

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

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Peachtree City, GA 30269

Scaled data based on original data using  
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: STREETWORKS

Report Number: P1457711

Luminaire Tested: GLAN-SB4A-760-U-T2LG-HSS

Issue Date: 05/20/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1457711  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 5/21/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: STREETWORKS  
Catalog Number: GLAN-SB4A-760-U-T2LG-HSS  
Description: GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 350mA 4xLight Square PACKAGE 70CRI 5700K FIXTURE w/ TYPE II LOW GLARE WITH HOUSE SIDE SHIELD  
Light Source: (104) 5700K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

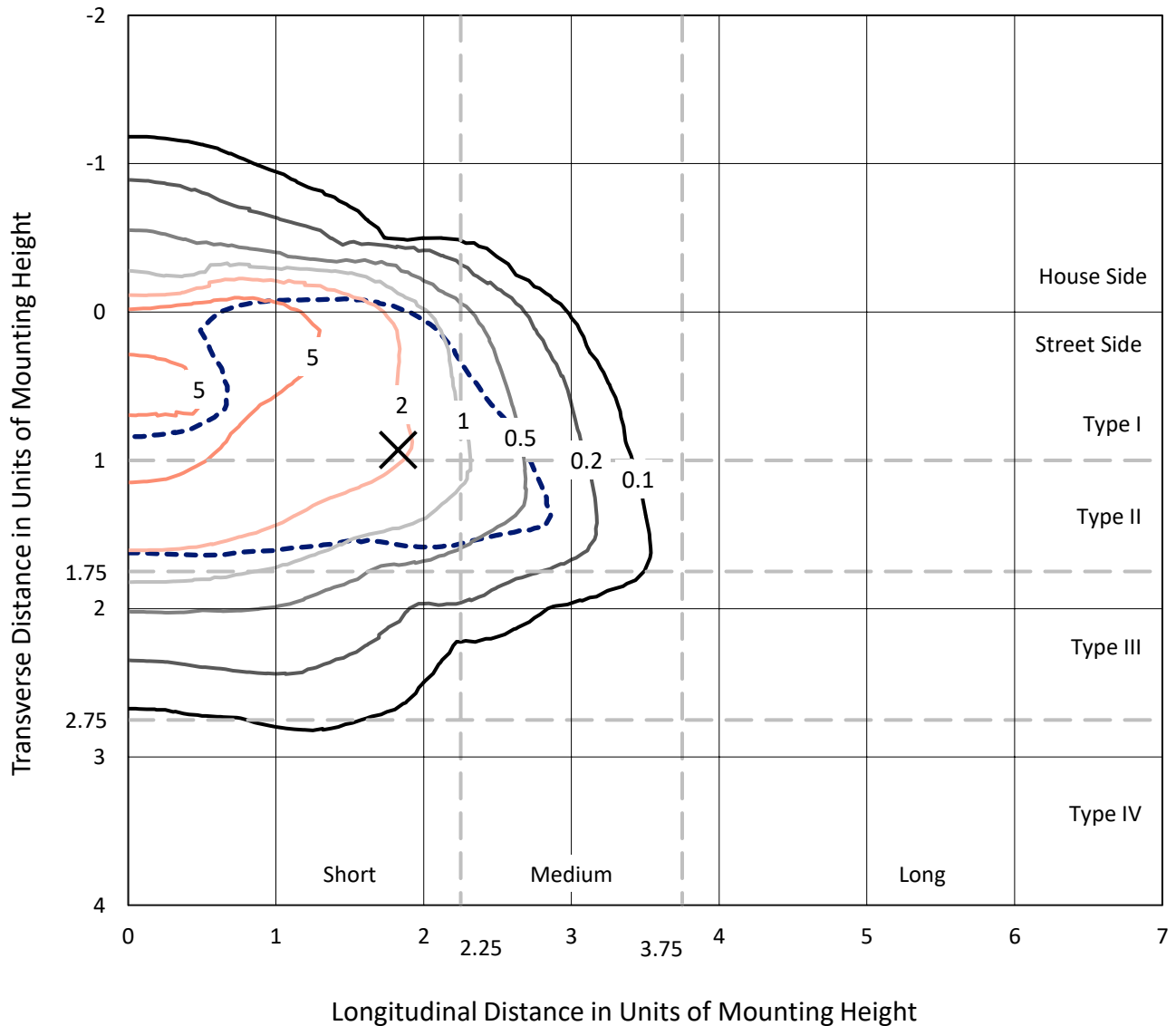
Lumens per Lamp: N/A  
Luminaire Lumens: 13777.2 lumens  
Efficiency: N/A  
Efficacy: 120.9 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G2

