

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: McGRAW-EDISON

Report Number: P1047142

Luminaire Tested: **GALN-SA6B-730-U-T3BC**

Issue Date: 07/10/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1047142  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 07/10/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: GALN-SA6B-730-U-T3BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 800mA 6xLight Square PACKAGE  
70CRI 3000K FIXTURE w/ TYPE III ANGLED BACKLIGHT CONTROL  
Light Source: (84) 3000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 27174.8 lumens  
Efficiency: N/A  
Efficacy: 127.1 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B0 - U0 - G4

Input Watts (W): 213.8  
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

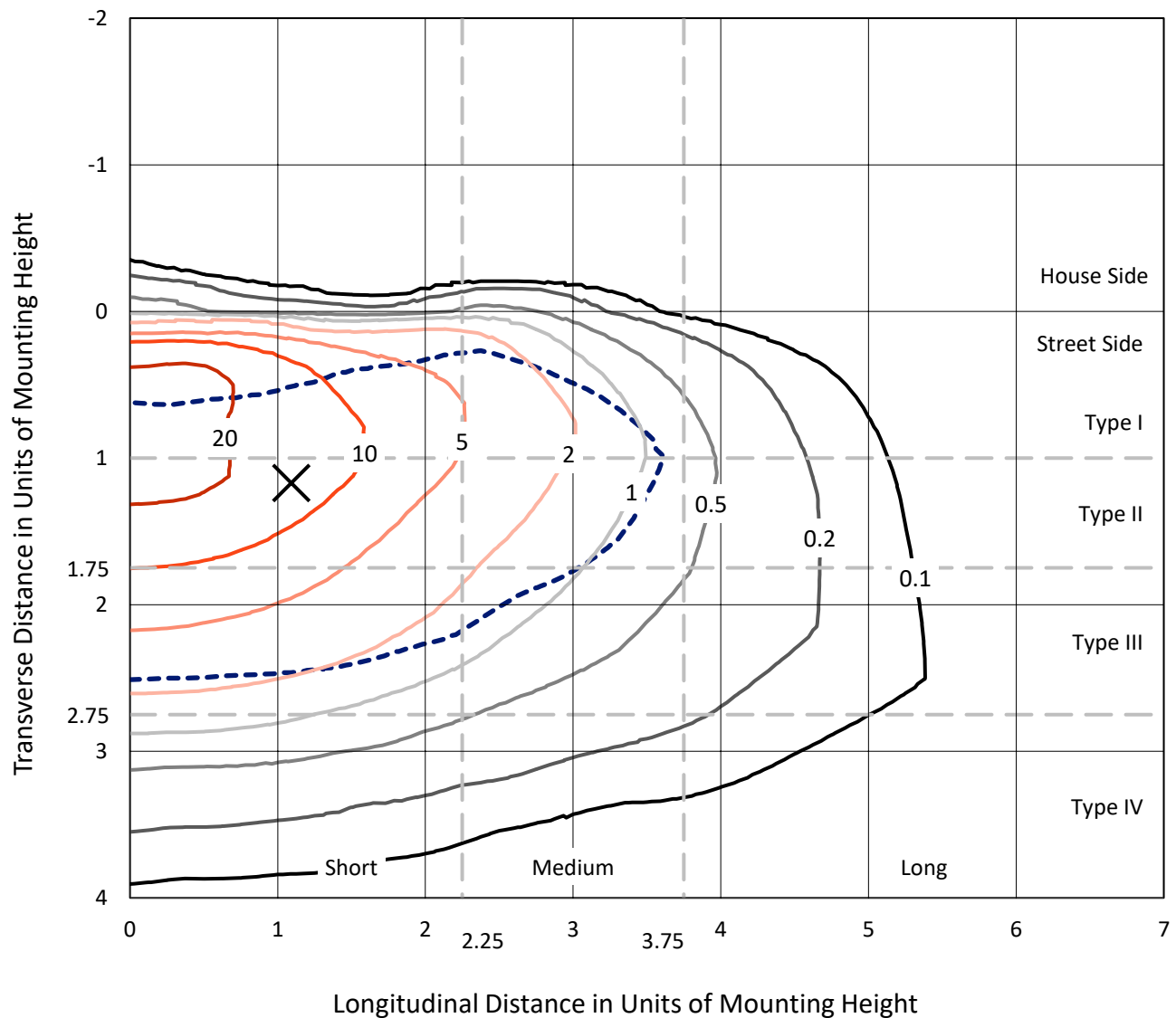


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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

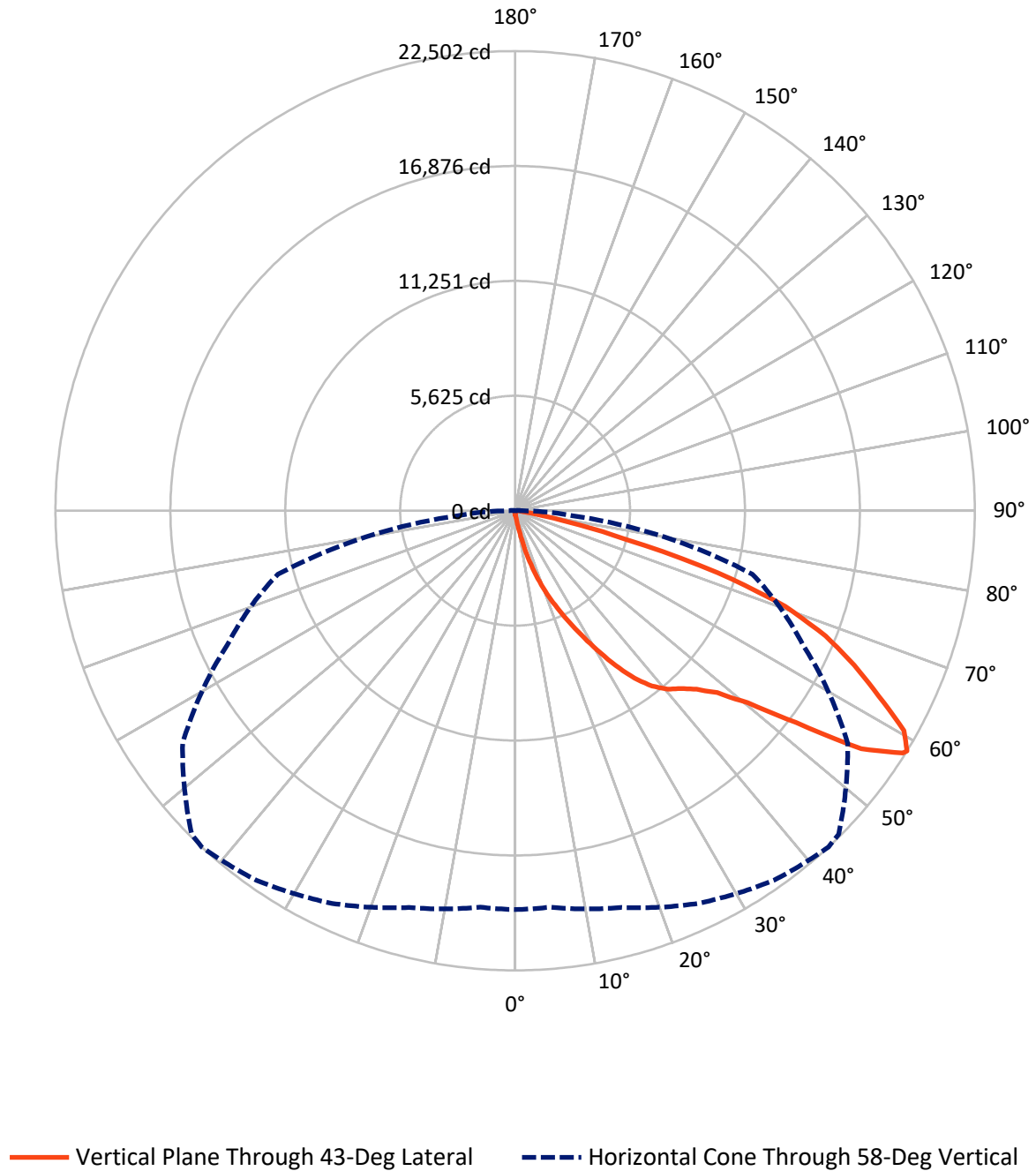


Based on 15 foot mounting height. Maximum calculated value = 30.5 fc  
 Type III - Short - N/A

