

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: P1064469

Luminaire Tested: **GLAN-SA6A-950-U-T4BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1064469  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: GLAN-SA6A-950-U-T4BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 615mA 6xLight Square PACKAGE  
90CRI 5000K FIXTURE w/ TYPE IV ANGLED BACKLIGHT CONTROL  
Light Source: (84) 5000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 17088.9 lumens  
Efficiency: N/A  
Efficacy: 104.9 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B0 - U0 - G4

Input Watts (W): 162.9  
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



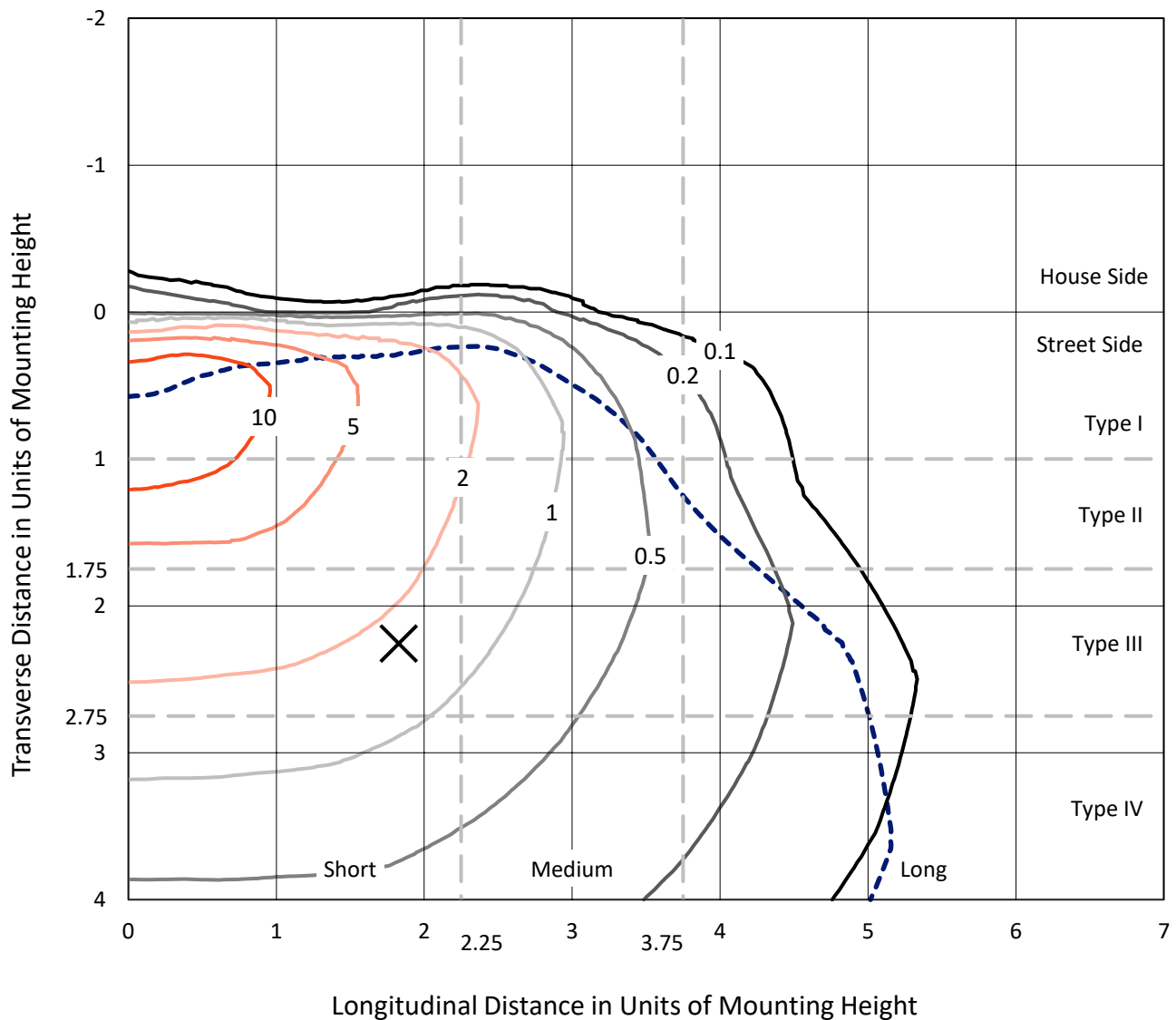
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CATALOG NUMBER: GLAN-SA6A-950-U-T4BC

