

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: STREETWORKS

Report Number: P1057534

Luminaire Tested: **GAP-SA1C-740-U-T2BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1057534  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: GAP-SA1C-740-U-T2BC  
Description: GALLEON PEDESTRAIAN COMPANION 1050mA 1xLight Square PACKAGE 70CRI  
4000K FIXTURE w/ TYPE II ANGLED BACKLIGHT CONTROL  
Light Source: (14) 4000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5478.7 lumens  
Efficiency: N/A  
Efficacy: 110.9 lumens/watt  
Luminous Opening: Rectangular (W 0.67' x L: 0.67' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B0 - U0 - G1

Input Watts (W): 49.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



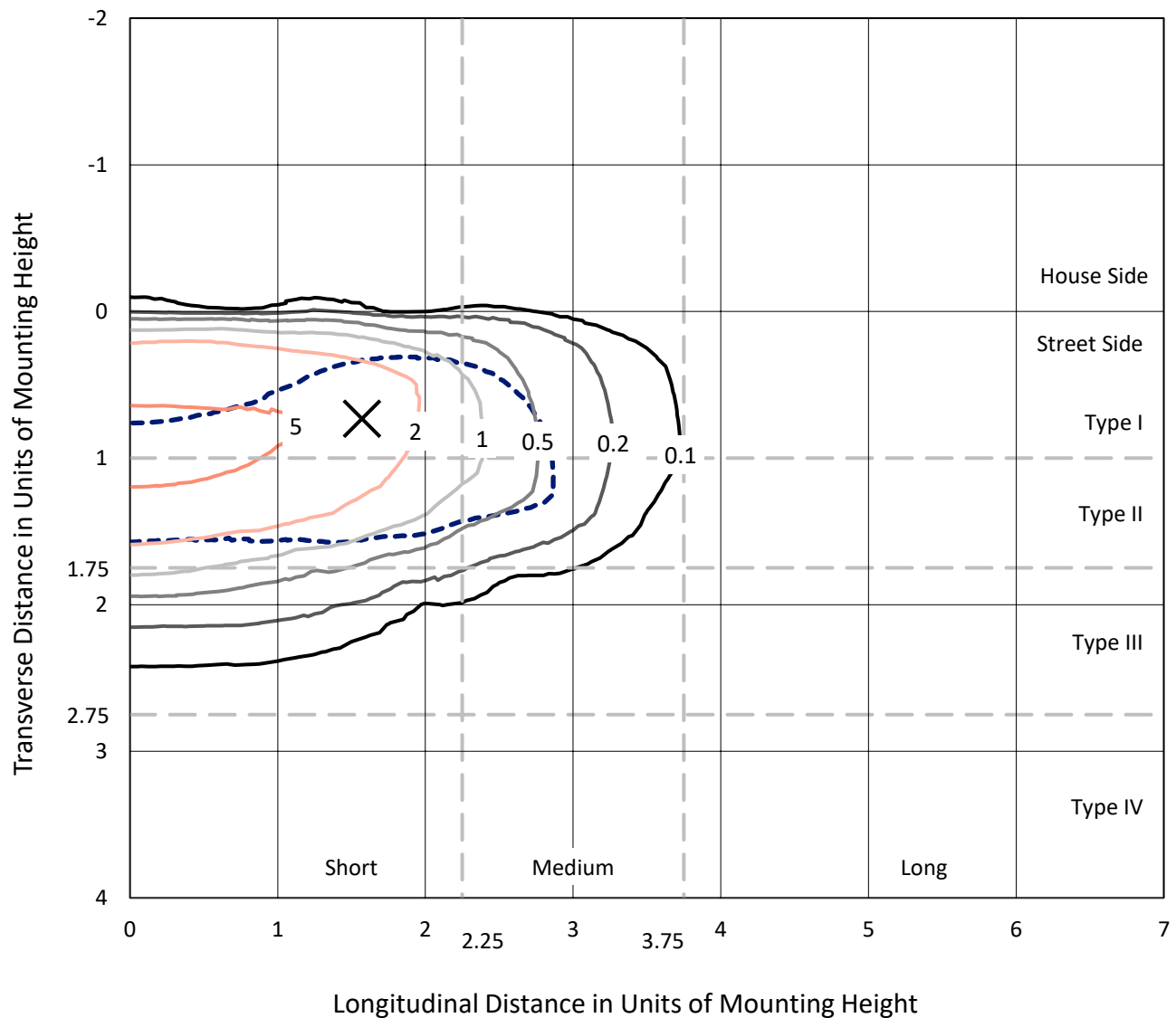
REPORT NUMBER: P1057534

CATALOG NUMBER: GAP-SA1C-740-U-T2BC

## Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

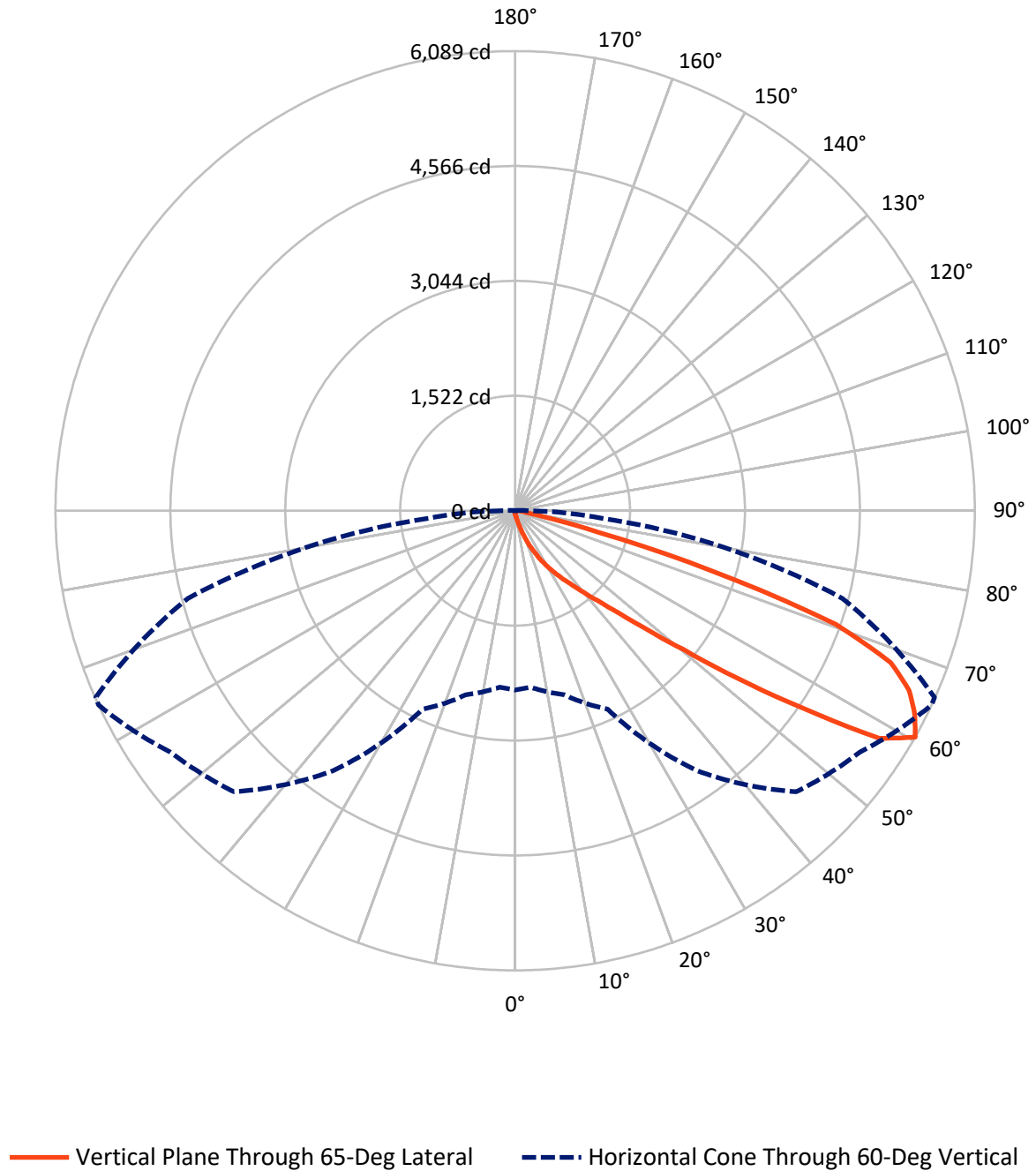


Based on 15 foot mounting height. Maximum calculated value = 7.9 fc  
 Type II - Short - N/A

