

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: P1383386

Luminaire Tested: **VAL-T-SB5D-727-U-SL2**

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: P1383386  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 02/18/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: VAL-T-SB5D-727-U-SL2  
Description: GALLEON II WALL SLIM HIGH DENSITY LED ARRAYS 55 SQUARE 294W 70CRI  
2700K FIXTURE w/ TYPE II SPILL CONTROL DISTRIBUTION OPTIC  
Light Source: (130) 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**

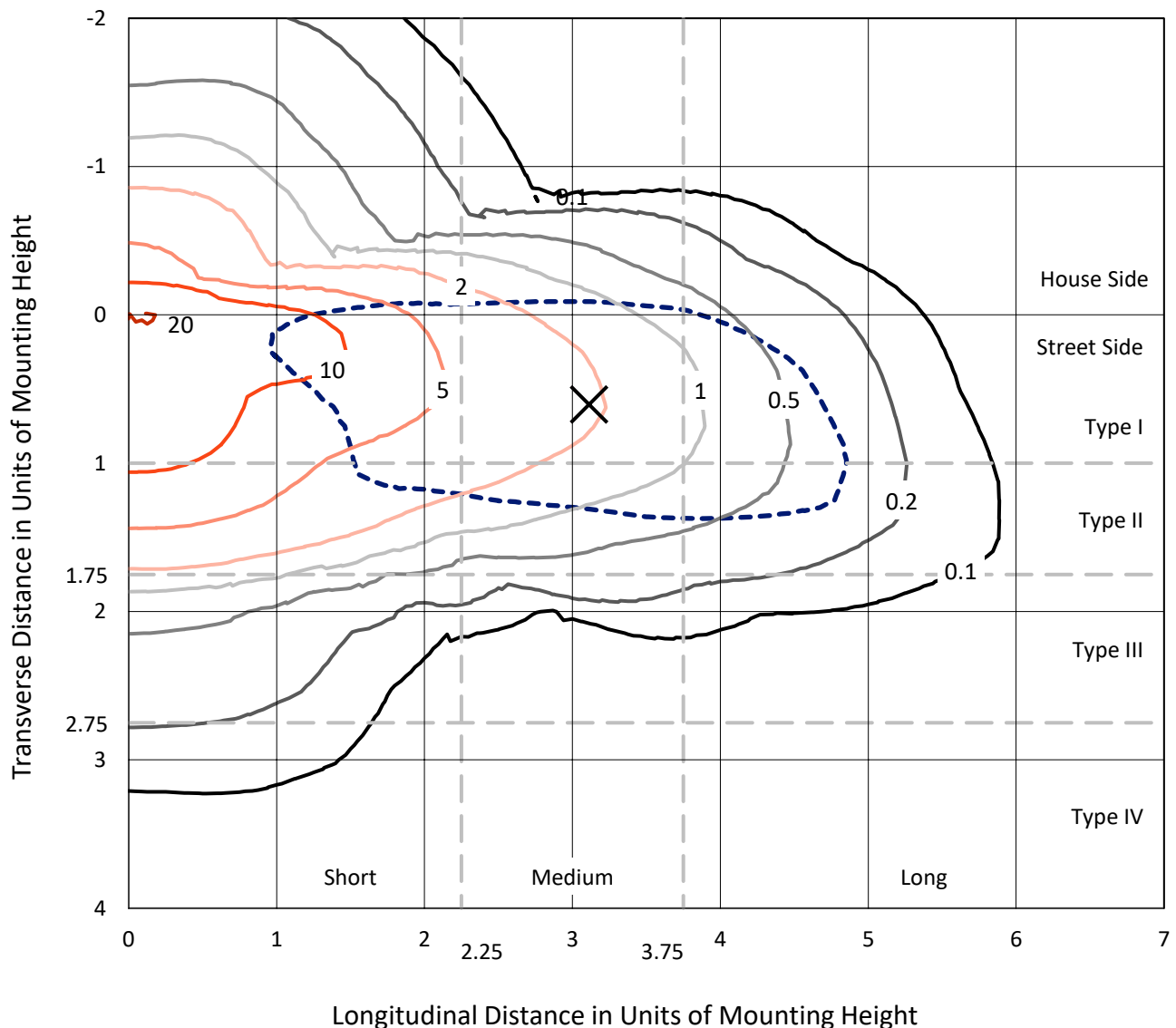
Lumens per Lamp: N/A  
Luminaire Lumens: 36432.2 lumens  
Efficiency: N/A  
Efficacy: 123.9 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type II - Medium  
BUG Rating: B3 - U0 - G4  
  
Input Watts (W): 294  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.98  
Total Harmonic Distortion (THDi): --  
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

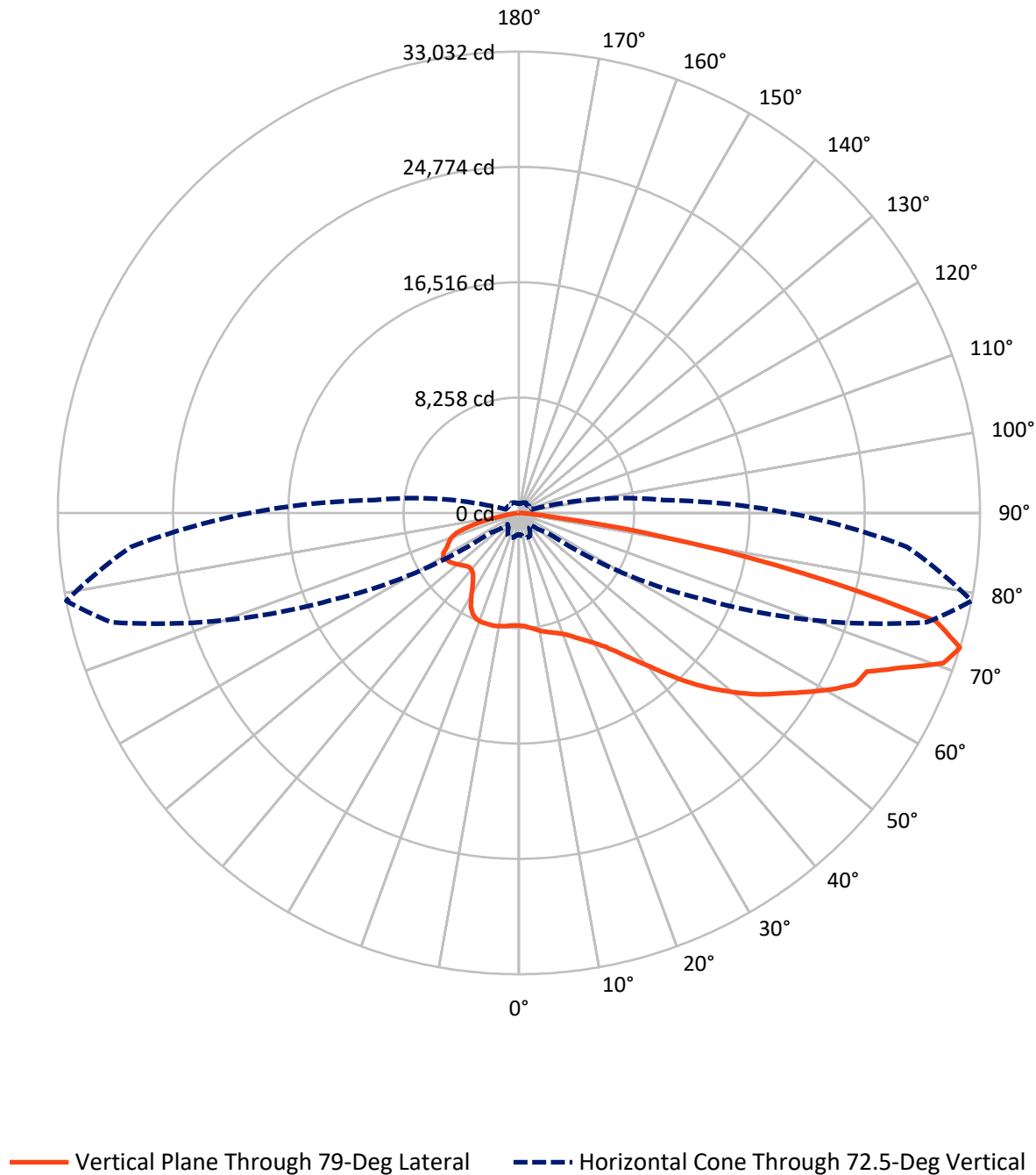
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 20.3 fc  
 Type II - Medium - N/A