## Iso-Footcandle Lines of Horizontal Illumination

✗ Max cd

--- 1/2 Max cd

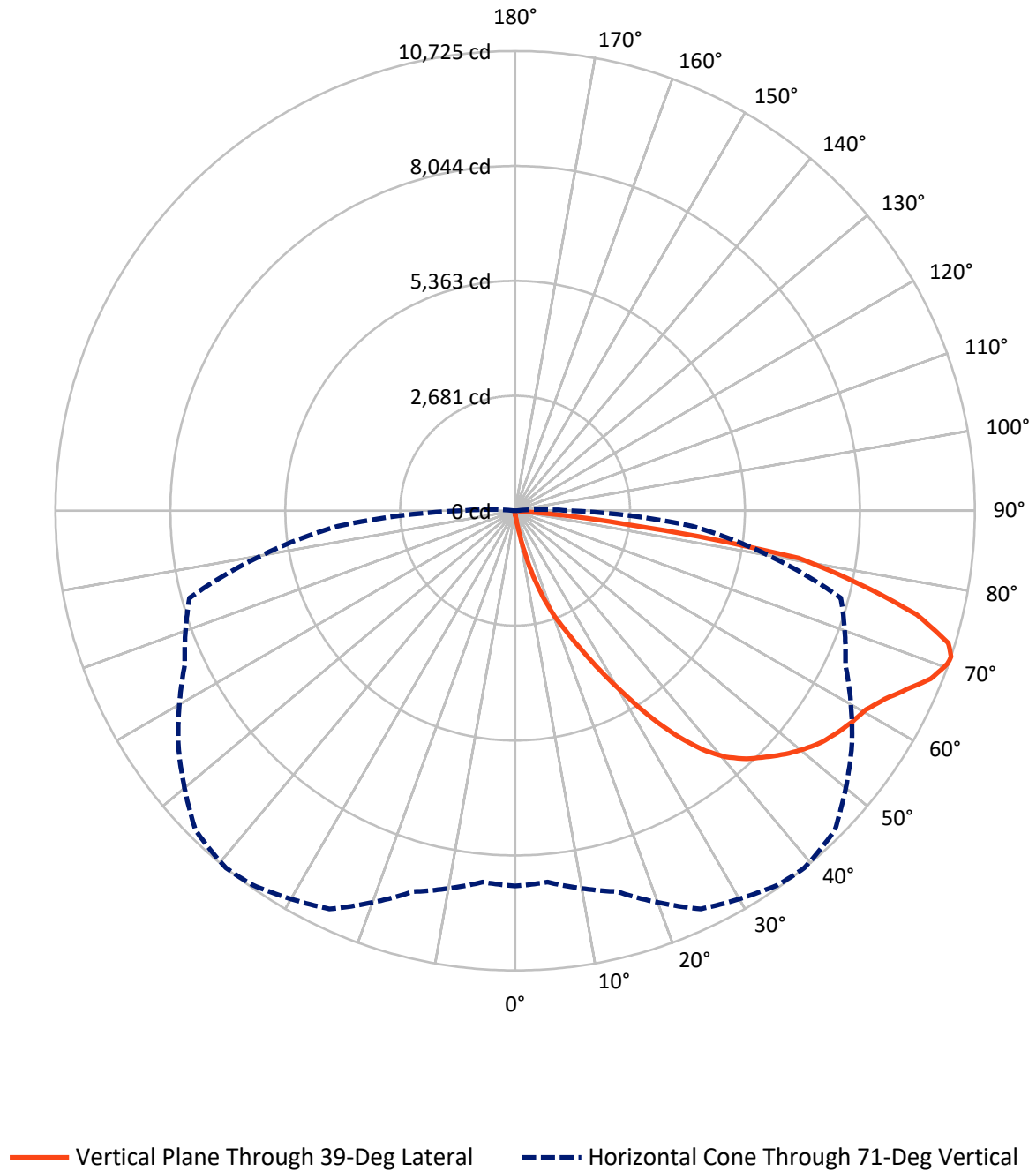


Based on 15 foot mounting height. Maximum calculated value = 17.6 fc  
Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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CATALOG NUMBER: GLAN-SA6A-950-U-T4BC

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 60.7     | 0.0    | 60.7    |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 17028.2  | 0.0    | 17028.2 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 17088.9  | 0.0    | 17088.9 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 14.3    | 0.1       |
| 10°-20°   | 182.6   | 1.1       |
| 20°-30°   | 650.5   | 3.8       |
| 30°-40°   | 1567.6  | 9.2       |
| 40°-50°   | 2623.6  | 15.4      |
| 50°-60°   | 3369.7  | 19.7      |
| 60°-70°   | 4264.3  | 25.0      |
| 70°-80°   | 3801.8  | 22.2      |
| 80°-90°   | 614.5   | 3.6       |
| 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°    | 17088.9 | 100.0     |
| 0°-180°   | 17088.9 | 100.0     |



