

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: P1380316

Luminaire Tested: **VAL-T-SB6B-727-U-T2-HSS**

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: P1380316  
 Test Lab: INNOVATION CENTER(G3)  
 Issue Date: 02/18/2026  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: STREETWORKS  
 Catalog Number: VAL-T-SB6B-727-U-T2-HSS  
 Description: GALLEON II WALL SLIM HIGH DENSITY LED ARRAYS 65 SQUARE 219W 70CRI  
 2700K FIXTURE w/ TYPE II DISTRIBUTION OPTIC AND HOUSE SIDE SHIELD  
 Light Source: (156) 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               |

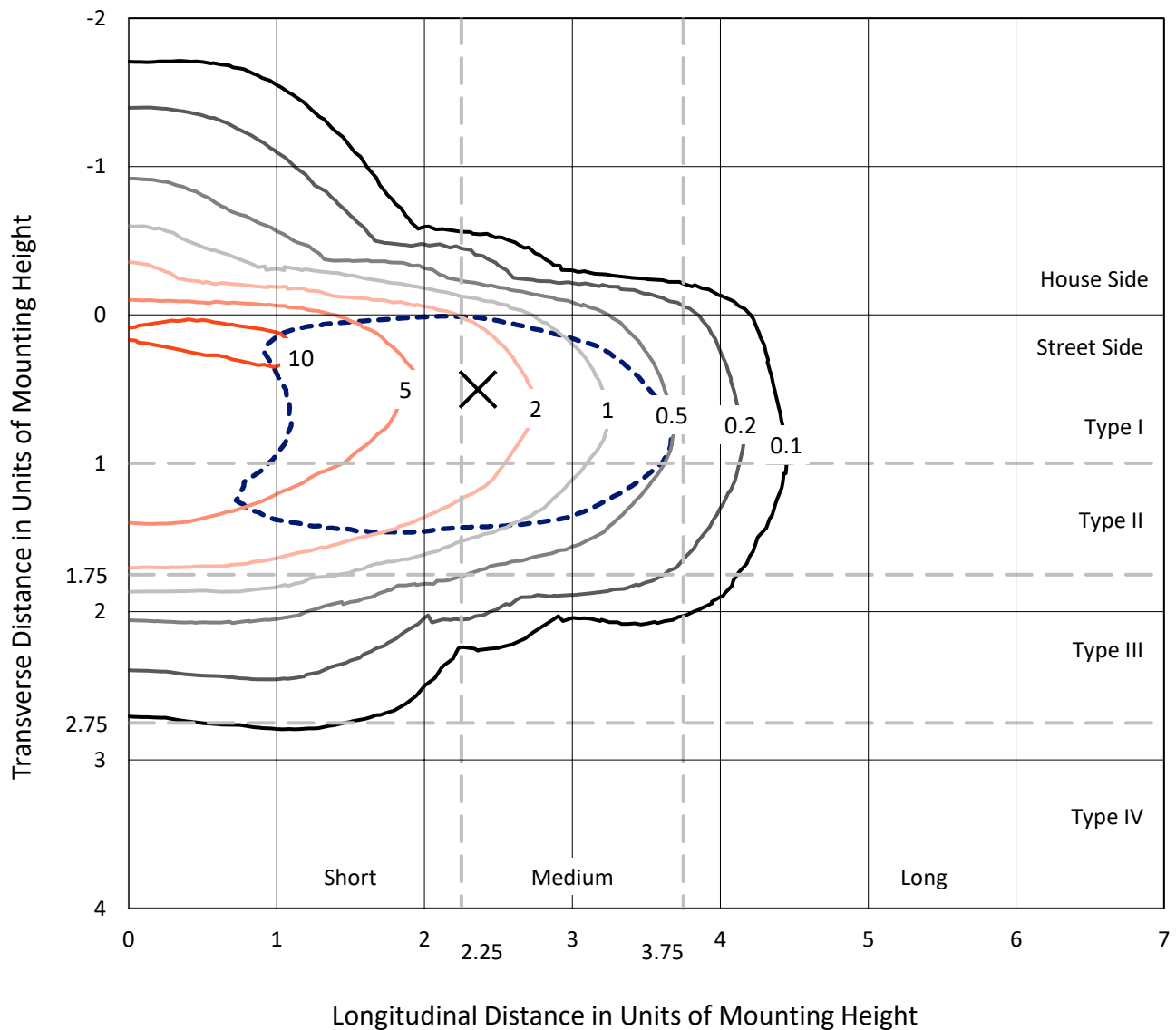
**Summary**

Lumens per Lamp: N/A  
 Luminaire Lumens: 23690.7 lumens  
 Efficiency: N/A  
 Efficacy: 108.2 lumens/watt  
 Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
 IES Classification: Type II - Medium  
 BUG Rating: B2 - U0 - G4  
  
 Input Watts (W): 219  
 Input Voltage (V): 120  
 Input Current (A<sub>in</sub>): 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

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## Iso-Footcandle Lines of Horizontal Illumination

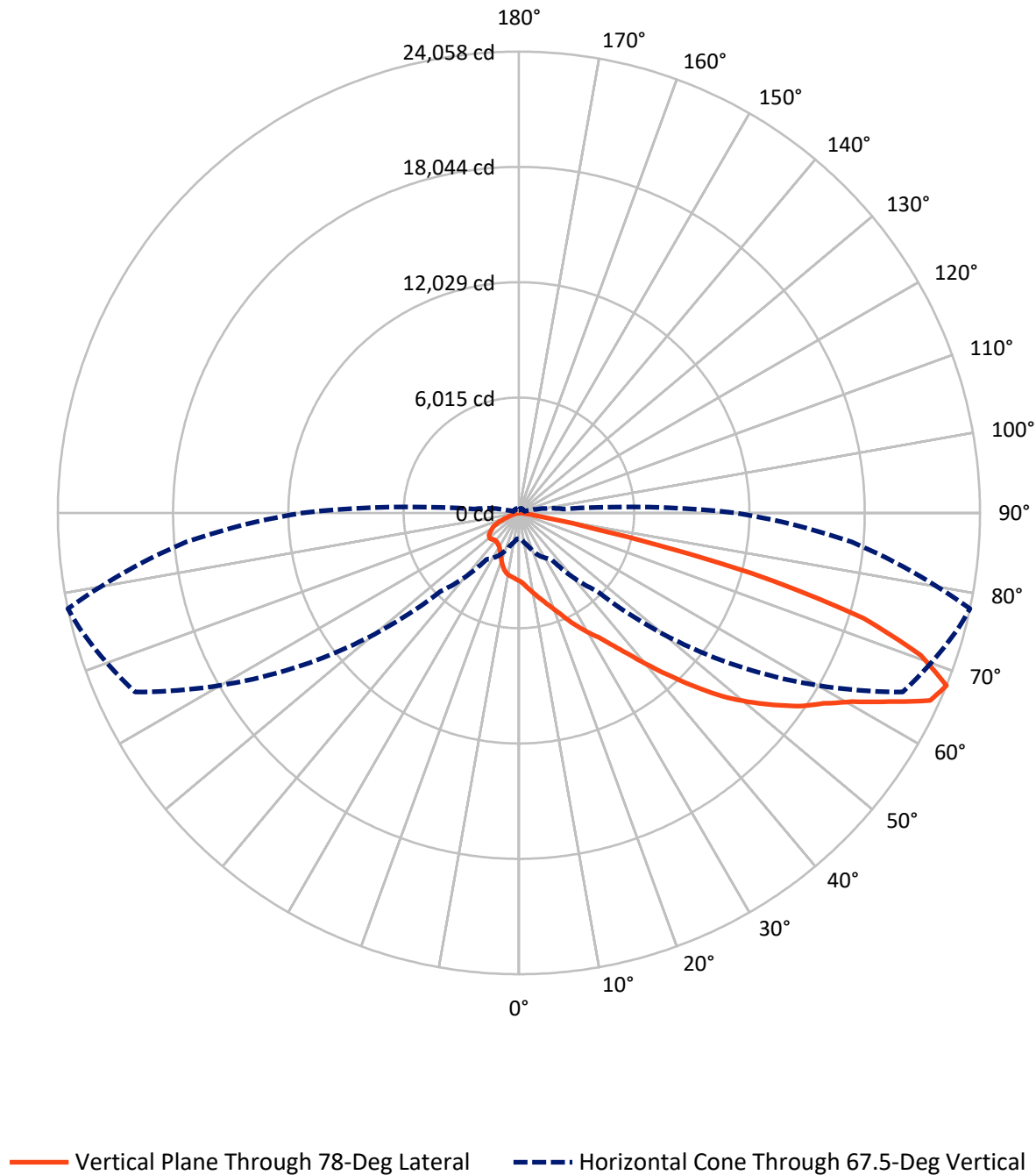
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 11.9 fc  
 Type II - Medium - N/A

