

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: P1382608

Luminaire Tested: **VAL-T-SB3B-727-U-5NQ**

Issue Date: 02/18/2026

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been  
influenced by sources from within Cooper Lighting Solutions or from external interests.

**Test Information**

Test Method: LM-79-08  
 Report Number: P1382608  
 Test Lab: INNOVATION CENTER(G1)  
 Issue Date: 02/18/2026  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: STREETWORKS  
 Catalog Number: VAL-T-SB3B-727-U-5NQ  
 Description: GALLEON II WALL SLIM HIGH DENSITY LED ARRAYS 3SQUARE 109W 70CRI  
 2700K FIXTURE w/ TYPE V SQUARE NARROW DISTRIBUTION OPTIC  
 Light Source: (78) 2700K CCT, 70 CRI LEDS  
 Ballast/Driver: ELECTRONIC DRIVER  
 Luminaire Equipment:

| <u>Sample No.</u> | <u>Condition</u> | <u>Description</u> |
|-------------------|------------------|--------------------|
| a                 | good             | reflector          |
| b                 | good             | lens               |
| c                 | good             | housing            |
| d                 | good             | cord               |

**Summary**

Lumens per Lamp: N/A  
 Luminaire Lumens: 15263.5 lumens  
 Efficiency: N/A  
 Efficacy: 140.0 lumens/watt  
 Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
 IES Classification: Type V - Short  
 BUG Rating: B3 - U0 - G2  
  
 Input Watts (W): 109  
 Input Voltage (V): 120  
 Input Current (Ain): NR  
 Voltage Rise (V): NR  
 Power Factor: 0.98  
 Total Harmonic Distortion (THDi): 8.7%  
 Frequency (hertz): 60  
 Stabilization Time: NR  
 Operation Time: NR  
 Ambient Temperature (°C): NR  
 Test Distance: 28.75 FT

