

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: P1063265

Luminaire Tested: **GLAN-SA2A-740-U-T2BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1063265  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: GLAN-SA2A-740-U-T2BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 615mA 2xLight Square PACKAGE  
70CRI 4000K FIXTURE w/ TYPE II ANGLED BACKLIGHT CONTROL  
Light Source: (28) 4000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7298.8 lumens  
Efficiency: N/A  
Efficacy: 130.8 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B0 - U0 - G2

Input Watts (W): 55.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



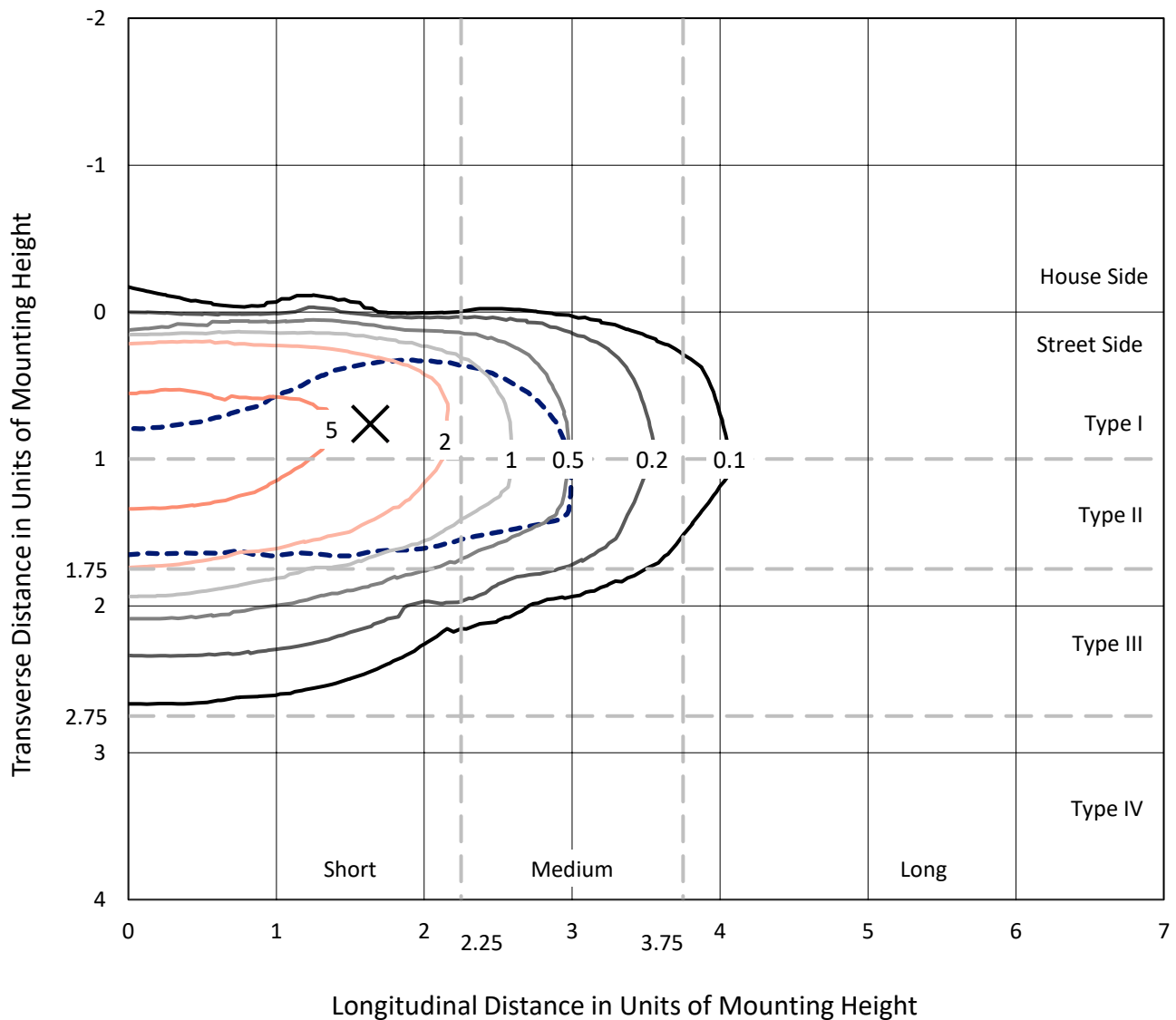
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CATALOG NUMBER: GLAN-SA2A-740-U-T2BC

## Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

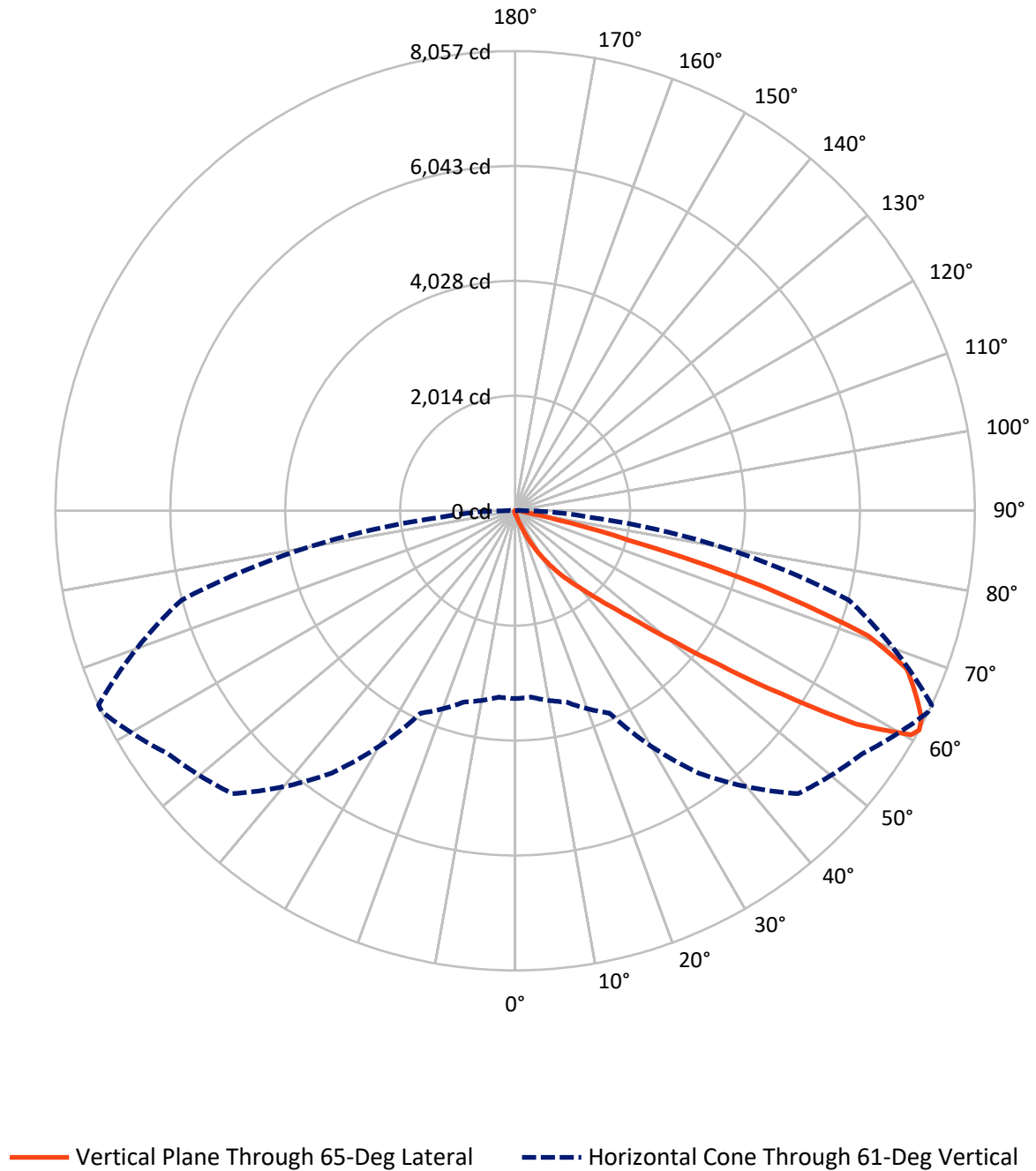


Based on 15 foot mounting height. Maximum calculated value = 9.7 fc  
 Type II - Short - N/A

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## Luminous Intensity Polar Plot



