

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: P1063510

Luminaire Tested: **GLAN-SA9B-760-U-T2BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1063510  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: GLAN-SA9B-760-U-T2BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 800mA 9xLight Square PACKAGE  
70CRI 5700K FIXTURE w/ TYPE II ANGLED BACKLIGHT CONTROL  
Light Source: (126) 5700K CCT, 70 CRI LEDs  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 39717.6 lumens  
Efficiency: N/A  
Efficacy: 127.0 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B0 - U0 - G5

Input Watts (W): 312.7  
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

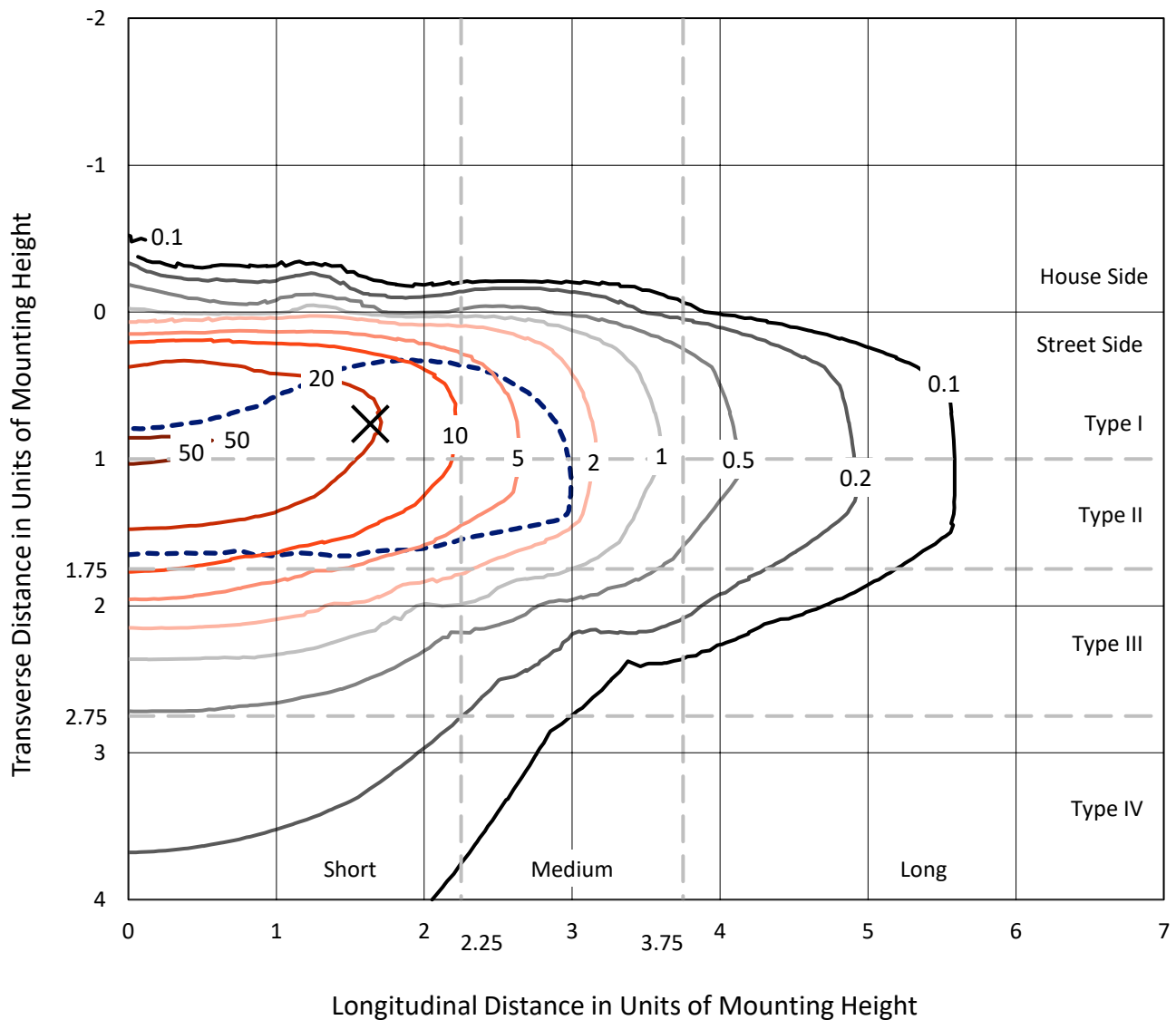


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## Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd  
 - - - 1/2 Max cd

