

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

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
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: P1456093

Luminaire Tested: GLAN-SB4C-835-U-T2LG

Issue Date: 05/20/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1456093  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 5/22/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: STREETWORKS  
Catalog Number: GLAN-SB4C-835-U-T2LG  
Description: GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 615mA 4xLight Square  
PACKAGE 80CRI 3500K FIXTURE w/ TYPE II LOW GLARE  
Light Source: (104) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

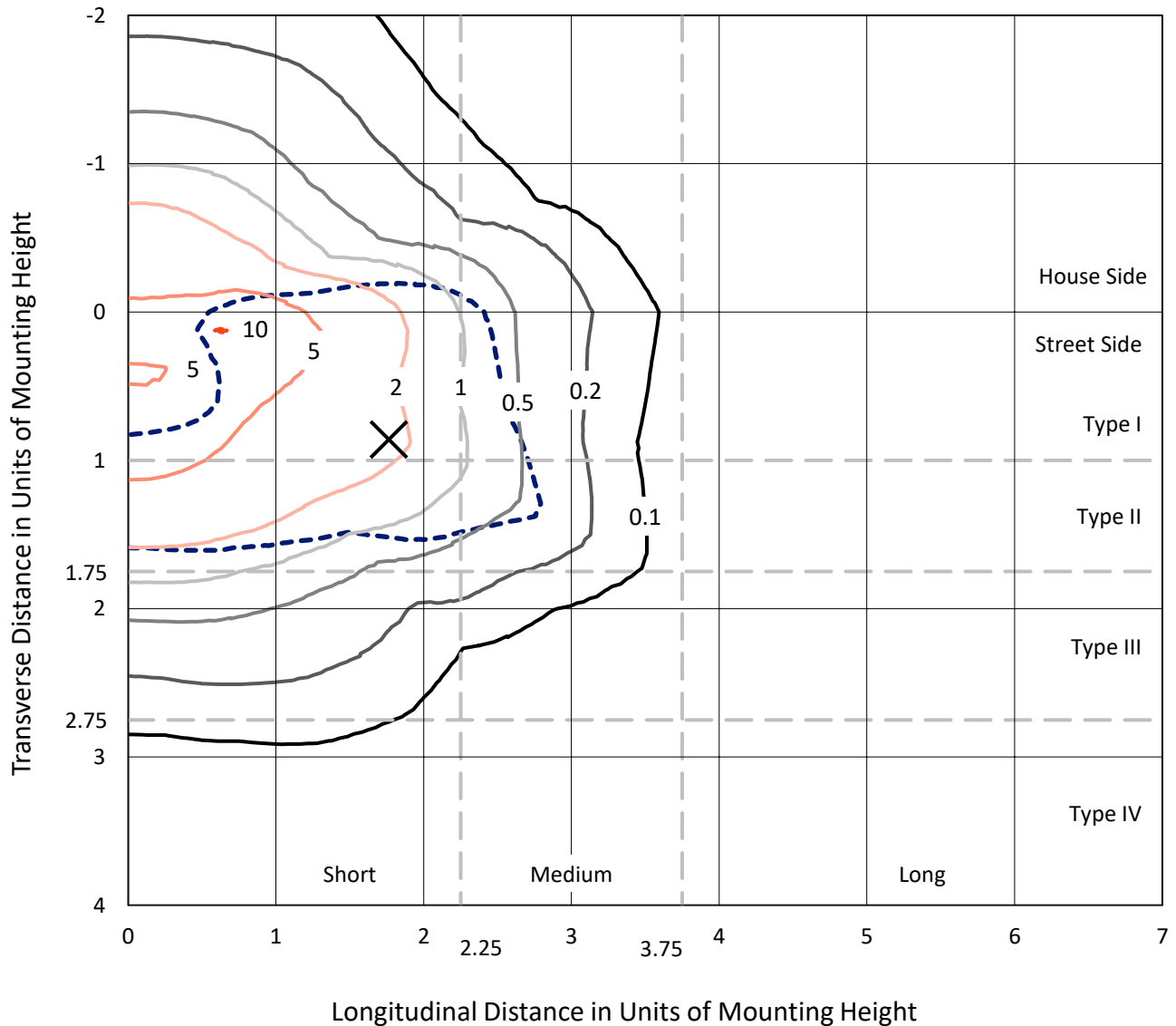
Lumens per Lamp: N/A  
Luminaire Lumens: 26941.5 lumens  
Efficiency: N/A  
Efficacy: 134.2 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B3 - U0 - G3  
  
Input Watts (W): 200.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
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