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## Luminous Intensity Polar Plot



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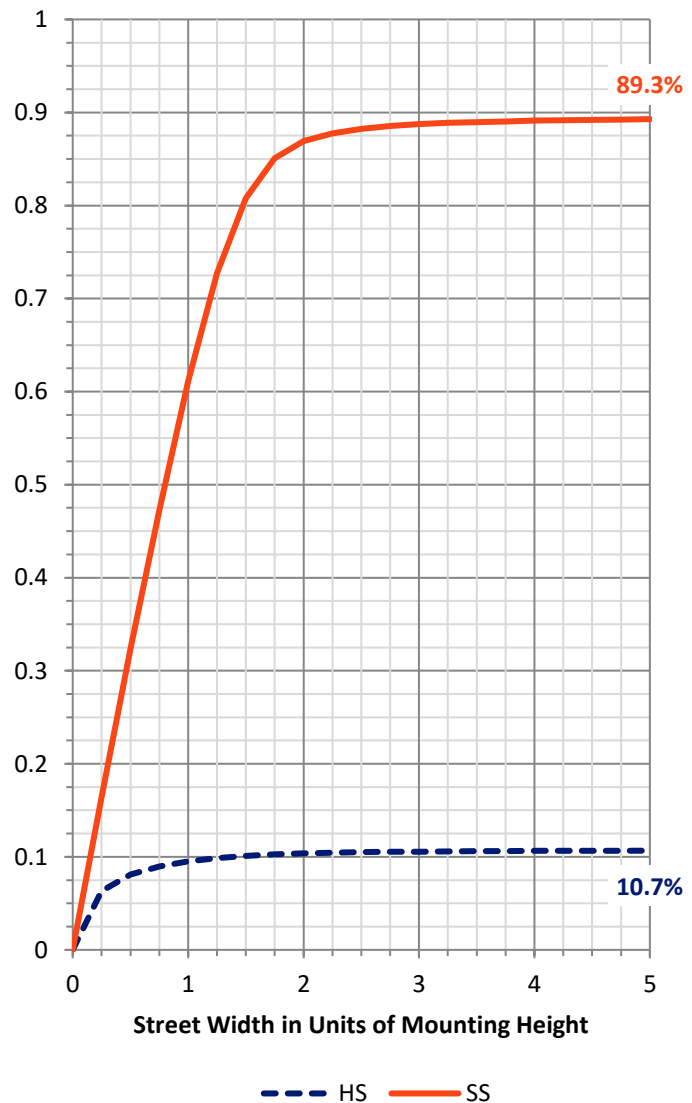
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 2542.3   | 0.0    | 2542.3  |
|                    | % Fixture | 10.7     | 0.0    | 10.7    |
| <b>Street Side</b> | Lumens    | 21148.4  | 0.0    | 21148.4 |
|                    | % Fixture | 89.3     | 0.0    | 89.3    |
| <b>Total</b>       | Lumens    | 23690.7  | 0.0    | 23690.7 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 319.5   | 1.3       |
| 10°-20°   | 869.9   | 3.7       |
| 20°-30°   | 1431.3  | 6.0       |
| 30°-40°   | 2499.9  | 10.6      |
| 40°-50°   | 4253.4  | 18.0      |
| 50°-60°   | 6134.7  | 25.9      |
| 60°-70°   | 5921.2  | 25.0      |
| 70°-80°   | 2175.1  | 9.2       |
| 80°-90°   | 85.7    | 0.4       |
| 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°    | 23690.7 | 100.0     |
| 0°-180°   | 23690.7 | 100.0     |

**Coefficient of Utilization**



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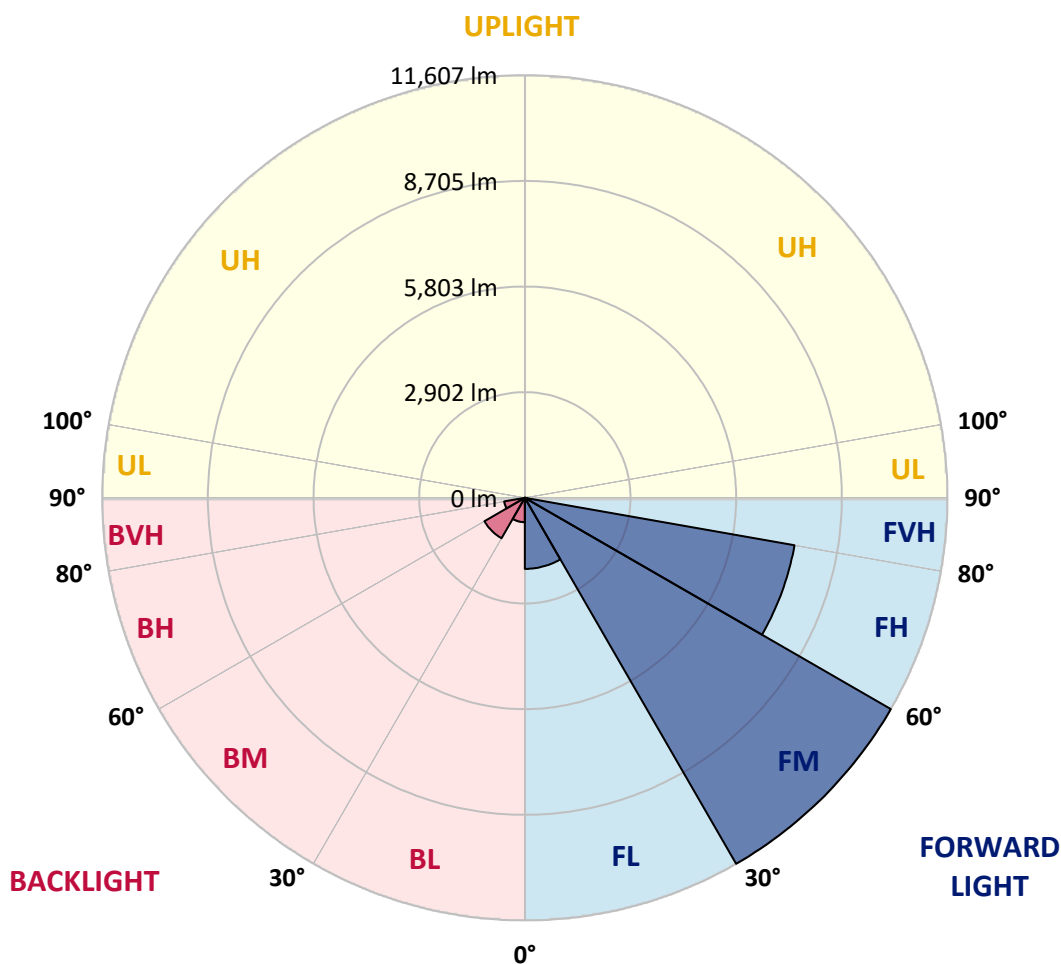
CATALOG NUMBER: VAL-T-SB6B-727-U-T2-HSS

