

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: P1062895

Luminaire Tested: **GLAN-SA8C-760-U-T3BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1062895  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: GLAN-SA8C-760-U-T3BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 1050mA 8xLight Square PACKAGE  
70CRI 5700K FIXTURE w/ TYPE III ANGLED BACKLIGHT CONTROL  
Light Source: (112) 5700K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 46446.1 lumens  
Efficiency: N/A  
Efficacy: 124.6 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1.5' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B0 - U0 - G5

Input Watts (W): 372.9  
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

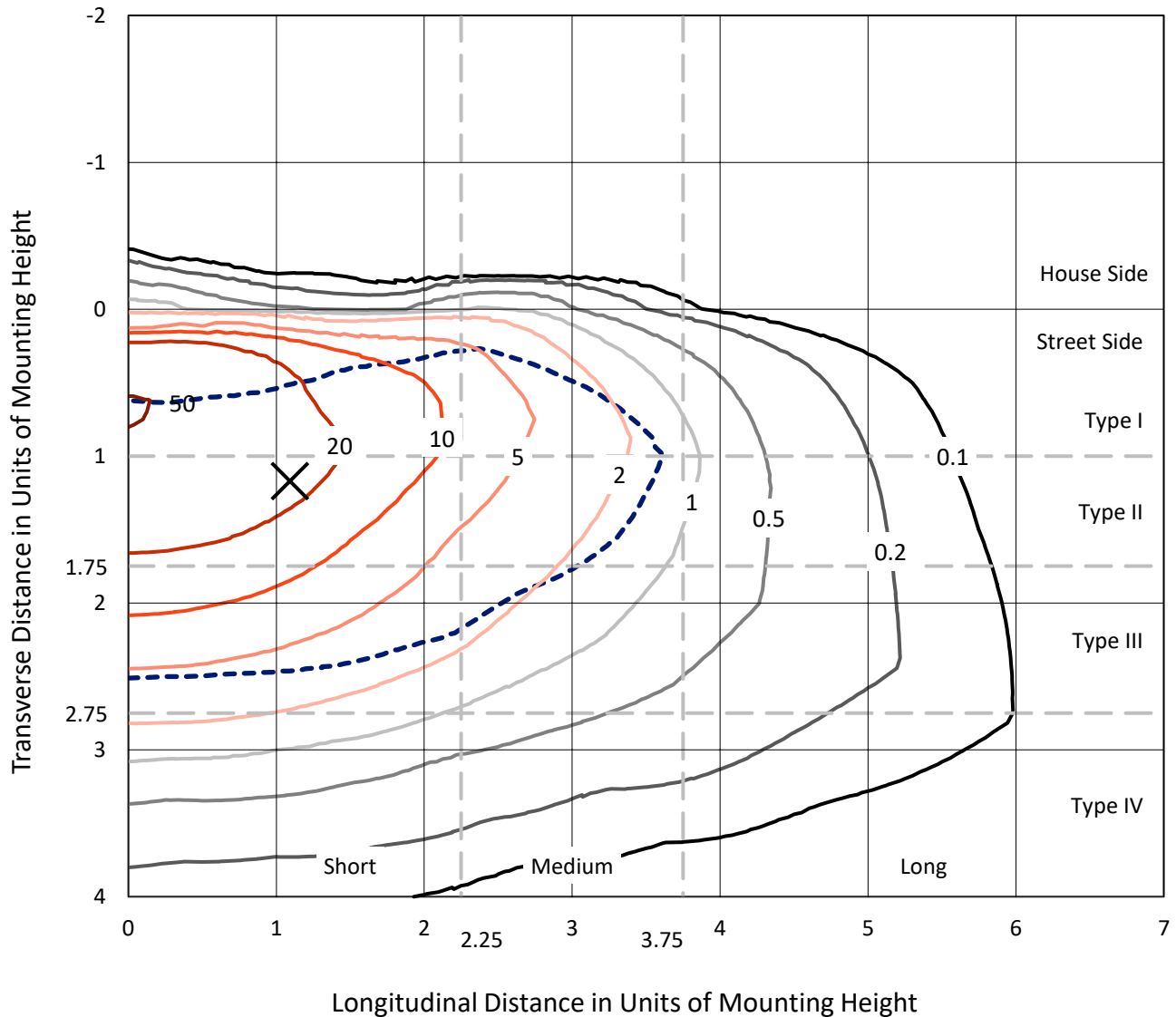


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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
- - - 1/2 Max cd

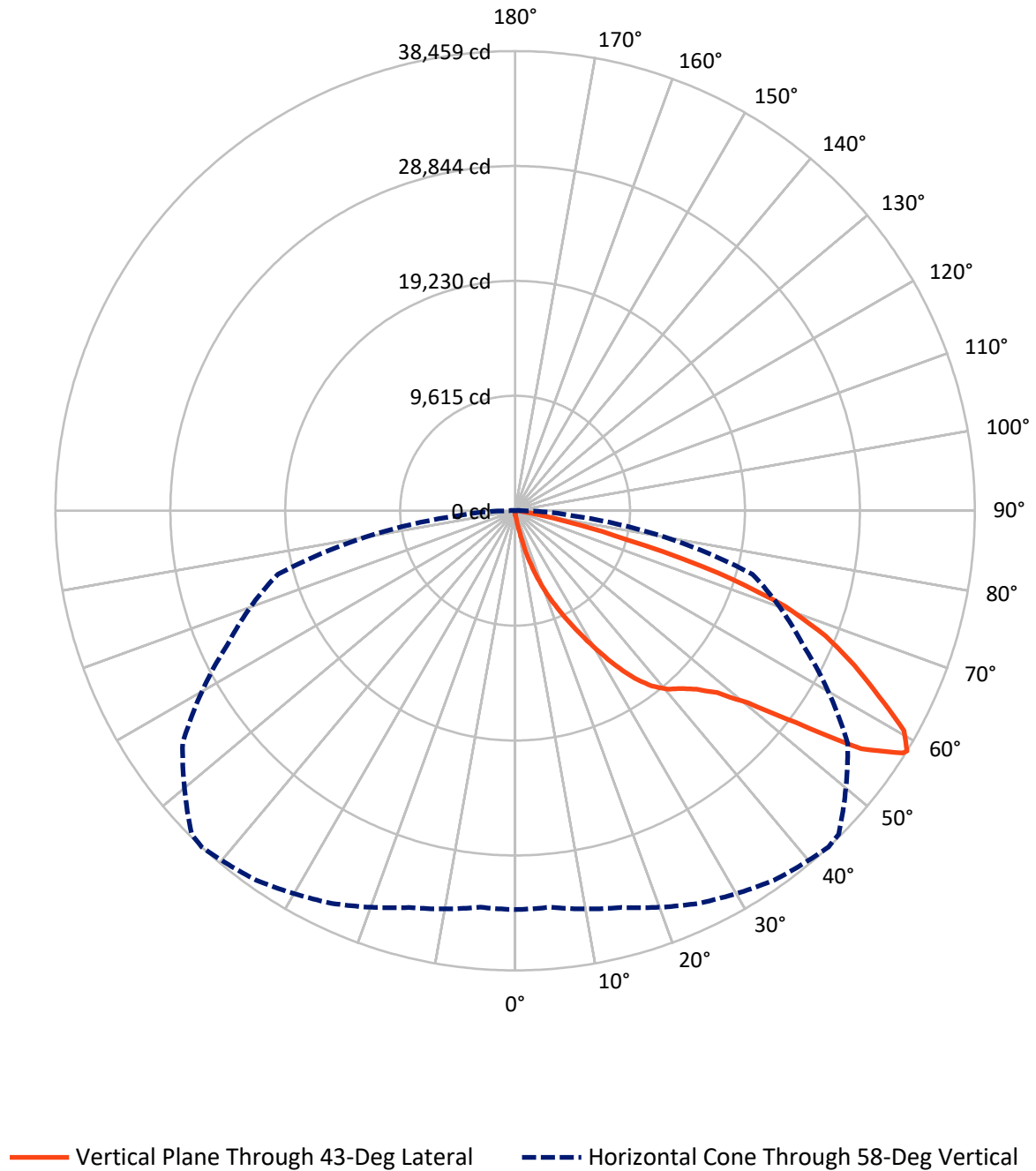


Based on 15 foot mounting height. Maximum calculated value = 52.1 fc  
Type III - Short - N/A

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## Luminous Intensity Polar Plot



