

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: P1456108

Luminaire Tested: GLAN-SB8B-835-U-T2LG

Issue Date: 05/20/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1456108  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 5/22/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: STREETWORKS  
Catalog Number: GLAN-SB8B-835-U-T2LG  
Description: GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 450mA 8xLight Square  
PACKAGE 80CRI 3500K FIXTURE w/ TYPE II LOW GLARE  
Light Source: (208) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

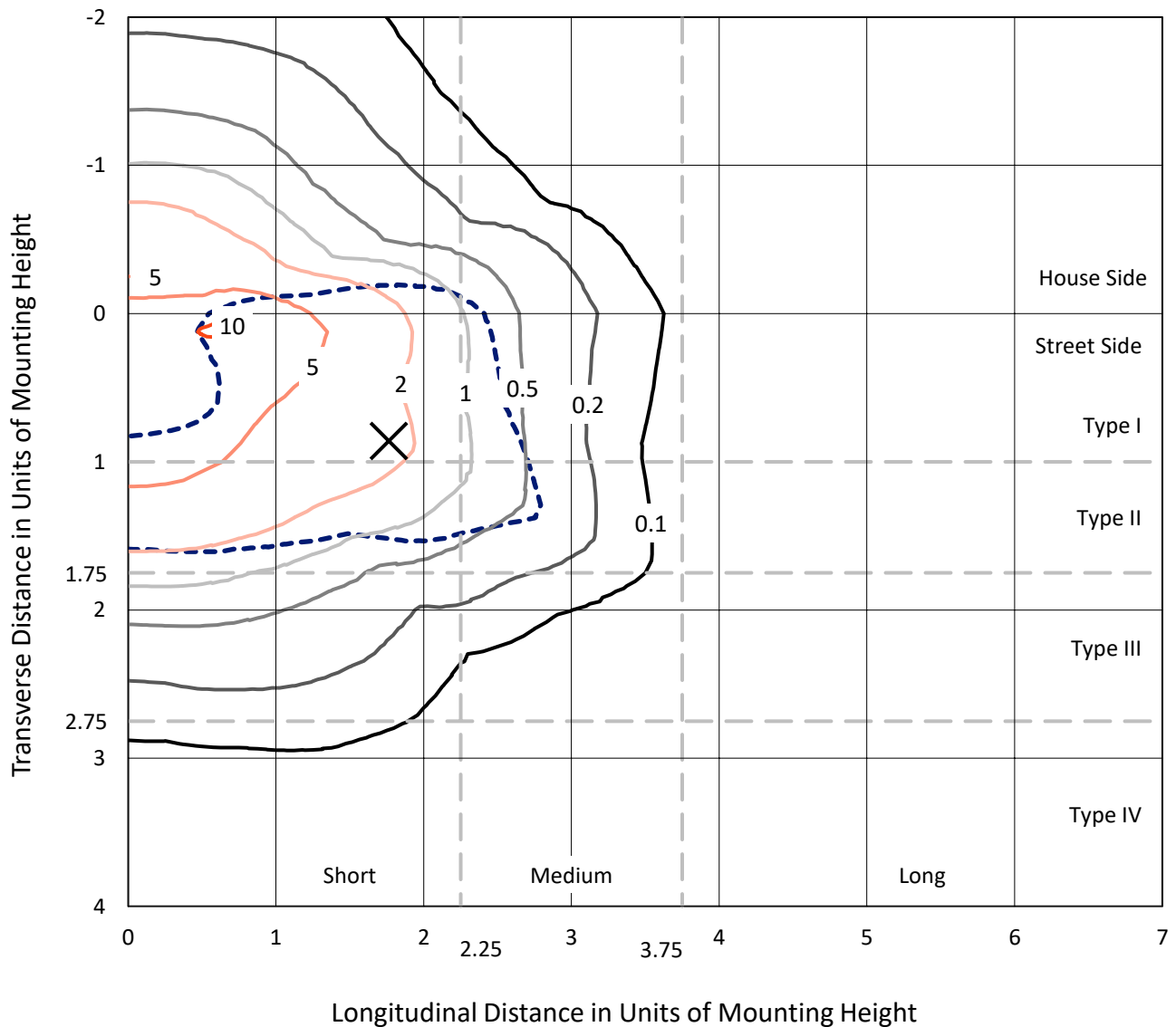
Lumens per Lamp: N/A  
Luminaire Lumens: 40871.9 lumens  
Efficiency: N/A  
Efficacy: 139.6 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B4 - U0 - G4  
  