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

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|---------|-----------|-------------------------|------|----------|
|      |             |         |           | B                       | U    | G        |
| FL   | (0°-30°)    | 1952.0  | 8.2       |                         |      |          |
| FM   | (30°-60°)   | 11606.8 | 49.0      |                         |      |          |
| FH   | (60°-80°)   | 7520.0  | 31.7      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 69.6    | 0.3       |                         |      | G1/100   |
| BL   | (0°-30°)    | 668.7   | 2.8       | B2/1000                 |      |          |
| BM   | (30°-60°)   | 1281.2  | 5.4       | B2/2500                 |      |          |
| BH   | (60°-80°)   | 576.3   | 2.4       | B2/1000                 |      | G2/1000  |
| BVH  | (80°-90°)   | 16.1    | 0.1       |                         |      | G1/100   |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |          |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |          |

**BUG Rating: B2-U0-G4**

Type II Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 65°     | 75°     | 78°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 3546.0  | 3546.0  | 3546.0  | 3546.0  | 3546.0  | 3546.0  | 3546.0  | 3546.0  | 3546.0  | 3546.0  | 3546.0  |
| 2.5°  | 3924.5  | 3917.8  | 3931.1  | 3904.5  | 3911.2  | 3878.0  | 3804.9  | 3758.5  | 3698.7  | 3658.8  | 3612.4  |
| 5°    | 4210.0  | 4216.6  | 4203.4  | 4210.0  | 4190.1  | 4143.6  | 4103.8  | 3984.2  | 3884.6  | 3844.8  | 3745.2  |
| 7.5°  | 4303.0  | 4316.2  | 4316.2  | 4349.4  | 4369.4  | 4389.3  | 4356.1  | 4229.9  | 4097.1  | 4044.0  | 3878.0  |
| 10°   | 4303.0  | 4303.0  | 4349.4  | 4395.9  | 4488.9  | 4555.3  | 4548.7  | 4502.2  | 4336.2  | 4256.5  | 4070.6  |
| 12.5° | 4183.4  | 4176.8  | 4236.6  | 4369.4  | 4495.5  | 4648.3  | 4761.2  | 4721.3  | 4568.6  | 4508.8  | 4236.6  |
| 15°   | 3851.4  | 3858.1  | 3970.9  | 4170.2  | 4422.5  | 4681.5  | 4874.0  | 4960.4  | 4854.1  | 4761.2  | 4488.9  |
| 17.5° | 3413.2  | 3439.7  | 3572.5  | 3851.4  | 4229.9  | 4648.3  | 5013.5  | 5219.3  | 5152.9  | 5066.6  | 4734.6  |
| 20°   | 3253.8  | 3260.4  | 3333.5  | 3532.7  | 3964.3  | 4522.1  | 5053.3  | 5498.2  | 5551.4  | 5411.9  | 5000.2  |
| 22.5° | 3499.5  | 3526.0  | 3499.5  | 3512.8  | 3785.0  | 4369.4  | 5093.2  | 5743.9  | 5936.5  | 5803.7  | 5318.9  |
| 25°   | 3951.0  | 3924.5  | 3851.4  | 3791.7  | 3838.1  | 4256.5  | 5113.1  | 6056.0  | 6421.2  | 6308.4  | 5737.3  |
| 27.5° | 4462.3  | 4402.6  | 4342.8  | 4203.4  | 4110.4  | 4322.9  | 5179.5  | 6242.0  | 6872.8  | 6786.5  | 6115.8  |
| 30°   | 5252.5  | 5239.3  | 5060.0  | 4741.2  | 4508.8  | 4581.9  | 5285.7  | 6434.5  | 7390.7  | 7284.5  | 6500.9  |
| 32.5° | 6182.2  | 6149.0  | 5916.6  | 5485.0  | 5073.2  | 4947.1  | 5498.2  | 6620.5  | 7968.5  | 7782.5  | 6999.0  |
| 35°   | 7111.8  | 7105.2  | 6965.8  | 6334.9  | 5777.1  | 5445.1  | 5876.7  | 6906.0  | 8639.1  | 8506.3  | 7536.8  |
| 37.5° | 7855.6  | 7902.0  | 7988.4  | 7145.0  | 6607.2  | 6102.5  | 6381.4  | 7364.2  | 9482.5  | 9389.5  | 8214.1  |
| 40°   | 8473.1  | 8552.8  | 8665.7  | 7955.2  | 7377.5  | 6892.7  | 7065.4  | 8114.5  | 10498.4 | 10485.2 | 9024.3  |
| 42.5° | 9004.4  | 9130.5  | 9037.6  | 8632.5  | 8101.3  | 7696.2  | 7815.7  | 8977.8  | 11600.7 | 11660.5 | 9953.9  |
| 45°   | 9628.5  | 9708.2  | 9714.9  | 9289.9  | 8798.5  | 8519.6  | 8718.8  | 9960.6  | 12875.7 | 12948.7 | 10943.3 |
| 47.5° | 10312.5 | 10285.9 | 10332.4 | 10020.3 | 9575.4  | 9323.1  | 9681.7  | 11003.1 | 14037.8 | 14296.7 | 11952.7 |
| 50°   | 10857.0 | 10950.0 | 11023.0 | 10850.4 | 10438.7 | 10219.5 | 10631.2 | 12078.8 | 15186.5 | 15485.4 | 12908.9 |
| 52.5° | 10916.8 | 10969.9 | 11341.8 | 11507.8 | 11487.9 | 11135.9 | 11614.0 | 13081.5 | 16169.3 | 16634.1 | 13685.8 |
| 55°   | 10053.5 | 10425.4 | 11036.3 | 11607.4 | 12357.7 | 12417.5 | 12550.3 | 14037.8 | 17032.6 | 17789.6 | 14349.9 |
| 57.5° | 8260.6  | 8539.5  | 9608.6  | 10969.9 | 12410.9 | 13652.6 | 14170.6 | 15073.7 | 17915.7 | 18745.8 | 15120.1 |
| 60°   | 5624.4  | 5511.5  | 6759.9  | 9389.5  | 11614.0 | 14137.4 | 16348.6 | 16879.8 | 18858.7 | 19974.3 | 15950.2 |
| 62.5° | 3054.6  | 3134.3  | 3904.5  | 6049.4  | 9276.6  | 13446.8 | 18214.6 | 20060.6 | 20558.6 | 21667.6 | 16913.0 |
| 65°   | 1958.9  | 2032.0  | 2510.1  | 3446.4  | 5431.8  | 10498.4 | 17856.0 | 22783.1 | 22743.3 | 23580.0 | 17676.7 |
| 67.5° | 1341.4  | 1374.6  | 1759.7  | 2443.7  | 2968.2  | 5783.8  | 13885.0 | 22099.2 | 23659.7 | 24058.1 | 17424.4 |
| 70°   | 903.1   | 936.3   | 1248.4  | 1806.2  | 2131.6  | 2536.6  | 8273.9  | 18234.5 | 21986.3 | 22238.6 | 15419.0 |
| 72.5° | 571.1   | 604.3   | 757.0   | 1208.5  | 1607.0  | 1434.3  | 3798.3  | 12716.3 | 18294.2 | 18805.5 | 13187.8 |