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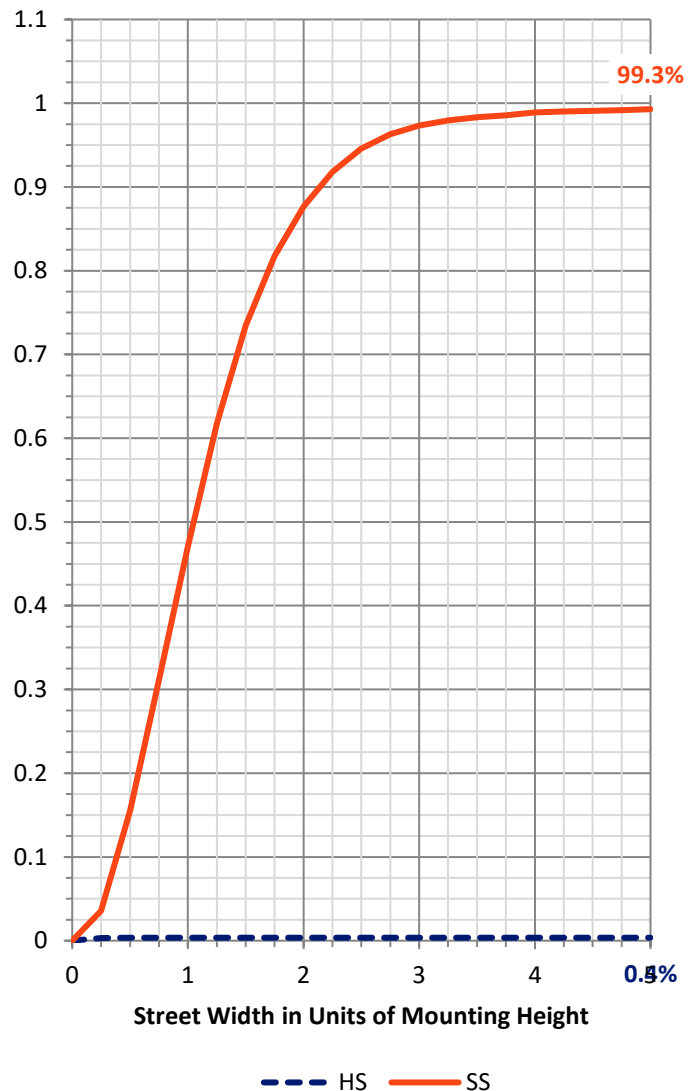
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 169.5    | 0.0    | 169.5   |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 46276.6  | 0.0    | 46276.6 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 46446.1  | 0.0    | 46446.1 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 44.5    | 0.1       |
| 10°-20°   | 533.9   | 1.1       |
| 20°-30°   | 1924.3  | 4.1       |
| 30°-40°   | 4402.8  | 9.5       |
| 40°-50°   | 7425.8  | 16.0      |
| 50°-60°   | 12254.3 | 26.4      |
| 60°-70°   | 13695.9 | 29.5      |
| 70°-80°   | 5654.8  | 12.2      |
| 80°-90°   | 509.8   | 1.1       |
| 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°    | 46446.1 | 100.0     |
| 0°-180°   | 46446.1 | 100.0     |



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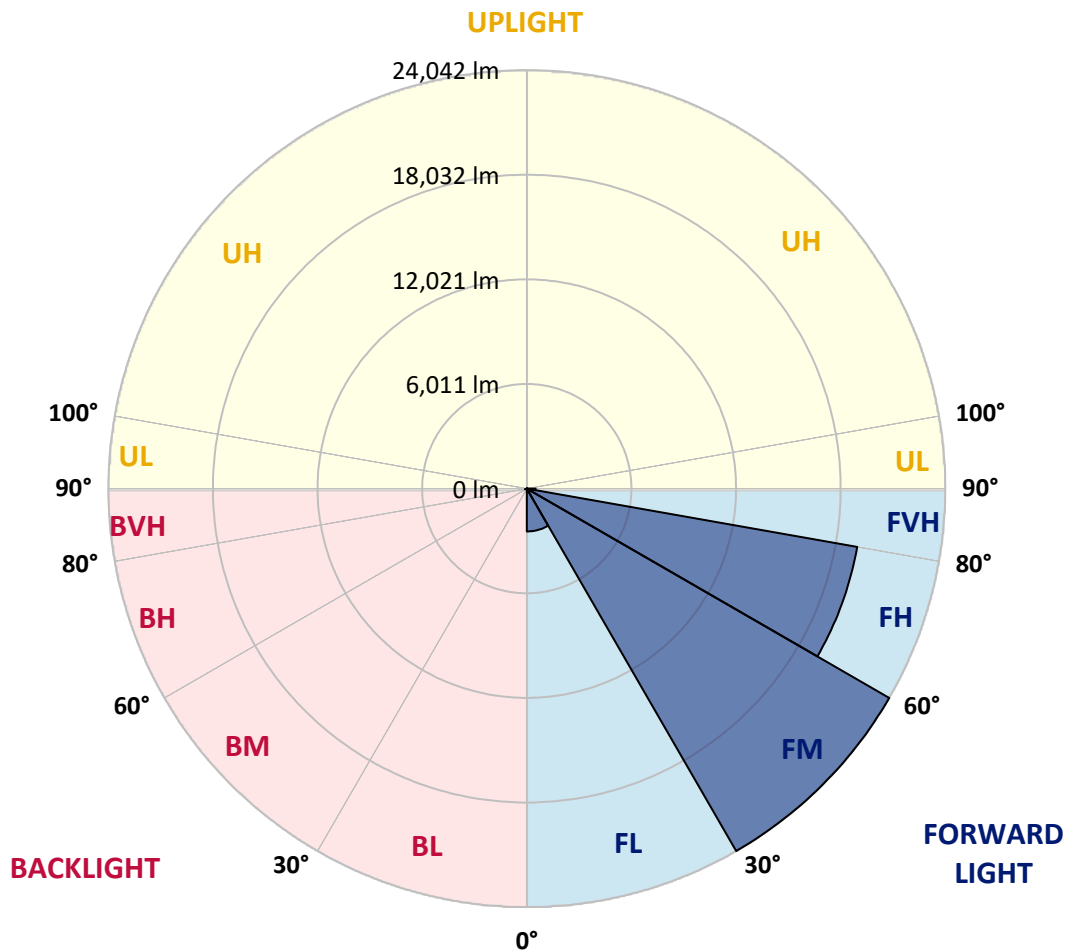
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |        |
|------|-------------|---------|-----------|-------------------------|------|--------|
|      |             |         |           | B                       | U    | G      |
| FL   | (0°-30°)    | 2458.5  | 5.3       |                         |      |        |
| FM   | (30°-60°)   | 24042.3 | 51.8      |                         |      |        |
| FH   | (60°-80°)   | 19273.0 | 41.5      |                         |      | G5     |
| FVH  | (80°-90°)   | 502.8   | 1.1       |                         |      | G4/750 |
| BL   | (0°-30°)    | 44.2    | 0.1       | B0/110                  |      |        |
| BM   | (30°-60°)   | 40.6    | 0.1       | B0/220                  |      |        |
| BH   | (60°-80°)   | 77.7    | 0.2       | B0/110                  |      | G0/110 |
| BVH  | (80°-90°)   | 7.0     | 0.0       |                         |      | G0/10  |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |        |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |        |

