

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P1047714

Luminaire Tested: **GALN-SA5B-727-U-T2BC**

Issue Date: 07/10/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1047714  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 07/10/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: GALN-SA5B-727-U-T2BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 800mA 5xLight Square PACKAGE  
70CRI 2700K FIXTURE w/ TYPE II ANGLED BACKLIGHT CONTROL  
Light Source: (70) 2700K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 20188.4 lumens  
Efficiency: N/A  
Efficacy: 112.9 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B0 - U0 - G3

Input Watts (W): 178.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

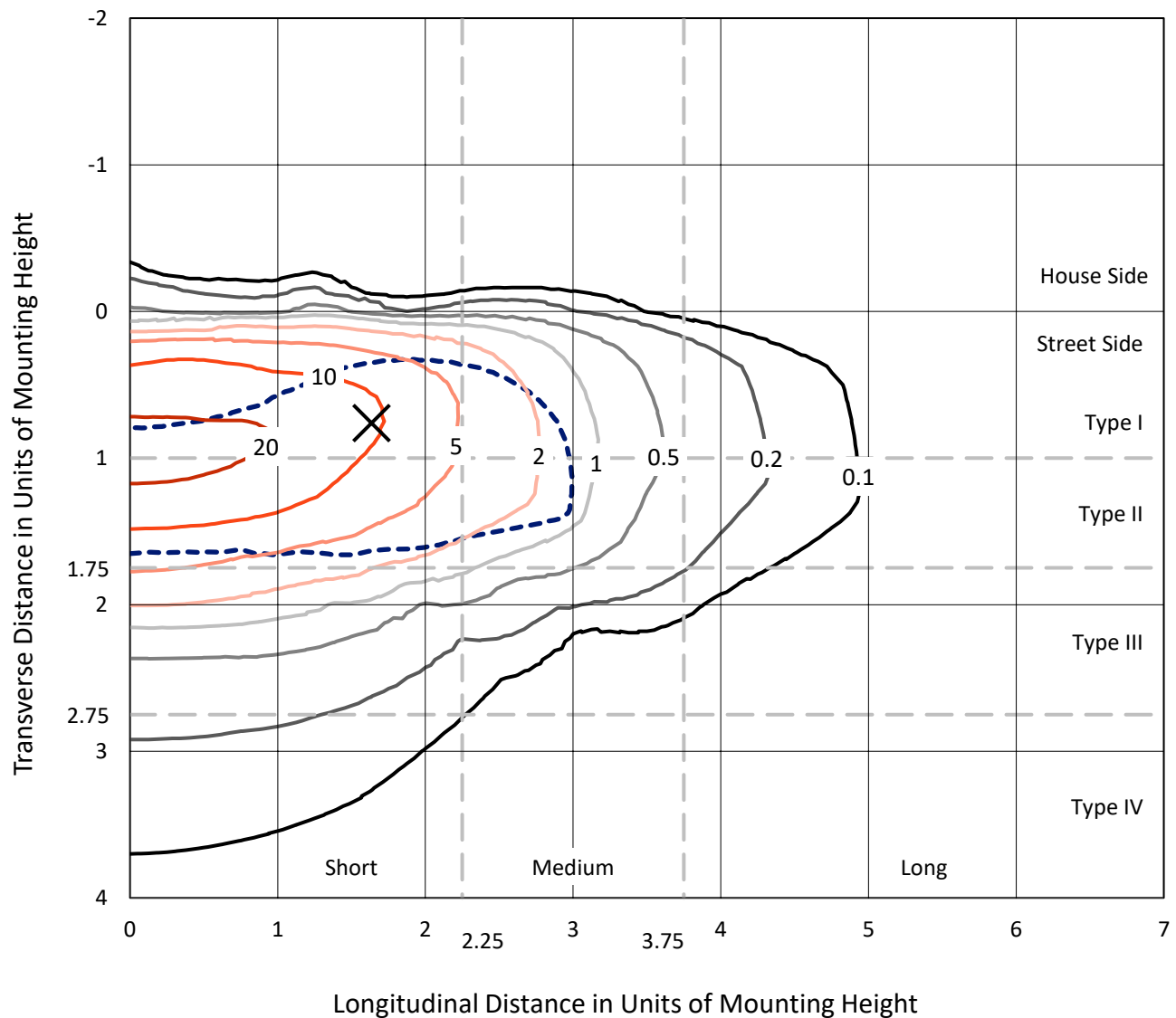


REPORT NUMBER: P1047714

CATALOG NUMBER: GALN-SA5B-727-U-T2BC

## Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd  
 - - - 1/2 Max cd

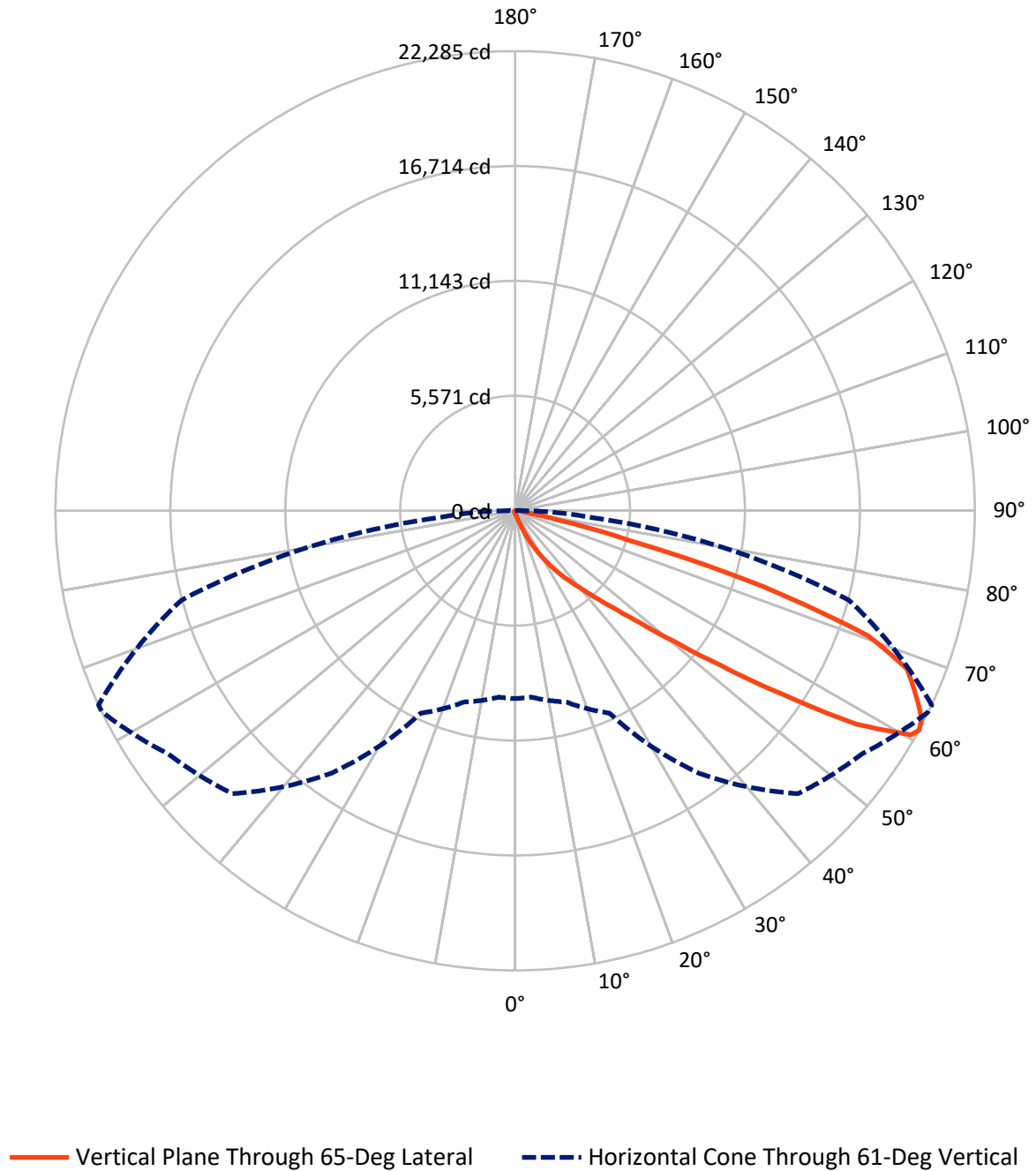


Based on 15 foot mounting height. Maximum calculated value = 26.7 fc  
 Type II - Short - N/A