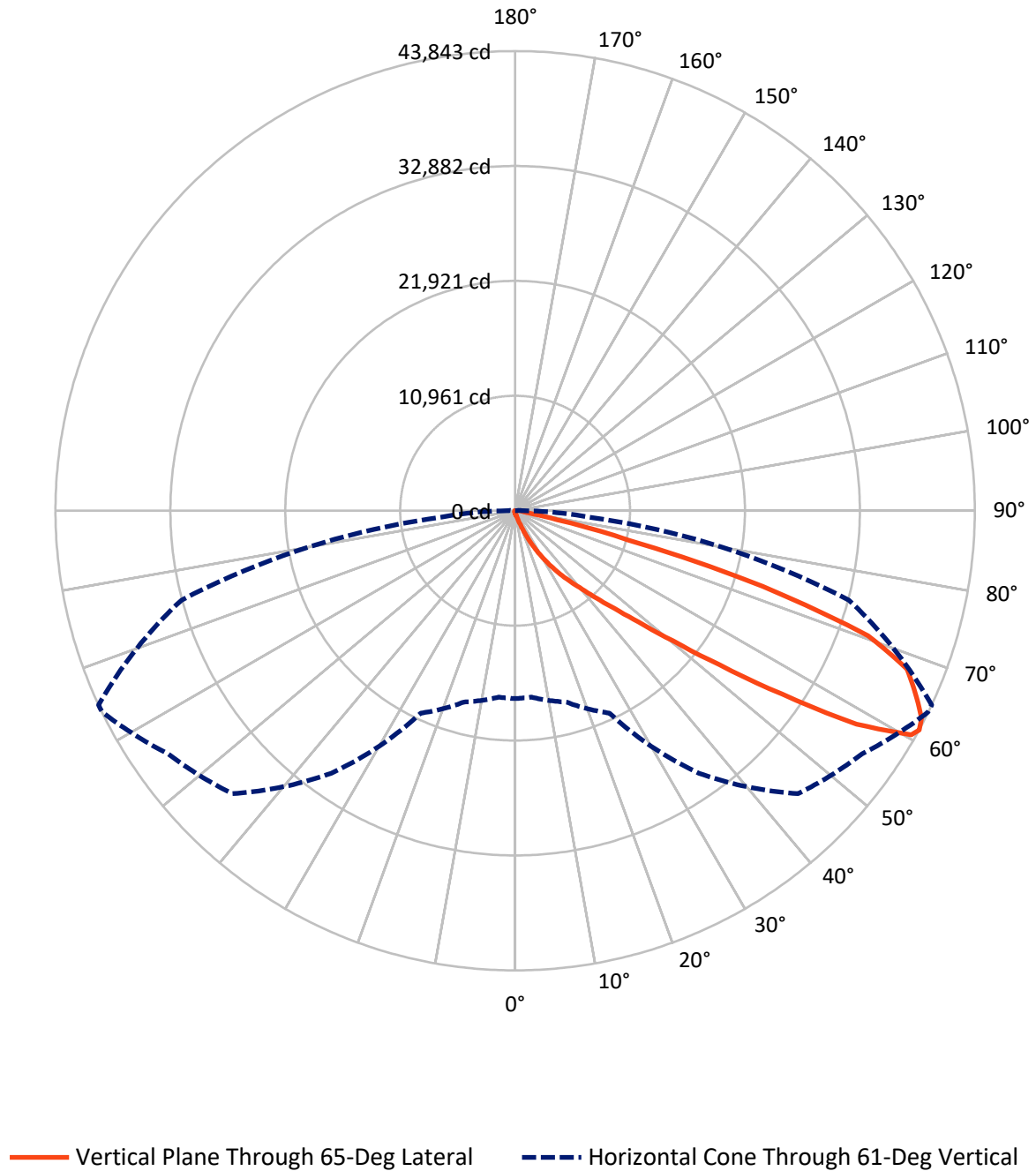


Based on 15 foot mounting height. Maximum calculated value = 52.5 fc  
 Type II - Short - N/A

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## Luminous Intensity Polar Plot



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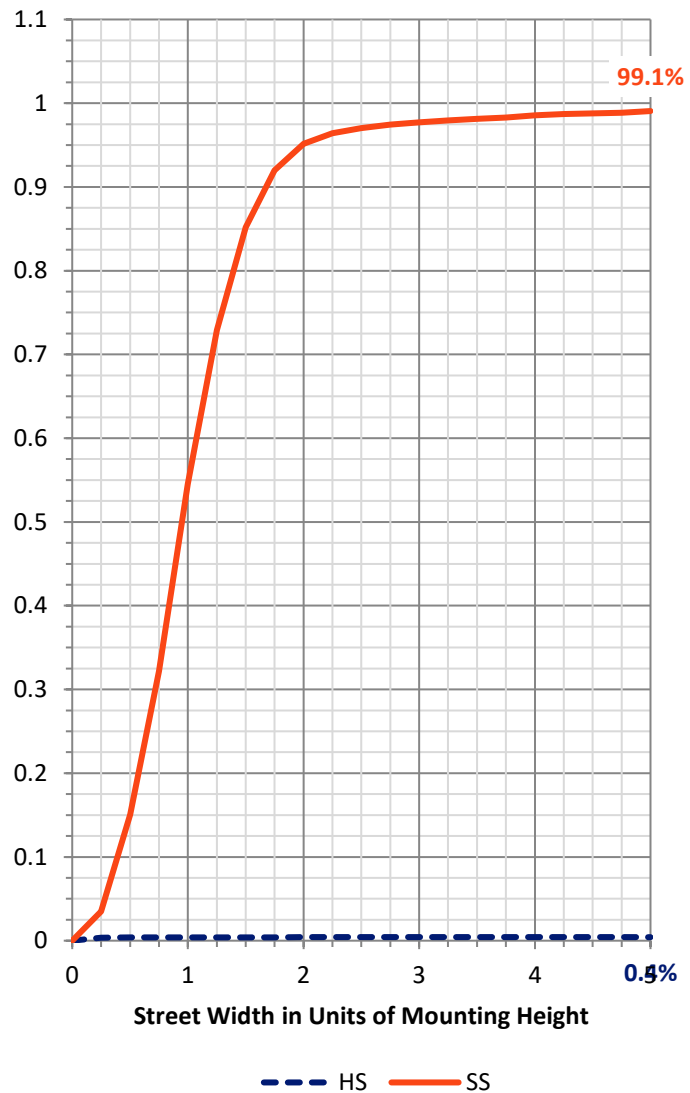
**FLUX DISTRIBUTION:**

|                    |           | 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    | 39548.1  | 0.0    | 39548.1 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 39717.6  | 0.0    | 39717.6 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 30.9    | 0.1       |
| 10°-20°   | 326.6   | 0.8       |
| 20°-30°   | 1172.1  | 3.0       |
| 30°-40°   | 3120.6  | 7.9       |
| 40°-50°   | 8197.9  | 20.6      |
| 50°-60°   | 12700.1 | 32.0      |
| 60°-70°   | 10648.9 | 26.8      |
| 70°-80°   | 3133.8  | 7.9       |
| 80°-90°   | 386.6   | 1.0       |
| 90°-100°  | 0.0     | 0.0       |
| 100°-110° | 0.0     | 0.0       |
| 110°-120° | 0.0     | 0.0       |
| 120°-130° | 0.0     | 0.0       |
| 130°-140° | 0.0     | 0.0       |
| 140°-150° | 0.0     | 0.0       |
| 150°-160° | 0.0     | 0.0       |
| 160°-170° | 0.0     | 0.0       |
| 170°-180° | 0.0     | 0.0       |
| 0°-90°    | 39717.6 | 100.0     |
| 0°-180°   | 39717.6 | 100.0     |



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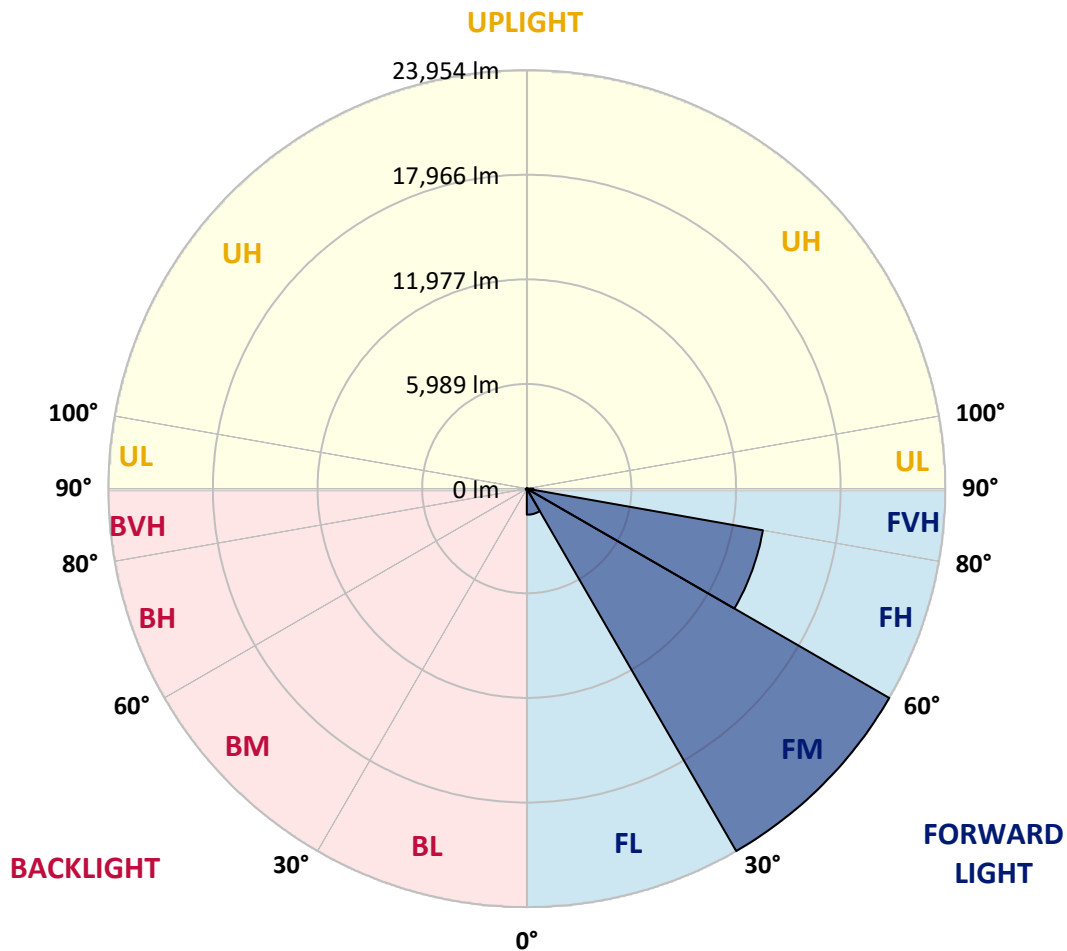
CATALOG NUMBER: GLAN-SA9B-760-U-T2BC