Input Watts (W): 292.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

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### Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd  
 - - - 1/2 Max cd

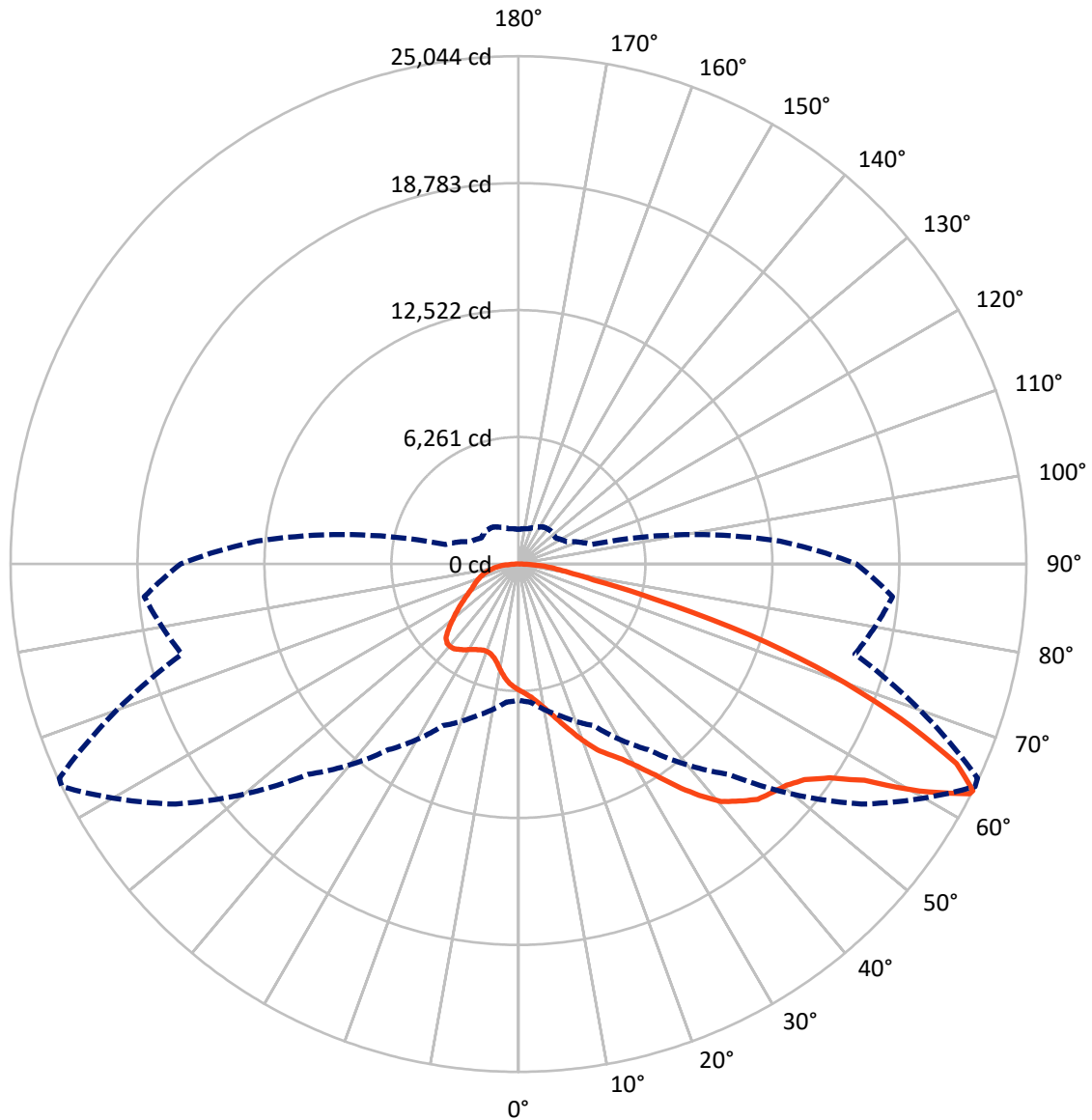


Based on 30 foot mounting height. Maximum calculated value = 10.7 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



