

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: P1383761

Luminaire Tested: **VAL-T-SB3C-727-U-SL2-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: P1383761  
 Test Lab: INNOVATION CENTER(G1)  
 Issue Date: 02/18/2026  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: STREETWORKS  
 Catalog Number: VAL-T-SB3C-727-U-SL2-HSS  
 Description: GALLEON II WALL SLIM HIGH DENSITY LED ARRAYS 3SQUARE 150W 70CRI  
 2700K FIXTURE w/ TYPE II SPILL CONTROL DISTRIBUTION OPTIC AND HOUSE SIDE  
 SHIELD  
 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               |

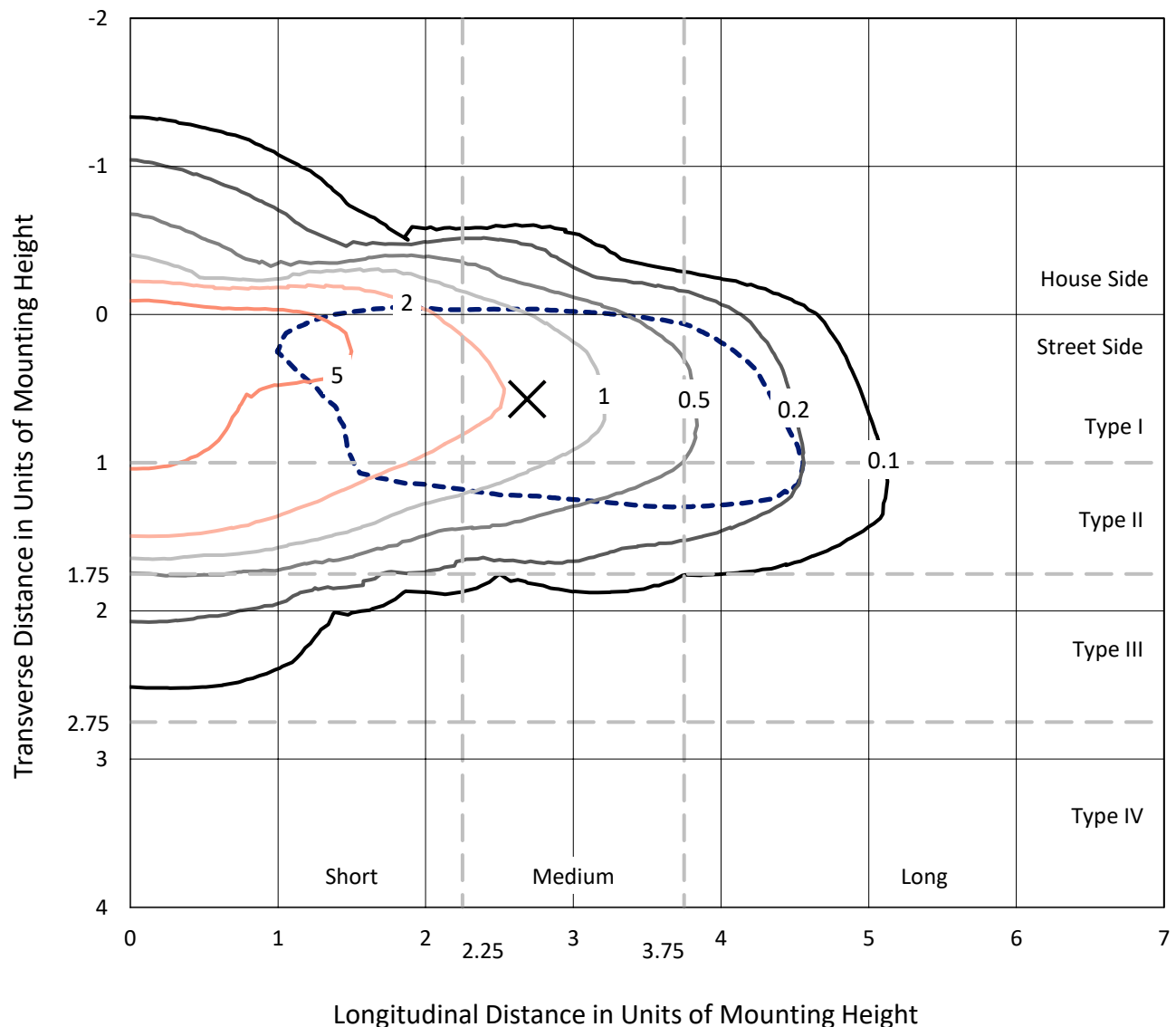
**Summary**

Lumens per Lamp: N/A  
 Luminaire Lumens: 15997 lumens  
 Efficiency: N/A  
 Efficacy: 106.6 lumens/watt  
 Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
 IES Classification: Type II - Medium  
 BUG Rating: B2 - U0 - G2  
  
 Input Watts (W): 150  
 Input Voltage (V): 120  
 Input Current (Ain): NR  
 Voltage Rise (V): NR  
 Power Factor: 0.98  
 Total Harmonic Distortion (THDi): 6.3%  
 Frequency (hertz): 60  
 Stabilization Time: NR  
 Operation Time: NR  
 Ambient Temperature (°C): NR  
 Test Distance: 28.75 FT

