

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: P1063127

Luminaire Tested: **GLAN-SA3C-930-U-T3BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1063127  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: GLAN-SA3C-930-U-T3BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 1050mA 3xLight Square PACKAGE  
90CRI 3000K FIXTURE w/ TYPE III ANGLED BACKLIGHT CONTROL  
Light Source: (42) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 12287.7 lumens  
Efficiency: N/A  
Efficacy: 87.5 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B0 - U0 - G3

Input Watts (W): 140.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

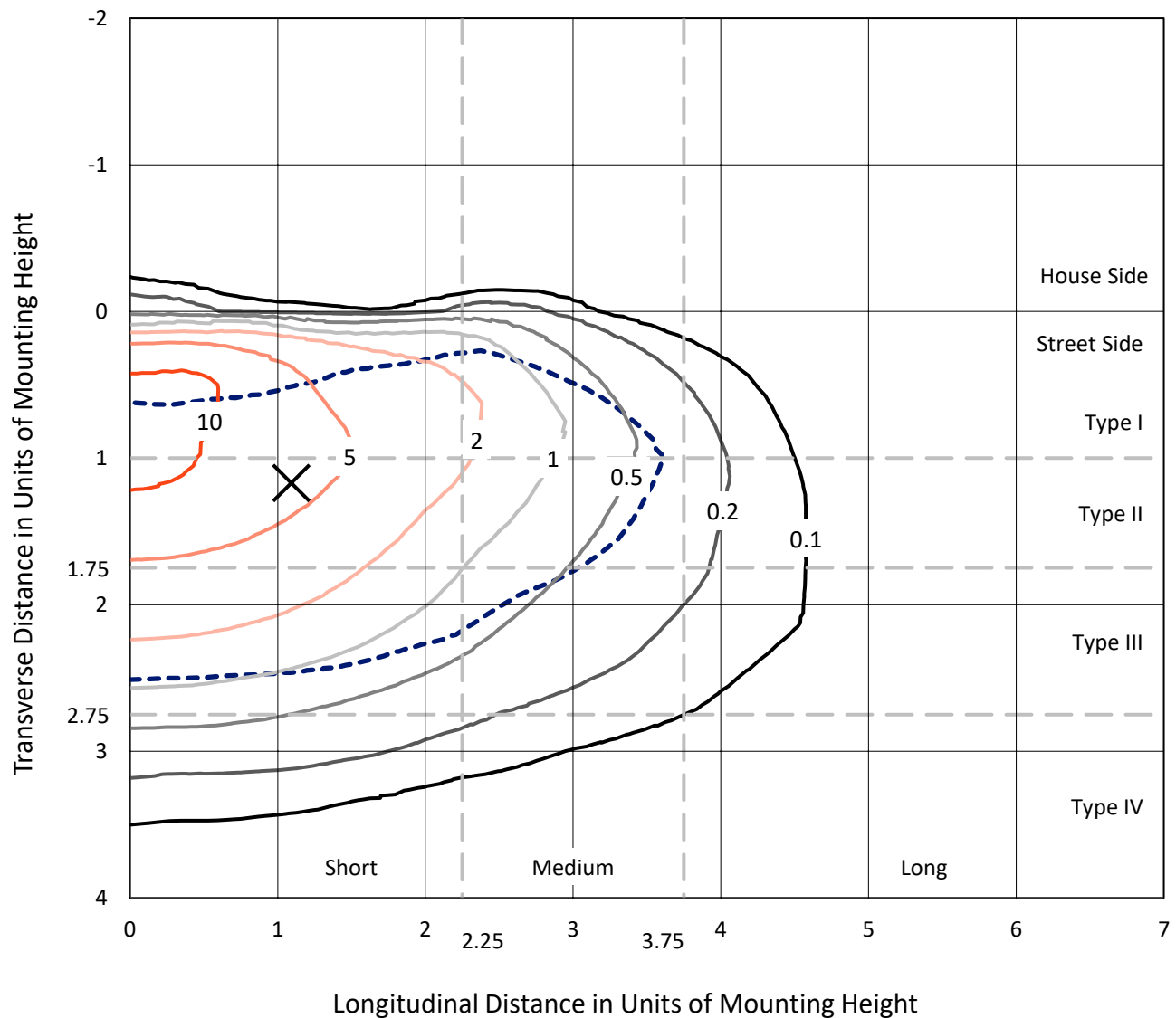


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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