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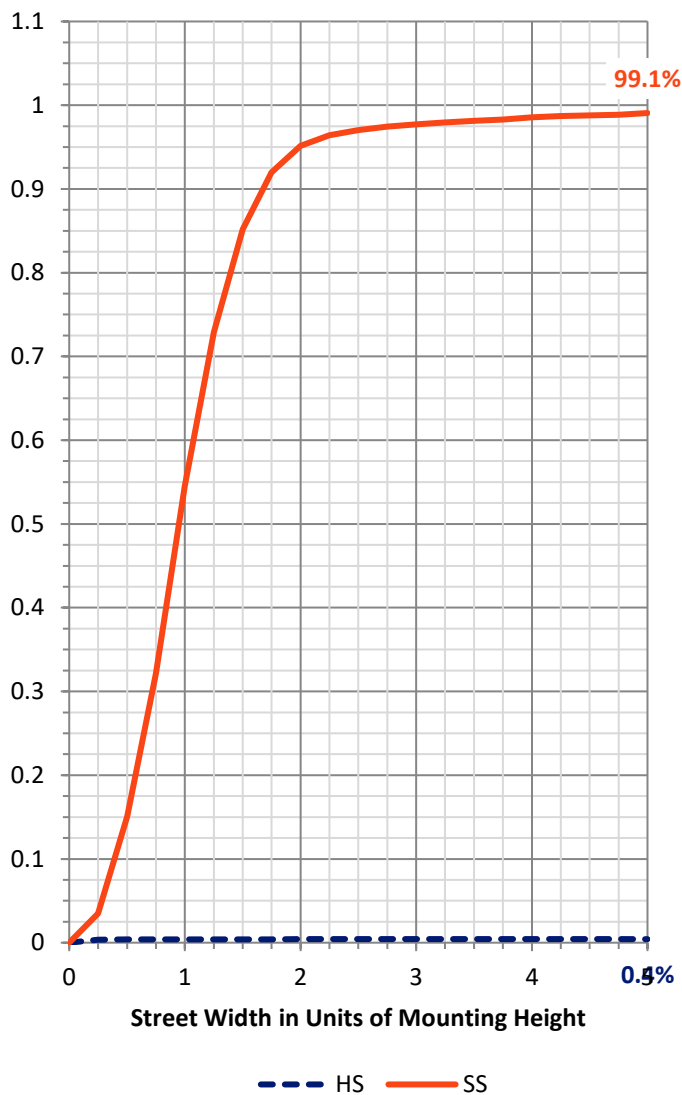
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 31.1     | 0.0    | 31.1   |
|                    | % Fixture | 0.4      | 0.0    | 0.4    |
| <b>Street Side</b> | Lumens    | 7267.7   | 0.0    | 7267.7 |
|                    | % Fixture | 99.6     | 0.0    | 99.6   |
| <b>Total</b>       | Lumens    | 7298.8   | 0.0    | 7298.8 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 5.7    | 0.1       |
| 10°-20°   | 60.0   | 0.8       |
| 20°-30°   | 215.4  | 3.0       |
| 30°-40°   | 573.5  | 7.9       |
| 40°-50°   | 1506.5 | 20.6      |
| 50°-60°   | 2333.9 | 32.0      |
| 60°-70°   | 1956.9 | 26.8      |
| 70°-80°   | 575.9  | 7.9       |
| 80°-90°   | 71.0   | 1.0       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-90°    | 7298.8 | 100.0     |
| 0°-180°   | 7298.8 | 100.0     |