Input Watts (W): 114  
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

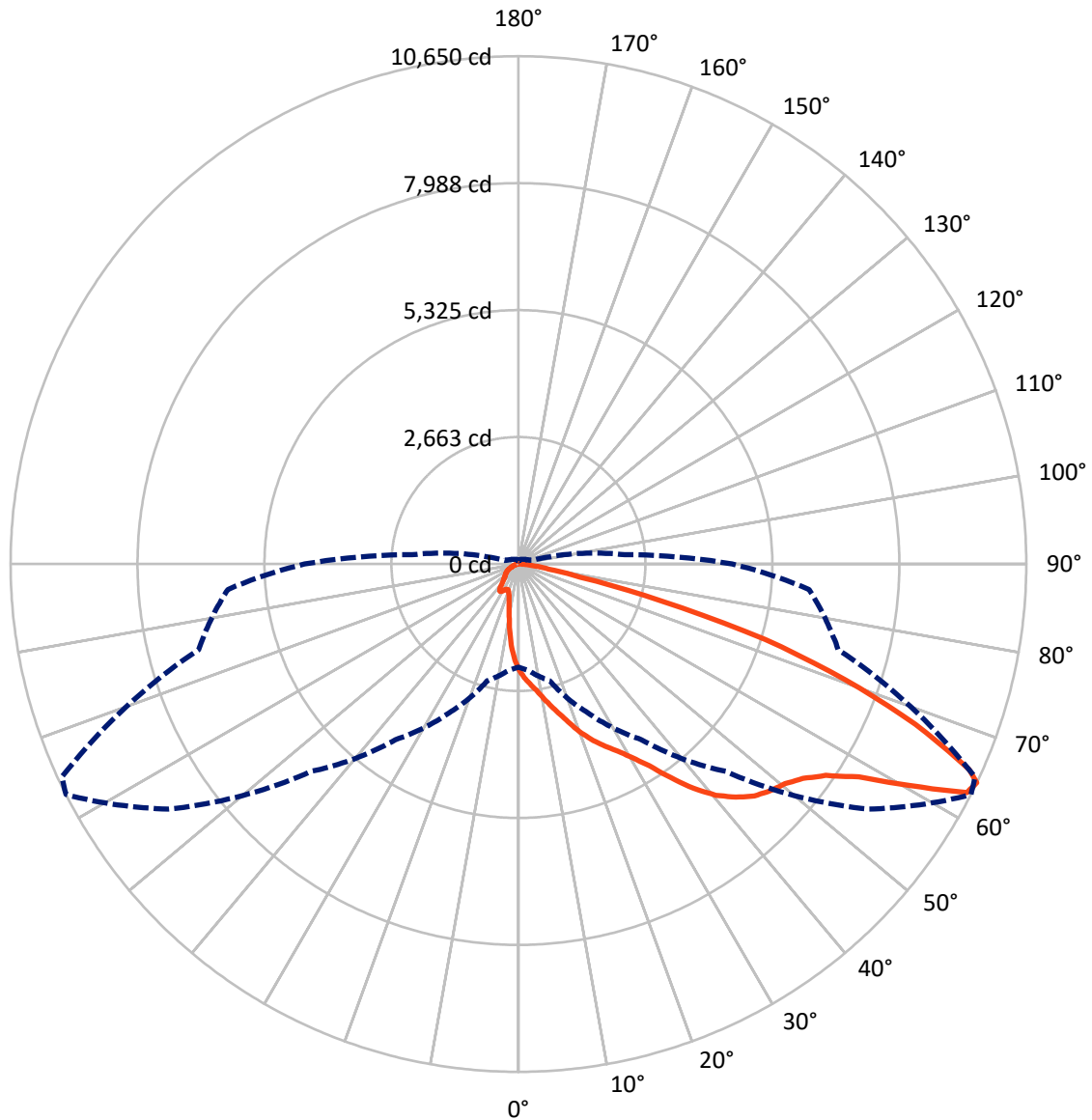
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 9.9 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 63-Deg Lateral      - - - Horizontal Cone Through 64-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 1634.9   | 0.0    | 1634.9  |
|                    | % Fixture | 11.9     | 0.0    | 11.9    |
| <b>Street Side</b> | Lumens    | 12142.3  | 0.0    | 12142.3 |
|                    | % Fixture | 88.1     | 0.0    | 88.1    |
| <b>Total</b>       | Lumens    | 13777.2  | 0.0    | 13777.2 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 187.6   | 1.4       |
| 10°-20°   | 527.1   | 3.8       |
| 20°-30°   | 938.9   | 6.8       |
| 30°-40°   | 1793.2  | 13.0      |
| 40°-50°   | 2972.4  | 21.6      |
| 50°-60°   | 3705.0  | 26.9      |
| 60°-70°   | 2762.7  | 20.1      |
| 70°-80°   | 792.4   | 5.8       |
| 80°-90°   | 98.0    | 0.7       |
| 90°-100°  | 0.0     | 0.0       |
| 100°-110° | 0.0     | 0.0       |
| 110°-120° | 0.0     | 0.0       |
| 120°-130° | 0.0     | 0.0       |
| 130°-140° | 0.0     | 0.0       |
| 140°-150° | 0.0     | 0.0       |
| 150°-160° | 0.0     | 0.0       |
| 160°-170° | 0.0     | 0.0       |
| 170°-180° | 0.0     | 0.0       |
| 0°-90°    | 13777.2 | 100.0     |
| 0°-180°   | 13777.2 | 100.0     |