REPORT NUMBER: P1047714

CATALOG NUMBER: GALN-SA5B-727-U-T2BC

## Luminous Intensity Polar Plot



REPORT NUMBER: P1047714

CATALOG NUMBER: GALN-SA5B-727-U-T2BC

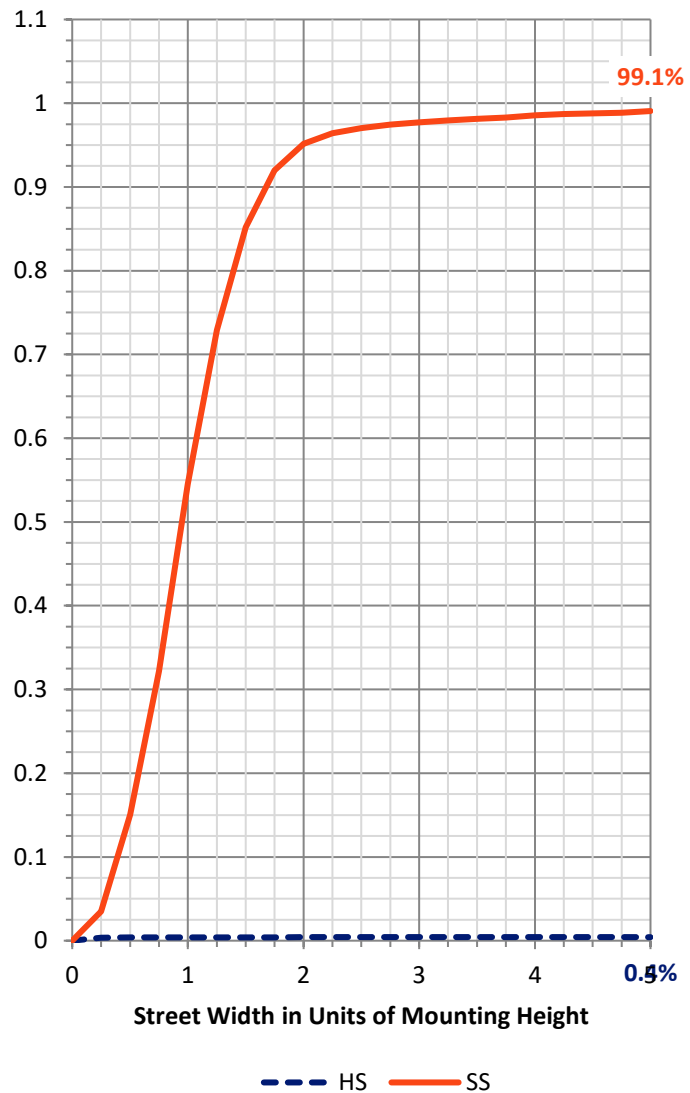
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 86.2     | 0.0    | 86.2    |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 20102.3  | 0.0    | 20102.3 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 20188.4  | 0.0    | 20188.4 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 15.7    | 0.1       |
| 10°-20°   | 166.0   | 0.8       |
| 20°-30°   | 595.8   | 3.0       |
| 30°-40°   | 1586.2  | 7.9       |
| 40°-50°   | 4167.0  | 20.6      |
| 50°-60°   | 6455.5  | 32.0      |
| 60°-70°   | 5412.8  | 26.8      |
| 70°-80°   | 1592.9  | 7.9       |
| 80°-90°   | 196.5   | 1.0       |
| 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°    | 20188.4 | 100.0     |
| 0°-180°   | 20188.4 | 100.0     |