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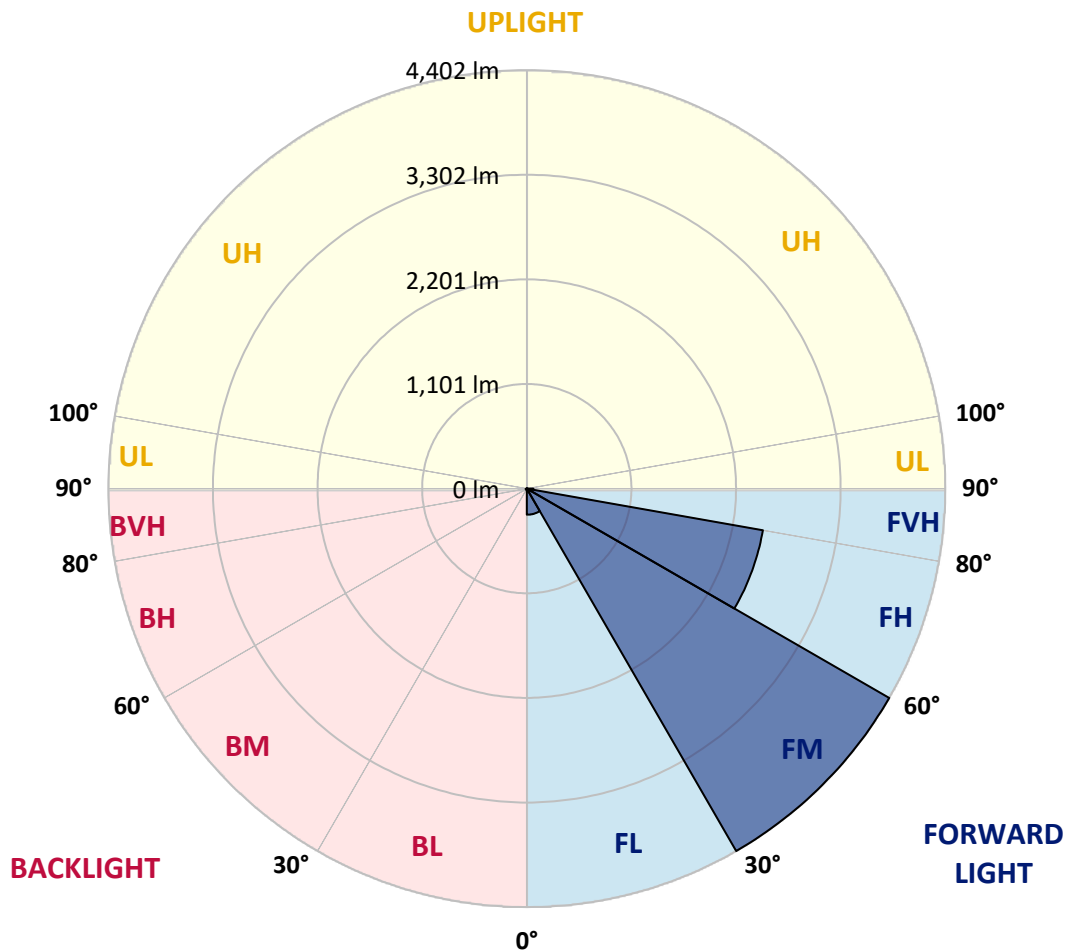
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 274.1  | 3.8       |                         |      |         |
| FM   | (30°-60°)   | 4402.0 | 60.3      |                         |      |         |
| FH   | (60°-80°)   | 2521.8 | 34.6      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 69.7   | 1.0       |                         |      | G1/100  |
| BL   | (0°-30°)    | 7.0    | 0.1       | B0/110                  |      |         |
| BM   | (30°-60°)   | 11.9   | 0.2       | B0/220                  |      |         |
| BH   | (60°-80°)   | 11.0   | 0.2       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 1.3    | 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-G2**