**Coefficient of Utilization**



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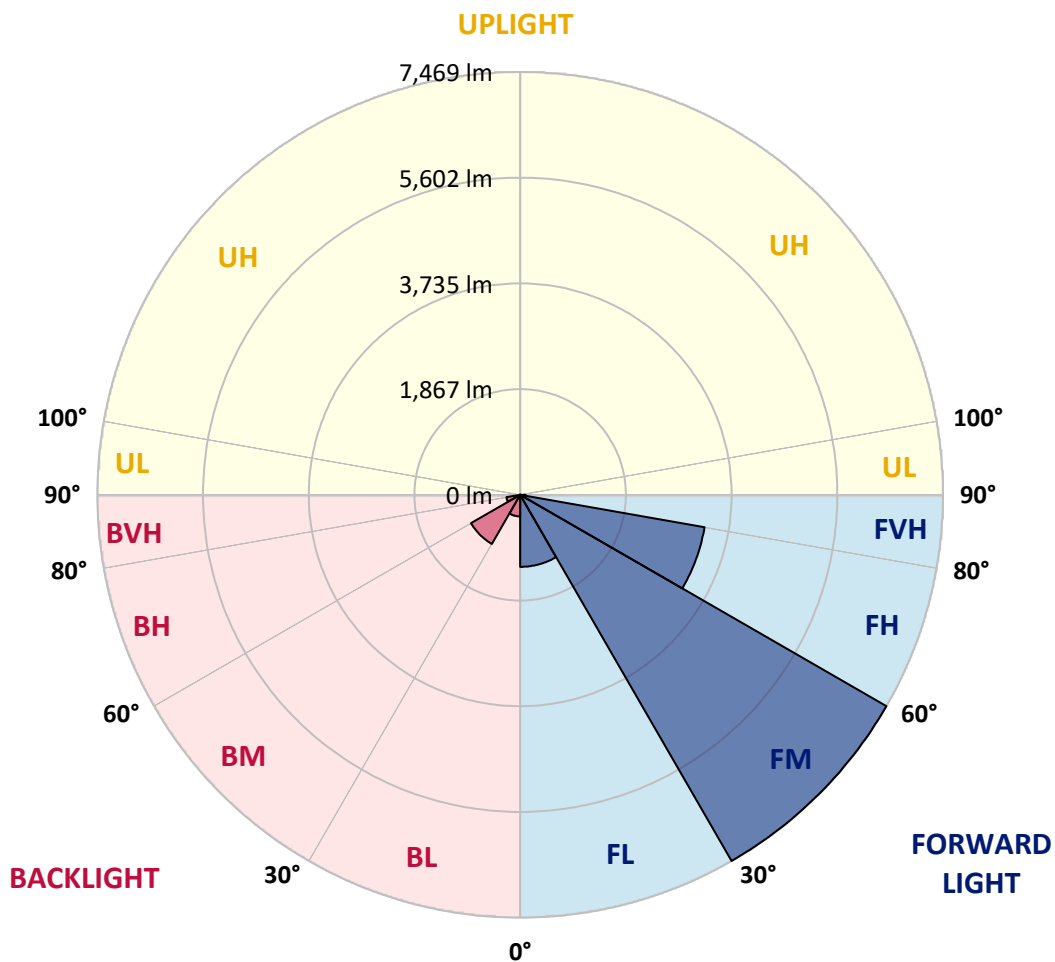
CATALOG NUMBER: GLAN-SB4A-760-U-T2LG-HSS

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 1272.2 | 9.2       |                         |      |         |
| FM   | (30°-60°)   | 7469.2 | 54.2      |                         |      |         |
| FH   | (60°-80°)   | 3307.8 | 24.0      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 93.2   | 0.7       |                         |      | G1/100  |
| BL   | (0°-30°)    | 381.4  | 2.8       | B1/500                  |      |         |
| BM   | (30°-60°)   | 1001.4 | 7.3       | B2/2500                 |      |         |
| BH   | (60°-80°)   | 247.3  | 1.8       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 4.8    | 0.0       |                         |      | G0/10   |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B2-U0-G2**

