

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: STREETWORKS

Report Number: P1387985

Luminaire Tested: **VAL-T-SB3C-727-U-T4W**

Issue Date: 02/18/2026

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been  
influenced by sources from within Cooper Lighting Solutions or from external interests.

**Test Information**

Test Method: LM-79-08  
Report Number: P1387985  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 02/18/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: VAL-T-SB3C-727-U-T4W  
Description: GALLEON II WALL SLIM HIGH DENSITY LED ARRAYS 3SQUARE 150W 70CRI  
2700K FIXTURE w/ TYPE IV WIDE DISTRIBUTION OPTIC  
Light Source: (78) 2700K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER  
Luminaire Equipment:

| <u>Sample No.</u> | <u>Condition</u> | <u>Description</u> |
|-------------------|------------------|--------------------|
| a                 | good             | reflector          |
| b                 | good             | lens               |
| c                 | good             | housing            |
| d                 | good             | cord               |

**Summary**

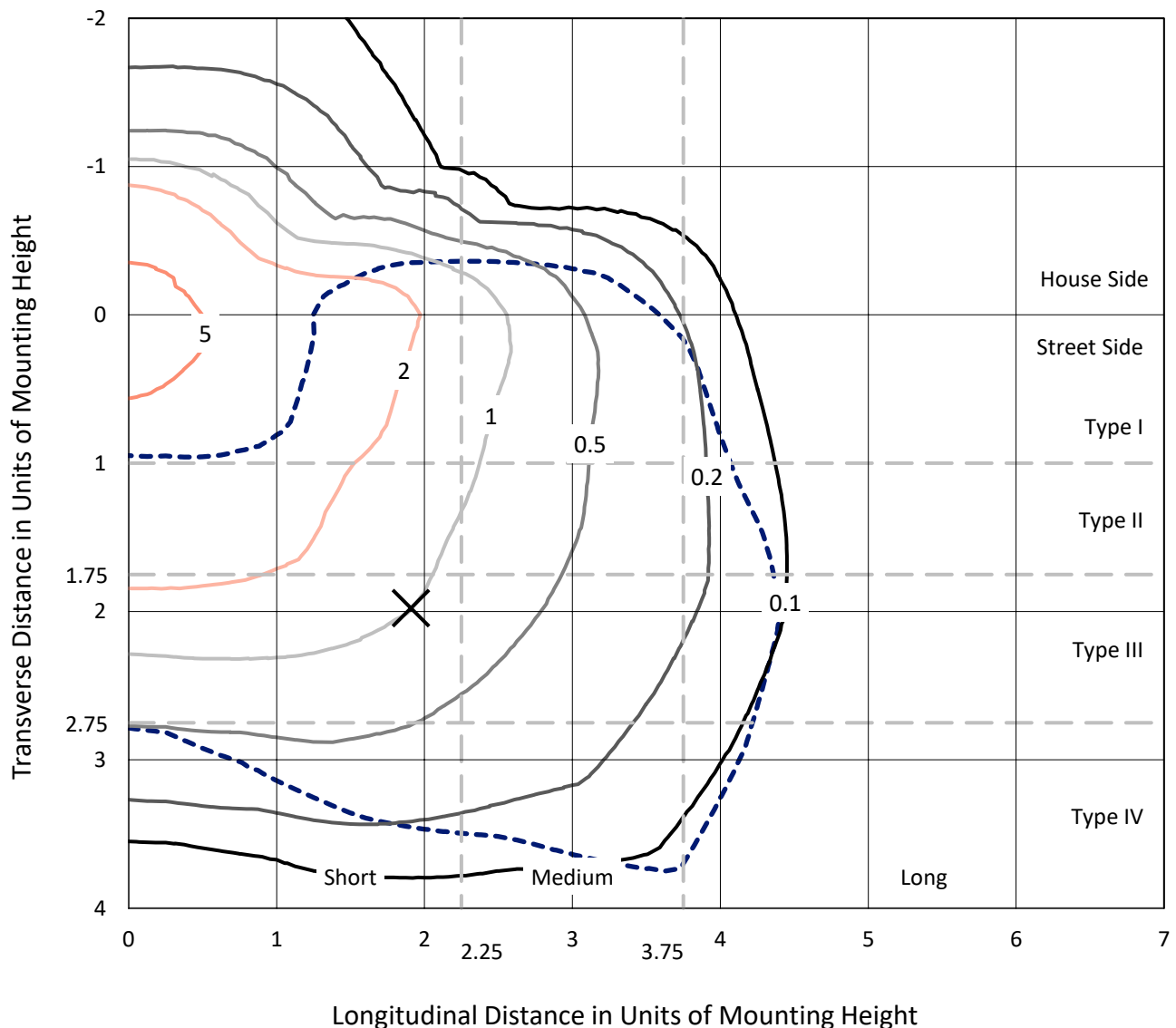
Lumens per Lamp: N/A  
Luminaire Lumens: 18469.8 lumens  
Efficiency: N/A  
Efficacy: 123.1 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B3 - U0 - G3  
  