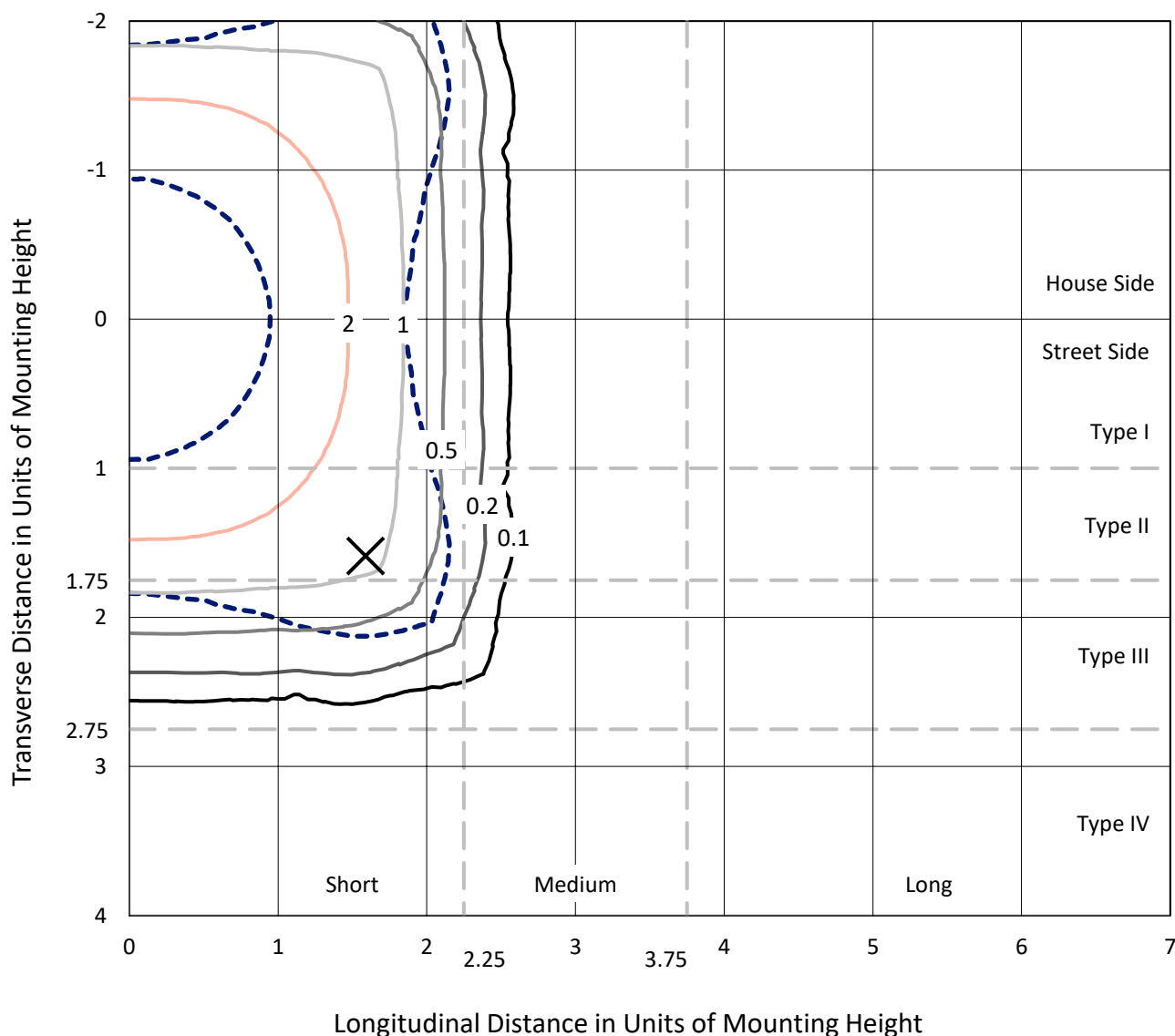
REPORT NUMBER: P1382608

CATALOG NUMBER: VAL-T-SB3B-727-U-5NQ

## Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

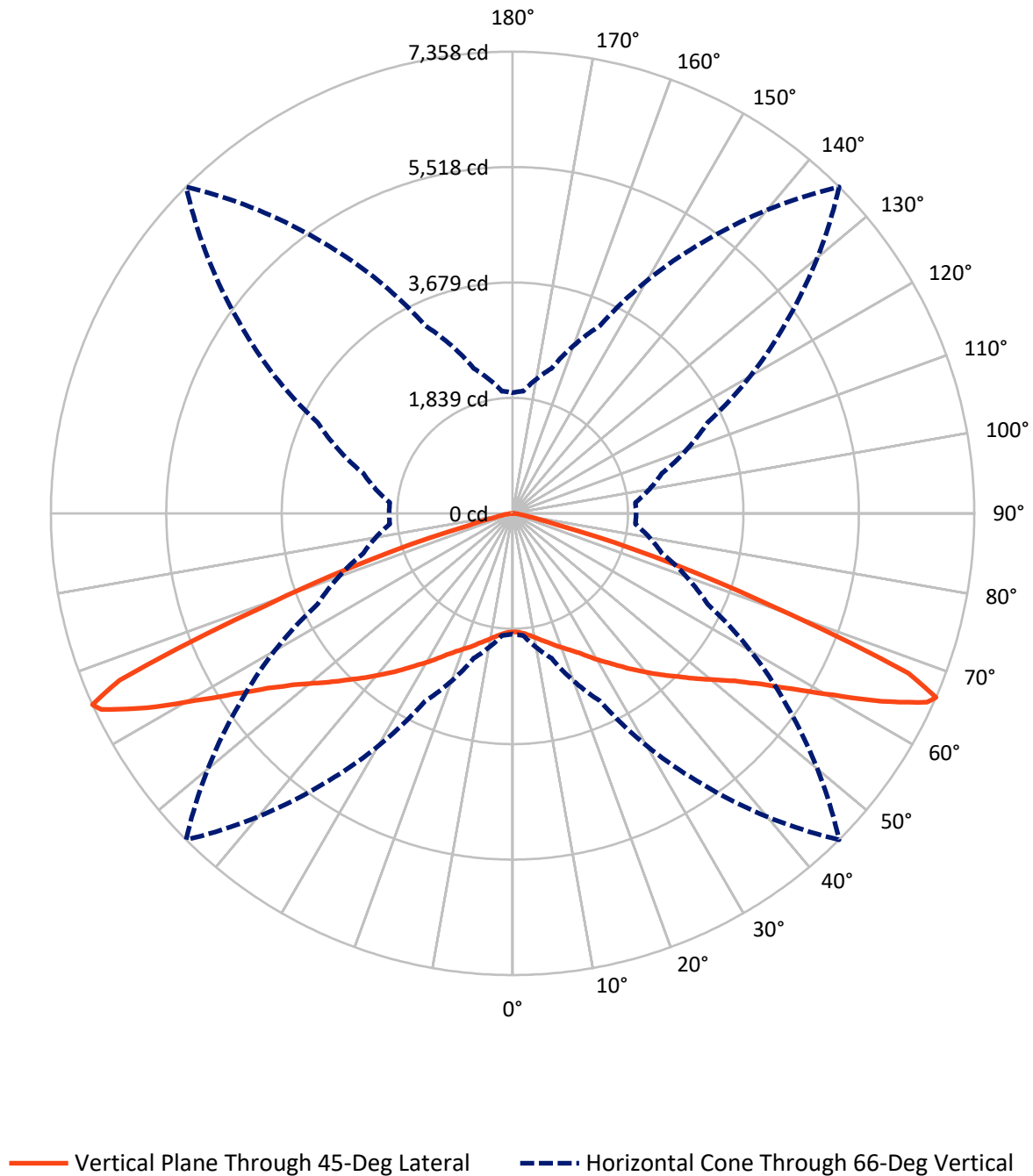


Based on 20 foot mounting height. Maximum calculated value = 4.8 fc

Type V - Short - N/A

REPORT NUMBER: P1382608  
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## Luminous Intensity Polar Plot



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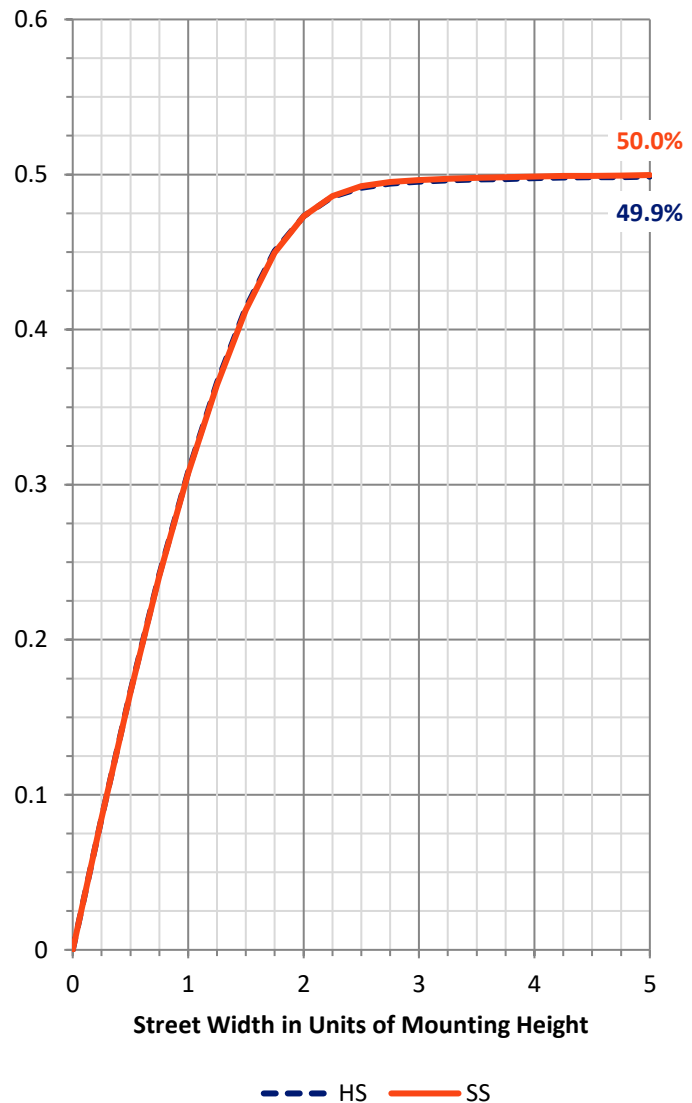
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 7631.8   | 0.0    | 7631.8  |
|                    | % Fixture | 50.0     | 0.0    | 50.0    |
| <b>Street Side</b> | Lumens    | 7631.8   | 0.0    | 7631.8  |
|                    | % Fixture | 50.0     | 0.0    | 50.0    |
| <b>Total</b>       | Lumens    | 15263.5  | 0.0    | 15263.5 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 186.6   | 1.2       |
| 10°-20°   | 608.7   | 4.0       |
| 20°-30°   | 1152.2  | 7.5       |
| 30°-40°   | 1891.5  | 12.4      |
| 40°-50°   | 2917.8  | 19.1      |
| 50°-60°   | 4229.1  | 27.7      |
| 60°-70°   | 3721.9  | 24.4      |
| 70°-80°   | 515.6   | 3.4       |
| 80°-90°   | 40.2    | 0.3       |
| 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°    | 15263.5 | 100.0     |
| 0°-180°   | 15263.5 | 100.0     |



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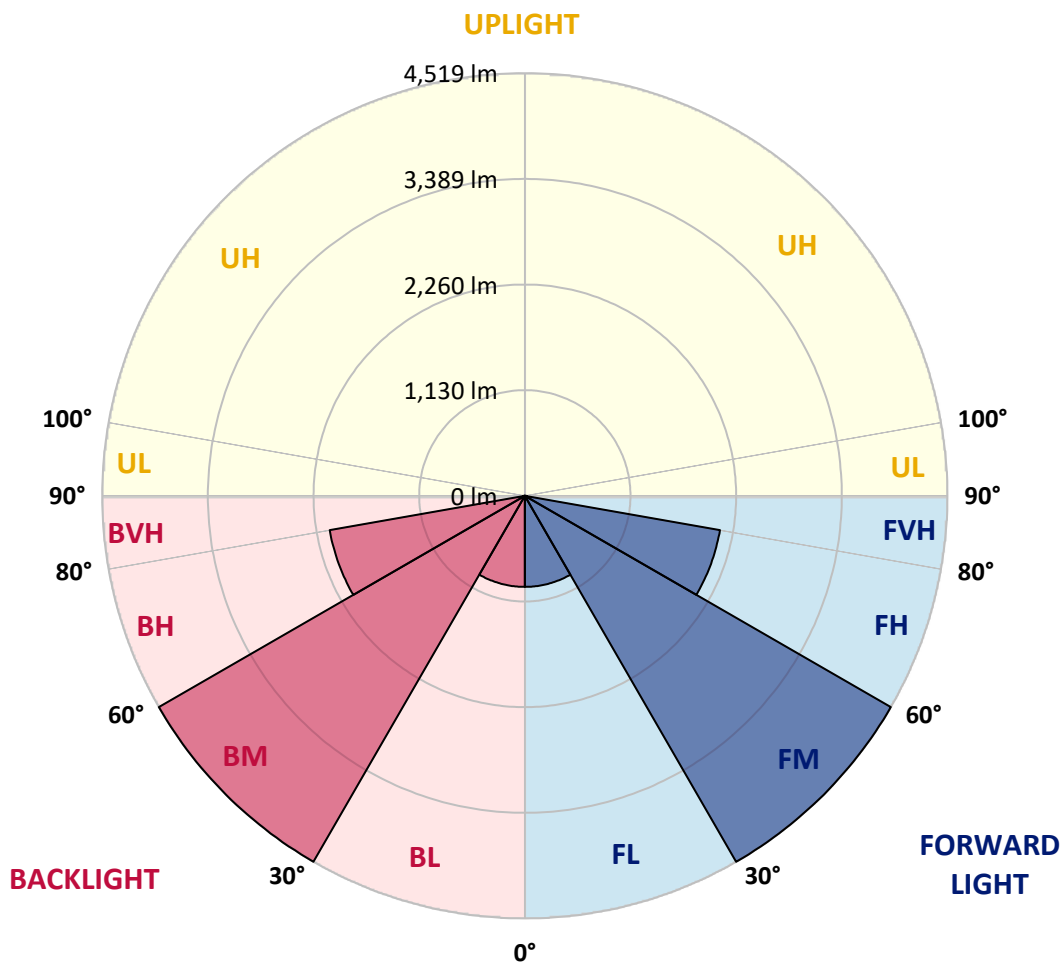
CATALOG NUMBER: VAL-T-SB3B-727-U-5NQ