REPORT NUMBER: P1456093

CATALOG NUMBER: GLAN-SB4C-835-U-T2LG

### Iso-Footcandle Lines of Horizontal Illumination

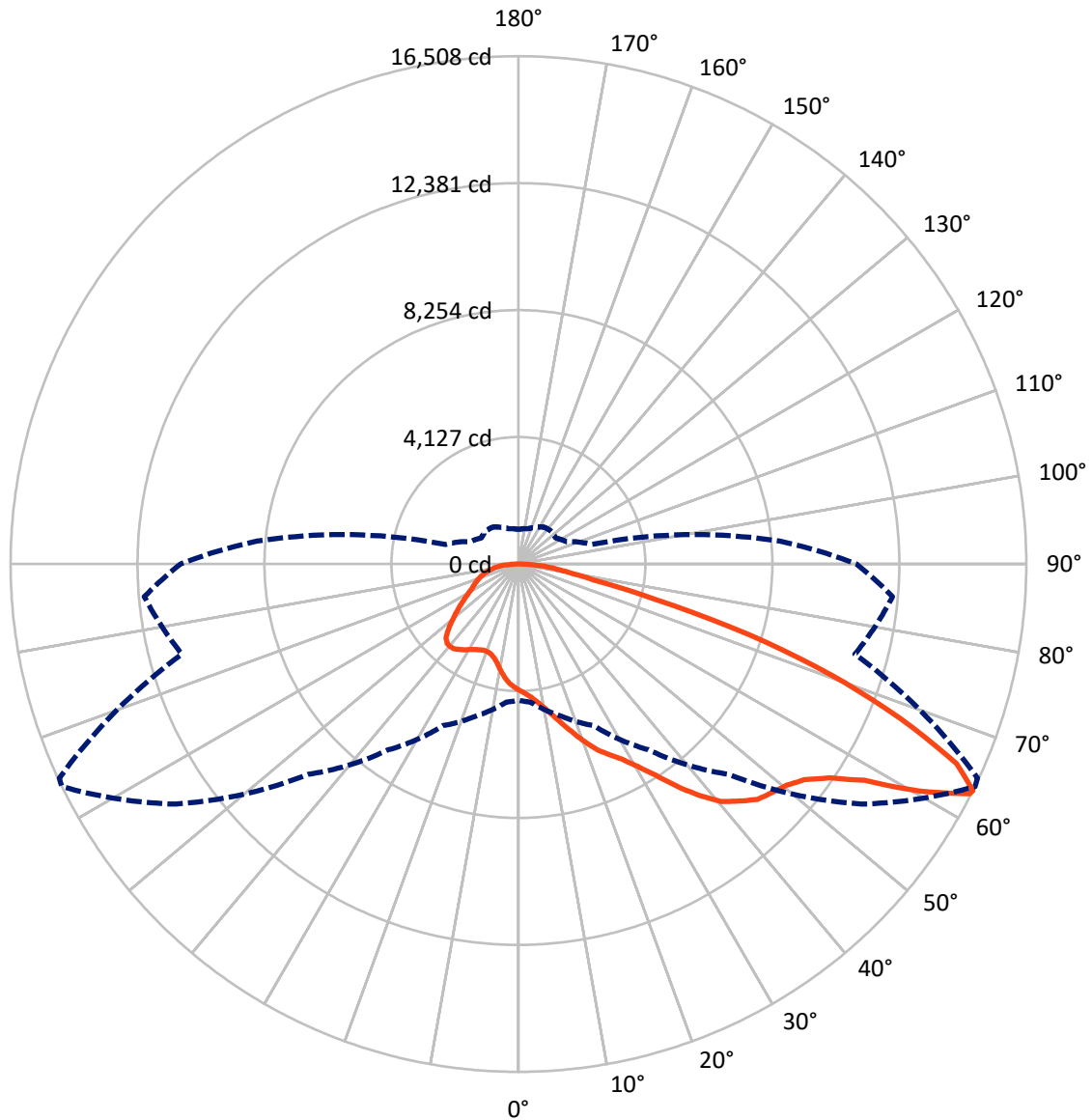
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 10.1 fc  
 Type II - Short - N/A

REPORT NUMBER: P1456093  
CATALOG NUMBER: GLAN-SB4C-835-U-T2LG

### Luminous Intensity Polar Plot



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

REPORT NUMBER: P1456093

CATALOG NUMBER: GLAN-SB4C-835-U-T2LG

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 7238.4   | 0.0    | 7238.4  |
|                    | % Fixture | 26.9     | 0.0    | 26.9    |
| <b>Street Side</b> | Lumens    | 19703.1  | 0.0    | 19703.1 |
|                    | % Fixture | 73.1     | 0.0    | 73.1    |
| <b>Total</b>       | Lumens    | 26941.5  | 0.0    | 26941.5 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 376.7   | 1.4       |
| 10°-20°   | 1159.7  | 4.3       |
| 20°-30°   | 2120.7  | 7.9       |
| 30°-40°   | 3647.9  | 13.5      |
| 40°-50°   | 5379.7  | 20.0      |
| 50°-60°   | 6447.9  | 23.9      |
| 60°-70°   | 5175.0  | 19.2      |
| 70°-80°   | 2079.5  | 7.7       |
| 80°-90°   | 554.5   | 2.1       |
| 90°-100°  | 0.0     | 0.0       |
| 100°-110° | 0.0     | 0.0       |
| 110°-120° | 0.0     | 0.0       |
| 120°-130° | 0.0     | 0.0       |
| 130°-140° | 0.0     | 0.0       |
| 140°-150° | 0.0     | 0.0       |
| 150°-160° | 0.0     | 0.0       |
| 160°-170° | 0.0     | 0.0       |
| 170°-180° | 0.0     | 0.0       |
| 0°-90°    | 26941.5 | 100.0     |
| 0°-180°   | 26941.5 | 100.0     |