Input Watts (W): 150  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.98  
Total Harmonic Distortion (THDi): 6.3%  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

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CATALOG NUMBER: VAL-T-SB3C-727-U-T4W

## Iso-Footcandle Lines of Horizontal Illumination

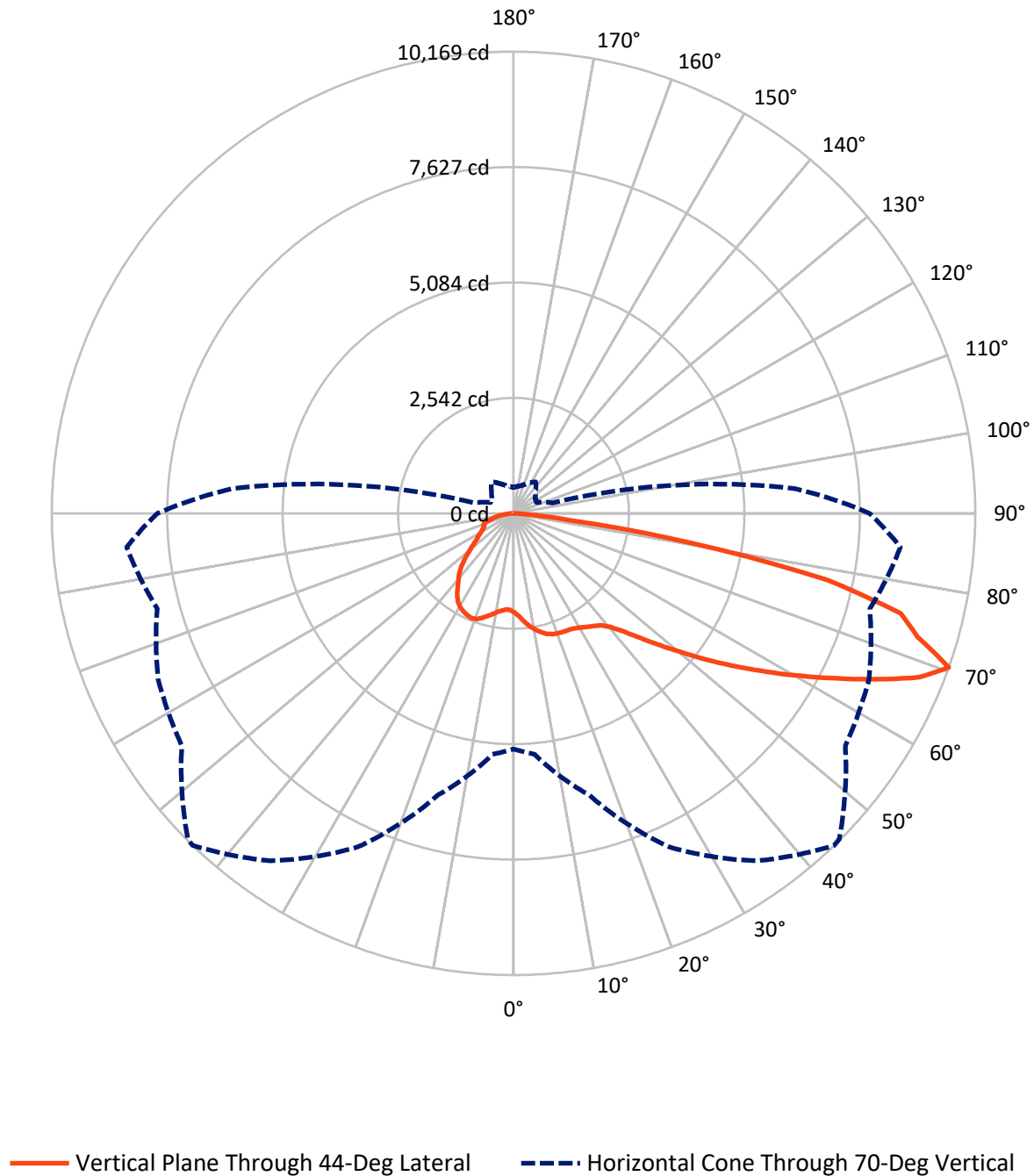
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 6.7 fc  
 Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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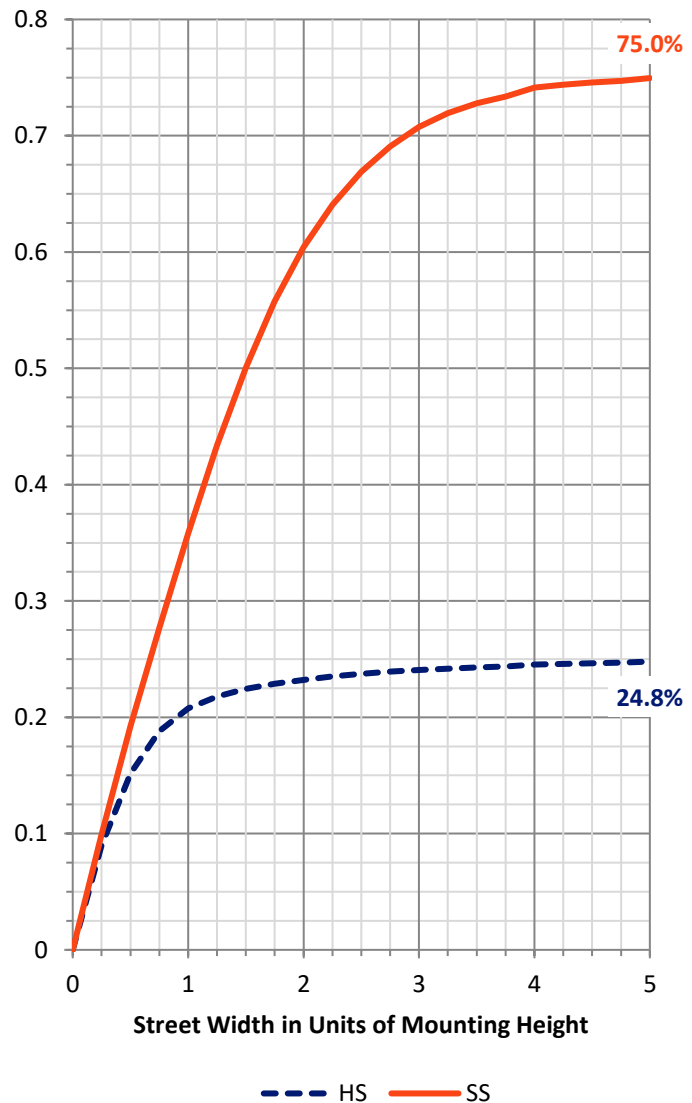
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 4628.0   | 0.0    | 4628.0  |
|                    | % Fixture | 25.1     | 0.0    | 25.1    |
| <b>Street Side</b> | Lumens    | 13841.8  | 0.0    | 13841.8 |
|                    | % Fixture | 74.9     | 0.0    | 74.9    |
| <b>Total</b>       | Lumens    | 18469.8  | 0.0    | 18469.8 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 220.3   | 1.2       |
| 10°-20°   | 723.1   | 3.9       |
| 20°-30°   | 1244.2  | 6.7       |
| 30°-40°   | 1753.9  | 9.5       |
| 40°-50°   | 2427.1  | 13.1      |
| 50°-60°   | 3604.4  | 19.5      |
| 60°-70°   | 4817.2  | 26.1      |
| 70°-80°   | 3398.2  | 18.4      |
| 80°-90°   | 281.4   | 1.5       |
| 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°    | 18469.8 | 100.0     |
| 0°-180°   | 18469.8 | 100.0     |



