

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: P1456410

Luminaire Tested: GLAN-SB2D-727-U-T3LG

Issue Date: 05/20/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1456410  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 5/21/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: STREETWORKS  
Catalog Number: GLAN-SB2D-727-U-T3LG  
Description: GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 900mA 2xLight Square  
PACKAGE 70CRI 2700K FIXTURE w/ TYPE III LOW GLARE  
Light Source: (52) 2700K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 18417.5 lumens  
Efficiency: N/A  
Efficacy: 124.8 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B3 - U0 - G2

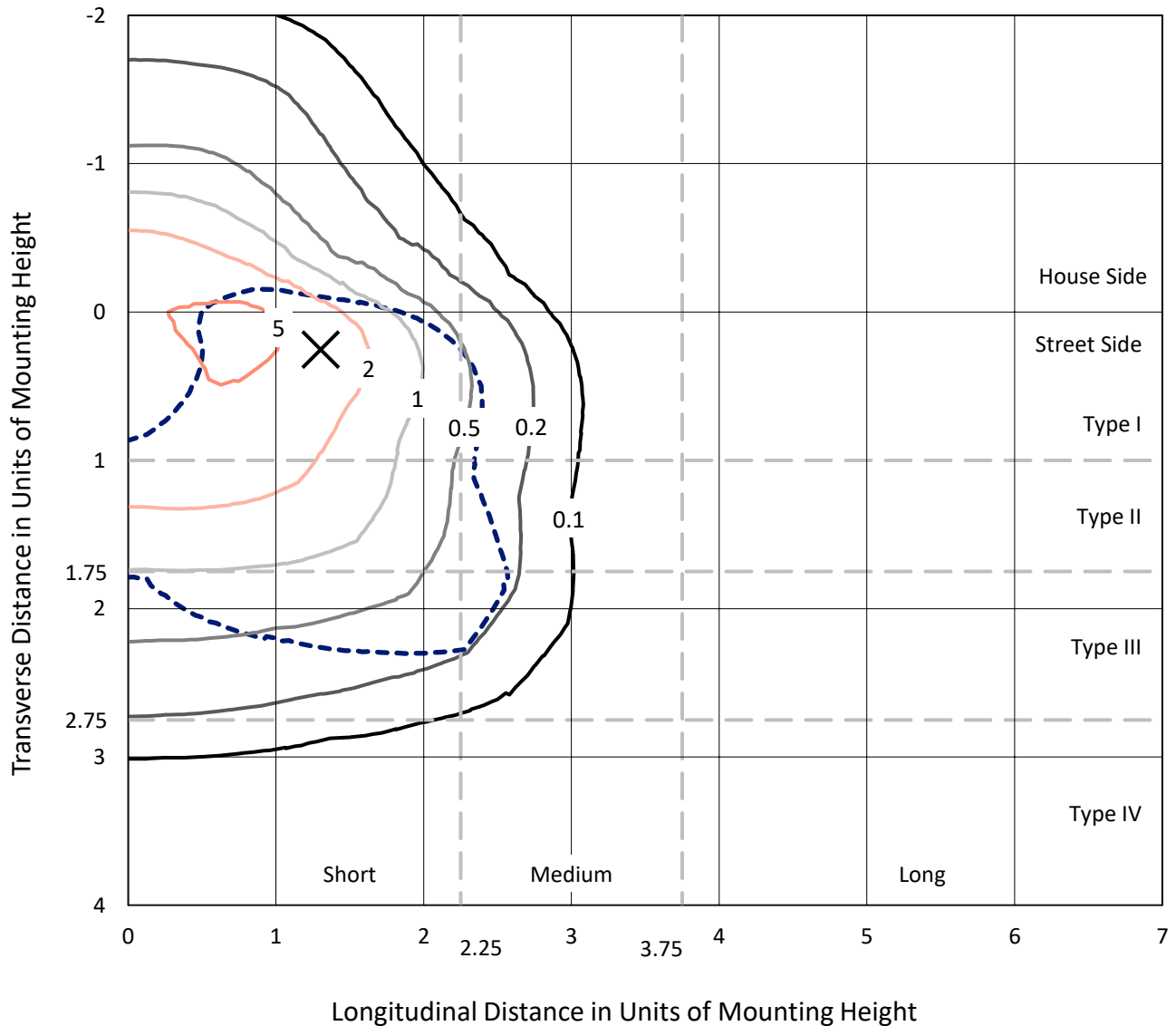
Input Watts (W): 147.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

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### Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