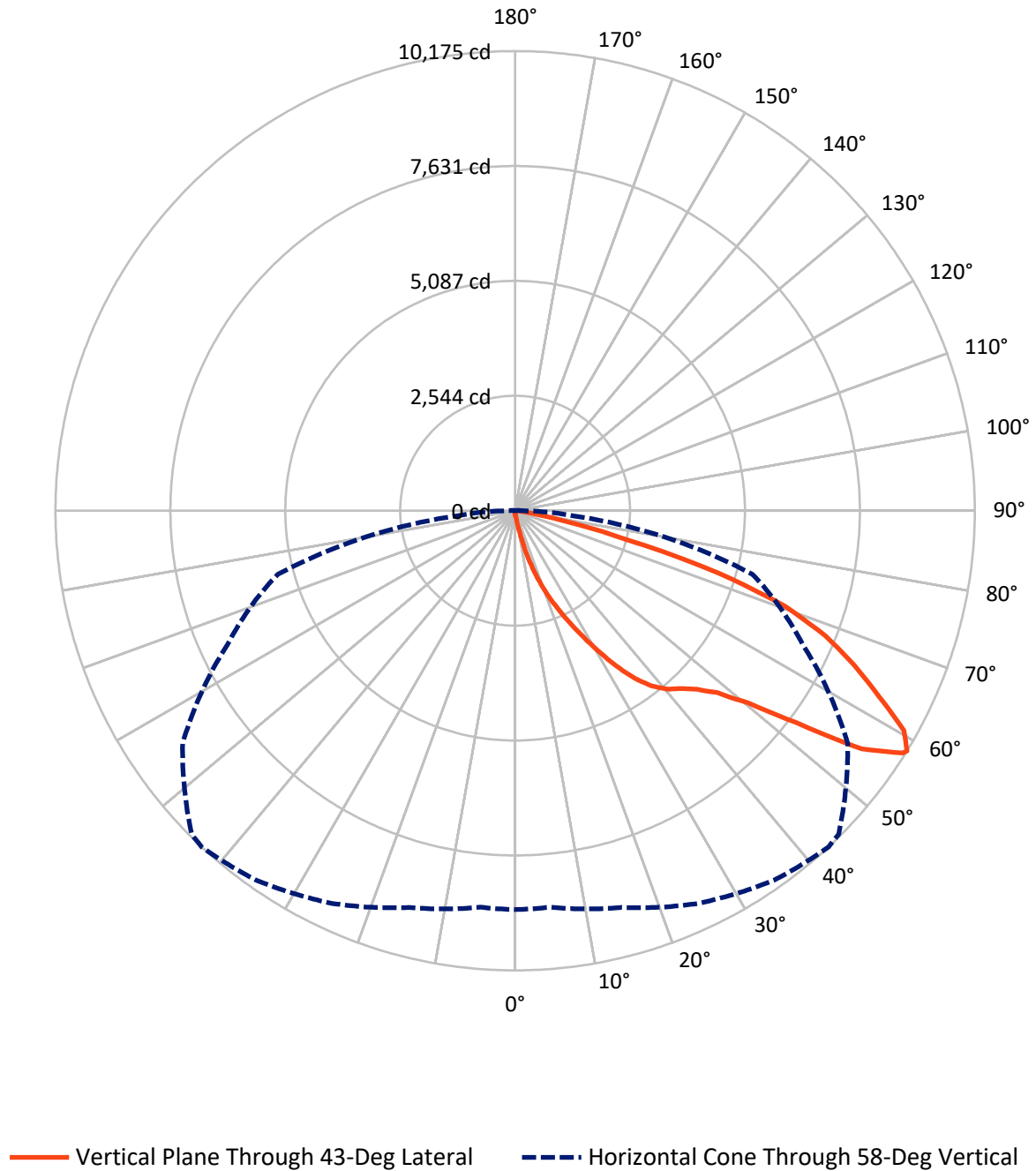


Based on 15 foot mounting height. Maximum calculated value = 13.8 fc  
 Type III - Short - N/A

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## Luminous Intensity Polar Plot



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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 44.8     | 0.0    | 44.8    |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 12242.9  | 0.0    | 12242.9 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 12287.7  | 0.0    | 12287.7 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 11.8    | 0.1       |
| 10°-20°   | 141.2   | 1.1       |
| 20°-30°   | 509.1   | 4.1       |
| 30°-40°   | 1164.8  | 9.5       |
| 40°-50°   | 1964.6  | 16.0      |
| 50°-60°   | 3242.0  | 26.4      |
| 60°-70°   | 3623.4  | 29.5      |
| 70°-80°   | 1496.0  | 12.2      |
| 80°-90°   | 134.9   | 1.1       |
| 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°    | 12287.7 | 100.0     |
| 0°-180°   | 12287.7 | 100.0     |