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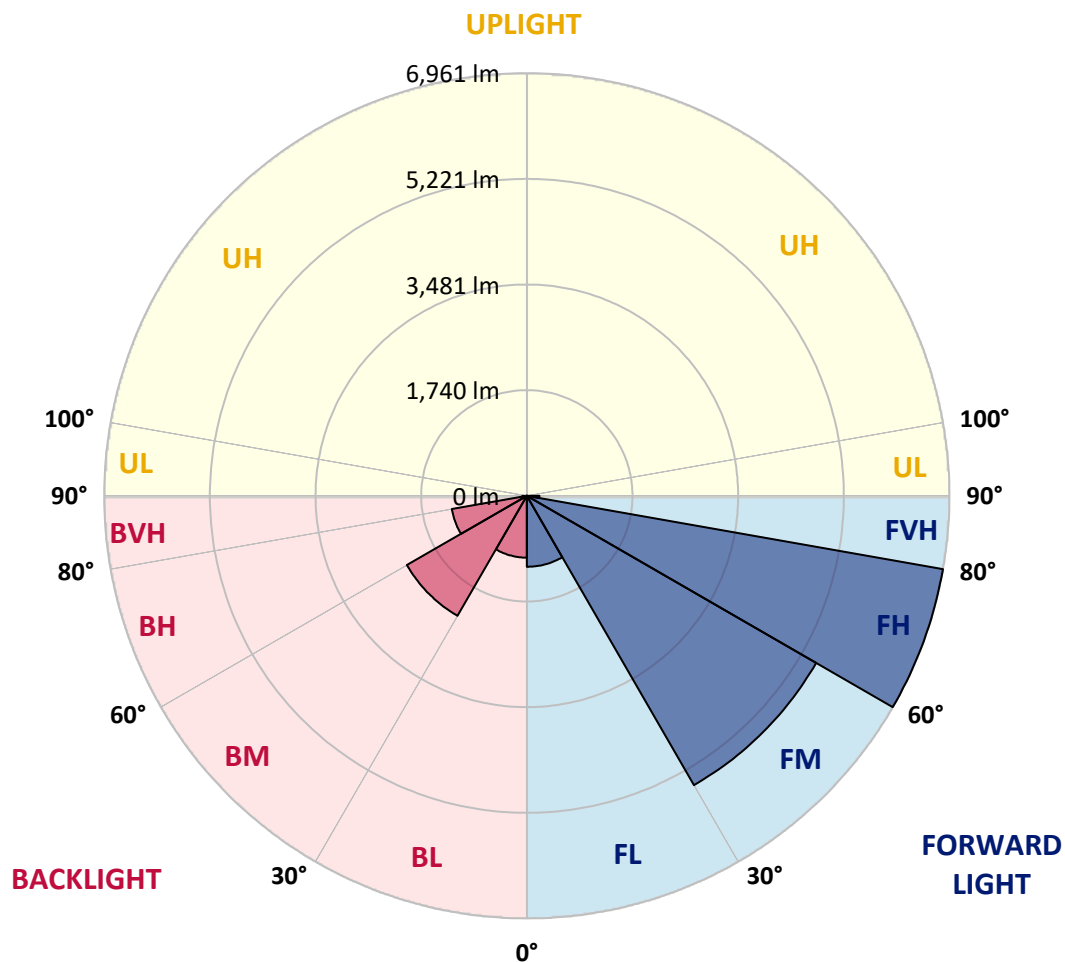
CATALOG NUMBER: VAL-T-SB3C-727-U-T4W

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 1168.9 | 6.3       |                         |      |         |
| FM   | (30°-60°)   | 5503.6 | 29.8      |                         |      |         |
| FH   | (60°-80°)   | 6961.1 | 37.7      |                         |      | G3/7500 |
| FVH  | (80°-90°)   | 208.3  | 1.1       |                         |      | G2/225  |
| BL   | (0°-30°)    | 1018.7 | 5.5       | B3/2500                 |      |         |
| BM   | (30°-60°)   | 2281.9 | 12.4      | B2/2500                 |      |         |
| BH   | (60°-80°)   | 1254.3 | 6.8       | B3/2500                 |      | G3/2500 |
| BVH  | (80°-90°)   | 73.1   | 0.4       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