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## Luminous Intensity Polar Plot



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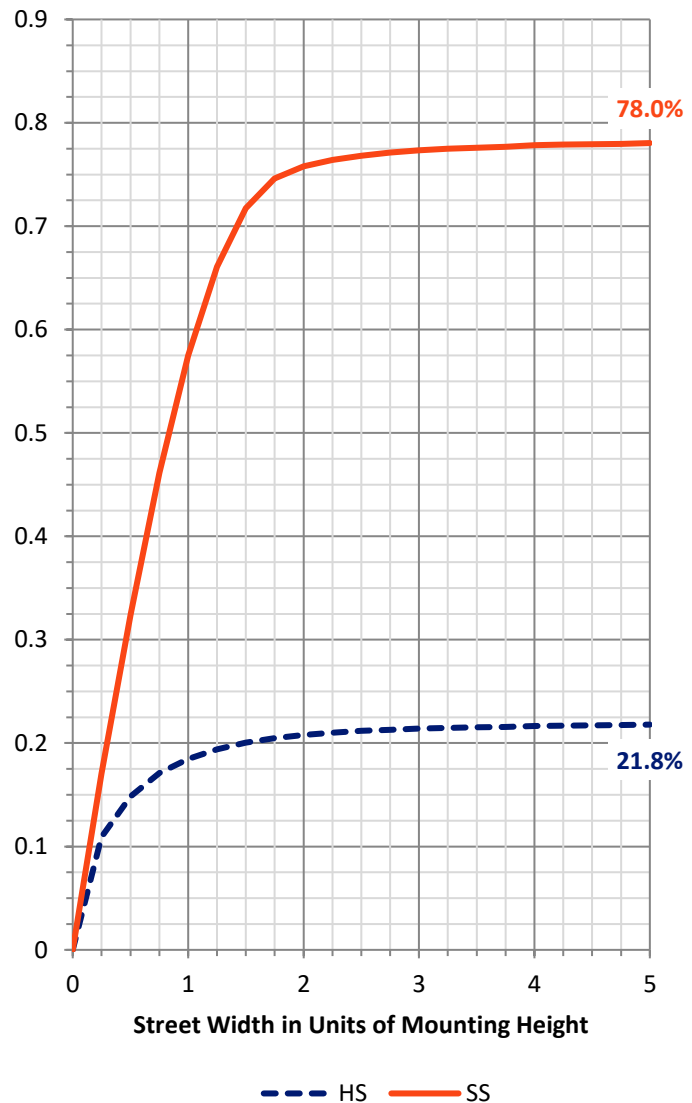
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 8002.9   | 0.0    | 8002.9  |
|                    | % Fixture | 22.0     | 0.0    | 22.0    |
| <b>Street Side</b> | Lumens    | 28429.3  | 0.0    | 28429.3 |
|                    | % Fixture | 78.0     | 0.0    | 78.0    |
| <b>Total</b>       | Lumens    | 36432.2  | 0.0    | 36432.2 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 749.0   | 2.1       |
| 10°-20°   | 1860.1  | 5.1       |
| 20°-30°   | 2928.7  | 8.0       |
| 30°-40°   | 4370.5  | 12.0      |
| 40°-50°   | 6214.2  | 17.1      |
| 50°-60°   | 7849.7  | 21.5      |
| 60°-70°   | 7347.5  | 20.2      |
| 70°-80°   | 4667.2  | 12.8      |
| 80°-90°   | 445.2   | 1.2       |
| 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°    | 36432.2 | 100.0     |
| 0°-180°   | 36432.2 | 100.0     |

**Coefficient of Utilization**



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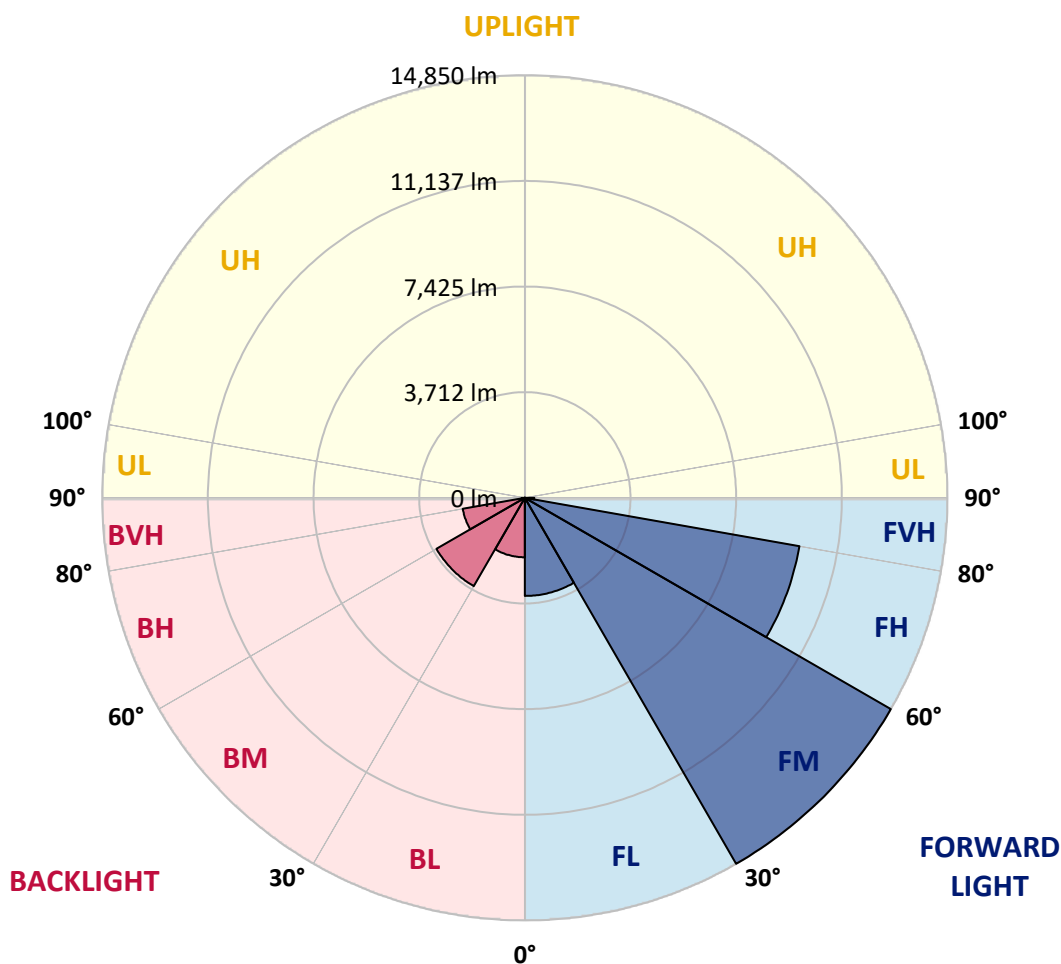
CATALOG NUMBER: VAL-T-SB5D-727-U-SL2