REPORT NUMBER: P1456093

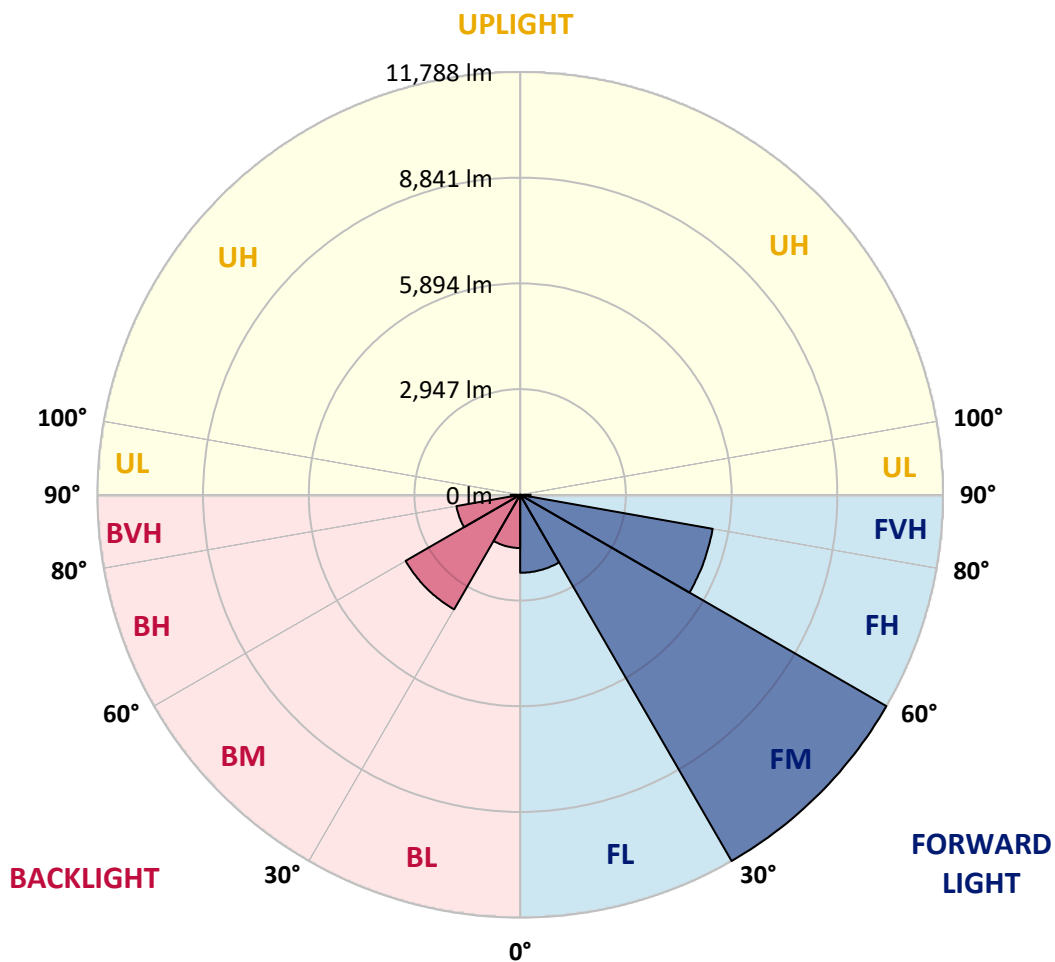
CATALOG NUMBER: GLAN-SB4C-835-U-T2LG

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

| Zone           | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|---------|-----------|-------------------------|------|---------|
|                |         |           | B                       | U    | G       |
| FL (0°-30°)    | 2173.7  | 8.1       |                         |      |         |
| FM (30°-60°)   | 11788.3 | 43.8      |                         |      |         |
| FH (60°-80°)   | 5449.8  | 20.2      |                         |      | G3/7500 |
| FVH (80°-90°)  | 291.3   | 1.1       |                         |      | G3/500  |
| BL (0°-30°)    | 1483.4  | 5.5       | B3/2500                 |      |         |
| BM (30°-60°)   | 3687.1  | 13.7      | B3/5000                 |      |         |
| BH (60°-80°)   | 1804.8  | 6.7       | B3/2500                 |      | G3/2500 |
| BVH (80°-90°)  | 263.2   | 1.0       |                         |      | G3/500  |
| UL (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0     | 0.0       |                         | U0/0 |         |