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

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |        |
|------|-------------|---------|-----------|-------------------------|------|--------|
|      |             |         |           | B                       | U    | G      |
| FL   | (0°-30°)    | 1491.6  | 3.8       |                         |      |        |
| FM   | (30°-60°)   | 23954.2 | 60.3      |                         |      |        |
| FH   | (60°-80°)   | 13722.8 | 34.6      |                         |      | G5     |
| FVH  | (80°-90°)   | 379.4   | 1.0       |                         |      | G3/500 |
| BL   | (0°-30°)    | 38.0    | 0.1       | B0/110                  |      |        |
| BM   | (30°-60°)   | 64.5    | 0.2       | B0/220                  |      |        |
| BH   | (60°-80°)   | 59.8    | 0.2       | B0/110                  |      | G0/110 |
| BVH  | (80°-90°)   | 7.2     | 0.0       |                         |      | G0/10  |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |        |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |        |

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

Type II Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 64°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 243.2   | 243.2   | 243.2   | 243.2   | 243.2   | 243.2   | 243.2   | 243.2   | 243.2   | 243.2   | 243.2   |
| 2.5°  | 295.1   | 297.8   | 292.3   | 281.4   | 273.2   | 273.2   | 270.5   | 262.3   | 262.3   | 254.1   | 248.6   |
| 5°    | 412.6   | 407.1   | 396.2   | 374.3   | 355.2   | 336.1   | 316.9   | 297.8   | 295.1   | 270.5   | 254.1   |
| 7.5°  | 674.8   | 680.3   | 644.8   | 576.5   | 519.1   | 445.3   | 377.0   | 336.1   | 330.6   | 289.6   | 256.8   |
| 10°   | 1480.8  | 1439.8  | 1357.9  | 1092.9  | 898.9   | 677.6   | 502.7   | 390.7   | 385.2   | 311.5   | 262.3   |
| 12.5° | 2699.4  | 2666.6  | 2516.3  | 2243.1  | 1743.1  | 1213.1  | 734.9   | 483.6   | 467.2   | 330.6   | 265.0   |
| 15°   | 3890.6  | 3838.7  | 3756.7  | 3480.8  | 2896.1  | 2174.8  | 1202.1  | 661.2   | 617.5   | 357.9   | 262.3   |
| 17.5° | 4650.1  | 4658.3  | 4584.5  | 4467.1  | 4090.0  | 3218.5  | 2076.4  | 986.3   | 901.6   | 407.1   | 256.8   |
| 20°   | 5314.0  | 5294.9  | 5335.9  | 5273.0  | 5008.0  | 4374.2  | 3021.8  | 1562.8  | 1418.0  | 486.3   | 259.6   |
| 22.5° | 6079.0  | 6125.5  | 6155.5  | 6141.9  | 5849.5  | 5308.6  | 4095.5  | 2338.7  | 2155.7  | 631.1   | 267.8   |
| 25°   | 7103.6  | 7098.1  | 7100.8  | 7065.3  | 6781.2  | 6180.1  | 5171.9  | 3303.2  | 3117.4  | 866.1   | 286.9   |
| 27.5° | 8177.3  | 8210.1  | 8223.8  | 8095.3  | 7723.8  | 7133.6  | 6169.2  | 4357.8  | 4139.2  | 1243.1  | 311.5   |
| 30°   | 9644.5  | 9617.1  | 9554.3  | 9292.0  | 8841.2  | 8109.0  | 7152.8  | 5464.3  | 5234.8  | 1770.4  | 349.7   |
| 32.5° | 11622.5 | 11592.5 | 11275.6 | 10696.3 | 10021.5 | 9125.4  | 8141.8  | 6573.5  | 6294.9  | 2428.9  | 401.6   |
| 35°   | 14882.0 | 14928.4 | 14149.8 | 12649.8 | 11439.5 | 10346.6 | 9237.4  | 7677.3  | 7431.4  | 3240.3  | 472.7   |
| 37.5° | 19873.6 | 19619.5 | 18562.2 | 15912.0 | 13305.5 | 11871.2 | 10283.8 | 8792.0  | 8578.9  | 4240.3  | 565.6   |
| 40°   | 24723.2 | 24471.8 | 24165.8 | 21655.0 | 16548.6 | 13551.4 | 11748.2 | 10100.7 | 9824.8  | 5368.7  | 702.2   |
| 42.5° | 29821.3 | 29682.0 | 29668.3 | 27775.0 | 22466.4 | 16193.4 | 13510.4 | 11633.5 | 11398.5 | 6606.3  | 926.2   |
| 45°   | 33433.2 | 33293.9 | 33586.2 | 33916.8 | 30526.2 | 21854.4 | 16578.6 | 13625.2 | 13283.7 | 8109.0  | 1284.1  |
| 47.5° | 33919.6 | 33925.0 | 34706.4 | 35741.9 | 36515.1 | 30610.9 | 20665.9 | 16264.4 | 15849.2 | 10259.2 | 1885.2  |
| 50°   | 32302.1 | 32365.0 | 33608.1 | 35460.5 | 37542.4 | 37957.7 | 27873.3 | 20094.9 | 19480.2 | 12808.3 | 2737.6  |
| 52.5° | 29223.0 | 29294.0 | 31026.2 | 34072.6 | 36597.1 | 39722.6 | 36359.4 | 25105.7 | 24398.0 | 15988.5 | 3939.8  |
| 55°   | 26449.9 | 26493.6 | 28479.9 | 32329.4 | 35457.8 | 38763.6 | 41397.4 | 31796.7 | 30867.8 | 19900.9 | 5125.5  |
| 57.5° | 23704.1 | 23603.0 | 24895.3 | 29302.2 | 35263.8 | 37586.1 | 42140.6 | 39422.1 | 38397.5 | 24176.7 | 6049.0  |
| 60°   | 20032.1 | 19862.7 | 20900.9 | 23704.1 | 32711.9 | 38359.3 | 40749.9 | 43640.5 | 43408.3 | 30130.1 | 6762.1  |
| 61°   | 17920.1 | 17849.1 | 18892.8 | 21297.1 | 30564.5 | 38162.6 | 40416.6 | 43818.1 | 43842.7 | 32946.9 | 7081.7  |
| 62.5° | 12797.4 | 12999.5 | 14595.1 | 17720.7 | 25600.2 | 36886.7 | 40460.3 | 43269.0 | 43512.1 | 36690.0 | 7909.6  |
| 65°   | 5688.3  | 6013.4  | 7253.8  | 9797.5  | 14887.4 | 30684.7 | 40072.3 | 42064.1 | 41943.9 | 37717.2 | 10761.9 |
| 67.5° | 3374.2  | 3423.4  | 4040.8  | 5551.7  | 7885.0  | 16504.9 | 35362.1 | 40471.2 | 40310.0 | 32834.9 | 13390.2 |
| 70°   | 2658.4  | 2683.0  | 2879.7  | 3483.5  | 4576.3  | 6322.2  | 20182.3 | 35015.1 | 35717.3 | 26624.7 | 13108.8 |
| 72.5° | 2521.8  | 2516.3  | 2543.6  | 2650.2  | 2882.4  | 3136.5  | 7813.9  | 23275.1 | 24704.0 | 19174.2 | 10991.4 |
| 75°   | 2489.0  | 2478.1  | 2450.7  | 2409.8  | 2087.4  | 1846.9  | 2420.7  | 10294.7 | 11122.6 | 13100.6 | 8275.7  |
| 77.5° | 2415.2  | 2417.9  | 2423.4  | 2311.4  | 1789.6  | 1306.0  | 1172.1  | 3303.2  | 4062.7  | 8313.9  | 5882.3  |
| 80°   | 1633.8  | 1658.4  | 1699.4  | 1655.7  | 1609.2  | 945.3   | 827.8   | 1174.8  | 1191.2  | 4666.5  | 3885.1  |
| 82.5° | 827.8   | 827.8   | 808.7   | 721.3   | 622.9   | 614.7   | 658.4   | 852.4   | 863.4   | 2360.6  | 1827.8  |
| 85°   | 500.0   | 527.3   | 538.2   | 489.1   | 448.1   | 412.6   | 502.7   | 677.6   | 702.2   | 915.3   | 426.2   |
| 87.5° | 112.0   | 114.8   | 125.7   | 166.7   | 243.2   | 330.6   | 467.2   | 620.2   | 631.1   | 587.4   | 51.9    |
| 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: P1063510