| 75°   | 325.4   | 345.3   | 471.5   | 836.7   | 1016.0  | 942.9   | 1022.6  | 7961.8  | 12284.7 | 12503.8 | 8778.6  |
| 77.5° | 166.0   | 179.3   | 298.8   | 537.9   | 650.8   | 524.6   | 544.5   | 3466.3  | 4289.7  | 4130.3  | 2410.5  |
| 80°   | 79.7    | 93.0    | 185.9   | 325.4   | 425.0   | 298.8   | 318.7   | 783.6   | 1029.3  | 876.5   | 564.4   |
| 82.5° | 39.8    | 39.8    | 119.5   | 132.8   | 232.4   | 179.3   | 139.4   | 272.3   | 385.1   | 391.8   | 259.0   |
| 85°   | 26.6    | 19.9    | 33.2    | 46.5    | 53.1    | 73.0    | 79.7    | 112.9   | 126.2   | 132.8   | 99.6    |
| 87.5° | 0.0     | 0.0     | 6.6     | 6.6     | 13.3    | 19.9    | 33.2    | 46.5    | 46.5    | 53.1    | 46.5    |
| 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: VAL-T-SB6B-727-U-T2-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°     | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3546.0  | 3546.0 | 3546.0 | 3546.0 | 3546.0 | 3546.0 | 3546.0 | 3546.0 | 3546.0 | 3546.0 | 3546.0 |
| 2.5°  | 3585.8  | 3565.9 | 3439.7 | 3333.5 | 3240.5 | 3174.1 | 3087.8 | 3067.9 | 3014.7 | 2981.5 | 2988.2 |
| 5°    | 3645.6  | 3552.6 | 3320.2 | 3121.0 | 2901.8 | 2682.7 | 2490.1 | 2423.7 | 2290.9 | 2244.4 | 2257.7 |
| 7.5°  | 3718.6  | 3605.7 | 3227.2 | 2835.4 | 2456.9 | 2178.0 | 1905.8 | 1739.8 | 1607.0 | 1553.8 | 1547.2 |
| 10°   | 3858.1  | 3665.5 | 3114.3 | 2549.9 | 2025.3 | 1646.8 | 1407.8 | 1314.8 | 1268.3 | 1255.0 | 1255.0 |
| 12.5° | 4004.1  | 3731.9 | 2961.6 | 2204.6 | 1600.3 | 1308.2 | 1215.2 | 1188.6 | 1175.3 | 1168.7 | 1168.7 |
| 15°   | 4150.2  | 3778.4 | 2742.5 | 1786.3 | 1301.5 | 1182.0 | 1142.1 | 1128.9 | 1108.9 | 1102.3 | 1115.6 |
| 17.5° | 4356.1  | 3811.6 | 2490.1 | 1460.9 | 1168.7 | 1108.9 | 1069.1 | 1055.8 | 1035.9 | 1029.3 | 1035.9 |
| 20°   | 4535.4  | 3864.7 | 2198.0 | 1248.4 | 1089.0 | 1042.5 | 989.4  | 962.9  | 956.2  | 949.6  | 949.6  |
| 22.5° | 4747.9  | 3924.5 | 1859.3 | 1128.9 | 1022.6 | 956.2  | 896.5  | 876.5  | 863.2  | 863.2  | 863.2  |
| 25°   | 5046.7  | 3970.9 | 1587.1 | 1075.7 | 949.6  | 869.9  | 810.1  | 790.2  | 783.6  | 776.9  | 783.6  |
| 27.5° | 5299.0  | 3970.9 | 1407.8 | 1042.5 | 889.8  | 796.8  | 743.7  | 730.4  | 717.2  | 703.9  | 710.5  |
| 30°   | 5538.1  | 3884.6 | 1275.0 | 1016.0 | 850.0  | 737.1  | 697.2  | 670.7  | 657.4  | 637.5  | 637.5  |
| 32.5° | 5810.3  | 3804.9 | 1221.8 | 989.4  | 810.1  | 690.6  | 650.8  | 630.8  | 617.6  | 597.6  | 597.6  |
| 35°   | 6102.5  | 3665.5 | 1215.2 | 969.5  | 770.3  | 657.4  | 617.6  | 604.3  | 584.4  | 571.1  | 571.1  |
| 37.5° | 6514.2  | 3579.2 | 1201.9 | 942.9  | 737.1  | 624.2  | 584.4  | 577.7  | 564.4  | 551.2  | 557.8  |
| 40°   | 7065.4  | 3572.5 | 1175.3 | 923.0  | 710.5  | 591.0  | 557.8  | 544.5  | 544.5  | 531.2  | 531.2  |
| 42.5° | 7596.6  | 3599.1 | 1175.3 | 883.2  | 684.0  | 557.8  | 531.2  | 524.6  | 511.3  | 491.4  | 491.4  |
| 45°   | 8247.3  | 3698.7 | 1188.6 | 843.3  | 657.4  | 537.9  | 511.3  | 498.0  | 484.7  | 471.5  | 471.5  |
| 47.5° | 8851.6  | 3824.9 | 1201.9 | 803.5  | 630.8  | 517.9  | 498.0  | 491.4  | 471.5  | 458.2  | 464.8  |
| 50°   | 9362.9  | 3977.6 | 1168.7 | 763.6  | 591.0  | 511.3  | 484.7  | 478.1  | 451.5  | 444.9  | 451.5  |
| 52.5° | 9821.1  | 4070.6 | 1069.1 | 723.8  | 551.2  | 498.0  | 471.5  | 464.8  | 438.3  | 431.6  | 425.0  |
| 55°   | 10173.1 | 4103.8 | 956.2  | 664.0  | 517.9  | 478.1  | 451.5  | 438.3  | 418.3  | 405.1  | 398.4  |
| 57.5° | 10518.4 | 3970.9 | 810.1  | 584.4  | 478.1  | 444.9  | 425.0  | 411.7  | 385.1  | 358.6  | 351.9  |
| 60°   | 10916.8 | 3804.9 | 677.3  | 484.7  | 431.6  | 411.7  | 391.8  | 378.5  | 345.3  | 298.8  | 298.8  |
| 62.5° | 11381.6 | 3725.3 | 537.9  | 398.4  | 378.5  | 358.6  | 358.6  | 345.3  | 292.2  | 245.7  | 239.1  |
| 65°   | 11726.9 | 3247.1 | 411.7  | 332.0  | 325.4  | 305.5  | 312.1  | 305.5  | 245.7  | 185.9  | 179.3  |
| 67.5° | 11315.2 | 2324.1 | 318.7  | 278.9  | 272.3  | 245.7  | 265.6  | 259.0  | 212.5  | 159.4  | 146.1  |
| 70°   | 9661.7  | 1514.0 | 259.0  | 232.4  | 219.1  | 185.9  | 219.1  | 225.8  | 179.3  | 126.2  | 119.5  |
| 72.5° | 8220.8  | 969.5  | 205.9  | 185.9  | 152.7  | 132.8  | 172.6  | 192.6  | 146.1  | 99.6   | 93.0   |
| 75°   | 5690.8  | 610.9  | 152.7  | 139.4  | 106.2  | 93.0   | 139.4  | 152.7  | 119.5  | 66.4   | 66.4   |
| 77.5° | 1879.2  | 305.5  | 112.9  | 93.0   | 73.0   | 66.4   | 106.2  | 112.9  | 79.7   | 46.5   | 39.8   |
| 80°   | 358.6   | 146.1  | 79.7   | 59.8   | 53.1   | 39.8   | 66.4   | 59.8   | 33.2   | 26.6   | 26.6   |
| 82.5° | 172.6   | 86.3   | 59.8   | 46.5   | 26.6   | 26.6   | 19.9   | 26.6   | 26.6   | 19.9   | 19.9   |
| 85°   | 79.7    | 53.1   | 39.8   | 26.6   | 19.9   | 13.3   | 13.3   | 19.9   | 19.9   | 19.9   | 13.3   |
| 87.5° | 46.5    | 39.8   | 26.6   | 19.9   | 13.3   | 13.3   | 13.3   | 13.3   | 13.3   | 13.3   | 6.6    |
| 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