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 973.7  | 6.4       |                         |      |         |
| FM   | (30°-60°)   | 4519.2 | 29.6      |                         |      |         |
| FH   | (60°-80°)   | 2118.8 | 13.9      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 20.1   | 0.1       |                         |      | G1/100  |
| BL   | (0°-30°)    | 973.7  | 6.4       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 4519.2 | 29.6      | B3/5000                 |      |         |
| BH   | (60°-80°)   | 2118.8 | 13.9      | B3/2500                 |      | G2/5000 |
| BVH  | (80°-90°)   | 20.1   | 0.1       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B3-U0-G2**

Type V Short





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CATALOG NUMBER: VAL-T-SB3B-727-U-5NQ

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    | 90°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1889.5 | 1889.5 | 1889.5 | 1889.5 | 1889.5 | 1889.5 | 1889.5 | 1889.5 | 1889.5 | 1889.5 | 1889.5 |
| 2.5°  | 1899.7 | 1896.3 | 1889.5 | 1892.9 | 1889.5 | 1896.3 | 1906.5 | 1892.9 | 1899.7 | 1903.1 | 1899.7 |
| 5°    | 1923.5 | 1923.5 | 1913.3 | 1920.1 | 1920.1 | 1923.5 | 1926.9 | 1920.1 | 1926.9 | 1926.9 | 1926.9 |
| 7.5°  | 1967.7 | 1971.1 | 1960.9 | 1960.9 | 1964.3 | 1964.3 | 1971.1 | 1967.7 | 1967.7 | 1971.1 | 1974.5 |
| 10°   | 2018.7 | 2018.7 | 2008.5 | 2008.5 | 2011.9 | 2015.3 | 2018.7 | 2011.9 | 2015.3 | 2015.3 | 2015.3 |
| 12.5° | 2073.1 | 2069.7 | 2059.5 | 2062.9 | 2062.9 | 2076.5 | 2076.5 | 2066.3 | 2062.9 | 2062.9 | 2062.9 |
| 15°   | 2127.4 | 2127.4 | 2120.6 | 2124.0 | 2134.2 | 2137.6 | 2141.0 | 2120.6 | 2120.6 | 2113.8 | 2113.8 |
| 17.5° | 2202.2 | 2195.4 | 2195.4 | 2192.0 | 2205.6 | 2215.8 | 2209.0 | 2188.6 | 2192.0 | 2185.2 | 2185.2 |
| 20°   | 2287.2 | 2280.4 | 2270.2 | 2277.0 | 2277.0 | 2287.2 | 2283.8 | 2266.8 | 2266.8 | 2266.8 | 2266.8 |
| 22.5° | 2378.9 | 2375.5 | 2365.3 | 2375.5 | 2372.1 | 2368.7 | 2372.1 | 2368.7 | 2361.9 | 2365.3 | 2368.7 |
| 25°   | 2477.5 | 2470.7 | 2463.9 | 2480.9 | 2470.7 | 2463.9 | 2474.1 | 2474.1 | 2467.3 | 2463.9 | 2477.5 |
| 27.5° | 2579.4 | 2572.6 | 2572.6 | 2589.6 | 2572.6 | 2586.2 | 2589.6 | 2579.4 | 2576.0 | 2572.6 | 2582.8 |
| 30°   | 2691.6 | 2684.8 | 2691.6 | 2708.6 | 2698.4 | 2715.4 | 2715.4 | 2708.6 | 2688.2 | 2688.2 | 2695.0 |
| 32.5° | 2827.5 | 2817.3 | 2827.5 | 2837.7 | 2837.7 | 2847.9 | 2851.3 | 2841.1 | 2837.7 | 2824.1 | 2841.1 |
| 35°   | 2980.4 | 2973.7 | 2973.7 | 2983.8 | 2983.8 | 3000.8 | 3000.8 | 2994.0 | 2987.2 | 2980.4 | 2987.2 |
| 37.5° | 3164.0 | 3140.2 | 3153.8 | 3150.4 | 3153.8 | 3167.4 | 3167.4 | 3143.6 | 3157.2 | 3147.0 | 3160.6 |
| 40°   | 3337.3 | 3310.1 | 3344.1 | 3333.9 | 3340.7 | 3337.3 | 3344.1 | 3333.9 | 3330.5 | 3316.9 | 3330.5 |
| 42.5° | 3527.6 | 3507.2 | 3537.8 | 3537.8 | 3541.2 | 3524.2 | 3534.4 | 3531.0 | 3531.0 | 3507.2 | 3514.0 |
| 45°   | 3748.5 | 3714.5 | 3758.7 | 3758.7 | 3748.5 | 3714.5 | 3751.9 | 3745.1 | 3751.9 | 3717.9 | 3728.1 |
| 47.5° | 3962.6 | 3935.4 | 4003.4 | 4010.2 | 3983.0 | 3935.4 | 3979.6 | 3986.4 | 3983.0 | 3935.4 | 3952.4 |
| 50°   | 4186.9 | 4159.7 | 4241.3 | 4292.3 | 4248.1 | 4166.5 | 4224.3 | 4265.1 | 4241.3 | 4156.3 | 4163.1 |
| 52.5° | 4390.8 | 4377.2 | 4496.2 | 4581.1 | 4530.1 | 4438.4 | 4520.0 | 4547.1 | 4489.4 | 4377.2 | 4380.6 |
| 55°   | 4543.7 | 4547.1 | 4717.1 | 4876.8 | 4876.8 | 4798.6 | 4856.4 | 4839.4 | 4696.7 | 4533.5 | 4526.7 |
| 57.5° | 4567.5 | 4584.5 | 4819.0 | 5145.3 | 5298.2 | 5277.8 | 5247.2 | 5077.3 | 4785.0 | 4533.5 | 4520.0 |
| 60°   | 4088.3 | 4163.1 | 4577.7 | 5254.0 | 5699.2 | 5875.9 | 5651.6 | 5145.3 | 4553.9 | 4183.5 | 4149.5 |
| 62.5° | 3231.9 | 3276.1 | 3721.3 | 4757.8 | 6022.1 | 6596.4 | 5916.7 | 4795.2 | 3833.5 | 3378.1 | 3330.5 |
| 65°   | 2375.5 | 2446.9 | 2827.5 | 3717.9 | 5672.0 | 7259.1 | 5665.2 | 3830.1 | 2912.5 | 2511.5 | 2480.9 |
| 66°   | 1923.5 | 1954.1 | 2389.1 | 3299.9 | 5264.2 | 7357.7 | 5325.4 | 3429.0 | 2463.9 | 1964.3 | 1967.7 |
| 67.5° | 1155.5 | 1189.5 | 1600.7 | 2586.2 | 4411.2 | 6803.7 | 4638.9 | 2671.2 | 1604.1 | 1179.3 | 1084.1 |
| 70°   | 418.0  | 431.6  | 560.7  | 1050.1 | 2966.9 | 4207.3 | 3082.4 | 1043.3 | 533.6  | 428.2  | 414.6  |
| 72.5° | 254.9  | 258.3  | 285.5  | 397.6  | 914.2  | 2334.7 | 887.0  | 401.0  | 285.5  | 244.7  | 244.7  |
| 75°   | 146.1  | 146.1  | 193.7  | 237.9  | 339.8  | 740.9  | 329.7  | 241.3  | 197.1  | 173.3  | 166.5  |
| 77.5° | 105.4  | 108.8  | 142.7  | 163.1  | 197.1  | 299.1  | 200.5  | 149.5  | 125.7  | 102.0  | 102.0  |
| 80°   | 74.8   | 78.2   | 95.2   | 115.5  | 135.9  | 169.9  | 108.8  | 95.2   | 91.8   | 64.6   | 64.6   |
| 82.5° | 51.0   | 51.0   | 54.4   | 68.0   | 71.4   | 68.0   | 57.8   | 61.2   | 57.8   | 44.2   | 40.8   |
| 85°   | 20.4   | 20.4   | 23.8   | 27.2   | 27.2   | 23.8   | 27.2   | 30.6   | 27.2   | 20.4   | 20.4   |
| 87.5° | 10.2   | 10.2   | 10.2   | 10.2   | 10.2   | 10.2   | 10.2   | 10.2   | 10.2   | 10.2   | 10.2   |
| 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: SP1-2407-184-3