CATALOG NUMBER: GLAN-SA9B-760-U-T2BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 243.2  | 243.2 | 243.2 | 243.2 | 243.2 | 243.2 | 243.2 | 243.2 | 243.2 | 243.2 | 243.2 |
| 2.5°  | 245.9  | 240.4 | 237.7 | 229.5 | 221.3 | 213.1 | 207.6 | 204.9 | 207.6 | 210.4 | 210.4 |
| 5°    | 243.2  | 235.0 | 221.3 | 207.6 | 196.7 | 185.8 | 174.9 | 172.1 | 172.1 | 174.9 | 174.9 |
| 7.5°  | 243.2  | 229.5 | 210.4 | 194.0 | 177.6 | 161.2 | 153.0 | 147.5 | 150.3 | 150.3 | 150.3 |
| 10°   | 243.2  | 226.8 | 202.2 | 177.6 | 158.5 | 139.3 | 125.7 | 120.2 | 120.2 | 120.2 | 120.2 |
| 12.5° | 240.4  | 224.0 | 194.0 | 163.9 | 136.6 | 114.8 | 98.4  | 90.2  | 92.9  | 92.9  | 92.9  |
| 15°   | 235.0  | 215.8 | 183.1 | 139.3 | 109.3 | 87.4  | 71.0  | 62.8  | 65.6  | 71.0  | 73.8  |
| 17.5° | 226.8  | 207.6 | 163.9 | 117.5 | 87.4  | 65.6  | 49.2  | 43.7  | 46.4  | 54.6  | 54.6  |
| 20°   | 224.0  | 199.4 | 144.8 | 95.6  | 65.6  | 46.4  | 32.8  | 27.3  | 30.1  | 41.0  | 43.7  |
| 22.5° | 224.0  | 194.0 | 131.1 | 79.2  | 49.2  | 30.1  | 19.1  | 10.9  | 10.9  | 19.1  | 19.1  |
| 25°   | 226.8  | 191.3 | 120.2 | 65.6  | 35.5  | 21.9  | 10.9  | 5.5   | 10.9  | 30.1  | 35.5  |
| 27.5° | 232.2  | 188.5 | 114.8 | 54.6  | 27.3  | 19.1  | 8.2   | 19.1  | 32.8  | 32.8  | 32.8  |
| 30°   | 237.7  | 183.1 | 106.6 | 46.4  | 24.6  | 13.7  | 13.7  | 27.3  | 27.3  | 32.8  | 35.5  |
| 32.5° | 245.9  | 180.3 | 101.1 | 41.0  | 19.1  | 10.9  | 19.1  | 16.4  | 16.4  | 19.1  | 21.9  |
| 35°   | 262.3  | 183.1 | 95.6  | 41.0  | 19.1  | 13.7  | 16.4  | 8.2   | 5.5   | 5.5   | 5.5   |
| 37.5° | 284.1  | 185.8 | 87.4  | 35.5  | 16.4  | 16.4  | 8.2   | 0.0   | 0.0   | 0.0   | 0.0   |
| 40°   | 319.7  | 194.0 | 82.0  | 32.8  | 13.7  | 13.7  | 2.7   | 0.0   | 0.0   | 0.0   | 0.0   |
| 42.5° | 379.8  | 210.4 | 79.2  | 30.1  | 13.7  | 10.9  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 45°   | 500.0  | 248.6 | 73.8  | 27.3  | 13.7  | 5.5   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 47.5° | 718.6  | 338.8 | 71.0  | 21.9  | 8.2   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 50°   | 1049.1 | 459.0 | 68.3  | 19.1  | 2.7   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 52.5° | 1338.8 | 483.6 | 46.4  | 16.4  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 55°   | 1371.5 | 333.3 | 35.5  | 10.9  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 57.5° | 1092.9 | 215.8 | 30.1  | 8.2   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 60°   | 827.8  | 163.9 | 27.3  | 2.7   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 61°   | 795.1  | 147.5 | 27.3  | 2.7   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 62.5° | 877.0  | 128.4 | 24.6  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 65°   | 1426.2 | 106.6 | 21.9  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 67.5° | 2478.1 | 92.9  | 19.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 70°   | 3131.0 | 87.4  | 16.4  | 2.7   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 72.5° | 2729.4 | 79.2  | 16.4  | 5.5   | 2.7   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 75°   | 1642.0 | 68.3  | 16.4  | 10.9  | 5.5   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 77.5° | 860.6  | 51.9  | 16.4  | 13.7  | 8.2   | 2.7   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 80°   | 418.0  | 46.4  | 19.1  | 13.7  | 10.9  | 5.5   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 82.5° | 163.9  | 38.3  | 21.9  | 19.1  | 13.7  | 8.2   | 2.7   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 73.8   | 32.8  | 24.6  | 21.9  | 19.1  | 10.9  | 2.7   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 38.3   | 30.1  | 27.3  | 24.6  | 19.1  | 13.7  | 5.5   | 0.0   | 0.0   | 0.0   | 0.0   |
| 90°   | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