REPORT NUMBER: P1047714

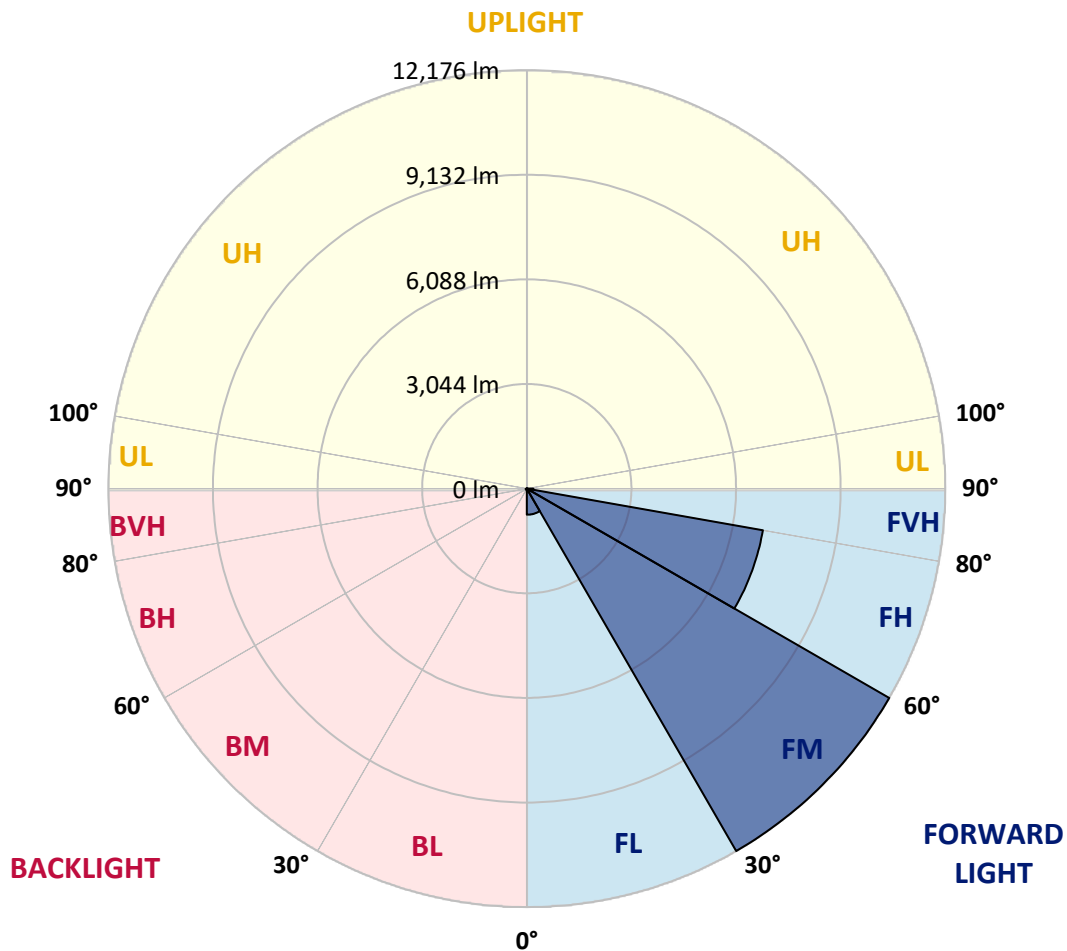
CATALOG NUMBER: GALN-SA5B-727-U-T2BC

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

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|---------|-----------|-------------------------|------|---------|
|      |             |         |           | B                       | U    | G       |
| FL   | (0°-30°)    | 758.2   | 3.8       |                         |      |         |
| FM   | (30°-60°)   | 12175.9 | 60.3      |                         |      |         |
| FH   | (60°-80°)   | 6975.3  | 34.6      |                         |      | G3/7500 |
| FVH  | (80°-90°)   | 192.9   | 1.0       |                         |      | G2/225  |
| BL   | (0°-30°)    | 19.3    | 0.1       | B0/110                  |      |         |
| BM   | (30°-60°)   | 32.8    | 0.2       | B0/220                  |      |         |
| BH   | (60°-80°)   | 30.4    | 0.2       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 3.6     | 0.0       |                         |      | G0/10   |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |         |

