

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: P1057544

Luminaire Tested: **GAP-SA1A-750-U-T2BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1057544  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: GAP-SA1A-750-U-T2BC  
Description: GALLEON PEDESTRAIAN COMPANION 615mA 1xLight Square PACKAGE 70CRI  
5000K FIXTURE w/ TYPE II ANGLED BACKLIGHT CONTROL  
Light Source: (14) 5000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3547.8 lumens  
Efficiency: N/A  
Efficacy: 120.7 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): 29.4  
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

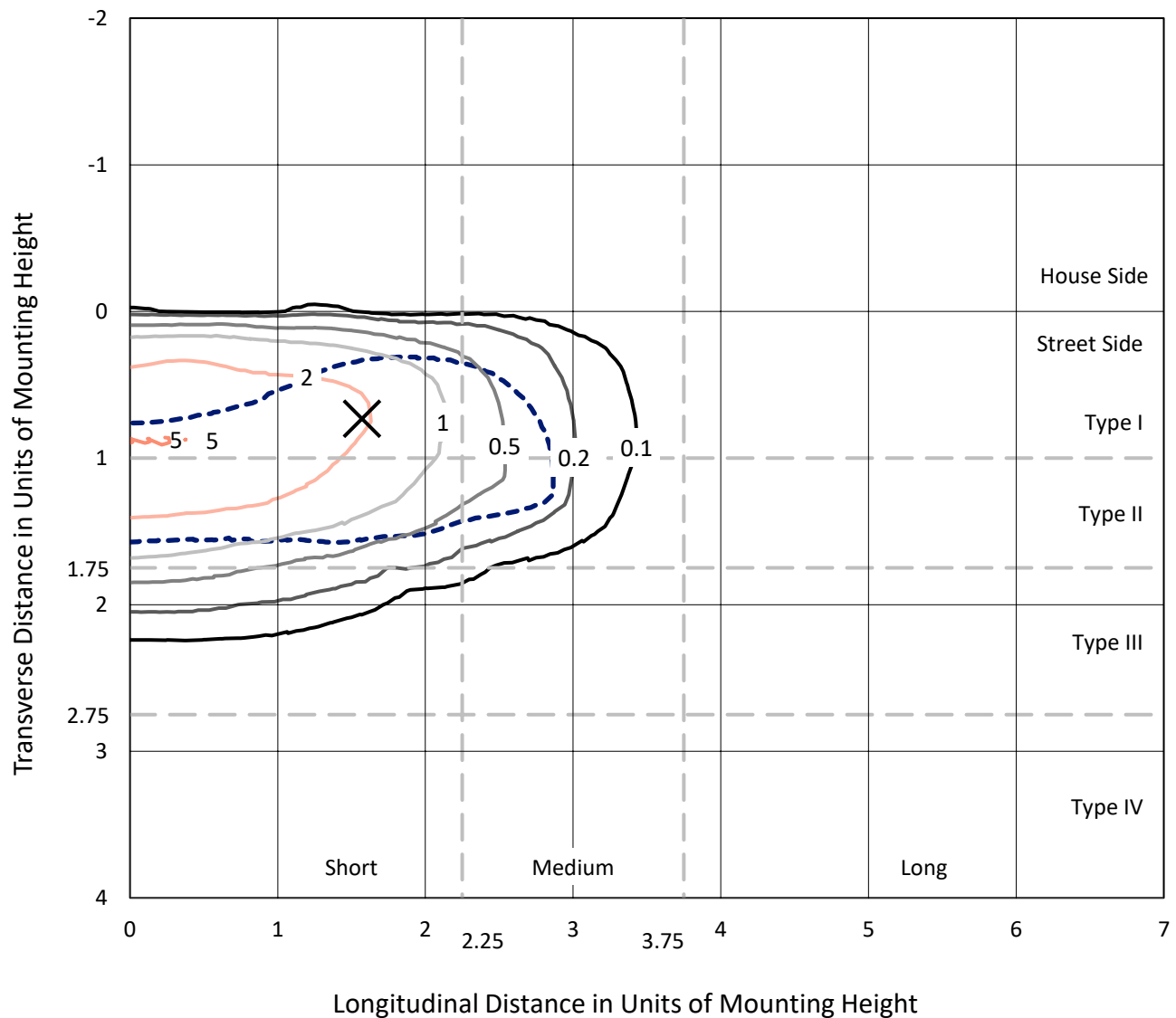


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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