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

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|---------|-----------|-------------------------|------|----------|
|      |             |         |           | B                       | U    | G        |
| FL   | (0°-30°)    | 3448.4  | 9.5       |                         |      |          |
| FM   | (30°-60°)   | 14849.8 | 40.8      |                         |      |          |
| FH   | (60°-80°)   | 9799.3  | 26.9      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 331.7   | 0.9       |                         |      | G3/500   |
| BL   | (0°-30°)    | 2089.3  | 5.7       | B3/2500                 |      |          |
| BM   | (30°-60°)   | 3584.7  | 9.8       | B3/5000                 |      |          |
| BH   | (60°-80°)   | 2215.4  | 6.1       | B3/2500                 |      | G3/2500  |
| BVH  | (80°-90°)   | 113.6   | 0.3       |                         |      | G2/225   |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |          |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |          |

**BUG Rating: B3-U0-G4**

Type II Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 65°     | 75°     | 79°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 8068.3  | 8068.3  | 8068.3  | 8068.3  | 8068.3  | 8068.3  | 8068.3  | 8068.3  | 8068.3  | 8068.3  | 8068.3  |
| 2.5°  | 8258.0  | 8266.6  | 8232.1  | 8232.1  | 8240.7  | 8206.3  | 8163.2  | 8154.5  | 8120.1  | 8120.1  | 8120.1  |
| 5°    | 8301.1  | 8301.1  | 8292.5  | 8335.6  | 8352.8  | 8378.7  | 8344.2  | 8318.3  | 8266.6  | 8266.6  | 8197.6  |
| 7.5°  | 7844.2  | 7827.0  | 7895.9  | 8094.2  | 8301.1  | 8413.1  | 8482.1  | 8482.1  | 8456.2  | 8413.1  | 8352.8  |
| 10°   | 6982.2  | 7008.1  | 7111.5  | 7378.7  | 7758.0  | 8266.6  | 8542.4  | 8654.5  | 8611.4  | 8594.2  | 8490.7  |
| 12.5° | 6525.3  | 6516.7  | 6594.3  | 6792.6  | 7120.1  | 7740.8  | 8421.8  | 8775.2  | 8783.8  | 8740.7  | 8620.0  |
| 15°   | 6473.6  | 6447.8  | 6482.2  | 6551.2  | 6766.7  | 7266.7  | 8059.7  | 8818.3  | 8904.5  | 8887.2  | 8749.3  |
| 17.5° | 6766.7  | 6758.1  | 6706.4  | 6689.1  | 6680.5  | 6956.3  | 7706.3  | 8783.8  | 9068.3  | 9051.0  | 8895.9  |
| 20°   | 7275.3  | 7232.2  | 7137.4  | 7051.2  | 6870.1  | 6896.0  | 7430.5  | 8740.7  | 9292.4  | 9266.5  | 9111.4  |
| 22.5° | 7818.4  | 7835.6  | 7749.4  | 7542.5  | 7223.6  | 7077.0  | 7344.3  | 8680.4  | 9594.1  | 9576.8  | 9370.0  |
| 25°   | 8482.1  | 8464.9  | 8361.4  | 8128.7  | 7706.3  | 7387.4  | 7439.1  | 8663.1  | 9938.9  | 9956.1  | 9706.1  |
| 27.5° | 9163.1  | 9145.8  | 9016.5  | 8723.5  | 8232.1  | 7766.6  | 7654.6  | 8732.1  | 10378.5 | 10369.9 | 10059.6 |
| 30°   | 9921.6  | 9930.3  | 9766.5  | 9370.0  | 8775.2  | 8240.7  | 7999.4  | 8913.1  | 10818.1 | 10844.0 | 10464.7 |
| 32.5° | 10602.6 | 10645.7 | 10550.9 | 10180.2 | 9438.9  | 8732.1  | 8421.8  | 9206.2  | 11404.3 | 11447.4 | 10981.9 |
| 35°   | 11033.6 | 11059.5 | 11050.9 | 10878.5 | 10145.8 | 9292.4  | 8844.1  | 9576.8  | 12111.1 | 12274.9 | 11671.5 |
| 37.5° | 11447.4 | 11507.7 | 11516.3 | 11387.0 | 10835.4 | 9956.1  | 9344.1  | 10094.0 | 13016.2 | 13283.4 | 12576.6 |
| 40°   | 11895.6 | 11878.4 | 11999.1 | 11843.9 | 11456.0 | 10663.0 | 9861.3  | 10680.2 | 14016.1 | 14455.8 | 13636.9 |
| 42.5° | 12162.8 | 12205.9 | 12361.1 | 12326.6 | 11938.7 | 11318.1 | 10447.5 | 11335.3 | 15266.0 | 15912.5 | 14921.2 |
| 45°   | 12335.2 | 12378.3 | 12602.5 | 12636.9 | 12430.1 | 11766.3 | 10999.1 | 11964.6 | 16412.5 | 17421.0 | 16300.4 |
| 47.5° | 12395.6 | 12421.4 | 12714.5 | 12852.4 | 12766.2 | 12050.8 | 11430.1 | 12680.0 | 17541.7 | 18843.3 | 17679.6 |
| 50°   | 12154.2 | 12249.0 | 12628.3 | 12938.6 | 12999.0 | 12197.3 | 11800.8 | 13438.6 | 18757.1 | 20222.5 | 19067.5 |
| 52.5° | 11783.6 | 11835.3 | 12292.1 | 12955.9 | 13145.5 | 12438.7 | 12257.7 | 14240.3 | 19903.6 | 21601.8 | 20257.0 |
| 55°   | 11059.5 | 11162.9 | 11731.8 | 12671.4 | 13231.7 | 12757.6 | 12852.4 | 15145.4 | 21093.2 | 22808.6 | 21550.0 |
| 57.5° | 9007.9  | 9188.9  | 10128.5 | 11456.0 | 12999.0 | 13386.9 | 13740.3 | 16266.0 | 22394.8 | 24205.0 | 22705.1 |
| 60°   | 5646.1  | 5887.5  | 6870.1  | 9016.5  | 11680.1 | 13757.5 | 15154.0 | 17722.7 | 23946.4 | 25670.4 | 23989.5 |
| 62.5° | 3060.1  | 3051.5  | 3344.6  | 4611.7  | 8421.8  | 12792.1 | 16369.4 | 20248.4 | 25946.2 | 27032.4 | 24739.4 |
| 65°   | 2655.0  | 2655.0  | 2689.4  | 2680.8  | 3637.6  | 9438.9  | 15162.6 | 21756.9 | 27325.4 | 27394.4 | 24101.6 |
| 67.5° | 2387.7  | 2387.7  | 2439.5  | 2310.2  | 1982.6  | 4223.8  | 11094.0 | 20860.4 | 29609.7 | 29566.6 | 24920.5 |
| 70°   | 2103.3  | 2111.9  | 2198.1  | 2120.5  | 1594.7  | 1715.4  | 6068.5  | 18998.5 | 31316.5 | 32238.8 | 26549.6 |
| 72.5° | 1543.0  | 1594.7  | 1844.7  | 1844.7  | 1310.2  | 1155.1  | 2465.3  | 14731.6 | 30247.6 | 33031.9 | 27903.0 |
| 75°   | 1086.1  | 1094.7  | 1224.0  | 1318.9  | 1034.4  | 870.6   | 1198.2  | 9861.3  | 27747.8 | 30816.5 | 26696.2 |
| 77.5° | 827.5   | 836.1   | 879.2   | 1051.6  | 706.8   | 637.9   | 827.5   | 5387.5  | 20015.7 | 20808.7 | 17317.6 |
| 80°   | 551.7   | 543.1   | 603.4   | 741.3   | 500.0   | 431.0   | 534.4   | 1801.6  | 11231.9 | 10714.7 | 7232.2  |
| 82.5° | 275.8   | 284.5   | 327.6   | 387.9   | 293.1   | 258.6   | 310.3   | 931.0   | 4404.8  | 2560.1  | 1051.6  |
| 85°   | 77.6    | 94.8    | 112.1   | 155.2   | 120.7   | 112.1   | 146.5   | 327.6   | 560.3   | 413.8   | 284.5   |
| 87.5° | 8.6     | 8.6     | 17.2    | 17.2    | 17.2    | 25.9    | 43.1    | 69.0    | 94.8    | 94.8    | 94.8    |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |