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CATALOG NUMBER: GALN-SA6B-730-U-T3BC

## Luminous Intensity Polar Plot



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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 99.2     | 0.0    | 99.2    |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 27075.6  | 0.0    | 27075.6 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 27174.8  | 0.0    | 27174.8 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 26.0    | 0.1       |
| 10°-20°   | 312.4   | 1.1       |
| 20°-30°   | 1125.9  | 4.1       |
| 30°-40°   | 2576.0  | 9.5       |
| 40°-50°   | 4344.7  | 16.0      |
| 50°-60°   | 7169.8  | 26.4      |
| 60°-70°   | 8013.2  | 29.5      |
| 70°-80°   | 3308.5  | 12.2      |
| 80°-90°   | 298.3   | 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°    | 27174.8 | 100.0     |
| 0°-180°   | 27174.8 | 100.0     |



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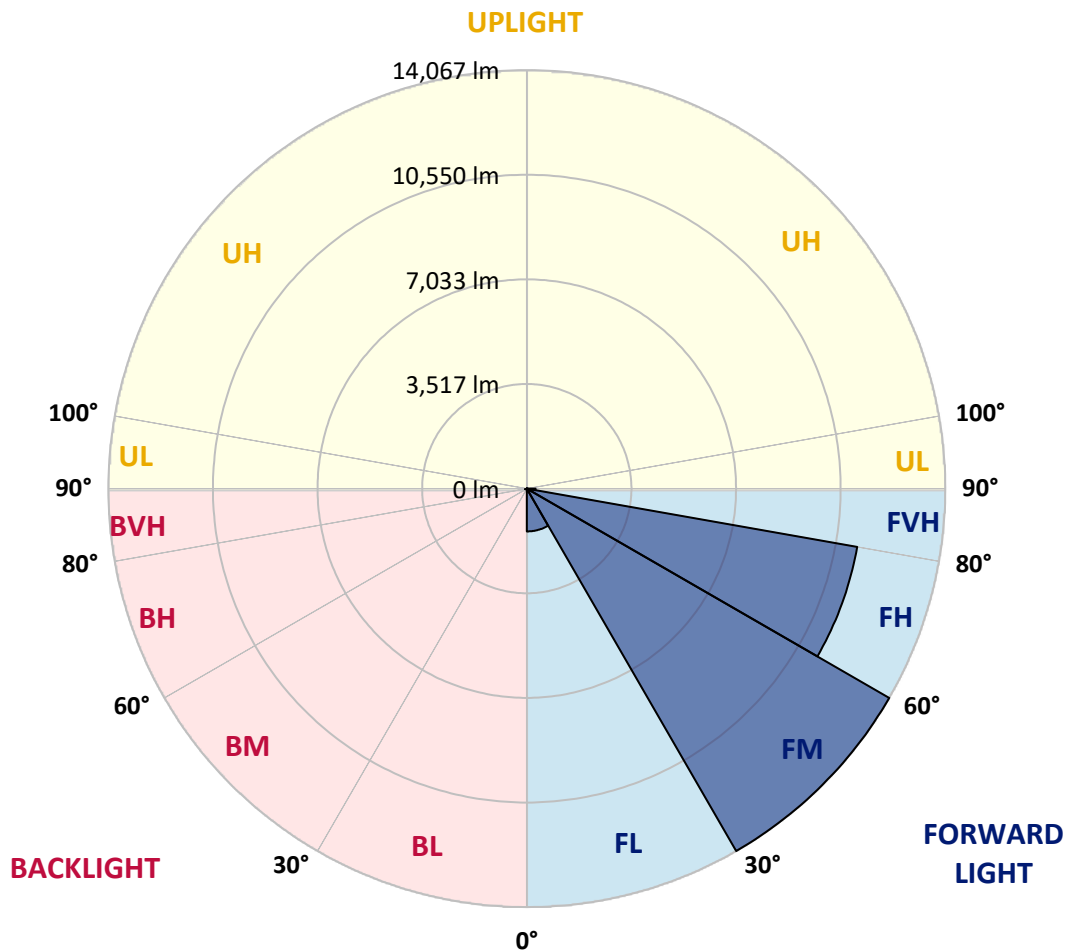
CATALOG NUMBER: GALN-SA6B-730-U-T3BC

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

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|---------|-----------|-------------------------|------|----------|
|      |             |         |           | B                       | U    | G        |
| FL   | (0°-30°)    | 1438.4  | 5.3       |                         |      |          |
| FM   | (30°-60°)   | 14066.8 | 51.8      |                         |      |          |
| FH   | (60°-80°)   | 11276.3 | 41.5      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 294.2   | 1.1       |                         |      | G3/500   |
| BL   | (0°-30°)    | 25.9    | 0.1       | B0/110                  |      |          |
| BM   | (30°-60°)   | 23.8    | 0.1       | B0/220                  |      |          |
| BH   | (60°-80°)   | 45.5    | 0.2       | B0/110                  |      | G0/110   |
| BVH  | (80°-90°)   | 4.1     | 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-G4**