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

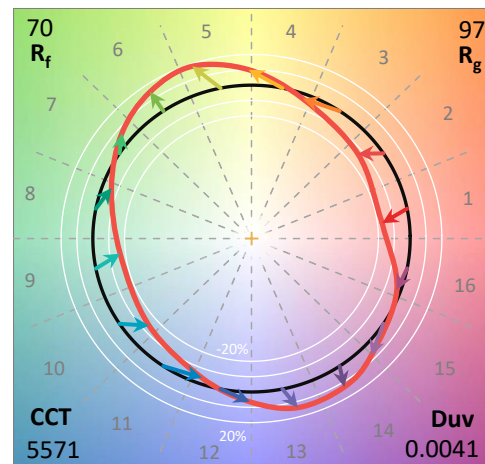
Data in this report applies to families of products including GSS-SB1A-760-U-5WQ

### 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

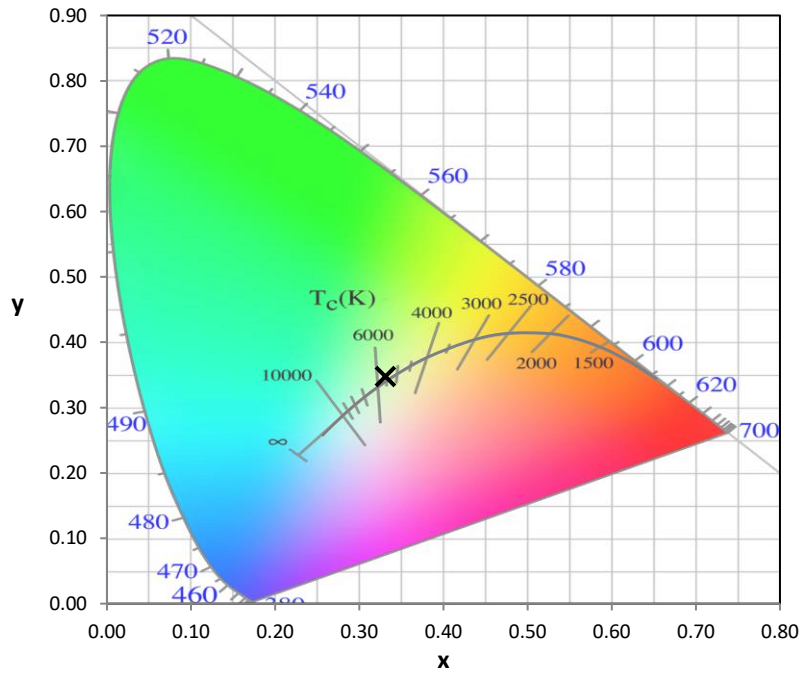
Stabilization Time: 20M  
 Operation Time: 1H 20M  
 Sphere Temperature (°C): 25.2

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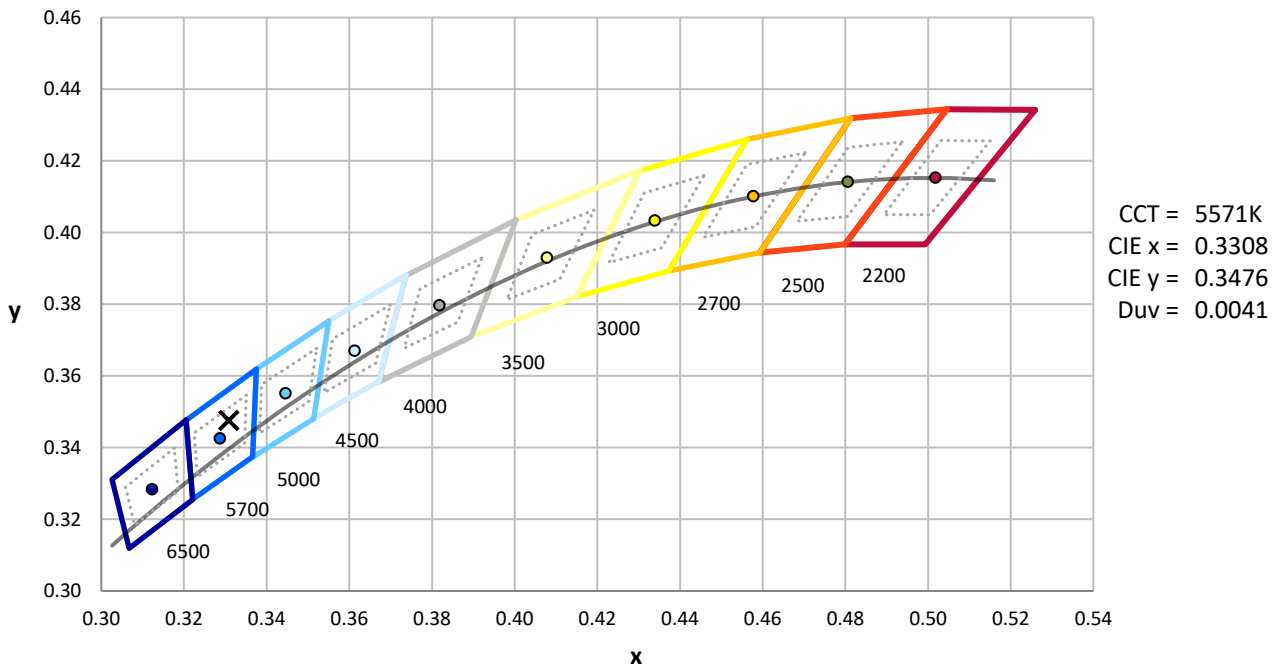
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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