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

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 10981.1  | 0.0    | 10981.1 |
|                    | % Fixture | 26.9     | 0.0    | 26.9    |
| <b>Street Side</b> | Lumens    | 29890.8  | 0.0    | 29890.8 |
|                    | % Fixture | 73.1     | 0.0    | 73.1    |
| <b>Total</b>       | Lumens    | 40871.9  | 0.0    | 40871.9 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 571.5   | 1.4       |
| 10°-20°   | 1759.3  | 4.3       |
| 20°-30°   | 3217.2  | 7.9       |
| 30°-40°   | 5534.1  | 13.5      |
| 40°-50°   | 8161.3  | 20.0      |
| 50°-60°   | 9781.8  | 23.9      |
| 60°-70°   | 7850.9  | 19.2      |
| 70°-80°   | 3154.7  | 7.7       |
| 80°-90°   | 841.2   | 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°    | 40871.9 | 100.0     |
| 0°-180°   | 40871.9 | 100.0     |



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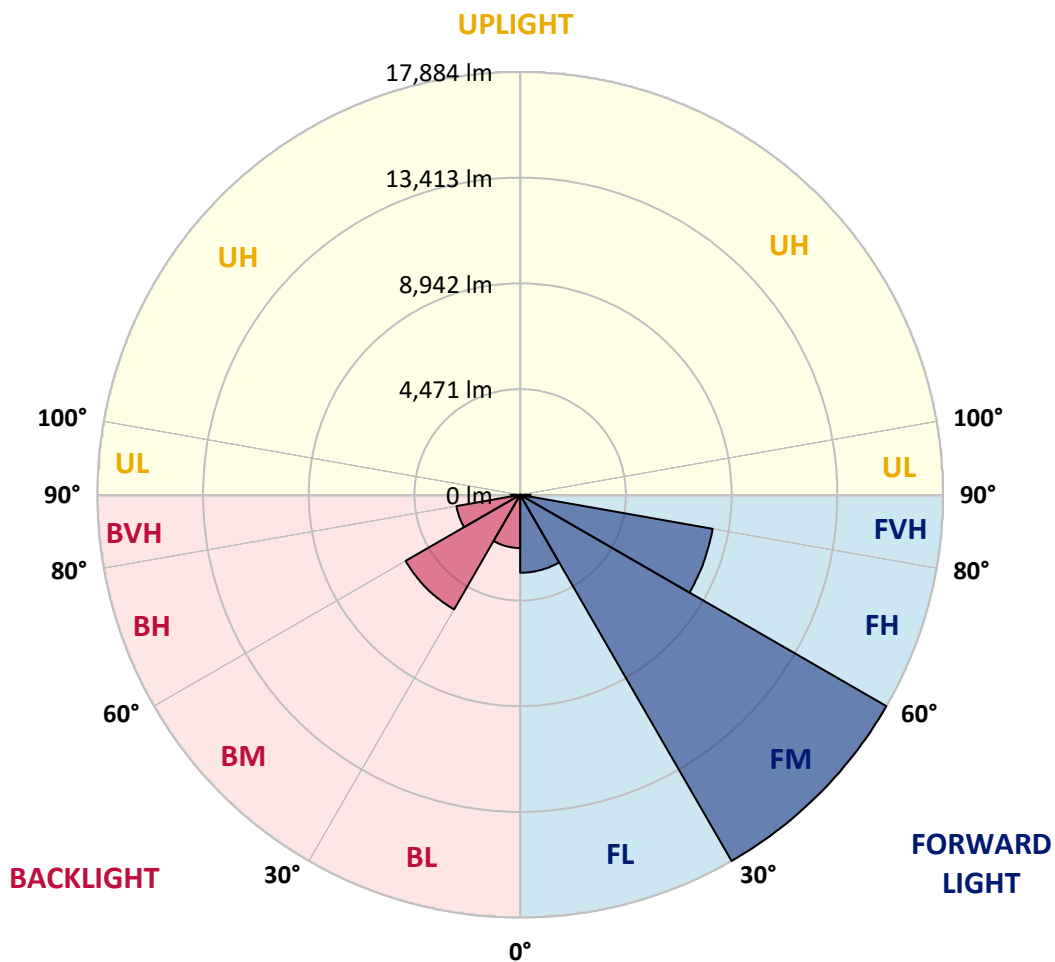
CATALOG NUMBER: GLAN-SB8B-835-U-T2LG