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-727-U-5WQ

Data in this report applies to families of products including GSS-SB1A-727-U-5WQ

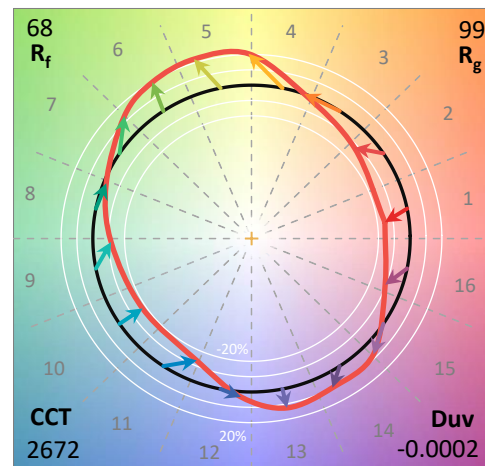


### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-3  
 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-727-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 2700K CCT 26 LEDS

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 2672     | CRI (Ra): | 71.1 |      |       |
| CIE u':                   | 0.2638   | R1:       | 68.3 | R9:  | -27.8 |
| CIE v':                   | 0.5276   | R2:       | 79.8 | R10: | 54.4  |
| Duv:                      | -0.0002  | R3:       | 91.2 | R11: | 65.8  |
| CIE x:                    | 0.4619   | R4:       | 69.4 | R12: | 45.6  |
| CIE y:                    | 0.4106   | R5:       | 66.5 | R13: | 69.8  |
| CIE z:                    | 0.1275   | R6:       | 72.6 | R14: | 94.5  |
| Peak Wavelength (nm):     | 601      | R7:       | 77.0 | R15: | 60.1  |
| Dominant Wavelength (nm): | 584      | R8:       | 44.1 |      |       |
| Purity:                   | 61.88407 |           |      |      |       |
| Rf:                       | 67.9     |           |      |      |       |
| Rg:                       | 98.6     |           |      |      |       |



### Test Conditions

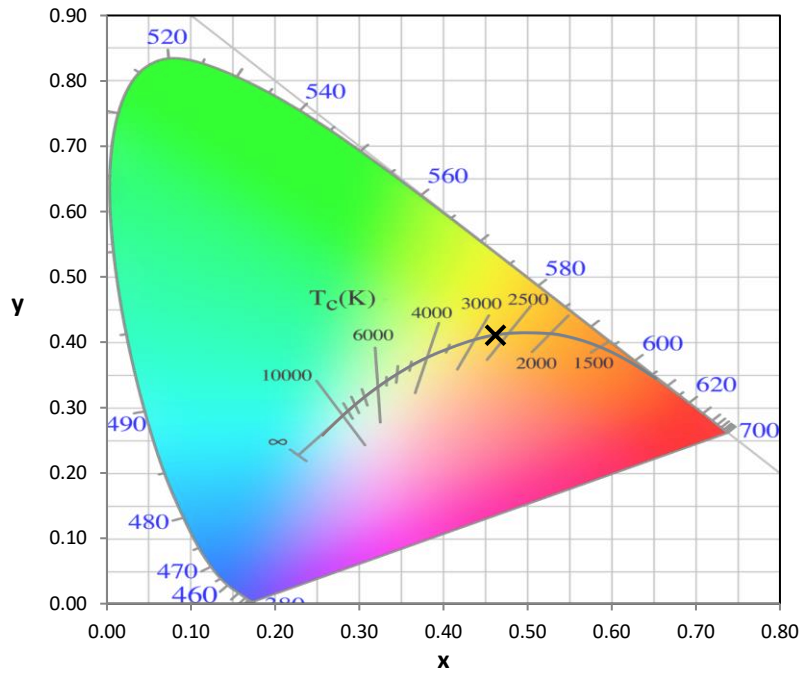
Stabilization Time: 21M  
 Operation Time: 1H 21M  
 Sphere Temperature (°C): 25.2

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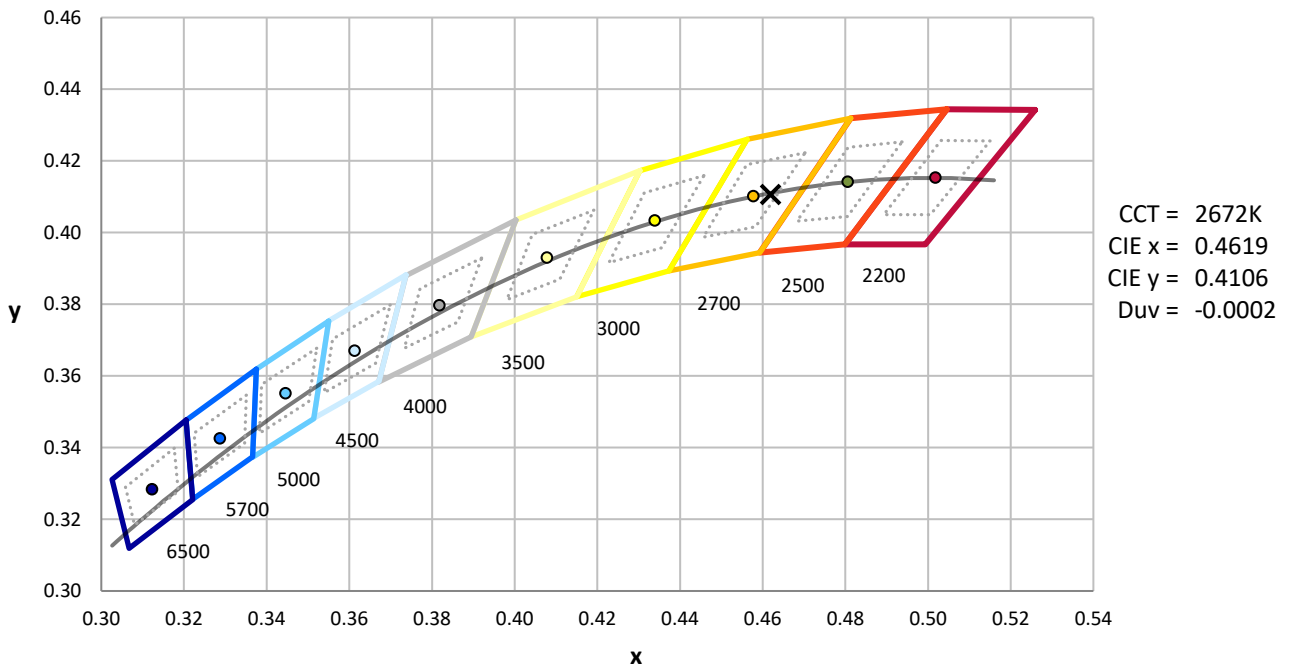
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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

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**CIE 1931 Chromaticity Diagram**



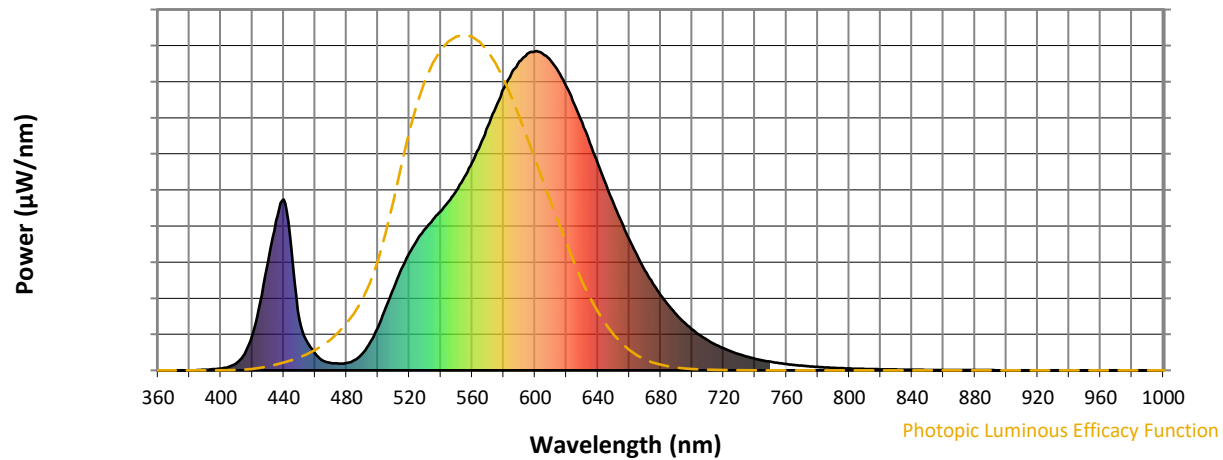
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 2700K 4-step quadrangle