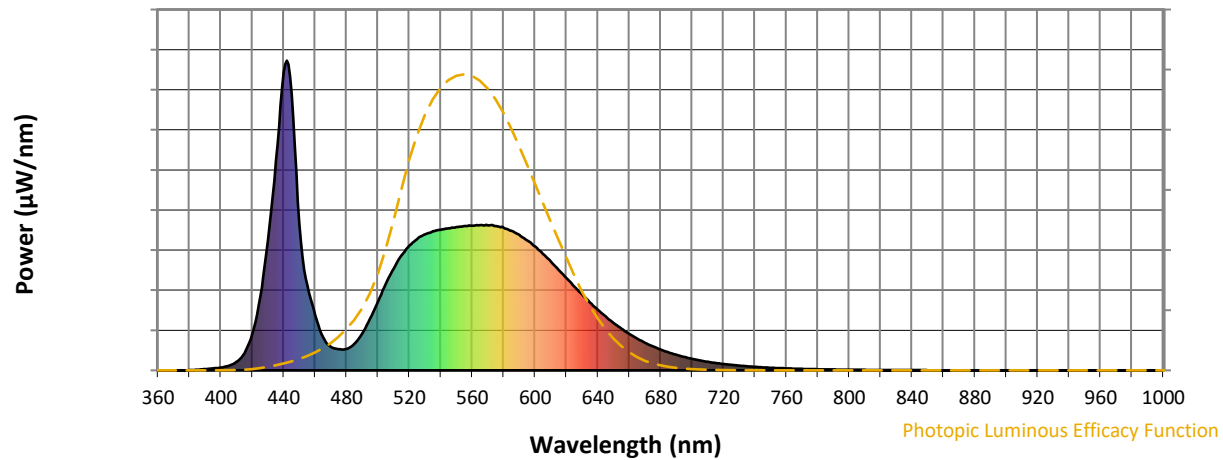
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 5700K 4-step quadrangle

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### Photopic Flux vs. Wavelength

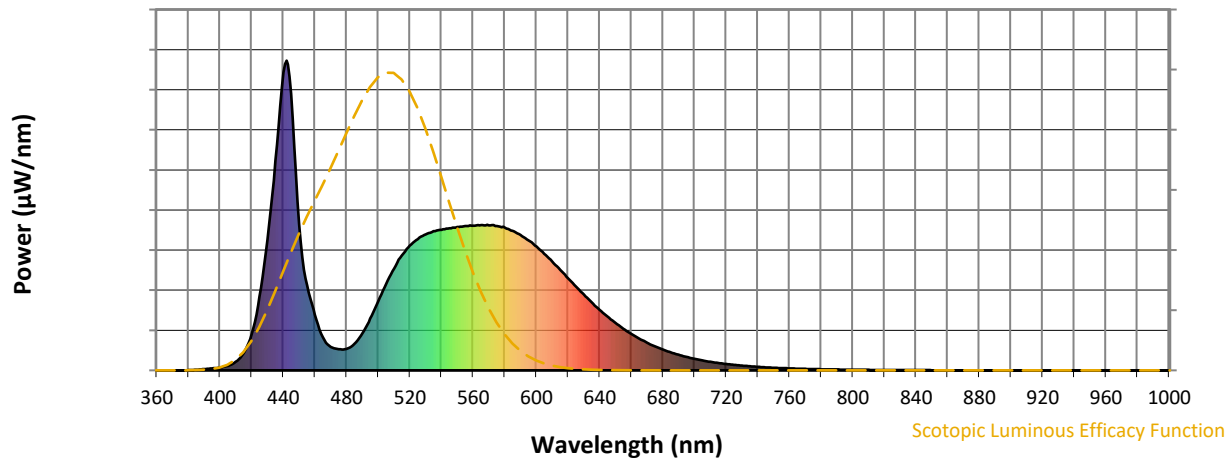


### Photopic Lumens: NR

| 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    | 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



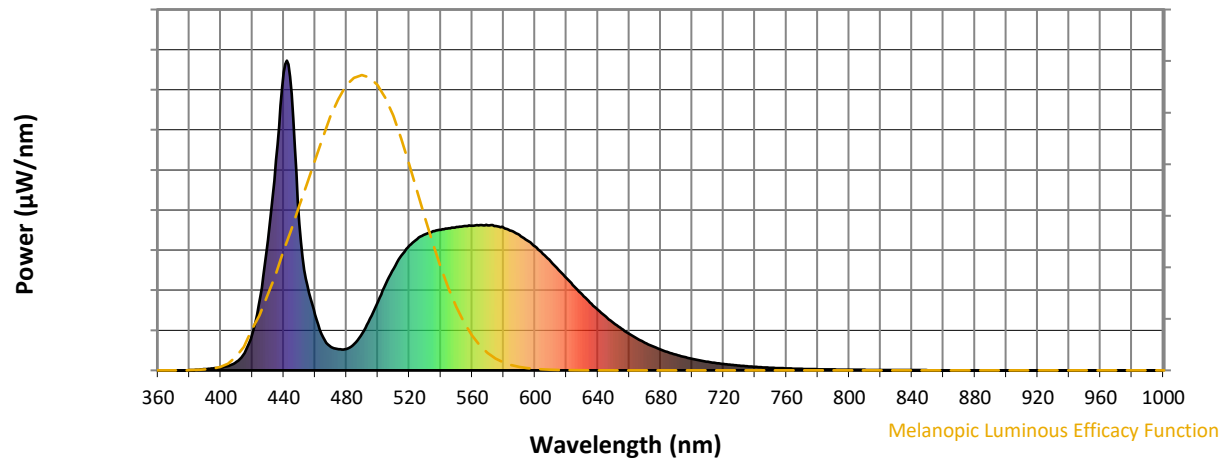
Scotopic Lumens: NR

S/P: 1.84

| λ<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       | 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**