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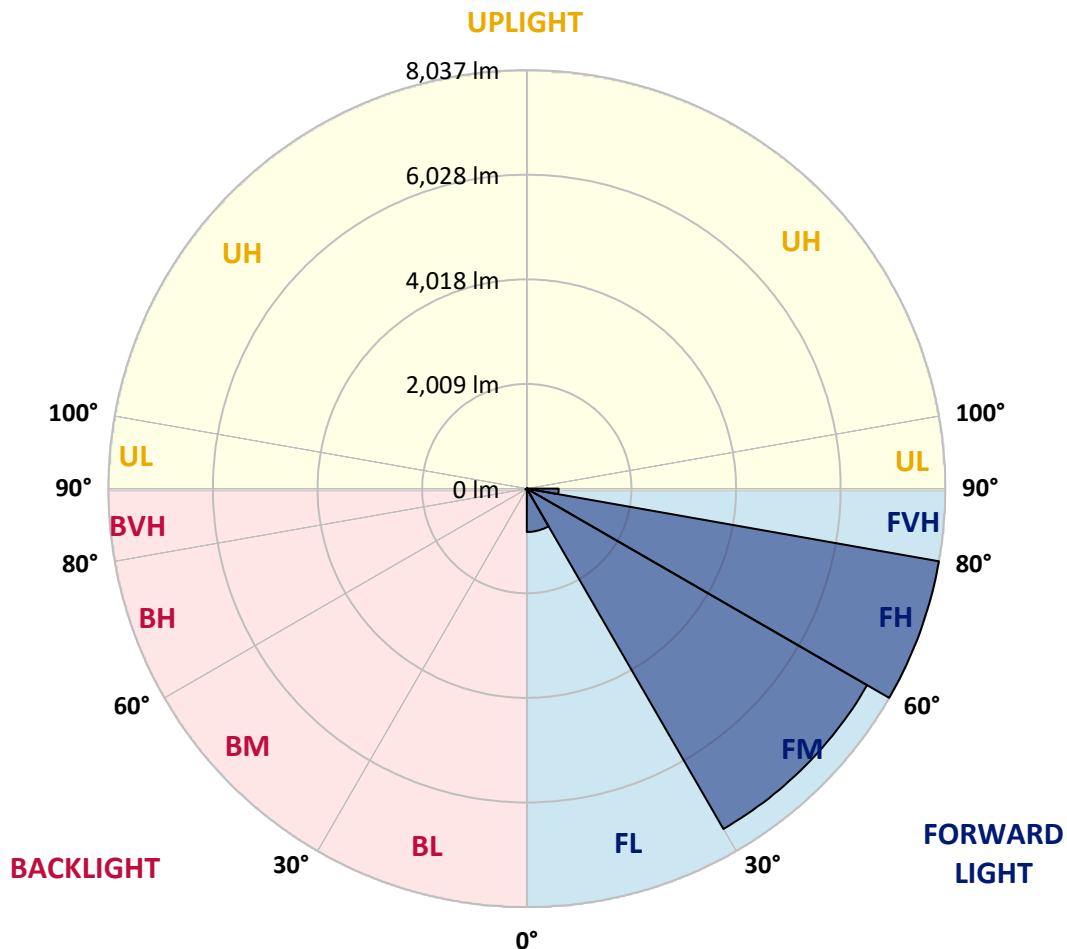
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|--------|-----------|-------------------------|------|----------|
|      |             |        |           | B                       | U    | G        |
| FL   | (0°-30°)    | 832.7  | 4.9       |                         |      |          |
| FM   | (30°-60°)   | 7546.8 | 44.2      |                         |      |          |
| FH   | (60°-80°)   | 8037.0 | 47.0      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 611.8  | 3.6       |                         |      | G4/750   |
| BL   | (0°-30°)    | 14.7   | 0.1       | B0/110                  |      |          |
| BM   | (30°-60°)   | 14.1   | 0.1       | B0/220                  |      |          |
| BH   | (60°-80°)   | 29.2   | 0.2       | B0/110                  |      | G0/110   |
| BVH  | (80°-90°)   | 2.8    | 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-G4**