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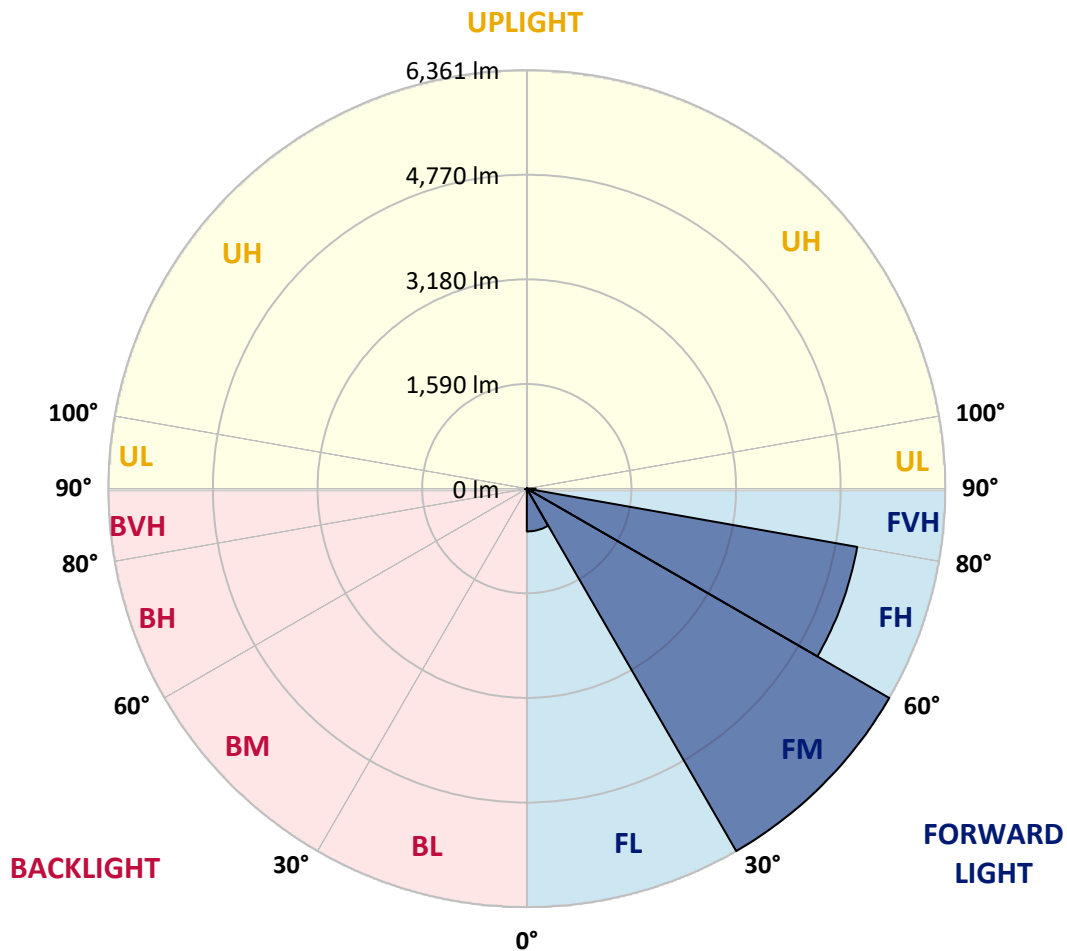
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 650.4  | 5.3       |                         |      |         |
| FM   | (30°-60°)   | 6360.6 | 51.8      |                         |      |         |
| FH   | (60°-80°)   | 5098.8 | 41.5      |                         |      | G3/7500 |
| FVH  | (80°-90°)   | 133.0  | 1.1       |                         |      | G2/225  |
| BL   | (0°-30°)    | 11.7   | 0.1       | B0/110                  |      |         |
| BM   | (30°-60°)   | 10.8   | 0.1       | B0/220                  |      |         |
| BH   | (60°-80°)   | 20.6   | 0.2       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 1.8    | 0.0       |                         |      | G0/10   |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