Type II Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 63°     | 65°     | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|---------|---------|--------|--------|
| 0°    | 2227.6 | 2227.6 | 2227.6 | 2227.6 | 2227.6 | 2227.6 | 2227.6 | 2227.6  | 2227.6  | 2227.6 | 2227.6 |
| 2.5°  | 2496.3 | 2488.0 | 2479.7 | 2467.3 | 2450.8 | 2434.3 | 2413.6 | 2384.7  | 2372.3  | 2330.9 | 2281.3 |
| 5°    | 2624.4 | 2624.4 | 2620.2 | 2612.0 | 2603.7 | 2587.2 | 2562.4 | 2525.2  | 2508.6  | 2450.8 | 2364.0 |
| 7.5°  | 2657.4 | 2661.6 | 2674.0 | 2690.5 | 2715.3 | 2711.2 | 2711.2 | 2669.8  | 2661.6  | 2599.6 | 2483.9 |
| 10°   | 2599.6 | 2603.7 | 2636.8 | 2682.2 | 2756.6 | 2826.9 | 2876.5 | 2851.7  | 2839.3  | 2777.3 | 2632.6 |
| 12.5° | 2516.9 | 2516.9 | 2570.6 | 2640.9 | 2756.6 | 2888.9 | 3033.5 | 3058.3  | 3062.5  | 2992.2 | 2818.6 |
| 15°   | 2302.0 | 2310.3 | 2397.1 | 2537.6 | 2727.7 | 2934.3 | 3178.2 | 3273.2  | 3298.0  | 3252.6 | 3045.9 |
| 17.5° | 2016.8 | 2025.1 | 2111.9 | 2302.0 | 2587.2 | 2934.3 | 3302.2 | 3521.2  | 3554.3  | 3562.5 | 3335.2 |
| 20°   | 1897.0 | 1897.0 | 1946.6 | 2091.2 | 2388.8 | 2855.8 | 3376.6 | 3785.7  | 3860.1  | 3951.0 | 3653.5 |
| 22.5° | 1913.5 | 1913.5 | 1942.4 | 2025.1 | 2264.8 | 2748.4 | 3422.0 | 4021.3  | 4174.2  | 4405.6 | 4062.6 |
| 25°   | 2004.4 | 2004.4 | 2029.2 | 2083.0 | 2277.2 | 2731.8 | 3508.8 | 4232.1  | 4475.9  | 4914.0 | 4529.6 |
| 27.5° | 2149.1 | 2145.0 | 2165.6 | 2219.3 | 2397.1 | 2810.3 | 3653.5 | 4442.8  | 4715.6  | 5484.3 | 5066.9 |
| 30°   | 2359.9 | 2347.5 | 2355.7 | 2417.7 | 2591.3 | 2992.2 | 3864.2 | 4711.5  | 4988.4  | 6108.4 | 5662.0 |
| 32.5° | 2847.5 | 2843.4 | 2723.6 | 2690.5 | 2876.5 | 3285.6 | 4153.5 | 5046.2  | 5356.2  | 6769.6 | 6273.7 |
| 35°   | 3727.8 | 3785.7 | 3616.3 | 3182.3 | 3219.5 | 3678.2 | 4566.8 | 5500.8  | 5786.0  | 7472.2 | 6939.1 |
| 37.5° | 4620.5 | 4620.5 | 4550.3 | 4037.8 | 3777.4 | 4112.2 | 5013.2 | 5967.9  | 6265.4  | 8038.4 | 7579.7 |
| 40°   | 5327.3 | 5364.5 | 5281.8 | 4897.4 | 4558.6 | 4608.1 | 5459.5 | 6377.0  | 6649.8  | 8385.6 | 8034.3 |
| 42.5° | 5852.1 | 5843.9 | 5810.8 | 5558.7 | 5368.6 | 5257.0 | 5864.5 | 6682.8  | 6943.2  | 8563.3 | 8319.5 |
| 45°   | 6418.3 | 6418.3 | 6372.9 | 6166.2 | 6009.2 | 5914.1 | 6166.2 | 6939.1  | 7211.8  | 8670.8 | 8497.2 |
| 47.5° | 7009.3 | 7001.1 | 6955.6 | 6728.3 | 6558.9 | 6418.3 | 6472.1 | 7104.4  | 7377.2  | 8600.5 | 8526.1 |
| 50°   | 7154.0 | 7145.7 | 7249.0 | 7257.3 | 7104.4 | 6835.8 | 6715.9 | 7244.9  | 7484.6  | 8604.6 | 8617.0 |
| 52.5° | 6984.5 | 7034.1 | 7187.1 | 7373.0 | 7546.6 | 7265.6 | 6976.3 | 7468.1  | 7716.1  | 8720.3 | 8844.3 |
| 55°   | 6563.0 | 6583.7 | 6877.1 | 7174.7 | 7579.7 | 7678.9 | 7393.7 | 7823.5  | 8042.6  | 8831.9 | 9046.8 |
| 57.5° | 5777.7 | 5856.3 | 6170.4 | 6687.0 | 7302.8 | 7716.1 | 8121.1 | 8418.6  | 8584.0  | 8877.4 | 8935.3 |
| 60°   | 4360.2 | 4401.5 | 5083.4 | 5752.9 | 6728.3 | 7418.5 | 8798.9 | 9427.1  | 9406.4  | 8364.9 | 8154.1 |
| 62.5° | 2653.3 | 2690.5 | 3178.2 | 4240.3 | 5467.8 | 6798.6 | 9026.2 | 10555.3 | 10443.7 | 7501.1 | 6864.7 |
| 64°   | 2161.5 | 2231.7 | 2533.4 | 3442.7 | 4496.6 | 6149.7 | 8960.1 | 10650.4 | 10563.6 | 6943.2 | 6116.6 |
| 65°   | 1847.4 | 1942.4 | 2252.4 | 2988.1 | 3822.9 | 5451.2 | 8778.2 | 10385.9 | 10328.0 | 6604.3 | 5496.7 |
| 67.5° | 1161.3 | 1206.8 | 1665.5 | 2322.7 | 2632.6 | 3488.1 | 7546.6 | 8980.7  | 9084.0  | 5885.2 | 4054.3 |
| 70°   | 863.8  | 884.4  | 1144.8 | 1797.8 | 2054.0 | 2029.2 | 5182.6 | 7273.8  | 7298.6  | 4707.3 | 2446.7 |
| 72.5° | 628.2  | 632.3  | 801.8  | 1330.8 | 1607.7 | 1384.5 | 2731.8 | 5405.8  | 5228.1  | 2756.6 | 1334.9 |
| 75°   | 417.4  | 434.0  | 562.1  | 938.2  | 1252.3 | 1016.7 | 1244.0 | 3079.0  | 3025.3  | 1347.3 | 764.6  |
| 77.5° | 305.8  | 310.0  | 380.2  | 628.2  | 983.6  | 748.0  | 752.2  | 1326.6  | 1368.0  | 801.8  | 483.5  |
| 80°   | 173.6  | 181.8  | 248.0  | 384.4  | 640.6  | 512.5  | 421.6  | 640.6   | 735.6   | 545.5  | 322.4  |
| 82.5° | 103.3  | 111.6  | 177.7  | 252.1  | 438.1  | 210.8  | 214.9  | 351.3   | 438.1   | 392.6  | 173.6  |
| 85°   | 62.0   | 66.1   | 111.6  | 136.4  | 260.4  | 140.5  | 78.5   | 173.6   | 227.3   | 231.4  | 95.1   |