REPORT NUMBER: P1383386

CATALOG NUMBER: VAL-T-SB5D-727-U-SL2

**CANDELA DISTRIBUTION (continued):**

|       | 90°     | 95°     | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 8068.3  | 8068.3  | 8068.3 | 8068.3 | 8068.3 | 8068.3 | 8068.3 | 8068.3 | 8068.3 | 8068.3 | 8068.3 |
| 2.5°  | 8102.8  | 8077.0  | 8042.5 | 7990.8 | 7990.8 | 7930.4 | 7895.9 | 7827.0 | 7852.8 | 7818.4 | 7801.1 |
| 5°    | 8180.4  | 8145.9  | 8068.3 | 7982.1 | 7895.9 | 7766.6 | 7663.2 | 7516.7 | 7499.4 | 7464.9 | 7413.2 |
| 7.5°  | 8318.3  | 8232.1  | 8137.3 | 7939.0 | 7775.3 | 7482.2 | 7249.4 | 6956.3 | 6792.6 | 6689.1 | 6697.7 |
| 10°   | 8456.2  | 8344.2  | 8145.9 | 7887.3 | 7533.9 | 7051.2 | 6447.8 | 5870.2 | 5430.6 | 5180.6 | 5232.3 |
| 12.5° | 8551.1  | 8430.4  | 8163.2 | 7749.4 | 7094.3 | 6128.8 | 5008.2 | 4189.3 | 3870.4 | 3706.6 | 3706.6 |
| 15°   | 8645.9  | 8490.7  | 8137.3 | 7456.3 | 6266.7 | 4620.3 | 3732.5 | 3422.1 | 3335.9 | 3284.2 | 3267.0 |
| 17.5° | 8766.6  | 8585.5  | 8059.7 | 6913.2 | 4939.3 | 3611.8 | 3301.5 | 3206.6 | 3206.6 | 3198.0 | 3180.8 |
| 20°   | 8913.1  | 8697.6  | 7964.9 | 6051.2 | 3792.8 | 3241.1 | 3154.9 | 3137.7 | 3154.9 | 3146.3 | 3137.7 |
| 22.5° | 9137.2  | 8835.5  | 7723.5 | 4861.7 | 3258.4 | 3068.7 | 3060.1 | 2973.9 | 2991.1 | 3008.4 | 2999.8 |
| 25°   | 9421.7  | 9007.9  | 7266.7 | 3715.2 | 2991.1 | 2956.7 | 2870.5 | 2792.9 | 2784.3 | 2792.9 | 2792.9 |
| 27.5° | 9688.9  | 9137.2  | 6525.3 | 3060.1 | 2801.5 | 2792.9 | 2715.3 | 2646.3 | 2646.3 | 2655.0 | 2655.0 |
| 30°   | 9982.0  | 9214.8  | 5387.5 | 2723.9 | 2689.4 | 2646.3 | 2620.5 | 2594.6 | 2603.2 | 2629.1 | 2629.1 |
| 32.5° | 10369.9 | 9292.4  | 4275.5 | 2534.3 | 2577.4 | 2517.0 | 2534.3 | 2525.7 | 2542.9 | 2586.0 | 2594.6 |
| 35°   | 10844.0 | 9326.9  | 3422.1 | 2422.2 | 2422.2 | 2370.5 | 2379.1 | 2344.6 | 2344.6 | 2370.5 | 2387.7 |
| 37.5° | 11473.2 | 9344.1  | 2879.1 | 2361.9 | 2301.5 | 2275.7 | 2258.4 | 2215.3 | 2155.0 | 2111.9 | 2120.5 |
| 40°   | 12154.2 | 9387.2  | 2586.0 | 2318.8 | 2249.8 | 2241.2 | 2206.7 | 2146.4 | 1974.0 | 1836.1 | 1827.4 |
| 42.5° | 13059.3 | 9507.9  | 2439.5 | 2249.8 | 2249.8 | 2249.8 | 2198.1 | 1930.9 | 1793.0 | 1698.1 | 1689.5 |
| 45°   | 13973.0 | 9826.8  | 2361.9 | 2189.5 | 2241.2 | 2249.8 | 2017.1 | 1853.3 | 1741.2 | 1637.8 | 1611.9 |
| 47.5° | 14990.2 | 10283.7 | 2327.4 | 2155.0 | 2180.9 | 2198.1 | 1896.4 | 1818.8 | 1689.5 | 1568.8 | 1543.0 |
| 50°   | 15998.7 | 10766.4 | 2292.9 | 2094.7 | 2094.7 | 1982.6 | 1870.5 | 1784.3 | 1655.0 | 1525.7 | 1508.5 |
| 52.5° | 17067.6 | 11326.7 | 2258.4 | 1991.2 | 1982.6 | 1861.9 | 1844.7 | 1775.7 | 1637.8 | 1474.0 | 1439.5 |
| 55°   | 17998.6 | 11835.3 | 2198.1 | 1870.5 | 1861.9 | 1741.2 | 1827.4 | 1741.2 | 1534.4 | 1344.7 | 1310.2 |
| 57.5° | 18886.4 | 12249.0 | 2120.5 | 1741.2 | 1758.5 | 1646.4 | 1758.5 | 1672.3 | 1439.5 | 1249.9 | 1232.7 |
| 60°   | 19731.2 | 12680.0 | 2017.1 | 1629.2 | 1629.2 | 1560.2 | 1672.3 | 1560.2 | 1344.7 | 1155.1 | 1129.2 |
| 62.5° | 19981.2 | 12542.1 | 1844.7 | 1508.5 | 1499.9 | 1448.2 | 1560.2 | 1430.9 | 1224.0 | 1051.6 | 1025.8 |
| 65°   | 19119.2 | 11835.3 | 1637.8 | 1387.8 | 1362.0 | 1318.9 | 1396.4 | 1275.8 | 1086.1 | 948.2  | 939.6  |
| 67.5° | 19239.9 | 11559.4 | 1405.1 | 1232.7 | 1206.8 | 1172.3 | 1198.2 | 1103.4 | 956.8  | 853.4  | 844.8  |
| 70°   | 19395.0 | 11257.7 | 1189.6 | 1086.1 | 1025.8 | 965.4  | 1025.8 | 948.2  | 844.8  | 758.6  | 749.9  |
| 72.5° | 19274.3 | 10421.6 | 982.7  | 913.7  | 870.6  | 801.7  | 879.2  | 818.9  | 732.7  | 663.7  | 646.5  |
| 75°   | 17533.1 | 8378.7  | 801.7  | 749.9  | 698.2  | 655.1  | 706.8  | 689.6  | 620.6  | 612.0  | 551.7  |
| 77.5° | 11792.2 | 5370.3  | 620.6  | 577.5  | 560.3  | 517.2  | 551.7  | 525.8  | 491.3  | 456.9  | 431.0  |
| 80°   | 5111.7  | 2405.0  | 448.2  | 405.1  | 387.9  | 362.0  | 396.5  | 387.9  | 370.7  | 344.8  | 336.2  |
| 82.5° | 732.7   | 568.9   | 301.7  | 275.8  | 232.7  | 215.5  | 232.7  | 250.0  | 362.0  | 439.6  | 431.0  |
| 85°   | 206.9   | 172.4   | 146.5  | 129.3  | 103.4  | 86.2   | 94.8   | 155.2  | 206.9  | 129.3  | 112.1  |
| 87.5° | 94.8    | 86.2    | 69.0   | 43.1   | 25.9   | 25.9   | 17.2   | 8.6    | 8.6    | 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