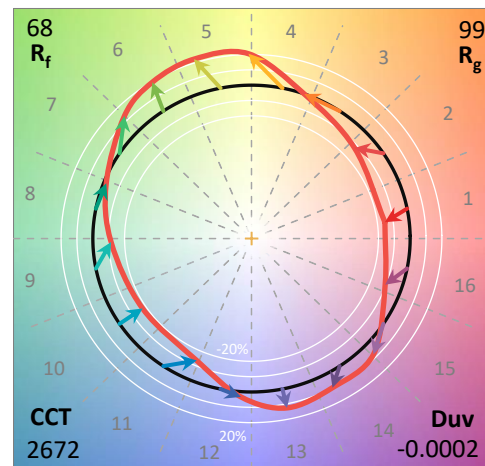
Data in this report applies to families of products including GSS-SB1A-727-U-5WQ

### 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

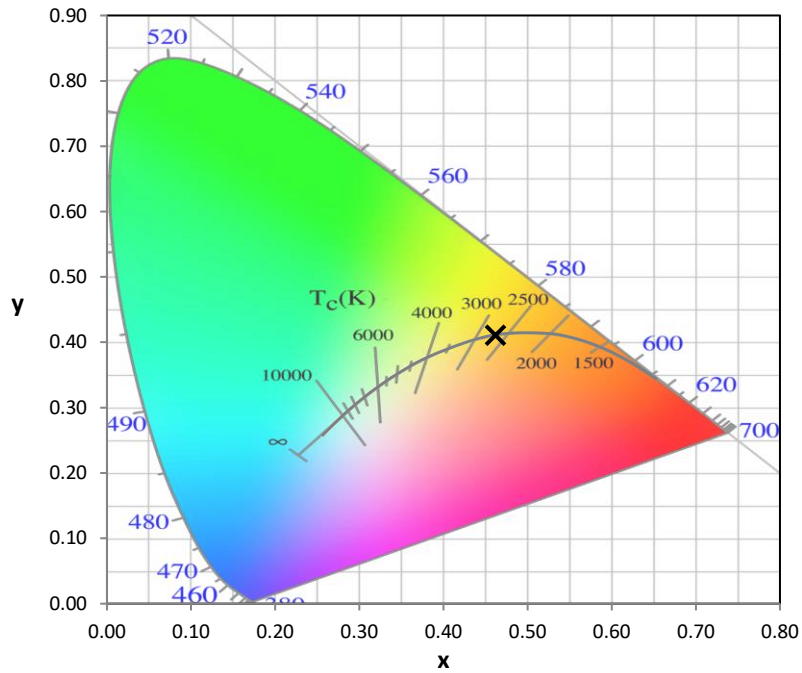
Stabilization Time: 21M  
 Operation Time: 1H 21M  
 Sphere Temperature (°C): 25.2

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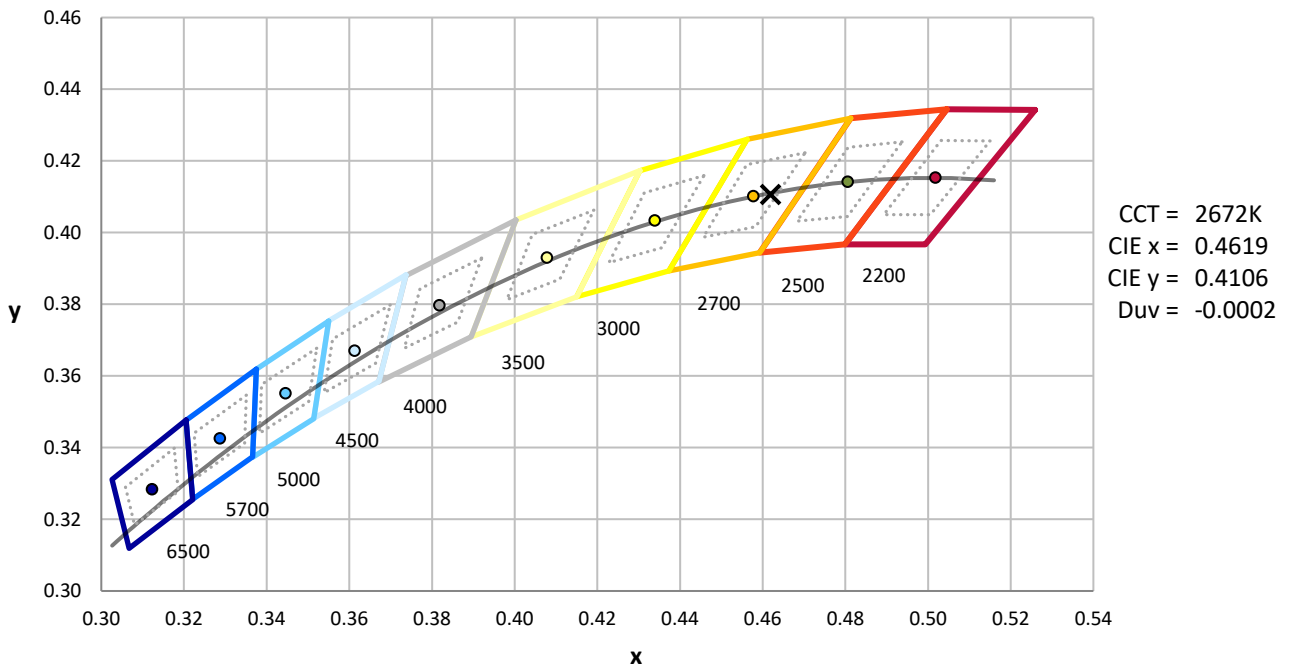
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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