REPORT NUMBER: P1057534

CATALOG NUMBER: GAP-SA1C-740-U-T2BC

## Luminous Intensity Polar Plot



REPORT NUMBER: P1057534

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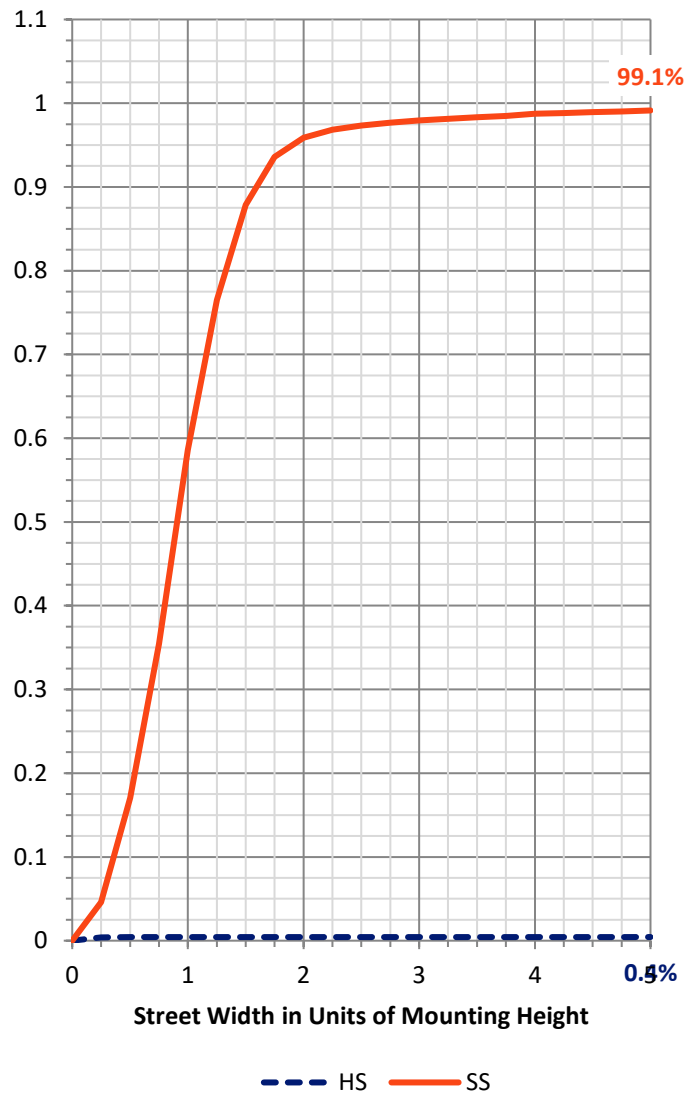
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 24.4     | 0.0    | 24.4   |
|                    | % Fixture | 0.4      | 0.0    | 0.4    |
| <b>Street Side</b> | Lumens    | 5454.3   | 0.0    | 5454.3 |
|                    | % Fixture | 99.6     | 0.0    | 99.6   |
| <b>Total</b>       | Lumens    | 5478.7   | 0.0    | 5478.7 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 7.3    | 0.1       |
| 10°-20°   | 60.5   | 1.1       |
| 20°-30°   | 185.4  | 3.4       |
| 30°-40°   | 481.9  | 8.8       |
| 40°-50°   | 1213.3 | 22.1      |
| 50°-60°   | 1758.8 | 32.1      |
| 60°-70°   | 1356.5 | 24.8      |
| 70°-80°   | 374.2  | 6.8       |
| 80°-90°   | 40.8   | 0.7       |
| 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°    | 5478.7 | 100.0     |
| 0°-180°   | 5478.7 | 100.0     |



REPORT NUMBER: P1057534

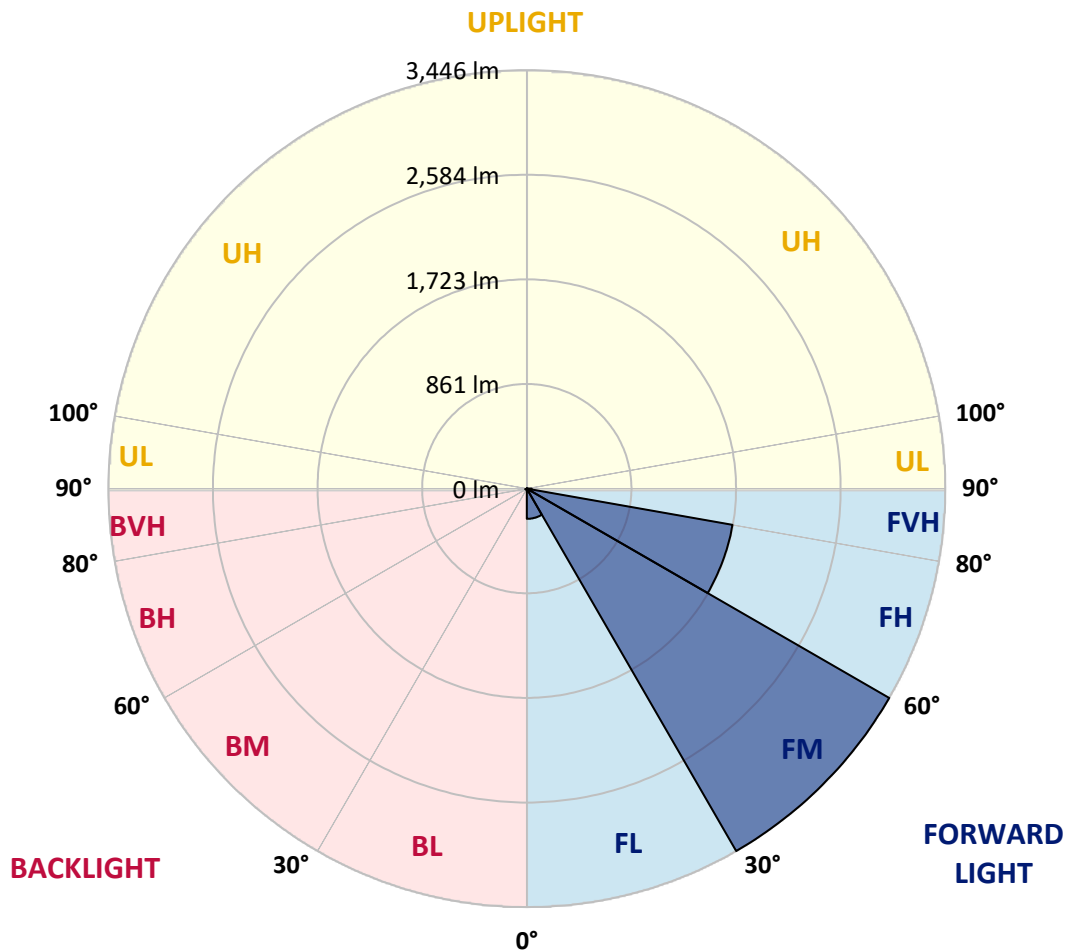
CATALOG NUMBER: GAP-SA1C-740-U-T2BC

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 248.7  | 4.5       |                         |      |         |
| FM   | (30°-60°)   | 3445.9 | 62.9      |                         |      |         |
| FH   | (60°-80°)   | 1719.8 | 31.4      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 39.9   | 0.7       |                         |      | G1/100  |
| BL   | (0°-30°)    | 4.5    | 0.1       | B0/110                  |      |         |
| BM   | (30°-60°)   | 8.0    | 0.1       | B0/220                  |      |         |
| BH   | (60°-80°)   | 10.9   | 0.2       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 1.0    | 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-G1**