Type IV Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°     | 35°     | 39°     | 45°     | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|---------|---------|---------|---------|--------|--------|--------|--------|
| 0°    | 93.7   | 93.7   | 93.7   | 93.7    | 93.7    | 93.7    | 93.7    | 93.7   | 93.7   | 93.7   | 93.7   |
| 2.5°  | 107.6  | 107.6  | 107.6  | 104.1   | 104.1   | 103.0   | 101.8   | 101.8  | 99.5   | 98.3   | 96.0   |
| 5°    | 163.1  | 159.6  | 151.5  | 146.9   | 137.7   | 131.9   | 126.1   | 118.0  | 109.9  | 104.1  | 97.2   |
| 7.5°  | 369.0  | 377.1  | 350.5  | 300.8   | 249.9   | 227.9   | 190.9   | 153.9  | 127.3  | 109.9  | 98.3   |
| 10°   | 940.5  | 935.9  | 845.6  | 746.2   | 576.1   | 507.8   | 397.9   | 251.0  | 164.3  | 120.3  | 99.5   |
| 12.5° | 1599.9 | 1595.3 | 1488.8 | 1353.5  | 1129.1  | 986.8   | 778.5   | 468.5  | 236.0  | 136.5  | 99.5   |
| 15°   | 2154.0 | 2135.5 | 2102.0 | 1967.8  | 1705.2  | 1586.0  | 1310.7  | 828.3  | 381.8  | 164.3  | 101.8  |
| 17.5° | 2520.7 | 2504.5 | 2473.3 | 2424.7  | 2258.1  | 2117.0  | 1896.0  | 1301.4 | 617.7  | 212.9  | 106.4  |
| 20°   | 2857.4 | 2845.8 | 2820.4 | 2811.1  | 2703.5  | 2628.3  | 2445.5  | 1845.1 | 962.5  | 289.2  | 113.4  |
| 22.5° | 3320.1 | 3295.8 | 3306.2 | 3250.7  | 3145.4  | 3055.2  | 2943.0  | 2414.3 | 1383.6 | 416.5  | 126.1  |
| 25°   | 3886.9 | 3875.4 | 3846.5 | 3807.1  | 3661.4  | 3582.7  | 3410.3  | 2951.1 | 1854.4 | 583.0  | 140.0  |
| 27.5° | 4571.8 | 4559.1 | 4552.1 | 4461.9  | 4294.2  | 4208.5  | 3967.9  | 3457.8 | 2384.2 | 816.7  | 158.5  |
| 30°   | 5360.8 | 5366.5 | 5321.4 | 5205.7  | 5010.2  | 4889.9  | 4642.4  | 3988.8 | 2926.8 | 1090.9 | 178.2  |
| 32.5° | 6177.5 | 6165.9 | 6096.5 | 5960.0  | 5785.3  | 5673.1  | 5358.4  | 4570.6 | 3495.9 | 1453.0 | 201.3  |
| 35°   | 7057.8 | 7035.8 | 6853.1 | 6696.9  | 6547.7  | 6406.5  | 6119.6  | 5246.2 | 4065.1 | 1859.0 | 232.5  |
| 37.5° | 7946.3 | 7843.3 | 7476.6 | 7278.8  | 7175.8  | 7060.1  | 6792.9  | 5966.9 | 4630.8 | 2312.5 | 270.7  |
| 40°   | 8617.2 | 8537.4 | 8102.4 | 7738.0  | 7655.9  | 7557.6  | 7358.6  | 6589.3 | 5232.3 | 2799.5 | 317.0  |
| 42.5° | 8988.6 | 8944.6 | 8553.6 | 8193.8  | 8000.6  | 7913.9  | 7743.8  | 7133.0 | 5827.0 | 3337.5 | 384.1  |
| 45°   | 9147.1 | 9078.8 | 8817.4 | 8649.6  | 8341.9  | 8198.5  | 7996.0  | 7543.7 | 6448.2 | 3948.3 | 477.8  |
| 47.5° | 9098.5 | 9059.1 | 8871.7 | 8933.0  | 8709.8  | 8486.5  | 8189.2  | 7858.3 | 6979.2 | 4649.3 | 606.2  |
| 50°   | 8793.1 | 8759.5 | 8701.7 | 9033.7  | 9005.9  | 8742.2  | 8439.1  | 8107.1 | 7413.0 | 5372.3 | 805.2  |
| 52.5° | 8212.3 | 8198.5 | 8346.5 | 8955.0  | 9173.7  | 8967.7  | 8679.7  | 8326.9 | 7817.9 | 6127.7 | 1089.7 |
| 55°   | 7463.9 | 7520.6 | 7944.0 | 8832.4  | 9259.3  | 9134.3  | 8892.6  | 8532.8 | 8142.9 | 6803.3 | 1509.7 |
| 57.5° | 7156.2 | 7171.2 | 7699.9 | 8745.6  | 9297.4  | 9281.2  | 9099.6  | 8729.4 | 8441.4 | 7343.6 | 2150.5 |
| 60°   | 7515.9 | 7492.8 | 7771.6 | 8811.6  | 9373.8  | 9413.1  | 9283.6  | 8912.2 | 8700.5 | 7807.4 | 3004.3 |
| 62.5° | 8166.1 | 8153.3 | 8242.4 | 9092.7  | 9597.1  | 9676.9  | 9539.2  | 9044.1 | 8929.6 | 8112.9 | 3978.3 |
| 65°   | 8746.8 | 8720.2 | 8885.6 | 9591.3  | 9989.2  | 10045.9 | 9925.6  | 9269.7 | 9030.2 | 8335.0 | 4893.4 |
| 67.5° | 8997.8 | 8992.0 | 9258.1 | 10065.6 | 10401.1 | 10462.4 | 10357.1 | 9580.9 | 9007.1 | 8405.5 | 5297.1 |
| 70°   | 8883.3 | 8861.3 | 9287.0 | 10266.9 | 10633.6 | 10703.0 | 10601.2 | 9696.6 | 8756.0 | 8182.3 | 4699.0 |
| 71°   | 8757.2 | 8698.2 | 9200.3 | 10253.0 | 10666.0 | 10725.0 | 10546.8 | 9591.3 | 8503.9 | 7865.3 | 4156.5 |
| 72.5° | 8366.2 | 8376.6 | 8962.0 | 10108.4 | 10588.5 | 10571.1 | 10239.1 | 9214.2 | 8199.6 | 7145.7 | 3338.6 |
| 75°   | 7403.7 | 7465.0 | 8190.4 | 9501.0  | 9896.7  | 9675.7  | 9167.9  | 8493.4 | 7588.8 | 5123.6 | 2318.3 |
| 77.5° | 6050.2 | 6141.6 | 6938.7 | 8332.6  | 8220.4  | 8198.5  | 8177.6  | 7483.5 | 6480.6 | 2752.1 | 1612.6 |
| 80°   | 2888.6 | 3086.4 | 4185.4 | 5948.4  | 6462.1  | 6710.8  | 6554.6  | 6030.6 | 5011.4 | 1310.7 | 963.6  |