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

Type III Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 43°     | 45°     | 55°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 303.7   | 303.7   | 303.7   | 303.7   | 303.7   | 303.7   | 303.7   | 303.7   | 303.7   | 303.7   | 303.7   |
| 2.5°  | 364.4   | 376.6   | 364.4   | 364.4   | 364.4   | 352.3   | 352.3   | 340.1   | 340.1   | 328.0   | 315.8   |
| 5°    | 534.5   | 534.5   | 498.1   | 473.8   | 449.5   | 437.3   | 425.2   | 400.9   | 376.6   | 352.3   | 328.0   |
| 7.5°  | 1190.5  | 1190.5  | 1081.1  | 935.4   | 741.0   | 631.7   | 607.4   | 498.1   | 425.2   | 376.6   | 328.0   |
| 10°   | 2842.5  | 2842.5  | 2599.6  | 2198.7  | 1700.7  | 1263.3  | 1129.7  | 716.7   | 510.2   | 400.9   | 340.1   |
| 12.5° | 4725.4  | 4786.1  | 4482.5  | 3972.3  | 3231.3  | 2466.0  | 2198.7  | 1311.9  | 680.3   | 437.3   | 340.1   |
| 15°   | 6413.9  | 6268.2  | 6183.1  | 5697.2  | 4992.7  | 4081.6  | 3741.5  | 2210.9  | 984.0   | 498.1   | 340.1   |
| 17.5° | 7555.8  | 7555.8  | 7434.3  | 7106.3  | 6462.5  | 5660.8  | 5381.4  | 3571.4  | 1591.3  | 570.9   | 352.3   |
| 20°   | 8892.0  | 8892.0  | 8673.4  | 8442.6  | 7871.6  | 7191.4  | 6924.1  | 5077.7  | 2466.0  | 728.9   | 352.3   |
| 22.5° | 10507.7 | 10532.0 | 10289.0 | 9876.0  | 9329.3  | 8576.2  | 8345.4  | 6474.7  | 3571.4  | 971.8   | 364.4   |
| 25°   | 12475.6 | 12499.9 | 12147.6 | 11758.9 | 10920.7 | 10106.8 | 9754.5  | 8078.1  | 4919.8  | 1360.5  | 364.4   |
| 27.5° | 14650.0 | 14820.0 | 14297.7 | 13629.6 | 12742.8 | 11722.4 | 11455.2 | 9523.7  | 6256.0  | 1919.3  | 388.7   |
| 30°   | 17358.9 | 17358.9 | 16666.5 | 15731.1 | 14771.5 | 13508.1 | 13168.0 | 11042.2 | 7677.3  | 2660.3  | 413.0   |
| 32.5° | 19691.2 | 19509.0 | 18622.2 | 17638.3 | 16617.9 | 15439.6 | 15075.1 | 12633.5 | 9135.0  | 3583.5  | 461.6   |
| 35°   | 21476.9 | 21319.0 | 20225.7 | 19168.9 | 18282.1 | 17201.0 | 16763.7 | 14358.4 | 10677.7 | 4628.2  | 534.5   |
| 37.5° | 23007.5 | 22946.8 | 21464.8 | 20140.7 | 19557.6 | 18610.1 | 18221.4 | 15986.2 | 12196.2 | 5758.0  | 619.5   |
| 40°   | 24683.9 | 24489.5 | 22910.3 | 21270.4 | 20395.8 | 19630.5 | 19278.2 | 17298.2 | 13653.9 | 7082.0  | 741.0   |
| 42.5° | 26117.3 | 25886.5 | 24465.2 | 22861.7 | 21367.6 | 20335.1 | 19994.9 | 18403.6 | 15075.1 | 8406.1  | 898.9   |
| 45°   | 27708.6 | 27587.2 | 26153.7 | 24939.0 | 22946.8 | 21294.7 | 20845.2 | 19290.4 | 16374.9 | 9985.3  | 1105.4  |
| 47.5° | 30101.7 | 29883.0 | 28546.8 | 27550.7 | 25242.7 | 22752.4 | 22108.6 | 20201.4 | 17626.1 | 11540.2 | 1421.3  |
| 50°   | 32883.5 | 32737.7 | 31948.1 | 31158.5 | 28862.7 | 25242.7 | 24477.4 | 21513.4 | 19023.1 | 13386.6 | 1834.3  |
| 52.5° | 35155.1 | 35130.8 | 35228.0 | 35240.1 | 33503.0 | 29433.6 | 28291.7 | 23627.0 | 20626.6 | 15208.8 | 2417.4  |
| 55°   | 35106.5 | 35215.8 | 36284.8 | 37511.7 | 37645.4 | 35155.1 | 34049.7 | 27186.3 | 22716.0 | 17456.1 | 3231.3  |
| 57.5° | 33794.6 | 33709.5 | 34839.3 | 36685.7 | 37985.5 | 38252.7 | 38070.5 | 32713.4 | 25862.2 | 20165.0 | 4482.5  |
| 58°   | 33369.4 | 33296.5 | 34365.5 | 36248.4 | 37742.5 | 38459.2 | 38277.0 | 33964.6 | 26566.8 | 20553.7 | 4822.6  |
| 60°   | 31826.7 | 31838.8 | 32470.5 | 34183.3 | 35677.4 | 37378.1 | 37548.2 | 37536.0 | 30077.4 | 23153.3 | 6535.4  |
| 62.5° | 29785.9 | 29688.7 | 30271.8 | 31668.7 | 32980.7 | 34122.6 | 34414.1 | 37779.0 | 35215.8 | 26457.4 | 9803.1  |
| 65°   | 26967.6 | 26821.9 | 27441.4 | 29020.6 | 30429.7 | 31170.7 | 31182.8 | 34523.4 | 37633.2 | 30004.5 | 14467.8 |
| 67.5° | 21732.0 | 21610.5 | 22849.6 | 24878.2 | 27052.7 | 28024.5 | 28461.8 | 29955.9 | 35592.4 | 32409.7 | 17140.2 |
| 70°   | 13313.7 | 13568.8 | 15293.8 | 18476.5 | 22193.6 | 23979.3 | 24635.3 | 25096.9 | 30308.2 | 32045.3 | 14334.1 |
| 72.5° | 6146.7  | 5843.0  | 7312.8  | 9535.9  | 13775.4 | 17747.6 | 18427.9 | 20237.9 | 24027.9 | 27818.0 | 10689.9 |
| 75°   | 2866.8  | 2757.5  | 3097.6  | 4166.6  | 6243.9  | 9584.4  | 10823.5 | 16156.3 | 18427.9 | 19351.1 | 7713.7  |
| 77.5° | 1469.9  | 1482.0  | 1761.4  | 1895.0  | 2575.3  | 4433.9  | 5089.8  | 10629.1 | 13508.1 | 10799.2 | 5174.9  |
| 80°   | 643.8   | 668.1   | 680.3   | 741.0   | 1044.7  | 1712.8  | 1931.5  | 4931.9  | 9232.2  | 5502.9  | 2830.4  |
| 82.5° | 413.0   | 425.2   | 425.2   | 425.2   | 498.1   | 680.3   | 777.4   | 1980.1  | 4603.9  | 2733.2  | 874.6   |
| 85°   | 218.7   | 218.7   | 243.0   | 303.7   | 352.3   | 413.0   | 437.3   | 631.7   | 1518.4  | 813.9   | 206.5   |
| 87.5° | 121.5   | 133.6   | 145.8   | 182.2   | 230.8   | 279.4   | 303.7   | 437.3   | 583.1   | 558.8   | 48.6    |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |



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CATALOG NUMBER: GLAN-SA8C-760-U-T3BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 303.7  | 303.7 | 303.7 | 303.7 | 303.7 | 303.7 | 303.7 | 303.7 | 303.7 | 303.7 | 303.7 |
| 2.5°  | 315.8  | 303.7 | 291.5 | 279.4 | 267.2 | 255.1 | 255.1 | 255.1 | 255.1 | 255.1 | 255.1 |
| 5°    | 303.7  | 291.5 | 279.4 | 255.1 | 230.8 | 218.7 | 206.5 | 194.4 | 194.4 | 194.4 | 194.4 |
| 7.5°  | 303.7  | 291.5 | 255.1 | 230.8 | 206.5 | 182.2 | 157.9 | 157.9 | 157.9 | 157.9 | 157.9 |
| 10°   | 303.7  | 279.4 | 243.0 | 206.5 | 170.1 | 145.8 | 133.6 | 121.5 | 121.5 | 121.5 | 121.5 |
| 12.5° | 303.7  | 267.2 | 230.8 | 182.2 | 145.8 | 121.5 | 109.3 | 97.2  | 97.2  | 97.2  | 97.2  |
| 15°   | 303.7  | 267.2 | 218.7 | 170.1 | 133.6 | 97.2  | 85.0  | 72.9  | 72.9  | 72.9  | 72.9  |
| 17.5° | 291.5  | 255.1 | 206.5 | 145.8 | 109.3 | 72.9  | 60.7  | 48.6  | 48.6  | 60.7  | 60.7  |
| 20°   | 279.4  | 243.0 | 182.2 | 121.5 | 85.0  | 60.7  | 36.4  | 36.4  | 36.4  | 36.4  | 36.4  |
| 22.5° | 279.4  | 243.0 | 170.1 | 109.3 | 72.9  | 36.4  | 24.3  | 24.3  | 24.3  | 24.3  | 36.4  |
| 25°   | 279.4  | 230.8 | 145.8 | 85.0  | 48.6  | 24.3  | 12.1  | 12.1  | 12.1  | 12.1  | 12.1  |
| 27.5° | 279.4  | 230.8 | 133.6 | 72.9  | 36.4  | 24.3  | 12.1  | 0.0   | 0.0   | 0.0   | 0.0   |
| 30°   | 267.2  | 218.7 | 121.5 | 60.7  | 24.3  | 12.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 32.5° | 267.2  | 206.5 | 97.2  | 48.6  | 24.3  | 12.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 35°   | 279.4  | 194.4 | 85.0  | 36.4  | 12.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 12.1  |
| 37.5° | 291.5  | 182.2 | 72.9  | 24.3  | 12.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 40°   | 303.7  | 170.1 | 72.9  | 24.3  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 42.5° | 328.0  | 170.1 | 60.7  | 24.3  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 45°   | 352.3  | 170.1 | 48.6  | 12.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 47.5° | 400.9  | 182.2 | 48.6  | 12.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 50°   | 437.3  | 194.4 | 36.4  | 12.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 52.5° | 485.9  | 182.2 | 36.4  | 12.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 55°   | 546.6  | 182.2 | 36.4  | 12.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 57.5° | 595.2  | 170.1 | 36.4  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 58°   | 619.5  | 157.9 | 24.3  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 60°   | 741.0  | 145.8 | 24.3  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 62.5° | 1154.0 | 121.5 | 24.3  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 65°   | 2344.5 | 109.3 | 24.3  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 67.5° | 4373.1 | 97.2  | 24.3  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 70°   | 4895.5 | 109.3 | 12.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 72.5° | 3085.5 | 85.0  | 12.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 75°   | 1627.8 | 85.0  | 12.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 77.5° | 813.9  | 85.0  | 12.1  | 12.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 80°   | 376.6  | 60.7  | 12.1  | 12.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 82.5° | 157.9  | 36.4  | 24.3  | 12.1  | 12.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 72.9   | 36.4  | 24.3  | 24.3  | 12.1  | 12.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 36.4   | 36.4  | 36.4  | 24.3  | 24.3  | 12.1  | 12.1  | 0.0   | 0.0   | 0.0   | 0.0   |
| 90°   | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |



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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-7

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-760-U-5WQ

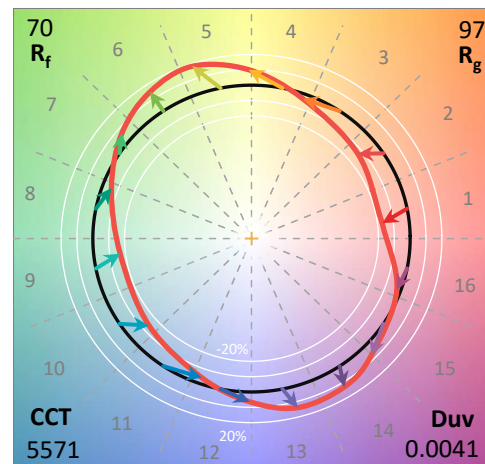
Data in this report applies to families of products including GSS-SB1A-760-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-7  
 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-70-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 5700K CCT 26 LEDS

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 5571     | CRI (Ra): | 69.9 |      |       |
| CIE u':                   | 0.2033   | R1:       | 68.8 | R9:  | -35.4 |
| CIE v':                   | 0.4806   | R2:       | 72.5 | R10: | 36.7  |
| Duv:                      | 0.0041   | R3:       | 76.8 | R11: | 73.9  |
| CIE x:                    | 0.3308   | R4:       | 72.0 | R12: | 47.8  |
| CIE y:                    | 0.3476   | R5:       | 70.9 | R13: | 68.0  |
| CIE z:                    | 0.3216   | R6:       | 65.6 | R14: | 87.0  |
| Peak Wavelength (nm):     | 442      | R7:       | 75.5 | R15: | 59.8  |
| Dominant Wavelength (nm): | 544      | R8:       | 56.8 |      |       |
| Purity:                   | 3.635698 |           |      |      |       |
| Rf:                       | 70.4     |           |      |      |       |
| Rg:                       | 97.1     |           |      |      |       |



### Test Conditions

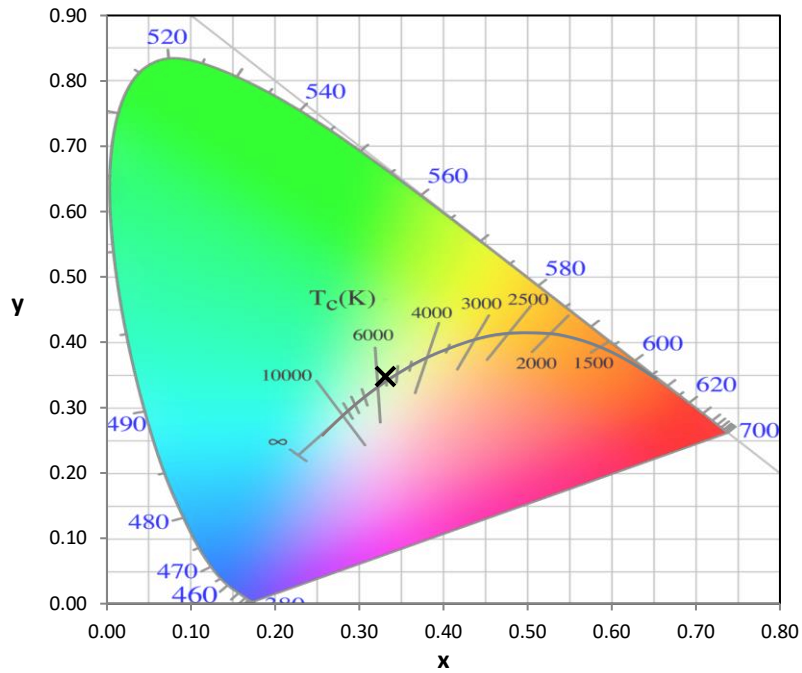
Stabilization Time: 20M  
 Operation Time: 1H 20M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-7

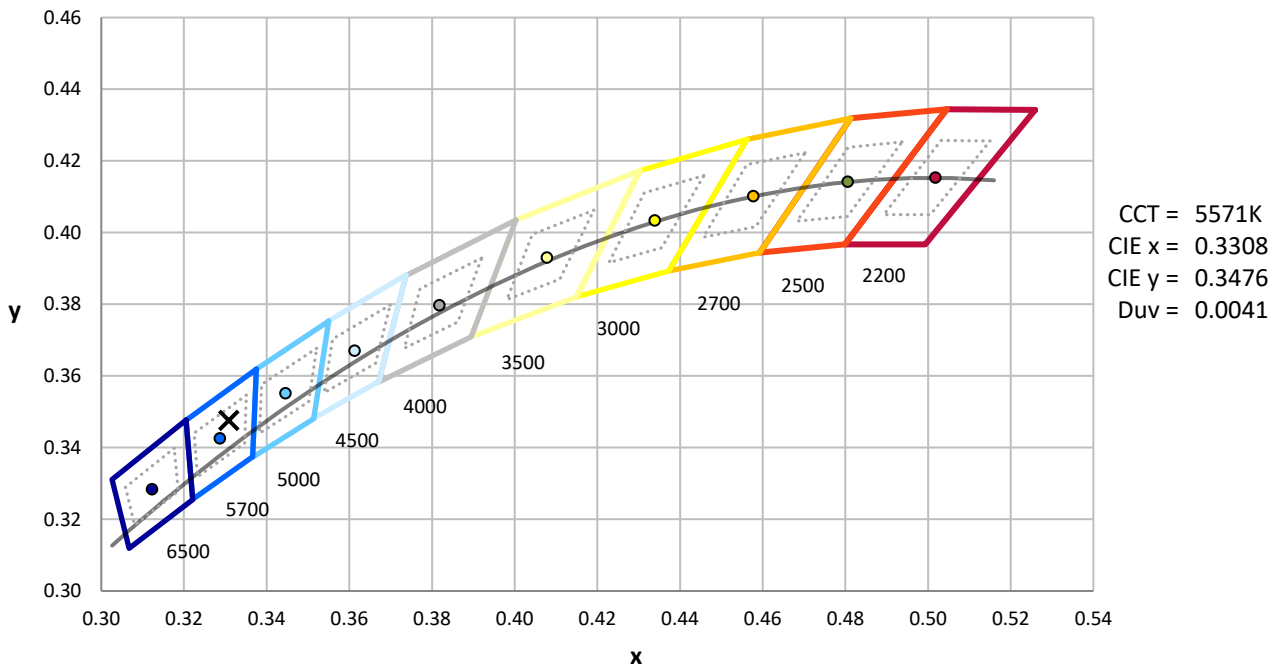
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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