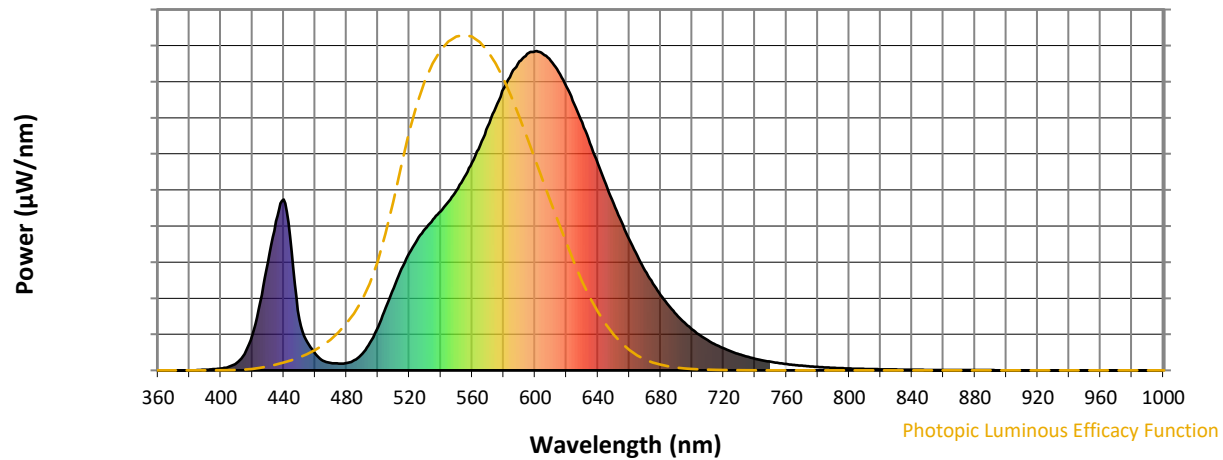
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 2700K 4-step quadrangle

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### Photopic Flux vs. Wavelength

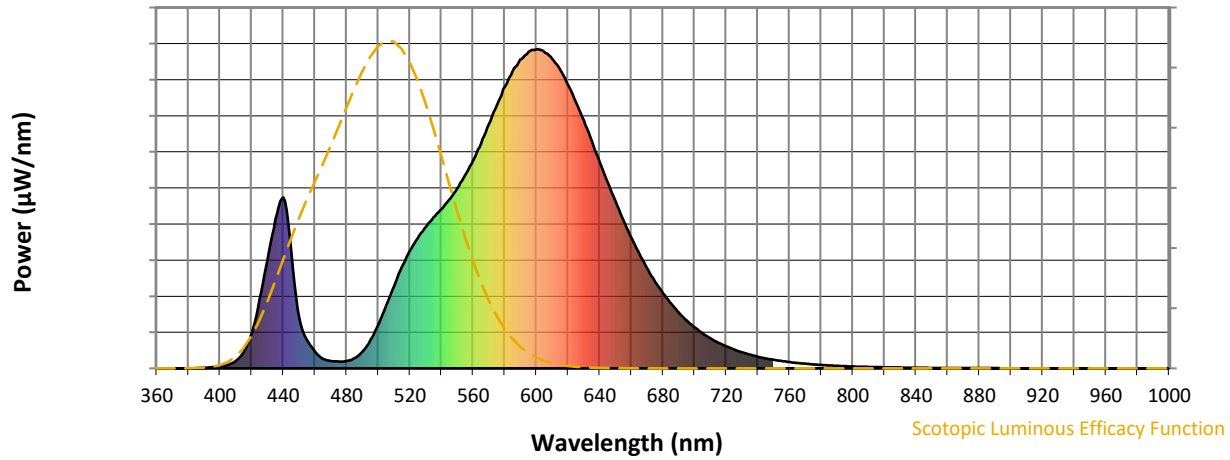


### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | 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



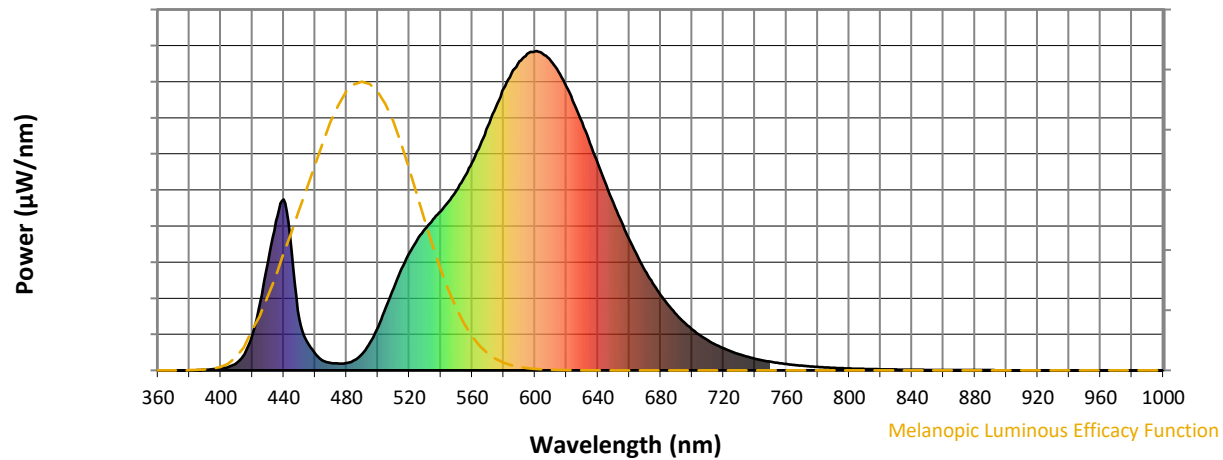
Scotopic Lumens: NR

S/P: 1.02

| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 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

| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 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               |           |                             |                  |

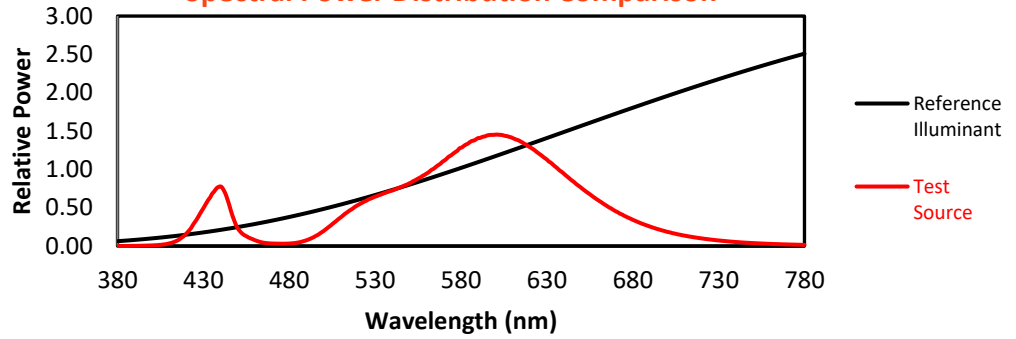
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TM-30-18