| 82.5° | 188.6  | 186.2  | 263.8  | 499.8   | 2106.6  | 2723.2  | 4326.5  | 4310.3 | 3493.6 | 638.6  | 393.3  |
| 85°   | 89.1   | 91.4   | 100.6  | 114.5   | 133.0   | 145.8   | 201.3   | 1180.0 | 1671.6 | 304.2  | 85.6   |
| 87.5° | 52.1   | 53.2   | 62.5   | 79.8    | 104.1   | 115.7   | 137.7   | 177.0  | 217.5  | 167.7  | 18.5   |
| 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-SA6A-950-U-T4BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°  | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|------|------|------|------|------|------|------|------|------|------|
| 0°    | 93.7   | 93.7 | 93.7 | 93.7 | 93.7 | 93.7 | 93.7 | 93.7 | 93.7 | 93.7 | 93.7 |
| 2.5°  | 94.9   | 93.7 | 90.2 | 86.8 | 83.3 | 81.0 | 79.8 | 81.0 | 81.0 | 82.1 | 82.1 |
| 5°    | 94.9   | 91.4 | 85.6 | 78.7 | 74.0 | 69.4 | 67.1 | 65.9 | 67.1 | 67.1 | 67.1 |
| 7.5°  | 93.7   | 87.9 | 79.8 | 71.7 | 65.9 | 60.2 | 57.8 | 56.7 | 56.7 | 57.8 | 57.8 |
| 10°   | 91.4   | 85.6 | 75.2 | 65.9 | 59.0 | 52.1 | 48.6 | 45.1 | 45.1 | 45.1 | 46.3 |
| 12.5° | 90.2   | 82.1 | 69.4 | 60.2 | 50.9 | 42.8 | 35.9 | 32.4 | 33.5 | 33.5 | 33.5 |
| 15°   | 87.9   | 78.7 | 65.9 | 54.4 | 42.8 | 32.4 | 26.6 | 23.1 | 24.3 | 25.5 | 24.3 |
| 17.5° | 87.9   | 77.5 | 61.3 | 47.4 | 33.5 | 24.3 | 19.7 | 17.4 | 17.4 | 18.5 | 18.5 |
| 20°   | 87.9   | 75.2 | 57.8 | 40.5 | 25.5 | 18.5 | 13.9 | 12.7 | 12.7 | 15.0 | 16.2 |
| 22.5° | 90.2   | 75.2 | 53.2 | 33.5 | 20.8 | 13.9 | 10.4 | 9.3  | 10.4 | 12.7 | 13.9 |
| 25°   | 93.7   | 74.0 | 48.6 | 30.1 | 17.4 | 10.4 | 8.1  | 5.8  | 6.9  | 9.3  | 10.4 |
| 27.5° | 97.2   | 72.9 | 44.0 | 26.6 | 13.9 | 8.1  | 5.8  | 4.6  | 3.5  | 4.6  | 4.6  |
| 30°   | 100.6  | 72.9 | 39.3 | 22.0 | 11.6 | 5.8  | 3.5  | 2.3  | 1.2  | 0.0  | 0.0  |
| 32.5° | 103.0  | 70.6 | 35.9 | 17.4 | 9.3  | 4.6  | 2.3  | 1.2  | 0.0  | 0.0  | 0.0  |
| 35°   | 105.3  | 68.3 | 31.2 | 13.9 | 6.9  | 3.5  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  |
| 37.5° | 107.6  | 64.8 | 26.6 | 11.6 | 5.8  | 2.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 40°   | 109.9  | 60.2 | 22.0 | 10.4 | 3.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 42.5° | 112.2  | 56.7 | 18.5 | 8.1  | 2.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 45°   | 118.0  | 54.4 | 15.0 | 6.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 47.5° | 128.4  | 52.1 | 13.9 | 4.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 50°   | 143.4  | 49.7 | 12.7 | 3.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 52.5° | 164.3  | 48.6 | 11.6 | 2.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 55°   | 201.3  | 47.4 | 10.4 | 2.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 57.5° | 264.9  | 46.3 | 10.4 | 2.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 60°   | 406.0  | 44.0 | 10.4 | 2.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 62.5° | 725.3  | 42.8 | 9.3  | 2.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 65°   | 1264.4 | 44.0 | 9.3  | 2.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 67.5° | 1812.8 | 46.3 | 8.1  | 3.5  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 70°   | 1551.3 | 40.5 | 8.1  | 4.6  | 2.3  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 71°   | 1264.4 | 35.9 | 8.1  | 4.6  | 2.3  | 1.2  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  |
| 72.5° | 813.3  | 27.8 | 6.9  | 4.6  | 2.3  | 2.3  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  |
| 75°   | 343.6  | 23.1 | 6.9  | 4.6  | 3.5  | 2.3  | 2.3  | 1.2  | 0.0  | 0.0  | 0.0  |
| 77.5° | 146.9  | 17.4 | 6.9  | 5.8  | 4.6  | 3.5  | 3.5  | 2.3  | 1.2  | 0.0  | 0.0  |
| 80°   | 55.5   | 13.9 | 8.1  | 6.9  | 5.8  | 5.8  | 4.6  | 2.3  | 1.2  | 0.0  | 0.0  |
| 82.5° | 25.5   | 11.6 | 8.1  | 6.9  | 6.9  | 5.8  | 4.6  | 3.5  | 2.3  | 0.0  | 0.0  |
| 85°   | 16.2   | 10.4 | 8.1  | 6.9  | 6.9  | 5.8  | 5.8  | 3.5  | 2.3  | 0.0  | 0.0  |
| 87.5° | 12.7   | 10.4 | 8.1  | 8.1  | 6.9  | 6.9  | 4.6  | 3.5  | 1.2  | 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: SP1-2407-184-17