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

Type III Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°     | 43°     | 45°     | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|---------|---------|---------|--------|--------|--------|--------|
| 0°    | 80.3   | 80.3   | 80.3   | 80.3   | 80.3    | 80.3    | 80.3    | 80.3   | 80.3   | 80.3   | 80.3   |
| 2.5°  | 96.4   | 99.6   | 96.4   | 96.4   | 96.4    | 93.2    | 93.2    | 90.0   | 90.0   | 86.8   | 83.6   |
| 5°    | 141.4  | 141.4  | 131.8  | 125.3  | 118.9   | 115.7   | 112.5   | 106.1  | 99.6   | 93.2   | 86.8   |
| 7.5°  | 314.9  | 314.9  | 286.0  | 247.5  | 196.0   | 167.1   | 160.7   | 131.8  | 112.5  | 99.6   | 86.8   |
| 10°   | 752.0  | 752.0  | 687.7  | 581.7  | 449.9   | 334.2   | 298.9   | 189.6  | 135.0  | 106.1  | 90.0   |
| 12.5° | 1250.1 | 1266.2 | 1185.9 | 1050.9 | 854.9   | 652.4   | 581.7   | 347.1  | 180.0  | 115.7  | 90.0   |
| 15°   | 1696.9 | 1658.3 | 1635.8 | 1507.2 | 1320.8  | 1079.8  | 989.8   | 584.9  | 260.3  | 131.8  | 90.0   |
| 17.5° | 1999.0 | 1999.0 | 1966.8 | 1880.0 | 1709.7  | 1497.6  | 1423.7  | 944.8  | 421.0  | 151.0  | 93.2   |
| 20°   | 2352.5 | 2352.5 | 2294.6 | 2233.6 | 2082.5  | 1902.5  | 1831.8  | 1343.3 | 652.4  | 192.8  | 93.2   |
| 22.5° | 2779.9 | 2786.3 | 2722.0 | 2612.8 | 2468.2  | 2268.9  | 2207.8  | 1712.9 | 944.8  | 257.1  | 96.4   |
| 25°   | 3300.5 | 3306.9 | 3213.7 | 3110.9 | 2889.2  | 2673.8  | 2580.6  | 2137.1 | 1301.6 | 359.9  | 96.4   |
| 27.5° | 3875.8 | 3920.8 | 3782.6 | 3605.8 | 3371.2  | 3101.3  | 3030.6  | 2519.6 | 1655.1 | 507.8  | 102.8  |
| 30°   | 4592.4 | 4592.4 | 4409.3 | 4161.8 | 3907.9  | 3573.7  | 3483.7  | 2921.3 | 2031.1 | 703.8  | 109.3  |
| 32.5° | 5209.5 | 5161.3 | 4926.7 | 4666.4 | 4396.4  | 4084.7  | 3988.3  | 3342.3 | 2416.7 | 948.1  | 122.1  |
| 35°   | 5681.9 | 5640.1 | 5350.9 | 5071.3 | 4836.7  | 4550.7  | 4435.0  | 3798.6 | 2824.9 | 1224.4 | 141.4  |
| 37.5° | 6086.8 | 6070.8 | 5678.7 | 5328.4 | 5174.1  | 4923.5  | 4820.6  | 4229.3 | 3226.6 | 1523.3 | 163.9  |
| 40°   | 6530.3 | 6478.9 | 6061.1 | 5627.3 | 5395.9  | 5193.4  | 5100.2  | 4576.4 | 3612.3 | 1873.6 | 196.0  |
| 42.5° | 6909.6 | 6848.5 | 6472.5 | 6048.3 | 5653.0  | 5379.8  | 5289.8  | 4868.8 | 3988.3 | 2223.9 | 237.8  |
| 45°   | 7330.6 | 7298.4 | 6919.2 | 6597.8 | 6070.8  | 5633.7  | 5514.8  | 5103.4 | 4332.1 | 2641.7 | 292.5  |
| 47.5° | 7963.7 | 7905.8 | 7552.3 | 7288.8 | 6678.2  | 6019.3  | 5849.0  | 5344.5 | 4663.1 | 3053.1 | 376.0  |
| 50°   | 8699.6 | 8661.0 | 8452.2 | 8243.3 | 7635.9  | 6678.2  | 6475.7  | 5691.5 | 5032.7 | 3541.5 | 485.3  |
| 52.5° | 9300.6 | 9294.2 | 9319.9 | 9323.1 | 8863.5  | 7786.9  | 7484.8  | 6250.7 | 5456.9 | 4023.6 | 639.5  |
| 55°   | 9287.7 | 9316.6 | 9599.5 | 9924.0 | 9959.4  | 9300.6  | 9008.1  | 7192.4 | 6009.7 | 4618.2 | 854.9  |
| 57.5° | 8940.6 | 8918.1 | 9217.0 | 9705.5 | 10049.4 | 10120.1 | 10071.9 | 8654.6 | 6842.1 | 5334.8 | 1185.9 |
| 58°   | 8828.2 | 8808.9 | 9091.7 | 9589.8 | 9985.1  | 10174.7 | 10126.5 | 8985.6 | 7028.5 | 5437.7 | 1275.9 |
| 60°   | 8420.0 | 8423.2 | 8590.3 | 9043.5 | 9438.8  | 9888.7  | 9933.7  | 9930.5 | 7957.2 | 6125.4 | 1729.0 |
| 62.5° | 7880.1 | 7854.4 | 8008.7 | 8378.2 | 8725.3  | 9027.4  | 9104.5  | 9994.8 | 9316.6 | 6999.5 | 2593.5 |
| 65°   | 7134.5 | 7096.0 | 7259.9 | 7677.6 | 8050.4  | 8246.5  | 8249.7  | 9133.5 | 9956.2 | 7938.0 | 3827.6 |
| 67.5° | 5749.4 | 5717.3 | 6045.1 | 6581.8 | 7157.0  | 7414.1  | 7529.8  | 7925.1 | 9416.3 | 8574.3 | 4534.6 |
| 70°   | 3522.3 | 3589.8 | 4046.1 | 4888.1 | 5871.5  | 6343.9  | 6517.5  | 6639.6 | 8018.3 | 8477.9 | 3792.2 |
| 72.5° | 1626.2 | 1545.8 | 1934.7 | 2522.8 | 3644.4  | 4695.3  | 4875.3  | 5354.1 | 6356.8 | 7359.5 | 2828.1 |
| 75°   | 758.4  | 729.5  | 819.5  | 1102.3 | 1651.9  | 2535.6  | 2863.4  | 4274.3 | 4875.3 | 5119.5 | 2040.7 |
| 77.5° | 388.9  | 392.1  | 466.0  | 501.3  | 681.3   | 1173.0  | 1346.6  | 2812.0 | 3573.7 | 2857.0 | 1369.1 |