Type III Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 43°     | 45°     | 55°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 177.7   | 177.7   | 177.7   | 177.7   | 177.7   | 177.7   | 177.7   | 177.7   | 177.7   | 177.7   | 177.7   |
| 2.5°  | 213.2   | 220.3   | 213.2   | 213.2   | 213.2   | 206.1   | 206.1   | 199.0   | 199.0   | 191.9   | 184.8   |
| 5°    | 312.7   | 312.7   | 291.4   | 277.2   | 263.0   | 255.9   | 248.8   | 234.5   | 220.3   | 206.1   | 191.9   |
| 7.5°  | 696.5   | 696.5   | 632.6   | 547.3   | 433.5   | 369.6   | 355.4   | 291.4   | 248.8   | 220.3   | 191.9   |
| 10°   | 1663.1  | 1663.1  | 1521.0  | 1286.4  | 995.0   | 739.2   | 661.0   | 419.3   | 298.5   | 234.5   | 199.0   |
| 12.5° | 2764.8  | 2800.3  | 2622.6  | 2324.1  | 1890.6  | 1442.8  | 1286.4  | 767.6   | 398.0   | 255.9   | 199.0   |
| 15°   | 3752.7  | 3667.4  | 3617.6  | 3333.3  | 2921.1  | 2388.1  | 2189.1  | 1293.5  | 575.7   | 291.4   | 199.0   |
| 17.5° | 4420.8  | 4420.8  | 4349.7  | 4157.8  | 3781.1  | 3312.0  | 3148.6  | 2089.6  | 931.1   | 334.0   | 206.1   |
| 20°   | 5202.6  | 5202.6  | 5074.6  | 4939.6  | 4605.6  | 4207.5  | 4051.2  | 2970.9  | 1442.8  | 426.4   | 206.1   |
| 22.5° | 6147.8  | 6162.1  | 6019.9  | 5778.3  | 5458.4  | 5017.8  | 4882.7  | 3788.2  | 2089.6  | 568.6   | 213.2   |
| 25°   | 7299.2  | 7313.5  | 7107.3  | 6879.9  | 6389.5  | 5913.3  | 5707.2  | 4726.4  | 2878.5  | 796.0   | 213.2   |
| 27.5° | 8571.5  | 8671.0  | 8365.3  | 7974.4  | 7455.6  | 6858.6  | 6702.2  | 5572.2  | 3660.3  | 1123.0  | 227.4   |
| 30°   | 10156.4 | 10156.4 | 9751.3  | 9204.0  | 8642.5  | 7903.4  | 7704.4  | 6460.6  | 4491.8  | 1556.5  | 241.6   |
| 32.5° | 11521.0 | 11414.4 | 10895.6 | 10319.9 | 9722.8  | 9033.4  | 8820.2  | 7391.6  | 5344.7  | 2096.7  | 270.1   |
| 35°   | 12565.8 | 12473.4 | 11833.7 | 11215.4 | 10696.5 | 10064.0 | 9808.1  | 8400.9  | 6247.4  | 2707.9  | 312.7   |
| 37.5° | 13461.3 | 13425.8 | 12558.7 | 11784.0 | 11442.8 | 10888.4 | 10661.0 | 9353.3  | 7135.8  | 3368.9  | 362.5   |
| 40°   | 14442.1 | 14328.4 | 13404.4 | 12445.0 | 11933.2 | 11485.5 | 11279.3 | 10120.9 | 7988.7  | 4143.6  | 433.5   |
| 42.5° | 15280.8 | 15145.7 | 14314.2 | 13376.0 | 12501.8 | 11897.7 | 11698.7 | 10767.6 | 8820.2  | 4918.3  | 525.9   |
| 45°   | 16211.8 | 16140.8 | 15302.1 | 14591.4 | 13425.8 | 12459.2 | 12196.2 | 11286.5 | 9580.7  | 5842.2  | 646.8   |
| 47.5° | 17612.0 | 17484.1 | 16702.2 | 16119.4 | 14769.1 | 13312.0 | 12935.4 | 11819.5 | 10312.8 | 6752.0  | 831.6   |
| 50°   | 19239.6 | 19154.3 | 18692.3 | 18230.3 | 16887.0 | 14769.1 | 14321.3 | 12587.1 | 11130.1 | 7832.3  | 1073.2  |
| 52.5° | 20568.6 | 20554.4 | 20611.3 | 20618.4 | 19602.0 | 17221.1 | 16553.0 | 13823.8 | 12068.3 | 8898.4  | 1414.4  |
| 55°   | 20540.2 | 20604.2 | 21229.6 | 21947.5 | 22025.6 | 20568.6 | 19921.9 | 15906.2 | 13290.7 | 10213.2 | 1890.6  |
| 57.5° | 19772.6 | 19722.9 | 20383.9 | 21464.2 | 22224.7 | 22381.0 | 22274.4 | 19140.1 | 15131.5 | 11798.2 | 2622.6  |
| 58°   | 19523.9 | 19481.2 | 20106.7 | 21208.3 | 22082.5 | 22501.8 | 22395.2 | 19872.1 | 15543.8 | 12025.6 | 2821.6  |
| 60°   | 18621.2 | 18628.3 | 18997.9 | 20000.1 | 20874.3 | 21869.3 | 21968.8 | 21961.7 | 17597.8 | 13546.6 | 3823.7  |
| 62.5° | 17427.2 | 17370.3 | 17711.5 | 18528.8 | 19296.4 | 19964.5 | 20135.1 | 22103.8 | 20604.2 | 15479.8 | 5735.6  |
| 65°   | 15778.3 | 15693.0 | 16055.5 | 16979.4 | 17803.9 | 18237.4 | 18244.5 | 20199.1 | 22018.5 | 17555.1 | 8464.8  |
| 67.5° | 12715.0 | 12644.0 | 13368.9 | 14555.8 | 15828.0 | 16396.6 | 16652.5 | 17526.7 | 20824.5 | 18962.4 | 10028.5 |
| 70°   | 7789.6  | 7938.9  | 8948.1  | 10810.3 | 12985.1 | 14029.9 | 14413.7 | 14683.8 | 17732.8 | 18749.2 | 8386.7  |
| 72.5° | 3596.3  | 3418.6  | 4278.6  | 5579.3  | 8059.7  | 10383.8 | 10781.8 | 11840.8 | 14058.3 | 16275.8 | 6254.5  |
| 75°   | 1677.3  | 1613.4  | 1812.4  | 2437.8  | 3653.2  | 5607.7  | 6332.6  | 9452.8  | 10781.8 | 11322.0 | 4513.2  |
| 77.5° | 860.0   | 867.1   | 1030.6  | 1108.7  | 1506.8  | 2594.2  | 2978.0  | 6218.9  | 7903.4  | 6318.4  | 3027.7  |
| 80°   | 376.7   | 390.9   | 398.0   | 433.5   | 611.2   | 1002.1  | 1130.1  | 2885.6  | 5401.6  | 3219.6  | 1656.0  |
| 82.5° | 241.6   | 248.8   | 248.8   | 248.8   | 291.4   | 398.0   | 454.9   | 1158.5  | 2693.7  | 1599.2  | 511.7   |
| 85°   | 127.9   | 127.9   | 142.1   | 177.7   | 206.1   | 241.6   | 255.9   | 369.6   | 888.4   | 476.2   | 120.8   |
| 87.5° | 71.1    | 78.2    | 85.3    | 106.6   | 135.0   | 163.5   | 177.7   | 255.9   | 341.2   | 326.9   | 28.4    |
| 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: GALN-SA6B-730-U-T3BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 177.7  | 177.7 | 177.7 | 177.7 | 177.7 | 177.7 | 177.7 | 177.7 | 177.7 | 177.7 | 177.7 |
| 2.5°  | 184.8  | 177.7 | 170.6 | 163.5 | 156.4 | 149.3 | 149.3 | 149.3 | 149.3 | 149.3 | 149.3 |
| 5°    | 177.7  | 170.6 | 163.5 | 149.3 | 135.0 | 127.9 | 120.8 | 113.7 | 113.7 | 113.7 | 113.7 |
| 7.5°  | 177.7  | 170.6 | 149.3 | 135.0 | 120.8 | 106.6 | 92.4  | 92.4  | 92.4  | 92.4  | 92.4  |
| 10°   | 177.7  | 163.5 | 142.1 | 120.8 | 99.5  | 85.3  | 78.2  | 71.1  | 71.1  | 71.1  | 71.1  |
| 12.5° | 177.7  | 156.4 | 135.0 | 106.6 | 85.3  | 71.1  | 64.0  | 56.9  | 56.9  | 56.9  | 56.9  |
| 15°   | 177.7  | 156.4 | 127.9 | 99.5  | 78.2  | 56.9  | 49.8  | 42.6  | 42.6  | 42.6  | 42.6  |
| 17.5° | 170.6  | 149.3 | 120.8 | 85.3  | 64.0  | 42.6  | 35.5  | 28.4  | 28.4  | 35.5  | 35.5  |
| 20°   | 163.5  | 142.1 | 106.6 | 71.1  | 49.8  | 35.5  | 21.3  | 21.3  | 21.3  | 21.3  | 21.3  |
| 22.5° | 163.5  | 142.1 | 99.5  | 64.0  | 42.6  | 21.3  | 14.2  | 14.2  | 14.2  | 14.2  | 21.3  |
| 25°   | 163.5  | 135.0 | 85.3  | 49.8  | 28.4  | 14.2  | 7.1   | 7.1   | 7.1   | 7.1   | 7.1   |
| 27.5° | 163.5  | 135.0 | 78.2  | 42.6  | 21.3  | 14.2  | 7.1   | 0.0   | 0.0   | 0.0   | 0.0   |
| 30°   | 156.4  | 127.9 | 71.1  | 35.5  | 14.2  | 7.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 32.5° | 156.4  | 120.8 | 56.9  | 28.4  | 14.2  | 7.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 35°   | 163.5  | 113.7 | 49.8  | 21.3  | 7.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 7.1   |
| 37.5° | 170.6  | 106.6 | 42.6  | 14.2  | 7.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 40°   | 177.7  | 99.5  | 42.6  | 14.2  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 42.5° | 191.9  | 99.5  | 35.5  | 14.2  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 45°   | 206.1  | 99.5  | 28.4  | 7.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 47.5° | 234.5  | 106.6 | 28.4  | 7.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 50°   | 255.9  | 113.7 | 21.3  | 7.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 52.5° | 284.3  | 106.6 | 21.3  | 7.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 55°   | 319.8  | 106.6 | 21.3  | 7.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 57.5° | 348.3  | 99.5  | 21.3  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 58°   | 362.5  | 92.4  | 14.2  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 60°   | 433.5  | 85.3  | 14.2  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 62.5° | 675.2  | 71.1  | 14.2  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 65°   | 1371.7 | 64.0  | 14.2  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 67.5° | 2558.6 | 56.9  | 14.2  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 70°   | 2864.3 | 64.0  | 7.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 72.5° | 1805.3 | 49.8  | 7.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 75°   | 952.4  | 49.8  | 7.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 77.5° | 476.2  | 49.8  | 7.1   | 7.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 80°   | 220.3  | 35.5  | 7.1   | 7.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 82.5° | 92.4   | 21.3  | 14.2  | 7.1   | 7.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 42.6   | 21.3  | 14.2  | 14.2  | 7.1   | 7.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 21.3   | 21.3  | 21.3  | 14.2  | 14.2  | 7.1   | 7.1   | 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: SP1-2407-184-4