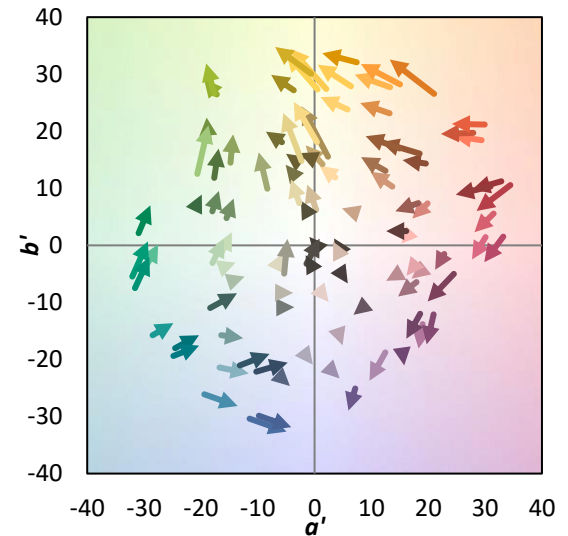
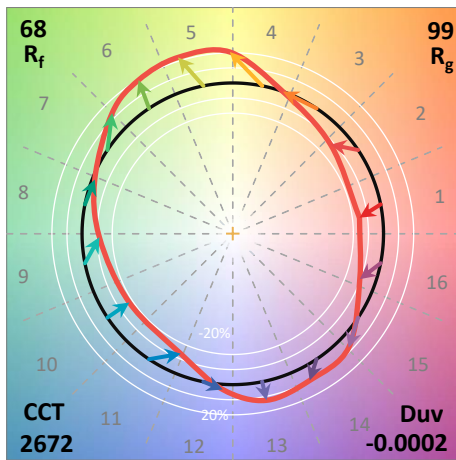
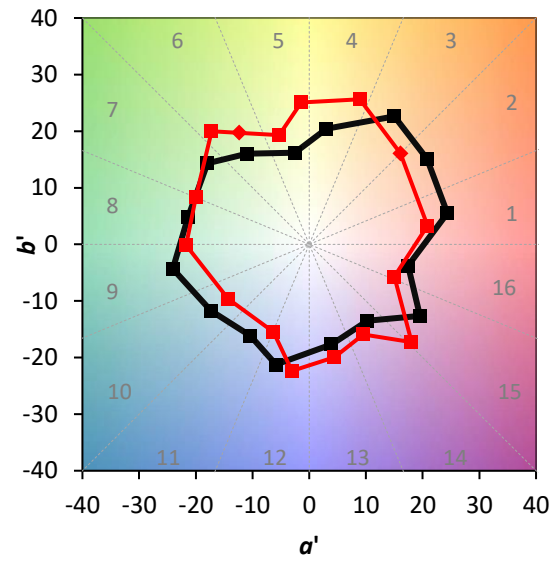
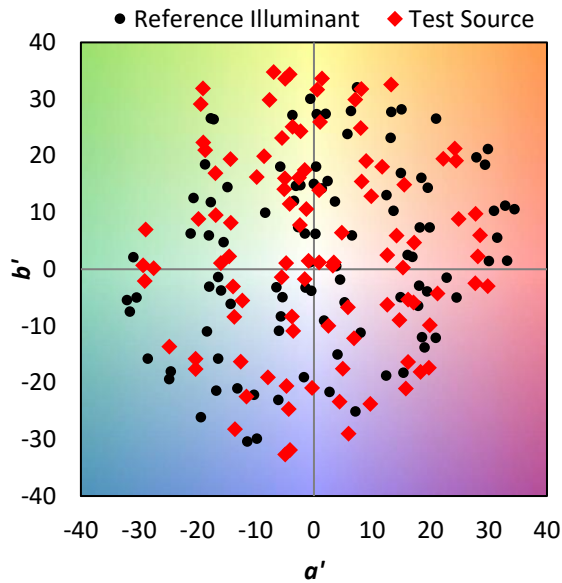
### Summary