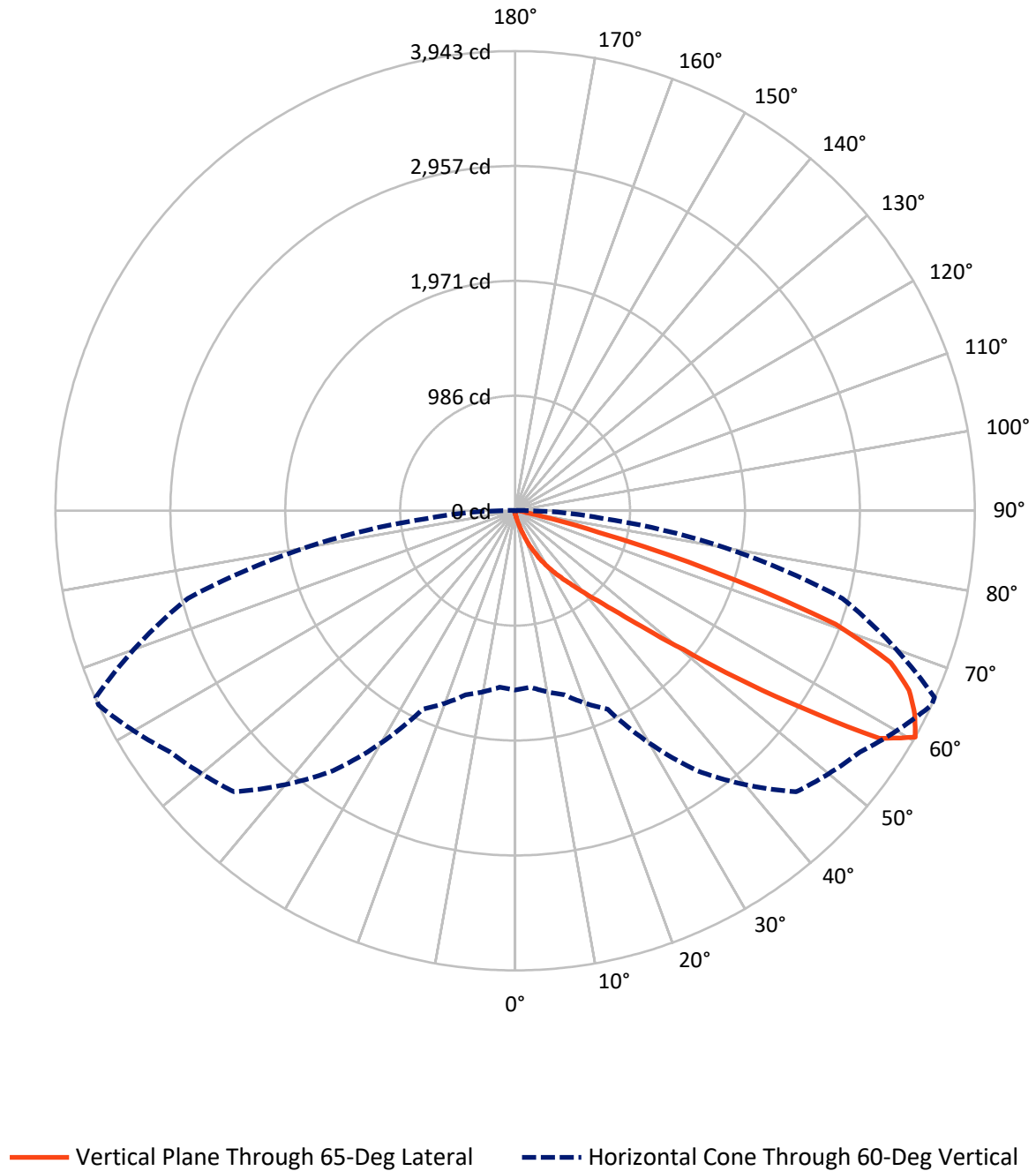


Based on 15 foot mounting height. Maximum calculated value = 5.1 fc  
 Type II - Short - N/A

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## Luminous Intensity Polar Plot



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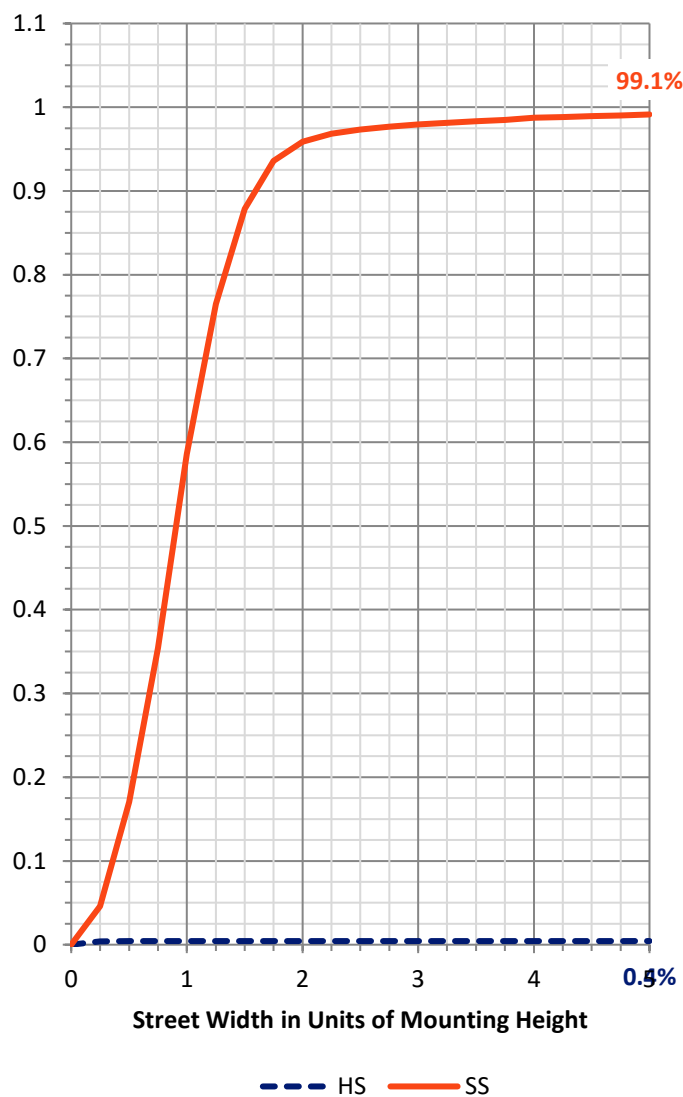
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 15.8     | 0.0    | 15.8   |
|                    | % Fixture | 0.4      | 0.0    | 0.4    |
| <b>Street Side</b> | Lumens    | 3532.0   | 0.0    | 3532.0 |
|                    | % Fixture | 99.6     | 0.0    | 99.6   |
| <b>Total</b>       | Lumens    | 3547.8   | 0.0    | 3547.8 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 4.7    | 0.1       |
| 10°-20°   | 39.2   | 1.1       |
| 20°-30°   | 120.1  | 3.4       |
| 30°-40°   | 312.1  | 8.8       |
| 40°-50°   | 785.7  | 22.1      |
| 50°-60°   | 1138.9 | 32.1      |
| 60°-70°   | 878.4  | 24.8      |
| 70°-80°   | 242.3  | 6.8       |
| 80°-90°   | 26.5   | 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°    | 3547.8 | 100.0     |
| 0°-180°   | 3547.8 | 100.0     |