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-730-U-5WQ

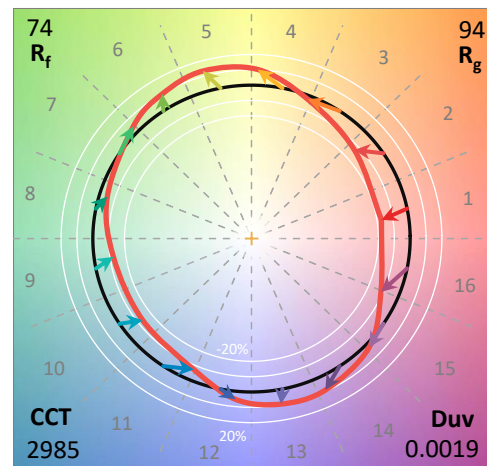
Data in this report applies to families of products including GSS-SB1A-730-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-4  
 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-730-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 3000K CCT 26 LEDS

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 2985     | CRI (Ra): | 70.8 |      |       |
| CIE u':                   | 0.2504   | R1:       | 66.3 | R9:  | -43.2 |
| CIE v':                   | 0.5243   | R2:       | 80.6 | R10: | 57.6  |
| Duv:                      | 0.0019   | R3:       | 94.5 | R11: | 64.8  |
| CIE x:                    | 0.4408   | R4:       | 68.2 | R12: | 53.5  |
| CIE y:                    | 0.4101   | R5:       | 66.5 | R13: | 68.7  |
| CIE z:                    | 0.1491   | R6:       | 74.7 | R14: | 97.0  |
| Peak Wavelength (nm):     | 595      | R7:       | 76.2 | R15: | 56.4  |
| Dominant Wavelength (nm): | 582      | R8:       | 39.6 |      |       |
| Purity:                   | 55.41818 |           |      |      |       |
| Rf:                       | 73.8     |           |      |      |       |
| Rg:                       | 94.4     |           |      |      |       |



### Test Conditions

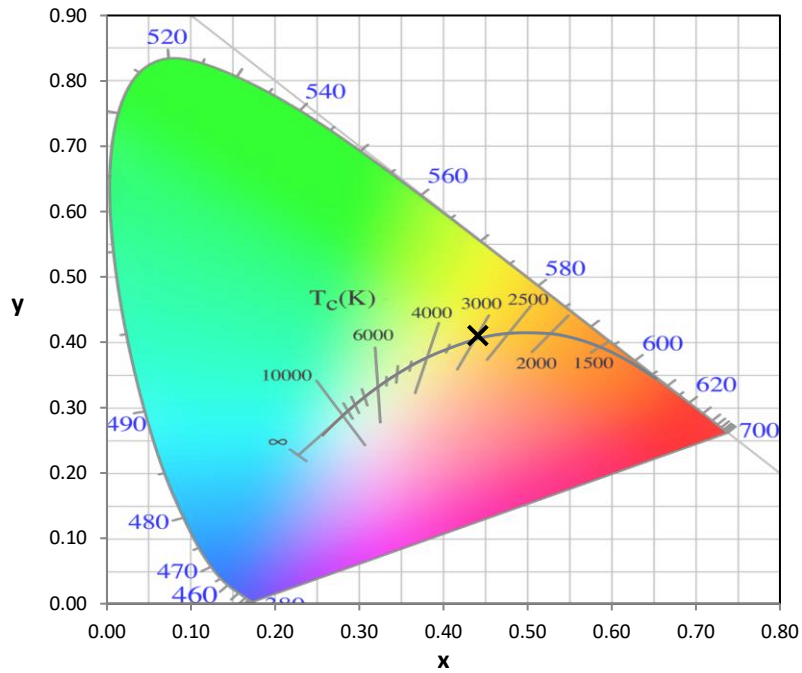
Stabilization Time: 36M  
 Operation Time: 1H 36M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-4

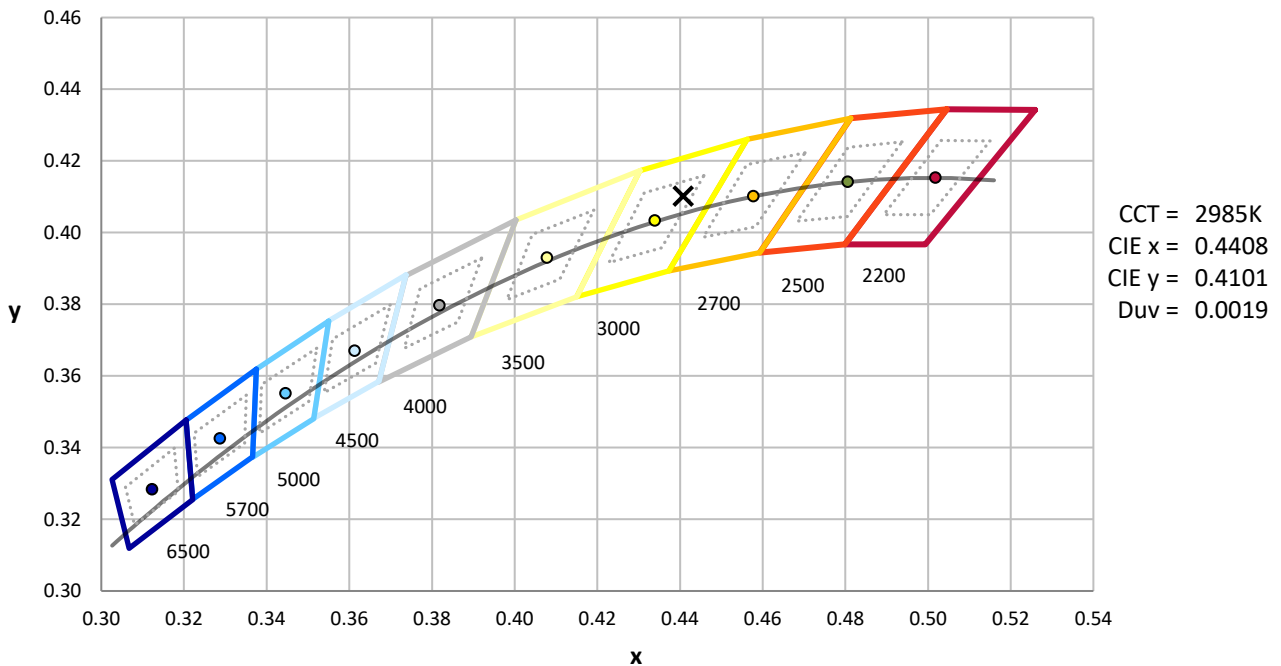
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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