**BUG Rating: B0-U0-G3**

Type II Short





REPORT NUMBER: P1047714

CATALOG NUMBER: GALN-SA5B-727-U-T2BC

**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 64°     | 65°     | 75°     | 85°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0°    | 123.6   | 123.6   | 123.6   | 123.6   | 123.6   | 123.6   | 123.6   | 123.6   | 123.6   | 123.6   | 123.6  |
| 2.5°  | 150.0   | 151.4   | 148.6   | 143.0   | 138.9   | 138.9   | 137.5   | 133.3   | 133.3   | 129.2   | 126.4  |
| 5°    | 209.7   | 206.9   | 201.4   | 190.3   | 180.5   | 170.8   | 161.1   | 151.4   | 150.0   | 137.5   | 129.2  |
| 7.5°  | 343.0   | 345.8   | 327.7   | 293.0   | 263.9   | 226.4   | 191.6   | 170.8   | 168.0   | 147.2   | 130.5  |
| 10°   | 752.7   | 731.9   | 690.2   | 555.5   | 456.9   | 344.4   | 255.5   | 198.6   | 195.8   | 158.3   | 133.3  |
| 12.5° | 1372.1  | 1355.4  | 1279.0  | 1140.2  | 886.0   | 616.6   | 373.6   | 245.8   | 237.5   | 168.0   | 134.7  |
| 15°   | 1977.6  | 1951.2  | 1909.5  | 1769.3  | 1472.1  | 1105.4  | 611.0   | 336.1   | 313.9   | 181.9   | 133.3  |
| 17.5° | 2363.6  | 2367.8  | 2330.3  | 2270.6  | 2079.0  | 1635.9  | 1055.4  | 501.3   | 458.3   | 206.9   | 130.5  |
| 20°   | 2701.1  | 2691.4  | 2712.2  | 2680.3  | 2545.6  | 2223.4  | 1536.0  | 794.4   | 720.8   | 247.2   | 131.9  |
| 22.5° | 3090.0  | 3113.6  | 3128.8  | 3121.9  | 2973.3  | 2698.3  | 2081.7  | 1188.8  | 1095.7  | 320.8   | 136.1  |
| 25°   | 3610.7  | 3608.0  | 3609.4  | 3591.3  | 3446.9  | 3141.3  | 2628.9  | 1679.0  | 1584.6  | 440.2   | 145.8  |
| 27.5° | 4156.5  | 4173.2  | 4180.1  | 4114.9  | 3926.0  | 3626.0  | 3135.8  | 2215.1  | 2104.0  | 631.9   | 158.3  |
| 30°   | 4902.3  | 4888.4  | 4856.4  | 4723.1  | 4494.0  | 4121.8  | 3635.7  | 2777.5  | 2660.8  | 899.9   | 177.8  |
| 32.5° | 5907.7  | 5892.5  | 5731.4  | 5436.9  | 5093.9  | 4638.4  | 4138.5  | 3341.3  | 3199.7  | 1234.6  | 204.1  |
| 35°   | 7564.5  | 7588.1  | 7192.3  | 6429.9  | 5814.7  | 5259.2  | 4695.4  | 3902.4  | 3777.4  | 1647.1  | 240.3  |
| 37.5° | 10101.7 | 9972.6  | 9435.1  | 8088.1  | 6763.2  | 6034.1  | 5227.2  | 4469.0  | 4360.7  | 2155.3  | 287.5  |
| 40°   | 12566.8 | 12439.0 | 12283.5 | 11007.2 | 8411.6  | 6888.2  | 5971.6  | 5134.2  | 4993.9  | 2728.9  | 356.9  |
| 42.5° | 15158.2 | 15087.4 | 15080.4 | 14118.0 | 11419.7 | 8231.1  | 6867.4  | 5913.3  | 5793.9  | 3358.0  | 470.8  |
| 45°   | 16994.1 | 16923.3 | 17071.9 | 17239.9 | 15516.5 | 11108.6 | 8426.9  | 6925.7  | 6752.1  | 4121.8  | 652.7  |
| 47.5° | 17241.3 | 17244.1 | 17641.3 | 18167.6 | 18560.6 | 15559.5 | 10504.5 | 8267.2  | 8056.1  | 5214.7  | 958.2  |
| 50°   | 16419.2 | 16451.1 | 17083.0 | 18024.6 | 19082.8 | 19293.9 | 14168.0 | 10214.2 | 9901.8  | 6510.4  | 1391.5 |
| 52.5° | 14854.0 | 14890.1 | 15770.6 | 17319.1 | 18602.3 | 20191.0 | 18481.4 | 12761.2 | 12401.5 | 8126.9  | 2002.6 |
| 55°   | 13444.5 | 13466.7 | 14476.3 | 16433.0 | 18023.2 | 19703.5 | 21042.3 | 16162.2 | 15690.1 | 10115.6 | 2605.3 |
| 57.5° | 12048.8 | 11997.4 | 12654.3 | 14894.3 | 17924.6 | 19105.0 | 21420.0 | 20038.2 | 19517.5 | 12289.0 | 3074.7 |
| 60°   | 10182.3 | 10096.2 | 10623.9 | 12048.8 | 16627.5 | 19498.0 | 20713.2 | 22182.5 | 22064.4 | 15315.1 | 3437.1 |
| 61°   | 9108.8  | 9072.7  | 9603.2  | 10825.3 | 15535.9 | 19398.0 | 20543.7 | 22272.7 | 22285.2 | 16746.9 | 3599.6 |
| 62.5° | 6504.9  | 6607.7  | 7418.7  | 9007.4  | 13012.6 | 18749.5 | 20566.0 | 21993.6 | 22117.2 | 18649.5 | 4020.4 |
| 65°   | 2891.4  | 3056.6  | 3687.1  | 4980.0  | 7567.3  | 15597.0 | 20368.8 | 21381.2 | 21320.0 | 19171.7 | 5470.3 |
| 67.5° | 1715.1  | 1740.1  | 2054.0  | 2821.9  | 4007.9  | 8389.4  | 17974.6 | 20571.5 | 20489.6 | 16690.0 | 6806.3 |
| 70°   | 1351.3  | 1363.7  | 1463.7  | 1770.7  | 2326.2  | 3213.6  | 10258.7 | 17798.2 | 18155.1 | 13533.3 | 6663.2 |
| 72.5° | 1281.8  | 1279.0  | 1292.9  | 1347.1  | 1465.1  | 1594.3  | 3971.8  | 11830.7 | 12557.1 | 9746.2  | 5586.9 |
| 75°   | 1265.1  | 1259.6  | 1245.7  | 1224.9  | 1061.0  | 938.8   | 1230.4  | 5232.8  | 5653.6  | 6659.0  | 4206.5 |
| 77.5° | 1227.7  | 1229.0  | 1231.8  | 1174.9  | 909.6   | 663.8   | 595.8   | 1679.0  | 2065.1  | 4226.0  | 2990.0 |
| 80°   | 830.5   | 843.0   | 863.8   | 841.6   | 818.0   | 480.5   | 420.8   | 597.2   | 605.5   | 2372.0  | 1974.8 |
| 82.5° | 420.8   | 420.8   | 411.1   | 366.6   | 316.6   | 312.5   | 334.7   | 433.3   | 438.8   | 1199.9  | 929.1  |
| 85°   | 254.1   | 268.0   | 273.6   | 248.6   | 227.8   | 209.7   | 255.5   | 344.4   | 356.9   | 465.2   | 216.6  |
| 87.5° | 56.9    | 58.3    | 63.9    | 84.7    | 123.6   | 168.0   | 237.5   | 315.2   | 320.8   | 298.6   | 26.4   |
| 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: P1047714