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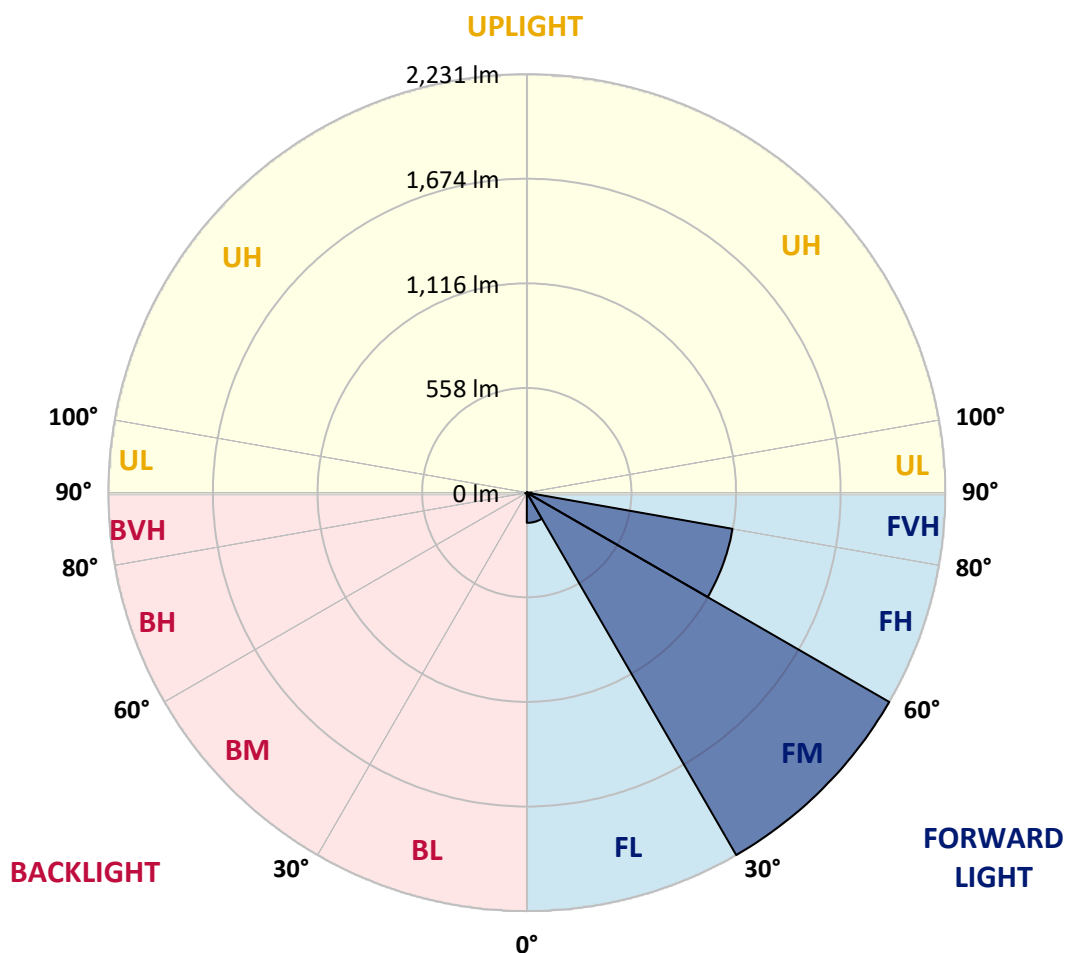
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 161.1  | 4.5       |                         |      |         |
| FM   | (30°-60°)   | 2231.5 | 62.9      |                         |      |         |
| FH   | (60°-80°)   | 1113.7 | 31.4      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 25.8   | 0.7       |                         |      | G1/100  |
| BL   | (0°-30°)    | 2.9    | 0.1       | B0/110                  |      |         |
| BM   | (30°-60°)   | 5.2    | 0.1       | B0/220                  |      |         |
| BH   | (60°-80°)   | 7.1    | 0.2       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 0.6    | 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-G1**