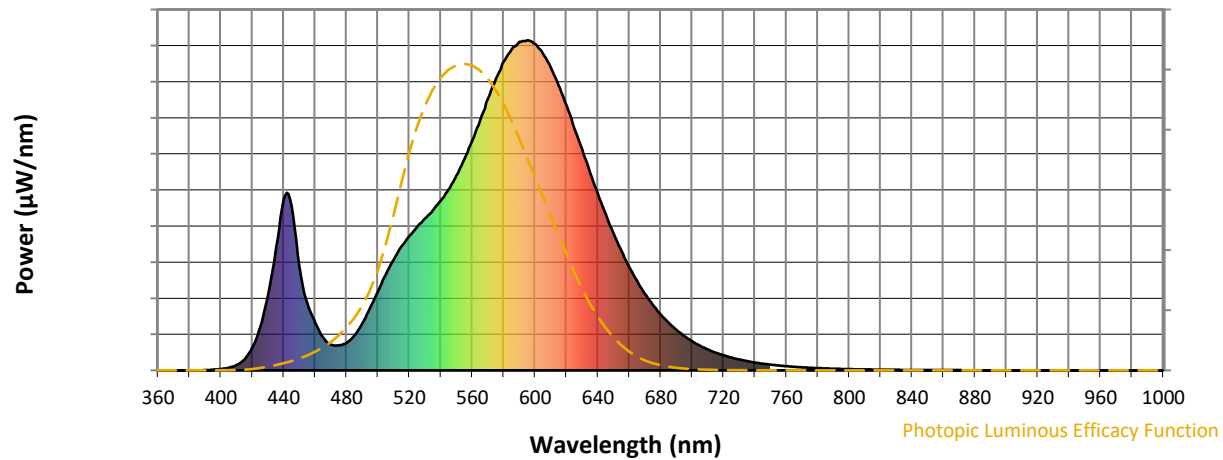
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 3000K 4-step quadrangle

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### Photopic Flux vs. Wavelength

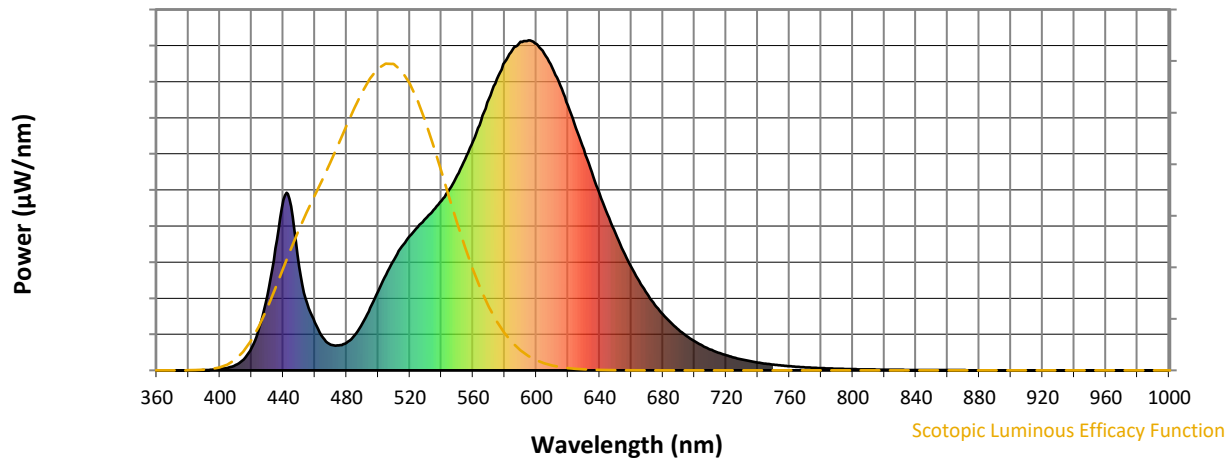


### Photopic Lumens: NR

| λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 142                      | NR            | 620    | 803                      | NR            | 750    | 17                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 189                      | NR            | 625    | 734                      | NR            | 755    | 15                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 240                      | NR            | 630    | 670                      | NR            | 760    | 13                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 290                      | NR            | 635    | 600                      | NR            | 765    | 11                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 335                      | NR            | 640    | 535                      | NR            | 770    | 9                        | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 375                      | NR            | 645    | 473                      | NR            | 775    | 8                        | NR            | 905    | 0                        | NR            |
| 390    | 1                        | NR            | 520    | 408                      | NR            | 650    | 415                      | NR            | 780    | 7                        | NR            | 910    | 0                        | NR            |
| 395    | 2                        | NR            | 525    | 434                      | NR            | 655    | 362                      | NR            | 785    | 6                        | NR            | 915    | 0                        | NR            |
| 400    | 4                        | NR            | 530    | 461                      | NR            | 660    | 313                      | NR            | 790    | 5                        | NR            | 920    | 0                        | NR            |
| 405    | 8                        | NR            | 535    | 486                      | NR            | 665    | 271                      | NR            | 795    | 4                        | NR            | 925    | 0                        | NR            |
| 410    | 16                       | NR            | 540    | 514                      | NR            | 670    | 231                      | NR            | 800    | 4                        | NR            | 930    | 0                        | NR            |
| 415    | 33                       | NR            | 545    | 549                      | NR            | 675    | 198                      | NR            | 805    | 3                        | NR            | 935    | 0                        | NR            |
| 420    | 69                       | NR            | 550    | 591                      | NR            | 680    | 169                      | NR            | 810    | 3                        | NR            | 940    | 0                        | NR            |
| 425    | 131                      | NR            | 555    | 640                      | NR            | 685    | 144                      | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 227                      | NR            | 560    | 695                      | NR            | 690    | 123                      | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 369                      | NR            | 565    | 757                      | NR            | 695    | 104                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 517                      | NR            | 570    | 822                      | NR            | 700    | 88                       | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 498                      | NR            | 575    | 882                      | NR            | 705    | 75                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 315                      | NR            | 580    | 935                      | NR            | 710    | 63                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 204                      | NR            | 585    | 972                      | NR            | 715    | 54                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 145                      | NR            | 590    | 996                      | NR            | 720    | 46                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 100                      | NR            | 595    | 1000                     | NR            | 725    | 39                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 78                       | NR            | 600    | 989                      | NR            | 730    | 33                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 76                       | NR            | 605    | 960                      | NR            | 735    | 28                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 83                       | NR            | 610    | 918                      | NR            | 740    | 24                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 105                      | NR            | 615    | 864                      | NR            | 745    | 20                       | NR            | 875    | 1                        | NR            |        |                          |               |

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### Scotopic Flux vs. Wavelength