| 80°   | 170.3  | 176.8  | 180.0  | 196.0  | 276.4   | 453.1   | 511.0   | 1304.8 | 2442.4 | 1455.8 | 748.8  |
| 82.5° | 109.3  | 112.5  | 112.5  | 112.5  | 131.8   | 180.0   | 205.7   | 523.8  | 1218.0 | 723.1  | 231.4  |
| 85°   | 57.8   | 57.8   | 64.3   | 80.3   | 93.2    | 109.3   | 115.7   | 167.1  | 401.7  | 215.3  | 54.6   |
| 87.5° | 32.1   | 35.4   | 38.6   | 48.2   | 61.1    | 73.9    | 80.3    | 115.7  | 154.3  | 147.8  | 12.9   |
| 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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**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°  | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|------|------|------|------|------|------|------|------|------|------|
| 0°    | 80.3   | 80.3 | 80.3 | 80.3 | 80.3 | 80.3 | 80.3 | 80.3 | 80.3 | 80.3 | 80.3 |
| 2.5°  | 83.6   | 80.3 | 77.1 | 73.9 | 70.7 | 67.5 | 67.5 | 67.5 | 67.5 | 67.5 | 67.5 |
| 5°    | 80.3   | 77.1 | 73.9 | 67.5 | 61.1 | 57.8 | 54.6 | 51.4 | 51.4 | 51.4 | 51.4 |
| 7.5°  | 80.3   | 77.1 | 67.5 | 61.1 | 54.6 | 48.2 | 41.8 | 41.8 | 41.8 | 41.8 | 41.8 |
| 10°   | 80.3   | 73.9 | 64.3 | 54.6 | 45.0 | 38.6 | 35.4 | 32.1 | 32.1 | 32.1 | 32.1 |
| 12.5° | 80.3   | 70.7 | 61.1 | 48.2 | 38.6 | 32.1 | 28.9 | 25.7 | 25.7 | 25.7 | 25.7 |
| 15°   | 80.3   | 70.7 | 57.8 | 45.0 | 35.4 | 25.7 | 22.5 | 19.3 | 19.3 | 19.3 | 19.3 |
| 17.5° | 77.1   | 67.5 | 54.6 | 38.6 | 28.9 | 19.3 | 16.1 | 12.9 | 12.9 | 16.1 | 16.1 |
| 20°   | 73.9   | 64.3 | 48.2 | 32.1 | 22.5 | 16.1 | 9.6  | 9.6  | 9.6  | 9.6  | 9.6  |
| 22.5° | 73.9   | 64.3 | 45.0 | 28.9 | 19.3 | 9.6  | 6.4  | 6.4  | 6.4  | 6.4  | 9.6  |
| 25°   | 73.9   | 61.1 | 38.6 | 22.5 | 12.9 | 6.4  | 3.2  | 3.2  | 3.2  | 3.2  | 3.2  |
| 27.5° | 73.9   | 61.1 | 35.4 | 19.3 | 9.6  | 6.4  | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  |
| 30°   | 70.7   | 57.8 | 32.1 | 16.1 | 6.4  | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 32.5° | 70.7   | 54.6 | 25.7 | 12.9 | 6.4  | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 35°   | 73.9   | 51.4 | 22.5 | 9.6  | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 3.2  |
| 37.5° | 77.1   | 48.2 | 19.3 | 6.4  | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 40°   | 80.3   | 45.0 | 19.3 | 6.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 42.5° | 86.8   | 45.0 | 16.1 | 6.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 45°   | 93.2   | 45.0 | 12.9 | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 47.5° | 106.1  | 48.2 | 12.9 | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 50°   | 115.7  | 51.4 | 9.6  | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 52.5° | 128.5  | 48.2 | 9.6  | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 55°   | 144.6  | 48.2 | 9.6  | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 57.5° | 157.5  | 45.0 | 9.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 58°   | 163.9  | 41.8 | 6.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 60°   | 196.0  | 38.6 | 6.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 62.5° | 305.3  | 32.1 | 6.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 65°   | 620.3  | 28.9 | 6.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 67.5° | 1156.9 | 25.7 | 6.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 70°   | 1295.1 | 28.9 | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 72.5° | 816.3  | 22.5 | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 75°   | 430.6  | 22.5 | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 77.5° | 215.3  | 22.5 | 3.2  | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 80°   | 99.6   | 16.1 | 3.2  | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 82.5° | 41.8   | 9.6  | 6.4  | 3.2  | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 85°   | 19.3   | 9.6  | 6.4  | 6.4  | 3.2  | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 87.5° | 9.6    | 9.6  | 9.6  | 6.4  | 6.4  | 3.2  | 3.2  | 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: SP1-2407-184-14