CATALOG NUMBER: GALN-SA5B-727-U-T2BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 123.6  | 123.6 | 123.6 | 123.6 | 123.6 | 123.6 | 123.6 | 123.6 | 123.6 | 123.6 | 123.6 |
| 2.5°  | 125.0  | 122.2 | 120.8 | 116.7 | 112.5 | 108.3 | 105.5 | 104.2 | 105.5 | 106.9 | 106.9 |
| 5°    | 123.6  | 119.4 | 112.5 | 105.5 | 100.0 | 94.4  | 88.9  | 87.5  | 87.5  | 88.9  | 88.9  |
| 7.5°  | 123.6  | 116.7 | 106.9 | 98.6  | 90.3  | 81.9  | 77.8  | 75.0  | 76.4  | 76.4  | 76.4  |
| 10°   | 123.6  | 115.3 | 102.8 | 90.3  | 80.5  | 70.8  | 63.9  | 61.1  | 61.1  | 61.1  | 61.1  |
| 12.5° | 122.2  | 113.9 | 98.6  | 83.3  | 69.4  | 58.3  | 50.0  | 45.8  | 47.2  | 47.2  | 47.2  |
| 15°   | 119.4  | 109.7 | 93.0  | 70.8  | 55.5  | 44.4  | 36.1  | 31.9  | 33.3  | 36.1  | 37.5  |
| 17.5° | 115.3  | 105.5 | 83.3  | 59.7  | 44.4  | 33.3  | 25.0  | 22.2  | 23.6  | 27.8  | 27.8  |
| 20°   | 113.9  | 101.4 | 73.6  | 48.6  | 33.3  | 23.6  | 16.7  | 13.9  | 15.3  | 20.8  | 22.2  |
| 22.5° | 113.9  | 98.6  | 66.7  | 40.3  | 25.0  | 15.3  | 9.7   | 5.6   | 5.6   | 9.7   | 9.7   |
| 25°   | 115.3  | 97.2  | 61.1  | 33.3  | 18.1  | 11.1  | 5.6   | 2.8   | 5.6   | 15.3  | 18.1  |
| 27.5° | 118.0  | 95.8  | 58.3  | 27.8  | 13.9  | 9.7   | 4.2   | 9.7   | 16.7  | 16.7  | 16.7  |
| 30°   | 120.8  | 93.0  | 54.2  | 23.6  | 12.5  | 6.9   | 6.9   | 13.9  | 13.9  | 16.7  | 18.1  |
| 32.5° | 125.0  | 91.7  | 51.4  | 20.8  | 9.7   | 5.6   | 9.7   | 8.3   | 8.3   | 9.7   | 11.1  |
| 35°   | 133.3  | 93.0  | 48.6  | 20.8  | 9.7   | 6.9   | 8.3   | 4.2   | 2.8   | 2.8   | 2.8   |
| 37.5° | 144.4  | 94.4  | 44.4  | 18.1  | 8.3   | 8.3   | 4.2   | 0.0   | 0.0   | 0.0   | 0.0   |
| 40°   | 162.5  | 98.6  | 41.7  | 16.7  | 6.9   | 6.9   | 1.4   | 0.0   | 0.0   | 0.0   | 0.0   |
| 42.5° | 193.0  | 106.9 | 40.3  | 15.3  | 6.9   | 5.6   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 45°   | 254.1  | 126.4 | 37.5  | 13.9  | 6.9   | 2.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 47.5° | 365.2  | 172.2 | 36.1  | 11.1  | 4.2   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 50°   | 533.3  | 233.3 | 34.7  | 9.7   | 1.4   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 52.5° | 680.5  | 245.8 | 23.6  | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 55°   | 697.2  | 169.4 | 18.1  | 5.6   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 57.5° | 555.5  | 109.7 | 15.3  | 4.2   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 60°   | 420.8  | 83.3  | 13.9  | 1.4   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 61°   | 404.1  | 75.0  | 13.9  | 1.4   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 62.5° | 445.8  | 65.3  | 12.5  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 65°   | 724.9  | 54.2  | 11.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 67.5° | 1259.6 | 47.2  | 9.7   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 70°   | 1591.5 | 44.4  | 8.3   | 1.4   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 72.5° | 1387.4 | 40.3  | 8.3   | 2.8   | 1.4   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 75°   | 834.6  | 34.7  | 8.3   | 5.6   | 2.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 77.5° | 437.5  | 26.4  | 8.3   | 6.9   | 4.2   | 1.4   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 80°   | 212.5  | 23.6  | 9.7   | 6.9   | 5.6   | 2.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 82.5° | 83.3   | 19.4  | 11.1  | 9.7   | 6.9   | 4.2   | 1.4   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 37.5   | 16.7  | 12.5  | 11.1  | 9.7   | 5.6   | 1.4   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 19.4   | 15.3  | 13.9  | 12.5  | 9.7   | 6.9   | 2.8   | 0.0   | 0.0   | 0.0   | 0.0   |
| 90°   | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-3