Type II Short



REPORT NUMBER: P1057534

CATALOG NUMBER: GAP-SA1C-740-U-T2BC

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 66°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 39.3   | 39.3   | 39.3   | 39.3   | 39.3   | 39.3   | 39.3   | 39.3   | 39.3   | 39.3   | 39.3   |
| 2.5°  | 63.2   | 63.2   | 62.1   | 60.0   | 54.9   | 51.8   | 48.7   | 45.6   | 44.5   | 42.4   | 40.4   |
| 5°    | 114.9  | 112.8  | 111.8  | 101.5  | 91.1   | 78.7   | 66.3   | 55.9   | 54.9   | 47.6   | 41.4   |
| 7.5°  | 241.2  | 241.2  | 220.5  | 195.7  | 167.7  | 129.4  | 95.2   | 73.5   | 70.4   | 54.9   | 42.4   |
| 10°   | 394.5  | 395.5  | 382.0  | 342.7  | 292.0  | 227.8  | 154.3  | 95.2   | 93.2   | 64.2   | 43.5   |
| 12.5° | 532.1  | 531.1  | 517.7  | 489.7  | 433.8  | 353.0  | 242.3  | 137.7  | 129.4  | 74.5   | 43.5   |
| 15°   | 620.1  | 620.1  | 618.1  | 603.6  | 564.2  | 481.4  | 359.3  | 201.9  | 192.6  | 90.1   | 44.5   |
| 17.5° | 706.1  | 711.3  | 704.0  | 697.8  | 668.8  | 606.7  | 481.4  | 290.9  | 272.3  | 114.9  | 46.6   |
| 20°   | 809.6  | 814.8  | 811.7  | 802.4  | 766.1  | 711.3  | 603.6  | 393.4  | 374.8  | 156.3  | 50.7   |
| 22.5° | 929.7  | 933.8  | 927.6  | 924.5  | 879.0  | 809.6  | 716.4  | 516.6  | 488.7  | 209.1  | 55.9   |
| 25°   | 1077.8 | 1074.6 | 1072.6 | 1055.0 | 1010.5 | 934.9  | 823.1  | 630.5  | 608.8  | 279.5  | 63.2   |
| 27.5° | 1251.7 | 1247.5 | 1234.1 | 1211.3 | 1146.1 | 1063.3 | 936.9  | 751.6  | 730.9  | 364.4  | 73.5   |
| 30°   | 1486.7 | 1461.8 | 1442.2 | 1391.4 | 1304.5 | 1194.7 | 1064.3 | 870.7  | 847.9  | 465.9  | 84.9   |
| 32.5° | 1818.0 | 1810.7 | 1734.1 | 1601.6 | 1476.3 | 1344.9 | 1206.1 | 997.0  | 973.2  | 570.5  | 100.4  |
| 35°   | 2412.3 | 2378.1 | 2244.5 | 1911.2 | 1676.2 | 1533.3 | 1350.0 | 1123.3 | 1098.5 | 691.6  | 121.1  |
| 37.5° | 3080.0 | 3050.0 | 2920.6 | 2518.9 | 1979.5 | 1727.9 | 1510.5 | 1266.2 | 1239.3 | 824.1  | 147.0  |
| 40°   | 3749.9 | 3740.5 | 3691.9 | 3370.9 | 2594.5 | 1987.8 | 1722.7 | 1448.4 | 1417.3 | 957.7  | 183.2  |
| 42.5° | 4503.6 | 4476.6 | 4445.6 | 4336.9 | 3656.7 | 2508.5 | 2017.8 | 1656.5 | 1629.6 | 1122.3 | 235.0  |
| 45°   | 4742.7 | 4732.4 | 4769.6 | 4874.2 | 4769.6 | 3599.7 | 2475.4 | 1940.2 | 1913.2 | 1333.5 | 309.6  |
| 47.5° | 4662.0 | 4651.6 | 4754.1 | 4926.0 | 5165.1 | 4909.4 | 3184.6 | 2347.0 | 2297.3 | 1586.1 | 420.3  |
| 50°   | 4254.1 | 4258.2 | 4439.4 | 4783.1 | 5125.8 | 5431.2 | 4369.0 | 2888.5 | 2854.3 | 1945.3 | 569.4  |
| 52.5° | 3867.9 | 3875.1 | 4101.9 | 4541.9 | 4918.7 | 5450.9 | 5498.5 | 3676.4 | 3529.3 | 2385.3 | 753.7  |
| 55°   | 3492.1 | 3481.7 | 3653.6 | 4316.2 | 4881.5 | 5181.7 | 5853.6 | 4600.9 | 4504.6 | 2955.8 | 934.9  |
| 57.5° | 3094.5 | 3082.1 | 3172.2 | 3665.0 | 4803.8 | 5219.0 | 5760.4 | 5689.0 | 5574.1 | 3611.1 | 1080.9 |
| 60°   | 2373.9 | 2346.0 | 2524.1 | 2900.9 | 4204.4 | 5264.5 | 5576.1 | 6088.6 | 6081.4 | 4489.1 | 1154.4 |
| 62.5° | 1137.8 | 1183.4 | 1424.6 | 1833.5 | 2810.8 | 4860.7 | 5647.6 | 5940.6 | 5955.1 | 5263.5 | 1324.2 |
| 65°   | 580.8  | 591.2  | 715.4  | 1001.1 | 1487.7 | 3494.1 | 5441.6 | 5735.6 | 5713.8 | 5112.3 | 1764.2 |
| 67.5° | 391.3  | 396.5  | 454.5  | 605.7  | 863.4  | 1463.9 | 4228.2 | 5367.0 | 5351.5 | 4357.6 | 2026.1 |
| 70°   | 346.8  | 348.9  | 363.4  | 412.1  | 517.7  | 645.0  | 1936.0 | 4503.6 | 4619.5 | 3328.5 | 1850.1 |
| 72.5° | 339.6  | 339.6  | 337.5  | 340.6  | 334.4  | 349.9  | 679.2  | 2711.5 | 2880.2 | 2325.3 | 1499.1 |
| 75°   | 332.3  | 333.4  | 330.3  | 319.9  | 259.9  | 218.4  | 248.5  | 1141.9 | 1266.2 | 1530.2 | 1123.3 |
| 77.5° | 310.6  | 312.7  | 322.0  | 296.1  | 236.0  | 154.3  | 141.8  | 362.4  | 423.4  | 977.3  | 823.1  |
| 80°   | 117.0  | 117.0  | 117.0  | 107.7  | 157.4  | 117.0  | 102.5  | 148.0  | 157.4  | 550.8  | 506.3  |
| 82.5° | 85.9   | 84.9   | 80.8   | 74.5   | 63.2   | 59.0   | 83.9   | 111.8  | 111.8  | 257.8  | 192.6  |
| 85°   | 24.8   | 24.8   | 28.0   | 37.3   | 46.6   | 51.8   | 64.2   | 85.9   | 89.0   | 98.4   | 29.0   |
| 87.5° | 11.4   | 11.4   | 14.5   | 18.6   | 24.8   | 37.3   | 53.8   | 73.5   | 74.5   | 81.8   | 5.2    |
| 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: P1057534