REPORT NUMBER: P1383761  
 CATALOG NUMBER: VAL-T-SB3C-727-U-SL2-HSS

## Iso-Footcandle Lines of Horizontal Illumination

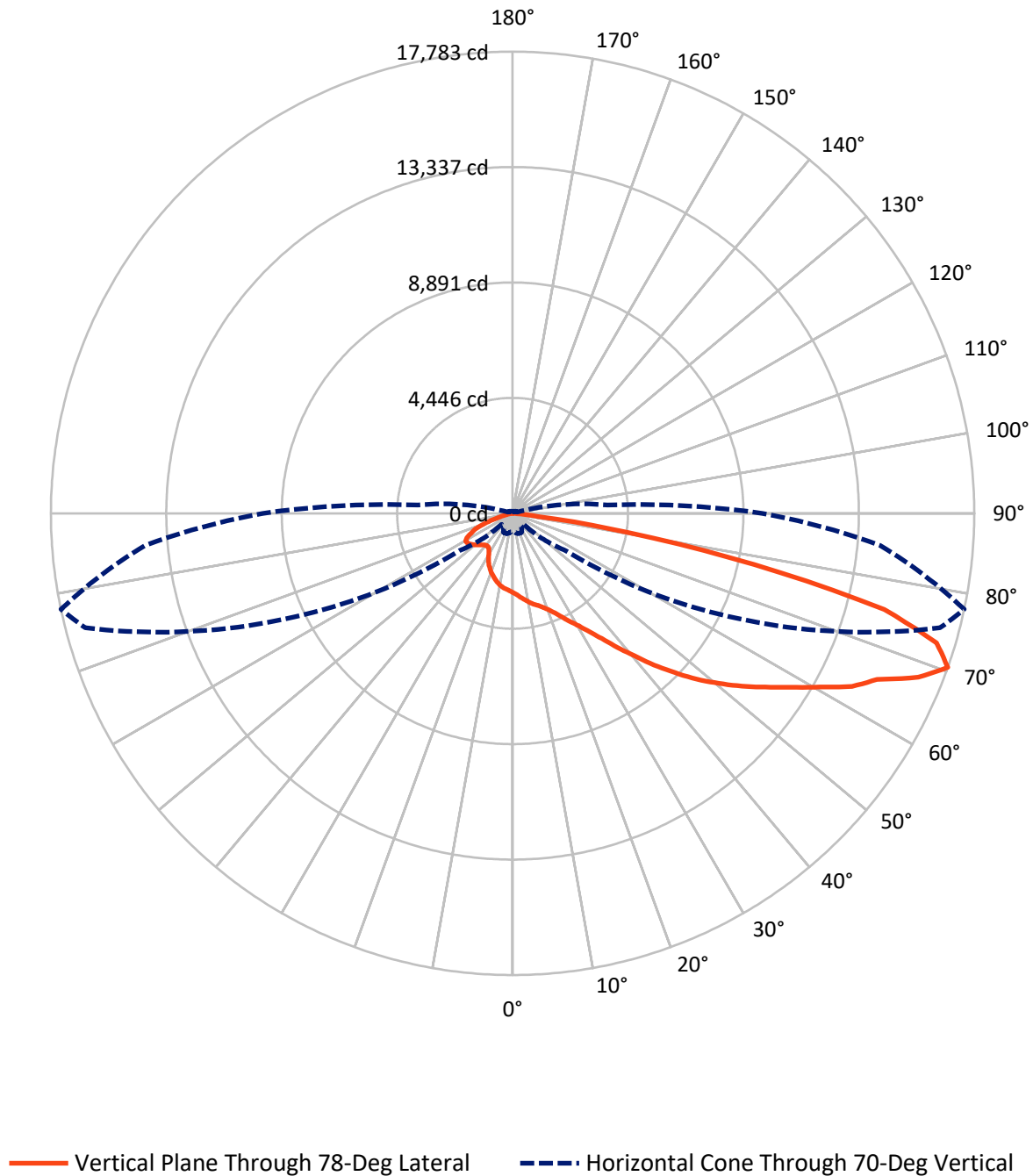
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 9.1 fc  
 Type II - Medium - N/A

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## Luminous Intensity Polar Plot



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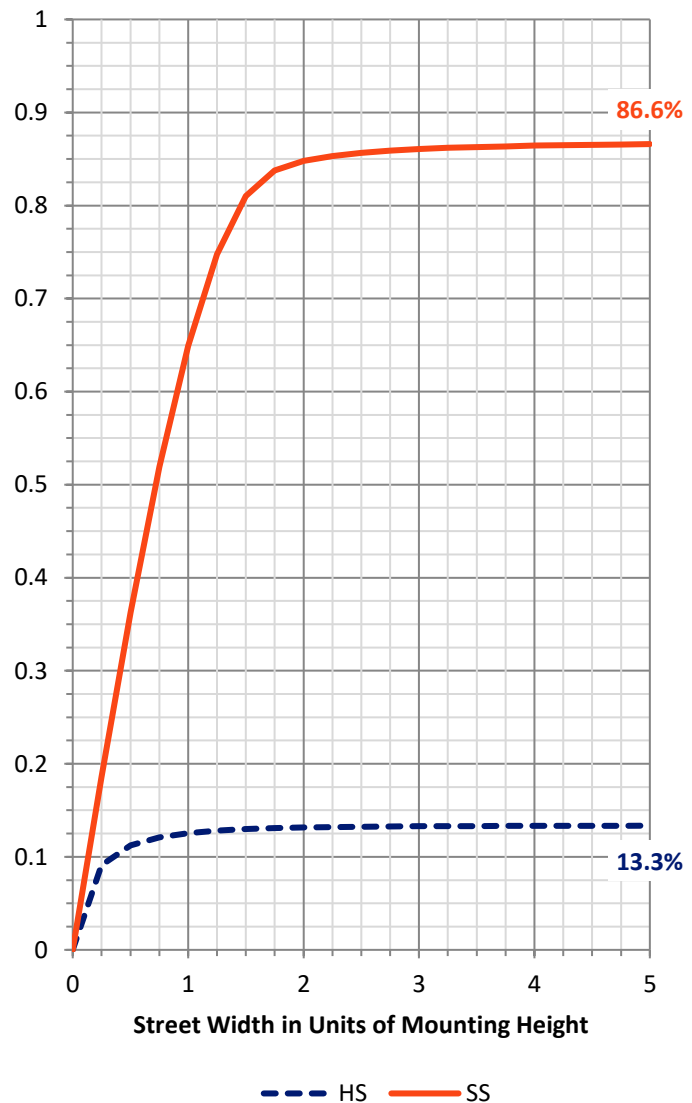
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 2151.7   | 0.0    | 2151.7  |
|                    | % Fixture | 13.5     | 0.0    | 13.5    |
| <b>Street Side</b> | Lumens    | 13845.3  | 0.0    | 13845.3 |
|                    | % Fixture | 86.5     | 0.0    | 86.5    |
| <b>Total</b>       | Lumens    | 15997.0  | 0.0    | 15997.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 278.9   | 1.7       |
| 10°-20°   | 690.8   | 4.3       |
| 20°-30°   | 1145.9  | 7.2       |
| 30°-40°   | 1826.6  | 11.4      |
| 40°-50°   | 2787.6  | 17.4      |
| 50°-60°   | 3711.7  | 23.2      |
| 60°-70°   | 3464.8  | 21.7      |
| 70°-80°   | 1959.4  | 12.2      |
| 80°-90°   | 131.4   | 0.8       |
| 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°    | 15997.0 | 100.0     |
| 0°-180°   | 15997.0 | 100.0     |