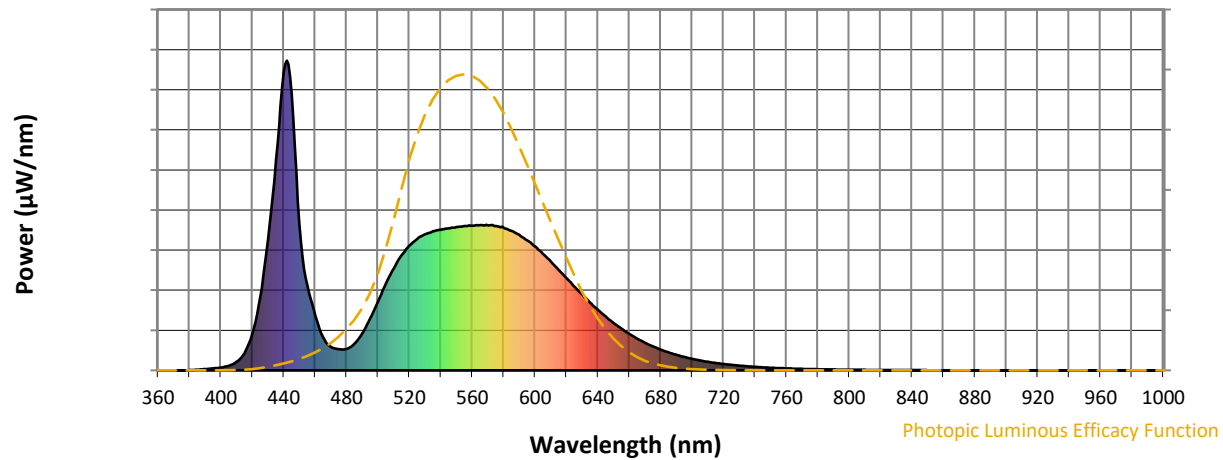
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 5700K 4-step quadrangle

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### Photopic Flux vs. Wavelength

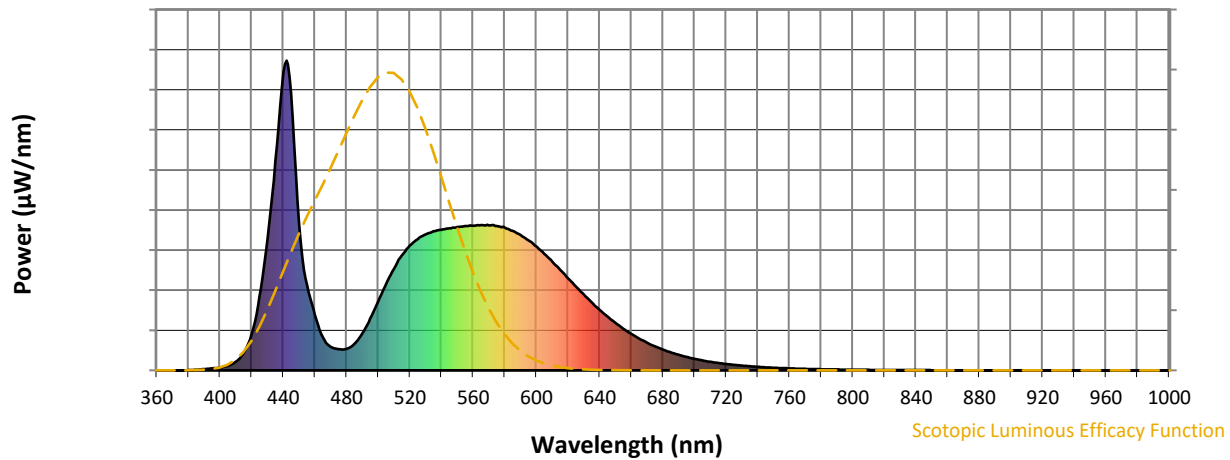


### Photopic Lumens: NR

| 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       | 120                         | NR               | 620       | 298                         | NR               | 750       | 9                           | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 167                         | NR               | 625       | 270                         | NR               | 755       | 7                           | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 222                         | NR               | 630       | 245                         | NR               | 760       | 6                           | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 279                         | NR               | 635       | 219                         | NR               | 765       | 6                           | NR               | 895       | 0                           | NR               |
| 380       | 1                           | NR               | 510       | 329                         | NR               | 640       | 196                         | NR               | 770       | 5                           | NR               | 900       | 0                           | NR               |
| 385       | 2                           | NR               | 515       | 371                         | NR               | 645       | 173                         | NR               | 775       | 4                           | NR               | 905       | 0                           | NR               |
| 390       | 4                           | NR               | 520       | 403                         | NR               | 650       | 153                         | NR               | 780       | 4                           | NR               | 910       | 0                           | NR               |
| 395       | 6                           | NR               | 525       | 424                         | NR               | 655       | 135                         | NR               | 785       | 3                           | NR               | 915       | 0                           | NR               |
| 400       | 9                           | NR               | 530       | 439                         | NR               | 660       | 117                         | NR               | 790       | 3                           | NR               | 920       | 0                           | NR               |
| 405       | 14                          | NR               | 535       | 449                         | NR               | 665       | 103                         | NR               | 795       | 2                           | NR               | 925       | 0                           | NR               |
| 410       | 28                          | NR               | 540       | 454                         | NR               | 670       | 89                          | NR               | 800       | 2                           | NR               | 930       | 0                           | NR               |
| 415       | 55                          | NR               | 545       | 459                         | NR               | 675       | 77                          | NR               | 805       | 2                           | NR               | 935       | 0                           | NR               |
| 420       | 118                         | NR               | 550       | 463                         | NR               | 680       | 67                          | NR               | 810       | 2                           | NR               | 940       | 0                           | NR               |
| 425       | 237                         | NR               | 555       | 466                         | NR               | 685       | 58                          | NR               | 815       | 1                           | NR               | 945       | 0                           | NR               |
| 430       | 420                         | NR               | 560       | 467                         | NR               | 690       | 50                          | NR               | 820       | 1                           | NR               | 950       | 0                           | NR               |
| 435       | 677                         | NR               | 565       | 469                         | NR               | 695       | 43                          | NR               | 825       | 1                           | NR               | 955       | 0                           | NR               |
| 440       | 962                         | NR               | 570       | 469                         | NR               | 700       | 37                          | NR               | 830       | 1                           | NR               | 960       | 0                           | NR               |
| 445       | 894                         | NR               | 575       | 466                         | NR               | 705       | 32                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 472                         | NR               | 580       | 461                         | NR               | 710       | 28                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 275                         | NR               | 585       | 450                         | NR               | 715       | 24                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 180                         | NR               | 590       | 437                         | NR               | 720       | 21                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 107                         | NR               | 595       | 420                         | NR               | 725       | 18                          | NR               | 855       | 0                           | NR               | 985       | 0                           | NR               |
| 470       | 76                          | NR               | 600       | 400                         | NR               | 730       | 15                          | NR               | 860       | 0                           | NR               | 990       | 0                           | NR               |
| 475       | 68                          | NR               | 605       | 376                         | NR               | 735       | 13                          | NR               | 865       | 0                           | NR               | 995       | 0                           | NR               |
| 480       | 69                          | NR               | 610       | 352                         | NR               | 740       | 11                          | NR               | 870       | 0                           | NR               | 1000      | 0                           | NR               |
| 485       | 86                          | NR               | 615       | 325                         | NR               | 745       | 10                          | NR               | 875       | 0                           | NR               |           |                             |                  |

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### Scotopic Flux vs. Wavelength