| 87.5° | 41.3   | 41.3   | 62.0   | 57.9   | 74.4   | 66.1   | 33.1   | 45.5    | 57.9    | 78.5   | 37.2   |
| 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-SB4A-760-U-T2LG-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 2227.6 | 2227.6 | 2227.6 | 2227.6 | 2227.6 | 2227.6 | 2227.6 | 2227.6 | 2227.6 | 2227.6 | 2227.6 |
| 2.5°  | 2240.0 | 2215.2 | 2140.8 | 2041.6 | 1950.7 | 1880.5 | 1793.7 | 1735.8 | 1682.1 | 1682.1 | 1636.6 |
| 5°    | 2293.7 | 2227.6 | 2045.8 | 1818.5 | 1574.6 | 1343.2 | 1194.4 | 1029.1 | 975.4  | 929.9  | 938.2  |
| 7.5°  | 2384.7 | 2264.8 | 1942.4 | 1533.3 | 1144.8 | 896.8  | 731.5  | 657.1  | 624.1  | 603.4  | 607.5  |
| 10°   | 2496.3 | 2330.9 | 1818.5 | 1244.0 | 843.1  | 657.1  | 578.6  | 549.7  | 537.3  | 533.1  | 533.1  |
| 12.5° | 2649.2 | 2409.5 | 1694.5 | 1000.2 | 665.4  | 566.2  | 524.9  | 508.3  | 495.9  | 487.7  | 487.7  |
| 15°   | 2831.0 | 2508.6 | 1549.8 | 822.4  | 582.7  | 520.7  | 487.7  | 471.1  | 454.6  | 450.5  | 450.5  |
| 17.5° | 3062.5 | 2612.0 | 1421.7 | 706.7  | 541.4  | 487.7  | 454.6  | 434.0  | 421.6  | 417.4  | 417.4  |
| 20°   | 3318.7 | 2740.1 | 1293.6 | 640.6  | 512.5  | 454.6  | 421.6  | 405.0  | 392.6  | 384.4  | 388.5  |
| 22.5° | 3645.2 | 2901.3 | 1210.9 | 607.5  | 487.7  | 425.7  | 392.6  | 376.1  | 363.7  | 355.4  | 359.6  |
| 25°   | 4004.7 | 3103.8 | 1165.5 | 607.5  | 471.1  | 405.0  | 367.8  | 351.3  | 338.9  | 330.6  | 330.6  |
| 27.5° | 4442.8 | 3331.1 | 1169.6 | 632.3  | 467.0  | 388.5  | 347.2  | 330.6  | 318.2  | 305.8  | 305.8  |
| 30°   | 4926.4 | 3599.7 | 1215.1 | 677.8  | 475.3  | 372.0  | 330.6  | 305.8  | 297.6  | 285.2  | 285.2  |
| 32.5° | 5438.9 | 3909.7 | 1330.8 | 735.6  | 467.0  | 351.3  | 305.8  | 285.2  | 272.8  | 264.5  | 264.5  |
| 35°   | 5980.3 | 4261.0 | 1475.4 | 760.4  | 425.7  | 322.4  | 285.2  | 264.5  | 256.2  | 252.1  | 248.0  |
| 37.5° | 6496.9 | 4566.8 | 1554.0 | 710.9  | 372.0  | 297.6  | 260.4  | 239.7  | 235.6  | 227.3  | 227.3  |
| 40°   | 6897.8 | 4818.9 | 1508.5 | 607.5  | 343.0  | 272.8  | 239.7  | 219.0  | 210.8  | 202.5  | 202.5  |
| 42.5° | 7133.3 | 4909.8 | 1343.2 | 516.6  | 322.4  | 248.0  | 219.0  | 198.4  | 190.1  | 186.0  | 186.0  |
| 45°   | 7269.7 | 4897.4 | 1148.9 | 462.9  | 301.7  | 227.3  | 198.4  | 186.0  | 173.6  | 169.4  | 165.3  |
| 47.5° | 7265.6 | 4769.3 | 1008.4 | 417.4  | 281.0  | 210.8  | 186.0  | 173.6  | 161.2  | 157.0  | 157.0  |
| 50°   | 7236.6 | 4579.2 | 851.4  | 384.4  | 264.5  | 198.4  | 173.6  | 165.3  | 152.9  | 148.8  | 144.7  |
| 52.5° | 7306.9 | 4471.8 | 710.9  | 363.7  | 243.8  | 190.1  | 169.4  | 157.0  | 140.5  | 136.4  | 136.4  |
| 55°   | 7393.7 | 4409.8 | 570.3  | 343.0  | 227.3  | 186.0  | 161.2  | 148.8  | 132.3  | 128.1  | 128.1  |
| 57.5° | 7141.6 | 4174.2 | 471.1  | 310.0  | 206.6  | 177.7  | 152.9  | 144.7  | 128.1  | 115.7  | 115.7  |
| 60°   | 6348.1 | 3450.9 | 388.5  | 272.8  | 190.1  | 165.3  | 144.7  | 132.3  | 115.7  | 99.2   | 99.2   |
| 62.5° | 5161.9 | 2632.6 | 322.4  | 231.4  | 177.7  | 152.9  | 132.3  | 119.9  | 99.2   | 78.5   | 78.5   |
| 64°   | 4484.2 | 2235.9 | 289.3  | 202.5  | 169.4  | 140.5  | 119.9  | 107.5  | 86.8   | 66.1   | 62.0   |
| 65°   | 4021.3 | 1975.5 | 268.6  | 190.1  | 165.3  | 132.3  | 115.7  | 103.3  | 78.5   | 62.0   | 57.9   |
| 67.5° | 2831.0 | 1326.6 | 214.9  | 157.0  | 144.7  | 111.6  | 99.2   | 86.8   | 70.3   | 53.7   | 49.6   |
| 70°   | 1649.0 | 752.2  | 169.4  | 132.3  | 111.6  | 86.8   | 82.7   | 78.5   | 62.0   | 41.3   | 41.3   |
| 72.5° | 896.8  | 376.1  | 128.1  | 107.5  | 86.8   | 62.0   | 70.3   | 62.0   | 49.6   | 33.1   | 28.9   |
| 75°   | 549.7  | 231.4  | 95.1   | 78.5   | 57.9   | 45.5   | 53.7   | 45.5   | 28.9   | 20.7   | 16.5   |
| 77.5° | 367.8  | 148.8  | 70.3   | 53.7   | 37.2   | 28.9   | 37.2   | 24.8   | 12.4   | 4.1    | 4.1    |
| 80°   | 227.3  | 103.3  | 45.5   | 33.1   | 20.7   | 12.4   | 8.3    | 4.1    | 4.1    | 0.0    | 0.0    |
| 82.5° | 99.2   | 66.1   | 24.8   | 16.5   | 8.3    | 4.1    | 4.1    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 53.7   | 20.7   | 8.3    | 4.1    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 87.5° | 16.5   | 8.3    | 4.1    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-7