CATALOG NUMBER: GAP-SA1C-740-U-T2BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°   | 95°  | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|-------|------|------|------|------|------|------|------|------|------|------|
| 0°    | 39.3  | 39.3 | 39.3 | 39.3 | 39.3 | 39.3 | 39.3 | 39.3 | 39.3 | 39.3 | 39.3 |
| 2.5°  | 39.3  | 38.3 | 37.3 | 36.2 | 34.2 | 32.1 | 29.0 | 28.0 | 26.9 | 26.9 | 26.9 |
| 5°    | 39.3  | 37.3 | 34.2 | 31.1 | 29.0 | 25.9 | 23.8 | 22.8 | 21.7 | 20.7 | 20.7 |
| 7.5°  | 38.3  | 35.2 | 31.1 | 28.0 | 25.9 | 22.8 | 19.7 | 18.6 | 17.6 | 17.6 | 17.6 |
| 10°   | 38.3  | 34.2 | 29.0 | 25.9 | 22.8 | 18.6 | 15.5 | 14.5 | 13.5 | 12.4 | 12.4 |
| 12.5° | 36.2  | 32.1 | 26.9 | 22.8 | 18.6 | 14.5 | 11.4 | 9.3  | 8.3  | 8.3  | 8.3  |
| 15°   | 35.2  | 31.1 | 24.8 | 19.7 | 14.5 | 10.4 | 7.2  | 5.2  | 4.1  | 5.2  | 5.2  |
| 17.5° | 34.2  | 28.0 | 22.8 | 15.5 | 10.4 | 6.2  | 3.1  | 1.0  | 1.0  | 1.0  | 1.0  |
| 20°   | 34.2  | 26.9 | 19.7 | 12.4 | 7.2  | 3.1  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 22.5° | 35.2  | 26.9 | 17.6 | 10.4 | 4.1  | 2.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 25°   | 36.2  | 25.9 | 15.5 | 7.2  | 3.1  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 27.5° | 37.3  | 24.8 | 13.5 | 5.2  | 2.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 30°   | 39.3  | 23.8 | 11.4 | 4.1  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 32.5° | 42.4  | 22.8 | 9.3  | 3.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 35°   | 45.6  | 20.7 | 6.2  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 37.5° | 49.7  | 20.7 | 4.1  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 40°   | 55.9  | 20.7 | 4.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 42.5° | 66.3  | 21.7 | 3.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 45°   | 85.9  | 28.0 | 3.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 47.5° | 122.2 | 42.4 | 3.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 50°   | 172.9 | 61.1 | 3.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 52.5° | 216.4 | 64.2 | 3.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 55°   | 224.7 | 45.6 | 3.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 57.5° | 193.6 | 37.3 | 3.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 60°   | 166.7 | 24.8 | 3.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 62.5° | 200.8 | 20.7 | 3.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 65°   | 319.9 | 19.7 | 3.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 67.5° | 498.0 | 19.7 | 3.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 70°   | 558.0 | 19.7 | 3.1  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 72.5° | 431.7 | 15.5 | 3.1  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 75°   | 271.2 | 12.4 | 3.1  | 2.1  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 77.5° | 148.0 | 8.3  | 3.1  | 2.1  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 80°   | 55.9  | 6.2  | 3.1  | 2.1  | 2.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 82.5° | 19.7  | 5.2  | 4.1  | 3.1  | 2.1  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 85°   | 7.2   | 4.1  | 4.1  | 3.1  | 3.1  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 87.5° | 4.1   | 4.1  | 4.1  | 4.1  | 3.1  | 1.0  | 0.0  | 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: SP1-2407-184-1