**BUG Rating: B3-U0-G3**

Type II Short





REPORT NUMBER: P1456093

CATALOG NUMBER: GLAN-SB4C-835-U-T2LG

**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 64°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 4102.9  | 4102.9  | 4102.9  | 4102.9  | 4102.9  | 4102.9  | 4102.9  | 4102.9  | 4102.9  | 4102.9  | 4102.9  |
| 2.5°  | 4272.3  | 4278.4  | 4260.2  | 4254.2  | 4266.3  | 4242.1  | 4236.0  | 4211.8  | 4199.7  | 4175.5  | 4145.2  |
| 5°    | 4393.4  | 4399.4  | 4387.3  | 4387.3  | 4399.4  | 4381.3  | 4375.2  | 4351.0  | 4338.9  | 4314.7  | 4254.2  |
| 7.5°  | 4387.3  | 4393.4  | 4405.5  | 4453.9  | 4514.4  | 4538.6  | 4556.7  | 4538.6  | 4532.5  | 4496.2  | 4435.7  |
| 10°   | 4290.5  | 4296.5  | 4326.8  | 4399.4  | 4550.7  | 4659.6  | 4774.6  | 4774.6  | 4786.7  | 4756.4  | 4647.5  |
| 12.5° | 4157.3  | 4163.4  | 4236.0  | 4351.0  | 4550.7  | 4738.3  | 4974.3  | 5071.1  | 5065.1  | 5046.9  | 4919.8  |
| 15°   | 3836.6  | 3836.6  | 3945.5  | 4163.4  | 4484.1  | 4792.7  | 5143.7  | 5403.9  | 5410.0  | 5428.2  | 5276.9  |
| 17.5° | 3564.3  | 3570.4  | 3661.1  | 3854.8  | 4272.3  | 4762.5  | 5325.3  | 5773.1  | 5791.2  | 5894.1  | 5676.3  |
| 20°   | 3588.5  | 3588.5  | 3618.8  | 3703.5  | 4042.4  | 4641.5  | 5428.2  | 6166.4  | 6226.9  | 6469.0  | 6196.7  |
| 22.5° | 3776.1  | 3776.1  | 3800.3  | 3794.3  | 4000.0  | 4562.8  | 5494.7  | 6559.8  | 6668.7  | 7171.0  | 6820.0  |
| 25°   | 4121.0  | 4115.0  | 4090.8  | 4054.5  | 4175.5  | 4647.5  | 5646.0  | 6862.3  | 7074.1  | 7945.6  | 7540.1  |
| 27.5° | 4544.6  | 4532.5  | 4496.2  | 4435.7  | 4520.4  | 4901.7  | 5906.2  | 7183.1  | 7413.0  | 8792.8  | 8302.6  |
| 30°   | 5071.1  | 5034.8  | 4998.5  | 4919.8  | 5010.6  | 5319.2  | 6293.5  | 7636.9  | 7854.8  | 9754.9  | 9222.4  |
| 32.5° | 5694.4  | 5736.8  | 5615.7  | 5506.8  | 5603.6  | 5888.1  | 6868.4  | 8175.5  | 8411.5  | 10759.5 | 10178.5 |
| 35°   | 6626.3  | 6753.4  | 6717.1  | 6166.4  | 6257.2  | 6571.9  | 7540.1  | 8871.4  | 9083.2  | 11673.2 | 11158.9 |
| 37.5° | 7546.2  | 7515.9  | 7546.2  | 7086.2  | 6941.0  | 7322.3  | 8260.2  | 9537.1  | 9742.8  | 12417.6 | 12024.2 |
| 40°   | 8284.4  | 8375.2  | 8375.2  | 8000.0  | 7812.4  | 8066.6  | 8913.8  | 10148.3 | 10348.0 | 12829.1 | 12647.5 |
| 42.5° | 9089.3  | 9101.4  | 9077.2  | 8750.4  | 8677.8  | 8744.3  | 9488.7  | 10535.6 | 10699.0 | 13040.9 | 13071.1 |
| 45°   | 9997.0  | 9990.9  | 9888.1  | 9615.8  | 9506.8  | 9446.3  | 9845.7  | 10910.8 | 11074.2 | 13137.7 | 13301.1 |
| 47.5° | 10747.4 | 10777.6 | 10783.7 | 10493.2 | 10311.7 | 10051.5 | 10154.3 | 11098.4 | 11286.0 | 13028.8 | 13349.5 |
| 50°   | 10789.7 | 10838.1 | 11068.1 | 11152.8 | 11116.5 | 10699.0 | 10438.8 | 11298.1 | 11485.7 | 13053.0 | 13525.0 |
| 52.5° | 10523.5 | 10571.9 | 10868.4 | 11219.4 | 11643.0 | 11443.3 | 10886.6 | 11643.0 | 11836.6 | 13289.0 | 13924.4 |
| 55°   | 9809.4  | 9888.1  | 10329.8 | 10820.0 | 11576.4 | 11860.8 | 11679.3 | 12266.3 | 12447.8 | 13476.6 | 14390.4 |
| 57.5° | 8538.6  | 8635.4  | 9246.6  | 10027.3 | 11062.1 | 11764.0 | 12829.1 | 13264.8 | 13416.1 | 13609.7 | 14396.4 |
| 60°   | 6384.3  | 6462.9  | 7419.1  | 8472.0  | 10027.3 | 11158.9 | 13512.9 | 14977.3 | 15062.1 | 12889.6 | 13579.5 |
| 62.5° | 4702.0  | 4780.6  | 5422.1  | 6178.5  | 7879.0  | 10045.4 | 13646.0 | 16459.9 | 16472.1 | 11588.5 | 12453.9 |
| 63°   | 4429.7  | 4508.3  | 5089.3  | 5797.3  | 7370.7  | 9670.2  | 13603.7 | 16508.4 | 16466.0 | 11322.3 | 12205.8 |
| 65°   | 3449.3  | 3588.5  | 4193.7  | 4732.2  | 5525.0  | 7697.4  | 13059.0 | 15649.1 | 15709.6 | 10535.6 | 10959.2 |
| 67.5° | 2348.0  | 2450.8  | 3219.4  | 3842.7  | 4175.5  | 4901.7  | 10711.1 | 13391.9 | 13488.7 | 9718.6  | 8744.3  |
| 70°   | 1815.4  | 1863.8  | 2311.7  | 3043.9  | 3376.7  | 3116.5  | 6983.4  | 10783.7 | 10783.7 | 7588.5  | 6196.7  |
| 72.5° | 1422.1  | 1440.2  | 1742.8  | 2378.2  | 2717.1  | 2396.4  | 3891.1  | 7842.7  | 7552.2  | 4502.3  | 4133.1  |
| 75°   | 1016.6  | 1040.8  | 1313.2  | 1773.1  | 2166.4  | 1888.1  | 2487.1  | 4568.8  | 4393.4  | 2590.0  | 2759.5  |
| 77.5° | 804.8   | 816.9   | 980.3   | 1307.1  | 1754.9  | 1440.2  | 1894.1  | 2493.2  | 2469.0  | 1821.5  | 1773.1  |
| 80°   | 635.4   | 659.6   | 768.5   | 938.0   | 1355.5  | 1125.6  | 1410.0  | 1646.0  | 1597.6  | 1252.7  | 1137.7  |
| 82.5° | 453.9   | 496.2   | 593.0   | 714.1   | 1004.5  | 804.8   | 925.9   | 1161.9  | 1161.9  | 944.0   | 750.4   |
| 85°   | 278.4   | 314.7   | 351.0   | 441.8   | 714.1   | 520.4   | 490.2   | 750.4   | 768.5   | 708.0   | 484.1   |
| 87.5° | 133.1   | 145.2   | 169.4   | 187.6   | 260.2   | 236.0   | 193.6   | 284.4   | 290.5   | 314.7   | 199.7   |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |



