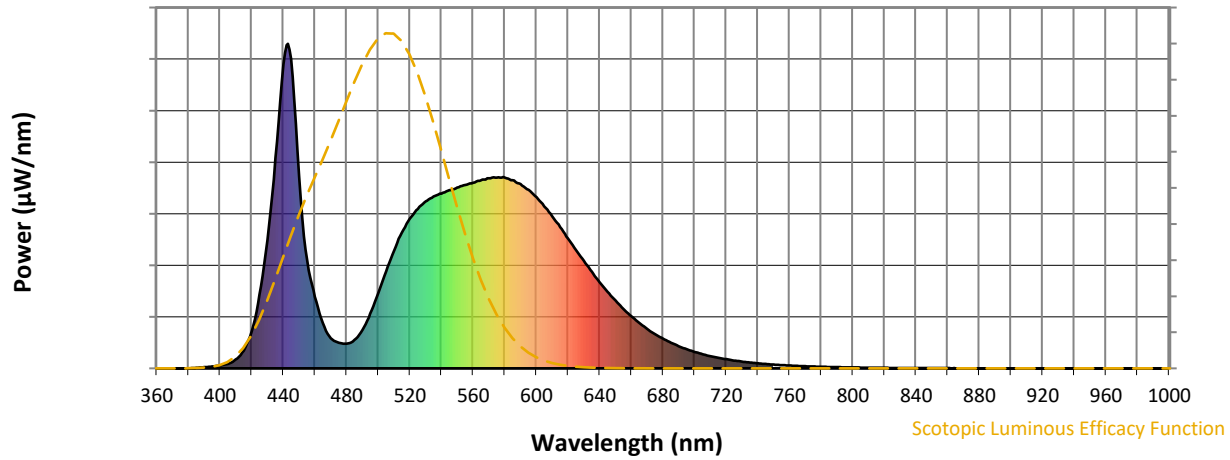


### Photopic Lumens: NR

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

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### Scotopic Flux vs. Wavelength