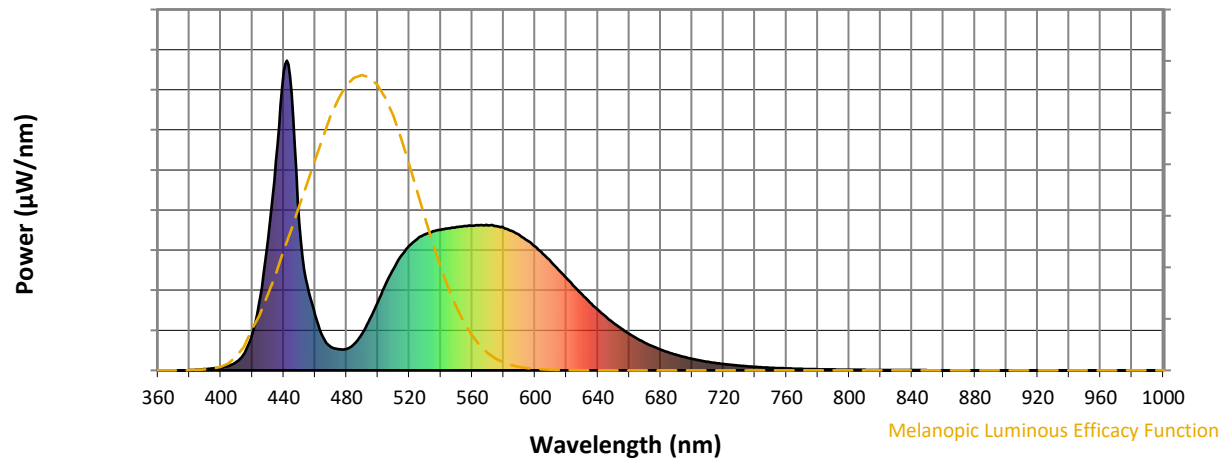
Scotopic Lumens: NR

S/P: 1.84

| 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    | 120                      | NR            | 620    | 298                      | NR            | 750    | 9                        | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 167                      | NR            | 625    | 270                      | NR            | 755    | 7                        | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 222                      | NR            | 630    | 245                      | NR            | 760    | 6                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 279                      | NR            | 635    | 219                      | NR            | 765    | 6                        | NR            | 895    | 0                        | NR            |
| 380    | 1                        | NR            | 510    | 329                      | NR            | 640    | 196                      | NR            | 770    | 5                        | NR            | 900    | 0                        | NR            |
| 385    | 2                        | NR            | 515    | 371                      | NR            | 645    | 173                      | NR            | 775    | 4                        | NR            | 905    | 0                        | NR            |
| 390    | 4                        | NR            | 520    | 403                      | NR            | 650    | 153                      | NR            | 780    | 4                        | NR            | 910    | 0                        | NR            |
| 395    | 6                        | NR            | 525    | 424                      | NR            | 655    | 135                      | NR            | 785    | 3                        | NR            | 915    | 0                        | NR            |
| 400    | 9                        | NR            | 530    | 439                      | NR            | 660    | 117                      | NR            | 790    | 3                        | NR            | 920    | 0                        | NR            |
| 405    | 14                       | NR            | 535    | 449                      | NR            | 665    | 103                      | NR            | 795    | 2                        | NR            | 925    | 0                        | NR            |
| 410    | 28                       | NR            | 540    | 454                      | NR            | 670    | 89                       | NR            | 800    | 2                        | NR            | 930    | 0                        | NR            |
| 415    | 55                       | NR            | 545    | 459                      | NR            | 675    | 77                       | NR            | 805    | 2                        | NR            | 935    | 0                        | NR            |
| 420    | 118                      | NR            | 550    | 463                      | NR            | 680    | 67                       | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 237                      | NR            | 555    | 466                      | NR            | 685    | 58                       | NR            | 815    | 1                        | NR            | 945    | 0                        | NR            |
| 430    | 420                      | NR            | 560    | 467                      | NR            | 690    | 50                       | NR            | 820    | 1                        | NR            | 950    | 0                        | NR            |
| 435    | 677                      | NR            | 565    | 469                      | NR            | 695    | 43                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 962                      | NR            | 570    | 469                      | NR            | 700    | 37                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 894                      | NR            | 575    | 466                      | NR            | 705    | 32                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 472                      | NR            | 580    | 461                      | NR            | 710    | 28                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 275                      | NR            | 585    | 450                      | NR            | 715    | 24                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 180                      | NR            | 590    | 437                      | NR            | 720    | 21                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 107                      | NR            | 595    | 420                      | NR            | 725    | 18                       | NR            | 855    | 0                        | NR            | 985    | 0                        | NR            |
| 470    | 76                       | NR            | 600    | 400                      | NR            | 730    | 15                       | NR            | 860    | 0                        | NR            | 990    | 0                        | NR            |
| 475    | 68                       | NR            | 605    | 376                      | NR            | 735    | 13                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 69                       | NR            | 610    | 352                      | NR            | 740    | 11                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 86                       | NR            | 615    | 325                      | NR            | 745    | 10                       | NR            | 875    | 0                        | NR            |        |                          |               |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 3.71

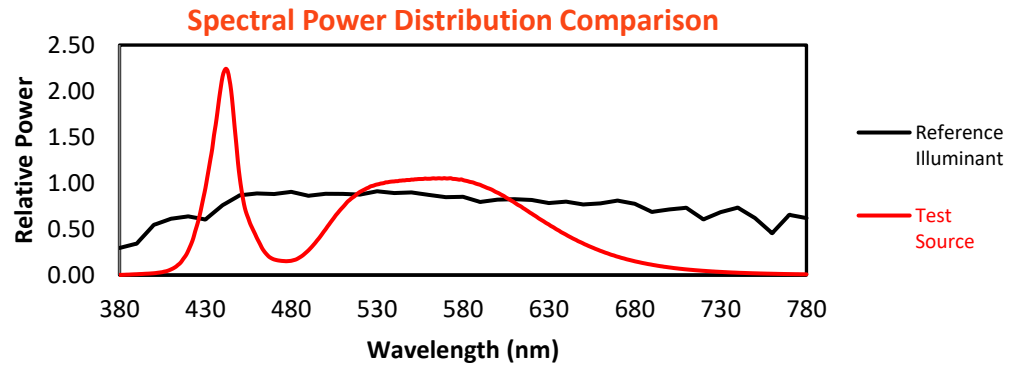
| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 120                         | NR               | 620       | 298                         | NR               | 750       | 9                           | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 167                         | NR               | 625       | 270                         | NR               | 755       | 7                           | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 222                         | NR               | 630       | 245                         | NR               | 760       | 6                           | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 279                         | NR               | 635       | 219                         | NR               | 765       | 6                           | NR               | 895       | 0                           | NR               |
| 380       | 1                           | NR               | 510       | 329                         | NR               | 640       | 196                         | NR               | 770       | 5                           | NR               | 900       | 0                           | NR               |
| 385       | 2                           | NR               | 515       | 371                         | NR               | 645       | 173                         | NR               | 775       | 4                           | NR               | 905       | 0                           | NR               |
| 390       | 4                           | NR               | 520       | 403                         | NR               | 650       | 153                         | NR               | 780       | 4                           | NR               | 910       | 0                           | NR               |
| 395       | 6                           | NR               | 525       | 424                         | NR               | 655       | 135                         | NR               | 785       | 3                           | NR               | 915       | 0                           | NR               |
| 400       | 9                           | NR               | 530       | 439                         | NR               | 660       | 117                         | NR               | 790       | 3                           | NR               | 920       | 0                           | NR               |
| 405       | 14                          | NR               | 535       | 449                         | NR               | 665       | 103                         | NR               | 795       | 2                           | NR               | 925       | 0                           | NR               |
| 410       | 28                          | NR               | 540       | 454                         | NR               | 670       | 89                          | NR               | 800       | 2                           | NR               | 930       | 0                           | NR               |
| 415       | 55                          | NR               | 545       | 459                         | NR               | 675       | 77                          | NR               | 805       | 2                           | NR               | 935       | 0                           | NR               |
| 420       | 118                         | NR               | 550       | 463                         | NR               | 680       | 67                          | NR               | 810       | 2                           | NR               | 940       | 0                           | NR               |
| 425       | 237                         | NR               | 555       | 466                         | NR               | 685       | 58                          | NR               | 815       | 1                           | NR               | 945       | 0                           | NR               |
| 430       | 420                         | NR               | 560       | 467                         | NR               | 690       | 50                          | NR               | 820       | 1                           | NR               | 950       | 0                           | NR               |
| 435       | 677                         | NR               | 565       | 469                         | NR               | 695       | 43                          | NR               | 825       | 1                           | NR               | 955       | 0                           | NR               |
| 440       | 962                         | NR               | 570       | 469                         | NR               | 700       | 37                          | NR               | 830       | 1                           | NR               | 960       | 0                           | NR               |
| 445       | 894                         | NR               | 575       | 466                         | NR               | 705       | 32                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 472                         | NR               | 580       | 461                         | NR               | 710       | 28                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 275                         | NR               | 585       | 450                         | NR               | 715       | 24                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 180                         | NR               | 590       | 437                         | NR               | 720       | 21                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 107                         | NR               | 595       | 420                         | NR               | 725       | 18                          | NR               | 855       | 0                           | NR               | 985       | 0                           | NR               |
| 470       | 76                          | NR               | 600       | 400                         | NR               | 730       | 15                          | NR               | 860       | 0                           | NR               | 990       | 0                           | NR               |
| 475       | 68                          | NR               | 605       | 376                         | NR               | 735       | 13                          | NR               | 865       | 0                           | NR               | 995       | 0                           | NR               |
| 480       | 69                          | NR               | 610       | 352                         | NR               | 740       | 11                          | NR               | 870       | 0                           | NR               | 1000      | 0                           | NR               |
| 485       | 86                          | NR               | 615       | 325                         | NR               | 745       | 10                          | NR               | 875       | 0                           | NR               |           |                             |                  |