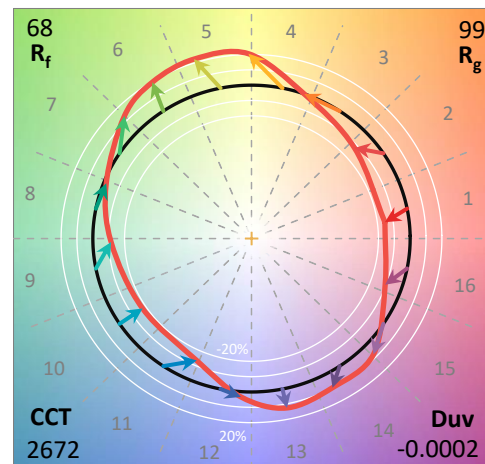
Data in this report applies to families of products including GSS-SB1A-727-U-5WQ

### 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

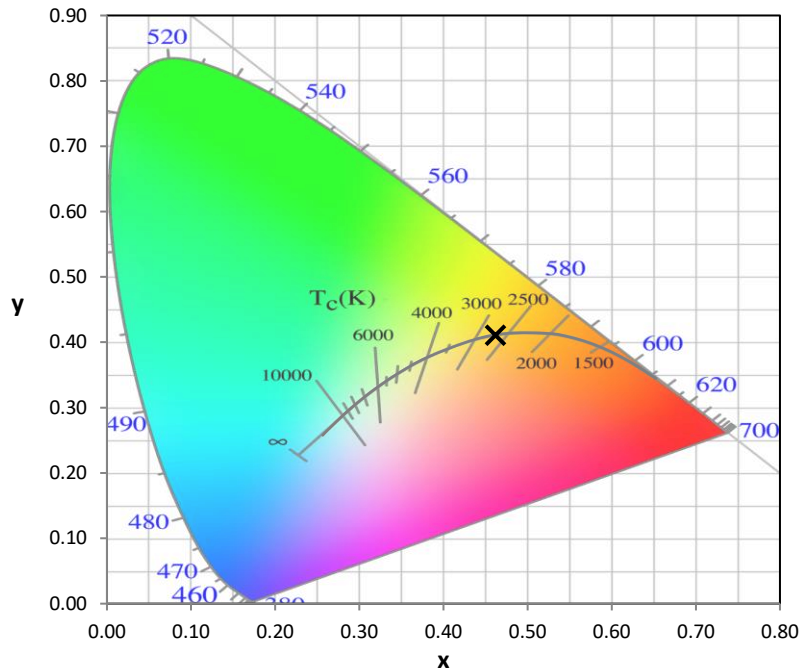
Stabilization Time: 21M  
 Operation Time: 1H 21M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-3

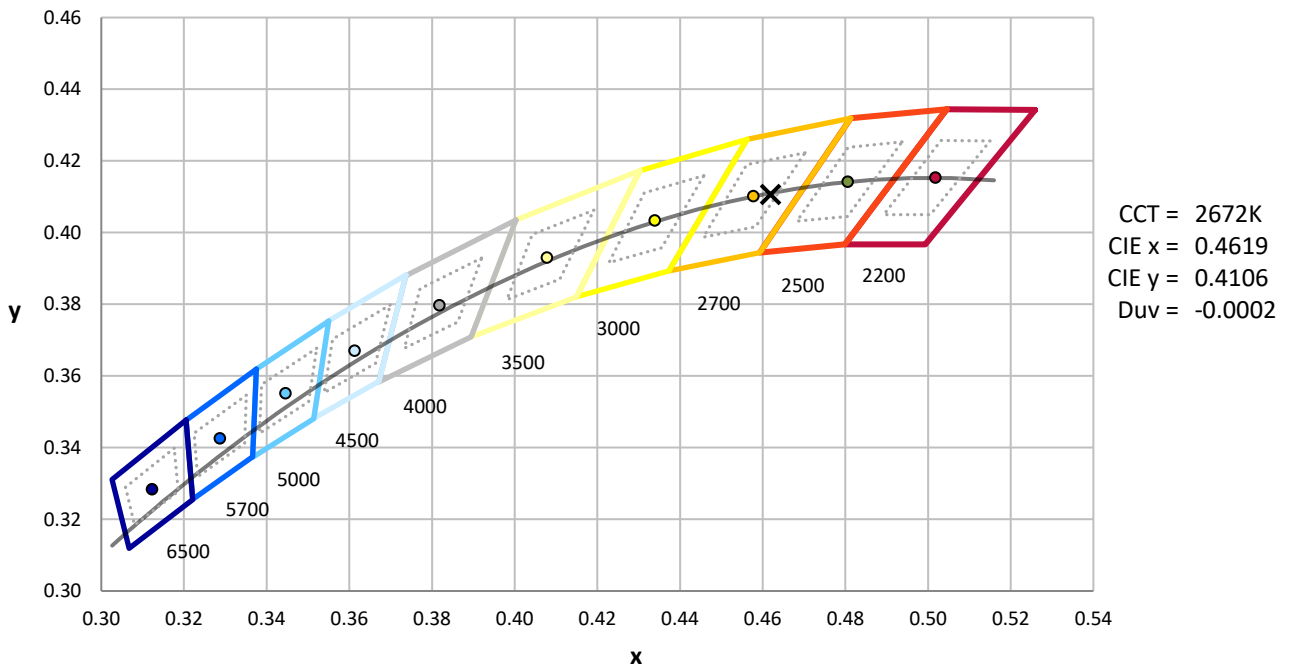
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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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**CIE 1931 Chromaticity Diagram**