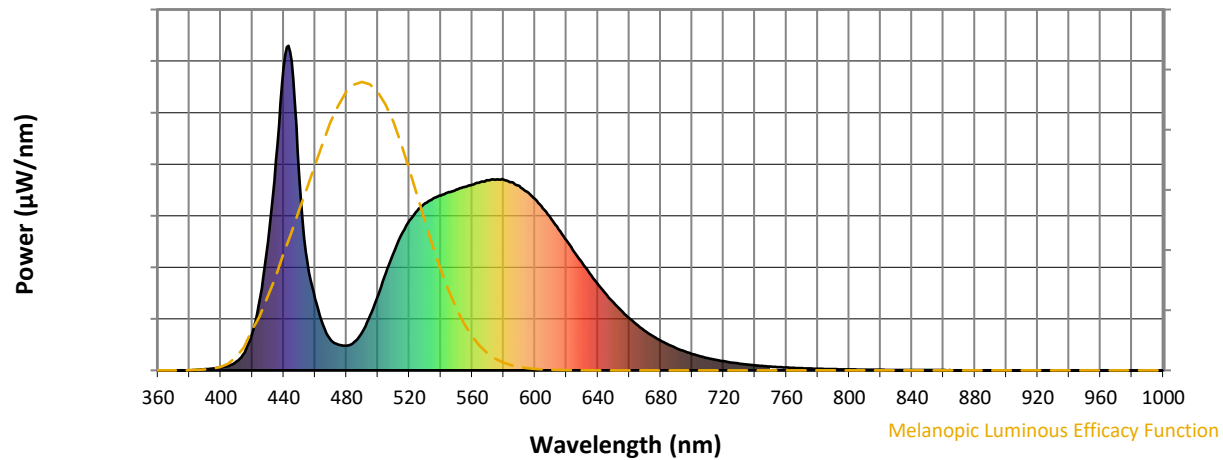
Scotopic Lumens: NR

S/P: 1.7

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

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 3.37

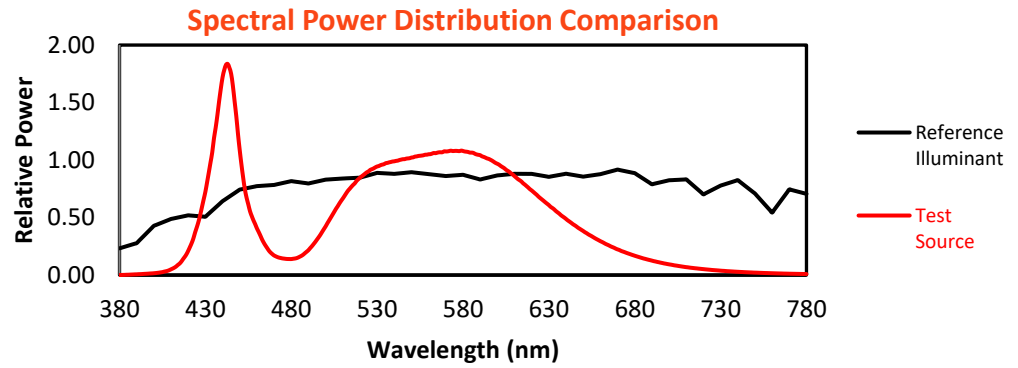
| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm)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

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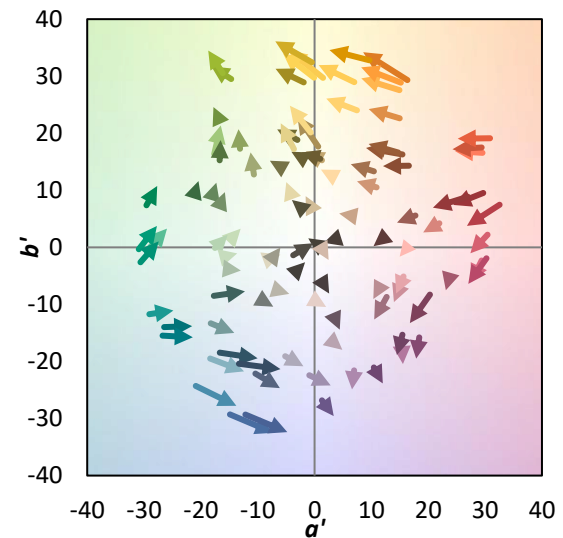
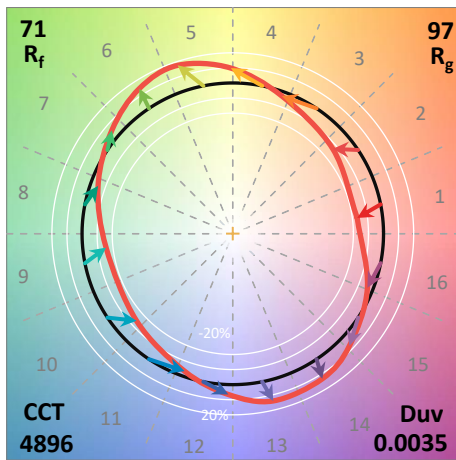
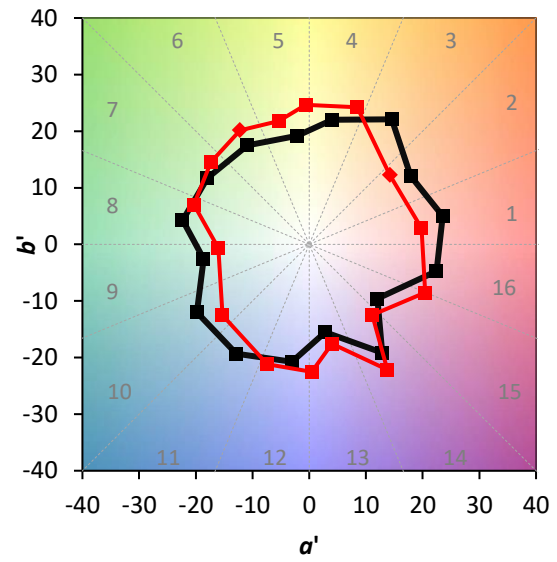
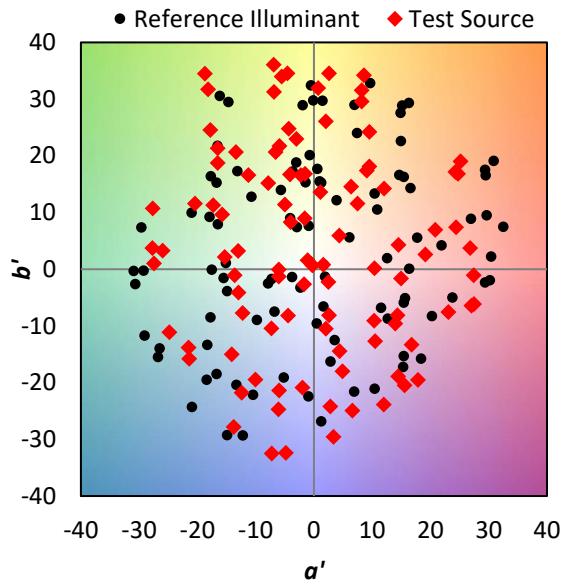
TM-30-18