**Coefficient of Utilization**



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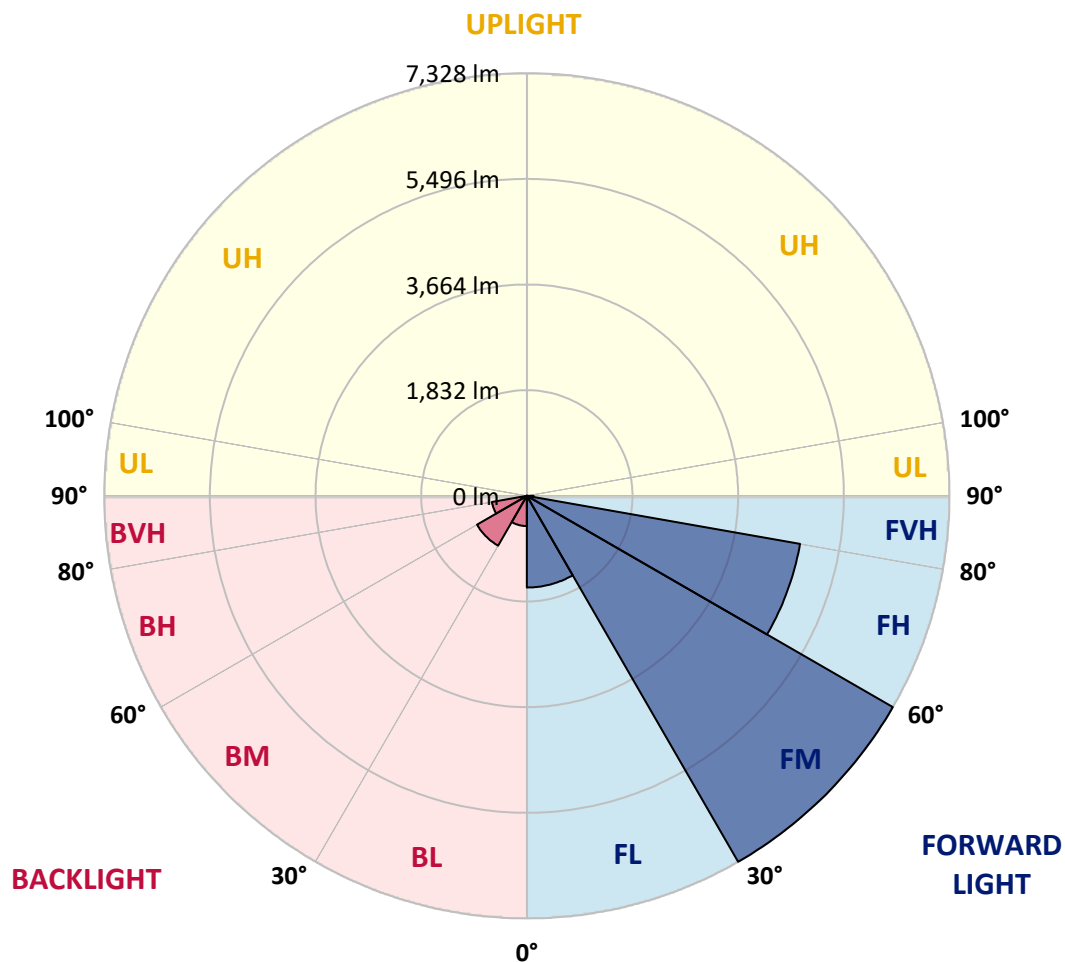
CATALOG NUMBER: VAL-T-SB3C-727-U-SL2-HSS

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 1590.7 | 9.9       |                         |      |         |
| FM   | (30°-60°)   | 7327.9 | 45.8      |                         |      |         |
| FH   | (60°-80°)   | 4810.0 | 30.1      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 116.7  | 0.7       |                         |      | G2/225  |
| BL   | (0°-30°)    | 524.8  | 3.3       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 998.0  | 6.2       | B1/1000                 |      |         |
| BH   | (60°-80°)   | 614.1  | 3.8       | B2/1000                 |      | G2/1000 |
| BVH  | (80°-90°)   | 14.7   | 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-G2**