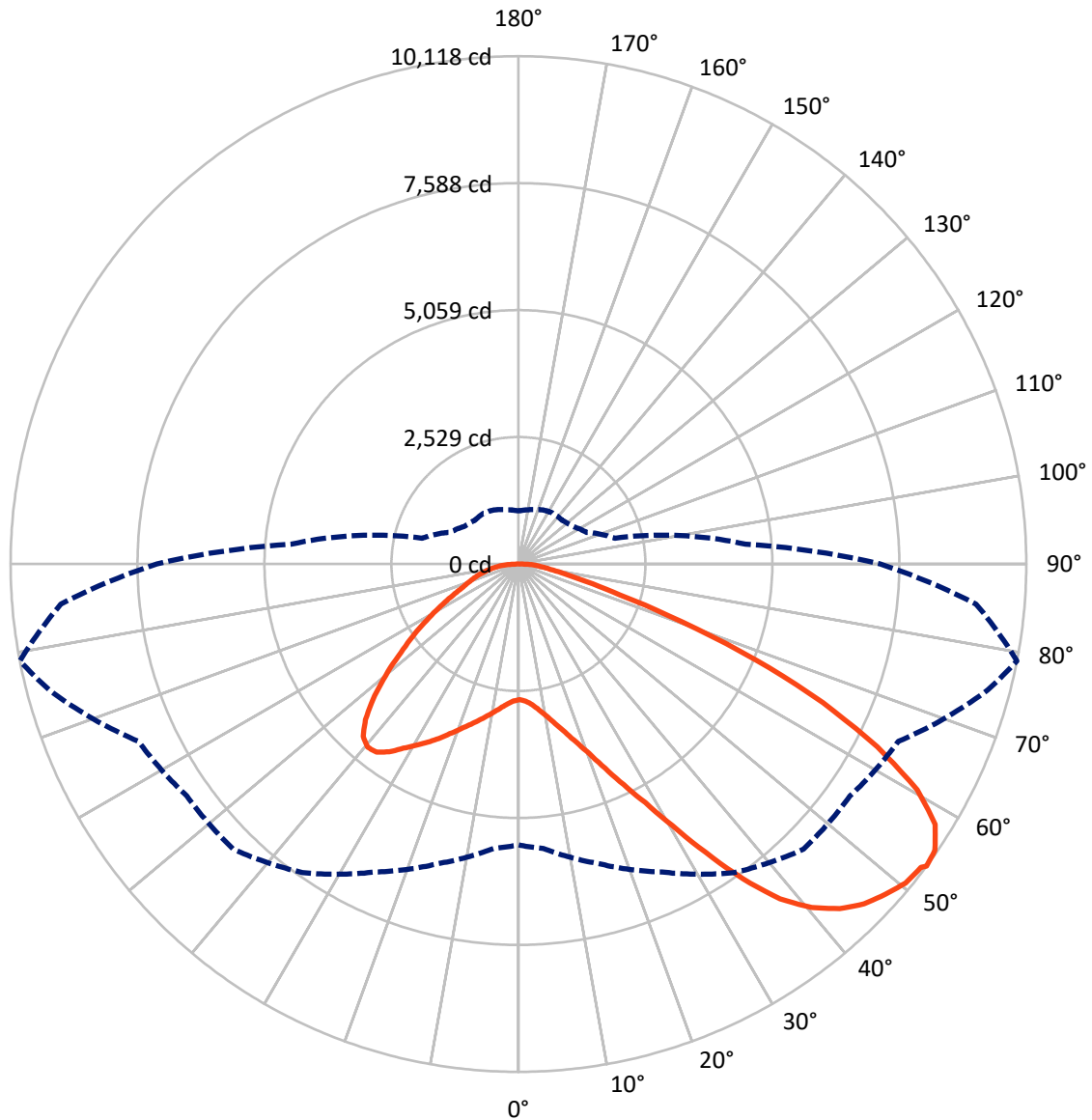


Based on 25 foot mounting height. Maximum calculated value = 6.7 fc  
 Type III - Short - N/A

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CATALOG NUMBER: GLAN-SB2D-727-U-T3LG

### Luminous Intensity Polar Plot



— Vertical Plane Through 79-Deg Lateral      - - - Horizontal Cone Through 53-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 4642.9   | 0.0    | 4642.9  |
|                    | % Fixture | 25.2     | 0.0    | 25.2    |
| <b>Street Side</b> | Lumens    | 13774.6  | 0.0    | 13774.6 |
|                    | % Fixture | 74.8     | 0.0    | 74.8    |