Test Date: 10/11/2024

Luminaire Tested: GSS-SB1A-930-U-5WQ

Data in this report applies to families of products including GSS-SB1A-930-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-14  
 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-930-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 90 CRI  
 3000K CCT 26 LEDS

### Spectral Parameters

CCT (K): 2993  
 CIE  $u'$ : 0.2501  
 CIE  $v'$ : 0.5245  
 Duv: 0.0021  
 CIE x: 0.4406  
 CIE y: 0.4107  
 CIE z: 0.1487  
 Peak Wavelength (nm): 621  
 Dominant Wavelength (nm): 582  
 Purity: 55.53327  
 R<sub>f</sub>: 92.6  
 R<sub>g</sub>: 98.5

CRI (Ra): 92.4  
 R1: 92.2  
 R2: 95.2  
 R3: 97.0  
 R4: 93.1  
 R5: 91.7  
 R6: 94.2  
 R7: 93.3  
 R8: 82.3  
 R9: 58.2  
 R10: 87.7  
 R11: 93.5  
 R12: 81.7  
 R13: 92.9  
 R14: 97.6  
 R15: 88.1



### Test Conditions

Stabilization Time: 20M  
 Operation Time: 1H 20M  
 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 3000K 4-step quadrangle

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**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               | 310                                  | NR                             | 620               | 998                                  | NR                             | 750               | 77                                   | NR                             | 880               | 2                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 347                                  | NR                             | 625               | 993                                  | NR                             | 755               | 66                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 379                                  | NR                             | 630               | 983                                  | NR                             | 760               | 56                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 412                                  | NR                             | 635               | 960                                  | NR                             | 765               | 48                                   | NR                             | 895               | 1                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 442                                  | NR                             | 640               | 930                                  | NR                             | 770               | 41                                   | NR                             | 900               | 1                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 475                                  | NR                             | 645               | 889                                  | NR                             | 775               | 35                                   | NR                             | 905               | 1                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 506                                  | NR                             | 650               | 846                                  | NR                             | 780               | 30                                   | NR                             | 910               | 1                                    | NR                             |
| 395               | 0                                    | NR                             | 525               | 535                                  | NR                             | 655               | 794                                  | NR                             | 785               | 26                                   | NR                             | 915               | 1                                    | NR                             |
| 400               | 1                                    | NR                             | 530               | 565                                  | NR                             | 660               | 740                                  | NR                             | 790               | 22                                   | NR                             | 920               | 1                                    | NR                             |
| 405               | 2                                    | NR                             | 535               | 592                                  | NR                             | 665               | 684                                  | NR                             | 795               | 19                                   | NR                             | 925               | 1                                    | NR                             |
| 410               | 6                                    | NR                             | 540               | 615                                  | NR                             | 670               | 624                                  | NR                             | 800               | 16                                   | NR                             | 930               | 0                                    | NR                             |
| 415               | 10                                   | NR                             | 545               | 638                                  | NR                             | 675               | 567                                  | NR                             | 805               | 14                                   | NR                             | 935               | 0                                    | NR                             |
| 420               | 20                                   | NR                             | 550               | 658                                  | NR                             | 680               | 513                                  | NR                             | 810               | 12                                   | NR                             | 940               | 0                                    | NR                             |
| 425               | 38                                   | NR                             | 555               | 678                                  | NR                             | 685               | 459                                  | NR                             | 815               | 10                                   | NR                             | 945               | 0                                    | NR                             |
| 430               | 70                                   | NR                             | 560               | 695                                  | NR                             | 690               | 412                                  | NR                             | 820               | 9                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 136                                  | NR                             | 565               | 716                                  | NR                             | 695               | 363                                  | NR                             | 825               | 8                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 262                                  | NR                             | 570               | 740                                  | NR                             | 700               | 320                                  | NR                             | 830               | 7                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 424                                  | NR                             | 575               | 765                                  | NR                             | 705               | 281                                  | NR                             | 835               | 6                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 406                                  | NR                             | 580               | 796                                  | NR                             | 710               | 245                                  | NR                             | 840               | 5                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 313                                  | NR                             | 585               | 827                                  | NR                             | 715               | 215                                  | NR                             | 845               | 4                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 294                                  | NR                             | 590               | 861                                  | NR                             | 720               | 188                                  | NR                             | 850               | 4                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 250                                  | NR                             | 595               | 894                                  | NR                             | 725               | 162                                  | NR                             | 855               | 3                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 217                                  | NR                             | 600               | 927                                  | NR                             | 730               | 140                                  | NR                             | 860               | 3                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 228                                  | NR                             | 605               | 954                                  | NR                             | 735               | 121                                  | NR                             | 865               | 2                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 249                                  | NR                             | 610               | 976                                  | NR                             | 740               | 104                                  | NR                             | 870               | 2                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 276                                  | NR                             | 615               | 992                                  | NR                             | 745               | 89                                   | NR                             | 875               | 2                                    | NR                             |                   |                                      |                                |

REPORT NUMBER: SP1-2407-184-14

### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.39

| $\lambda$<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               | 310                                  | NR                             | 620               | 998                                  | NR                             | 750               | 77                                   | NR                             | 880               | 2                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 347                                  | NR                             | 625               | 993                                  | NR                             | 755               | 66                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 379                                  | NR                             | 630               | 983                                  | NR                             | 760               | 56                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 412                                  | NR                             | 635               | 960                                  | NR                             | 765               | 48                                   | NR                             | 895               | 1                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 442                                  | NR                             | 640               | 930                                  | NR                             | 770               | 41                                   | NR                             | 900               | 1                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 475                                  | NR                             | 645               | 889                                  | NR                             | 775               | 35                                   | NR                             | 905               | 1                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 506                                  | NR                             | 650               | 846                                  | NR                             | 780               | 30                                   | NR                             | 910               | 1                                    | NR                             |
| 395               | 0                                    | NR                             | 525               | 535                                  | NR                             | 655               | 794                                  | NR                             | 785               | 26                                   | NR                             | 915               | 1                                    | NR                             |
| 400               | 1                                    | NR                             | 530               | 565                                  | NR                             | 660               | 740                                  | NR                             | 790               | 22                                   | NR                             | 920               | 1                                    | NR                             |
| 405               | 2                                    | NR                             | 535               | 592                                  | NR                             | 665               | 684                                  | NR                             | 795               | 19                                   | NR                             | 925               | 1                                    | NR                             |
| 410               | 6                                    | NR                             | 540               | 615                                  | NR                             | 670               | 624                                  | NR                             | 800               | 16                                   | NR                             | 930               | 0                                    | NR                             |
| 415               | 10                                   | NR                             | 545               | 638                                  | NR                             | 675               | 567                                  | NR                             | 805               | 14                                   | NR                             | 935               | 0                                    | NR                             |
| 420               | 20                                   | NR                             | 550               | 658                                  | NR                             | 680               | 513                                  | NR                             | 810               | 12                                   | NR                             | 940               | 0                                    | NR                             |
| 425               | 38                                   | NR                             | 555               | 678                                  | NR                             | 685               | 459                                  | NR                             | 815               | 10                                   | NR                             | 945               | 0                                    | NR                             |
| 430               | 70                                   | NR                             | 560               | 695                                  | NR                             | 690               | 412                                  | NR                             | 820               | 9                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 136                                  | NR                             | 565               | 716                                  | NR                             | 695               | 363                                  | NR                             | 825               | 8                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 262                                  | NR                             | 570               | 740                                  | NR                             | 700               | 320                                  | NR                             | 830               | 7                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 424                                  | NR                             | 575               | 765                                  | NR                             | 705               | 281                                  | NR                             | 835               | 6                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 406                                  | NR                             | 580               | 796                                  | NR                             | 710               | 245                                  | NR                             | 840               | 5                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 313                                  | NR                             | 585               | 827                                  | NR                             | 715               | 215                                  | NR                             | 845               | 4                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 294                                  | NR                             | 590               | 861                                  | NR                             | 720               | 188                                  | NR                             | 850               | 4                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 250                                  | NR                             | 595               | 894                                  | NR                             | 725               | 162                                  | NR                             | 855               | 3                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 217                                  | NR                             | 600               | 927                                  | NR                             | 730               | 140                                  | NR                             | 860               | 3                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 228                                  | NR                             | 605               | 954                                  | NR                             | 735               | 121                                  | NR                             | 865               | 2                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 249                                  | NR                             | 610               | 976                                  | NR                             | 740               | 104                                  | NR                             | 870               | 2                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 276                                  | NR                             | 615               | 992                                  | NR                             | 745               | 89                                   | NR                             | 875               | 2                                    | NR                             |                   |                                      |                                |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.69