Test Date: 10/11/2024

Luminaire Tested: GSS-SB1A-950-U-5WQ

Data in this report applies to families of products including GSS-SB1A-950-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-17  
 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-950-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 90 CRI  
 5000K CCT 26 LEDS

### Spectral Parameters

CCT (K): 4765  
 CIE  $u'$ : 0.2105  
 CIE  $v'$ : 0.4941  
 Duv: 0.0052  
 CIE x: 0.3536  
 CIE y: 0.3689  
 CIE z: 0.2775  
 Peak Wavelength (nm): 449  
 Dominant Wavelength (nm): 571  
 Purity: 16.80041  
 R<sub>f</sub>: 90.7  
 R<sub>g</sub>: 98

CRI (Ra): 90.8  
 R1: 89.8  
 R2: 93.1  
 R3: 95.3  
 R4: 90.3  
 R5: 89.0  
 R6: 89.7  
 R7: 94.9  
 R8: 84.0  
 R9: 54.9  
 R10: 83.0  
 R11: 89.6  
 R12: 68.0  
 R13: 90.6  
 R14: 97.3  
 R15: 86.2



### 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 5000K 7-step quadrangle

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### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 462                      | NR            | 620    | 668                      | NR            | 750    | 45                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 498                      | NR            | 625    | 652                      | NR            | 755    | 39                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 533                      | NR            | 630    | 634                      | NR            | 760    | 33                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 562                      | NR            | 635    | 610                      | NR            | 765    | 28                       | NR            | 895    | 1                        | NR            |
| 380    | 0                        | NR            | 510    | 590                      | NR            | 640    | 583                      | NR            | 770    | 24                       | NR            | 900    | 1                        | NR            |
| 385    | 0                        | NR            | 515    | 617                      | NR            | 645    | 552                      | NR            | 775    | 21                       | NR            | 905    | 1                        | NR            |
| 390    | 0                        | NR            | 520    | 642                      | NR            | 650    | 519                      | NR            | 780    | 18                       | NR            | 910    | 0                        | NR            |
| 395    | 2                        | NR            | 525    | 661                      | NR            | 655    | 484                      | NR            | 785    | 15                       | NR            | 915    | 0                        | NR            |
| 400    | 4                        | NR            | 530    | 681                      | NR            | 660    | 448                      | NR            | 790    | 13                       | NR            | 920    | 0                        | NR            |
| 405    | 7                        | NR            | 535    | 695                      | NR            | 665    | 411                      | NR            | 795    | 11                       | NR            | 925    | 0                        | NR            |
| 410    | 12                       | NR            | 540    | 702                      | NR            | 670    | 373                      | NR            | 800    | 10                       | NR            | 930    | 0                        | NR            |
| 415    | 21                       | NR            | 545    | 708                      | NR            | 675    | 338                      | NR            | 805    | 8                        | NR            | 935    | 0                        | NR            |
| 420    | 39                       | NR            | 550    | 707                      | NR            | 680    | 305                      | NR            | 810    | 7                        | NR            | 940    | 0                        | NR            |
| 425    | 74                       | NR            | 555    | 706                      | NR            | 685    | 272                      | NR            | 815    | 6                        | NR            | 945    | 0                        | NR            |
| 430    | 139                      | NR            | 560    | 700                      | NR            | 690    | 243                      | NR            | 820    | 5                        | NR            | 950    | 0                        | NR            |
| 435    | 270                      | NR            | 565    | 696                      | NR            | 695    | 214                      | NR            | 825    | 5                        | NR            | 955    | 0                        | NR            |
| 440    | 517                      | NR            | 570    | 692                      | NR            | 700    | 188                      | NR            | 830    | 4                        | NR            | 960    | 0                        | NR            |
| 445    | 877                      | NR            | 575    | 689                      | NR            | 705    | 165                      | NR            | 835    | 3                        | NR            | 965    | 0                        | NR            |
| 450    | 978                      | NR            | 580    | 688                      | NR            | 710    | 144                      | NR            | 840    | 3                        | NR            | 970    | 0                        | NR            |
| 455    | 738                      | NR            | 585    | 688                      | NR            | 715    | 125                      | NR            | 845    | 3                        | NR            | 975    | 0                        | NR            |
| 460    | 618                      | NR            | 590    | 689                      | NR            | 720    | 110                      | NR            | 850    | 2                        | NR            | 980    | 0                        | NR            |
| 465    | 529                      | NR            | 595    | 690                      | NR            | 725    | 95                       | NR            | 855    | 2                        | NR            | 985    | 0                        | NR            |
| 470    | 420                      | NR            | 600    | 690                      | NR            | 730    | 82                       | NR            | 860    | 2                        | NR            | 990    | 0                        | NR            |
| 475    | 395                      | NR            | 605    | 688                      | NR            | 735    | 71                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 408                      | NR            | 610    | 685                      | NR            | 740    | 61                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 429                      | NR            | 615    | 678                      | NR            | 745    | 52                       | NR            | 875    | 1                        | NR            |        |                          |               |