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

| Zone           | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |          |
|----------------|---------|-----------|-------------------------|------|----------|
|                |         |           | B                       | U    | G        |
| FL (0°-30°)    | 3297.6  | 8.1       |                         |      |          |
| FM (30°-60°)   | 17883.6 | 43.8      |                         |      |          |
| FH (60°-80°)   | 8267.6  | 20.2      |                         |      | G4/12000 |
| FVH (80°-90°)  | 442.0   | 1.1       |                         |      | G3/500   |
| BL (0°-30°)    | 2250.4  | 5.5       | B3/2500                 |      |          |
| BM (30°-60°)   | 5593.5  | 13.7      | B4/8500                 |      |          |
| BH (60°-80°)   | 2737.9  | 6.7       | B4/5000                 |      | G4/5000  |
| BVH (80°-90°)  | 399.2   | 1.0       |                         |      | G3/500   |
| UL (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |          |
| UH (100°-180°) | 0.0     | 0.0       |                         | U0/0 |          |

**BUG Rating: B4-U0-G4**

Type II Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 64°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 6224.3  | 6224.3  | 6224.3  | 6224.3  | 6224.3  | 6224.3  | 6224.3  | 6224.3  | 6224.3  | 6224.3  | 6224.3  |
| 2.5°  | 6481.4  | 6490.6  | 6463.0  | 6453.8  | 6472.2  | 6435.5  | 6426.3  | 6389.6  | 6371.2  | 6334.5  | 6288.6  |
| 5°    | 6665.0  | 6674.2  | 6655.8  | 6655.8  | 6674.2  | 6646.6  | 6637.4  | 6600.7  | 6582.4  | 6545.6  | 6453.8  |
| 7.5°  | 6655.8  | 6665.0  | 6683.3  | 6756.8  | 6848.6  | 6885.3  | 6912.9  | 6885.3  | 6876.1  | 6821.1  | 6729.2  |
| 10°   | 6508.9  | 6518.1  | 6564.0  | 6674.2  | 6903.7  | 7068.9  | 7243.4  | 7243.4  | 7261.7  | 7215.8  | 7050.6  |
| 12.5° | 6306.9  | 6316.1  | 6426.3  | 6600.7  | 6903.7  | 7188.3  | 7546.3  | 7693.2  | 7684.0  | 7656.5  | 7463.7  |
| 15°   | 5820.4  | 5820.4  | 5985.6  | 6316.1  | 6802.7  | 7270.9  | 7803.4  | 8198.1  | 8207.3  | 8234.8  | 8005.3  |
| 17.5° | 5407.3  | 5416.4  | 5554.2  | 5847.9  | 6481.4  | 7225.0  | 8078.8  | 8758.1  | 8785.7  | 8941.7  | 8611.2  |
| 20°   | 5444.0  | 5444.0  | 5489.9  | 5618.4  | 6132.5  | 7041.4  | 8234.8  | 9354.8  | 9446.7  | 9813.9  | 9400.8  |
| 22.5° | 5728.6  | 5728.6  | 5765.3  | 5756.1  | 6068.3  | 6922.0  | 8335.8  | 9951.6  | 10116.8 | 10878.8 | 10346.3 |
| 25°   | 6251.9  | 6242.7  | 6206.0  | 6150.9  | 6334.5  | 7050.6  | 8565.3  | 10410.6 | 10731.9 | 12053.9 | 11438.8 |
| 27.5° | 6894.5  | 6876.1  | 6821.1  | 6729.2  | 6857.8  | 7436.1  | 8960.1  | 10897.2 | 11246.0 | 13339.2 | 12595.5 |
| 30°   | 7693.2  | 7638.1  | 7583.0  | 7463.7  | 7601.4  | 8069.6  | 9547.6  | 11585.7 | 11916.2 | 14798.8 | 13991.0 |