REPORT NUMBER: P1456093

CATALOG NUMBER: GLAN-SB4C-835-U-T2LG

**CANDELA DISTRIBUTION (continued):**

|       | 90°     | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 4102.9  | 4102.9 | 4102.9 | 4102.9 | 4102.9 | 4102.9 | 4102.9 | 4102.9 | 4102.9 | 4102.9 | 4102.9 |
| 2.5°  | 4139.2  | 4127.1 | 4066.6 | 4006.1 | 3939.5 | 3879.0 | 3818.5 | 3770.1 | 3715.6 | 3727.7 | 3733.7 |
| 5°    | 4217.9  | 4187.6 | 4054.5 | 3897.1 | 3691.4 | 3497.7 | 3310.1 | 3177.0 | 3092.3 | 3068.1 | 3019.7 |
| 7.5°  | 4387.3  | 4314.7 | 4072.6 | 3739.8 | 3358.6 | 3056.0 | 2880.5 | 2801.8 | 2777.6 | 2783.7 | 2771.6 |
| 10°   | 4580.9  | 4472.0 | 4096.8 | 3552.2 | 3068.1 | 2862.3 | 2838.1 | 2886.5 | 2910.7 | 2935.0 | 2941.0 |
| 12.5° | 4835.1  | 4659.6 | 4084.7 | 3346.5 | 2928.9 | 2892.6 | 2983.4 | 3074.1 | 3128.6 | 3164.9 | 3158.9 |
| 15°   | 5131.6  | 4895.6 | 4048.4 | 3177.0 | 2910.7 | 3007.6 | 3122.5 | 3225.4 | 3292.0 | 3328.3 | 3310.1 |
| 17.5° | 5488.7  | 5174.0 | 4006.1 | 3068.1 | 2965.2 | 3080.2 | 3201.2 | 3304.1 | 3376.7 | 3400.9 | 3382.8 |
| 20°   | 5930.4  | 5488.7 | 3933.4 | 3019.7 | 3007.6 | 3110.4 | 3219.4 | 3316.2 | 3376.7 | 3400.9 | 3376.7 |
| 22.5° | 6450.8  | 5863.9 | 3872.9 | 3019.7 | 3025.7 | 3110.4 | 3189.1 | 3261.7 | 3316.2 | 3334.3 | 3304.1 |
| 25°   | 7116.5  | 6299.6 | 3848.7 | 3068.1 | 3031.8 | 3080.2 | 3122.5 | 3164.9 | 3195.2 | 3207.3 | 3195.2 |
| 27.5° | 7794.3  | 6801.8 | 3860.8 | 3128.6 | 3025.7 | 3037.8 | 3037.8 | 3043.9 | 3049.9 | 3056.0 | 3049.9 |
| 30°   | 8574.9  | 7310.2 | 3909.2 | 3207.3 | 3037.8 | 2977.3 | 2959.2 | 2922.9 | 2892.6 | 2868.4 | 2844.2 |
| 32.5° | 9331.3  | 7794.3 | 3994.0 | 3322.2 | 3025.7 | 2910.7 | 2874.4 | 2783.7 | 2698.9 | 2626.3 | 2626.3 |
| 35°   | 10148.3 | 8296.5 | 4145.2 | 3407.0 | 3013.6 | 2850.2 | 2747.4 | 2644.5 | 2553.7 | 2450.8 | 2450.8 |
| 37.5° | 10850.3 | 8726.2 | 4266.3 | 3503.8 | 3001.5 | 2777.6 | 2614.2 | 2499.2 | 2402.4 | 2299.6 | 2287.4 |
| 40°   | 11340.4 | 8974.3 | 4338.9 | 3540.1 | 2959.2 | 2680.8 | 2487.1 | 2341.9 | 2202.7 | 2063.5 | 2057.5 |
| 42.5° | 11576.4 | 8962.2 | 4296.5 | 3528.0 | 2880.5 | 2559.8 | 2378.2 | 2184.6 | 1997.0 | 1869.9 | 1857.8 |
| 45°   | 11703.5 | 8883.5 | 4133.1 | 3425.1 | 2753.4 | 2432.7 | 2239.0 | 2033.3 | 1845.7 | 1730.7 | 1706.5 |
| 47.5° | 11679.3 | 8689.9 | 3909.2 | 3171.0 | 2584.0 | 2293.5 | 2099.9 | 1888.1 | 1736.8 | 1670.2 | 1670.2 |
| 50°   | 11745.9 | 8538.6 | 3655.1 | 2880.5 | 2354.0 | 2130.1 | 1972.8 | 1779.1 | 1688.4 | 1603.6 | 1573.4 |
| 52.5° | 12042.4 | 8665.7 | 3437.2 | 2608.2 | 2136.2 | 1972.8 | 1863.8 | 1700.5 | 1585.5 | 1531.0 | 1512.9 |
| 55°   | 12435.7 | 8938.0 | 3231.5 | 2366.1 | 1924.4 | 1833.6 | 1779.1 | 1627.8 | 1494.7 | 1440.2 | 1410.0 |
| 57.5° | 12508.3 | 9125.6 | 3031.8 | 2130.1 | 1748.9 | 1724.7 | 1706.5 | 1500.8 | 1391.8 | 1349.5 | 1325.3 |
| 60°   | 12006.1 | 8986.4 | 2771.6 | 1918.3 | 1609.7 | 1621.8 | 1573.4 | 1422.1 | 1295.0 | 1252.7 | 1228.4 |
| 62.5° | 11152.8 | 8623.3 | 2511.4 | 1736.8 | 1500.8 | 1525.0 | 1476.6 | 1325.3 | 1198.2 | 1155.8 | 1143.7 |
| 63°   | 10983.4 | 8526.5 | 2450.8 | 1718.6 | 1476.6 | 1506.8 | 1464.5 | 1313.2 | 1186.1 | 1143.7 | 1125.6 |
| 65°   | 9972.8  | 7945.6 | 2239.0 | 1621.8 | 1397.9 | 1397.9 | 1403.9 | 1252.7 | 1143.7 | 1125.6 | 1113.5 |
| 67.5° | 8133.2  | 6632.4 | 2009.1 | 1506.8 | 1313.2 | 1331.3 | 1361.6 | 1276.9 | 1234.5 | 1222.4 | 1210.3 |
| 70°   | 6148.3  | 4992.4 | 1809.4 | 1397.9 | 1222.4 | 1282.9 | 1488.7 | 1452.3 | 1295.0 | 1186.1 | 1161.9 |
| 72.5° | 4357.0  | 3400.9 | 1633.9 | 1289.0 | 1113.5 | 1264.8 | 1543.1 | 1385.8 | 1167.9 | 1040.8 | 1016.6 |
| 75°   | 2916.8  | 2190.6 | 1458.4 | 1174.0 | 992.4  | 1167.9 | 1458.4 | 1264.8 | 1016.6 | 986.4  | 950.1  |
| 77.5° | 1833.6  | 1561.3 | 1282.9 | 1040.8 | 859.3  | 1040.8 | 1325.3 | 1125.6 | 877.5  | 889.6  | 835.1  |
| 80°   | 1119.5  | 1113.5 | 1077.2 | 883.5  | 689.9  | 829.0  | 1113.5 | 950.1  | 702.0  | 702.0  | 623.3  |
| 82.5° | 665.7   | 804.8  | 913.8  | 732.2  | 502.3  | 593.0  | 804.8  | 714.1  | 587.0  | 568.8  | 532.5  |
| 85°   | 447.8   | 544.6  | 726.2  | 562.8  | 320.7  | 363.1  | 556.7  | 599.1  | 538.6  | 472.0  | 441.8  |
| 87.5° | 163.4   | 217.9  | 332.8  | 230.0  | 139.2  | 217.9  | 417.6  | 435.7  | 326.8  | 254.2  | 230.0  |
| 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: SP1-2407-184-10