Type II Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°     | 75°     | 78°     | 85°     |
|-------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| 0°    | 3056.4 | 3056.4 | 3056.4 | 3056.4 | 3056.4 | 3056.4 | 3056.4 | 3056.4  | 3056.4  | 3056.4  | 3056.4  |
| 2.5°  | 3441.8 | 3392.5 | 3392.5 | 3370.1 | 3347.7 | 3307.4 | 3258.1 | 3204.3  | 3159.5  | 3137.1  | 3101.2  |
| 5°    | 3688.3 | 3674.9 | 3670.4 | 3634.5 | 3598.7 | 3540.4 | 3477.7 | 3374.6  | 3280.5  | 3249.1  | 3168.5  |
| 7.5°  | 3679.4 | 3670.4 | 3688.3 | 3733.1 | 3764.5 | 3742.1 | 3688.3 | 3562.8  | 3414.9  | 3361.2  | 3240.2  |
| 10°   | 3401.5 | 3374.6 | 3437.4 | 3535.9 | 3679.4 | 3827.2 | 3849.7 | 3728.7  | 3540.4  | 3477.7  | 3307.4  |
| 12.5° | 3150.5 | 3150.5 | 3181.9 | 3271.5 | 3450.8 | 3715.2 | 3921.4 | 3881.0  | 3665.9  | 3589.7  | 3365.6  |
| 15°   | 3119.2 | 3096.8 | 3105.7 | 3146.1 | 3271.5 | 3531.5 | 3876.5 | 3997.5  | 3782.4  | 3679.4  | 3419.4  |
| 17.5° | 3262.6 | 3235.7 | 3213.3 | 3195.3 | 3213.3 | 3383.6 | 3737.6 | 4096.1  | 3921.4  | 3809.3  | 3491.1  |
| 20°   | 3486.7 | 3486.7 | 3428.4 | 3356.7 | 3298.4 | 3329.8 | 3625.6 | 4158.9  | 4087.2  | 3966.2  | 3598.7  |
| 22.5° | 3809.3 | 3769.0 | 3733.1 | 3621.1 | 3477.7 | 3410.5 | 3576.3 | 4226.1  | 4315.7  | 4167.8  | 3746.6  |
| 25°   | 4078.2 | 4091.7 | 4051.3 | 3912.4 | 3710.7 | 3562.8 | 3616.6 | 4253.0  | 4575.7  | 4427.8  | 3930.3  |
| 27.5° | 4383.0 | 4369.5 | 4333.7 | 4194.7 | 3961.7 | 3751.1 | 3728.7 | 4306.8  | 4875.9  | 4719.1  | 4145.4  |
| 30°   | 4665.3 | 4665.3 | 4620.5 | 4463.6 | 4226.1 | 3997.5 | 3894.5 | 4396.4  | 5176.2  | 5032.8  | 4387.4  |
| 32.5° | 4979.0 | 4983.5 | 4893.9 | 4728.0 | 4486.0 | 4226.1 | 4105.1 | 4530.9  | 5548.2  | 5440.6  | 4714.6  |
| 35°   | 5234.5 | 5243.4 | 5221.0 | 5041.8 | 4723.6 | 4463.6 | 4324.7 | 4741.5  | 5982.9  | 5920.1  | 5149.3  |
| 37.5° | 5431.6 | 5445.1 | 5400.3 | 5319.6 | 5023.8 | 4692.2 | 4557.7 | 5001.4  | 6507.2  | 6547.6  | 5714.0  |
| 40°   | 5660.2 | 5660.2 | 5660.2 | 5539.2 | 5319.6 | 4943.2 | 4795.3 | 5324.1  | 7071.9  | 7197.4  | 6341.4  |
| 42.5° | 5861.9 | 5875.3 | 5897.7 | 5803.6 | 5601.9 | 5301.7 | 5086.6 | 5687.1  | 7703.8  | 7986.1  | 7116.7  |
| 45°   | 5965.0 | 5991.8 | 6072.5 | 6032.2 | 5879.8 | 5588.5 | 5395.8 | 6041.1  | 8398.4  | 8748.0  | 7950.3  |
| 47.5° | 6027.7 | 6059.1 | 6166.6 | 6215.9 | 6153.2 | 5808.1 | 5687.1 | 6462.4  | 9061.7  | 9545.7  | 8806.3  |
| 50°   | 6077.0 | 6121.8 | 6242.8 | 6336.9 | 6395.2 | 5991.8 | 5973.9 | 6892.6  | 9725.0  | 10294.1 | 9586.0  |
| 52.5° | 5933.6 | 5978.4 | 6207.0 | 6507.2 | 6556.5 | 6269.7 | 6274.2 | 7358.7  | 10397.2 | 11056.0 | 10307.6 |
| 55°   | 5422.7 | 5454.1 | 5772.2 | 6377.3 | 6749.2 | 6592.4 | 6682.0 | 7963.7  | 11132.2 | 11813.4 | 10997.7 |
| 57.5° | 3858.6 | 4051.3 | 4616.0 | 5575.1 | 6511.7 | 7054.0 | 7336.3 | 8631.5  | 11988.2 | 12642.5 | 11696.9 |
| 60°   | 1604.4 | 1743.3 | 2290.1 | 3979.6 | 5633.3 | 7116.7 | 8237.1 | 9729.5  | 12960.7 | 13583.6 | 12490.1 |
| 62.5° | 1044.2 | 1057.6 | 1111.4 | 1707.5 | 3576.3 | 6242.8 | 8582.2 | 11284.6 | 14332.0 | 14677.1 | 12924.8 |
| 65°   | 932.2  | 950.1  | 977.0  | 1062.1 | 1317.6 | 4212.7 | 7417.0 | 11808.9 | 15447.9 | 15425.5 | 12678.3 |
| 67.5° | 829.1  | 851.5  | 900.8  | 909.8  | 735.0  | 1550.6 | 4983.5 | 11038.1 | 16608.6 | 16850.7 | 13350.6 |
| 70°   | 708.1  | 717.0  | 806.7  | 815.6  | 578.1  | 609.5  | 2509.7 | 9581.6  | 17038.9 | 17782.8 | 14211.0 |
| 72.5° | 493.0  | 519.9  | 681.2  | 717.0  | 461.6  | 394.4  | 914.2  | 6973.3  | 15837.8 | 17074.7 | 14157.2 |
| 75°   | 291.3  | 304.7  | 389.9  | 488.5  | 358.5  | 277.9  | 412.3  | 4288.8  | 13628.4 | 14789.1 | 12597.7 |
| 77.5° | 210.6  | 224.1  | 282.3  | 380.9  | 228.6  | 188.2  | 255.4  | 2240.8  | 9465.0  | 9514.3  | 7112.2  |
| 80°   | 67.2   | 76.2   | 174.8  | 255.4  | 165.8  | 121.0  | 156.9  | 757.4   | 4781.8  | 4512.9  | 2173.6  |
| 82.5° | 35.9   | 35.9   | 107.6  | 134.4  | 103.1  | 76.2   | 89.6   | 313.7   | 1532.7  | 981.5   | 345.1   |
| 85°   | 17.9   | 17.9   | 44.8   | 53.8   | 40.3   | 35.9   | 44.8   | 112.0   | 161.3   | 147.9   | 98.6    |
| 87.5° | 0.0    | 0.0    | 4.5    | 4.5    | 4.5    | 9.0    | 17.9   | 31.4    | 40.3    | 40.3    | 44.8    |
| 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-SB3C-727-U-SL2-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3056.4 | 3056.4 | 3056.4 | 3056.4 | 3056.4 | 3056.4 | 3056.4 | 3056.4 | 3056.4 | 3056.4 | 3056.4 |
| 2.5°  | 3060.9 | 3025.1 | 2971.3 | 2908.5 | 2863.7 | 2801.0 | 2747.2 | 2724.8 | 2684.5 | 2675.5 | 2666.5 |
| 5°    | 3092.3 | 3020.6 | 2899.6 | 2760.6 | 2639.6 | 2496.2 | 2379.7 | 2290.1 | 2227.3 | 2200.4 | 2187.0 |
| 7.5°  | 3141.6 | 3025.1 | 2827.9 | 2599.3 | 2379.7 | 2164.6 | 1949.5 | 1783.7 | 1689.5 | 1599.9 | 1604.4 |
| 10°   | 3168.5 | 3029.5 | 2733.7 | 2415.6 | 2088.4 | 1756.8 | 1434.1 | 1187.6 | 1057.6 | 981.5  | 963.5  |
| 12.5° | 3190.9 | 3007.1 | 2626.2 | 2187.0 | 1720.9 | 1245.9 | 923.2  | 761.9  | 694.6  | 685.7  | 681.2  |
| 15°   | 3204.3 | 2980.2 | 2491.7 | 1922.6 | 1304.1 | 842.5  | 685.7  | 640.9  | 622.9  | 618.5  | 618.5  |
| 17.5° | 3235.7 | 2948.9 | 2352.8 | 1595.4 | 905.3  | 672.2  | 614.0  | 591.6  | 578.1  | 573.6  | 573.6  |
| 20°   | 3289.5 | 2953.3 | 2209.4 | 1236.9 | 703.6  | 614.0  | 569.2  | 546.7  | 528.8  | 528.8  | 528.8  |
| 22.5° | 3379.1 | 2971.3 | 2025.7 | 927.7  | 618.5  | 560.2  | 519.9  | 493.0  | 484.0  | 488.5  | 488.5  |
| 25°   | 3500.1 | 3016.1 | 1837.4 | 717.0  | 569.2  | 506.4  | 466.1  | 443.7  | 439.2  | 443.7  | 443.7  |
| 27.5° | 3652.5 | 3065.4 | 1604.4 | 618.5  | 524.3  | 461.6  | 421.3  | 407.8  | 403.3  | 412.3  | 412.3  |
| 30°   | 3818.3 | 3123.6 | 1326.5 | 569.2  | 484.0  | 425.7  | 389.9  | 376.5  | 376.5  | 389.9  | 389.9  |
| 32.5° | 4051.3 | 3217.8 | 1075.6 | 528.8  | 452.6  | 398.9  | 363.0  | 349.6  | 354.0  | 367.5  | 367.5  |
| 35°   | 4365.0 | 3338.8 | 882.9  | 501.9  | 430.2  | 376.5  | 345.1  | 327.2  | 331.6  | 336.1  | 340.6  |
| 37.5° | 4772.9 | 3504.6 | 761.9  | 484.0  | 407.8  | 363.0  | 322.7  | 309.2  | 309.2  | 313.7  | 313.7  |
| 40°   | 5230.0 | 3701.8 | 703.6  | 470.6  | 389.9  | 340.6  | 304.7  | 286.8  | 286.8  | 295.8  | 295.8  |
| 42.5° | 5812.6 | 3912.4 | 658.8  | 452.6  | 367.5  | 322.7  | 282.3  | 268.9  | 264.4  | 273.4  | 273.4  |
| 45°   | 6484.8 | 4217.1 | 631.9  | 434.7  | 345.1  | 300.3  | 264.4  | 246.5  | 242.0  | 246.5  | 251.0  |
| 47.5° | 7166.0 | 4539.8 | 605.0  | 412.3  | 331.6  | 282.3  | 251.0  | 228.6  | 224.1  | 224.1  | 224.1  |
| 50°   | 7806.9 | 4862.5 | 587.1  | 385.4  | 318.2  | 264.4  | 233.0  | 215.1  | 206.2  | 206.2  | 206.2  |
| 52.5° | 8380.5 | 5162.8 | 578.1  | 363.0  | 304.7  | 251.0  | 224.1  | 201.7  | 188.2  | 188.2  | 188.2  |
| 55°   | 8927.3 | 5454.1 | 564.7  | 336.1  | 291.3  | 233.0  | 210.6  | 188.2  | 174.8  | 170.3  | 170.3  |
| 57.5° | 9478.5 | 5722.9 | 528.8  | 309.2  | 264.4  | 219.6  | 197.2  | 174.8  | 161.3  | 152.4  | 152.4  |
| 60°   | 9931.1 | 5888.8 | 475.0  | 277.9  | 233.0  | 201.7  | 183.7  | 161.3  | 143.4  | 130.0  | 130.0  |
| 62.5° | 9962.5 | 5718.5 | 394.4  | 246.5  | 206.2  | 183.7  | 165.8  | 143.4  | 121.0  | 103.1  | 103.1  |
| 65°   | 9429.2 | 5126.9 | 313.7  | 206.2  | 183.7  | 161.3  | 138.9  | 121.0  | 98.6   | 80.7   | 76.2   |
| 67.5° | 9550.2 | 4651.9 | 242.0  | 174.8  | 161.3  | 130.0  | 112.0  | 98.6   | 80.7   | 67.2   | 67.2   |
| 70°   | 9621.9 | 3661.4 | 192.7  | 143.4  | 134.4  | 103.1  | 89.6   | 85.1   | 67.2   | 53.8   | 53.8   |
| 72.5° | 8994.5 | 2267.7 | 156.9  | 121.0  | 103.1  | 71.7   | 71.7   | 67.2   | 53.8   | 40.3   | 35.9   |
| 75°   | 7932.4 | 1353.4 | 121.0  | 94.1   | 71.7   | 53.8   | 53.8   | 49.3   | 35.9   | 26.9   | 26.9   |
| 77.5° | 4795.3 | 712.6  | 94.1   | 71.7   | 49.3   | 40.3   | 35.9   | 31.4   | 22.4   | 17.9   | 13.4   |
| 80°   | 1483.4 | 251.0  | 71.7   | 49.3   | 35.9   | 31.4   | 22.4   | 13.4   | 9.0    | 9.0    | 4.5    |
| 82.5° | 206.2  | 89.6   | 53.8   | 40.3   | 26.9   | 17.9   | 13.4   | 9.0    | 4.5    | 4.5    | 4.5    |
| 85°   | 71.7   | 49.3   | 35.9   | 26.9   | 17.9   | 13.4   | 9.0    | 4.5    | 4.5    | 0.0    | 0.0    |
| 87.5° | 40.3   | 35.9   | 26.9   | 17.9   | 13.4   | 9.0    | 9.0    | 4.5    | 0.0    | 0.0    | 0.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-3