| 32.5° | 8638.8  | 8703.0  | 8519.4  | 8354.2  | 8501.1  | 8932.5  | 10419.8 | 12402.7 | 12760.8 | 16322.8 | 15441.5 |
| 35°   | 10052.6 | 10245.3 | 10190.3 | 9354.8  | 9492.6  | 9969.9  | 11438.8 | 13458.5 | 13779.8 | 17709.0 | 16928.7 |
| 37.5° | 11448.0 | 11402.1 | 11448.0 | 10750.3 | 10529.9 | 11108.3 | 12531.3 | 14468.3 | 14780.5 | 18838.2 | 18241.5 |
| 40°   | 12568.0 | 12705.7 | 12705.7 | 12136.5 | 11851.9 | 12237.5 | 13522.8 | 15395.6 | 15698.5 | 19462.5 | 19187.1 |
| 42.5° | 13789.0 | 13807.4 | 13770.6 | 13274.9 | 13164.7 | 13265.7 | 14394.9 | 15983.1 | 16231.0 | 19783.8 | 19829.7 |
| 45°   | 15166.1 | 15156.9 | 15000.8 | 14587.7 | 14422.4 | 14330.6 | 14936.5 | 16552.3 | 16800.2 | 19930.7 | 20178.6 |
| 47.5° | 16304.4 | 16350.3 | 16359.5 | 15918.8 | 15643.4 | 15248.7 | 15404.7 | 16836.9 | 17121.5 | 19765.4 | 20252.0 |
| 50°   | 16368.7 | 16442.1 | 16791.0 | 16919.5 | 16864.4 | 16231.0 | 15836.2 | 17139.8 | 17424.4 | 19802.2 | 20518.2 |
| 52.5° | 15964.8 | 16038.2 | 16488.0 | 17020.5 | 17663.1 | 17360.2 | 16515.6 | 17663.1 | 17956.9 | 20160.2 | 21124.1 |
| 55°   | 14881.5 | 15000.8 | 15671.0 | 16414.6 | 17562.1 | 17993.6 | 17718.2 | 18608.7 | 18884.1 | 20444.8 | 21831.0 |
| 57.5° | 12953.6 | 13100.5 | 14027.7 | 15212.0 | 16781.8 | 17846.7 | 19462.5 | 20123.5 | 20353.0 | 20646.8 | 21840.2 |
| 60°   | 9685.3  | 9804.7  | 11255.2 | 12852.6 | 15212.0 | 16928.7 | 20499.9 | 22721.5 | 22850.1 | 19554.3 | 20600.9 |
| 62.5° | 7133.2  | 7252.5  | 8225.7  | 9373.2  | 11952.9 | 15239.5 | 20701.8 | 24970.7 | 24989.1 | 17580.5 | 18893.3 |
| 63°   | 6720.1  | 6839.4  | 7720.7  | 8794.8  | 11181.8 | 14670.3 | 20637.6 | 25044.2 | 24979.9 | 17176.6 | 18516.9 |
| 65°   | 5232.8  | 5444.0  | 6362.0  | 7179.1  | 8381.7  | 11677.5 | 19811.3 | 23740.6 | 23832.4 | 15983.1 | 16625.7 |
| 67.5° | 3562.0  | 3718.1  | 4884.0  | 5829.6  | 6334.5  | 7436.1  | 16249.3 | 20316.3 | 20463.2 | 14743.8 | 13265.7 |
| 70°   | 2754.1  | 2827.6  | 3506.9  | 4617.8  | 5122.7  | 4727.9  | 10594.2 | 16359.5 | 16359.5 | 11512.2 | 9400.8  |
| 72.5° | 2157.4  | 2184.9  | 2644.0  | 3607.9  | 4122.0  | 3635.4  | 5903.0  | 11897.8 | 11457.2 | 6830.2  | 6270.2  |
| 75°   | 1542.3  | 1579.0  | 1992.2  | 2689.9  | 3286.6  | 2864.3  | 3773.2  | 6931.2  | 6665.0  | 3929.2  | 4186.3  |
| 77.5° | 1221.0  | 1239.4  | 1487.2  | 1983.0  | 2662.3  | 2184.9  | 2873.5  | 3782.3  | 3745.6  | 2763.3  | 2689.9  |
| 80°   | 963.9   | 1000.7  | 1165.9  | 1423.0  | 2056.4  | 1707.6  | 2139.0  | 2497.1  | 2423.6  | 1900.3  | 1725.9  |
| 82.5° | 688.5   | 752.8   | 899.7   | 1083.3  | 1523.9  | 1221.0  | 1404.6  | 1762.6  | 1762.6  | 1432.1  | 1138.4  |
| 85°   | 422.3   | 477.4   | 532.5   | 670.2   | 1083.3  | 789.5   | 743.6   | 1138.4  | 1165.9  | 1074.1  | 734.4   |
| 87.5° | 202.0   | 220.3   | 257.1   | 284.6   | 394.8   | 358.0   | 293.8   | 431.5   | 440.7   | 477.4   | 303.0   |
| 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: P1456108