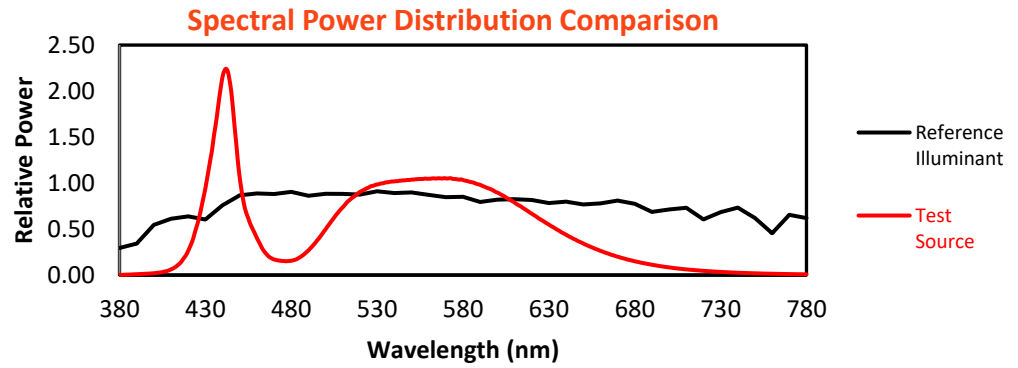
| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 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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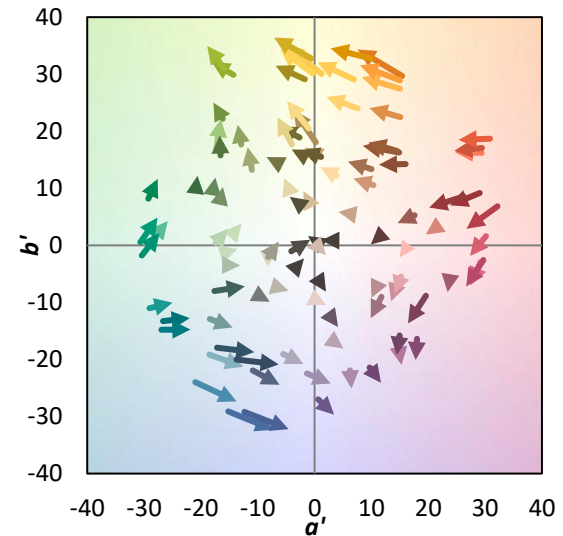
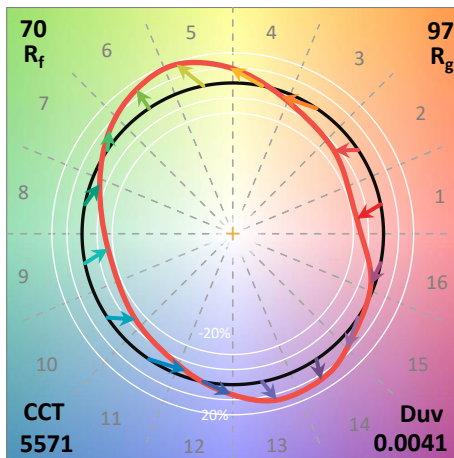
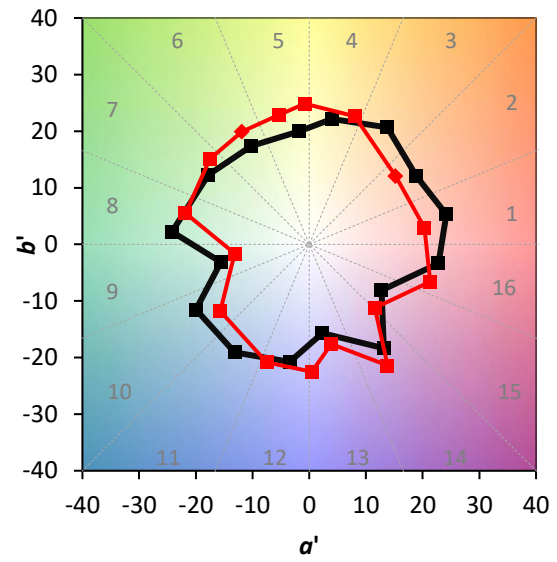
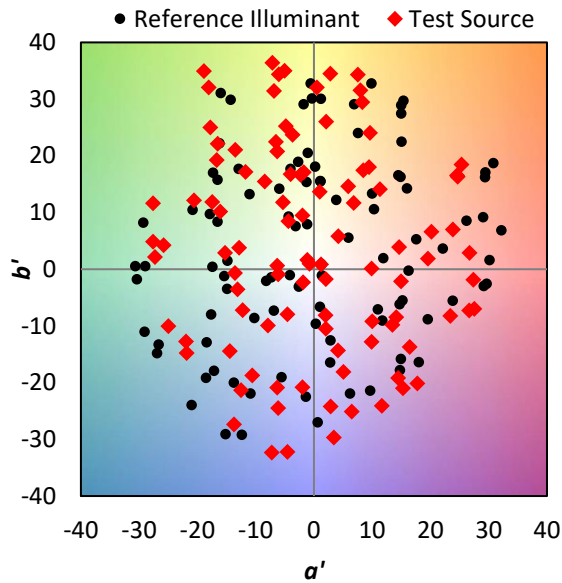
TM-30-18