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           |

REPORT NUMBER: SP1-2407-184-3

**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

REPORT NUMBER: SP1-2407-184-3

### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

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

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

| 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

TM-30-18

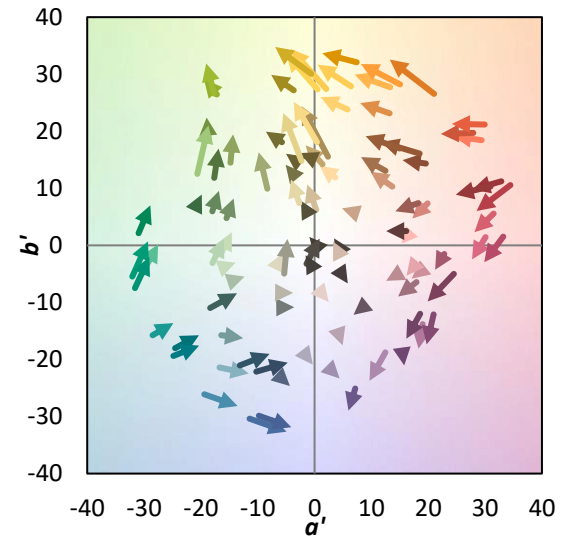
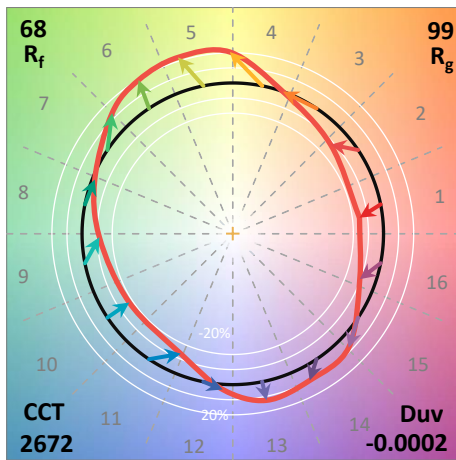
### Summary