Type II Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 64°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 44.7   | 44.7   | 44.7   | 44.7   | 44.7   | 44.7   | 44.7   | 44.7   | 44.7   | 44.7   | 44.7   |
| 2.5°  | 54.2   | 54.7   | 53.7   | 51.7   | 50.2   | 50.2   | 49.7   | 48.2   | 48.2   | 46.7   | 45.7   |
| 5°    | 75.8   | 74.8   | 72.8   | 68.8   | 65.3   | 61.8   | 58.2   | 54.7   | 54.2   | 49.7   | 46.7   |
| 7.5°  | 124.0  | 125.0  | 118.5  | 105.9  | 95.4   | 81.8   | 69.3   | 61.8   | 60.8   | 53.2   | 47.2   |
| 10°   | 272.1  | 264.6  | 249.5  | 200.8  | 165.2  | 124.5  | 92.4   | 71.8   | 70.8   | 57.2   | 48.2   |
| 12.5° | 496.1  | 490.0  | 462.4  | 412.2  | 320.3  | 222.9  | 135.1  | 88.9   | 85.9   | 60.8   | 48.7   |
| 15°   | 715.0  | 705.4  | 690.4  | 639.7  | 532.2  | 399.7  | 220.9  | 121.5  | 113.5  | 65.8   | 48.2   |
| 17.5° | 854.5  | 856.1  | 842.5  | 820.9  | 751.6  | 591.5  | 381.6  | 181.3  | 165.7  | 74.8   | 47.2   |
| 20°   | 976.6  | 973.0  | 980.6  | 969.0  | 920.3  | 803.8  | 555.3  | 287.2  | 260.6  | 89.4   | 47.7   |
| 22.5° | 1117.1 | 1125.7 | 1131.2 | 1128.7 | 1075.0 | 975.5  | 752.6  | 429.8  | 396.1  | 116.0  | 49.2   |
| 25°   | 1305.4 | 1304.4 | 1304.9 | 1298.4 | 1246.2 | 1135.7 | 950.4  | 607.0  | 572.9  | 159.2  | 52.7   |
| 27.5° | 1502.7 | 1508.8 | 1511.3 | 1487.7 | 1419.4 | 1310.9 | 1133.7 | 800.8  | 760.7  | 228.4  | 57.2   |
| 30°   | 1772.4 | 1767.3 | 1755.8 | 1707.6 | 1624.7 | 1490.2 | 1314.5 | 1004.2 | 962.0  | 325.3  | 64.3   |
| 32.5° | 2135.9 | 2130.3 | 2072.1 | 1965.7 | 1841.6 | 1677.0 | 1496.2 | 1208.0 | 1156.8 | 446.4  | 73.8   |
| 35°   | 2734.8 | 2743.4 | 2600.3 | 2324.6 | 2102.2 | 1901.4 | 1697.5 | 1410.9 | 1365.7 | 595.5  | 86.9   |
| 37.5° | 3652.1 | 3605.5 | 3411.1 | 2924.1 | 2445.1 | 2181.5 | 1889.8 | 1615.7 | 1576.5 | 779.2  | 103.9  |
| 40°   | 4543.3 | 4497.2 | 4440.9 | 3979.5 | 3041.1 | 2490.3 | 2159.0 | 1856.2 | 1805.5 | 986.6  | 129.0  |
| 42.5° | 5480.2 | 5454.6 | 5452.1 | 5104.2 | 4128.6 | 2975.8 | 2482.8 | 2137.9 | 2094.7 | 1214.0 | 170.2  |
| 45°   | 6144.0 | 6118.4 | 6172.1 | 6232.9 | 5609.8 | 4016.2 | 3046.6 | 2503.9 | 2441.1 | 1490.2 | 236.0  |
| 47.5° | 6233.4 | 6234.4 | 6378.0 | 6568.2 | 6710.3 | 5625.3 | 3797.8 | 2988.9 | 2912.6 | 1885.3 | 346.4  |
| 50°   | 5936.1 | 5947.7 | 6176.1 | 6516.5 | 6899.1 | 6975.4 | 5122.2 | 3692.8 | 3579.8 | 2353.8 | 503.1  |
| 52.5° | 5370.3 | 5383.3 | 5701.6 | 6261.5 | 6725.4 | 7299.8 | 6681.7 | 4613.6 | 4483.6 | 2938.2 | 724.0  |
| 55°   | 4860.7 | 4868.7 | 5233.7 | 5941.1 | 6516.0 | 7123.5 | 7607.6 | 5843.2 | 5672.5 | 3657.2 | 941.9  |
| 57.5° | 4356.1 | 4337.5 | 4575.0 | 5384.8 | 6480.4 | 6907.1 | 7744.1 | 7244.5 | 7056.3 | 4442.9 | 1111.6 |
| 60°   | 3681.3 | 3650.1 | 3840.9 | 4356.1 | 6011.4 | 7049.2 | 7488.6 | 8019.8 | 7977.1 | 5537.0 | 1242.7 |
| 61°   | 3293.2 | 3280.1 | 3471.9 | 3913.7 | 5616.8 | 7013.1 | 7427.3 | 8052.4 | 8056.9 | 6054.6 | 1301.4 |
| 62.5° | 2351.8 | 2388.9 | 2682.1 | 3256.5 | 4704.5 | 6778.6 | 7435.3 | 7951.5 | 7996.2 | 6742.5 | 1453.5 |
| 65°   | 1045.3 | 1105.1 | 1333.0 | 1800.5 | 2735.8 | 5638.9 | 7364.0 | 7730.1 | 7708.0 | 6931.2 | 1977.7 |
| 67.5° | 620.1  | 629.1  | 742.6  | 1020.2 | 1449.0 | 3033.1 | 6498.5 | 7437.3 | 7407.7 | 6034.0 | 2460.7 |
| 70°   | 488.5  | 493.0  | 529.2  | 640.2  | 841.0  | 1161.8 | 3708.9 | 6434.7 | 6563.7 | 4892.8 | 2409.0 |
| 72.5° | 463.4  | 462.4  | 467.4  | 487.0  | 529.7  | 576.4  | 1436.0 | 4277.2 | 4539.8 | 3523.6 | 2019.9 |
| 75°   | 457.4  | 455.4  | 450.4  | 442.8  | 383.6  | 339.4  | 444.8  | 1891.8 | 2044.0 | 2407.5 | 1520.8 |
| 77.5° | 443.8  | 444.3  | 445.3  | 424.8  | 328.9  | 240.0  | 215.4  | 607.0  | 746.6  | 1527.8 | 1081.0 |
| 80°   | 300.2  | 304.8  | 312.3  | 304.3  | 295.7  | 173.7  | 152.1  | 215.9  | 218.9  | 857.6  | 714.0  |
| 82.5° | 152.1  | 152.1  | 148.6  | 132.5  | 114.5  | 113.0  | 121.0  | 156.6  | 158.7  | 433.8  | 335.9  |