CATALOG NUMBER: GLAN-SB8B-835-U-T2LG

**CANDELA DISTRIBUTION (continued):**

|       | 90°     | 95°     | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 6224.3  | 6224.3  | 6224.3 | 6224.3 | 6224.3 | 6224.3 | 6224.3 | 6224.3 | 6224.3 | 6224.3 | 6224.3 |
| 2.5°  | 6279.4  | 6261.0  | 6169.2 | 6077.4 | 5976.5 | 5884.6 | 5792.8 | 5719.4 | 5636.8 | 5655.1 | 5664.3 |
| 5°    | 6398.8  | 6352.9  | 6150.9 | 5912.2 | 5600.1 | 5306.3 | 5021.7 | 4819.7 | 4691.2 | 4654.5 | 4581.0 |
| 7.5°  | 6655.8  | 6545.6  | 6178.4 | 5673.5 | 5095.1 | 4636.1 | 4369.9 | 4250.5 | 4213.8 | 4223.0 | 4204.6 |
| 10°   | 6949.6  | 6784.3  | 6215.1 | 5388.9 | 4654.5 | 4342.3 | 4305.6 | 4379.1 | 4415.8 | 4452.5 | 4461.7 |
| 12.5° | 7335.2  | 7068.9  | 6196.8 | 5076.8 | 4443.3 | 4388.2 | 4525.9 | 4663.7 | 4746.3 | 4801.4 | 4792.2 |
| 15°   | 7785.0  | 7427.0  | 6141.7 | 4819.7 | 4415.8 | 4562.7 | 4737.1 | 4893.2 | 4994.1 | 5049.2 | 5021.7 |
| 17.5° | 8326.6  | 7849.3  | 6077.4 | 4654.5 | 4498.4 | 4672.8 | 4856.4 | 5012.5 | 5122.7 | 5159.4 | 5131.9 |
| 20°   | 8996.8  | 8326.6  | 5967.3 | 4581.0 | 4562.7 | 4718.7 | 4884.0 | 5030.9 | 5122.7 | 5159.4 | 5122.7 |
| 22.5° | 9786.3  | 8895.8  | 5875.5 | 4581.0 | 4590.2 | 4718.7 | 4838.1 | 4948.2 | 5030.9 | 5058.4 | 5012.5 |
| 25°   | 10796.2 | 9556.8  | 5838.7 | 4654.5 | 4599.4 | 4672.8 | 4737.1 | 4801.4 | 4847.3 | 4865.6 | 4847.3 |
| 27.5° | 11824.4 | 10318.8 | 5857.1 | 4746.3 | 4590.2 | 4608.6 | 4608.6 | 4617.8 | 4626.9 | 4636.1 | 4626.9 |
| 30°   | 13008.7 | 11089.9 | 5930.6 | 4865.6 | 4608.6 | 4516.8 | 4489.2 | 4434.1 | 4388.2 | 4351.5 | 4314.8 |
| 32.5° | 14156.2 | 11824.4 | 6059.1 | 5040.1 | 4590.2 | 4415.8 | 4360.7 | 4223.0 | 4094.5 | 3984.3 | 3984.3 |
| 35°   | 15395.6 | 12586.4 | 6288.6 | 5168.6 | 4571.8 | 4324.0 | 4167.9 | 4011.8 | 3874.1 | 3718.1 | 3718.1 |
| 37.5° | 16460.5 | 13238.2 | 6472.2 | 5315.5 | 4553.5 | 4213.8 | 3965.9 | 3791.5 | 3644.6 | 3488.6 | 3470.2 |
| 40°   | 17204.1 | 13614.6 | 6582.4 | 5370.5 | 4489.2 | 4066.9 | 3773.2 | 3552.8 | 3341.7 | 3130.5 | 3121.3 |
| 42.5° | 17562.1 | 13596.2 | 6518.1 | 5352.2 | 4369.9 | 3883.3 | 3607.9 | 3314.1 | 3029.5 | 2836.8 | 2818.4 |
| 45°   | 17754.9 | 13476.9 | 6270.2 | 5196.1 | 4177.1 | 3690.5 | 3396.8 | 3084.6 | 2800.0 | 2625.6 | 2588.9 |
| 47.5° | 17718.2 | 13183.1 | 5930.6 | 4810.5 | 3920.0 | 3479.4 | 3185.6 | 2864.3 | 2634.8 | 2533.8 | 2533.8 |
| 50°   | 17819.2 | 12953.6 | 5545.0 | 4369.9 | 3571.2 | 3231.5 | 2992.8 | 2699.0 | 2561.3 | 2432.8 | 2386.9 |
| 52.5° | 18269.0 | 13146.4 | 5214.5 | 3956.8 | 3240.7 | 2992.8 | 2827.6 | 2579.7 | 2405.3 | 2322.6 | 2295.1 |
| 55°   | 18865.8 | 13559.5 | 4902.3 | 3589.5 | 2919.4 | 2781.7 | 2699.0 | 2469.5 | 2267.6 | 2184.9 | 2139.0 |
| 57.5° | 18975.9 | 13844.1 | 4599.4 | 3231.5 | 2653.1 | 2616.4 | 2588.9 | 2276.7 | 2111.5 | 2047.2 | 2010.5 |
| 60°   | 18214.0 | 13632.9 | 4204.6 | 2910.2 | 2442.0 | 2460.4 | 2386.9 | 2157.4 | 1964.6 | 1900.3 | 1863.6 |
| 62.5° | 16919.5 | 13082.1 | 3809.9 | 2634.8 | 2276.7 | 2313.5 | 2240.0 | 2010.5 | 1817.7 | 1753.5 | 1735.1 |
| 63°   | 16662.5 | 12935.2 | 3718.1 | 2607.2 | 2240.0 | 2285.9 | 2221.7 | 1992.2 | 1799.4 | 1735.1 | 1707.6 |
| 65°   | 15129.3 | 12053.9 | 3396.8 | 2460.4 | 2120.7 | 2120.7 | 2129.9 | 1900.3 | 1735.1 | 1707.6 | 1689.2 |
| 67.5° | 12338.5 | 10061.7 | 3047.9 | 2285.9 | 1992.2 | 2019.7 | 2065.6 | 1937.1 | 1872.8 | 1854.4 | 1836.1 |
| 70°   | 9327.3  | 7573.8  | 2744.9 | 2120.7 | 1854.4 | 1946.2 | 2258.4 | 2203.3 | 1964.6 | 1799.4 | 1762.6 |
| 72.5° | 6609.9  | 5159.4  | 2478.7 | 1955.4 | 1689.2 | 1918.7 | 2341.0 | 2102.3 | 1771.8 | 1579.0 | 1542.3 |
| 75°   | 4425.0  | 3323.3  | 2212.5 | 1781.0 | 1505.6 | 1771.8 | 2212.5 | 1918.7 | 1542.3 | 1496.4 | 1441.3 |
| 77.5° | 2781.7  | 2368.5  | 1946.2 | 1579.0 | 1303.6 | 1579.0 | 2010.5 | 1707.6 | 1331.2 | 1349.5 | 1266.9 |
| 80°   | 1698.4  | 1689.2  | 1634.1 | 1340.3 | 1046.6 | 1257.7 | 1689.2 | 1441.3 | 1064.9 | 1064.9 | 945.6  |
| 82.5° | 1009.8  | 1221.0  | 1386.2 | 1110.8 | 762.0  | 899.7  | 1221.0 | 1083.3 | 890.5  | 863.0  | 807.9  |
| 85°   | 679.4   | 826.2   | 1101.7 | 853.8  | 486.6  | 550.8  | 844.6  | 908.9  | 817.1  | 716.1  | 670.2  |
| 87.5° | 247.9   | 330.5   | 504.9  | 348.9  | 211.1  | 330.5  | 633.4  | 661.0  | 495.7  | 385.6  | 348.9  |
| 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**