Type II Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 66°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 25.5   | 25.5   | 25.5   | 25.5   | 25.5   | 25.5   | 25.5   | 25.5   | 25.5   | 25.5   | 25.5   |
| 2.5°  | 40.9   | 40.9   | 40.2   | 38.9   | 35.5   | 33.5   | 31.5   | 29.5   | 28.8   | 27.5   | 26.1   |
| 5°    | 74.4   | 73.1   | 72.4   | 65.7   | 59.0   | 51.0   | 42.9   | 36.2   | 35.5   | 30.8   | 26.8   |
| 7.5°  | 156.2  | 156.2  | 142.8  | 126.7  | 108.6  | 83.8   | 61.7   | 47.6   | 45.6   | 35.5   | 27.5   |
| 10°   | 255.4  | 256.1  | 247.4  | 221.9  | 189.1  | 147.5  | 99.9   | 61.7   | 60.3   | 41.6   | 28.2   |
| 12.5° | 344.6  | 343.9  | 335.2  | 317.1  | 280.9  | 228.6  | 156.9  | 89.2   | 83.8   | 48.3   | 28.2   |
| 15°   | 401.6  | 401.6  | 400.2  | 390.9  | 365.4  | 311.8  | 232.6  | 130.7  | 124.7  | 58.3   | 28.8   |
| 17.5° | 457.2  | 460.6  | 455.9  | 451.9  | 433.1  | 392.9  | 311.8  | 188.4  | 176.3  | 74.4   | 30.2   |
| 20°   | 524.3  | 527.6  | 525.6  | 519.6  | 496.1  | 460.6  | 390.9  | 254.8  | 242.7  | 101.2  | 32.9   |
| 22.5° | 602.0  | 604.7  | 600.7  | 598.7  | 569.2  | 524.3  | 463.9  | 334.5  | 316.4  | 135.4  | 36.2   |
| 25°   | 697.9  | 695.9  | 694.6  | 683.2  | 654.3  | 605.4  | 533.0  | 408.3  | 394.2  | 181.0  | 40.9   |
| 27.5° | 810.6  | 807.9  | 799.2  | 784.4  | 742.2  | 688.5  | 606.7  | 486.7  | 473.3  | 236.0  | 47.6   |
| 30°   | 962.7  | 946.6  | 933.9  | 901.1  | 844.7  | 773.7  | 689.2  | 563.8  | 549.1  | 301.7  | 55.0   |
| 32.5° | 1177.3 | 1172.6 | 1123.0 | 1037.2 | 956.0  | 870.9  | 781.1  | 645.6  | 630.2  | 369.4  | 65.0   |
| 35°   | 1562.1 | 1540.0 | 1453.5 | 1237.6 | 1085.4 | 992.9  | 874.2  | 727.4  | 711.3  | 447.8  | 78.4   |
| 37.5° | 1994.5 | 1975.1 | 1891.3 | 1631.2 | 1281.9 | 1119.0 | 978.2  | 819.9  | 802.5  | 533.7  | 95.2   |
| 40°   | 2428.3 | 2422.3 | 2390.8 | 2182.9 | 1680.1 | 1287.2 | 1115.6 | 937.9  | 917.8  | 620.1  | 118.7  |
| 42.5° | 2916.4 | 2898.9 | 2878.8 | 2808.4 | 2368.0 | 1624.5 | 1306.7 | 1072.7 | 1055.3 | 726.7  | 152.2  |
| 45°   | 3071.2 | 3064.5 | 3088.7 | 3156.4 | 3088.7 | 2331.1 | 1603.0 | 1256.4 | 1239.0 | 863.5  | 200.5  |
| 47.5° | 3019.0 | 3012.3 | 3078.6 | 3189.9 | 3344.8 | 3179.2 | 2062.2 | 1519.9 | 1487.7 | 1027.1 | 272.2  |
| 50°   | 2754.8 | 2757.5 | 2874.8 | 3097.4 | 3319.3 | 3517.1 | 2829.2 | 1870.5 | 1848.4 | 1259.7 | 368.7  |
| 52.5° | 2504.7 | 2509.4 | 2656.3 | 2941.2 | 3185.2 | 3529.8 | 3560.7 | 2380.7 | 2285.5 | 1544.7 | 488.1  |
| 55°   | 2261.4 | 2254.7 | 2366.0 | 2795.0 | 3161.1 | 3355.5 | 3790.6 | 2979.4 | 2917.0 | 1914.1 | 605.4  |
| 57.5° | 2003.9 | 1995.9 | 2054.2 | 2373.3 | 3110.8 | 3379.6 | 3730.3 | 3684.0 | 3609.6 | 2338.5 | 699.9  |
| 60°   | 1537.3 | 1519.2 | 1634.5 | 1878.6 | 2722.6 | 3409.1 | 3610.9 | 3942.8 | 3938.1 | 2907.0 | 747.5  |
| 62.5° | 736.8  | 766.3  | 922.5  | 1187.3 | 1820.2 | 3147.7 | 3657.2 | 3846.9 | 3856.3 | 3408.5 | 857.5  |
| 65°   | 376.1  | 382.8  | 463.3  | 648.3  | 963.4  | 2262.7 | 3523.8 | 3714.2 | 3700.1 | 3310.6 | 1142.4 |
| 67.5° | 253.4  | 256.8  | 294.3  | 392.2  | 559.1  | 948.0  | 2738.0 | 3475.5 | 3465.5 | 2821.8 | 1312.0 |
| 70°   | 224.6  | 225.9  | 235.3  | 266.8  | 335.2  | 417.7  | 1253.7 | 2916.4 | 2991.5 | 2155.4 | 1198.1 |
| 72.5° | 219.9  | 219.9  | 218.6  | 220.6  | 216.5  | 226.6  | 439.8  | 1755.9 | 1865.1 | 1505.8 | 970.8  |
| 75°   | 215.2  | 215.9  | 213.9  | 207.2  | 168.3  | 141.5  | 160.9  | 739.5  | 819.9  | 990.9  | 727.4  |
| 77.5° | 201.1  | 202.5  | 208.5  | 191.7  | 152.9  | 99.9   | 91.8   | 234.7  | 274.2  | 632.9  | 533.0  |
| 80°   | 75.8   | 75.8   | 75.8   | 69.7   | 101.9  | 75.8   | 66.4   | 95.9   | 101.9  | 356.7  | 327.8  |
| 82.5° | 55.6   | 55.0   | 52.3   | 48.3   | 40.9   | 38.2   | 54.3   | 72.4   | 72.4   | 166.9  | 124.7  |
| 85°   | 16.1   | 16.1   | 18.1   | 24.1   | 30.2   | 33.5   | 41.6   | 55.6   | 57.7   | 63.7   | 18.8   |
| 87.5° | 7.4    | 7.4    | 9.4    | 12.1   | 16.1   | 24.1   | 34.9   | 47.6   | 48.3   | 53.0   | 3.4    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