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### Photopic Flux vs. Wavelength

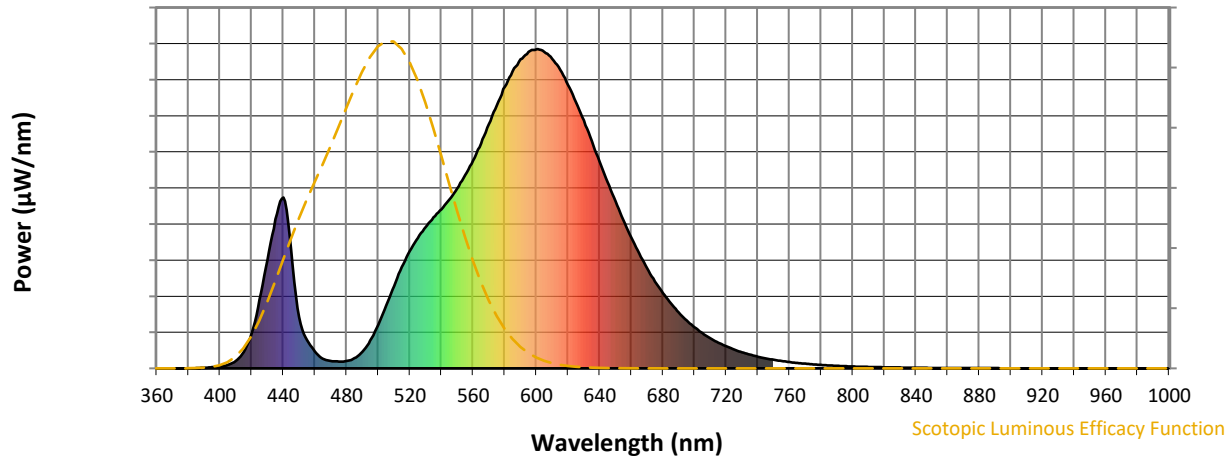


### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 52                                   | NR                             | 620               | 888                                  | NR                             | 750               | 27                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 87                                   | NR                             | 625               | 834                                  | NR                             | 755               | 23                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 135                                  | NR                             | 630               | 776                                  | NR                             | 760               | 20                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 196                                  | NR                             | 635               | 712                                  | NR                             | 765               | 17                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 258                                  | NR                             | 640               | 648                                  | NR                             | 770               | 15                                   | NR                             | 900               | 0                                    | NR                             |
| 385               | 1                                    | NR                             | 515               | 317                                  | NR                             | 645               | 583                                  | NR                             | 775               | 12                                   | NR                             | 905               | 0                                    | NR                             |
| 390               | 2                                    | NR                             | 520               | 368                                  | NR                             | 650               | 523                                  | NR                             | 780               | 11                                   | NR                             | 910               | 0                                    | NR                             |
| 395               | 4                                    | NR                             | 525               | 408                                  | NR                             | 655               | 465                                  | NR                             | 785               | 9                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 6                                    | NR                             | 530               | 443                                  | NR                             | 660               | 410                                  | NR                             | 790               | 8                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 11                                   | NR                             | 535               | 473                                  | NR                             | 665               | 360                                  | NR                             | 795               | 7                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 23                                   | NR                             | 540               | 498                                  | NR                             | 670               | 313                                  | NR                             | 800               | 6                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 51                                   | NR                             | 545               | 530                                  | NR                             | 675               | 272                                  | NR                             | 805               | 5                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 111                                  | NR                             | 550               | 563                                  | NR                             | 680               | 236                                  | NR                             | 810               | 4                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 214                                  | NR                             | 555               | 605                                  | NR                             | 685               | 203                                  | NR                             | 815               | 4                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 339                                  | NR                             | 560               | 651                                  | NR                             | 690               | 175                                  | NR                             | 820               | 3                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 467                                  | NR                             | 565               | 705                                  | NR                             | 695               | 150                                  | NR                             | 825               | 3                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 535                                  | NR                             | 570               | 765                                  | NR                             | 700               | 128                                  | NR                             | 830               | 3                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 372                                  | NR                             | 575               | 824                                  | NR                             | 705               | 110                                  | NR                             | 835               | 2                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 160                                  | NR                             | 580               | 882                                  | NR                             | 710               | 94                                   | NR                             | 840               | 2                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 89                                   | NR                             | 585               | 930                                  | NR                             | 715               | 80                                   | NR                             | 845               | 2                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 53                                   | NR                             | 590               | 968                                  | NR                             | 720               | 69                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 31                                   | NR                             | 595               | 991                                  | NR                             | 725               | 59                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 23                                   | NR                             | 600               | 999                                  | NR                             | 730               | 50                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 21                                   | NR                             | 605               | 992                                  | NR                             | 735               | 43                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 23                                   | NR                             | 610               | 969                                  | NR                             | 740               | 36                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 32                                   | NR                             | 615               | 935                                  | NR                             | 745               | 31                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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### Scotopic Flux vs. Wavelength