Test Date: 10/11/2024

Luminaire Tested: GSS-SB1A-835-U-5WQ

Data in this report applies to families of products including GSS-SB1A-835-U-5WQ

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-10  
 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-835-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 80 CRI 3500K CCT 26 LEDS

**Spectral Parameters**

CCT (K): 3411  
 CIE u': 0.2360  
 CIE v': 0.5189  
 Duv: 0.0044  
 CIE x: 0.4154  
 CIE y: 0.4059  
 CIE z: 0.1787  
 Peak Wavelength (nm): 601  
 Dominant Wavelength (nm): 579  
 Purity: 46.51914  
 Rf: 86.6  
 Rg: 95.9

|           |      |      |      |
|-----------|------|------|------|
| CRI (Ra): | 83.5 |      |      |
| R1:       | 81.1 | R9:  | 6.3  |
| R2:       | 88.9 | R10: | 75.4 |
| R3:       | 97.2 | R11: | 84.1 |
| R4:       | 83.8 | R12: | 69.7 |
| R5:       | 81.7 | R13: | 82.8 |
| R6:       | 86.9 | R14: | 98.5 |
| R7:       | 86.1 | R15: | 72.6 |
| R8:       | 62.2 |      |      |



**Test Conditions**

Stabilization Time: 35M  
 Operation Time: 1H 35M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-10