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CATALOG NUMBER: GAP-SA1A-750-U-T2BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°   | 95°  | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|-------|------|------|------|------|------|------|------|------|------|------|
| 0°    | 25.5  | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 |
| 2.5°  | 25.5  | 24.8 | 24.1 | 23.5 | 22.1 | 20.8 | 18.8 | 18.1 | 17.4 | 17.4 | 17.4 |
| 5°    | 25.5  | 24.1 | 22.1 | 20.1 | 18.8 | 16.8 | 15.4 | 14.7 | 14.1 | 13.4 | 13.4 |
| 7.5°  | 24.8  | 22.8 | 20.1 | 18.1 | 16.8 | 14.7 | 12.7 | 12.1 | 11.4 | 11.4 | 11.4 |
| 10°   | 24.8  | 22.1 | 18.8 | 16.8 | 14.7 | 12.1 | 10.1 | 9.4  | 8.7  | 8.0  | 8.0  |
| 12.5° | 23.5  | 20.8 | 17.4 | 14.7 | 12.1 | 9.4  | 7.4  | 6.0  | 5.4  | 5.4  | 5.4  |
| 15°   | 22.8  | 20.1 | 16.1 | 12.7 | 9.4  | 6.7  | 4.7  | 3.4  | 2.7  | 3.4  | 3.4  |
| 17.5° | 22.1  | 18.1 | 14.7 | 10.1 | 6.7  | 4.0  | 2.0  | 0.7  | 0.7  | 0.7  | 0.7  |
| 20°   | 22.1  | 17.4 | 12.7 | 8.0  | 4.7  | 2.0  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  |
| 22.5° | 22.8  | 17.4 | 11.4 | 6.7  | 2.7  | 1.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 25°   | 23.5  | 16.8 | 10.1 | 4.7  | 2.0  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 27.5° | 24.1  | 16.1 | 8.7  | 3.4  | 1.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 30°   | 25.5  | 15.4 | 7.4  | 2.7  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 32.5° | 27.5  | 14.7 | 6.0  | 2.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 35°   | 29.5  | 13.4 | 4.0  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 37.5° | 32.2  | 13.4 | 2.7  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 40°   | 36.2  | 13.4 | 2.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 42.5° | 42.9  | 14.1 | 2.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 45°   | 55.6  | 18.1 | 2.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 47.5° | 79.1  | 27.5 | 2.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 50°   | 112.0 | 39.6 | 2.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 52.5° | 140.1 | 41.6 | 2.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 55°   | 145.5 | 29.5 | 2.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 57.5° | 125.4 | 24.1 | 2.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 60°   | 107.9 | 16.1 | 2.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 62.5° | 130.1 | 13.4 | 2.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 65°   | 207.2 | 12.7 | 2.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 67.5° | 322.5 | 12.7 | 2.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 70°   | 361.4 | 12.7 | 2.0  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 72.5° | 279.6 | 10.1 | 2.0  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 75°   | 175.7 | 8.0  | 2.0  | 1.3  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 77.5° | 95.9  | 5.4  | 2.0  | 1.3  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 80°   | 36.2  | 4.0  | 2.0  | 1.3  | 1.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 82.5° | 12.7  | 3.4  | 2.7  | 2.0  | 1.3  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 85°   | 4.7   | 2.7  | 2.7  | 2.0  | 2.0  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 87.5° | 2.7   | 2.7  | 2.7  | 2.7  | 2.0  | 0.7  | 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: SP1-2407-184-6

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-750-U-5WQ

Data in this report applies to families of products including GSS-SB1A-750-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-6  
 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-750-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 5000K CCT 26 LEDS