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-757-U-5WQ

Data in this report applies to families of products including GSS-SB1A-757-U-5WQ

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-7  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 10/15/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: McGraw-Edison  
 Catalog Number: **GSS-SB1A-757-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 5700K CCT 26 LEDS

**Spectral Parameters**

CCT (K): 5571  
 CIE u': 0.2033  
 CIE v': 0.4806  
 Duv: 0.0041  
 CIE x: 0.3308  
 CIE y: 0.3476  
 CIE z: 0.3216  
 Peak Wavelength (nm): 442  
 Dominant Wavelength (nm): 544  
 Purity: 3.635698  
 Rf: 70.4  
 Rg: 97.1

|           |      |      |       |
|-----------|------|------|-------|
| CRI (Ra): | 69.9 |      |       |
| R1:       | 68.8 | R9:  | -35.4 |
| R2:       | 72.5 | R10: | 36.7  |
| R3:       | 76.8 | R11: | 73.9  |
| R4:       | 72.0 | R12: | 47.8  |
| R5:       | 70.9 | R13: | 68.0  |
| R6:       | 65.6 | R14: | 87.0  |
| R7:       | 75.5 | R15: | 59.8  |
| R8:       | 56.8 |      |       |



**Test Conditions**

Stabilization Time: 20M  
 Operation Time: 1H 20M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-7

| 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 5700K 4-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    | 120                      | NR            | 620    | 298                      | NR            | 750    | 9                        | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 167                      | NR            | 625    | 270                      | NR            | 755    | 7                        | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 222                      | NR            | 630    | 245                      | NR            | 760    | 6                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 279                      | NR            | 635    | 219                      | NR            | 765    | 6                        | NR            | 895    | 0                        | NR            |
| 380    | 1                        | NR            | 510    | 329                      | NR            | 640    | 196                      | NR            | 770    | 5                        | NR            | 900    | 0                        | NR            |
| 385    | 2                        | NR            | 515    | 371                      | NR            | 645    | 173                      | NR            | 775    | 4                        | NR            | 905    | 0                        | NR            |
| 390    | 4                        | NR            | 520    | 403                      | NR            | 650    | 153                      | NR            | 780    | 4                        | NR            | 910    | 0                        | NR            |
| 395    | 6                        | NR            | 525    | 424                      | NR            | 655    | 135                      | NR            | 785    | 3                        | NR            | 915    | 0                        | NR            |
| 400    | 9                        | NR            | 530    | 439                      | NR            | 660    | 117                      | NR            | 790    | 3                        | NR            | 920    | 0                        | NR            |
| 405    | 14                       | NR            | 535    | 449                      | NR            | 665    | 103                      | NR            | 795    | 2                        | NR            | 925    | 0                        | NR            |
| 410    | 28                       | NR            | 540    | 454                      | NR            | 670    | 89                       | NR            | 800    | 2                        | NR            | 930    | 0                        | NR            |
| 415    | 55                       | NR            | 545    | 459                      | NR            | 675    | 77                       | NR            | 805    | 2                        | NR            | 935    | 0                        | NR            |
| 420    | 118                      | NR            | 550    | 463                      | NR            | 680    | 67                       | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 237                      | NR            | 555    | 466                      | NR            | 685    | 58                       | NR            | 815    | 1                        | NR            | 945    | 0                        | NR            |
| 430    | 420                      | NR            | 560    | 467                      | NR            | 690    | 50                       | NR            | 820    | 1                        | NR            | 950    | 0                        | NR            |
| 435    | 677                      | NR            | 565    | 469                      | NR            | 695    | 43                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 962                      | NR            | 570    | 469                      | NR            | 700    | 37                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 894                      | NR            | 575    | 466                      | NR            | 705    | 32                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 472                      | NR            | 580    | 461                      | NR            | 710    | 28                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 275                      | NR            | 585    | 450                      | NR            | 715    | 24                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 180                      | NR            | 590    | 437                      | NR            | 720    | 21                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 107                      | NR            | 595    | 420                      | NR            | 725    | 18                       | NR            | 855    | 0                        | NR            | 985    | 0                        | NR            |
| 470    | 76                       | NR            | 600    | 400                      | NR            | 730    | 15                       | NR            | 860    | 0                        | NR            | 990    | 0                        | NR            |
| 475    | 68                       | NR            | 605    | 376                      | NR            | 735    | 13                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 69                       | NR            | 610    | 352                      | NR            | 740    | 11                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 86                       | NR            | 615    | 325                      | NR            | 745    | 10                       | NR            | 875    | 0                        | NR            |        |                          |               |