| <b>Total</b>       | Lumens    | 18417.5  | 0.0    | 18417.5 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 257.6   | 1.4       |
| 10°-20°   | 797.8   | 4.3       |
| 20°-30°   | 1525.3  | 8.3       |
| 30°-40°   | 2618.8  | 14.2      |
| 40°-50°   | 3668.1  | 19.9      |
| 50°-60°   | 4162.8  | 22.6      |
| 60°-70°   | 3650.5  | 19.8      |
| 70°-80°   | 1427.4  | 7.8       |
| 80°-90°   | 309.3   | 1.7       |
| 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°    | 18417.5 | 100.0     |
| 0°-180°   | 18417.5 | 100.0     |



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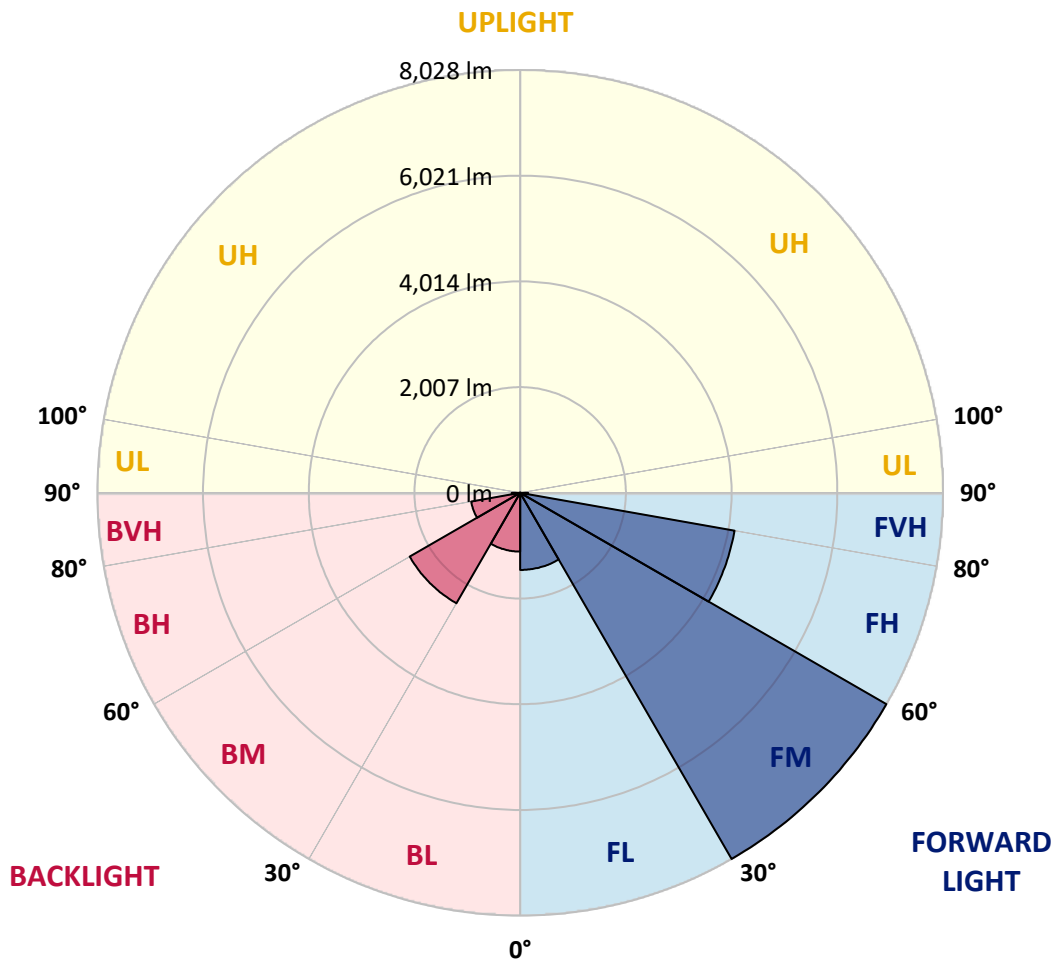
CATALOG NUMBER: GLAN-SB2D-727-U-T3LG