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-740-U-5WQ

Data in this report applies to families of products including GSS-SB1A-740-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-1  
 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-740-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 4000K CCT 26 LEDS

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 3949     | CRI (Ra): | 70.7 |      |       |
| CIE u':                   | 0.2248   | R1:       | 68.0 | R9:  | -36.7 |
| CIE v':                   | 0.5053   | R2:       | 76.0 | R10: | 45.1  |
| Duv:                      | 0.0022   | R3:       | 84.3 | R11: | 70.7  |
| CIE x:                    | 0.3844   | R4:       | 72.0 | R12: | 47.1  |
| CIE y:                    | 0.3840   | R5:       | 68.6 | R13: | 68.5  |
| CIE z:                    | 0.2316   | R6:       | 68.3 | R14: | 91.1  |
| Peak Wavelength (nm):     | 440      | R7:       | 77.9 | R15: | 58.7  |
| Dominant Wavelength (nm): | 578      | R8:       | 50.3 |      |       |
| Purity:                   | 30.60026 |           |      |      |       |
| Rf:                       | 71.8     |           |      |      |       |
| Rg:                       | 96.5     |           |      |      |       |



### Test Conditions

Stabilization Time: 34M  
 Operation Time: 1H 34M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-1

| 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: SP1-2407-184-1

**CIE 1931 Chromaticity Diagram**

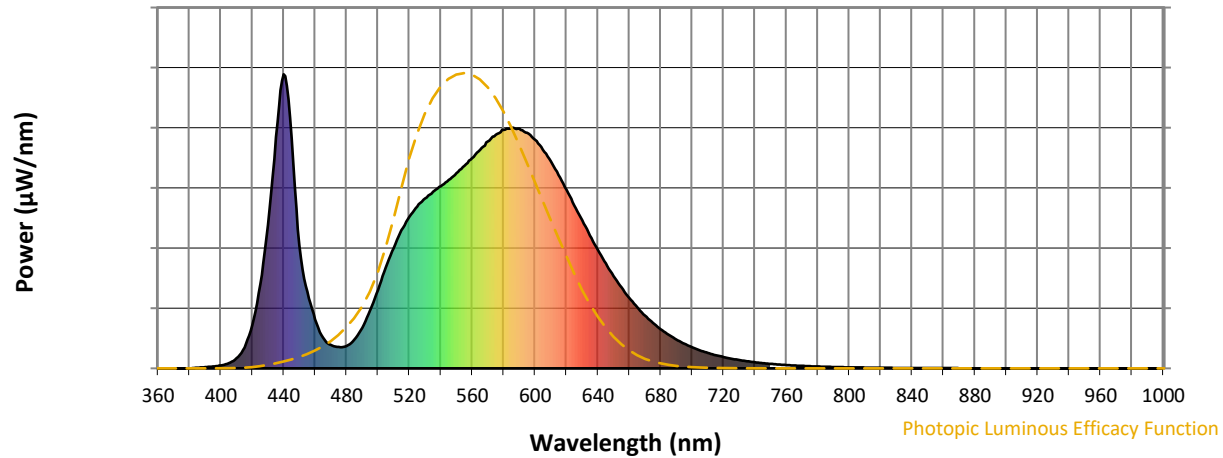


**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2407-184-1

**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               | 139                                  | NR                             | 620               | 607                                  | NR                             | 750               | 15                                   | NR                             | 880               | 0                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 198                                  | NR                             | 625               | 554                                  | NR                             | 755               | 13                                   | NR                             | 885               | 0                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 267                                  | NR                             | 630               | 504                                  | NR                             | 760               | 11                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 343                                  | NR                             | 635               | 452                                  | NR                             | 765               | 10                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 410                                  | NR                             | 640               | 403                                  | NR                             | 770               | 8                                    | NR                             | 900               | 0                                    | NR                             |
| 385               | 2                                    | NR                             | 515               | 470                                  | NR                             | 645               | 357                                  | NR                             | 775               | 7                                    | NR                             | 905               | 0                                    | NR                             |
| 390               | 4                                    | NR                             | 520               | 516                                  | NR                             | 650               | 314                                  | NR                             | 780               | 6                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 7                                    | NR                             | 525               | 550                                  | NR                             | 655               | 275                                  | NR                             | 785               | 5                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 10                                   | NR                             | 530               | 578                                  | NR                             | 660               | 240                                  | NR                             | 790               | 5                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 17                                   | NR                             | 535               | 601                                  | NR                             | 665               | 208                                  | NR                             | 795               | 4                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 35                                   | NR                             | 540               | 620                                  | NR                             | 670               | 179                                  | NR                             | 800               | 4                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 70                                   | NR                             | 545               | 641                                  | NR                             | 675               | 155                                  | NR                             | 805               | 3                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 147                                  | NR                             | 550               | 664                                  | NR                             | 680               | 133                                  | NR                             | 810               | 3                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 285                                  | NR                             | 555               | 689                                  | NR                             | 685               | 114                                  | NR                             | 815               | 2                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 487                                  | NR                             | 560               | 715                                  | NR                             | 690               | 98                                   | NR                             | 820               | 2                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 787                                  | NR                             | 565               | 743                                  | NR                             | 695               | 84                                   | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 1000                                 | NR                             | 570               | 771                                  | NR                             | 700               | 72                                   | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 783                                  | NR                             | 575               | 794                                  | NR                             | 705               | 61                                   | NR                             | 835               | 1                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 