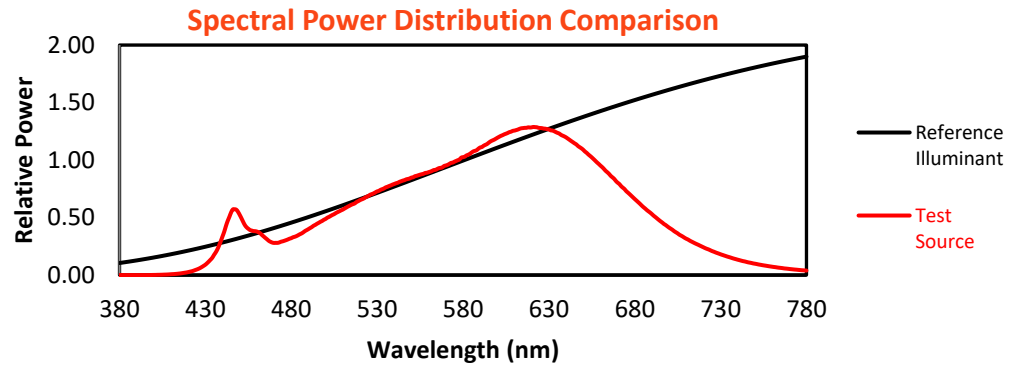
| $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | 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               | 310                                    | NR                             | 620               | 998                                    | NR                             | 750               | 77                                     | NR                             | 880               | 2                                      | NR                             |
| 365               | 0                                      | NR                             | 495               | 347                                    | NR                             | 625               | 993                                    | NR                             | 755               | 66                                     | NR                             | 885               | 1                                      | NR                             |
| 370               | 0                                      | NR                             | 500               | 379                                    | NR                             | 630               | 983                                    | NR                             | 760               | 56                                     | NR                             | 890               | 1                                      | NR                             |
| 375               | 0                                      | NR                             | 505               | 412                                    | NR                             | 635               | 960                                    | NR                             | 765               | 48                                     | NR                             | 895               | 1                                      | NR                             |
| 380               | 0                                      | NR                             | 510               | 442                                    | NR                             | 640               | 930                                    | NR                             | 770               | 41                                     | NR                             | 900               | 1                                      | NR                             |
| 385               | 0                                      | NR                             | 515               | 475                                    | NR                             | 645               | 889                                    | NR                             | 775               | 35                                     | NR                             | 905               | 1                                      | NR                             |
| 390               | 0                                      | NR                             | 520               | 506                                    | NR                             | 650               | 846                                    | NR                             | 780               | 30                                     | NR                             | 910               | 1                                      | NR                             |
| 395               | 0                                      | NR                             | 525               | 535                                    | NR                             | 655               | 794                                    | NR                             | 785               | 26                                     | NR                             | 915               | 1                                      | NR                             |
| 400               | 1                                      | NR                             | 530               | 565                                    | NR                             | 660               | 740                                    | NR                             | 790               | 22                                     | NR                             | 920               | 1                                      | NR                             |
| 405               | 2                                      | NR                             | 535               | 592                                    | NR                             | 665               | 684                                    | NR                             | 795               | 19                                     | NR                             | 925               | 1                                      | NR                             |
| 410               | 6                                      | NR                             | 540               | 615                                    | NR                             | 670               | 624                                    | NR                             | 800               | 16                                     | NR                             | 930               | 0                                      | NR                             |
| 415               | 10                                     | NR                             | 545               | 638                                    | NR                             | 675               | 567                                    | NR                             | 805               | 14                                     | NR                             | 935               | 0                                      | NR                             |
| 420               | 20                                     | NR                             | 550               | 658                                    | NR                             | 680               | 513                                    | NR                             | 810               | 12                                     | NR                             | 940               | 0                                      | NR                             |
| 425               | 38                                     | NR                             | 555               | 678                                    | NR                             | 685               | 459                                    | NR                             | 815               | 10                                     | NR                             | 945               | 0                                      | NR                             |
| 430               | 70                                     | NR                             | 560               | 695                                    | NR                             | 690               | 412                                    | NR                             | 820               | 9                                      | NR                             | 950               | 0                                      | NR                             |
| 435               | 136                                    | NR                             | 565               | 716                                    | NR                             | 695               | 363                                    | NR                             | 825               | 8                                      | NR                             | 955               | 0                                      | NR                             |
| 440               | 262                                    | NR                             | 570               | 740                                    | NR                             | 700               | 320                                    | NR                             | 830               | 7                                      | NR                             | 960               | 0                                      | NR                             |
| 445               | 424                                    | NR                             | 575               | 765                                    | NR                             | 705               | 281                                    | NR                             | 835               | 6                                      | NR                             | 965               | 0                                      | NR                             |
| 450               | 406                                    | NR                             | 580               | 796                                    | NR                             | 710               | 245                                    | NR                             | 840               | 5                                      | NR                             | 970               | 0                                      | NR                             |
| 455               | 313                                    | NR                             | 585               | 827                                    | NR                             | 715               | 215                                    | NR                             | 845               | 4                                      | NR                             | 975               | 0                                      | NR                             |
| 460               | 294                                    | NR                             | 590               | 861                                    | NR                             | 720               | 188                                    | NR                             | 850               | 4                                      | NR                             | 980               | 0                                      | NR                             |
| 465               | 250                                    | NR                             | 595               | 894                                    | NR                             | 725               | 162                                    | NR                             | 855               | 3                                      | NR                             | 985               | 0                                      | NR                             |
| 470               | 217                                    | NR                             | 600               | 927                                    | NR                             | 730               | 140                                    | NR                             | 860               | 3                                      | NR                             | 990               | 0                                      | NR                             |
| 475               | 228                                    | NR                             | 605               | 954                                    | NR                             | 735               | 121                                    | NR                             | 865               | 2                                      | NR                             | 995               | 0                                      | NR                             |
| 480               | 249                                    | NR                             | 610               | 976                                    | NR                             | 740               | 104                                    | NR                             | 870               | 2                                      | NR                             | 1000              | 0                                      | NR                             |
| 485               | 276                                    | NR                             | 615               | 992                                    | NR                             | 745               | 89                                     | NR                             | 875               | 2                                      | NR                             |                   |                                        |                                |