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

### Spectral Power Distribution Comparison

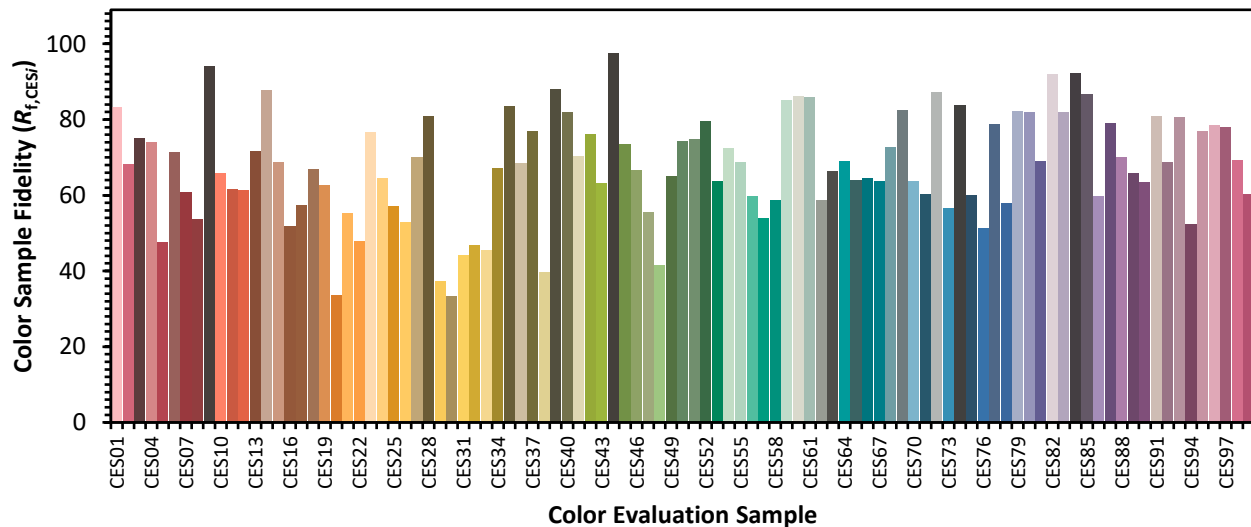


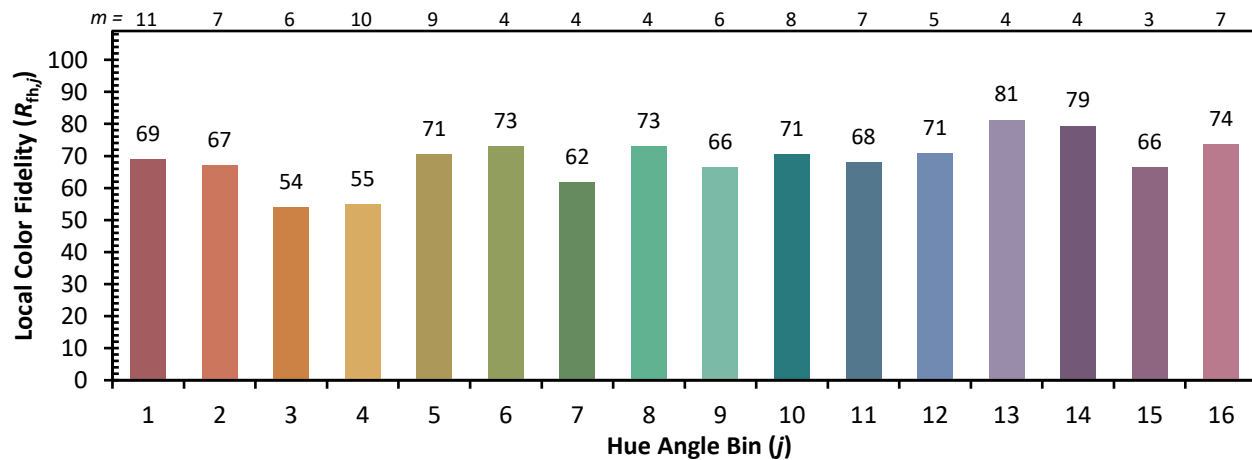
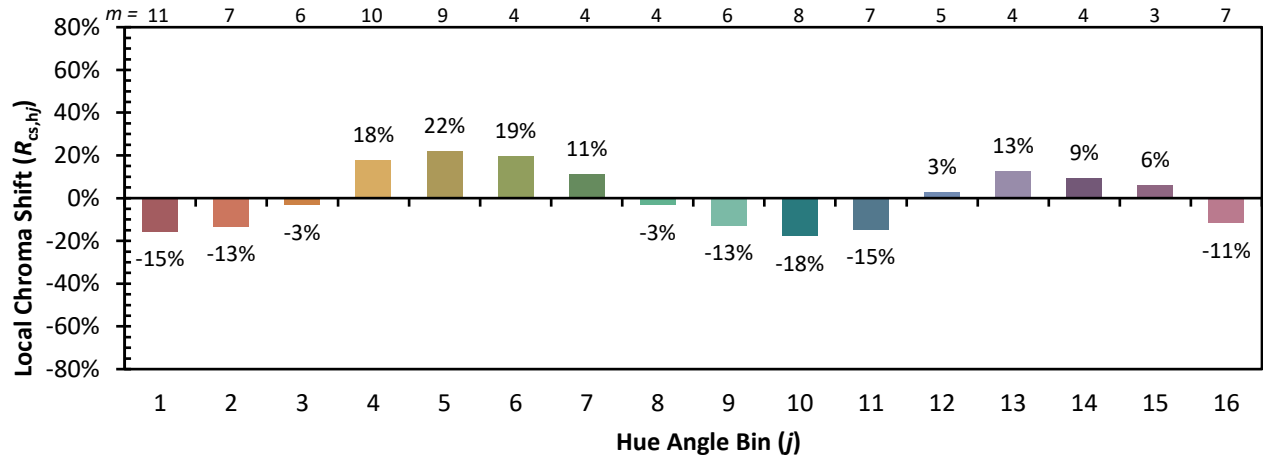
### Color Vector Graphics



**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)