| 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: SP1-2407-184-10

CIE 1931 Chromaticity Diagram



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



CCT = 3411K  
 CIE x = 0.4154  
 CIE y = 0.4059  
 Duv = 0.0044

Point lies inside the ANSI 3500K 7-step quadrangle

REPORT NUMBER: SP1-2407-184-10

**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

| $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) |
|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|
| 360               | 0                           | NR                      | 490               | 311                         | NR                      | 620               | 903                         | NR                      | 750               | 26                          | NR                      | 880               | 1                           | NR                      |
| 365               | 0                           | NR                      | 495               | 376                         | NR                      | 625               | 851                         | NR                      | 755               | 22                          | NR                      | 885               | 1                           | NR                      |
| 370               | 0                           | NR                      | 500               | 438                         | NR                      | 630               | 797                         | NR                      | 760               | 19                          | NR                      | 890               | 0                           | NR                      |
| 375               | 0                           | NR                      | 505               | 491                         | NR                      | 635               | 735                         | NR                      | 765               | 16                          | NR                      | 895               | 0                           | NR                      |
| 380               | 0                           | NR                      | 510               | 533                         | NR                      | 640               | 672                         | NR                      | 770               | 14                          | NR                      | 900               | 0                           | NR                      |
| 385               | 0                           | NR                      | 515               | 566                         | NR                      | 645               | 607                         | NR                      | 775               | 12                          | NR                      | 905               | 0                           | NR                      |
| 390               | 0                           | NR                      | 520               | 592                         | NR                      | 650               | 546                         | NR                      | 780               | 10                          | NR                      | 910               | 0                           | NR                      |
| 395               | 1                           | NR                      | 525               | 608                         | NR                      | 655               | 487                         | NR                      | 785               | 9                           | NR                      | 915               | 0                           | NR                      |
| 400               | 3                           | NR                      | 530               | 625                         | NR                      | 660               | 429                         | NR                      | 790               | 7                           | NR                      | 920               | 0                           | NR                      |
| 405               | 6                           | NR                      | 535               | 642                         | NR                      | 665               | 378                         | NR                      | 795               | 6                           | NR                      | 925               | 0                           | NR                      |
| 410               | 12                          | NR                      | 540               | 657                         | NR                      | 670               | 329                         | NR                      | 800               | 5                           | NR                      | 930               | 0                           | NR                      |
| 415               | 22                          | NR                      | 545               | 677                         | NR                      | 675               | 286                         | NR                      | 805               | 5                           | NR                      | 935               | 0                           | NR                      |
| 420               | 43                          | NR                      | 550               | 701                         | NR                      | 680               | 248                         | NR                      | 810               | 4                           | NR                      | 940               | 0                           | NR                      |
| 425               | 80                          | NR                      | 555               | 728                         | NR                      | 685               | 213                         | NR                      | 815               | 3                           | NR                      | 945               | 0                           | NR                      |
| 430               | 140                         | NR                      | 560               | 757                         | NR                      | 690               | 184                         | NR                      | 820               | 3                           | NR                      | 950               | 0                           | NR                      |
| 435               | 243                         | NR                      | 565               | 793                         | NR                      | 695               | 156                         | NR                      | 825               | 3                           | NR                      | 955               | 0                           | NR                      |
| 440               | 412                         | NR                      | 570               | 831                         | NR                      | 700               | 134                         | NR                      | 830               | 2                           | NR                      | 960               | 0                           | NR                      |
| 445               | 610                         | NR                      | 575               | 872                         | NR                      | 705               | 114                         | NR                      | 835               | 2                           | NR                      | 965               | 0                           | NR                      |
| 450               | 597                         | NR                      | 580               | 911                         | NR                      | 710               | 97                          | NR                      | 840               | 2                           | NR                      | 970               | 0                           | NR                      |
| 455               | 412                         | NR                      | 585               | 944                         | NR                      | 715               | 83                          | NR                      | 845               | 1                           | NR                      | 975               | 0                           | NR                      |
| 460               | 330                         | NR                      | 590               | 974                         | NR                      | 720               | 70                          | NR                      | 850               | 1                           | NR                      | 980               | 0                           | NR                      |
| 465               | 274                         | NR                      | 595               | 992                         | NR                      | 725               | 60                          | NR                      | 855               | 1                           | NR                      | 985               | 0                           | NR                      |
| 470               | 211                         | NR                      | 600               | 999                         | NR                      | 730               | 51                          | NR                      | 860               | 1                           | NR                      | 990               | 0                           | NR                      |
| 475               | 200                         | NR                      | 605               | 992                         | NR                      | 735               | 43                          | NR                      | 865               | 1                           | NR                      | 995               | 0                           | NR                      |
| 480               | 220                         | NR                      | 610               | 975                         | NR                      | 740               | 36                          | NR                      | 870               | 1                           | NR                      | 1000              | 0                           | NR                      |
| 485               | 255                         | NR                      | 615               | 944                         | NR                      | 745               | 31                          | NR                      | 875               | 1                           | NR                      |                   |                             |                         |

REPORT NUMBER: SP1-2407-184-10

**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 1.48**

| 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    | 311                      | NR            | 620    | 903                      | NR            | 750    | 26                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 376                      | NR            | 625    | 851                      | NR            | 755    | 22                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 438                      | NR            | 630    | 797                      | NR            | 760    | 19                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 491                      | NR            | 635    | 735                      | NR            | 765    | 16                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 533                      | NR            | 640    | 672                      | NR            | 770    | 14                       | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 566                      | NR            | 645    | 607                      | NR            | 775    | 12                       | NR            | 905    | 0                        | NR            |
| 390    | 0                        | NR            | 520    | 592                      | NR            | 650    | 546                      | NR            | 780    | 10                       | NR            | 910    | 0                        | NR            |
| 395    | 1                        | NR            | 525    | 608                      | NR            | 655    | 487                      | NR            | 785    | 9                        | NR            | 915    | 0                        | NR            |
| 400    | 3                        | NR            | 530    | 625                      | NR            | 660    | 429                      | NR            | 790    | 7                        | NR            | 920    | 0                        | NR            |
| 405    | 6                        | NR            | 535    | 642                      | NR            | 665    | 378                      | NR            | 795    | 6                        | NR            | 925    | 0                        | NR            |
| 410    | 12                       | NR            | 540    | 657                      | NR            | 670    | 329                      | NR            | 800    | 5                        | NR            | 930    | 0                        | NR            |
| 415    | 22                       | NR            | 545    | 677                      | NR            | 675    | 286                      | NR            | 805    | 5                        | NR            | 935    | 0                        | NR            |
| 420    | 43                       | NR            | 550    | 701                      | NR            | 680    | 248                      | NR            | 810    | 4                        | NR            | 940    | 0                        | NR            |
| 425    | 80                       | NR            | 555    | 728                      | NR            | 685    | 213                      | NR            | 815    | 3                        | NR            | 945    | 0                        | NR            |
| 430    | 140                      | NR            | 560    | 757                      | NR            | 690    | 184                      | NR            | 820    | 3                        | NR            | 950    | 0                        | NR            |
| 435    | 243                      | NR            | 565    | 793                      | NR            | 695    | 156                      | NR            | 825    | 3                        | NR            | 955    | 0                        | NR            |
| 440    | 412                      | NR            | 570    | 831                      | NR            | 700    | 134                      | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 610                      | NR            | 575    | 872                      | NR            | 705    | 114                      | NR            | 835    | 2                        | NR            | 965    | 0                        | NR            |
| 450    | 597                      | NR            | 580    | 911                      | NR            | 710    | 97                       | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 412                      | NR            | 585    | 944                      | NR            | 715    | 83                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 330                      | NR            | 590    | 974                      | NR            | 720    | 70                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 274                      | NR            | 595    | 992                      | NR            | 725    | 60                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 211                      | NR            | 600    | 999                      | NR            | 730    | 51                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 200                      | NR            | 605    | 992                      | NR            | 735    | 43                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 220                      | NR            | 610    | 975                      | NR            | 740    | 36                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 255                      | NR            | 615    | 944                      | NR            | 745    | 31                       | NR            | 875    | 1                        | NR            |        |                          |               |