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

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 1464.0 | 7.9       |                         |      |         |
| FM (30°-60°)   | 8027.6 | 43.6      |                         |      |         |
| FH (60°-80°)   | 4133.0 | 22.4      |                         |      | G2/5000 |
| FVH (80°-90°)  | 150.0  | 0.8       |                         |      | G2/225  |
| BL (0°-30°)    | 1116.6 | 6.1       | B3/2500                 |      |         |
| BM (30°-60°)   | 2422.1 | 13.2      | B2/2500                 |      |         |
| BH (60°-80°)   | 944.9  | 5.1       | B2/1000                 |      | G2/1000 |
| BVH (80°-90°)  | 159.3  | 0.9       |                         |      | G2/225  |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B3-U0-G2**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 79°     | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|
| 0°    | 2703.7 | 2703.7 | 2703.7 | 2703.7 | 2703.7 | 2703.7 | 2703.7 | 2703.7 | 2703.7 | 2703.7  | 2703.7 |
| 2.5°  | 2707.8 | 2707.8 | 2691.4 | 2707.8 | 2699.6 | 2711.9 | 2720.2 | 2720.2 | 2736.6 | 2732.5  | 2732.5 |
| 5°    | 2662.7 | 2654.5 | 2650.4 | 2679.1 | 2695.5 | 2728.4 | 2765.3 | 2781.7 | 2810.4 | 2810.4  | 2814.5 |
| 7.5°  | 2543.7 | 2539.6 | 2560.1 | 2617.6 | 2670.9 | 2753.0 | 2830.9 | 2876.1 | 2921.2 | 2929.4  | 2929.4 |
| 10°   | 2469.9 | 2465.8 | 2490.4 | 2560.1 | 2646.3 | 2765.3 | 2888.4 | 2982.7 | 3056.6 | 3077.1  | 3077.1 |
| 12.5° | 2469.9 | 2469.9 | 2490.4 | 2560.1 | 2650.4 | 2794.0 | 2962.2 | 3122.2 | 3237.1 | 3261.7  | 3253.5 |
| 15°   | 2539.6 | 2535.5 | 2560.1 | 2634.0 | 2720.2 | 2855.5 | 3060.7 | 3274.0 | 3429.9 | 3475.1  | 3479.2 |
| 17.5° | 2613.5 | 2609.4 | 2646.3 | 2740.7 | 2843.2 | 2978.6 | 3187.9 | 3450.5 | 3672.0 | 3729.4  | 3741.8 |
| 20°   | 2728.4 | 2724.3 | 2769.4 | 2859.7 | 2986.8 | 3142.7 | 3360.2 | 3659.7 | 3967.4 | 4028.9  | 4045.4 |
| 22.5° | 2859.7 | 2863.8 | 2913.0 | 3023.8 | 3150.9 | 3356.1 | 3622.8 | 3955.1 | 4324.3 | 4418.7  | 4435.1 |
| 25°   | 3134.5 | 3122.2 | 3163.3 | 3241.2 | 3376.6 | 3622.8 | 3951.0 | 4312.0 | 4751.0 | 4865.9  | 4886.4 |
| 27.5° | 3499.7 | 3479.2 | 3524.3 | 3602.3 | 3700.7 | 3930.5 | 4307.9 | 4710.0 | 5239.3 | 5382.9  | 5387.0 |
| 30°   | 3827.9 | 3815.6 | 3877.1 | 4037.2 | 4139.7 | 4316.1 | 4718.2 | 5177.7 | 5842.4 | 6051.6  | 6059.8 |
| 32.5° | 4111.0 | 4106.9 | 4221.8 | 4426.9 | 4660.8 | 4849.5 | 5239.3 | 5768.5 | 6605.5 | 6847.6  | 6794.2 |
| 35°   | 4381.8 | 4394.1 | 4537.7 | 4751.0 | 5062.9 | 5440.3 | 5834.2 | 6437.3 | 7409.7 | 7701.0  | 7614.8 |
| 37.5° | 4656.7 | 4664.9 | 4853.6 | 5128.5 | 5456.7 | 5949.1 | 6478.3 | 7163.5 | 8107.1 | 8468.2  | 8279.4 |
| 40°   | 4911.0 | 4935.7 | 5190.0 | 5485.4 | 5912.1 | 6412.7 | 7003.5 | 7668.1 | 8644.6 | 9001.5  | 8796.4 |
| 42.5° | 5165.4 | 5202.3 | 5477.2 | 5883.4 | 6338.8 | 6859.9 | 7368.6 | 7975.8 | 8989.2 | 9387.2  | 9071.3 |
| 45°   | 5428.0 | 5452.6 | 5793.2 | 6215.7 | 6732.7 | 7212.7 | 7577.9 | 8172.8 | 9227.2 | 9658.0  | 9227.2 |
| 47.5° | 5604.4 | 5653.7 | 6027.0 | 6515.2 | 7032.2 | 7483.5 | 7746.1 | 8254.8 | 9379.0 | 9834.4  | 9284.6 |
| 50°   | 5674.2 | 5743.9 | 6146.0 | 6687.6 | 7278.4 | 7737.9 | 7877.4 | 8300.0 | 9547.2 | 9990.3  | 9272.3 |
| 52.5° | 5661.9 | 5727.5 | 6166.5 | 6765.5 | 7475.3 | 7971.7 | 8004.6 | 8349.2 | 9666.2 | 10043.6 | 9165.7 |
| 53°   | 5596.2 | 5686.5 | 6178.8 | 6769.6 | 7504.0 | 8033.3 | 8062.0 | 8353.3 | 9682.6 | 10117.5 | 9149.2 |
| 55°   | 5370.6 | 5419.8 | 6051.6 | 6765.5 | 7639.4 | 8263.0 | 8222.0 | 8476.4 | 9727.7 | 10068.3 | 8968.7 |
| 57.5° | 5165.4 | 5214.7 | 5764.4 | 6687.6 | 7750.2 | 8587.2 | 8480.5 | 8455.9 | 9481.6 | 9789.3  | 8513.3 |
| 60°   | 5034.1 | 5050.5 | 5514.2 | 6441.4 | 7705.1 | 8812.8 | 8648.7 | 8213.8 | 8874.4 | 9128.7  | 7713.3 |
| 62.5° | 4923.4 | 4919.3 | 5329.5 | 6088.6 | 7532.7 | 8845.6 | 8681.5 | 7614.8 | 7984.0 | 8025.1  | 6646.5 |
| 65°   | 4673.1 | 4644.4 | 5042.3 | 5690.6 | 7175.8 | 8697.9 | 8279.4 | 6708.1 | 6802.4 | 6667.0  | 5337.7 |
| 67.5° | 4176.6 | 4115.1 | 4467.9 | 5083.4 | 6449.6 | 8279.4 | 7512.2 | 5653.7 | 5362.4 | 5091.6  | 4020.7 |
| 70°   | 2990.9 | 2990.9 | 3274.0 | 3889.5 | 5177.7 | 7155.3 | 6449.6 | 4279.2 | 3692.5 | 3450.5  | 2687.3 |
| 72.5° | 1464.7 | 1501.6 | 1797.0 | 2297.6 | 3471.0 | 5194.1 | 4939.8 | 2773.5 | 2240.1 | 2121.1  | 1723.2 |
| 75°   | 623.6  | 627.7  | 767.2  | 1017.5 | 1760.1 | 3073.0 | 3093.5 | 1600.1 | 1436.0 | 1378.5  | 1140.6 |
| 77.5° | 434.9  | 443.1  | 504.6  | 599.0  | 837.0  | 1411.4 | 1608.3 | 968.3  | 964.2  | 923.1   | 812.4  |
| 80°   | 332.3  | 340.5  | 381.6  | 447.2  | 562.1  | 722.1  | 832.9  | 656.4  | 689.3  | 648.2   | 586.7  |
| 82.5° | 250.3  | 258.5  | 287.2  | 336.4  | 402.1  | 484.1  | 467.7  | 484.1  | 508.7  | 484.1   | 422.6  |
| 85°   | 168.2  | 172.3  | 192.8  | 233.9  | 258.5  | 291.3  | 291.3  | 352.8  | 369.3  | 361.0   | 332.3  |
| 87.5° | 86.2   | 86.2   | 102.6  | 123.1  | 131.3  | 135.4  | 119.0  | 155.9  | 176.4  | 192.8   | 155.9  |
| 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: P1456410