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**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 1.84**

| 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    | 120                      | NR            | 620    | 298                      | NR            | 750    | 9                        | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 167                      | NR            | 625    | 270                      | NR            | 755    | 7                        | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 222                      | NR            | 630    | 245                      | NR            | 760    | 6                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 279                      | NR            | 635    | 219                      | NR            | 765    | 6                        | NR            | 895    | 0                        | NR            |
| 380    | 1                        | NR            | 510    | 329                      | NR            | 640    | 196                      | NR            | 770    | 5                        | NR            | 900    | 0                        | NR            |
| 385    | 2                        | NR            | 515    | 371                      | NR            | 645    | 173                      | NR            | 775    | 4                        | NR            | 905    | 0                        | NR            |
| 390    | 4                        | NR            | 520    | 403                      | NR            | 650    | 153                      | NR            | 780    | 4                        | NR            | 910    | 0                        | NR            |
| 395    | 6                        | NR            | 525    | 424                      | NR            | 655    | 135                      | NR            | 785    | 3                        | NR            | 915    | 0                        | NR            |
| 400    | 9                        | NR            | 530    | 439                      | NR            | 660    | 117                      | NR            | 790    | 3                        | NR            | 920    | 0                        | NR            |
| 405    | 14                       | NR            | 535    | 449                      | NR            | 665    | 103                      | NR            | 795    | 2                        | NR            | 925    | 0                        | NR            |
| 410    | 28                       | NR            | 540    | 454                      | NR            | 670    | 89                       | NR            | 800    | 2                        | NR            | 930    | 0                        | NR            |
| 415    | 55                       | NR            | 545    | 459                      | NR            | 675    | 77                       | NR            | 805    | 2                        | NR            | 935    | 0                        | NR            |
| 420    | 118                      | NR            | 550    | 463                      | NR            | 680    | 67                       | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 237                      | NR            | 555    | 466                      | NR            | 685    | 58                       | NR            | 815    | 1                        | NR            | 945    | 0                        | NR            |
| 430    | 420                      | NR            | 560    | 467                      | NR            | 690    | 50                       | NR            | 820    | 1                        | NR            | 950    | 0                        | NR            |
| 435    | 677                      | NR            | 565    | 469                      | NR            | 695    | 43                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 962                      | NR            | 570    | 469                      | NR            | 700    | 37                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 894                      | NR            | 575    | 466                      | NR            | 705    | 32                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 472                      | NR            | 580    | 461                      | NR            | 710    | 28                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 275                      | NR            | 585    | 450                      | NR            | 715    | 24                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 180                      | NR            | 590    | 437                      | NR            | 720    | 21                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 107                      | NR            | 595    | 420                      | NR            | 725    | 18                       | NR            | 855    | 0                        | NR            | 985    | 0                        | NR            |
| 470    | 76                       | NR            | 600    | 400                      | NR            | 730    | 15                       | NR            | 860    | 0                        | NR            | 990    | 0                        | NR            |
| 475    | 68                       | NR            | 605    | 376                      | NR            | 735    | 13                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 69                       | NR            | 610    | 352                      | NR            | 740    | 11                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 86                       | NR            | 615    | 325                      | NR            | 745    | 10                       | NR            | 875    | 0                        | NR            |        |                          |               |

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**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: NR**