Test Date: 10/09/2024

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

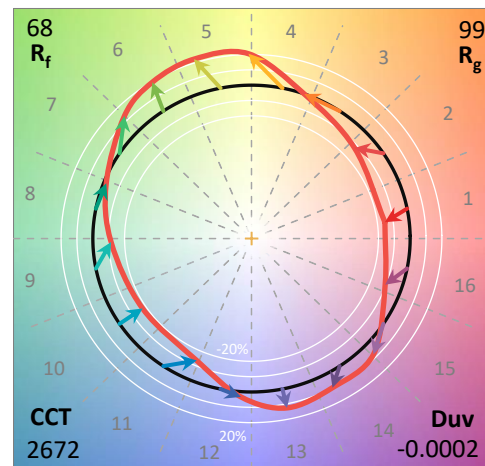
Data in this report applies to families of products including GSS-SB1A-727-U-5WQ

### 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

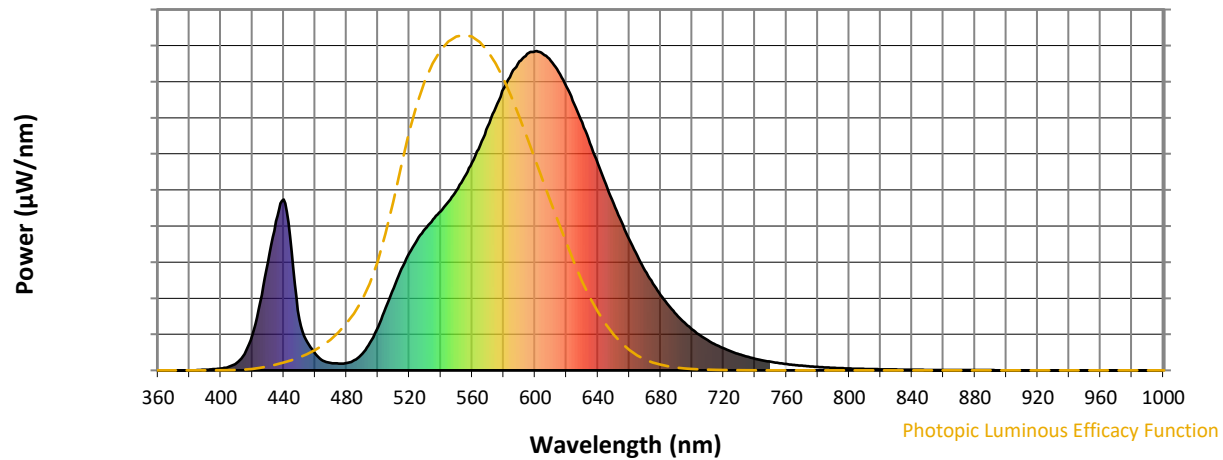
REPORT NUMBER: SP1-2407-184-3

| 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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### Photopic Flux vs. Wavelength