CATALOG NUMBER: GLAN-SB2D-727-U-T3LG

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 2703.7 | 2703.7 | 2703.7 | 2703.7 | 2703.7 | 2703.7 | 2703.7 | 2703.7 | 2703.7 | 2703.7 | 2703.7 |
| 2.5°  | 2732.5 | 2736.6 | 2724.3 | 2720.2 | 2716.1 | 2695.5 | 2695.5 | 2675.0 | 2670.9 | 2675.0 | 2662.7 |
| 5°    | 2822.7 | 2814.5 | 2781.7 | 2757.1 | 2728.4 | 2670.9 | 2638.1 | 2593.0 | 2580.7 | 2568.4 | 2556.0 |
| 7.5°  | 2933.5 | 2921.2 | 2863.8 | 2798.1 | 2720.2 | 2609.4 | 2547.8 | 2474.0 | 2449.4 | 2428.9 | 2420.7 |
| 10°   | 3073.0 | 3048.4 | 2958.1 | 2818.6 | 2675.0 | 2539.6 | 2453.5 | 2363.2 | 2322.2 | 2314.0 | 2293.5 |
| 12.5° | 3253.5 | 3208.4 | 3040.2 | 2822.7 | 2634.0 | 2457.6 | 2363.2 | 2293.5 | 2277.1 | 2273.0 | 2252.4 |
| 15°   | 3454.6 | 3388.9 | 3118.1 | 2826.8 | 2580.7 | 2387.8 | 2330.4 | 2293.5 | 2293.5 | 2289.4 | 2277.1 |
| 17.5° | 3700.7 | 3594.1 | 3192.0 | 2810.4 | 2515.0 | 2367.3 | 2338.6 | 2305.8 | 2297.6 | 2301.7 | 2285.3 |
| 20°   | 3996.1 | 3819.7 | 3269.9 | 2789.9 | 2486.3 | 2371.4 | 2338.6 | 2293.5 | 2273.0 | 2268.8 | 2256.5 |
| 22.5° | 4336.7 | 4078.2 | 3356.1 | 2757.1 | 2486.3 | 2367.3 | 2314.0 | 2252.4 | 2211.4 | 2195.0 | 2178.6 |
| 25°   | 4726.4 | 4377.7 | 3446.4 | 2744.8 | 2494.5 | 2350.9 | 2264.7 | 2166.3 | 2100.6 | 2076.0 | 2063.7 |
| 27.5° | 5198.2 | 4693.6 | 3512.0 | 2757.1 | 2490.4 | 2314.0 | 2178.6 | 2051.4 | 1977.5 | 1936.5 | 1928.3 |
| 30°   | 5719.3 | 5034.1 | 3557.1 | 2777.6 | 2465.8 | 2244.2 | 2076.0 | 1932.4 | 1829.8 | 1780.6 | 1768.3 |
| 32.5° | 6334.7 | 5415.7 | 3602.3 | 2777.6 | 2404.2 | 2145.8 | 1957.0 | 1801.1 | 1694.5 | 1637.0 | 1628.8 |
| 35°   | 7015.8 | 5883.4 | 3643.3 | 2773.5 | 2330.4 | 2039.1 | 1838.1 | 1678.0 | 1567.3 | 1509.8 | 1505.7 |
| 37.5° | 7594.3 | 6236.3 | 3663.8 | 2732.5 | 2227.8 | 1916.0 | 1727.3 | 1567.3 | 1452.4 | 1390.8 | 1386.7 |
| 40°   | 7951.2 | 6384.0 | 3622.8 | 2650.4 | 2104.7 | 1788.8 | 1604.2 | 1456.5 | 1341.6 | 1267.8 | 1251.4 |
| 42.5° | 8086.6 | 6314.2 | 3491.5 | 2515.0 | 1957.0 | 1661.6 | 1501.6 | 1345.7 | 1193.9 | 1132.4 | 1120.1 |
| 45°   | 8041.5 | 6043.4 | 3212.5 | 2322.2 | 1792.9 | 1546.8 | 1411.4 | 1234.9 | 1136.5 | 1083.1 | 1079.0 |
| 47.5° | 7889.7 | 5624.9 | 2863.8 | 2080.1 | 1620.6 | 1444.2 | 1292.4 | 1206.2 | 1116.0 | 1058.5 | 1054.4 |
| 50°   | 7623.0 | 5177.7 | 2445.3 | 1805.2 | 1464.7 | 1337.5 | 1263.7 | 1193.9 | 1120.1 | 1074.9 | 1066.7 |
| 52.5° | 7282.5 | 4673.1 | 2059.6 | 1538.5 | 1329.3 | 1243.1 | 1234.9 | 1185.7 | 1128.3 | 1079.0 | 1058.5 |
| 53°   | 7204.5 | 4541.8 | 1985.8 | 1493.4 | 1308.8 | 1230.8 | 1226.7 | 1185.7 | 1120.1 | 1074.9 | 1058.5 |
| 55°   | 6831.2 | 4135.6 | 1751.9 | 1333.4 | 1206.2 | 1189.8 | 1226.7 | 1181.6 | 1099.5 | 1062.6 | 1050.3 |
| 57.5° | 6232.2 | 3602.3 | 1526.2 | 1185.7 | 1099.5 | 1140.6 | 1214.4 | 1165.2 | 1074.9 | 1009.3 | 988.8  |
| 60°   | 5510.1 | 2990.9 | 1353.9 | 1087.2 | 1021.6 | 1079.0 | 1165.2 | 1107.8 | 984.7  | 951.8  | 947.7  |
| 62.5° | 4648.5 | 2420.7 | 1222.6 | 1005.2 | 956.0  | 1013.4 | 1091.3 | 992.9  | 902.6  | 878.0  | 869.8  |
| 65°   | 3631.0 | 1924.2 | 1120.1 | 943.6  | 890.3  | 935.4  | 988.8  | 927.2  | 869.8  | 849.3  | 845.2  |
| 67.5° | 2699.6 | 1509.8 | 1038.0 | 890.3  | 824.7  | 853.4  | 914.9  | 898.5  | 849.3  | 837.0  | 832.9  |
| 70°   | 1862.7 | 1226.7 | 964.2  | 841.1  | 742.6  | 775.4  | 869.8  | 882.1  | 832.9  | 824.7  | 820.6  |
| 72.5° | 1304.7 | 1038.0 | 886.2  | 787.7  | 677.0  | 709.8  | 849.3  | 849.3  | 795.9  | 808.3  | 800.0  |
| 75°   | 980.6  | 873.9  | 795.9  | 722.1  | 594.9  | 644.1  | 820.6  | 812.4  | 759.0  | 812.4  | 791.8  |
| 77.5° | 738.5  | 705.7  | 689.3  | 640.0  | 521.1  | 570.3  | 763.1  | 746.7  | 677.0  | 681.1  | 644.1  |
| 80°   | 537.5  | 545.7  | 590.8  | 545.7  | 434.9  | 471.8  | 644.1  | 635.9  | 549.8  | 566.2  | 521.1  |
| 82.5° | 385.7  | 406.2  | 504.6  | 439.0  | 315.9  | 336.4  | 443.1  | 480.0  | 430.8  | 406.2  | 414.4  |
| 85°   | 291.3  | 303.6  | 406.2  | 324.1  | 196.9  | 221.6  | 303.6  | 344.6  | 336.4  | 311.8  | 315.9  |
| 87.5° | 123.1  | 139.5  | 188.7  | 151.8  | 114.9  | 114.9  | 188.7  | 242.1  | 217.4  | 184.6  | 192.8  |
| 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: SP1-2407-184-3

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-727-U-5WQ

Data in this report applies to families of products including GSS-SB1A-727-U-5WQ

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-3  
 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-727-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 2700K CCT 26 LEDS