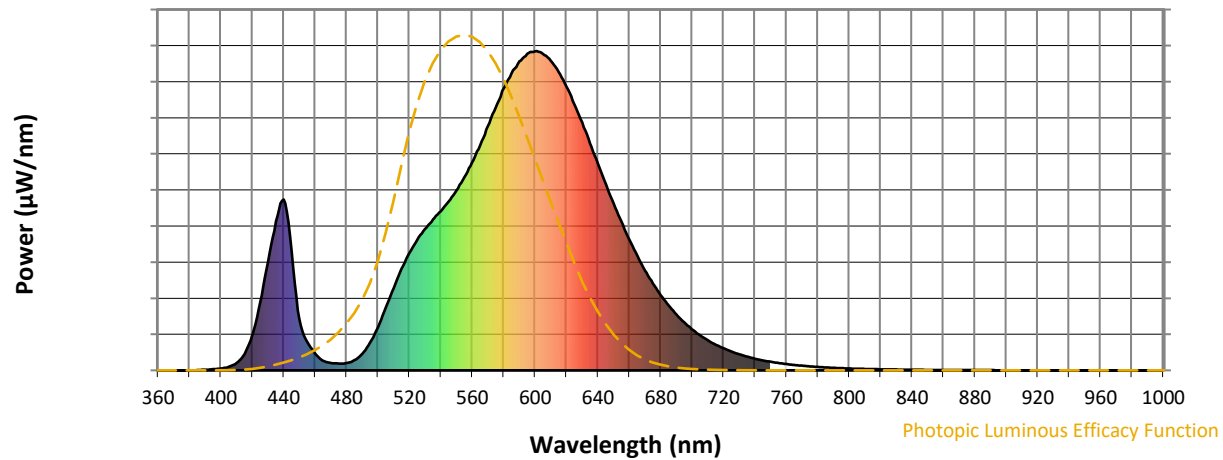
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 2700K 4-step quadrangle

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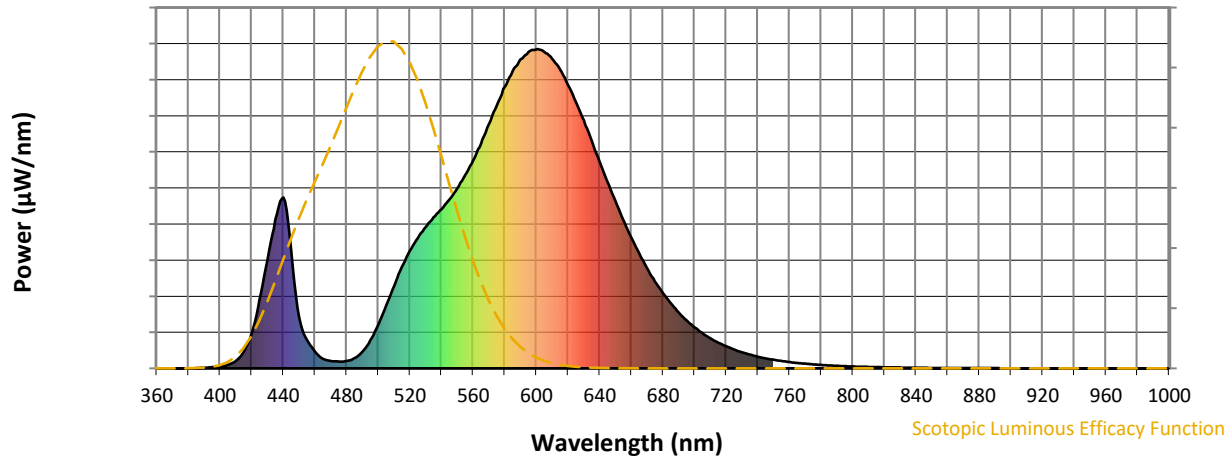
### Photopic Flux vs. Wavelength



### 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                             |                   |                               |                                |

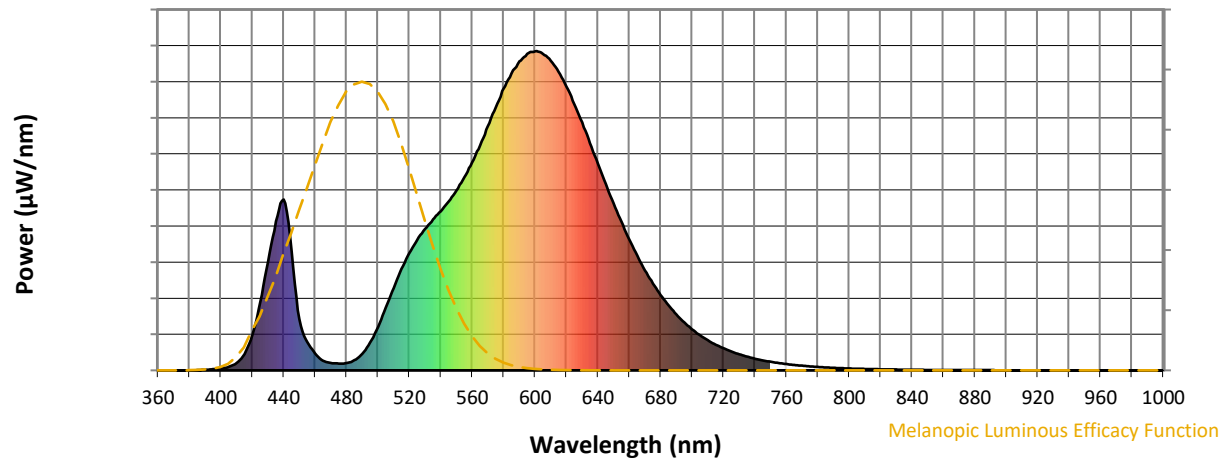
REPORT NUMBER: SP1-2407-184-3

**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               |           |                             |                  |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 1.71