### Summary

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



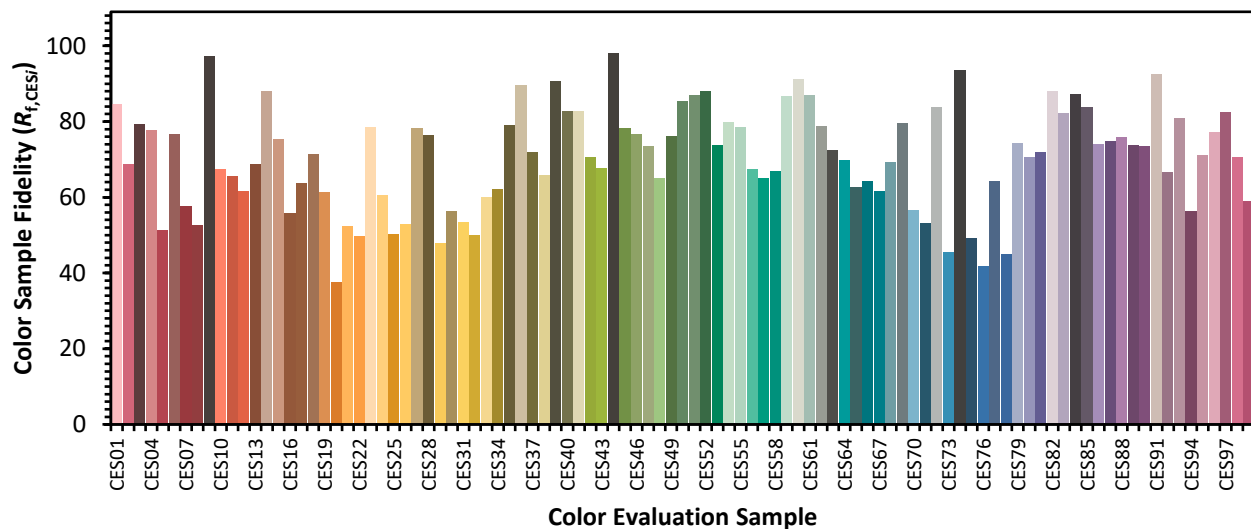
### Color Vector