| 85°   | 91.9   | 96.9   | 98.9   | 89.9   | 82.3   | 75.8   | 92.4   | 124.5  | 129.0  | 168.2  | 78.3   |
| 87.5° | 20.6   | 21.1   | 23.1   | 30.6   | 44.7   | 60.8   | 85.9   | 114.0  | 116.0  | 107.9  | 9.5    |
| 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: GLAN-SA2A-740-U-T2BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°   | 95°  | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|-------|------|------|------|------|------|------|------|------|------|------|
| 0°    | 44.7  | 44.7 | 44.7 | 44.7 | 44.7 | 44.7 | 44.7 | 44.7 | 44.7 | 44.7 | 44.7 |
| 2.5°  | 45.2  | 44.2 | 43.7 | 42.2 | 40.7 | 39.2 | 38.2 | 37.7 | 38.2 | 38.7 | 38.7 |
| 5°    | 44.7  | 43.2 | 40.7 | 38.2 | 36.1 | 34.1 | 32.1 | 31.6 | 31.6 | 32.1 | 32.1 |
| 7.5°  | 44.7  | 42.2 | 38.7 | 35.6 | 32.6 | 29.6 | 28.1 | 27.1 | 27.6 | 27.6 | 27.6 |
| 10°   | 44.7  | 41.7 | 37.2 | 32.6 | 29.1 | 25.6 | 23.1 | 22.1 | 22.1 | 22.1 | 22.1 |
| 12.5° | 44.2  | 41.2 | 35.6 | 30.1 | 25.1 | 21.1 | 18.1 | 16.6 | 17.1 | 17.1 | 17.1 |
| 15°   | 43.2  | 39.7 | 33.6 | 25.6 | 20.1 | 16.1 | 13.1 | 11.5 | 12.0 | 13.1 | 13.6 |
| 17.5° | 41.7  | 38.2 | 30.1 | 21.6 | 16.1 | 12.0 | 9.0  | 8.0  | 8.5  | 10.0 | 10.0 |
| 20°   | 41.2  | 36.7 | 26.6 | 17.6 | 12.0 | 8.5  | 6.0  | 5.0  | 5.5  | 7.5  | 8.0  |
| 22.5° | 41.2  | 35.6 | 24.1 | 14.6 | 9.0  | 5.5  | 3.5  | 2.0  | 2.0  | 3.5  | 3.5  |
| 25°   | 41.7  | 35.1 | 22.1 | 12.0 | 6.5  | 4.0  | 2.0  | 1.0  | 2.0  | 5.5  | 6.5  |
| 27.5° | 42.7  | 34.6 | 21.1 | 10.0 | 5.0  | 3.5  | 1.5  | 3.5  | 6.0  | 6.0  | 6.0  |
| 30°   | 43.7  | 33.6 | 19.6 | 8.5  | 4.5  | 2.5  | 2.5  | 5.0  | 5.0  | 6.0  | 6.5  |
| 32.5° | 45.2  | 33.1 | 18.6 | 7.5  | 3.5  | 2.0  | 3.5  | 3.0  | 3.0  | 3.5  | 4.0  |
| 35°   | 48.2  | 33.6 | 17.6 | 7.5  | 3.5  | 2.5  | 3.0  | 1.5  | 1.0  | 1.0  | 1.0  |
| 37.5° | 52.2  | 34.1 | 16.1 | 6.5  | 3.0  | 3.0  | 1.5  | 0.0  | 0.0  | 0.0  | 0.0  |
| 40°   | 58.7  | 35.6 | 15.1 | 6.0  | 2.5  | 2.5  | 0.5  | 0.0  | 0.0  | 0.0  | 0.0  |
| 42.5° | 69.8  | 38.7 | 14.6 | 5.5  | 2.5  | 2.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 45°   | 91.9  | 45.7 | 13.6 | 5.0  | 2.5  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 47.5° | 132.0 | 62.3 | 13.1 | 4.0  | 1.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 50°   | 192.8 | 84.3 | 12.6 | 3.5  | 0.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 52.5° | 246.0 | 88.9 | 8.5  | 3.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 55°   | 252.0 | 61.3 | 6.5  | 2.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 57.5° | 200.8 | 39.7 | 5.5  | 1.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 60°   | 152.1 | 30.1 | 5.0  | 0.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 61°   | 146.1 | 27.1 | 5.0  | 0.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 62.5° | 161.2 | 23.6 | 4.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 65°   | 262.1 | 19.6 | 4.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 67.5° | 455.4 | 17.1 | 3.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 70°   | 575.4 | 16.1 | 3.0  | 0.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 72.5° | 501.6 | 14.6 | 3.0  | 1.0  | 0.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 75°   | 301.8 | 12.6 | 3.0  | 2.0  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 77.5° | 158.2 | 9.5  | 3.0  | 2.5  | 1.5  | 0.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 80°   | 76.8  | 8.5  | 3.5  | 2.5  | 2.0  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 82.5° | 30.1  | 7.0  | 4.0  | 3.5  | 2.5  | 1.5  | 0.5  | 0.0  | 0.0  | 0.0  | 0.0  |
| 85°   | 13.6  | 6.0  | 4.5  | 4.0  | 3.5  | 2.0  | 0.5  | 0.0  | 0.0  | 0.0  | 0.0  |
| 87.5° | 7.0   | 5.5  | 5.0  | 4.5  | 3.5  | 2.5  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 90°   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-1