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

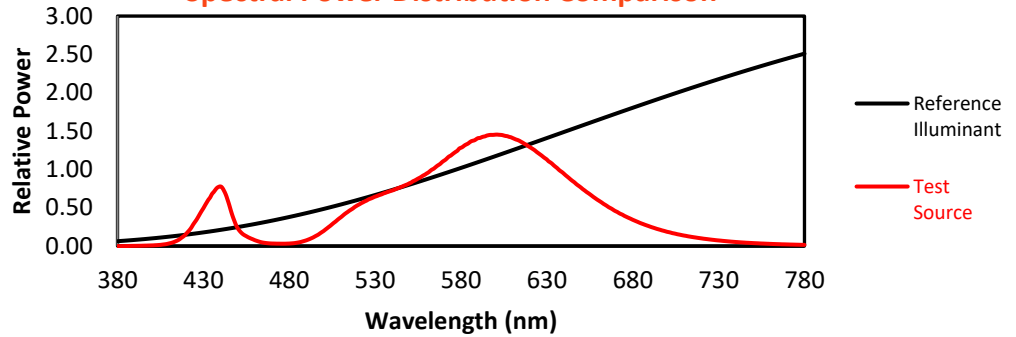
REPORT NUMBER: SP1-2407-184-3

TM-30-18

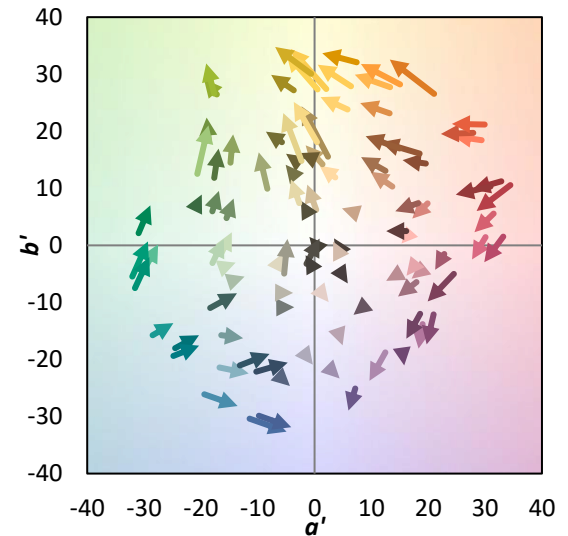
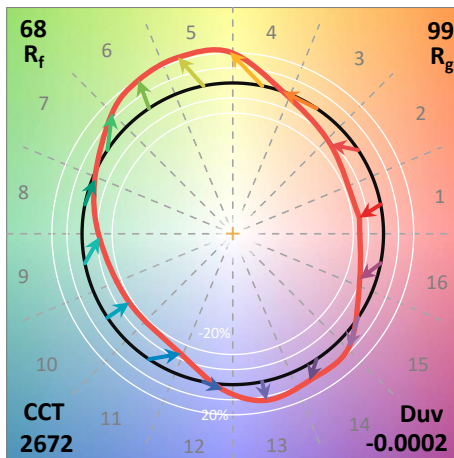
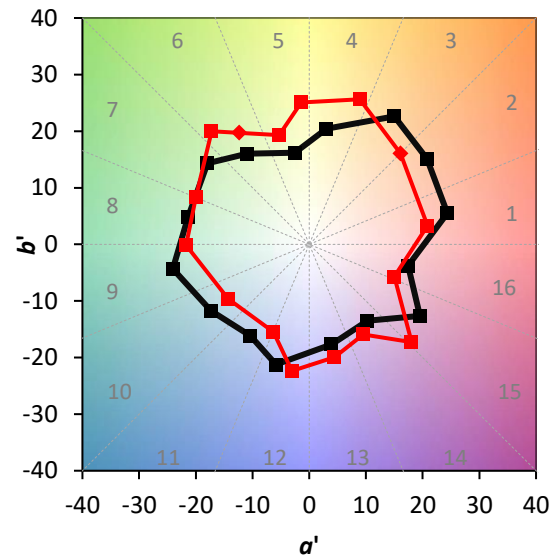
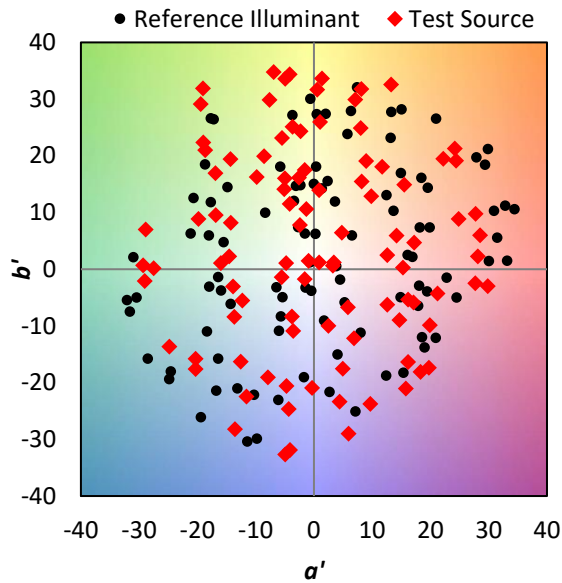
### Summary