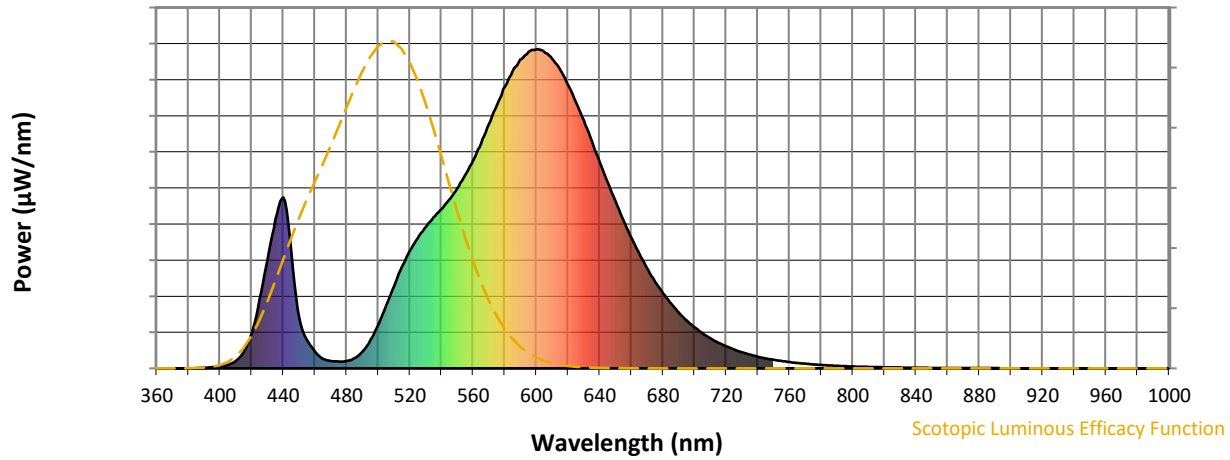


### Photopic Lumens: NR

| 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               |           |                             |                  |

REPORT NUMBER: SP1-2407-184-3

### Scotopic Flux vs. Wavelength



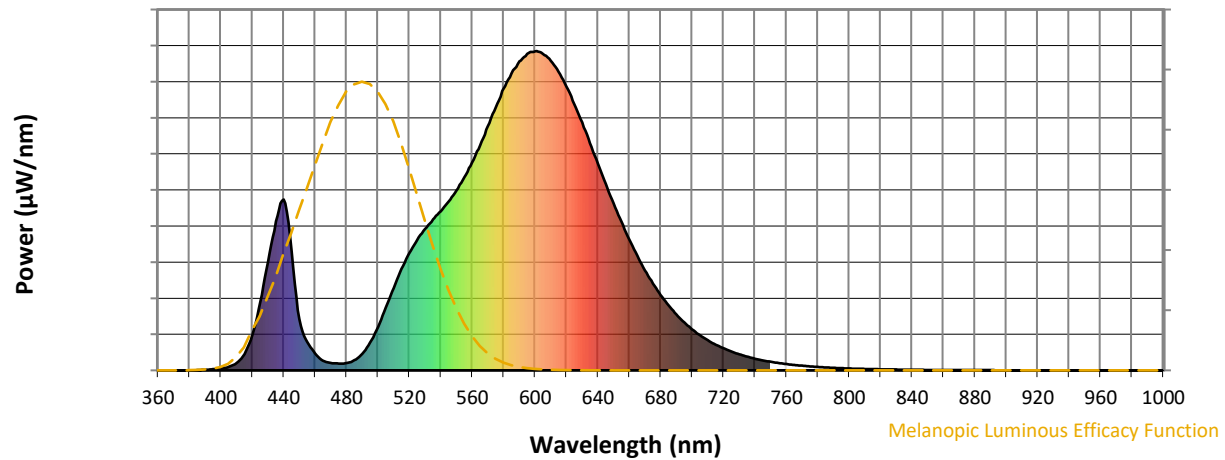
Scotopic Lumens: NR

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               |           |                             |                  |

REPORT NUMBER: SP1-2407-184-3

### 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                             |                   |                                      |                                |