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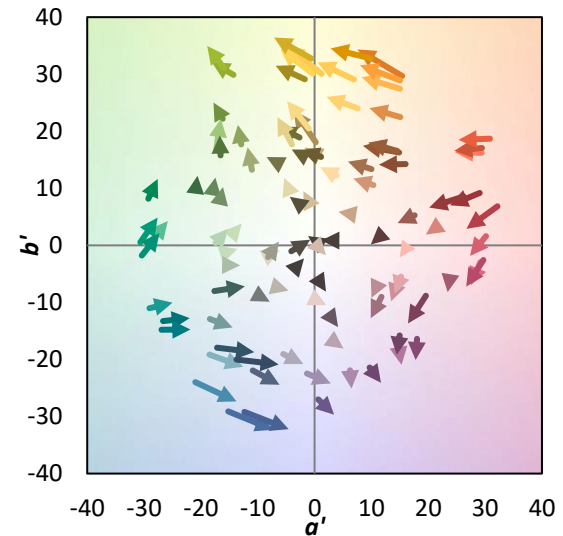
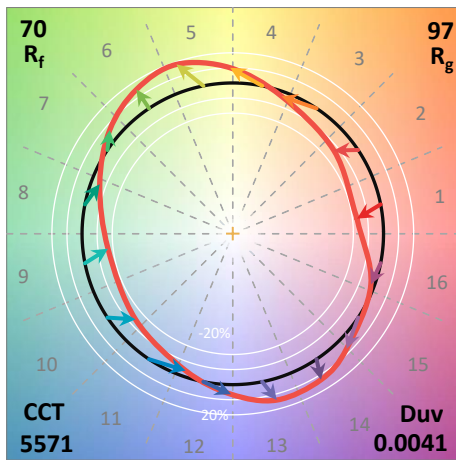
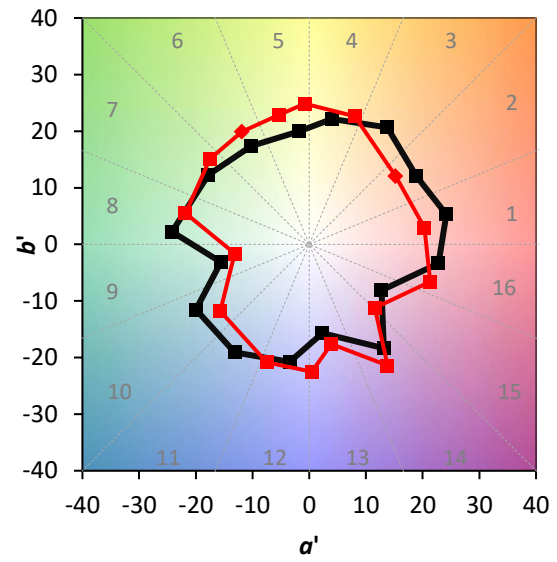
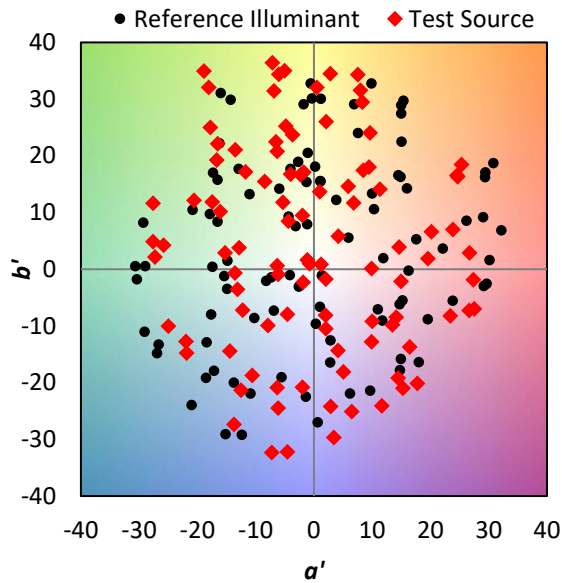
TM-30-18