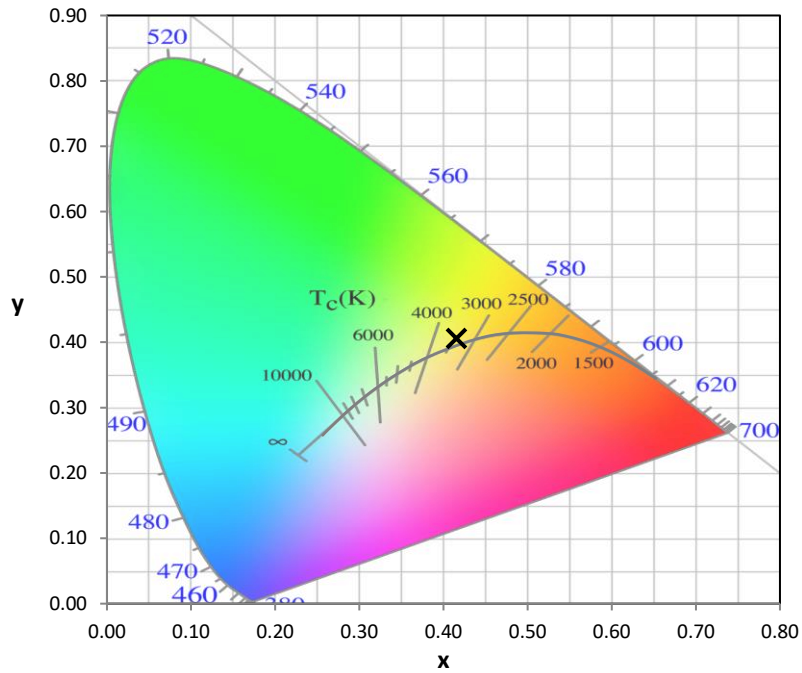
Stabilization Time: 35M  
 Operation Time: 1H 35M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-10