**Spectral Parameters**

CCT (K): 2672  
 CIE u': 0.2638  
 CIE v': 0.5276  
 Duv: -0.0002  
 CIE x: 0.4619  
 CIE y: 0.4106  
 CIE z: 0.1275  
 Peak Wavelength (nm): 601  
 Dominant Wavelength (nm): 584  
 Purity: 61.88407  
 Rf: 67.9  
 Rg: 98.6

|           |      |      |       |
|-----------|------|------|-------|
| CRI (Ra): | 71.1 |      |       |
| R1:       | 68.3 | R9:  | -27.8 |
| R2:       | 79.8 | R10: | 54.4  |
| R3:       | 91.2 | R11: | 65.8  |
| R4:       | 69.4 | R12: | 45.6  |
| R5:       | 66.5 | R13: | 69.8  |
| R6:       | 72.6 | R14: | 94.5  |
| R7:       | 77.0 | R15: | 60.1  |
| R8:       | 44.1 |      |       |



**Test Conditions**

Stabilization Time: 21M  
 Operation Time: 1H 21M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-3

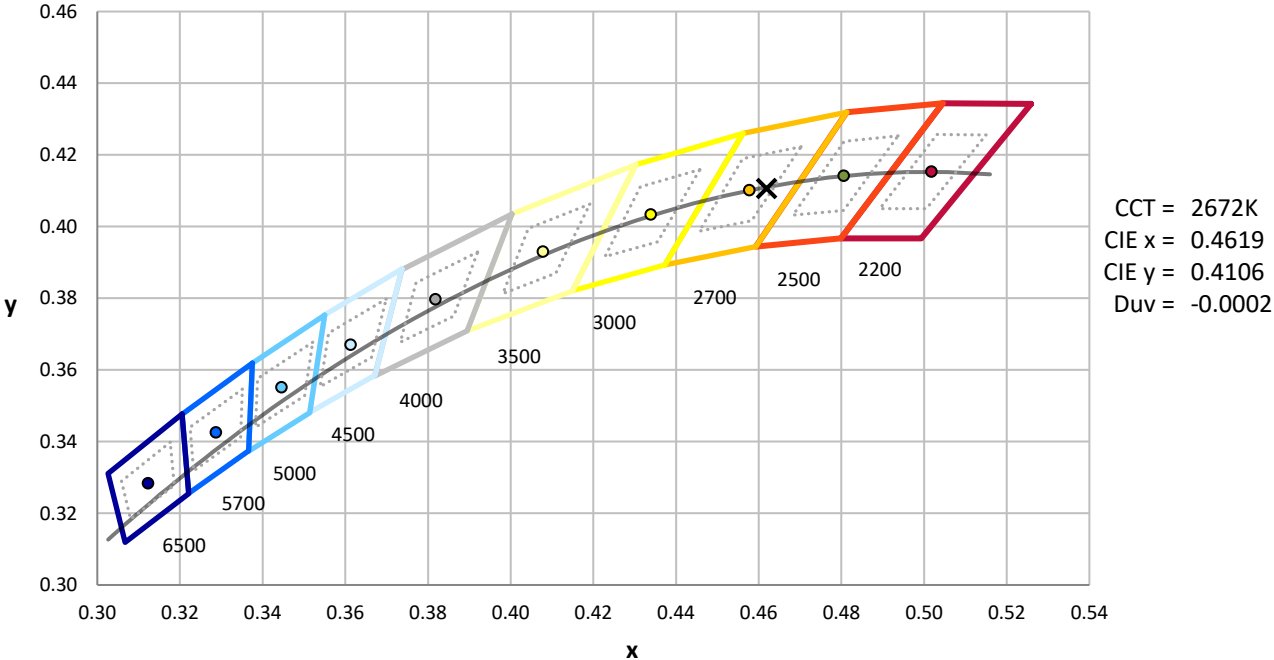
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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 2700K 4-step quadrangle