Graphics



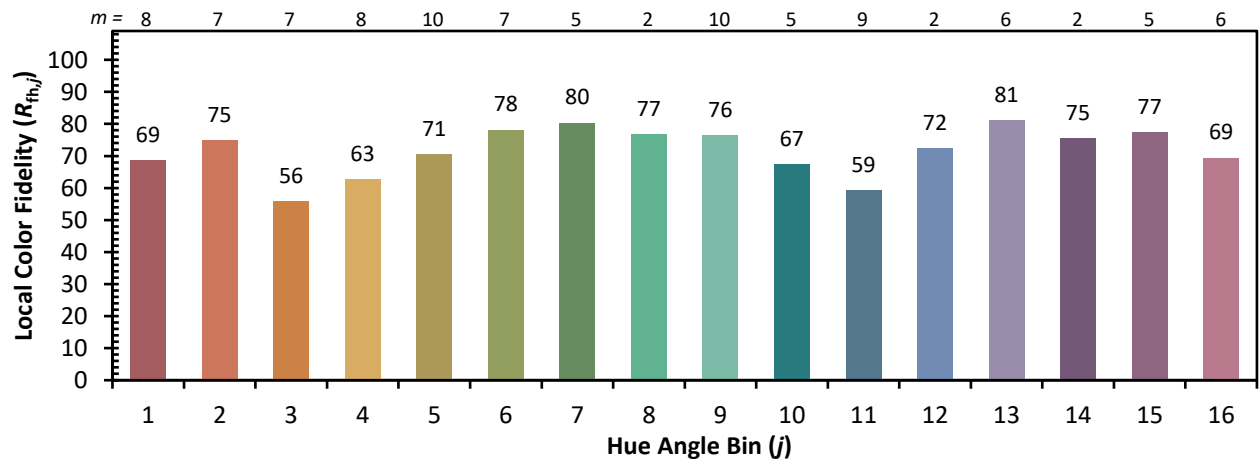
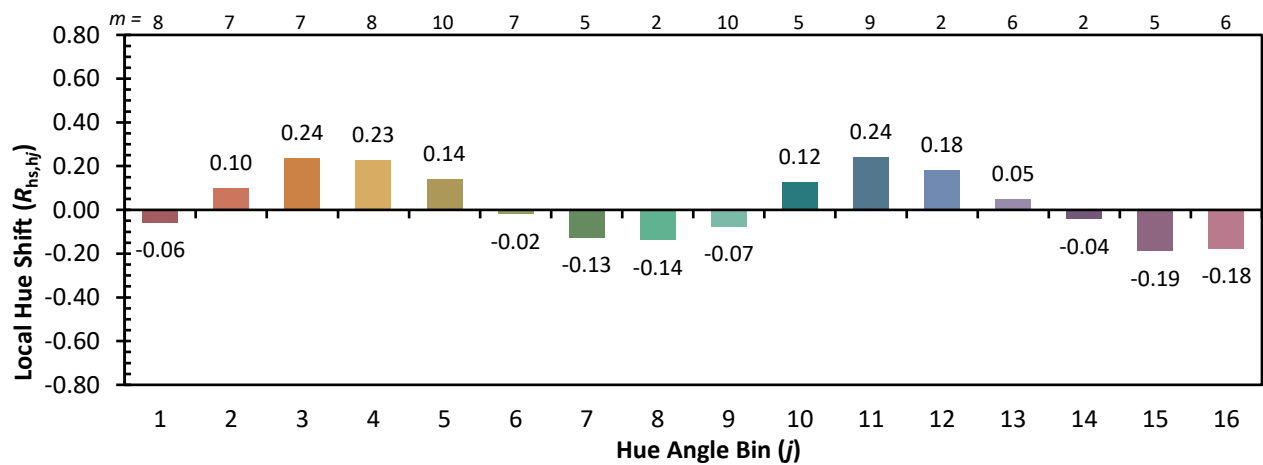
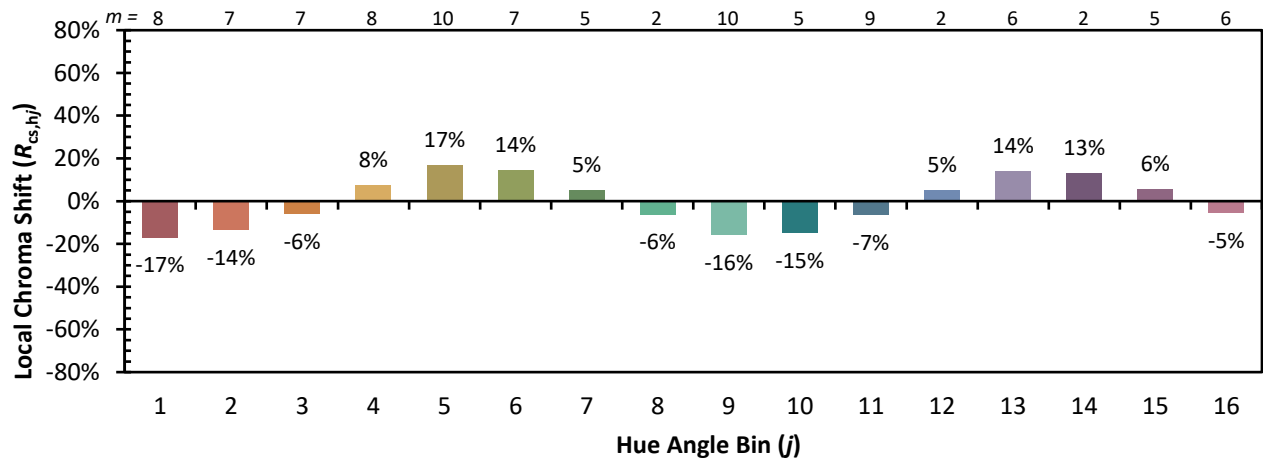