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### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.99

| 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       | 462                         | NR               | 620       | 668                         | NR               | 750       | 45                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 498                         | NR               | 625       | 652                         | NR               | 755       | 39                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 533                         | NR               | 630       | 634                         | NR               | 760       | 33                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 562                         | NR               | 635       | 610                         | NR               | 765       | 28                          | NR               | 895       | 1                           | NR               |
| 380       | 0                           | NR               | 510       | 590                         | NR               | 640       | 583                         | NR               | 770       | 24                          | NR               | 900       | 1                           | NR               |
| 385       | 0                           | NR               | 515       | 617                         | NR               | 645       | 552                         | NR               | 775       | 21                          | NR               | 905       | 1                           | NR               |
| 390       | 0                           | NR               | 520       | 642                         | NR               | 650       | 519                         | NR               | 780       | 18                          | NR               | 910       | 0                           | NR               |
| 395       | 2                           | NR               | 525       | 661                         | NR               | 655       | 484                         | NR               | 785       | 15                          | NR               | 915       | 0                           | NR               |
| 400       | 4                           | NR               | 530       | 681                         | NR               | 660       | 448                         | NR               | 790       | 13                          | NR               | 920       | 0                           | NR               |
| 405       | 7                           | NR               | 535       | 695                         | NR               | 665       | 411                         | NR               | 795       | 11                          | NR               | 925       | 0                           | NR               |
| 410       | 12                          | NR               | 540       | 702                         | NR               | 670       | 373                         | NR               | 800       | 10                          | NR               | 930       | 0                           | NR               |
| 415       | 21                          | NR               | 545       | 708                         | NR               | 675       | 338                         | NR               | 805       | 8                           | NR               | 935       | 0                           | NR               |
| 420       | 39                          | NR               | 550       | 707                         | NR               | 680       | 305                         | NR               | 810       | 7                           | NR               | 940       | 0                           | NR               |
| 425       | 74                          | NR               | 555       | 706                         | NR               | 685       | 272                         | NR               | 815       | 6                           | NR               | 945       | 0                           | NR               |
| 430       | 139                         | NR               | 560       | 700                         | NR               | 690       | 243                         | NR               | 820       | 5                           | NR               | 950       | 0                           | NR               |
| 435       | 270                         | NR               | 565       | 696                         | NR               | 695       | 214                         | NR               | 825       | 5                           | NR               | 955       | 0                           | NR               |
| 440       | 517                         | NR               | 570       | 692                         | NR               | 700       | 188                         | NR               | 830       | 4                           | NR               | 960       | 0                           | NR               |
| 445       | 877                         | NR               | 575       | 689                         | NR               | 705       | 165                         | NR               | 835       | 3                           | NR               | 965       | 0                           | NR               |
| 450       | 978                         | NR               | 580       | 688                         | NR               | 710       | 144                         | NR               | 840       | 3                           | NR               | 970       | 0                           | NR               |
| 455       | 738                         | NR               | 585       | 688                         | NR               | 715       | 125                         | NR               | 845       | 3                           | NR               | 975       | 0                           | NR               |
| 460       | 618                         | NR               | 590       | 689                         | NR               | 720       | 110                         | NR               | 850       | 2                           | NR               | 980       | 0                           | NR               |
| 465       | 529                         | NR               | 595       | 690                         | NR               | 725       | 95                          | NR               | 855       | 2                           | NR               | 985       | 0                           | NR               |
| 470       | 420                         | NR               | 600       | 690                         | NR               | 730       | 82                          | NR               | 860       | 2                           | NR               | 990       | 0                           | NR               |
| 475       | 395                         | NR               | 605       | 688                         | NR               | 735       | 71                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 408                         | NR               | 610       | 685                         | NR               | 740       | 61                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 429                         | NR               | 615       | 678                         | NR               | 745       | 52                          | NR               | 875       | 1                           | NR               |           |                             |                  |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 4.22

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 462                      | NR            | 620    | 668                      | NR            | 750    | 45                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 498                      | NR            | 625    | 652                      | NR            | 755    | 39                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 533                      | NR            | 630    | 634                      | NR            | 760    | 33                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 562                      | NR            | 635    | 610                      | NR            | 765    | 28                       | NR            | 895    | 1                        | NR            |
| 380    | 0                        | NR            | 510    | 590                      | NR            | 640    | 583                      | NR            | 770    | 24                       | NR            | 900    | 1                        | NR            |
| 385    | 0                        | NR            | 515    | 617                      | NR            | 645    | 552                      | NR            | 775    | 21                       | NR            | 905    | 1                        | NR            |
| 390    | 0                        | NR            | 520    | 642                      | NR            | 650    | 519                      | NR            | 780    | 18                       | NR            | 910    | 0                        | NR            |
| 395    | 2                        | NR            | 525    | 661                      | NR            | 655    | 484                      | NR            | 785    | 15                       | NR            | 915    | 0                        | NR            |
| 400    | 4                        | NR            | 530    | 681                      | NR            | 660    | 448                      | NR            | 790    | 13                       | NR            | 920    | 0                        | NR            |
| 405    | 7                        | NR            | 535    | 695                      | NR            | 665    | 411                      | NR            | 795    | 11                       | NR            | 925    | 0                        | NR            |
| 410    | 12                       | NR            | 540    | 702                      | NR            | 670    | 373                      | NR            | 800    | 10                       | NR            | 930    | 0                        | NR            |
| 415    | 21                       | NR            | 545    | 708                      | NR            | 675    | 338                      | NR            | 805    | 8                        | NR            | 935    | 0                        | NR            |
| 420    | 39                       | NR            | 550    | 707                      | NR            | 680    | 305                      | NR            | 810    | 7                        | NR            | 940    | 0                        | NR            |
| 425    | 74                       | NR            | 555    | 706                      | NR            | 685    | 272                      | NR            | 815    | 6                        | NR            | 945    | 0                        | NR            |
| 430    | 139                      | NR            | 560    | 700                      | NR            | 690    | 243                      | NR            | 820    | 5                        | NR            | 950    | 0                        | NR            |
| 435    | 270                      | NR            | 565    | 696                      | NR            | 695    | 214                      | NR            | 825    | 5                        | NR            | 955    | 0                        | NR            |
| 440    | 517                      | NR            | 570    | 692                      | NR            | 700    | 188                      | NR            | 830    | 4                        | NR            | 960    | 0                        | NR            |
| 445    | 877                      | NR            | 575    | 689                      | NR            | 705    | 165                      | NR            | 835    | 3                        | NR            | 965    | 0                        | NR            |
| 450    | 978                      | NR            | 580    | 688                      | NR            | 710    | 144                      | NR            | 840    | 3                        | NR            | 970    | 0                        | NR            |
| 455    | 738                      | NR            | 585    | 688                      | NR            | 715    | 125                      | NR            | 845    | 3                        | NR            | 975    | 0                        | NR            |
| 460    | 618                      | NR            | 590    | 689                      | NR            | 720    | 110                      | NR            | 850    | 2                        | NR            | 980    | 0                        | NR            |
| 465    | 529                      | NR            | 595    | 690                      | NR            | 725    | 95                       | NR            | 855    | 2                        | NR            | 985    | 0                        | NR            |
| 470    | 420                      | NR            | 600    | 690                      | NR            | 730    | 82                       | NR            | 860    | 2                        | NR            | 990    | 0                        | NR            |
| 475    | 395                      | NR            | 605    | 688                      | NR            | 735    | 71                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 408                      | NR            | 610    | 685                      | NR            | 740    | 61                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 429                      | NR            | 615    | 678                      | NR            | 745    | 52                       | NR            | 875    | 1                        | NR            |        |                          |               |