417                                  | NR                             | 580               | 811                                  | NR                             | 710               | 52                                   | NR                             | 840               | 1                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 261                                  | NR                             | 585               | 817                                  | NR                             | 715               | 45                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 167                                  | NR                             | 590               | 815                                  | NR                             | 720               | 39                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 104                                  | NR                             | 595               | 801                                  | NR                             | 725               | 33                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 79                                   | NR                             | 600               | 777                                  | NR                             | 730               | 28                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 73                                   | NR                             | 605               | 744                                  | NR                             | 735               | 24                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 76                                   | NR                             | 610               | 704                                  | NR                             | 740               | 21                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 98                                   | NR                             | 615               | 657                                  | NR                             | 745               | 18                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

REPORT NUMBER: SP1-2407-184-1

### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.47

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 139                      | NR            | 620    | 607                      | NR            | 750    | 15                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 198                      | NR            | 625    | 554                      | NR            | 755    | 13                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 267                      | NR            | 630    | 504                      | NR            | 760    | 11                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 343                      | NR            | 635    | 452                      | NR            | 765    | 10                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 410                      | NR            | 640    | 403                      | NR            | 770    | 8                        | NR            | 900    | 0                        | NR            |
| 385    | 2                        | NR            | 515    | 470                      | NR            | 645    | 357                      | NR            | 775    | 7                        | NR            | 905    | 0                        | NR            |
| 390    | 4                        | NR            | 520    | 516                      | NR            | 650    | 314                      | NR            | 780    | 6                        | NR            | 910    | 0                        | NR            |
| 395    | 7                        | NR            | 525    | 550                      | NR            | 655    | 275                      | NR            | 785    | 5                        | NR            | 915    | 0                        | NR            |
| 400    | 10                       | NR            | 530    | 578                      | NR            | 660    | 240                      | NR            | 790    | 5                        | NR            | 920    | 0                        | NR            |
| 405    | 17                       | NR            | 535    | 601                      | NR            | 665    | 208                      | NR            | 795    | 4                        | NR            | 925    | 0                        | NR            |
| 410    | 35                       | NR            | 540    | 620                      | NR            | 670    | 179                      | NR            | 800    | 4                        | NR            | 930    | 0                        | NR            |
| 415    | 70                       | NR            | 545    | 641                      | NR            | 675    | 155                      | NR            | 805    | 3                        | NR            | 935    | 0                        | NR            |
| 420    | 147                      | NR            | 550    | 664                      | NR            | 680    | 133                      | NR            | 810    | 3                        | NR            | 940    | 0                        | NR            |
| 425    | 285                      | NR            | 555    | 689                      | NR            | 685    | 114                      | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 487                      | NR            | 560    | 715                      | NR            | 690    | 98                       | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 787                      | NR            | 565    | 743                      | NR            | 695    | 84                       | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 1000                     | NR            | 570    | 771                      | NR            | 700    | 72                       | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 783                      | NR            | 575    | 794                      | NR            | 705    | 61                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 417                      | NR            | 580    | 811                      | NR            | 710    | 52                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 261                      | NR            | 585    | 817                      | NR            | 715    | 45                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 167                      | NR            | 590    | 815                      | NR            | 720    | 39                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 104                      | NR            | 595    | 801                      | NR            | 725    | 33                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 79                       | NR            | 600    | 777                      | NR            | 730    | 28                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 73                       | NR            | 605    | 744                      | NR            | 735    | 24                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 76                       | NR            | 610    | 704                      | NR            | 740    | 21                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 98                       | NR            | 615    | 657                      | NR            | 745    | 18                       | NR            | 875    | 1                        | NR            |        |                          |               |