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**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               | 52                          | NR                      | 620               | 888                         | NR                      | 750               | 27                          | NR                      | 880               | 1                           | NR                      |
| 365               | 0                           | NR                      | 495               | 87                          | NR                      | 625               | 834                         | NR                      | 755               | 23                          | NR                      | 885               | 1                           | NR                      |
| 370               | 0                           | NR                      | 500               | 135                         | NR                      | 630               | 776                         | NR                      | 760               | 20                          | NR                      | 890               | 1                           | NR                      |
| 375               | 0                           | NR                      | 505               | 196                         | NR                      | 635               | 712                         | NR                      | 765               | 17                          | NR                      | 895               | 0                           | NR                      |
| 380               | 0                           | NR                      | 510               | 258                         | NR                      | 640               | 648                         | NR                      | 770               | 15                          | NR                      | 900               | 0                           | NR                      |
| 385               | 1                           | NR                      | 515               | 317                         | NR                      | 645               | 583                         | NR                      | 775               | 12                          | NR                      | 905               | 0                           | NR                      |
| 390               | 2                           | NR                      | 520               | 368                         | NR                      | 650               | 523                         | NR                      | 780               | 11                          | NR                      | 910               | 0                           | NR                      |
| 395               | 4                           | NR                      | 525               | 408                         | NR                      | 655               | 465                         | NR                      | 785               | 9                           | NR                      | 915               | 0                           | NR                      |
| 400               | 6                           | NR                      | 530               | 443                         | NR                      | 660               | 410                         | NR                      | 790               | 8                           | NR                      | 920               | 0                           | NR                      |
| 405               | 11                          | NR                      | 535               | 473                         | NR                      | 665               | 360                         | NR                      | 795               | 7                           | NR                      | 925               | 0                           | NR                      |
| 410               | 23                          | NR                      | 540               | 498                         | NR                      | 670               | 313                         | NR                      | 800               | 6                           | NR                      | 930               | 0                           | NR                      |
| 415               | 51                          | NR                      | 545               | 530                         | NR                      | 675               | 272                         | NR                      | 805               | 5                           | NR                      | 935               | 0                           | NR                      |
| 420               | 111                         | NR                      | 550               | 563                         | NR                      | 680               | 236                         | NR                      | 810               | 4                           | NR                      | 940               | 0                           | NR                      |
| 425               | 214                         | NR                      | 555               | 605                         | NR                      | 685               | 203                         | NR                      | 815               | 4                           | NR                      | 945               | 0                           | NR                      |
| 430               | 339                         | NR                      | 560               | 651                         | NR                      | 690               | 175                         | NR                      | 820               | 3                           | NR                      | 950               | 0                           | NR                      |
| 435               | 467                         | NR                      | 565               | 705                         | NR                      | 695               | 150                         | NR                      | 825               | 3                           | NR                      | 955               | 0                           | NR                      |
| 440               | 535                         | NR                      | 570               | 765                         | NR                      | 700               | 128                         | NR                      | 830               | 3                           | NR                      | 960               | 0                           | NR                      |
| 445               | 372                         | NR                      | 575               | 824                         | NR                      | 705               | 110                         | NR                      | 835               | 2                           | NR                      | 965               | 0                           | NR                      |
| 450               | 160                         | NR                      | 580               | 882                         | NR                      | 710               | 94                          | NR                      | 840               | 2                           | NR                      | 970               | 0                           | NR                      |
| 455               | 89                          | NR                      | 585               | 930                         | NR                      | 715               | 80                          | NR                      | 845               | 2                           | NR                      | 975               | 0                           | NR                      |
| 460               | 53                          | NR                      | 590               | 968                         | NR                      | 720               | 69                          | NR                      | 850               | 1                           | NR                      | 980               | 0                           | NR                      |
| 465               | 31                          | NR                      | 595               | 991                         | NR                      | 725               | 59                          | NR                      | 855               | 1                           | NR                      | 985               | 0                           | NR                      |
| 470               | 23                          | NR                      | 600               | 999                         | NR                      | 730               | 50                          | NR                      | 860               | 1                           | NR                      | 990               | 0                           | NR                      |
| 475               | 21                          | NR                      | 605               | 992                         | NR                      | 735               | 43                          | NR                      | 865               | 1                           | NR                      | 995               | 0                           | NR                      |
| 480               | 23                          | NR                      | 610               | 969                         | NR                      | 740               | 36                          | NR                      | 870               | 1                           | NR                      | 1000              | 0                           | NR                      |
| 485               | 32                          | NR                      | 615               | 935                         | NR                      | 745               | 31                          | NR                      | 875               | 1                           | NR                      |                   |                             |                         |

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**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 1.02**

| 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    | 52                       | NR            | 620    | 888                      | NR            | 750    | 27                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 87                       | NR            | 625    | 834                      | NR            | 755    | 23                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 135                      | NR            | 630    | 776                      | NR            | 760    | 20                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 196                      | NR            | 635    | 712                      | NR            | 765    | 17                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 258                      | NR            | 640    | 648                      | NR            | 770    | 15                       | NR            | 900    | 0                        | NR            |
| 385    | 1                        | NR            | 515    | 317                      | NR            | 645    | 583                      | NR            | 775    | 12                       | NR            | 905    | 0                        | NR            |
| 390    | 2                        | NR            | 520    | 368                      | NR            | 650    | 523                      | NR            | 780    | 11                       | NR            | 910    | 0                        | NR            |
| 395    | 4                        | NR            | 525    | 408                      | NR            | 655    | 465                      | NR            | 785    | 9                        | NR            | 915    | 0                        | NR            |
| 400    | 6                        | NR            | 530    | 443                      | NR            | 660    | 410                      | NR            | 790    | 8                        | NR            | 920    | 0                        | NR            |
| 405    | 11                       | NR            | 535    | 473                      | NR            | 665    | 360                      | NR            | 795    | 7                        | NR            | 925    | 0                        | NR            |
| 410    | 23                       | NR            | 540    | 498                      | NR            | 670    | 313                      | NR            | 800    | 6                        | NR            | 930    | 0                        | NR            |
| 415    | 51                       | NR            | 545    | 530                      | NR            | 675    | 272                      | NR            | 805    | 5                        | NR            | 935    | 0                        | NR            |
| 420    | 111                      | NR            | 550    | 563                      | NR            | 680    | 236                      | NR            | 810    | 4                        | NR            | 940    | 0                        | NR            |
| 425    | 214                      | NR            | 555    | 605                      | NR            | 685    | 203                      | NR            | 815    | 4                        | NR            | 945    | 0                        | NR            |
| 430    | 339                      | NR            | 560    | 651                      | NR            | 690    | 175                      | NR            | 820    | 3                        | NR            | 950    | 0                        | NR            |
| 435    | 467                      | NR            | 565    | 705                      | NR            | 695    | 150                      | NR            | 825    | 3                        | NR            | 955    | 0                        | NR            |
| 440    | 535                      | NR            | 570    | 765                      | NR            | 700    | 128                      | NR            | 830    | 3                        | NR            | 960    | 0                        | NR            |
| 445    | 372                      | NR            | 575    | 824                      | NR            | 705    | 110                      | NR            | 835    | 2                        | NR            | 965    | 0                        | NR            |
| 450    | 160                      | NR            | 580    | 882                      | NR            | 710    | 94                       | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 89                       | NR            | 585    | 930                      | NR            | 715    | 80                       | NR            | 845    | 2                        | NR            | 975    | 0                        | NR            |
| 460    | 53                       | NR            | 590    | 968                      | NR            | 720    | 69                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 31                       | NR            | 595    | 991                      | NR            | 725    | 59                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 23                       | NR            | 600    | 999                      | NR            | 730    | 50                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 21                       | NR            | 605    | 992                      | NR            | 735    | 43                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 23                       | NR            | 610    | 969                      | NR            | 740    | 36                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 32                       | NR            | 615    | 935                      | NR            | 745    | 31                       | NR            | 875    | 1                        | NR            |        |                          |               |

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**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: NR**