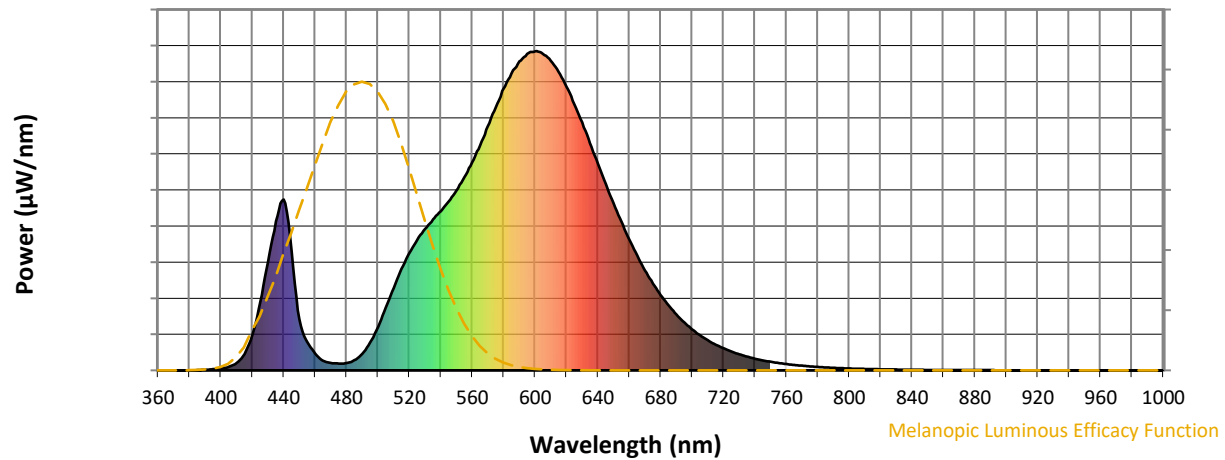
Scotopic Lumens: NR

S/P: 1.02

| $\lambda$<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               | 52                                   | NR                             | 620               | 888                                  | NR                             | 750               | 27                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 87                                   | NR                             | 625               | 834                                  | NR                             | 755               | 23                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 135                                  | NR                             | 630               | 776                                  | NR                             | 760               | 20                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 196                                  | NR                             | 635               | 712                                  | NR                             | 765               | 17                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 258                                  | NR                             | 640               | 648                                  | NR                             | 770               | 15                                   | NR                             | 900               | 0                                    | NR                             |
| 385               | 1                                    | NR                             | 515               | 317                                  | NR                             | 645               | 583                                  | NR                             | 775               | 12                                   | NR                             | 905               | 0                                    | NR                             |
| 390               | 2                                    | NR                             | 520               | 368                                  | NR                             | 650               | 523                                  | NR                             | 780               | 11                                   | NR                             | 910               | 0                                    | NR                             |
| 395               | 4                                    | NR                             | 525               | 408                                  | NR                             | 655               | 465                                  | NR                             | 785               | 9                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 6                                    | NR                             | 530               | 443                                  | NR                             | 660               | 410                                  | NR                             | 790               | 8                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 11                                   | NR                             | 535               | 473                                  | NR                             | 665               | 360                                  | NR                             | 795               | 7                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 23                                   | NR                             | 540               | 498                                  | NR                             | 670               | 313                                  | NR                             | 800               | 6                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 51                                   | NR                             | 545               | 530                                  | NR                             | 675               | 272                                  | NR                             | 805               | 5                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 111                                  | NR                             | 550               | 563                                  | NR                             | 680               | 236                                  | NR                             | 810               | 4                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 214                                  | NR                             | 555               | 605                                  | NR                             | 685               | 203                                  | NR                             | 815               | 4                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 339                                  | NR                             | 560               | 651                                  | NR                             | 690               | 175                                  | NR                             | 820               | 3                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 467                                  | NR                             | 565               | 705                                  | NR                             | 695               | 150                                  | NR                             | 825               | 3                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 535                                  | NR                             | 570               | 765                                  | NR                             | 700               | 128                                  | NR                             | 830               | 3                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 372                                  | NR                             | 575               | 824                                  | NR                             | 705               | 110                                  | NR                             | 835               | 2                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 160                                  | NR                             | 580               | 882                                  | NR                             | 710               | 94                                   | NR                             | 840               | 2                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 89                                   | NR                             | 585               | 930                                  | NR                             | 715               | 80                                   | NR                             | 845               | 2                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 53                                   | NR                             | 590               | 968                                  | NR                             | 720               | 69                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 31                                   | NR                             | 595               | 991                                  | NR                             | 725               | 59                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 23                                   | NR                             | 600               | 999                                  | NR                             | 730               | 50                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 21                                   | NR                             | 605               | 992                                  | NR                             | 735               | 43                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 23                                   | NR                             | 610               | 969                                  | NR                             | 740               | 36                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 32                                   | NR                             | 615               | 935                                  | NR                             | 745               | 31                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 1.71

| $\lambda$<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               | 52                                     | NR                             | 620               | 888                                    | NR                             | 750               | 27                                     | NR                             | 880               | 1                                      | NR                             |
| 365               | 0                                      | NR                             | 495               | 87                                     | NR                             | 625               | 834                                    | NR                             | 755               | 23                                     | NR                             | 885               | 1                                      | NR                             |
| 370               | 0                                      | NR                             | 500               | 135                                    | NR                             | 630               | 776                                    | NR                             | 760               | 20                                     | NR                             | 890               | 1                                      | NR                             |
| 375               | 0                                      | NR                             | 505               | 196                                    | NR                             | 635               | 712                                    | NR                             | 765               | 17                                     | NR                             | 895               | 0                                      | NR                             |
| 380               | 0                                      | NR                             | 510               | 258                                    | NR                             | 640               | 648                                    | NR                             | 770               | 15                                     | NR                             | 900               | 0                                      | NR                             |
| 385               | 1                                      | NR                             | 515               | 317                                    | NR                             | 645               | 583                                    | NR                             | 775               | 12                                     | NR                             | 905               | 0                                      | NR                             |
| 390               | 2                                      | NR                             | 520               | 368                                    | NR                             | 650               | 523                                    | NR                             | 780               | 11                                     | NR                             | 910               | 0                                      | NR                             |
| 395               | 4                                      | NR                             | 525               | 408                                    | NR                             | 655               | 465                                    | NR                             | 785               | 9                                      | NR                             | 915               | 0                                      | NR                             |
| 400               | 6                                      | NR                             | 530               | 443                                    | NR                             | 660               | 410                                    | NR                             | 790               | 8                                      | NR                             | 920               | 0                                      | NR                             |
| 405               | 11                                     | NR                             | 535               | 473                                    | NR                             | 665               | 360                                    | NR                             | 795               | 7                                      | NR                             | 925               | 0                                      | NR                             |
| 410               | 23                                     | NR                             | 540               | 498                                    | NR                             | 670               | 313                                    | NR                             | 800               | 6                                      | NR                             | 930               | 0                                      | NR                             |
| 415               | 51                                     | NR                             | 545               | 530                                    | NR                             | 675               | 272                                    | NR                             | 805               | 5                                      | NR                             | 935               | 0                                      | NR                             |
| 420               | 111                                    | NR                             | 550               | 563                                    | NR                             | 680               | 236                                    | NR                             | 810               | 4                                      | NR                             | 940               | 0                                      | NR                             |
| 425               | 214                                    | NR                             | 555               | 605                                    | NR                             | 685               | 203                                    | NR                             | 815               | 4                                      | NR                             | 945               | 0                                      | NR                             |
| 430               | 339                                    | NR                             | 560               | 651                                    | NR                             | 690               | 175                                    | NR                             | 820               | 3                                      | NR                             | 950               | 0                                      | NR                             |
| 435               | 467                                    | NR                             | 565               | 705                                    | NR                             | 695               | 150                                    | NR                             | 825               | 3                                      | NR                             | 955               | 0                                      | NR                             |
| 440               | 535                                    | NR                             | 570               | 765                                    | NR                             | 700               | 128                                    | NR                             | 830               | 3                                      | NR                             | 960               | 0                                      | NR                             |
| 445               | 372                                    | NR                             | 575               | 824                                    | NR                             | 705               | 110                                    | NR                             | 835               | 2                                      | NR                             | 965               | 0                                      | NR                             |
| 450               | 160                                    | NR                             | 580               | 882                                    | NR                             | 710               | 94                                     | NR                             | 840               | 2                                      | NR                             | 970               | 0                                      | NR                             |
| 455               | 89                                     | NR                             | 585               | 930                                    | NR                             | 715               | 80                                     | NR                             | 845               | 2                                      | NR                             | 975               | 0                                      | NR                             |
| 460               | 53                                     | NR                             | 590               | 968                                    | NR                             | 720               | 69                                     | NR                             | 850               | 1                                      | NR                             | 980               | 0                                      | NR                             |
| 465               | 31                                     | NR                             | 595               | 991                                    | NR                             | 725               | 59                                     | NR                             | 855               | 1                                      | NR                             | 985               | 0                                      | NR                             |
| 470               | 23                                     | NR                             | 600               | 999                                    | NR                             | 730               | 50                                     | NR                             | 860               | 1                                      | NR                             | 990               | 0                                      | NR                             |
| 475               | 21                                     | NR                             | 605               | 992                                    | NR                             | 735               | 43                                     | NR                             | 865               | 1                                      | NR                             | 995               | 0                                      | NR                             |
| 480               | 23                                     | NR                             | 610               | 969                                    | NR                             | 740               | 36                                     | NR                             | 870               | 1                                      | NR                             | 1000              | 0                                      | NR                             |
| 485               | 32                                     | NR                             | 615               | 935                                    | NR                             | 745               | 31                                     | NR                             | 875               | 1                                      | NR                             |                   |                                        |                                |