### Summary

$R_f = 70.4$   
 $R_g = 97.1$   
 $CIE R_a = 69.9$   
 $R_g = -35.4$



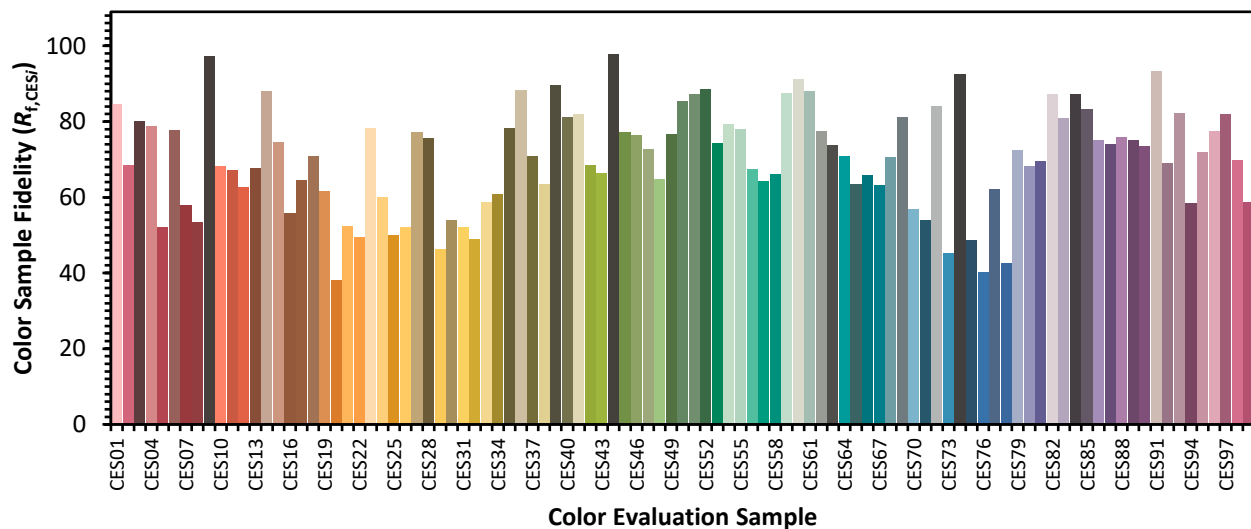
### Color Vector Graphics



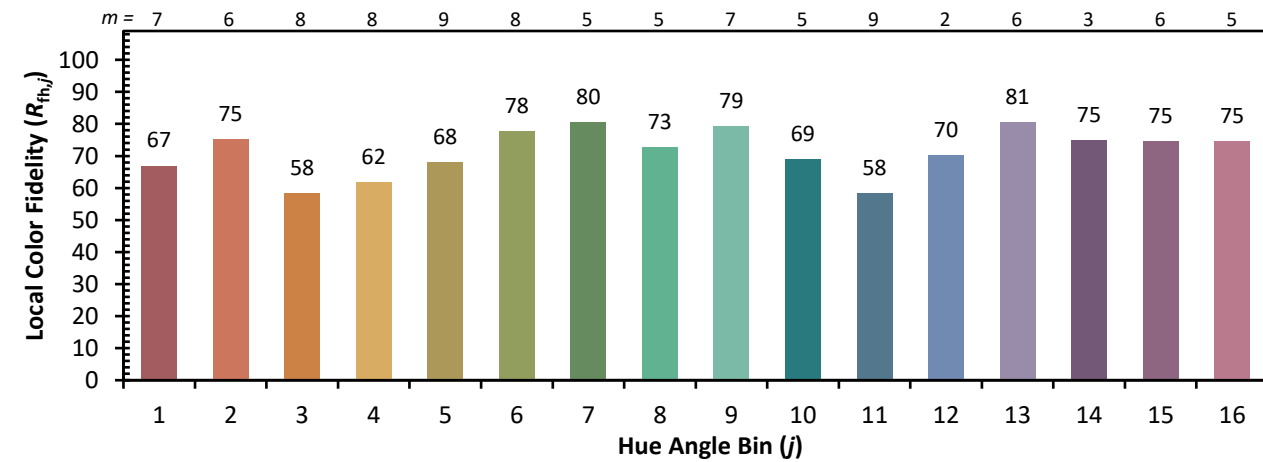
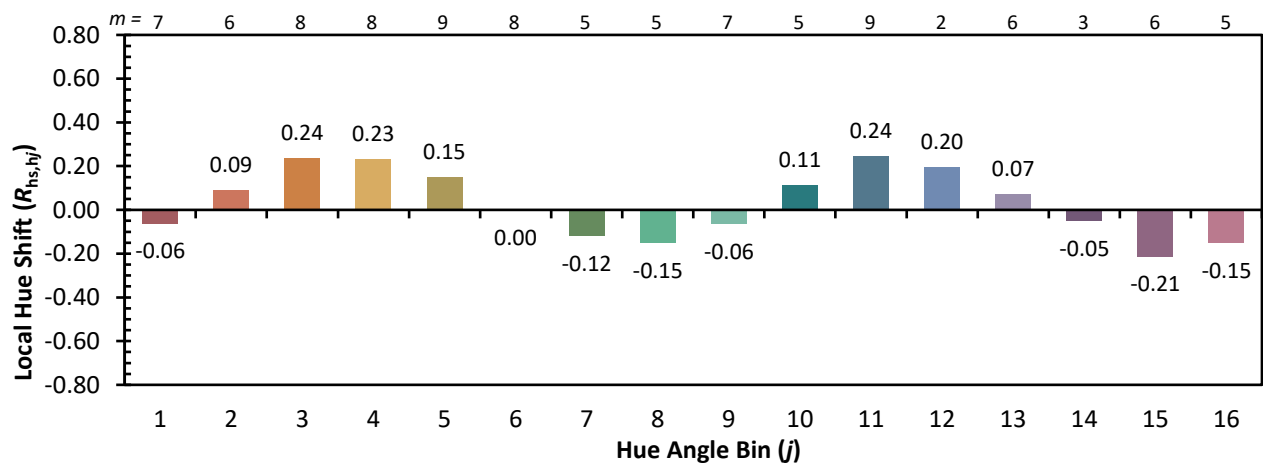
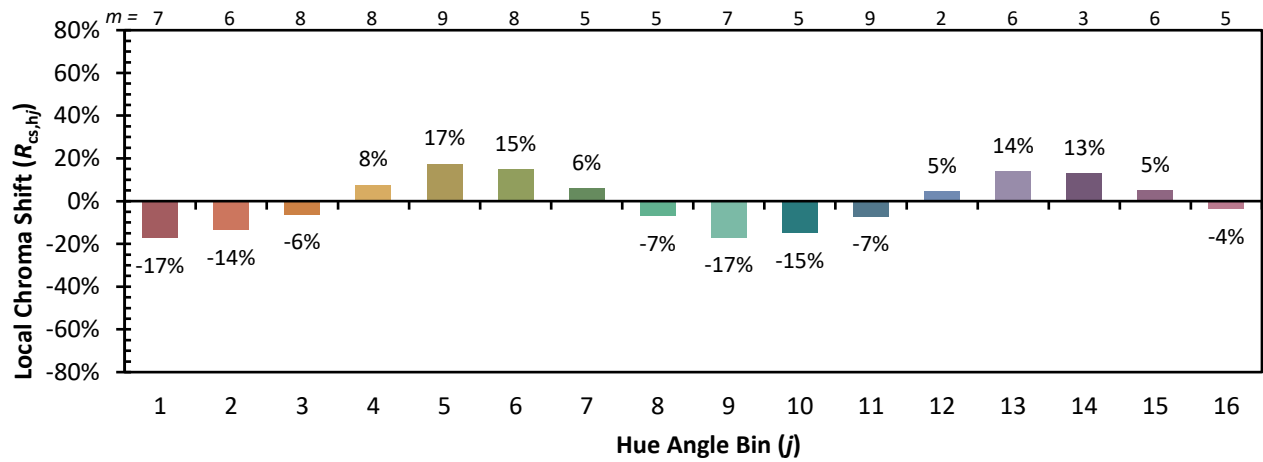


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

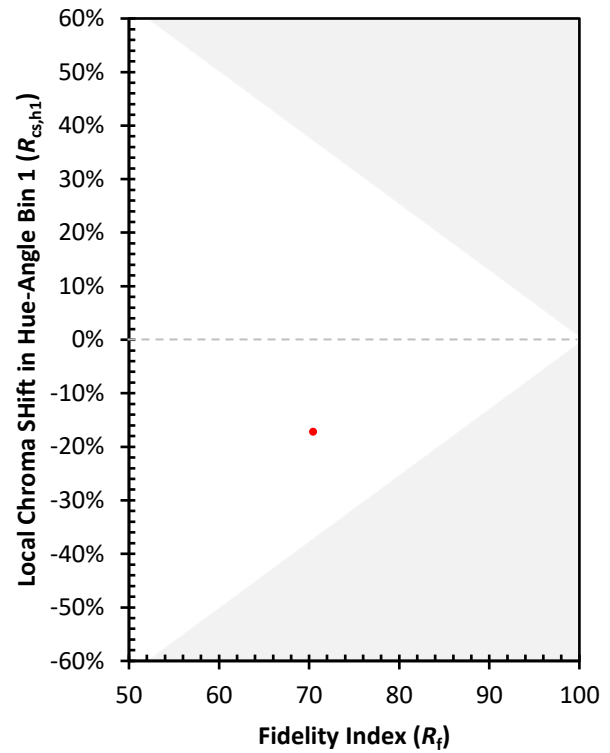
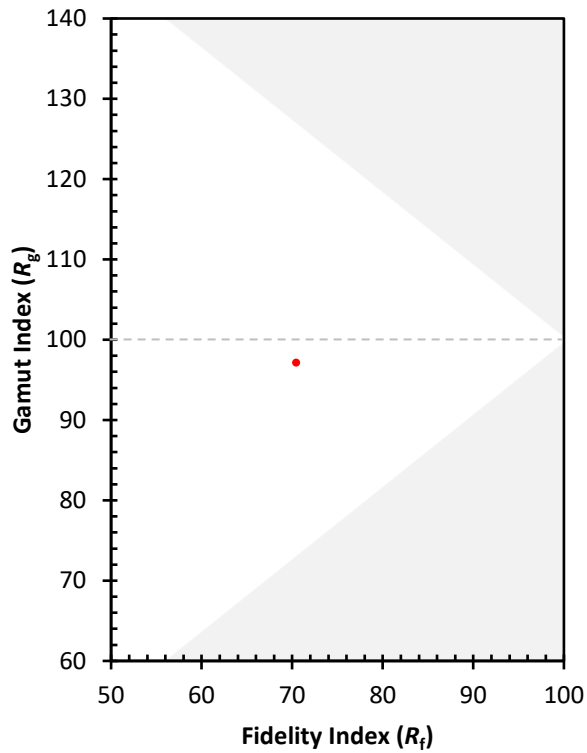
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 52 | CES51 = 87 | CES76 = 40 |
| CES02 = 59 | CES27 = 77 | CES52 = 88 | CES77 = 62 |
| CES03 = 30 | CES28 = 76 | CES53 = 74 | CES78 = 43 |
| CES04 = 68 | CES29 = 46 | CES54 = 79 | CES79 = 72 |
| CES05 = 45 | CES30 = 54 | CES55 = 78 | CES80 = 68 |
| CES06 = 49 | CES31 = 52 | CES56 = 67 | CES81 = 70 |
| CES07 = 38 | CES32 = 49 | CES57 = 64 | CES82 = 87 |
| CES08 = 37 | CES33 = 59 | CES58 = 66 | CES83 = 81 |
| CES09 = 29 | CES34 = 61 | CES59 = 87 | CES84 = 87 |
| CES10 = 72 | CES35 = 78 | CES60 = 91 | CES85 = 83 |
| CES11 = 55 | CES36 = 88 | CES61 = 88 | CES86 = 75 |
| CES12 = 61 | CES37 = 71 | CES62 = 77 | CES87 = 74 |
| CES13 = 41 | CES38 = 64 | CES63 = 74 | CES88 = 76 |
| CES14 = 74 | CES39 = 90 | CES64 = 71 | CES89 = 75 |
| CES15 = 70 | CES40 = 81 | CES65 = 63 | CES90 = 73 |
| CES16 = 46 | CES41 = 82 | CES66 = 66 | CES91 = 93 |
| CES17 = 48 | CES42 = 69 | CES67 = 63 | CES92 = 69 |
| CES18 = 55 | CES43 = 67 | CES68 = 71 | CES93 = 82 |
| CES19 = 70 | CES44 = 98 | CES69 = 81 | CES94 = 58 |
| CES20 = 63 | CES45 = 77 | CES70 = 57 | CES95 = 72 |
| CES21 = 85 | CES46 = 76 | CES71 = 54 | CES96 = 78 |
| CES22 = 77 | CES47 = 73 | CES72 = 84 | CES97 = 82 |
| CES23 = 91 | CES48 = 65 | CES73 = 45 | CES98 = 70 |
| CES24 = 90 | CES49 = 77 | CES74 = 92 | CES99 = 59 |
| CES25 = 71 | CES50 = 85 | CES75 = 49 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)