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

### Spectral Power Distribution Comparison

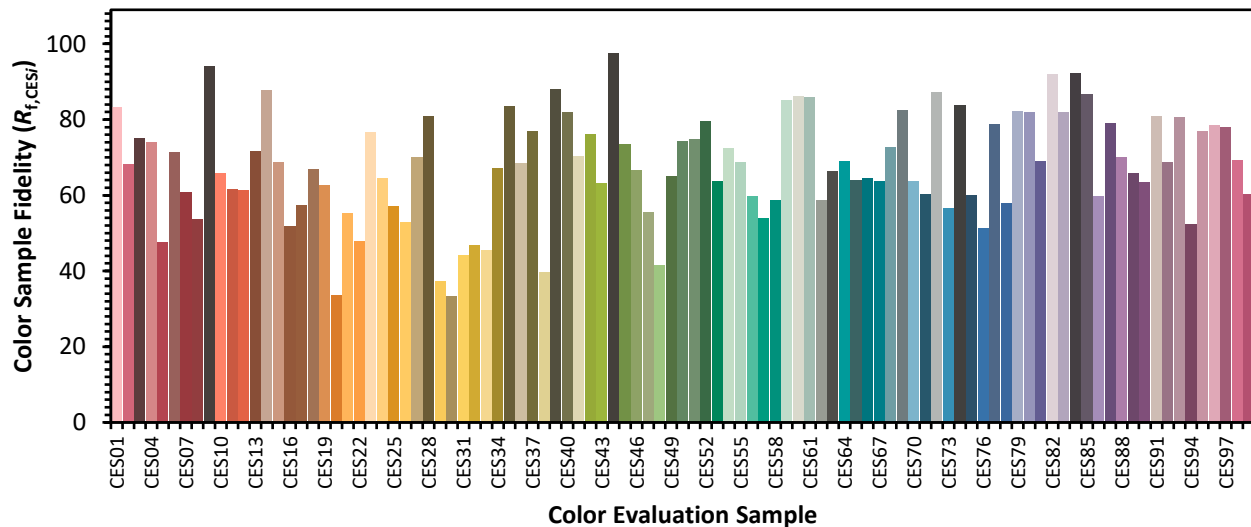


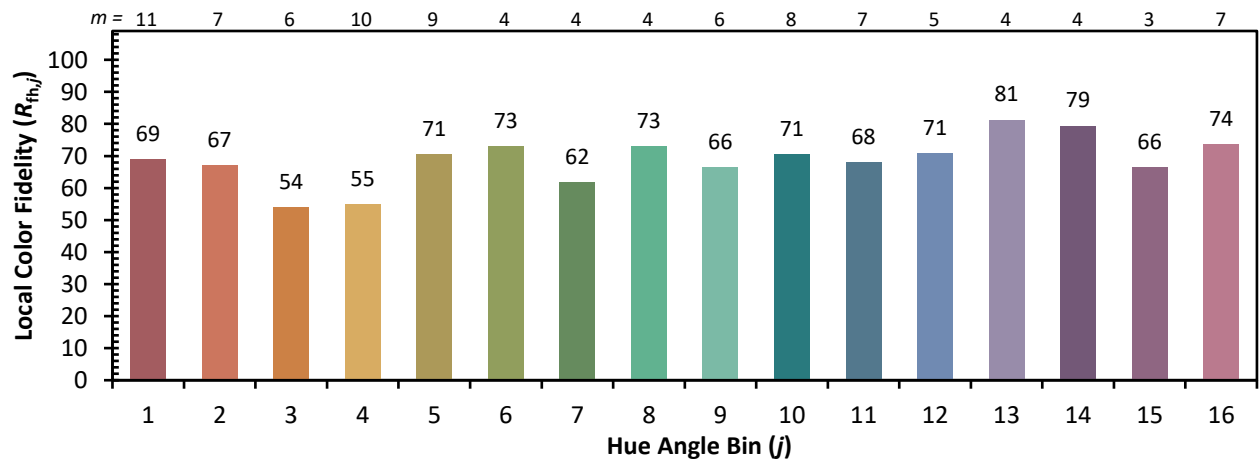
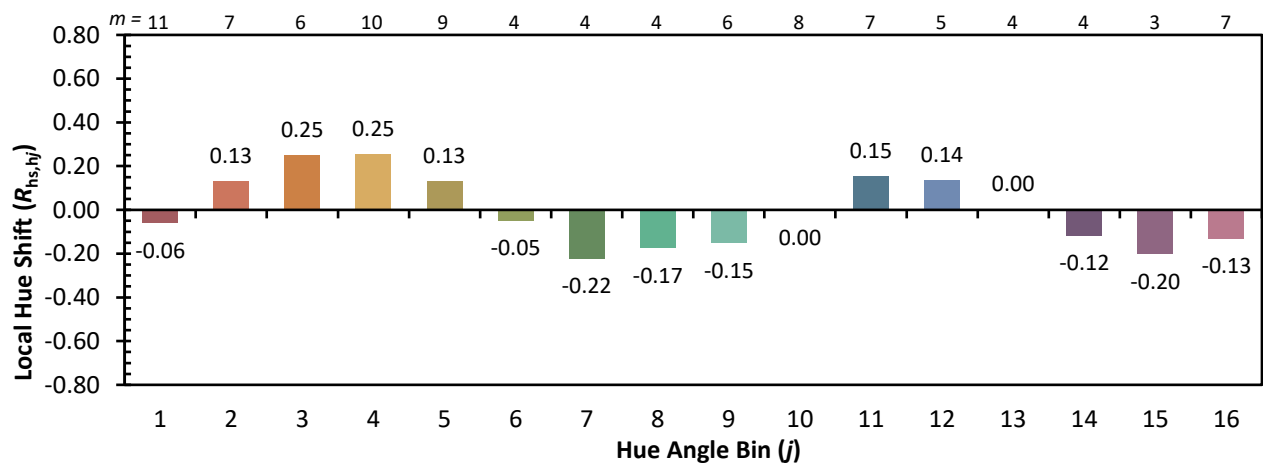
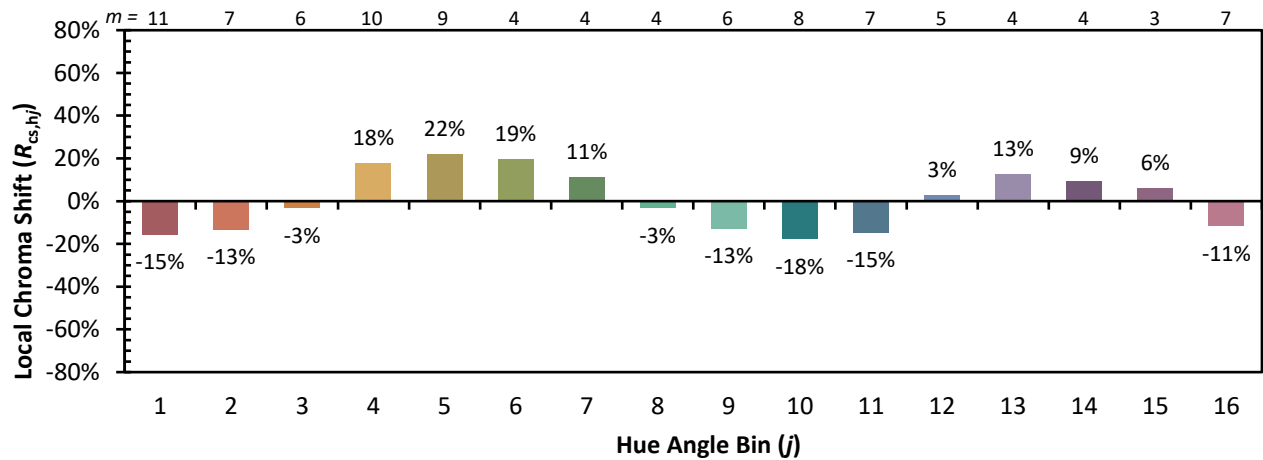
### Color Vector Graphics



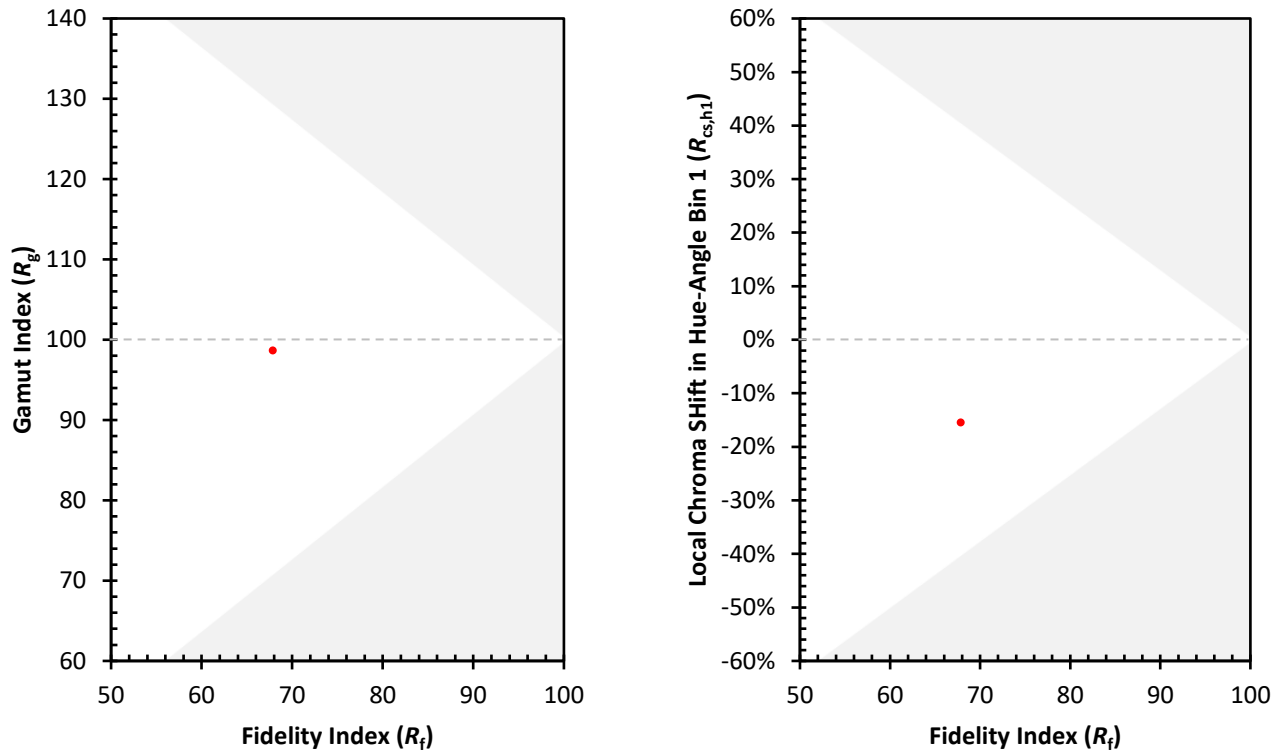
**Individual Sample Fidelity Index ( $R_{f,i}$ )**

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