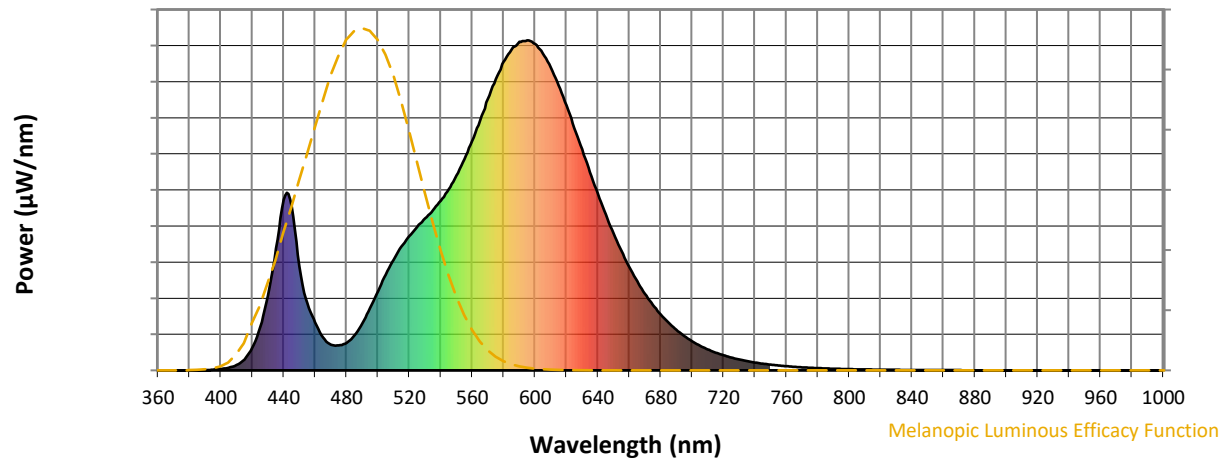
Scotopic Lumens: NR

S/P: 1.19

| 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    | 142                      | NR            | 620    | 803                      | NR            | 750    | 17                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 189                      | NR            | 625    | 734                      | NR            | 755    | 15                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 240                      | NR            | 630    | 670                      | NR            | 760    | 13                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 290                      | NR            | 635    | 600                      | NR            | 765    | 11                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 335                      | NR            | 640    | 535                      | NR            | 770    | 9                        | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 375                      | NR            | 645    | 473                      | NR            | 775    | 8                        | NR            | 905    | 0                        | NR            |
| 390    | 1                        | NR            | 520    | 408                      | NR            | 650    | 415                      | NR            | 780    | 7                        | NR            | 910    | 0                        | NR            |
| 395    | 2                        | NR            | 525    | 434                      | NR            | 655    | 362                      | NR            | 785    | 6                        | NR            | 915    | 0                        | NR            |
| 400    | 4                        | NR            | 530    | 461                      | NR            | 660    | 313                      | NR            | 790    | 5                        | NR            | 920    | 0                        | NR            |
| 405    | 8                        | NR            | 535    | 486                      | NR            | 665    | 271                      | NR            | 795    | 4                        | NR            | 925    | 0                        | NR            |
| 410    | 16                       | NR            | 540    | 514                      | NR            | 670    | 231                      | NR            | 800    | 4                        | NR            | 930    | 0                        | NR            |
| 415    | 33                       | NR            | 545    | 549                      | NR            | 675    | 198                      | NR            | 805    | 3                        | NR            | 935    | 0                        | NR            |
| 420    | 69                       | NR            | 550    | 591                      | NR            | 680    | 169                      | NR            | 810    | 3                        | NR            | 940    | 0                        | NR            |
| 425    | 131                      | NR            | 555    | 640                      | NR            | 685    | 144                      | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 227                      | NR            | 560    | 695                      | NR            | 690    | 123                      | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 369                      | NR            | 565    | 757                      | NR            | 695    | 104                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 517                      | NR            | 570    | 822                      | NR            | 700    | 88                       | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 498                      | NR            | 575    | 882                      | NR            | 705    | 75                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 315                      | NR            | 580    | 935                      | NR            | 710    | 63                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 204                      | NR            | 585    | 972                      | NR            | 715    | 54                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 145                      | NR            | 590    | 996                      | NR            | 720    | 46                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 100                      | NR            | 595    | 1000                     | NR            | 725    | 39                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 78                       | NR            | 600    | 989                      | NR            | 730    | 33                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 76                       | NR            | 605    | 960                      | NR            | 735    | 28                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 83                       | NR            | 610    | 918                      | NR            | 740    | 24                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 105                      | NR            | 615    | 864                      | NR            | 745    | 20                       | NR            | 875    | 1                        | NR            |        |                          |               |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.13

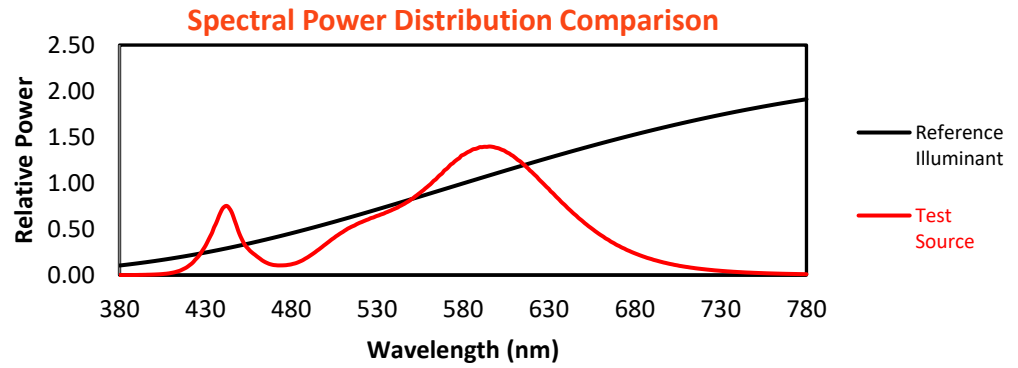
| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<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               | 142                                  | NR                             | 620               | 803                                  | NR                             | 750               | 17                                   | NR                             | 880               | 0                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 189                                  | NR                             | 625               | 734                                  | NR                             | 755               | 15                                   | NR                             | 885               | 0                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 240                                  | NR                             | 630               | 670                                  | NR                             | 760               | 13                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 290                                  | NR                             | 635               | 600                                  | NR                             | 765               | 11                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 335                                  | NR                             | 640               | 535                                  | NR                             | 770               | 9                                    | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 375                                  | NR                             | 645               | 473                                  | NR                             | 775               | 8                                    | NR                             | 905               | 0                                    | NR                             |
| 390               | 1                                    | NR                             | 520               | 408                                  | NR                             | 650               | 415                                  | NR                             | 780               | 7                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 2                                    | NR                             | 525               | 434                                  | NR                             | 655               | 362                                  | NR                             | 785               | 6                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 4                                    | NR                             | 530               | 461                                  | NR                             | 660               | 313                                  | NR                             | 790               | 5                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 8                                    | NR                             | 535               | 486                                  | NR                             | 665               | 271                                  | NR                             | 795               | 4                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 16                                   | NR                             | 540               | 514                                  | NR                             | 670               | 231                                  | NR                             | 800               | 4                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 33                                   | NR                             | 545               | 549                                  | NR                             | 675               | 198                                  | NR                             | 805               | 3                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 69                                   | NR                             | 550               | 591                                  | NR                             | 680               | 169                                  | NR                             | 810               | 3                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 131                                  | NR                             | 555               | 640                                  | NR                             | 685               | 144                                  | NR                             | 815               | 2                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 227                                  | NR                             | 560               | 695                                  | NR                             | 690               | 123                                  | NR                             | 820               | 2                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 369                                  | NR                             | 565               | 757                                  | NR                             | 695               | 104                                  | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 517                                  | NR                             | 570               | 822                                  | NR                             | 700               | 88                                   | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 498                                  | NR                             | 575               | 882                                  | NR                             | 705               | 75                                   | NR                             | 835               | 1                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 315                                  | NR                             | 580               | 935                                  | NR                             | 710               | 63                                   | NR                             | 840               | 1                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 204                                  | NR                             | 585               | 972                                  | NR                             | 715               | 54                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 145                                  | NR                             | 590               | 996                                  | NR                             | 720               | 46                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 100                                  | NR                             | 595               | 1000                                 | NR                             | 725               | 39                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 78                                   | NR                             | 600               | 989                                  | NR                             | 730               | 33                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 76                                   | NR                             | 605               | 960                                  | NR                             | 735               | 28                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 83                                   | NR                             | 610               | 918                                  | NR                             | 740               | 24                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 105                                  | NR                             | 615               | 864                                  | NR                             | 745               | 20                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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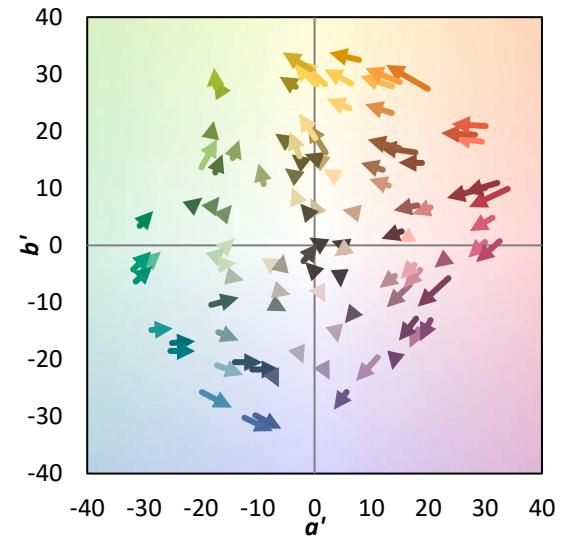
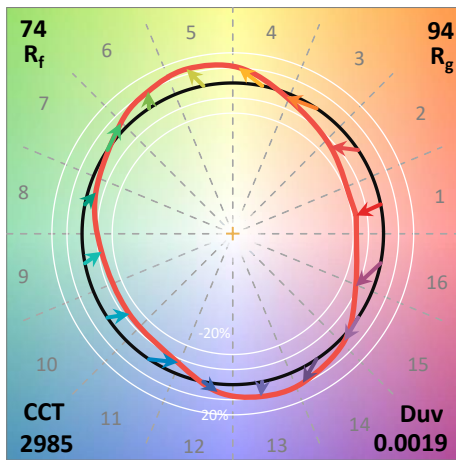
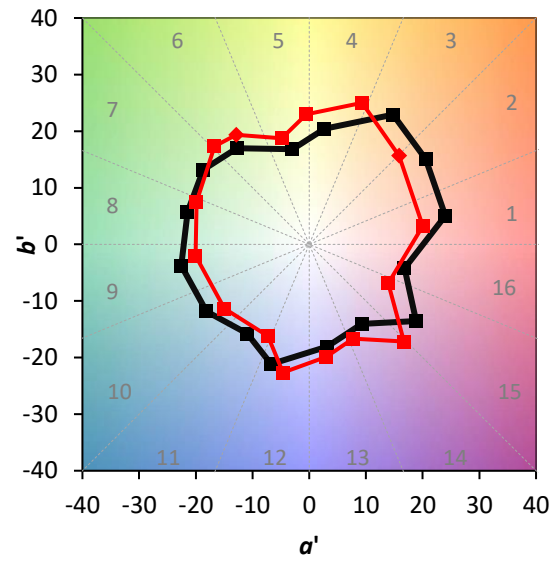
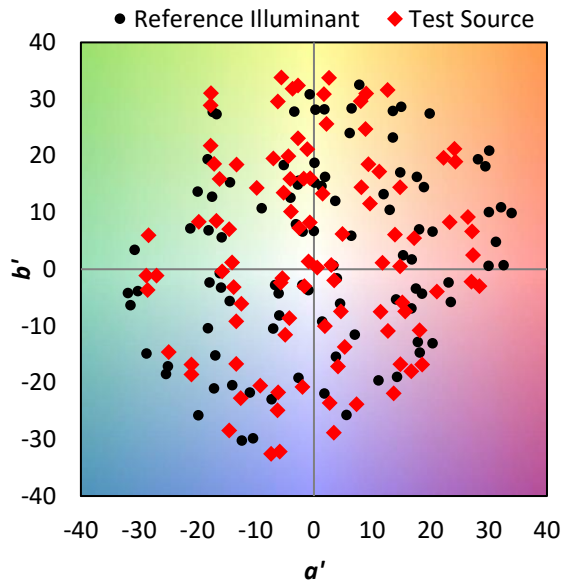
TM-30-18