### Summary

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

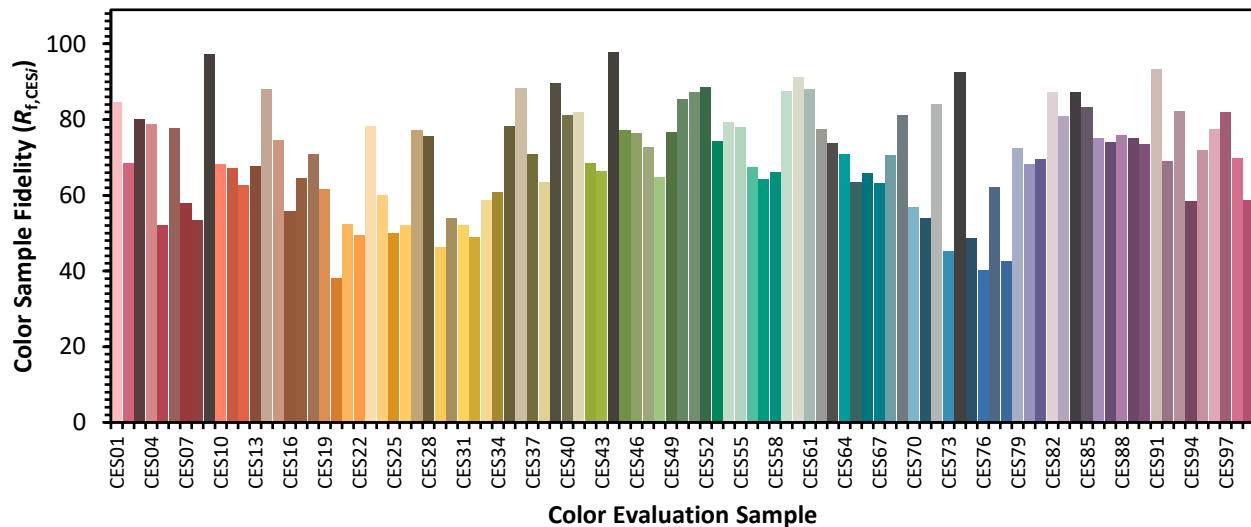


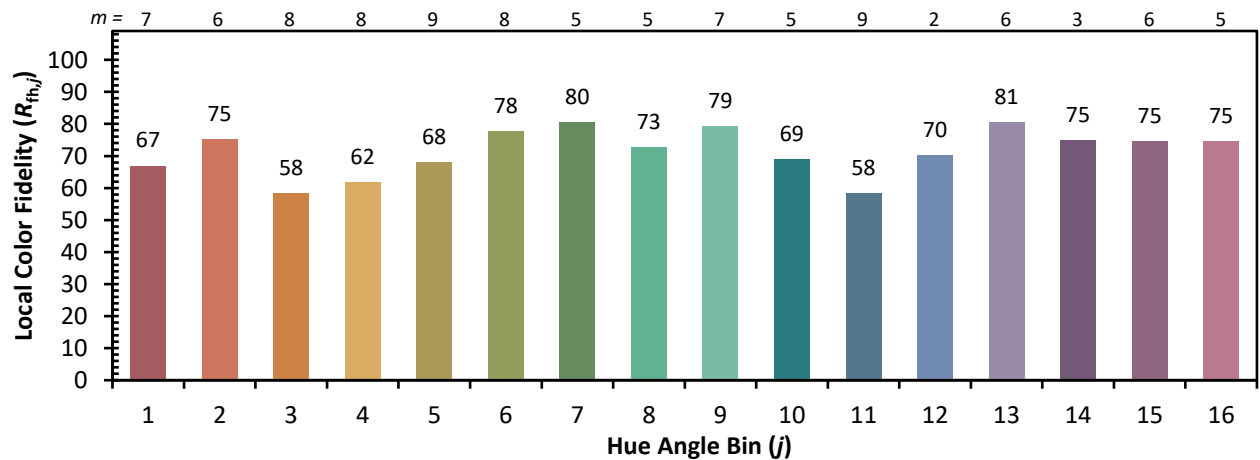
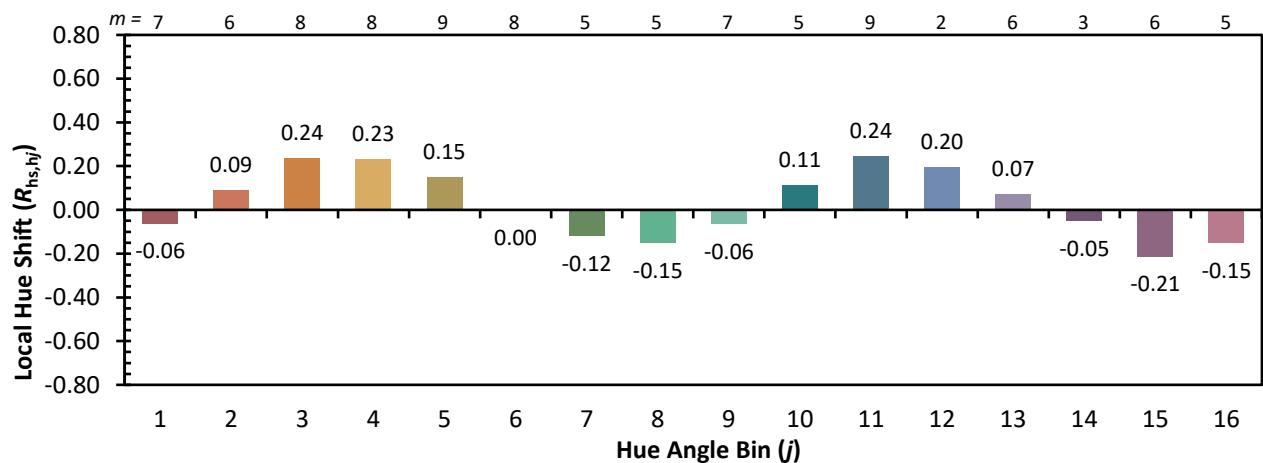
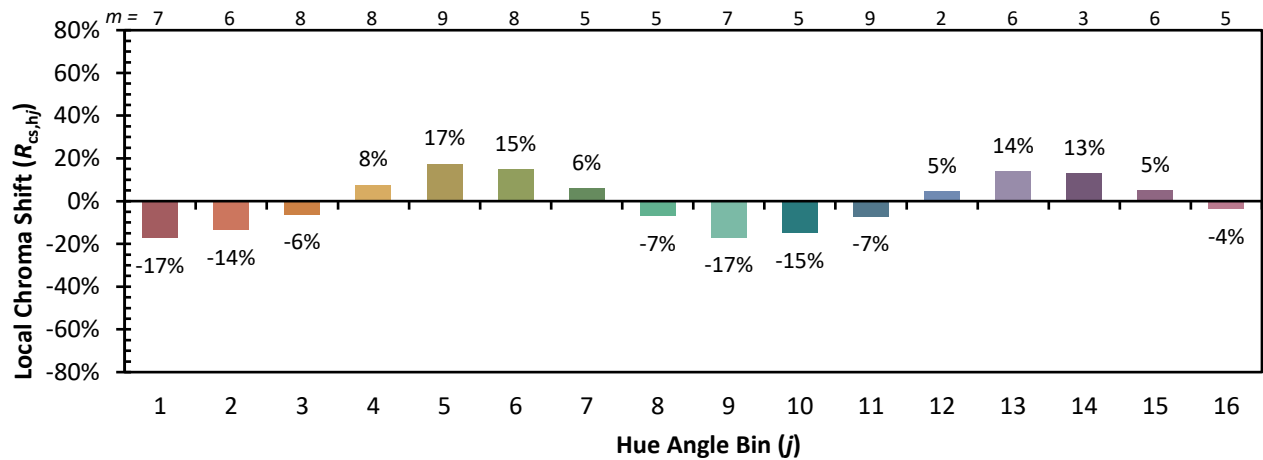
### Color Vector Graphics

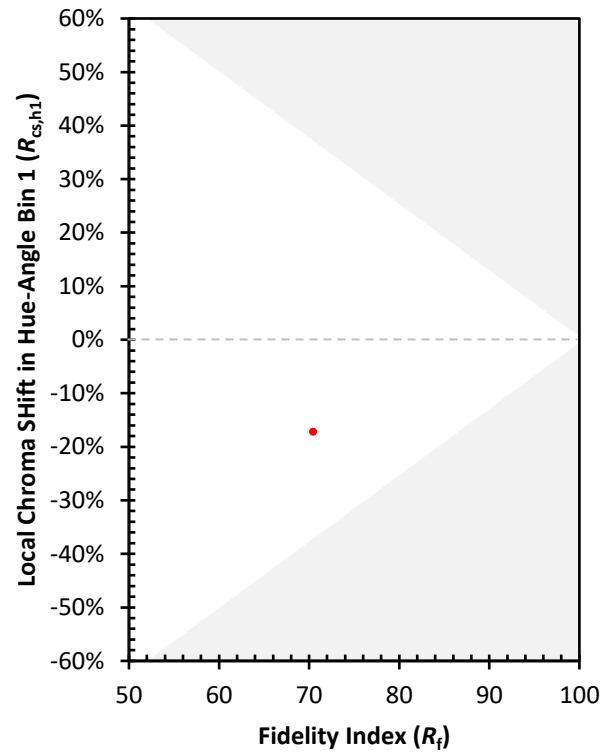
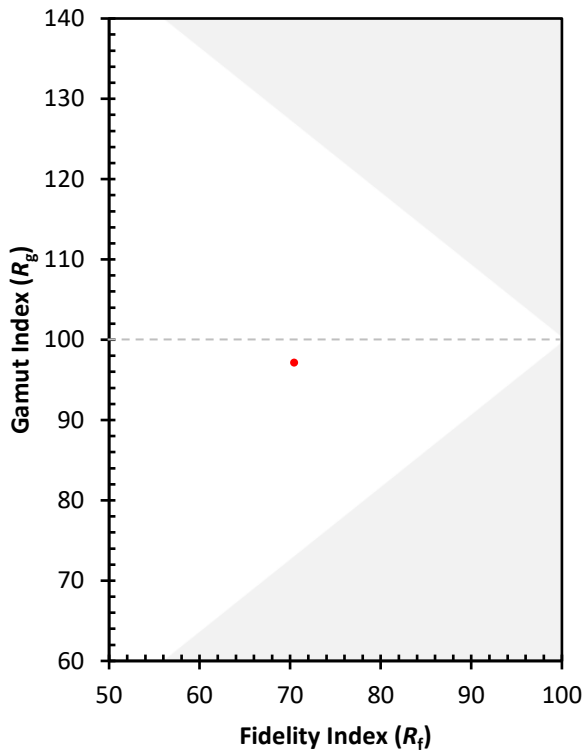


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| 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)