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

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 44°     | 45°     | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|---------|---------|--------|--------|--------|--------|
| 0°    | 2182.5 | 2182.5 | 2182.5 | 2182.5 | 2182.5 | 2182.5  | 2182.5  | 2182.5 | 2182.5 | 2182.5 | 2182.5 |
| 2.5°  | 2343.9 | 2330.4 | 2317.0 | 2312.5 | 2294.6 | 2267.7  | 2267.7  | 2258.7 | 2236.3 | 2218.4 | 2204.9 |
| 5°    | 2496.2 | 2500.7 | 2478.3 | 2460.4 | 2433.5 | 2388.7  | 2393.2  | 2352.8 | 2308.0 | 2258.7 | 2222.9 |
| 7.5°  | 2644.1 | 2644.1 | 2617.3 | 2594.8 | 2559.0 | 2505.2  | 2505.2  | 2442.5 | 2388.7 | 2321.5 | 2272.2 |
| 10°   | 2778.6 | 2769.6 | 2733.8 | 2706.9 | 2657.6 | 2599.3  | 2594.8  | 2532.1 | 2464.9 | 2388.7 | 2321.5 |
| 12.5° | 2881.7 | 2881.7 | 2845.8 | 2801.0 | 2747.2 | 2684.5  | 2680.0  | 2612.8 | 2545.5 | 2464.9 | 2384.2 |
| 15°   | 2980.3 | 2957.9 | 2926.5 | 2868.2 | 2805.5 | 2756.2  | 2747.2  | 2689.0 | 2621.7 | 2550.0 | 2460.4 |
| 17.5° | 3016.1 | 3007.1 | 2966.8 | 2908.6 | 2850.3 | 2796.5  | 2796.5  | 2742.7 | 2693.4 | 2621.7 | 2532.1 |
| 20°   | 3007.1 | 2993.7 | 2957.9 | 2908.6 | 2863.7 | 2818.9  | 2818.9  | 2778.6 | 2751.7 | 2684.5 | 2603.8 |
| 22.5° | 2962.3 | 2948.9 | 2926.5 | 2881.7 | 2859.3 | 2832.4  | 2832.4  | 2810.0 | 2801.0 | 2760.7 | 2684.5 |
| 25°   | 2948.9 | 2939.9 | 2908.6 | 2868.2 | 2845.8 | 2841.3  | 2845.8  | 2850.3 | 2859.3 | 2827.9 | 2765.1 |
| 27.5° | 2957.9 | 2957.9 | 2931.0 | 2890.6 | 2863.7 | 2868.2  | 2872.7  | 2899.6 | 2926.5 | 2908.6 | 2854.8 |
| 30°   | 3016.1 | 3002.7 | 2984.7 | 2944.4 | 2913.0 | 2917.5  | 2917.5  | 2971.3 | 2998.2 | 2975.8 | 2935.4 |
| 32.5° | 3114.7 | 3101.3 | 3074.4 | 2989.2 | 2957.9 | 2980.3  | 2989.2  | 3034.0 | 3052.0 | 3029.6 | 3011.6 |
| 35°   | 3343.3 | 3356.7 | 3267.1 | 3114.7 | 3029.6 | 3047.5  | 3056.4  | 3087.8 | 3110.2 | 3101.3 | 3083.3 |
| 37.5° | 3760.1 | 3764.5 | 3652.5 | 3379.1 | 3181.9 | 3128.2  | 3132.6  | 3177.5 | 3204.3 | 3173.0 | 3159.5 |
| 40°   | 4279.9 | 4284.4 | 4127.5 | 3755.6 | 3423.9 | 3289.5  | 3285.0  | 3294.0 | 3334.3 | 3280.5 | 3271.6 |