### Summary

$R_f = 73.8$   
 $R_g = 94.4$   
 $CIE\ R_a = 70.8$   
 $R_g = -43.2$



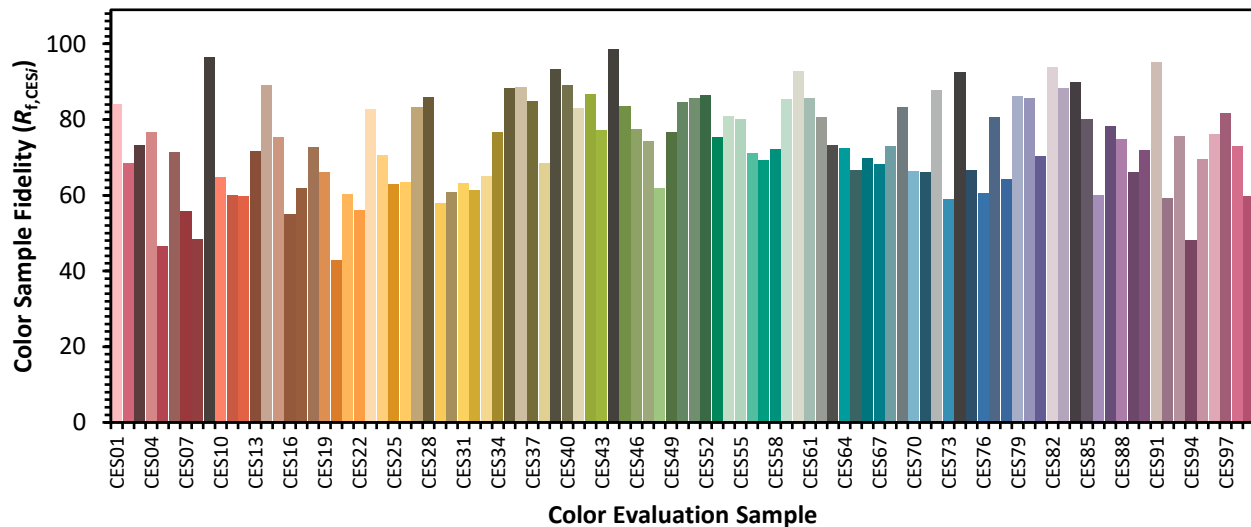
### Color Vector Graphics



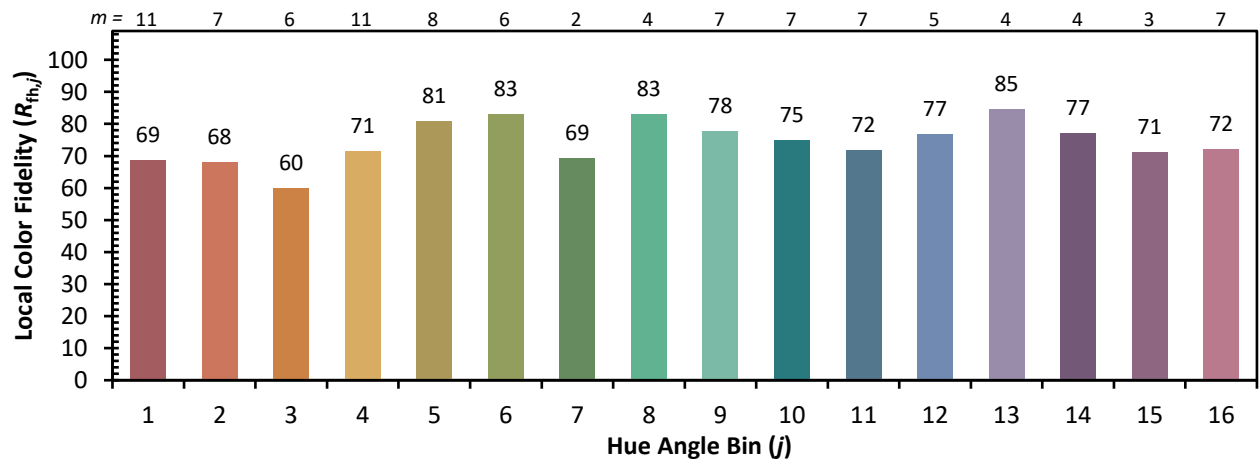
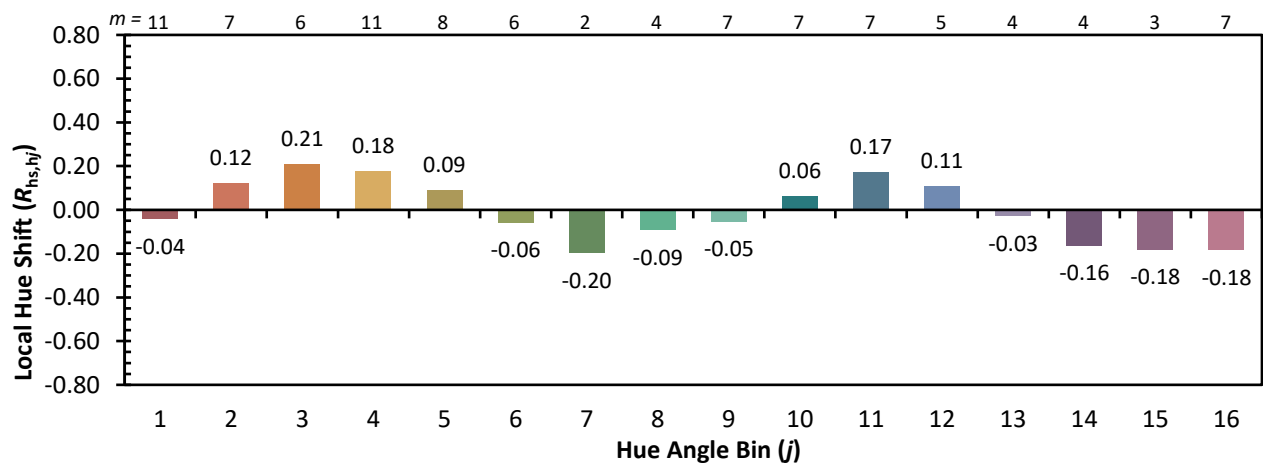
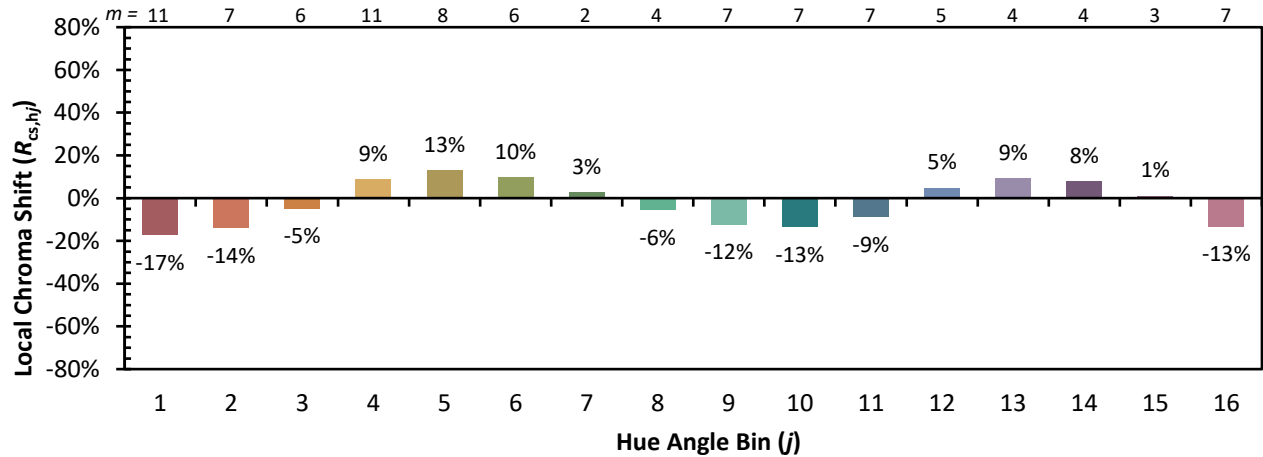