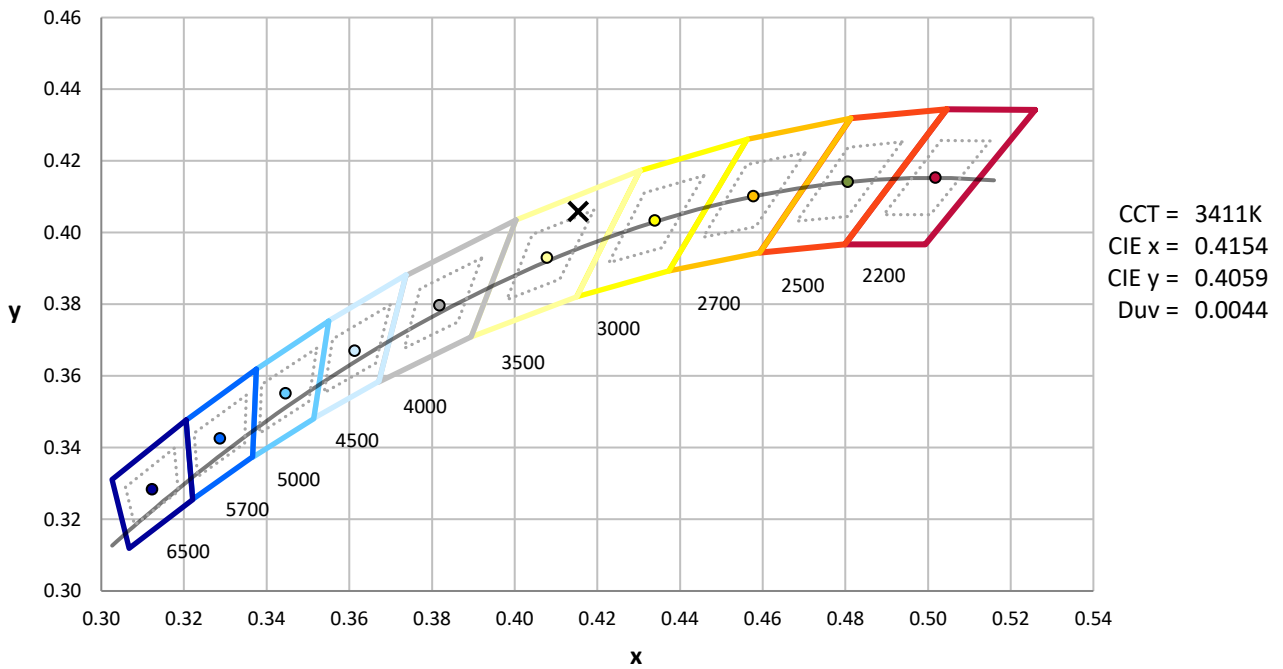
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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

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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 3500K 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    | 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            |        |                          |               |

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**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            |        |                          |               |

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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)