| 42.5° | 4844.6 | 4781.9 | 4647.4 | 4221.7 | 3782.5 | 3558.4  | 3518.1  | 3491.2 | 3540.5 | 3473.2 | 3428.4 |
| 45°   | 5382.4 | 5337.6 | 5153.8 | 4714.6 | 4212.7 | 3912.4  | 3872.1  | 3737.6 | 3818.3 | 3764.5 | 3683.9 |
| 47.5° | 5830.6 | 5794.7 | 5655.8 | 5247.9 | 4701.2 | 4338.2  | 4275.4  | 4064.8 | 4208.2 | 4181.3 | 4082.7 |
| 50°   | 6162.2 | 6126.3 | 6032.2 | 5781.3 | 5319.7 | 4813.2  | 4755.0  | 4499.5 | 4647.4 | 4696.7 | 4620.5 |
| 52.5° | 6404.2 | 6395.2 | 6359.4 | 6319.0 | 5947.1 | 5364.5  | 5297.2  | 4979.1 | 5221.1 | 5315.2 | 5292.8 |
| 55°   | 6771.7 | 6753.8 | 6767.2 | 6834.4 | 6619.3 | 5951.6  | 5853.0  | 5481.0 | 5812.6 | 5987.4 | 6023.3 |
| 57.5° | 7121.3 | 7121.3 | 7237.8 | 7412.6 | 7385.7 | 6583.5  | 6466.9  | 6068.1 | 6529.7 | 6614.8 | 6785.1 |
| 60°   | 7448.4 | 7479.8 | 7641.1 | 8026.5 | 8102.7 | 7269.1  | 7130.2  | 6744.8 | 7210.9 | 7305.0 | 7614.2 |
| 62.5° | 7309.5 | 7385.7 | 7901.1 | 8524.0 | 8775.0 | 8004.1  | 7865.2  | 7488.7 | 7977.2 | 7865.2 | 8143.1 |
| 65°   | 6601.4 | 6717.9 | 7515.6 | 8555.4 | 9429.3 | 8810.8  | 8694.3  | 8326.8 | 8398.5 | 7950.3 | 8438.8 |
| 67.5° | 5857.4 | 6027.7 | 6955.4 | 8174.4 | 9599.6 | 9635.4  | 9532.4  | 8842.2 | 8394.0 | 8040.0 | 8739.1 |
| 70°   | 5189.7 | 5328.6 | 6422.1 | 8107.2 | 9344.1 | 10168.7 | 10146.3 | 8918.4 | 8636.0 | 8120.6 | 8550.9 |
| 72.5° | 3639.1 | 3831.8 | 4952.2 | 7484.3 | 9420.3 | 9299.3  | 9250.0  | 9451.7 | 8815.3 | 7824.9 | 7578.4 |
| 75°   | 1308.6 | 1384.8 | 2568.0 | 5064.2 | 7488.7 | 8806.3  | 8846.7  | 8757.0 | 8640.5 | 7009.2 | 5696.1 |
| 77.5° | 389.9  | 416.8  | 730.5  | 2007.8 | 4199.3 | 7067.5  | 7134.7  | 6897.2 | 6493.8 | 4226.1 | 2155.6 |
| 80°   | 210.6  | 228.6  | 345.1  | 587.1  | 1573.0 | 3988.6  | 4172.4  | 3531.5 | 2339.4 | 1115.9 | 484.0  |
| 82.5° | 103.1  | 112.0  | 179.3  | 286.8  | 676.7  | 1268.3  | 1272.8  | 1129.4 | 761.9  | 336.1  | 179.3  |
| 85°   | 35.9   | 40.3   | 58.3   | 107.6  | 233.0  | 259.9   | 259.9   | 242.0  | 224.1  | 165.8  | 80.7   |
| 87.5° | 9.0    | 9.0    | 13.4   | 17.9   | 22.4   | 26.9    | 26.9    | 31.4   | 35.9   | 40.3   | 40.3   |
| 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: P1387985