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

### Spectral Power Distribution Comparison



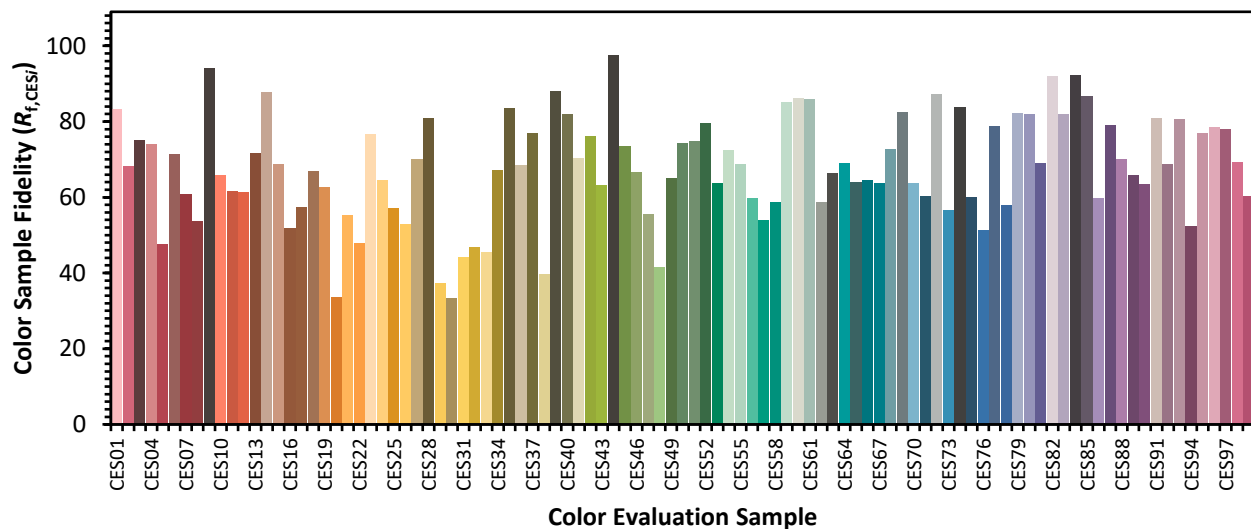
### Color Vector Graphics



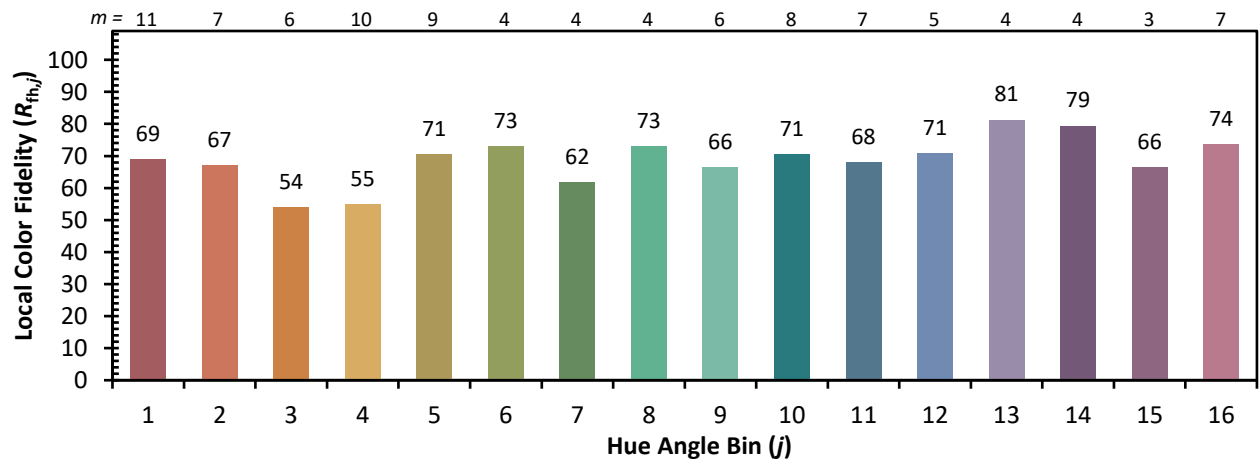
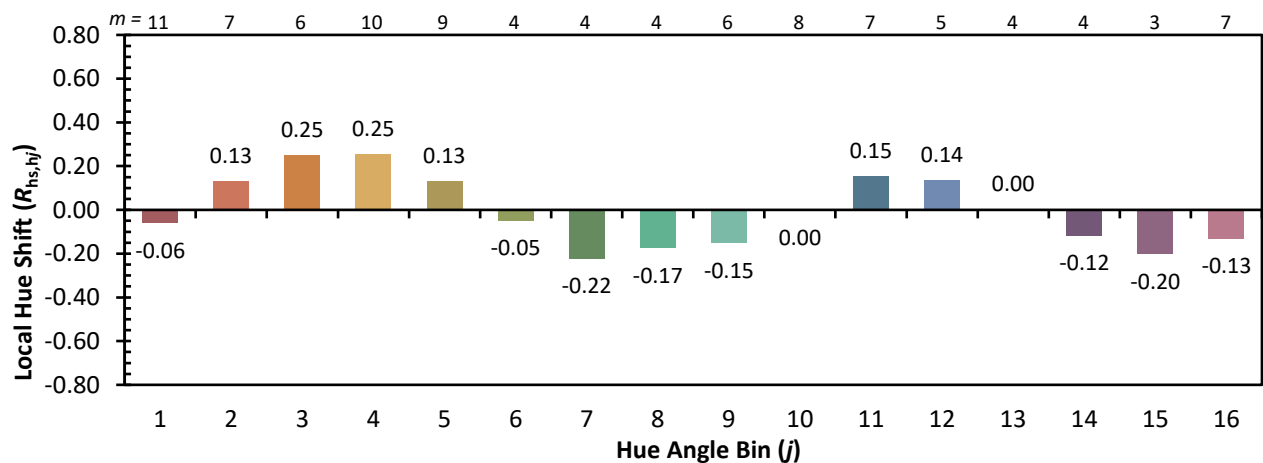
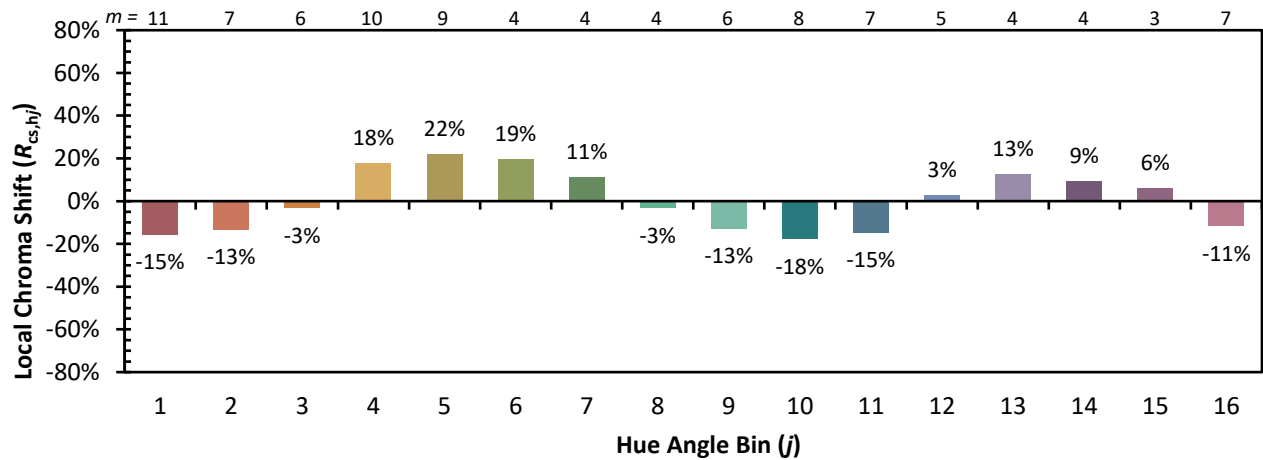


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

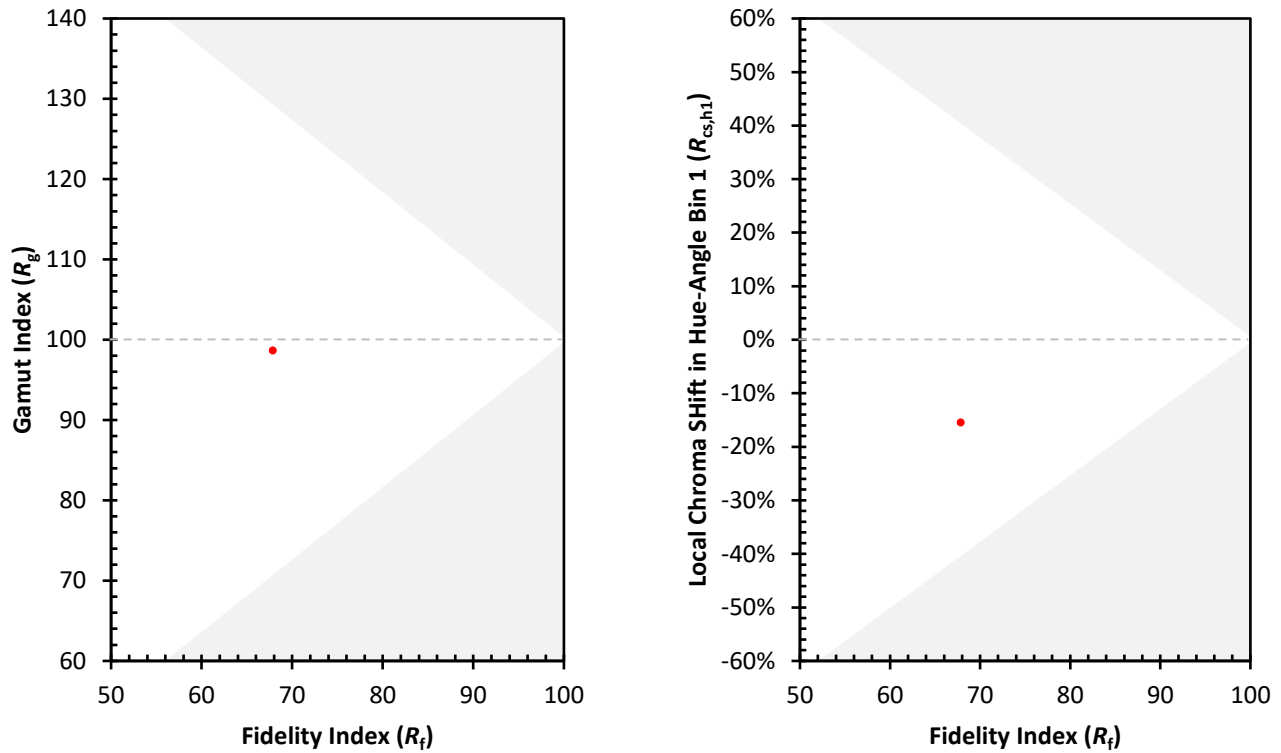
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 53 | CES51 = 75 | CES76 = 51 |
| CES02 = 63 | CES27 = 70 | CES52 = 80 | CES77 = 79 |
| CES03 = 31 | CES28 = 81 | CES53 = 64 | CES78 = 58 |
| CES04 = 71 | CES29 = 37 | CES54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



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)