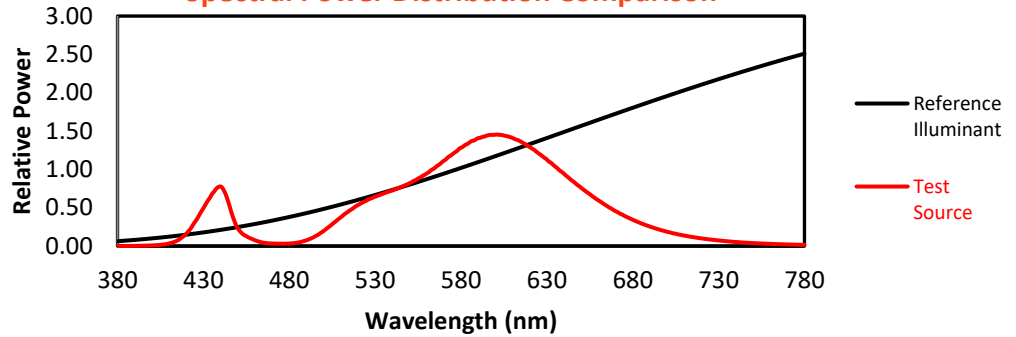
REPORT NUMBER: SP1-2407-184-3

TM-30-18

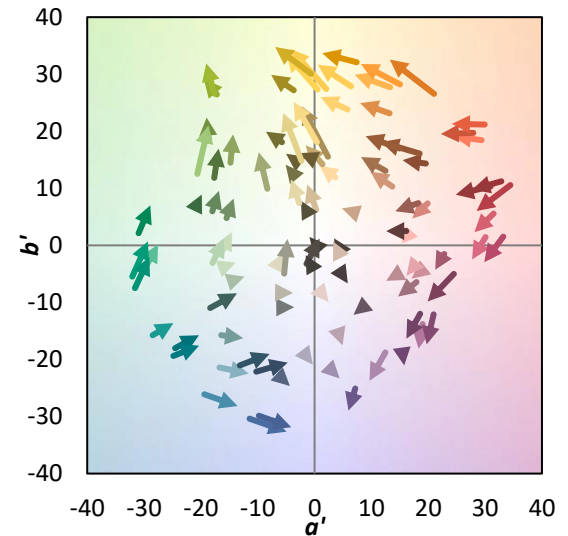
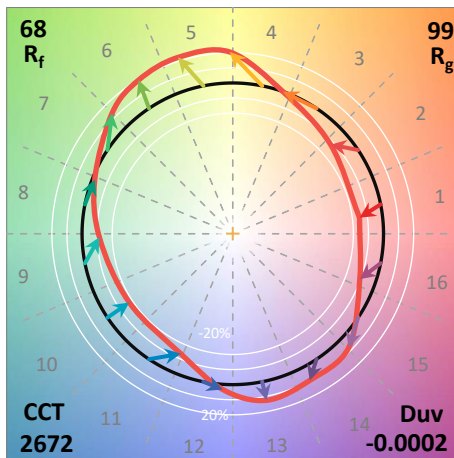
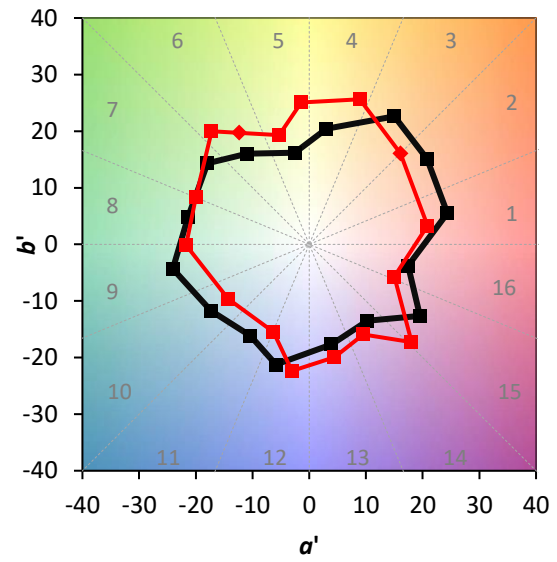
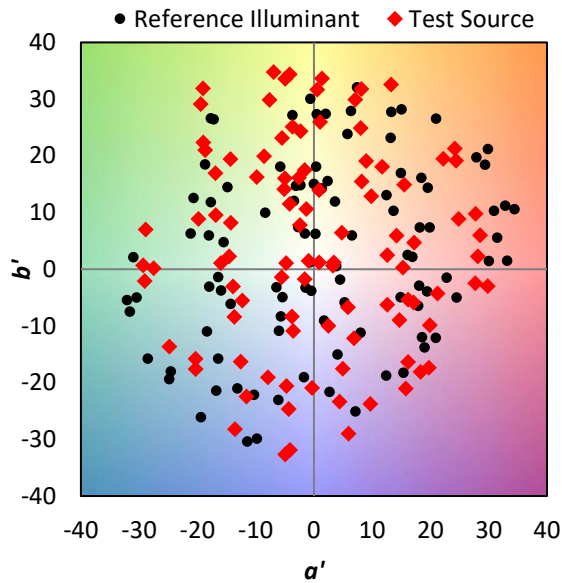
### Summary