Test Date: 10/09/2024

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

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

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-1  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 10/15/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: McGraw-Edison  
 Catalog Number: **GSS-SB1A-740-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 4000K CCT 26 LEDS

### Spectral Parameters

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



### Test Conditions

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

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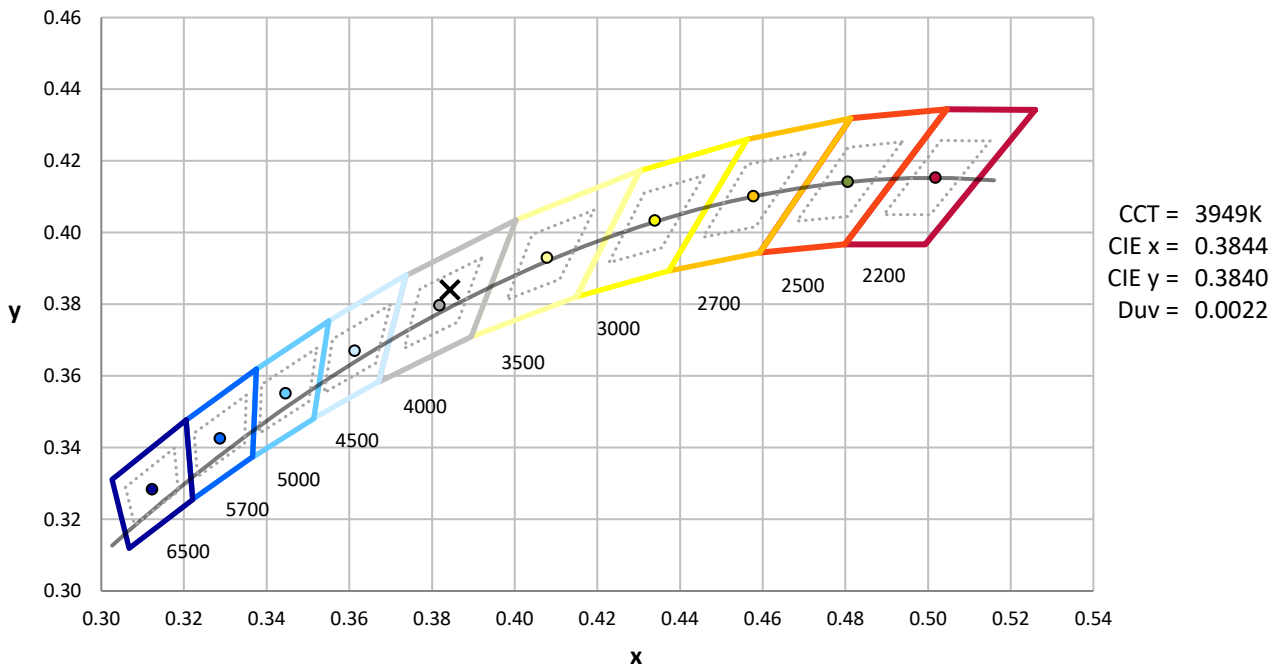
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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           |