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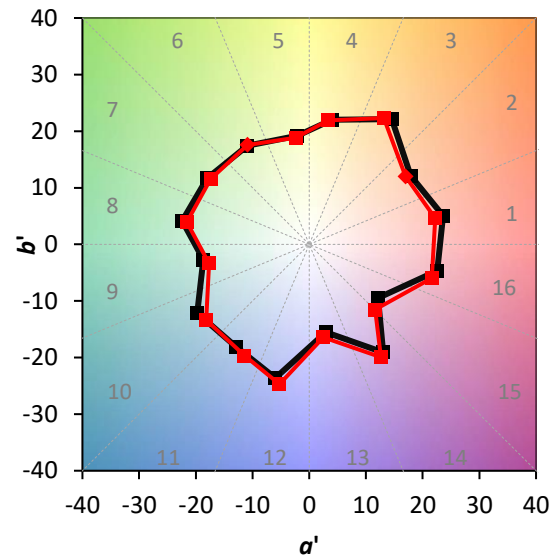
TM-30-18

### Summary

$R_f = 90.7$   
 $R_g = 98$   
 CIE  $R_a = 90.8$   
 $R_9 = 54.9$



### Color Vector Graphics



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

|            |             |            |            |
|------------|-------------|------------|------------|
| CES01 = 85 | CES26 = 92  | CES51 = 96 | CES76 = 85 |
| CES02 = 60 | CES27 = 92  | CES52 = 97 | CES77 = 88 |
| CES03 = 31 | CES28 = 95  | CES53 = 94 | CES78 = 82 |
| CES04 = 69 | CES29 = 95  | CES54 = 93 | CES79 = 96 |
| CES05 = 48 | CES30 = 94  | CES55 = 92 | CES80 = 93 |
| CES06 = 50 | CES31 = 96  | CES56 = 92 | CES81 = 89 |
| CES07 = 41 | CES32 = 91  | CES57 = 91 | CES82 = 97 |
| CES08 = 40 | CES33 = 99  | CES58 = 91 | CES83 = 98 |
| CES09 = 29 | CES34 = 93  | CES59 = 95 | CES84 = 93 |
| CES10 = 73 | CES35 = 96  | CES60 = 92 | CES85 = 85 |
| CES11 = 56 | CES36 = 82  | CES61 = 92 | CES86 = 88 |
| CES12 = 62 | CES37 = 95  | CES62 = 87 | CES87 = 90 |
| CES13 = 42 | CES38 = 89  | CES63 = 91 | CES88 = 94 |
| CES14 = 74 | CES39 = 99  | CES64 = 88 | CES89 = 87 |
| CES15 = 71 | CES40 = 98  | CES65 = 86 | CES90 = 94 |
| CES16 = 46 | CES41 = 97  | CES66 = 85 | CES91 = 74 |
| CES17 = 48 | CES42 = 95  | CES67 = 84 | CES92 = 78 |
| CES18 = 56 | CES43 = 95  | CES68 = 86 | CES93 = 87 |
| CES19 = 70 | CES44 = 100 | CES69 = 88 | CES94 = 80 |
| CES20 = 65 | CES45 = 97  | CES70 = 84 | CES95 = 81 |
| CES21 = 85 | CES46 = 96  | CES71 = 79 | CES96 = 90 |
| CES22 = 77 | CES47 = 98  | CES72 = 93 | CES97 = 95 |
| CES23 = 91 | CES48 = 90  | CES73 = 78 | CES98 = 92 |
| CES24 = 90 | CES49 = 95  | CES74 = 93 | CES99 = 88 |
| CES25 = 70 | CES50 = 97  | CES75 = 80 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)