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

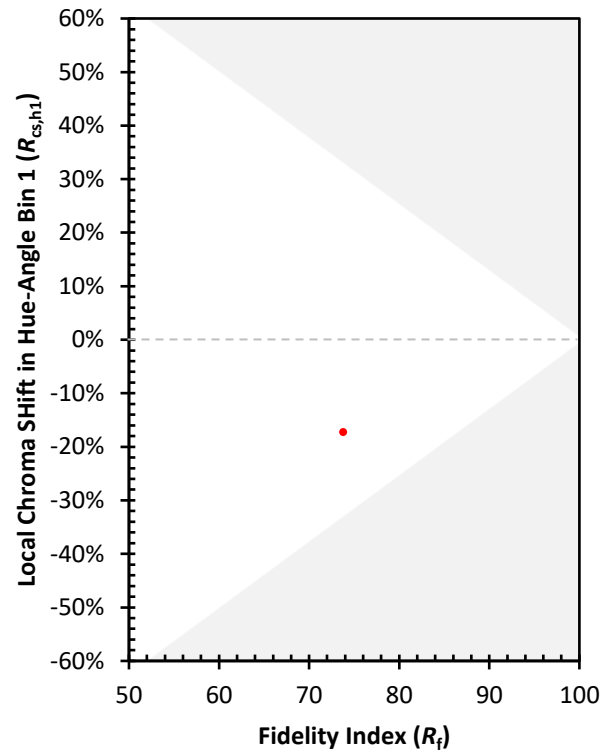
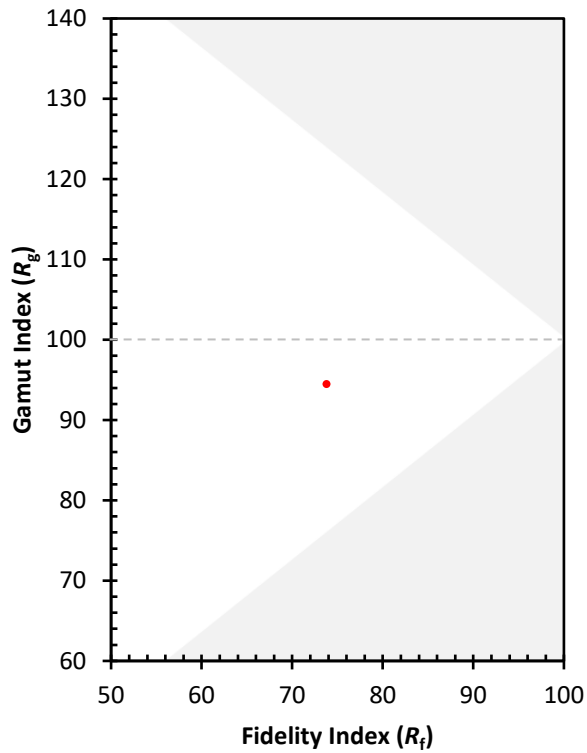
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 63 | CES51 = 86 | CES76 = 61 |
| CES02 = 62 | CES27 = 83 | CES52 = 86 | CES77 = 81 |
| CES03 = 31 | CES28 = 86 | CES53 = 75 | CES78 = 64 |
| CES04 = 71 | CES29 = 58 | CES54 = 81 | CES79 = 86 |
| CES05 = 49 | CES30 = 61 | CES55 = 80 | CES80 = 86 |
| CES06 = 51 | CES31 = 63 | CES56 = 71 | CES81 = 70 |
| CES07 = 41 | CES32 = 61 | CES57 = 69 | CES82 = 94 |
| CES08 = 40 | CES33 = 65 | CES58 = 72 | CES83 = 88 |
| CES09 = 29 | CES34 = 77 | CES59 = 85 | CES84 = 90 |
| CES10 = 76 | CES35 = 88 | CES60 = 93 | CES85 = 80 |
| CES11 = 59 | CES36 = 89 | CES61 = 86 | CES86 = 60 |
| CES12 = 65 | CES37 = 85 | CES62 = 81 | CES87 = 78 |
| CES13 = 43 | CES38 = 69 | CES63 = 73 | CES88 = 75 |
| CES14 = 74 | CES39 = 93 | CES64 = 72 | CES89 = 66 |
| CES15 = 71 | CES40 = 89 | CES65 = 67 | CES90 = 72 |
| CES16 = 47 | CES41 = 83 | CES66 = 70 | CES91 = 95 |
| CES17 = 50 | CES42 = 87 | CES67 = 68 | CES92 = 59 |
| CES18 = 56 | CES43 = 77 | CES68 = 73 | CES93 = 76 |
| CES19 = 73 | CES44 = 99 | CES69 = 83 | CES94 = 48 |
| CES20 = 66 | CES45 = 83 | CES70 = 66 | CES95 = 70 |
| CES21 = 87 | CES46 = 77 | CES71 = 66 | CES96 = 76 |
| CES22 = 79 | CES47 = 74 | CES72 = 88 | CES97 = 82 |
| CES23 = 92 | CES48 = 62 | CES73 = 59 | CES98 = 73 |
| CES24 = 91 | CES49 = 77 | CES74 = 93 | CES99 = 60 |
| CES25 = 73 | CES50 = 85 | CES75 = 67 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)