REPORT NUMBER: SP1-2407-184-1

**CIE 1931 Chromaticity Diagram**



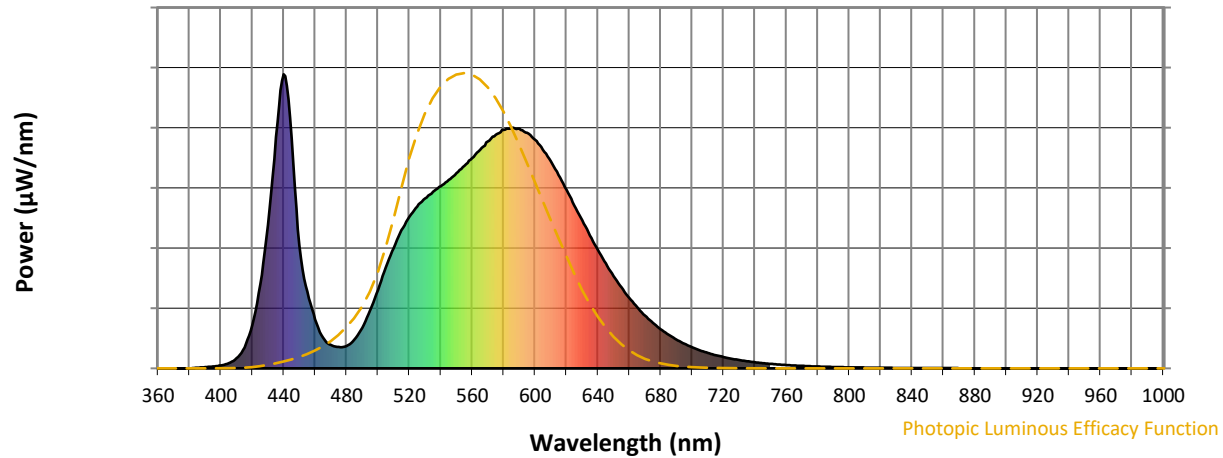
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2407-184-1

### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

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

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### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.47

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

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.78

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

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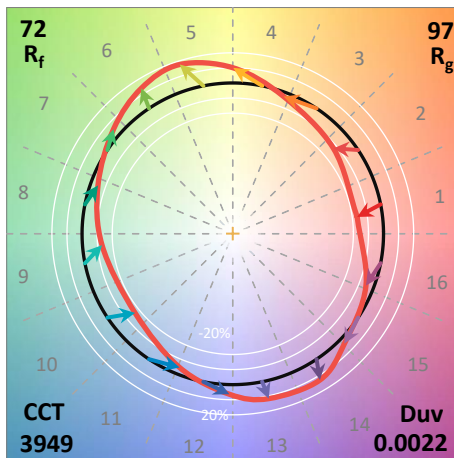
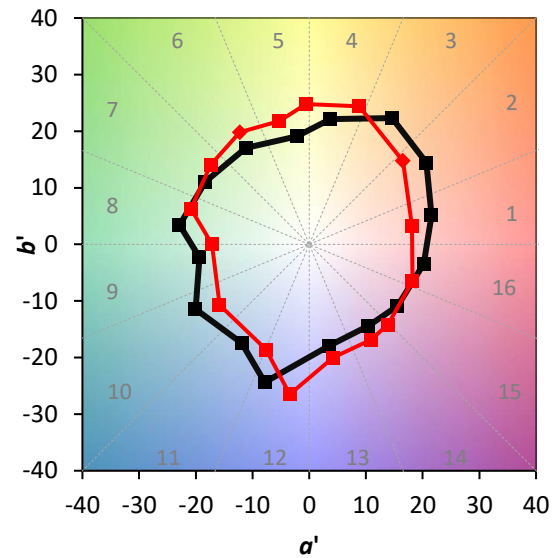
TM-30-18

### Summary

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



### Color Vector Graphics



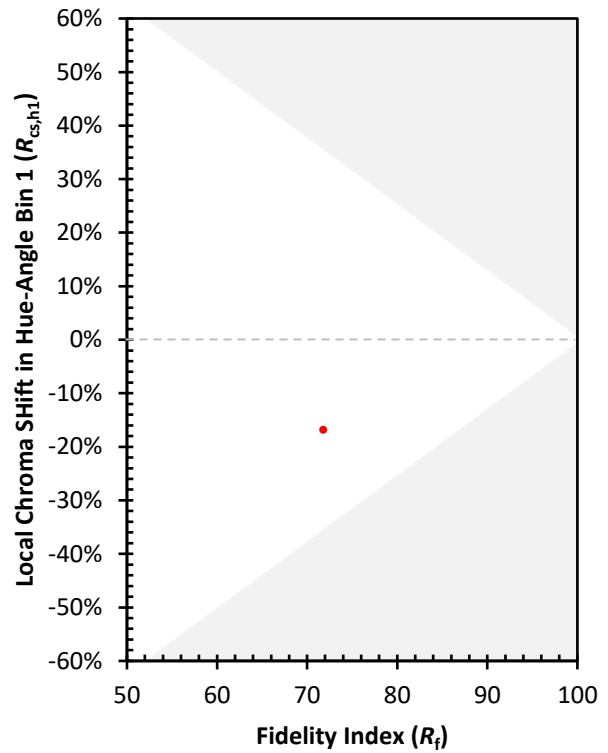
**Individual Sample Fidelity Index ( $R_{f,i}$ )**

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



**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**



(END OF REPORT)