REPORT NUMBER: SP1-2407-184-10

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.88

| λ (nm) | Power W <sup>2</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>2</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>2</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>2</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>2</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 311                      | NR            | 620    | 903                      | NR            | 750    | 26                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 376                      | NR            | 625    | 851                      | NR            | 755    | 22                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 438                      | NR            | 630    | 797                      | NR            | 760    | 19                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 491                      | NR            | 635    | 735                      | NR            | 765    | 16                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 533                      | NR            | 640    | 672                      | NR            | 770    | 14                       | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 566                      | NR            | 645    | 607                      | NR            | 775    | 12                       | NR            | 905    | 0                        | NR            |
| 390    | 0                        | NR            | 520    | 592                      | NR            | 650    | 546                      | NR            | 780    | 10                       | NR            | 910    | 0                        | NR            |
| 395    | 1                        | NR            | 525    | 608                      | NR            | 655    | 487                      | NR            | 785    | 9                        | NR            | 915    | 0                        | NR            |
| 400    | 3                        | NR            | 530    | 625                      | NR            | 660    | 429                      | NR            | 790    | 7                        | NR            | 920    | 0                        | NR            |
| 405    | 6                        | NR            | 535    | 642                      | NR            | 665    | 378                      | NR            | 795    | 6                        | NR            | 925    | 0                        | NR            |
| 410    | 12                       | NR            | 540    | 657                      | NR            | 670    | 329                      | NR            | 800    | 5                        | NR            | 930    | 0                        | NR            |
| 415    | 22                       | NR            | 545    | 677                      | NR            | 675    | 286                      | NR            | 805    | 5                        | NR            | 935    | 0                        | NR            |
| 420    | 43                       | NR            | 550    | 701                      | NR            | 680    | 248                      | NR            | 810    | 4                        | NR            | 940    | 0                        | NR            |
| 425    | 80                       | NR            | 555    | 728                      | NR            | 685    | 213                      | NR            | 815    | 3                        | NR            | 945    | 0                        | NR            |
| 430    | 140                      | NR            | 560    | 757                      | NR            | 690    | 184                      | NR            | 820    | 3                        | NR            | 950    | 0                        | NR            |
| 435    | 243                      | NR            | 565    | 793                      | NR            | 695    | 156                      | NR            | 825    | 3                        | NR            | 955    | 0                        | NR            |
| 440    | 412                      | NR            | 570    | 831                      | NR            | 700    | 134                      | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 610                      | NR            | 575    | 872                      | NR            | 705    | 114                      | NR            | 835    | 2                        | NR            | 965    | 0                        | NR            |
| 450    | 597                      | NR            | 580    | 911                      | NR            | 710    | 97                       | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 412                      | NR            | 585    | 944                      | NR            | 715    | 83                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 330                      | NR            | 590    | 974                      | NR            | 720    | 70                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 274                      | NR            | 595    | 992                      | NR            | 725    | 60                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 211                      | NR            | 600    | 999                      | NR            | 730    | 51                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 200                      | NR            | 605    | 992                      | NR            | 735    | 43                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 220                      | NR            | 610    | 975                      | NR            | 740    | 36                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 255                      | NR            | 615    | 944                      | NR            | 745    | 31                       | NR            | 875    | 1                        | NR            |        |                          |               |

**Summary**

$R_f = 86.6$   
 $R_g = 95.9$   
 $CIE R_a = 83.5$   
 $R_9 = 6.3$



**Color Vector Graphics**



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

|            |             |            |            |
|------------|-------------|------------|------------|
| CES01 = 86 | CES26 = 85  | CES51 = 97 | CES76 = 81 |
| CES02 = 62 | CES27 = 95  | CES52 = 96 | CES77 = 87 |
| CES03 = 31 | CES28 = 94  | CES53 = 91 | CES78 = 80 |
| CES04 = 70 | CES29 = 87  | CES54 = 92 | CES79 = 93 |
| CES05 = 49 | CES30 = 93  | CES55 = 92 | CES80 = 91 |
| CES06 = 51 | CES31 = 89  | CES56 = 88 | CES81 = 77 |
| CES07 = 41 | CES32 = 84  | CES57 = 87 | CES82 = 96 |
| CES08 = 40 | CES33 = 91  | CES58 = 88 | CES83 = 95 |
| CES09 = 29 | CES34 = 91  | CES59 = 93 | CES84 = 92 |
| CES10 = 75 | CES35 = 95  | CES60 = 94 | CES85 = 80 |
| CES11 = 58 | CES36 = 90  | CES61 = 91 | CES86 = 72 |
| CES12 = 64 | CES37 = 95  | CES62 = 95 | CES87 = 86 |
| CES13 = 43 | CES38 = 100 | CES63 = 88 | CES88 = 88 |
| CES14 = 74 | CES39 = 97  | CES64 = 85 | CES89 = 77 |
| CES15 = 71 | CES40 = 94  | CES65 = 80 | CES90 = 88 |
| CES16 = 47 | CES41 = 97  | CES66 = 84 | CES91 = 81 |
| CES17 = 49 | CES42 = 96  | CES67 = 82 | CES92 = 67 |
| CES18 = 56 | CES43 = 93  | CES68 = 85 | CES93 = 81 |
| CES19 = 72 | CES44 = 99  | CES69 = 89 | CES94 = 63 |
| CES20 = 66 | CES45 = 95  | CES70 = 81 | CES95 = 76 |
| CES21 = 86 | CES46 = 91  | CES71 = 79 | CES96 = 84 |
| CES22 = 78 | CES47 = 93  | CES72 = 93 | CES97 = 92 |
| CES23 = 91 | CES48 = 85  | CES73 = 76 | CES98 = 86 |
| CES24 = 90 | CES49 = 92  | CES74 = 95 | CES99 = 77 |
| CES25 = 72 | CES50 = 96  | CES75 = 80 |            |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)