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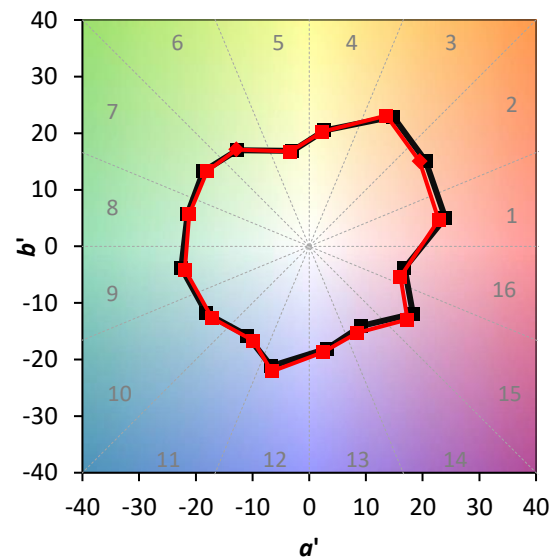
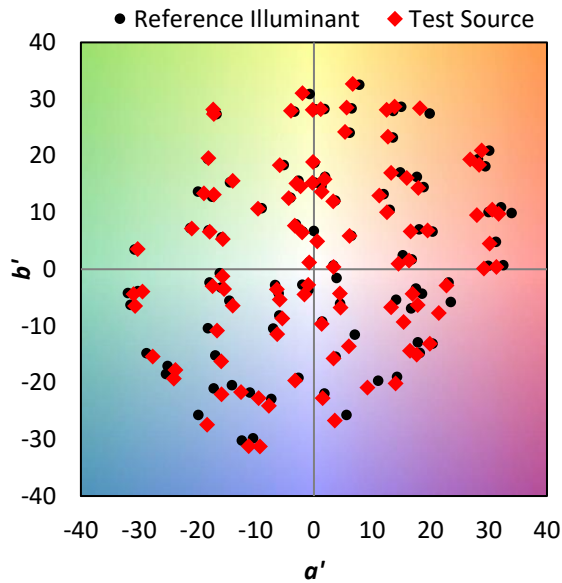
TM-30-18

### Summary

$R_f = 92.6$   
 $R_g = 98.5$   
 $CIE R_a = 92.4$   
 $R_9 = 58.2$



### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 94 | CES51 = 98 | CES76 = 90 |
| CES02 = 63 | CES27 = 94 | CES52 = 98 | CES77 = 91 |
| CES03 = 32 | CES28 = 97 | CES53 = 96 | CES78 = 88 |
| CES04 = 70 | CES29 = 95 | CES54 = 95 | CES79 = 94 |
| CES05 = 51 | CES30 = 97 | CES55 = 94 | CES80 = 94 |
| CES06 = 51 | CES31 = 96 | CES56 = 94 | CES81 = 84 |
| CES07 = 43 | CES32 = 91 | CES57 = 94 | CES82 = 97 |
| CES08 = 42 | CES33 = 98 | CES58 = 94 | CES83 = 97 |
| CES09 = 29 | CES34 = 96 | CES59 = 97 | CES84 = 95 |
| CES10 = 76 | CES35 = 97 | CES60 = 95 | CES85 = 85 |
| CES11 = 59 | CES36 = 87 | CES61 = 94 | CES86 = 84 |
| CES12 = 65 | CES37 = 95 | CES62 = 92 | CES87 = 92 |
| CES13 = 44 | CES38 = 93 | CES63 = 93 | CES88 = 95 |
| CES14 = 74 | CES39 = 99 | CES64 = 92 | CES89 = 86 |
| CES15 = 72 | CES40 = 98 | CES65 = 89 | CES90 = 96 |
| CES16 = 48 | CES41 = 98 | CES66 = 90 | CES91 = 82 |
| CES17 = 50 | CES42 = 97 | CES67 = 89 | CES92 = 81 |
| CES18 = 57 | CES43 = 97 | CES68 = 90 | CES93 = 89 |
| CES19 = 72 | CES44 = 99 | CES69 = 92 | CES94 = 80 |
| CES20 = 67 | CES45 = 99 | CES70 = 89 | CES95 = 86 |
| CES21 = 86 | CES46 = 96 | CES71 = 87 | CES96 = 92 |
| CES22 = 79 | CES47 = 95 | CES72 = 95 | CES97 = 96 |
| CES23 = 92 | CES48 = 93 | CES73 = 85 | CES98 = 94 |
| CES24 = 91 | CES49 = 97 | CES74 = 93 | CES99 = 91 |
| CES25 = 72 | CES50 = 98 | CES75 = 88 |            |



**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**



(END OF REPORT)