Individual Sample Fidelity Index ( $R_{f,i}$ )

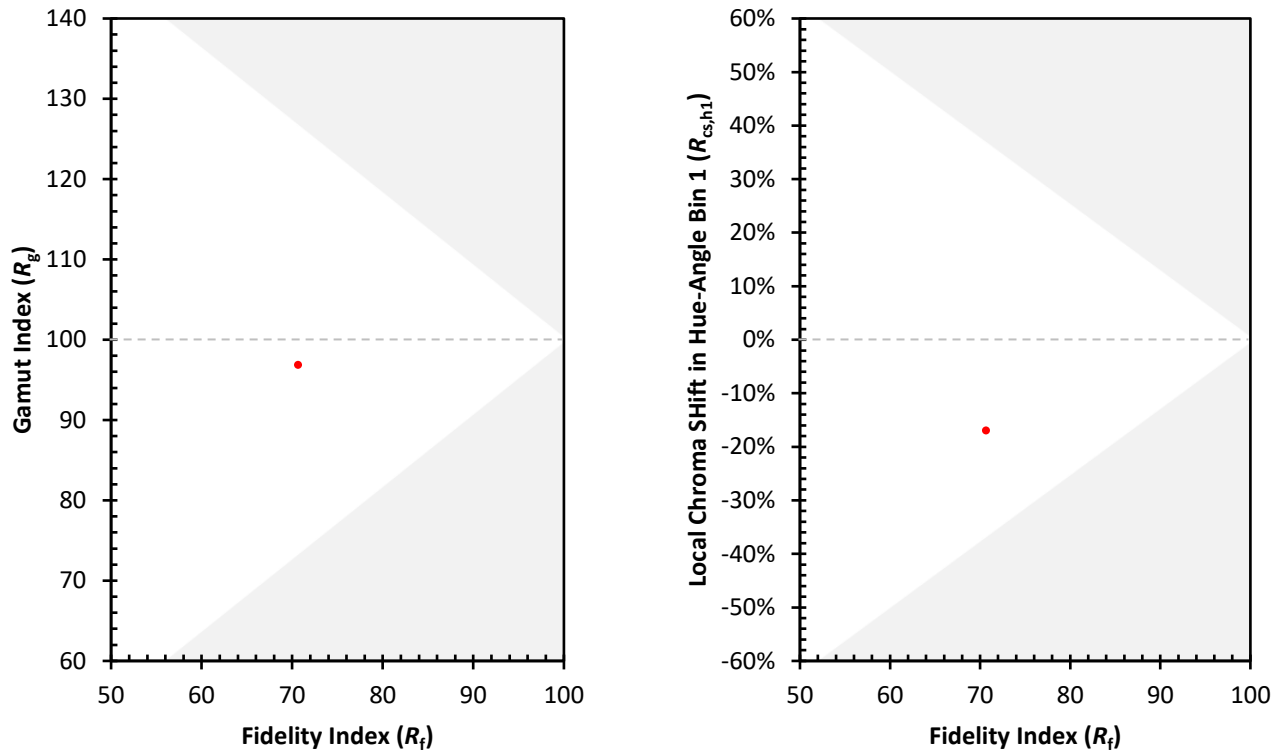
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 53 | CES51 = 87 | CES76 = 42 |
| CES02 = 59 | CES27 = 78 | CES52 = 88 | CES77 = 64 |
| CES03 = 30 | CES28 = 76 | CES53 = 74 | CES78 = 45 |
| CES04 = 69 | CES29 = 48 | CES54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



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)