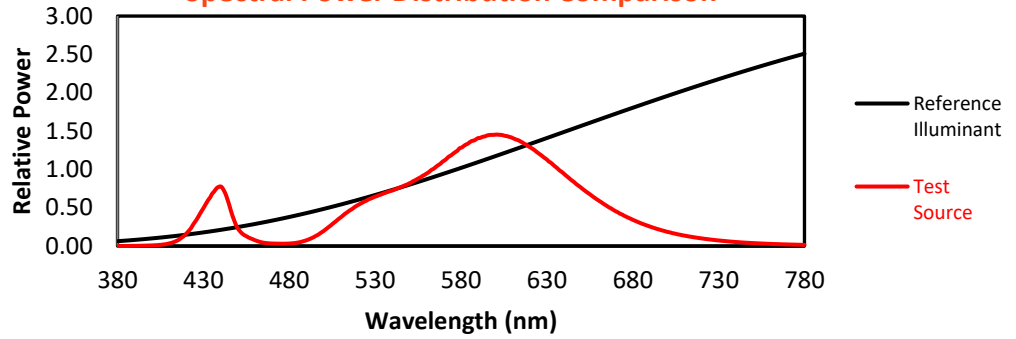
REPORT NUMBER: SP1-2407-184-3

TM-30-18

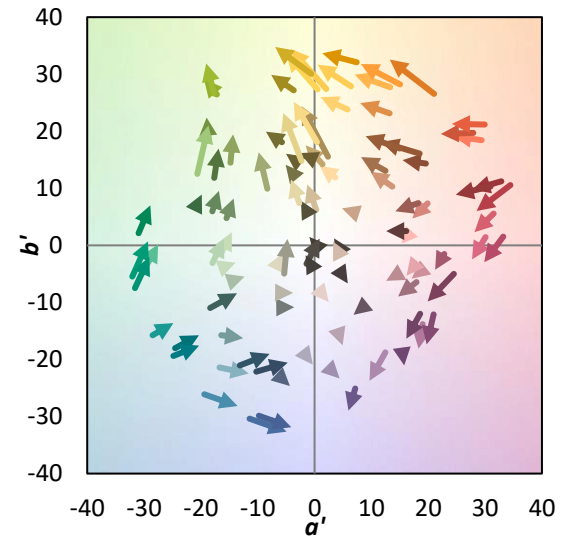
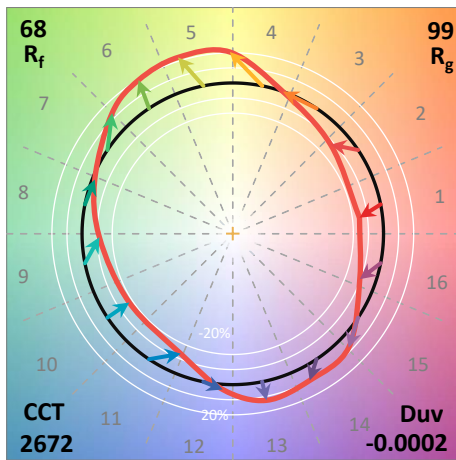
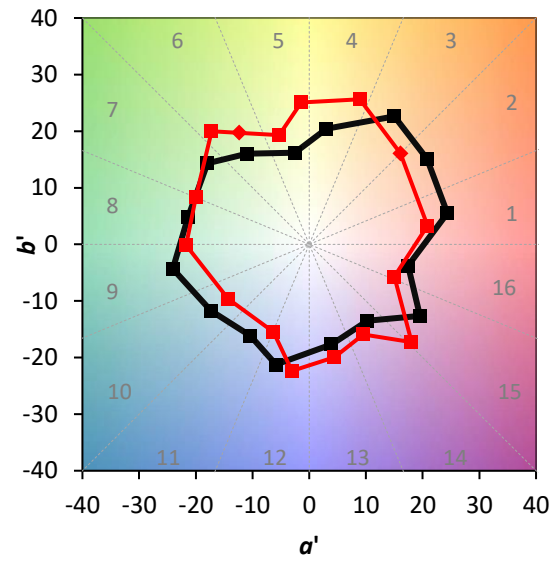
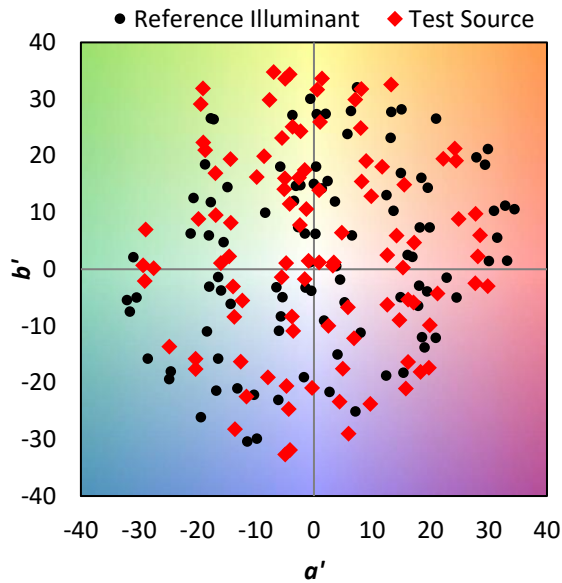
### Summary