CATALOG NUMBER: VAL-T-SB3C-727-U-T4W

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 2182.5 | 2182.5 | 2182.5 | 2182.5 | 2182.5 | 2182.5 | 2182.5 | 2182.5 | 2182.5 | 2182.5 | 2182.5 |
| 2.5°  | 2196.0 | 2178.1 | 2164.6 | 2151.2 | 2142.2 | 2124.3 | 2119.8 | 2119.8 | 2115.3 | 2119.8 | 2115.3 |
| 5°    | 2209.4 | 2182.5 | 2160.1 | 2142.2 | 2133.2 | 2124.3 | 2124.3 | 2128.8 | 2124.3 | 2128.8 | 2124.3 |
| 7.5°  | 2236.3 | 2218.4 | 2196.0 | 2169.1 | 2164.6 | 2160.1 | 2164.6 | 2173.6 | 2178.1 | 2182.5 | 2173.6 |
| 10°   | 2290.1 | 2263.2 | 2231.8 | 2218.4 | 2209.4 | 2204.9 | 2218.4 | 2236.3 | 2240.8 | 2249.8 | 2240.8 |
| 12.5° | 2352.8 | 2321.5 | 2299.1 | 2267.7 | 2267.7 | 2272.2 | 2285.6 | 2308.0 | 2321.5 | 2334.9 | 2321.5 |
| 15°   | 2424.5 | 2393.2 | 2361.8 | 2334.9 | 2330.4 | 2339.4 | 2361.8 | 2384.2 | 2388.7 | 2393.2 | 2384.2 |
| 17.5° | 2496.2 | 2464.9 | 2424.5 | 2393.2 | 2388.7 | 2411.1 | 2420.1 | 2420.1 | 2411.1 | 2411.1 | 2397.7 |
| 20°   | 2568.0 | 2545.5 | 2505.2 | 2447.0 | 2464.9 | 2473.8 | 2447.0 | 2424.5 | 2411.1 | 2406.6 | 2393.2 |
| 22.5° | 2653.1 | 2617.3 | 2572.4 | 2509.7 | 2523.1 | 2487.3 | 2438.0 | 2429.0 | 2415.6 | 2420.1 | 2406.6 |
| 25°   | 2733.8 | 2711.4 | 2639.7 | 2559.0 | 2523.1 | 2464.9 | 2433.5 | 2433.5 | 2420.1 | 2429.0 | 2424.5 |
| 27.5° | 2827.9 | 2801.0 | 2702.4 | 2585.9 | 2491.8 | 2429.0 | 2424.5 | 2424.5 | 2402.1 | 2406.6 | 2402.1 |
| 30°   | 2922.0 | 2881.7 | 2751.7 | 2563.5 | 2415.6 | 2375.2 | 2388.7 | 2384.2 | 2375.2 | 2388.7 | 2397.7 |
| 32.5° | 3002.7 | 2971.3 | 2778.6 | 2509.7 | 2321.5 | 2303.5 | 2312.5 | 2334.9 | 2357.3 | 2370.8 | 2388.7 |
| 35°   | 3087.8 | 3052.0 | 2801.0 | 2415.6 | 2218.4 | 2191.5 | 2187.0 | 2254.2 | 2294.6 | 2317.0 | 2330.4 |
| 37.5° | 3177.5 | 3132.6 | 2814.4 | 2312.5 | 2119.8 | 2039.1 | 2052.6 | 2106.3 | 2151.2 | 2191.5 | 2222.9 |
| 40°   | 3298.5 | 3253.6 | 2832.4 | 2200.5 | 2016.7 | 1909.2 | 1891.2 | 1904.7 | 1936.0 | 1994.3 | 2025.7 |
| 42.5° | 3477.7 | 3406.0 | 2832.4 | 2057.1 | 1868.8 | 1792.6 | 1729.9 | 1680.6 | 1662.7 | 1698.5 | 1716.5 |
| 45°   | 3724.2 | 3616.6 | 2814.4 | 1909.2 | 1698.5 | 1644.7 | 1541.7 | 1461.0 | 1389.3 | 1353.4 | 1344.5 |
| 47.5° | 4132.0 | 3943.8 | 2796.5 | 1765.7 | 1537.2 | 1470.0 | 1344.5 | 1250.4 | 1147.3 | 1053.2 | 1030.8 |
| 50°   | 4678.8 | 4378.5 | 2801.0 | 1622.3 | 1375.8 | 1286.2 | 1174.2 | 1075.6 | 954.6  | 864.9  | 851.5  |
| 52.5° | 5400.3 | 4988.0 | 2827.9 | 1465.5 | 1219.0 | 1138.3 | 1044.2 | 945.6  | 824.6  | 757.4  | 752.9  |
| 55°   | 6238.4 | 5723.0 | 2922.0 | 1290.7 | 1075.6 | 1012.8 | 945.6  | 851.5  | 748.4  | 690.2  | 681.2  |
| 57.5° | 7215.4 | 6574.5 | 3110.2 | 1107.0 | 945.6  | 923.2  | 869.4  | 779.8  | 694.6  | 636.4  | 627.4  |
| 60°   | 8178.9 | 7399.1 | 3253.6 | 945.6  | 842.5  | 842.5  | 793.2  | 726.0  | 609.5  | 560.2  | 551.2  |
| 62.5° | 8627.1 | 7654.6 | 2980.3 | 815.7  | 761.9  | 775.3  | 743.9  | 649.8  | 614.0  | 591.6  | 578.1  |
| 65°   | 8734.6 | 7511.2 | 2240.8 | 717.1  | 694.6  | 739.5  | 690.2  | 694.6  | 663.3  | 640.9  | 627.4  |
| 67.5° | 8604.7 | 7103.3 | 1434.1 | 631.9  | 645.3  | 694.6  | 761.9  | 766.4  | 663.3  | 614.0  | 605.0  |
| 70°   | 7842.8 | 6229.4 | 882.9  | 560.2  | 578.1  | 685.7  | 847.0  | 721.5  | 627.4  | 587.1  | 569.2  |
| 72.5° | 6543.1 | 5140.4 | 618.5  | 493.0  | 493.0  | 649.8  | 761.9  | 676.7  | 578.1  | 555.7  | 533.3  |
| 75°   | 4593.6 | 3477.7 | 452.6  | 412.3  | 412.3  | 506.4  | 703.6  | 618.5  | 542.3  | 551.2  | 542.3  |
| 77.5° | 1564.1 | 1129.4 | 327.2  | 318.2  | 304.7  | 434.7  | 627.4  | 591.6  | 501.9  | 475.0  | 439.2  |
| 80°   | 461.6  | 363.0  | 242.0  | 224.1  | 219.6  | 349.6  | 528.8  | 434.7  | 358.5  | 327.2  | 304.7  |
| 82.5° | 179.3  | 161.3  | 156.9  | 143.4  | 138.9  | 233.0  | 349.6  | 300.3  | 268.9  | 224.1  | 219.6  |
| 85°   | 71.7   | 71.7   | 80.7   | 80.7   | 71.7   | 125.5  | 210.6  | 165.8  | 156.9  | 138.9  | 134.4  |
| 87.5° | 35.9   | 35.9   | 31.4   | 22.4   | 22.4   | 26.9   | 22.4   | 22.4   | 22.4   | 22.4   | 22.4   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-3