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 4896     | CRI (Ra): | 70.2 |      |       |
| CIE u':                   | 0.2101   | R1:       | 68.1 | R9:  | -35.1 |
| CIE v':                   | 0.4901   | R2:       | 73.9 | R10: | 39.3  |
| Duv:                      | 0.0035   | R3:       | 79.4 | R11: | 71.1  |
| CIE x:                    | 0.3489   | R4:       | 72.1 | R12: | 43.8  |
| CIE y:                    | 0.3618   | R5:       | 69.2 | R13: | 68.1  |
| CIE z:                    | 0.2893   | R6:       | 65.7 | R14: | 88.4  |
| Peak Wavelength (nm):     | 443      | R7:       | 78.1 | R15: | 59.7  |
| Dominant Wavelength (nm): | 570      | R8:       | 55.3 |      |       |
| Purity:                   | 13.25435 |           |      |      |       |
| Rf:                       | 70.7     |           |      |      |       |
| Rg:                       | 96.8     |           |      |      |       |



### Test Conditions

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

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| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 6/18/2024        | 12/18/2024           |
| Power Meter                    | INXT2011004           | 2/8/2024         | 2/8/2025             |
| AC Power Source                | IN0063                | 10/24/2023       | 10/24/2024           |
| DC Power Source                | IN0208                | 10/24/2023       | 10/24/2024           |
| Sphere Thermometer             | IN0085                | 10/24/2023       | 10/24/2024           |
| Room Thermometer               | IN0046                | 10/24/2023       | 10/24/2024           |

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**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 5000K 4-step quadrangle

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### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

| λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 118                      | NR            | 620    | 401                      | NR            | 750    | 12                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 168                      | NR            | 625    | 365                      | NR            | 755    | 10                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 230                      | NR            | 630    | 331                      | NR            | 760    | 9                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 299                      | NR            | 635    | 298                      | NR            | 765    | 8                        | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 362                      | NR            | 640    | 266                      | NR            | 770    | 6                        | NR            | 900    | 0                        | NR            |
| 385    | 2                        | NR            | 515    | 418                      | NR            | 645    | 236                      | NR            | 775    | 6                        | NR            | 905    | 0                        | NR            |
| 390    | 4                        | NR            | 520    | 461                      | NR            | 650    | 209                      | NR            | 780    | 5                        | NR            | 910    | 0                        | NR            |
| 395    | 6                        | NR            | 525    | 491                      | NR            | 655    | 184                      | NR            | 785    | 4                        | NR            | 915    | 0                        | NR            |
| 400    | 9                        | NR            | 530    | 514                      | NR            | 660    | 160                      | NR            | 790    | 4                        | NR            | 920    | 0                        | NR            |
| 405    | 14                       | NR            | 535    | 530                      | NR            | 665    | 140                      | NR            | 795    | 3                        | NR            | 925    | 0                        | NR            |
| 410    | 27                       | NR            | 540    | 539                      | NR            | 670    | 122                      | NR            | 800    | 3                        | NR            | 930    | 0                        | NR            |
| 415    | 55                       | NR            | 545    | 549                      | NR            | 675    | 106                      | NR            | 805    | 2                        | NR            | 935    | 0                        | NR            |
| 420    | 115                      | NR            | 550    | 557                      | NR            | 680    | 92                       | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 226                      | NR            | 555    | 565                      | NR            | 685    | 79                       | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 395                      | NR            | 560    | 572                      | NR            | 690    | 68                       | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 648                      | NR            | 565    | 580                      | NR            | 695    | 59                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 937                      | NR            | 570    | 586                      | NR            | 700    | 51                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 953                      | NR            | 575    | 588                      | NR            | 705    | 44                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 591                      | NR            | 580    | 588                      | NR            | 710    | 38                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 334                      | NR            | 585    | 580                      | NR            | 715    | 32                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 221                      | NR            | 590    | 568                      | NR            | 720    | 28                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 140                      | NR            | 595    | 550                      | NR            | 725    | 24                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 93                       | NR            | 600    | 527                      | NR            | 730    | 21                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 79                       | NR            | 605    | 499                      | NR            | 735    | 18                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 76                       | NR            | 610    | 469                      | NR            | 740    | 15                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 87                       | NR            | 615    | 435                      | NR            | 745    | 13                       | NR            | 875    | 0                        | NR            |        |                          |               |

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### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.7