**M/P: 1.71**

| 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    | 52                       | NR            | 620    | 888                      | NR            | 750    | 27                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 87                       | NR            | 625    | 834                      | NR            | 755    | 23                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 135                      | NR            | 630    | 776                      | NR            | 760    | 20                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 196                      | NR            | 635    | 712                      | NR            | 765    | 17                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 258                      | NR            | 640    | 648                      | NR            | 770    | 15                       | NR            | 900    | 0                        | NR            |
| 385    | 1                        | NR            | 515    | 317                      | NR            | 645    | 583                      | NR            | 775    | 12                       | NR            | 905    | 0                        | NR            |
| 390    | 2                        | NR            | 520    | 368                      | NR            | 650    | 523                      | NR            | 780    | 11                       | NR            | 910    | 0                        | NR            |
| 395    | 4                        | NR            | 525    | 408                      | NR            | 655    | 465                      | NR            | 785    | 9                        | NR            | 915    | 0                        | NR            |
| 400    | 6                        | NR            | 530    | 443                      | NR            | 660    | 410                      | NR            | 790    | 8                        | NR            | 920    | 0                        | NR            |
| 405    | 11                       | NR            | 535    | 473                      | NR            | 665    | 360                      | NR            | 795    | 7                        | NR            | 925    | 0                        | NR            |
| 410    | 23                       | NR            | 540    | 498                      | NR            | 670    | 313                      | NR            | 800    | 6                        | NR            | 930    | 0                        | NR            |
| 415    | 51                       | NR            | 545    | 530                      | NR            | 675    | 272                      | NR            | 805    | 5                        | NR            | 935    | 0                        | NR            |
| 420    | 111                      | NR            | 550    | 563                      | NR            | 680    | 236                      | NR            | 810    | 4                        | NR            | 940    | 0                        | NR            |
| 425    | 214                      | NR            | 555    | 605                      | NR            | 685    | 203                      | NR            | 815    | 4                        | NR            | 945    | 0                        | NR            |
| 430    | 339                      | NR            | 560    | 651                      | NR            | 690    | 175                      | NR            | 820    | 3                        | NR            | 950    | 0                        | NR            |
| 435    | 467                      | NR            | 565    | 705                      | NR            | 695    | 150                      | NR            | 825    | 3                        | NR            | 955    | 0                        | NR            |
| 440    | 535                      | NR            | 570    | 765                      | NR            | 700    | 128                      | NR            | 830    | 3                        | NR            | 960    | 0                        | NR            |
| 445    | 372                      | NR            | 575    | 824                      | NR            | 705    | 110                      | NR            | 835    | 2                        | NR            | 965    | 0                        | NR            |
| 450    | 160                      | NR            | 580    | 882                      | NR            | 710    | 94                       | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 89                       | NR            | 585    | 930                      | NR            | 715    | 80                       | NR            | 845    | 2                        | NR            | 975    | 0                        | NR            |
| 460    | 53                       | NR            | 590    | 968                      | NR            | 720    | 69                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 31                       | NR            | 595    | 991                      | NR            | 725    | 59                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 23                       | NR            | 600    | 999                      | NR            | 730    | 50                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 21                       | NR            | 605    | 992                      | NR            | 735    | 43                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 23                       | NR            | 610    | 969                      | NR            | 740    | 36                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 32                       | NR            | 615    | 935                      | NR            | 745    | 31                       | NR            | 875    | 1                        | NR            |        |                          |               |

**Summary**

$R_f = 67.9$   
 $R_g = 98.6$   
 $CIE R_a = 71.1$   
 $R_9 = -27.8$



**Color Vector Graphics**



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 53 | CES51 = 75 | CES76 = 51 |
| CES02 = 63 | CES27 = 70 | CES52 = 80 | CES77 = 79 |
| CES03 = 31 | CES28 = 81 | CES53 = 64 | CES78 = 58 |
| CES04 = 71 | CES29 = 37 | CES54 = 73 | CES79 = 82 |
| CES05 = 50 | CES30 = 33 | CES55 = 69 | CES80 = 82 |
| CES06 = 52 | CES31 = 44 | CES56 = 60 | CES81 = 69 |
| CES07 = 42 | CES32 = 47 | CES57 = 54 | CES82 = 92 |
| CES08 = 41 | CES33 = 45 | CES58 = 59 | CES83 = 82 |
| CES09 = 29 | CES34 = 67 | CES59 = 85 | CES84 = 92 |
| CES10 = 77 | CES35 = 84 | CES60 = 86 | CES85 = 87 |
| CES11 = 60 | CES36 = 68 | CES61 = 86 | CES86 = 60 |
| CES12 = 66 | CES37 = 77 | CES62 = 59 | CES87 = 79 |
| CES13 = 44 | CES38 = 40 | CES63 = 66 | CES88 = 70 |
| CES14 = 74 | CES39 = 88 | CES64 = 69 | CES89 = 66 |
| CES15 = 72 | CES40 = 82 | CES65 = 64 | CES90 = 64 |
| CES16 = 48 | CES41 = 70 | CES66 = 65 | CES91 = 81 |
| CES17 = 51 | CES42 = 76 | CES67 = 64 | CES92 = 69 |
| CES18 = 57 | CES43 = 63 | CES68 = 73 | CES93 = 81 |
| CES19 = 73 | CES44 = 97 | CES69 = 83 | CES94 = 53 |
| CES20 = 67 | CES45 = 74 | CES70 = 64 | CES95 = 77 |
| CES21 = 88 | CES46 = 67 | CES71 = 60 | CES96 = 79 |
| CES22 = 80 | CES47 = 55 | CES72 = 87 | CES97 = 78 |
| CES23 = 92 | CES48 = 42 | CES73 = 57 | CES98 = 69 |
| CES24 = 92 | CES49 = 65 | CES74 = 84 | CES99 = 60 |
| CES25 = 73 | CES50 = 74 | CES75 = 60 |            |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)