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:  $4\pi$   
 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     | CRI (Ra): | 71.1 |      |       |
| CIE u':                   | 0.2638   | R1:       | 68.3 | R9:  | -27.8 |
| CIE v':                   | 0.5276   | R2:       | 79.8 | R10: | 54.4  |
| Duv:                      | -0.0002  | R3:       | 91.2 | R11: | 65.8  |
| CIE x:                    | 0.4619   | R4:       | 69.4 | R12: | 45.6  |
| CIE y:                    | 0.4106   | R5:       | 66.5 | R13: | 69.8  |
| CIE z:                    | 0.1275   | R6:       | 72.6 | R14: | 94.5  |
| Peak Wavelength (nm):     | 601      | R7:       | 77.0 | R15: | 60.1  |
| Dominant Wavelength (nm): | 584      | R8:       | 44.1 |      |       |
| Purity:                   | 61.88407 |           |      |      |       |
| Rf:                       | 67.9     |           |      |      |       |
| Rg:                       | 98.6     |           |      |      |       |



### 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

REPORT NUMBER: SP1-2407-184-3

### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|
| 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

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 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<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(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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TM-30-18

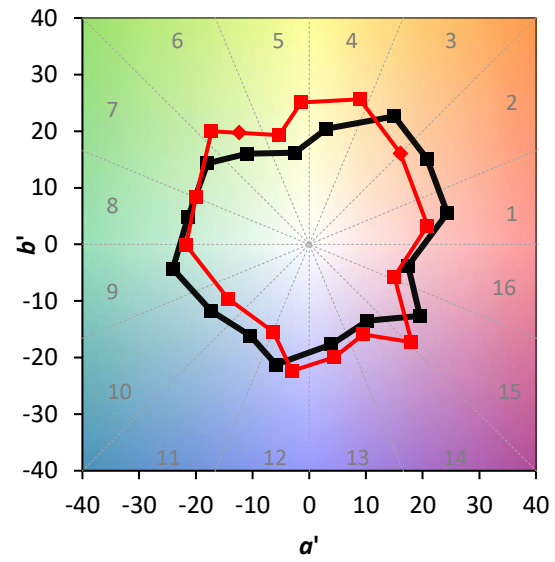
### Summary

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

### Spectral Power Distribution Comparison



### Color Vector Graphics



**Individual Sample Fidelity Index ( $R_{fi}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| 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)