| 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       | 118                         | NR               | 620       | 401                         | NR               | 750       | 12                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 168                         | NR               | 625       | 365                         | NR               | 755       | 10                          | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 230                         | NR               | 630       | 331                         | NR               | 760       | 9                           | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 299                         | NR               | 635       | 298                         | NR               | 765       | 8                           | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 362                         | NR               | 640       | 266                         | NR               | 770       | 6                           | NR               | 900       | 0                           | NR               |
| 385       | 2                           | NR               | 515       | 418                         | NR               | 645       | 236                         | NR               | 775       | 6                           | NR               | 905       | 0                           | NR               |
| 390       | 4                           | NR               | 520       | 461                         | NR               | 650       | 209                         | NR               | 780       | 5                           | NR               | 910       | 0                           | NR               |
| 395       | 6                           | NR               | 525       | 491                         | NR               | 655       | 184                         | NR               | 785       | 4                           | NR               | 915       | 0                           | NR               |
| 400       | 9                           | NR               | 530       | 514                         | NR               | 660       | 160                         | NR               | 790       | 4                           | NR               | 920       | 0                           | NR               |
| 405       | 14                          | NR               | 535       | 530                         | NR               | 665       | 140                         | NR               | 795       | 3                           | NR               | 925       | 0                           | NR               |
| 410       | 27                          | NR               | 540       | 539                         | NR               | 670       | 122                         | NR               | 800       | 3                           | NR               | 930       | 0                           | NR               |
| 415       | 55                          | NR               | 545       | 549                         | NR               | 675       | 106                         | NR               | 805       | 2                           | NR               | 935       | 0                           | NR               |
| 420       | 115                         | NR               | 550       | 557                         | NR               | 680       | 92                          | NR               | 810       | 2                           | NR               | 940       | 0                           | NR               |
| 425       | 226                         | NR               | 555       | 565                         | NR               | 685       | 79                          | NR               | 815       | 2                           | NR               | 945       | 0                           | NR               |
| 430       | 395                         | NR               | 560       | 572                         | NR               | 690       | 68                          | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 648                         | NR               | 565       | 580                         | NR               | 695       | 59                          | NR               | 825       | 1                           | NR               | 955       | 0                           | NR               |
| 440       | 937                         | NR               | 570       | 586                         | NR               | 700       | 51                          | NR               | 830       | 1                           | NR               | 960       | 0                           | NR               |
| 445       | 953                         | NR               | 575       | 588                         | NR               | 705       | 44                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 591                         | NR               | 580       | 588                         | NR               | 710       | 38                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 334                         | NR               | 585       | 580                         | NR               | 715       | 32                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 221                         | NR               | 590       | 568                         | NR               | 720       | 28                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 140                         | NR               | 595       | 550                         | NR               | 725       | 24                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 93                          | NR               | 600       | 527                         | NR               | 730       | 21                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 79                          | NR               | 605       | 499                         | NR               | 735       | 18                          | NR               | 865       | 0                           | NR               | 995       | 0                           | NR               |
| 480       | 76                          | NR               | 610       | 469                         | NR               | 740       | 15                          | NR               | 870       | 0                           | NR               | 1000      | 0                           | NR               |
| 485       | 87                          | NR               | 615       | 435                         | NR               | 745       | 13                          | NR               | 875       | 0                           | NR               |           |                             |                  |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 3.37

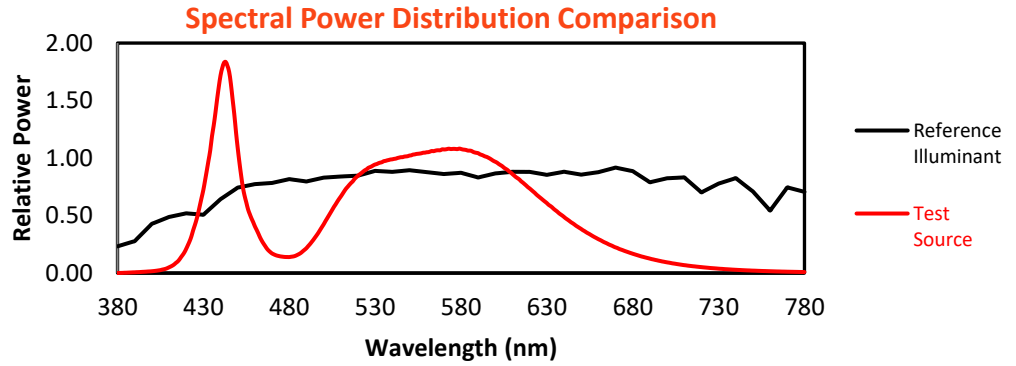
| $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | 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               | 118                                    | NR                             | 620               | 401                                    | NR                             | 750               | 12                                     | NR                             | 880               | 0                                      | NR                             |
| 365               | 0                                      | NR                             | 495               | 168                                    | NR                             | 625               | 365                                    | NR                             | 755               | 10                                     | NR                             | 885               | 0                                      | NR                             |
| 370               | 0                                      | NR                             | 500               | 230                                    | NR                             | 630               | 331                                    | NR                             | 760               | 9                                      | NR                             | 890               | 0                                      | NR                             |
| 375               | 0                                      | NR                             | 505               | 299                                    | NR                             | 635               | 298                                    | NR                             | 765               | 8                                      | NR                             | 895               | 0                                      | NR                             |
| 380               | 0                                      | NR                             | 510               | 362                                    | NR                             | 640               | 266                                    | NR                             | 770               | 6                                      | NR                             | 900               | 0                                      | NR                             |
| 385               | 2                                      | NR                             | 515               | 418                                    | NR                             | 645               | 236                                    | NR                             | 775               | 6                                      | NR                             | 905               | 0                                      | NR                             |
| 390               | 4                                      | NR                             | 520               | 461                                    | NR                             | 650               | 209                                    | NR                             | 780               | 5                                      | NR                             | 910               | 0                                      | NR                             |
| 395               | 6                                      | NR                             | 525               | 491                                    | NR                             | 655               | 184                                    | NR                             | 785               | 4                                      | NR                             | 915               | 0                                      | NR                             |
| 400               | 9                                      | NR                             | 530               | 514                                    | NR                             | 660               | 160                                    | NR                             | 790               | 4                                      | NR                             | 920               | 0                                      | NR                             |
| 405               | 14                                     | NR                             | 535               | 530                                    | NR                             | 665               | 140                                    | NR                             | 795               | 3                                      | NR                             | 925               | 0                                      | NR                             |
| 410               | 27                                     | NR                             | 540               | 539                                    | NR                             | 670               | 122                                    | NR                             | 800               | 3                                      | NR                             | 930               | 0                                      | NR                             |
| 415               | 55                                     | NR                             | 545               | 549                                    | NR                             | 675               | 106                                    | NR                             | 805               | 2                                      | NR                             | 935               | 0                                      | NR                             |
| 420               | 115                                    | NR                             | 550               | 557                                    | NR                             | 680               | 92                                     | NR                             | 810               | 2                                      | NR                             | 940               | 0                                      | NR                             |
| 425               | 226                                    | NR                             | 555               | 565                                    | NR                             | 685               | 79                                     | NR                             | 815               | 2                                      | NR                             | 945               | 0                                      | NR                             |
| 430               | 395                                    | NR                             | 560               | 572                                    | NR                             | 690               | 68                                     | NR                             | 820               | 2                                      | NR                             | 950               | 0                                      | NR                             |
| 435               | 648                                    | NR                             | 565               | 580                                    | NR                             | 695               | 59                                     | NR                             | 825               | 1                                      | NR                             | 955               | 0                                      | NR                             |
| 440               | 937                                    | NR                             | 570               | 586                                    | NR                             | 700               | 51                                     | NR                             | 830               | 1                                      | NR                             | 960               | 0                                      | NR                             |
| 445               | 953                                    | NR                             | 575               | 588                                    | NR                             | 705               | 44                                     | NR                             | 835               | 1                                      | NR                             | 965               | 0                                      | NR                             |
| 450               | 591                                    | NR                             | 580               | 588                                    | NR                             | 710               | 38                                     | NR                             | 840               | 1                                      | NR                             | 970               | 0                                      | NR                             |
| 455               | 334                                    | NR                             | 585               | 580                                    | NR                             | 715               | 32                                     | NR                             | 845               | 1                                      | NR                             | 975               | 0                                      | NR                             |
| 460               | 221                                    | NR                             | 590               | 568                                    | NR                             | 720               | 28                                     | NR                             | 850               | 1                                      | NR                             | 980               | 0                                      | NR                             |
| 465               | 140                                    | NR                             | 595               | 550                                    | NR                             | 725               | 24                                     | NR                             | 855               | 1                                      | NR                             | 985               | 0                                      | NR                             |
| 470               | 93                                     | NR                             | 600               | 527                                    | NR                             | 730               | 21                                     | NR                             | 860               | 1                                      | NR                             | 990               | 0                                      | NR                             |
| 475               | 79                                     | NR                             | 605               | 499                                    | NR                             | 735               | 18                                     | NR                             | 865               | 0                                      | NR                             | 995               | 0                                      | NR                             |
| 480               | 76                                     | NR                             | 610               | 469                                    | NR                             | 740               | 15                                     | NR                             | 870               | 0                                      | NR                             | 1000              | 0                                      | NR                             |
| 485               | 87                                     | NR                             | 615               | 435                                    | NR                             | 745               | 13                                     | NR                             | 875               | 0                                      | NR                             |                   |                                        |                                |