$R_f = 67.9$   
 $R_g = 98.6$   
 $CIE\ R_a = 71.1$   
 $R_g = -27.8$

### Spectral Power Distribution Comparison

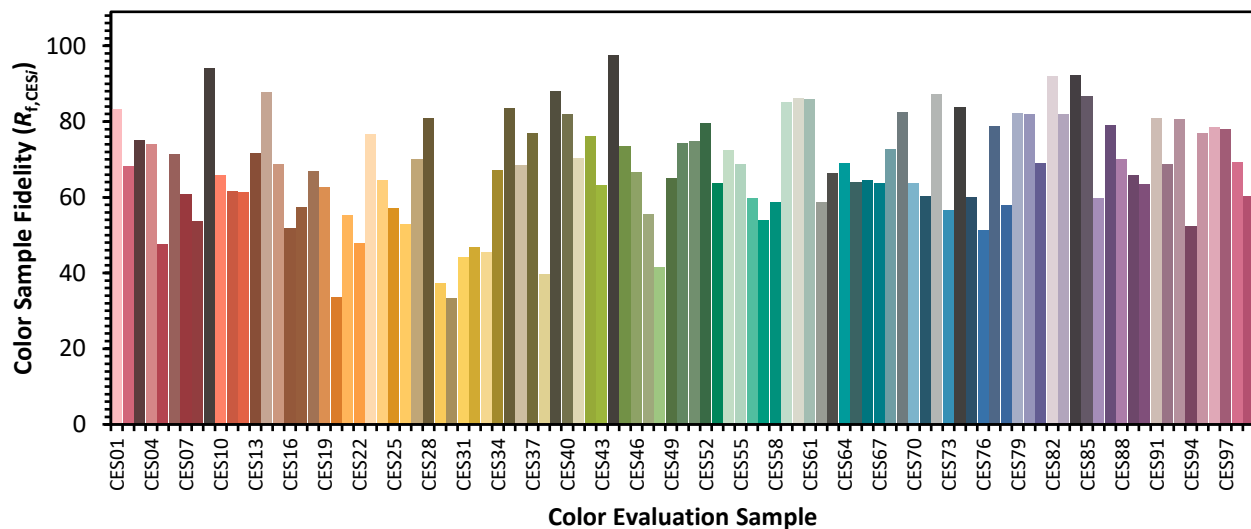


### Color Vector Graphics

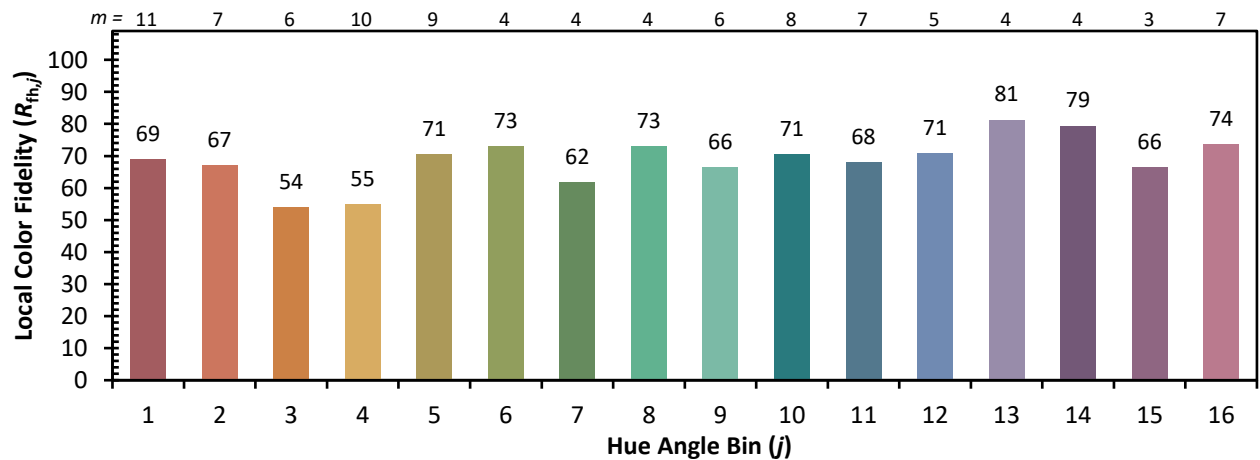
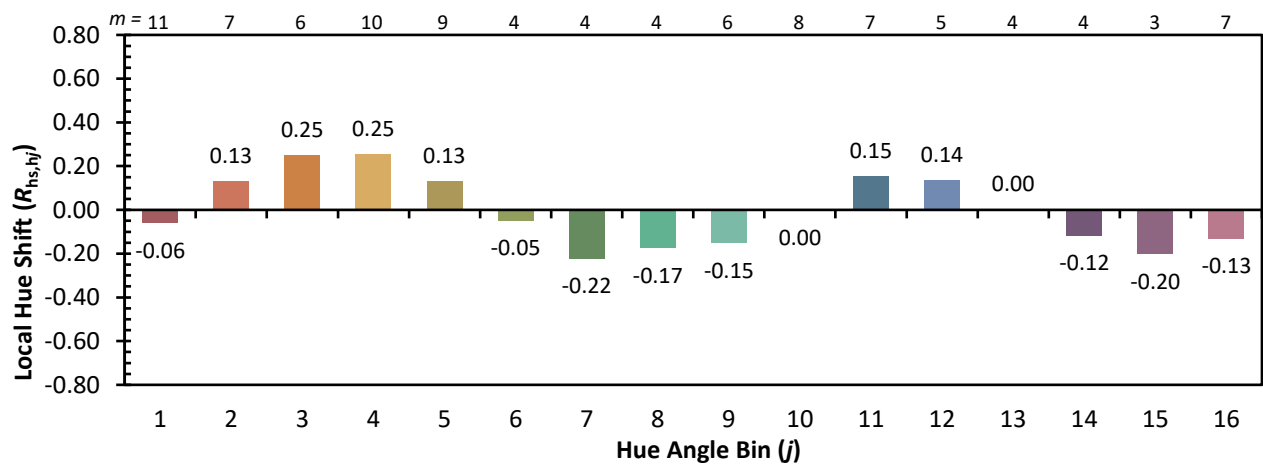
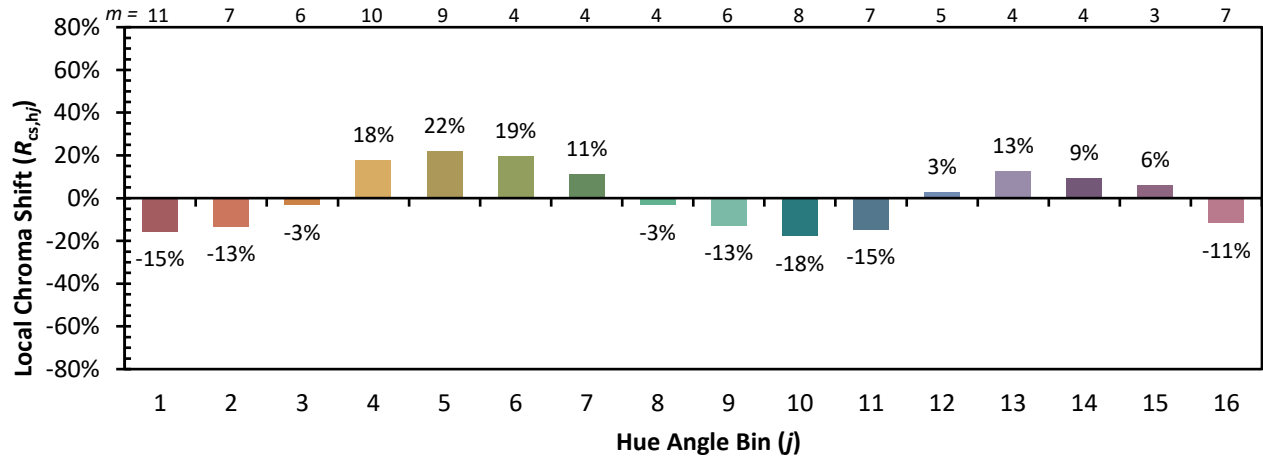


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

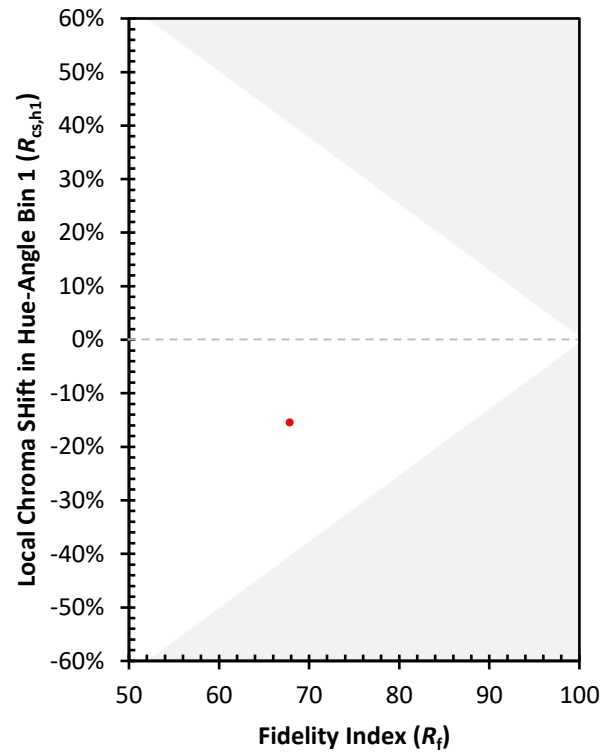
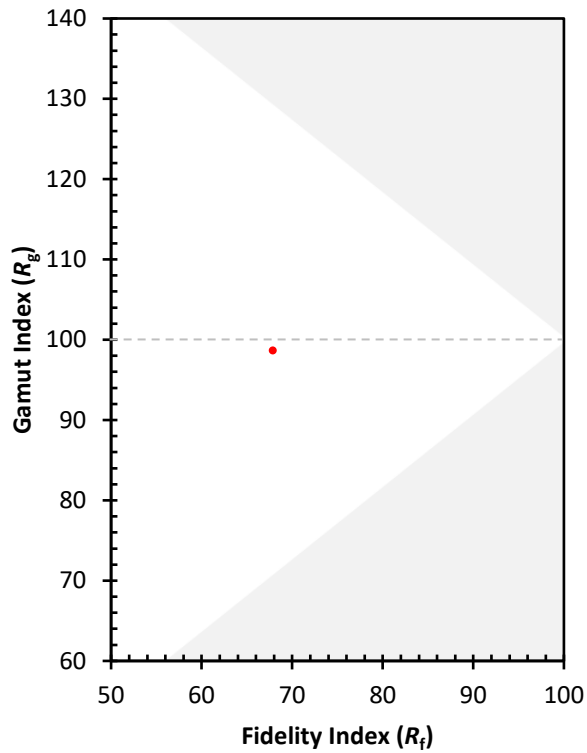
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 53 | CES51 = 75 | CES76 = 51 |
| CES02 = 63 | CES27 = 70 | CES52 = 80 | CES77 = 79 |
| CES03 = 31 | CES28 = 81 | CES53 = 64 | CES78 = 58 |
| CES04 = 71 | CES29 = 37 | CES54 = 73 | CES79 = 82 |
| CES05 = 50 | CES30 = 33 | CES55 = 69 | CES80 = 82 |
| CES06 = 52 | CES31 = 44 | CES56 = 60 | CES81 = 69 |
| CES07 = 42 | CES32 = 47 | CES57 = 54 | CES82 = 92 |
| CES08 = 41 | CES33 = 45 | CES58 = 59 | CES83 = 82 |
| CES09 = 29 | CES34 = 67 | CES59 = 85 | CES84 = 92 |
| CES10 = 77 | CES35 = 84 | CES60 = 86 | CES85 = 87 |
| CES11 = 60 | CES36 = 68 | CES61 = 86 | CES86 = 60 |
| CES12 = 66 | CES37 = 77 | CES62 = 59 | CES87 = 79 |
| CES13 = 44 | CES38 = 40 | CES63 = 66 | CES88 = 70 |
| CES14 = 74 | CES39 = 88 | CES64 = 69 | CES89 = 66 |
| CES15 = 72 | CES40 = 82 | CES65 = 64 | CES90 = 64 |
| CES16 = 48 | CES41 = 70 | CES66 = 65 | CES91 = 81 |
| CES17 = 51 | CES42 = 76 | CES67 = 64 | CES92 = 69 |
| CES18 = 57 | CES43 = 63 | CES68 = 73 | CES93 = 81 |
| CES19 = 73 | CES44 = 97 | CES69 = 83 | CES94 = 53 |
| CES20 = 67 | CES45 = 74 | CES70 = 64 | CES95 = 77 |
| CES21 = 88 | CES46 = 67 | CES71 = 60 | CES96 = 79 |
| CES22 = 80 | CES47 = 55 | CES72 = 87 | CES97 = 78 |
| CES23 = 92 | CES48 = 42 | CES73 = 57 | CES98 = 69 |
| CES24 = 92 | CES49 = 65 | CES74 = 84 | CES99 = 60 |
| CES25 = 73 | CES50 = 74 | CES75 = 60 |            |





**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**



(END OF REPORT)