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

### Spectral Power Distribution Comparison

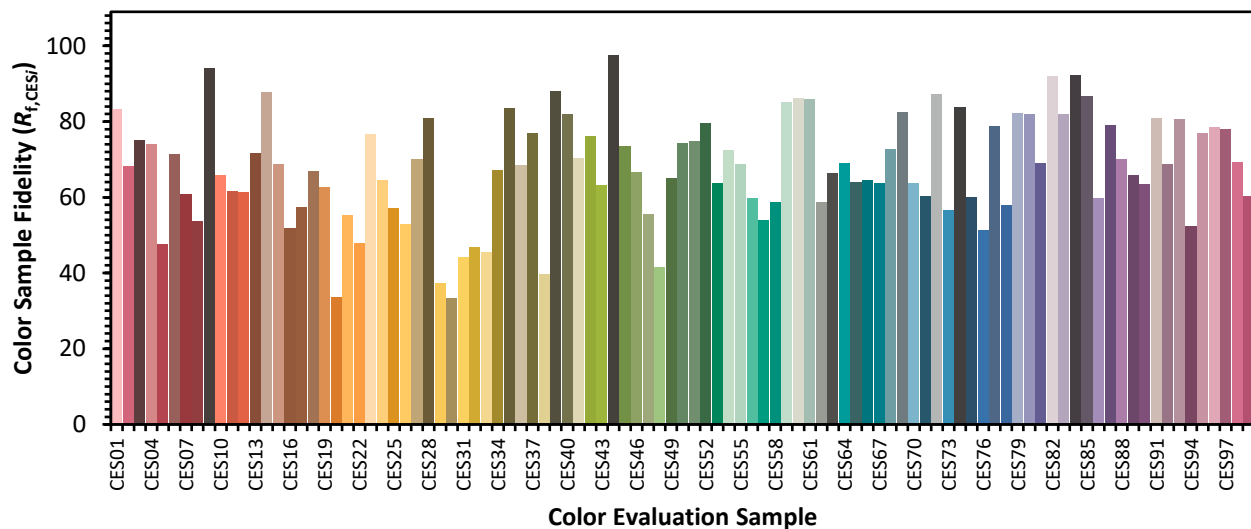


### Color Vector Graphics

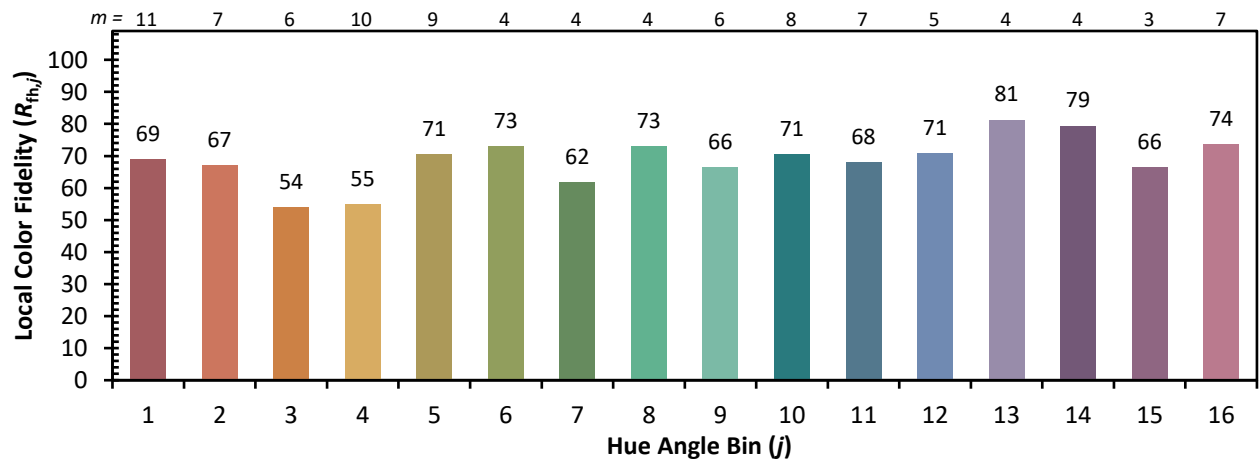
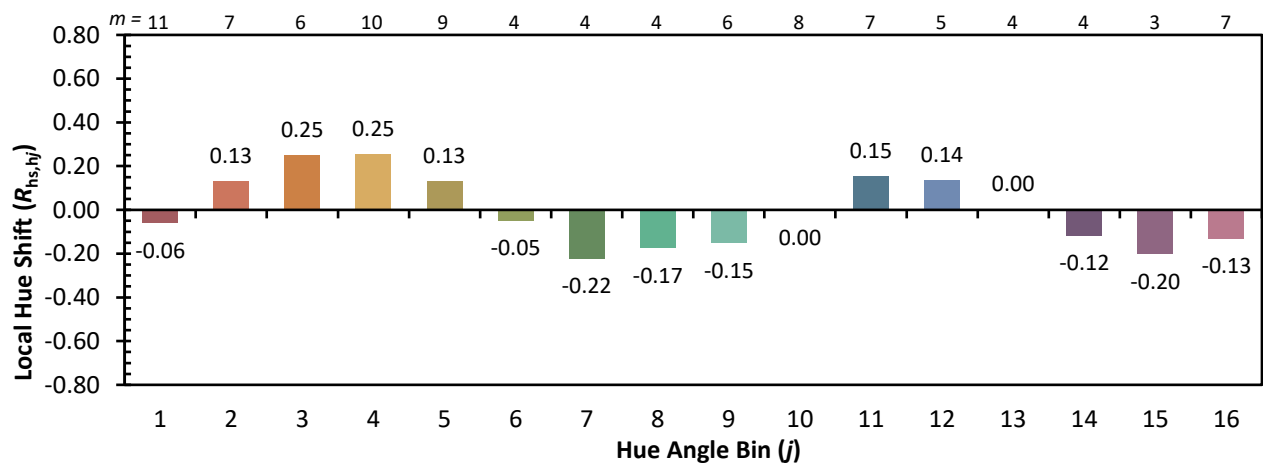
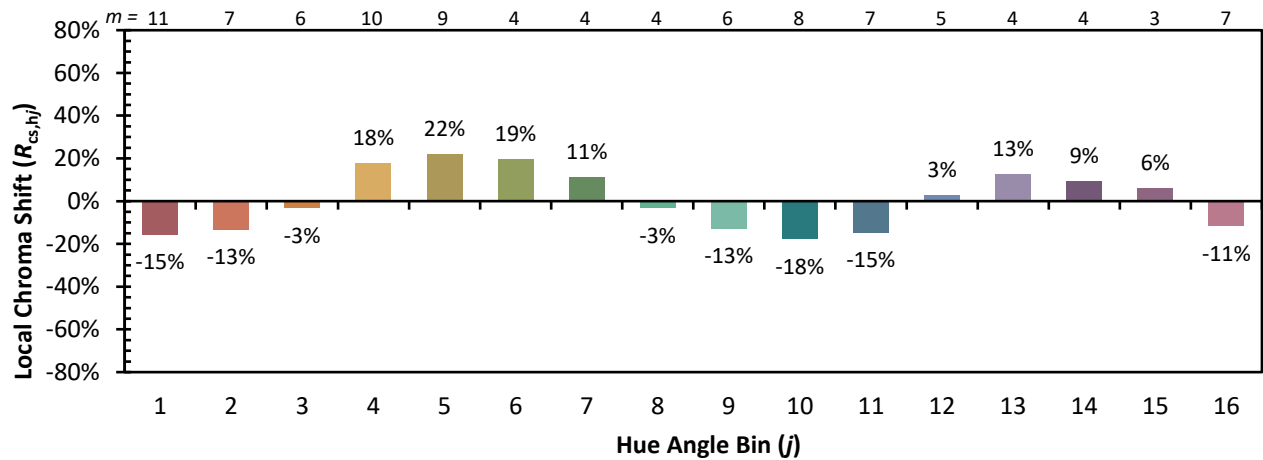


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

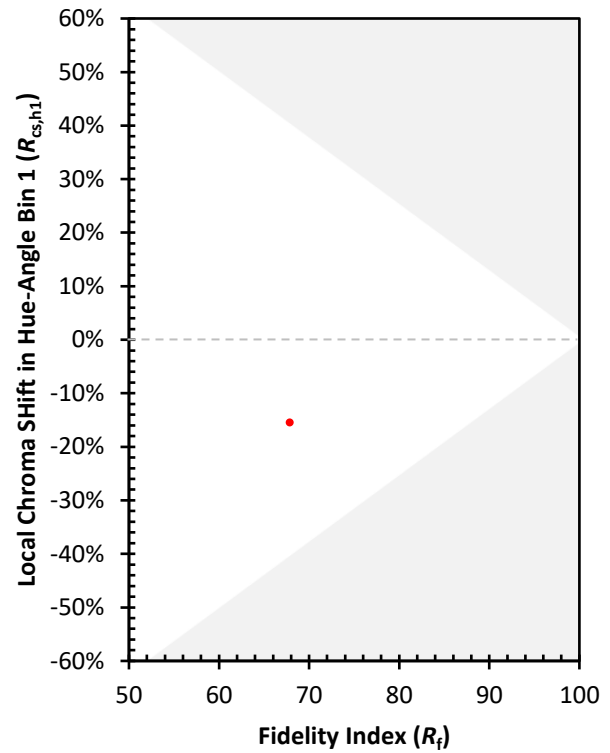
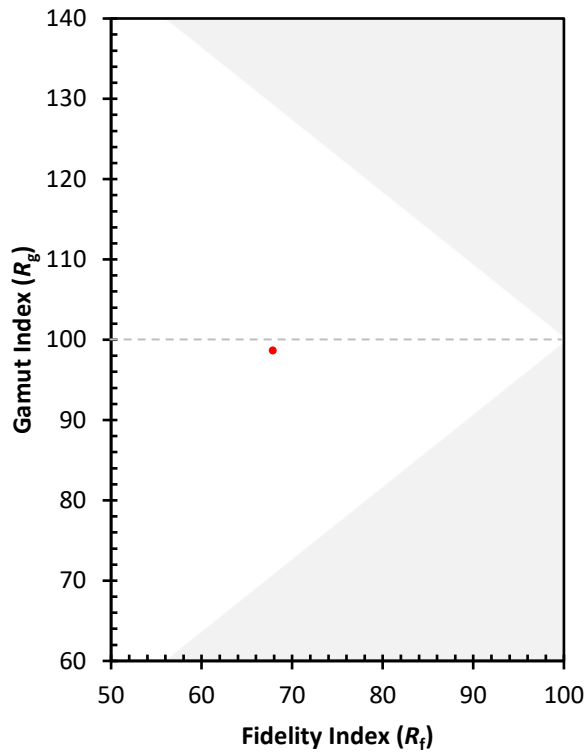
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 53 | CES51 = 75 | CES76 = 51 |
| CES02 = 63 | CES27 = 70 | CES52 = 80 | CES77 = 79 |
| CES03 = 31 | CES28 = 81 | CES53 = 64 | CES78 = 58 |
| CES04 = 71 | CES29 = 37 | CES54 = 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)