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TM-30-18

### Summary

$R_f = 70.7$   
 $R_g = 96.8$   
 $CIE R_a = 70.2$   
 $R_g = -35.1$



### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 53 | CES51 = 87 | CES76 = 42 |
| CES02 = 59 | CES27 = 78 | CES52 = 88 | CES77 = 64 |
| CES03 = 30 | CES28 = 76 | CES53 = 74 | CES78 = 45 |
| CES04 = 69 | CES29 = 48 | CES54 = 80 | CES79 = 74 |
| CES05 = 46 | CES30 = 56 | CES55 = 79 | CES80 = 71 |
| CES06 = 50 | CES31 = 54 | CES56 = 68 | CES81 = 72 |
| CES07 = 39 | CES32 = 50 | CES57 = 65 | CES82 = 88 |
| CES08 = 38 | CES33 = 60 | CES58 = 67 | CES83 = 82 |
| CES09 = 29 | CES34 = 62 | CES59 = 87 | CES84 = 87 |
| CES10 = 72 | CES35 = 79 | CES60 = 91 | CES85 = 84 |
| CES11 = 56 | CES36 = 90 | CES61 = 87 | CES86 = 74 |
| CES12 = 61 | CES37 = 72 | CES62 = 79 | CES87 = 75 |
| CES13 = 41 | CES38 = 66 | CES63 = 72 | CES88 = 76 |
| CES14 = 74 | CES39 = 91 | CES64 = 70 | CES89 = 74 |
| CES15 = 70 | CES40 = 83 | CES65 = 63 | CES90 = 73 |
| CES16 = 46 | CES41 = 83 | CES66 = 64 | CES91 = 92 |
| CES17 = 49 | CES42 = 70 | CES67 = 62 | CES92 = 67 |
| CES18 = 55 | CES43 = 68 | CES68 = 69 | CES93 = 81 |
| CES19 = 71 | CES44 = 98 | CES69 = 80 | CES94 = 56 |
| CES20 = 64 | CES45 = 78 | CES70 = 56 | CES95 = 71 |
| CES21 = 85 | CES46 = 77 | CES71 = 53 | CES96 = 77 |
| CES22 = 77 | CES47 = 73 | CES72 = 84 | CES97 = 82 |
| CES23 = 91 | CES48 = 65 | CES73 = 46 | CES98 = 71 |
| CES24 = 90 | CES49 = 76 | CES74 = 94 | CES99 = 59 |
| CES25 = 71 | CES50 = 85 | CES75 = 49 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)