REPORT NUMBER: SP1-2407-184-1

### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.78

| 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       | 139                         | NR               | 620       | 607                         | NR               | 750       | 15                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 198                         | NR               | 625       | 554                         | NR               | 755       | 13                          | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 267                         | NR               | 630       | 504                         | NR               | 760       | 11                          | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 343                         | NR               | 635       | 452                         | NR               | 765       | 10                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 410                         | NR               | 640       | 403                         | NR               | 770       | 8                           | NR               | 900       | 0                           | NR               |
| 385       | 2                           | NR               | 515       | 470                         | NR               | 645       | 357                         | NR               | 775       | 7                           | NR               | 905       | 0                           | NR               |
| 390       | 4                           | NR               | 520       | 516                         | NR               | 650       | 314                         | NR               | 780       | 6                           | NR               | 910       | 0                           | NR               |
| 395       | 7                           | NR               | 525       | 550                         | NR               | 655       | 275                         | NR               | 785       | 5                           | NR               | 915       | 0                           | NR               |
| 400       | 10                          | NR               | 530       | 578                         | NR               | 660       | 240                         | NR               | 790       | 5                           | NR               | 920       | 0                           | NR               |
| 405       | 17                          | NR               | 535       | 601                         | NR               | 665       | 208                         | NR               | 795       | 4                           | NR               | 925       | 0                           | NR               |
| 410       | 35                          | NR               | 540       | 620                         | NR               | 670       | 179                         | NR               | 800       | 4                           | NR               | 930       | 0                           | NR               |
| 415       | 70                          | NR               | 545       | 641                         | NR               | 675       | 155                         | NR               | 805       | 3                           | NR               | 935       | 0                           | NR               |
| 420       | 147                         | NR               | 550       | 664                         | NR               | 680       | 133                         | NR               | 810       | 3                           | NR               | 940       | 0                           | NR               |
| 425       | 285                         | NR               | 555       | 689                         | NR               | 685       | 114                         | NR               | 815       | 2                           | NR               | 945       | 0                           | NR               |
| 430       | 487                         | NR               | 560       | 715                         | NR               | 690       | 98                          | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 787                         | NR               | 565       | 743                         | NR               | 695       | 84                          | NR               | 825       | 2                           | NR               | 955       | 0                           | NR               |
| 440       | 1000                        | NR               | 570       | 771                         | NR               | 700       | 72                          | NR               | 830       | 2                           | NR               | 960       | 0                           | NR               |
| 445       | 783                         | NR               | 575       | 794                         | NR               | 705       | 61                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 417                         | NR               | 580       | 811                         | NR               | 710       | 52                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 261                         | NR               | 585       | 817                         | NR               | 715       | 45                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 167                         | NR               | 590       | 815                         | NR               | 720       | 39                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 104                         | NR               | 595       | 801                         | NR               | 725       | 33                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 79                          | NR               | 600       | 777                         | NR               | 730       | 28                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 73                          | NR               | 605       | 744                         | NR               | 735       | 24                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 76                          | NR               | 610       | 704                         | NR               | 740       | 21                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 98                          | NR               | 615       | 657                         | NR               | 745       | 18                          | NR               | 875       | 1                           | NR               |           |                             |                  |

REPORT NUMBER: SP1-2407-184-1

TM-30-18

### Summary

$R_f = 71.8$   
 $R_g = 96.5$   
 $CIE R_a = 70.7$   
 $R_g = -36.7$



### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 56 | CES51 = 86 | CES76 = 48 |
| CES02 = 61 | CES27 = 79 | CES52 = 88 | CES77 = 71 |
| CES03 = 30 | CES28 = 80 | CES53 = 73 | CES78 = 52 |
| CES04 = 70 | CES29 = 49 | CES54 = 79 | CES79 = 79 |
| CES05 = 47 | CES30 = 53 | CES55 = 77 | CES80 = 77 |
| CES06 = 50 | CES31 = 55 | CES56 = 67 | CES81 = 75 |
| CES07 = 40 | CES32 = 53 | CES57 = 64 | CES82 = 90 |
| CES08 = 39 | CES33 = 59 | CES58 = 67 | CES83 = 84 |
| CES09 = 29 | CES34 = 67 | CES59 = 87 | CES84 = 89 |
| CES10 = 74 | CES35 = 82 | CES60 = 91 | CES85 = 86 |
| CES11 = 57 | CES36 = 86 | CES61 = 87 | CES86 = 71 |
| CES12 = 63 | CES37 = 76 | CES62 = 76 | CES87 = 78 |
| CES13 = 42 | CES38 = 62 | CES63 = 73 | CES88 = 76 |
| CES14 = 74 | CES39 = 91 | CES64 = 71 | CES89 = 72 |
| CES15 = 71 | CES40 = 84 | CES65 = 64 | CES90 = 72 |
| CES16 = 46 | CES41 = 81 | CES66 = 67 | CES91 = 97 |
| CES17 = 49 | CES42 = 76 | CES67 = 65 | CES92 = 66 |
| CES18 = 56 | CES43 = 71 | CES68 = 72 | CES93 = 81 |
| CES19 = 72 | CES44 = 98 | CES69 = 82 | CES94 = 55 |
| CES20 = 65 | CES45 = 80 | CES70 = 61 | CES95 = 73 |
| CES21 = 86 | CES46 = 76 | CES71 = 59 | CES96 = 78 |
| CES22 = 78 | CES47 = 71 | CES72 = 86 | CES97 = 83 |
| CES23 = 92 | CES48 = 61 | CES73 = 52 | CES98 = 72 |
| CES24 = 91 | CES49 = 76 | CES74 = 93 | CES99 = 60 |
| CES25 = 72 | CES50 = 84 | CES75 = 56 |            |



### Color Rendition by Hue-Angle Bin



**Measure Comparisons**


(END OF REPORT)