**M/P: 3.71**

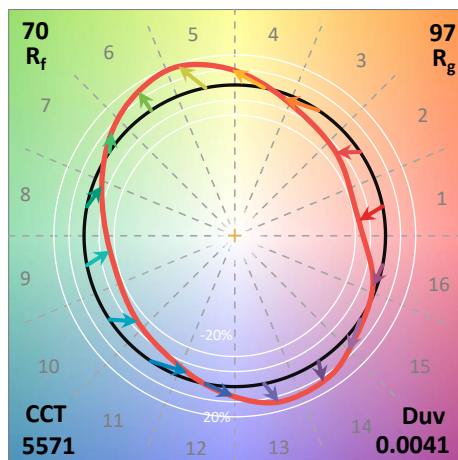
| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 120                      | NR            | 620    | 298                      | NR            | 750    | 9                        | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 167                      | NR            | 625    | 270                      | NR            | 755    | 7                        | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 222                      | NR            | 630    | 245                      | NR            | 760    | 6                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 279                      | NR            | 635    | 219                      | NR            | 765    | 6                        | NR            | 895    | 0                        | NR            |
| 380    | 1                        | NR            | 510    | 329                      | NR            | 640    | 196                      | NR            | 770    | 5                        | NR            | 900    | 0                        | NR            |
| 385    | 2                        | NR            | 515    | 371                      | NR            | 645    | 173                      | NR            | 775    | 4                        | NR            | 905    | 0                        | NR            |
| 390    | 4                        | NR            | 520    | 403                      | NR            | 650    | 153                      | NR            | 780    | 4                        | NR            | 910    | 0                        | NR            |
| 395    | 6                        | NR            | 525    | 424                      | NR            | 655    | 135                      | NR            | 785    | 3                        | NR            | 915    | 0                        | NR            |
| 400    | 9                        | NR            | 530    | 439                      | NR            | 660    | 117                      | NR            | 790    | 3                        | NR            | 920    | 0                        | NR            |
| 405    | 14                       | NR            | 535    | 449                      | NR            | 665    | 103                      | NR            | 795    | 2                        | NR            | 925    | 0                        | NR            |
| 410    | 28                       | NR            | 540    | 454                      | NR            | 670    | 89                       | NR            | 800    | 2                        | NR            | 930    | 0                        | NR            |
| 415    | 55                       | NR            | 545    | 459                      | NR            | 675    | 77                       | NR            | 805    | 2                        | NR            | 935    | 0                        | NR            |
| 420    | 118                      | NR            | 550    | 463                      | NR            | 680    | 67                       | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 237                      | NR            | 555    | 466                      | NR            | 685    | 58                       | NR            | 815    | 1                        | NR            | 945    | 0                        | NR            |
| 430    | 420                      | NR            | 560    | 467                      | NR            | 690    | 50                       | NR            | 820    | 1                        | NR            | 950    | 0                        | NR            |
| 435    | 677                      | NR            | 565    | 469                      | NR            | 695    | 43                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 962                      | NR            | 570    | 469                      | NR            | 700    | 37                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 894                      | NR            | 575    | 466                      | NR            | 705    | 32                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 472                      | NR            | 580    | 461                      | NR            | 710    | 28                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 275                      | NR            | 585    | 450                      | NR            | 715    | 24                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 180                      | NR            | 590    | 437                      | NR            | 720    | 21                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 107                      | NR            | 595    | 420                      | NR            | 725    | 18                       | NR            | 855    | 0                        | NR            | 985    | 0                        | NR            |
| 470    | 76                       | NR            | 600    | 400                      | NR            | 730    | 15                       | NR            | 860    | 0                        | NR            | 990    | 0                        | NR            |
| 475    | 68                       | NR            | 605    | 376                      | NR            | 735    | 13                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 69                       | NR            | 610    | 352                      | NR            | 740    | 11                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 86                       | NR            | 615    | 325                      | NR            | 745    | 10                       | NR            | 875    | 0                        | NR            |        |                          |               |

**Summary**

$R_f = 70.4$   
 $R_g = 97.1$   
 CIE  $R_a = 69.9$   
 $R_g = -35.4$



**Color Vector Graphics**



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 52 | CES51 = 87 | CES76 = 40 |
| CES02 = 59 | CES27 = 77 | CES52 = 88 | CES77 = 62 |
| CES03 = 30 | CES28 = 76 | CES53 = 74 | CES78 = 43 |
| CES04 = 68 | CES29 = 46 | CES54 = 79 | CES79 = 72 |
| CES05 = 45 | CES30 = 54 | CES55 = 78 | CES80 = 68 |
| CES06 = 49 | CES31 = 52 | CES56 = 67 | CES81 = 70 |
| CES07 = 38 | CES32 = 49 | CES57 = 64 | CES82 = 87 |
| CES08 = 37 | CES33 = 59 | CES58 = 66 | CES83 = 81 |
| CES09 = 29 | CES34 = 61 | CES59 = 87 | CES84 = 87 |
| CES10 = 72 | CES35 = 78 | CES60 = 91 | CES85 = 83 |
| CES11 = 55 | CES36 = 88 | CES61 = 88 | CES86 = 75 |
| CES12 = 61 | CES37 = 71 | CES62 = 77 | CES87 = 74 |
| CES13 = 41 | CES38 = 64 | CES63 = 74 | CES88 = 76 |
| CES14 = 74 | CES39 = 90 | CES64 = 71 | CES89 = 75 |
| CES15 = 70 | CES40 = 81 | CES65 = 63 | CES90 = 73 |
| CES16 = 46 | CES41 = 82 | CES66 = 66 | CES91 = 93 |
| CES17 = 48 | CES42 = 69 | CES67 = 63 | CES92 = 69 |
| CES18 = 55 | CES43 = 67 | CES68 = 71 | CES93 = 82 |
| CES19 = 70 | CES44 = 98 | CES69 = 81 | CES94 = 58 |
| CES20 = 63 | CES45 = 77 | CES70 = 57 | CES95 = 72 |
| CES21 = 85 | CES46 = 76 | CES71 = 54 | CES96 = 78 |
| CES22 = 77 | CES47 = 73 | CES72 = 84 | CES97 = 82 |
| CES23 = 91 | CES48 = 65 | CES73 = 45 | CES98 = 70 |
| CES24 = 90 | CES49 = 77 | CES74 = 92 | CES99 = 59 |
| CES25 = 71 | CES50 = 85 | CES75 = 49 |            |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)