

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: P1387612

Luminaire Tested: **VAL-T-SB6B-727-U-T3R-HSS**

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: P1387612  
 Test Lab: INNOVATION CENTER(G1)  
 Issue Date: 02/18/2026  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: STREETWORKS  
 Catalog Number: VAL-T-SB6B-727-U-T3R-HSS  
 Description: GALLEON II WALL SLIM HIGH DENSITY LED ARRAYS 65 SQUARE 219W 70CRI  
 2700K FIXTURE w/ TYPE III ROADWAY DISTRIBUTION OPTIC AND HOUSE SIDE SHIELD  
 Light Source: (156) 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               |

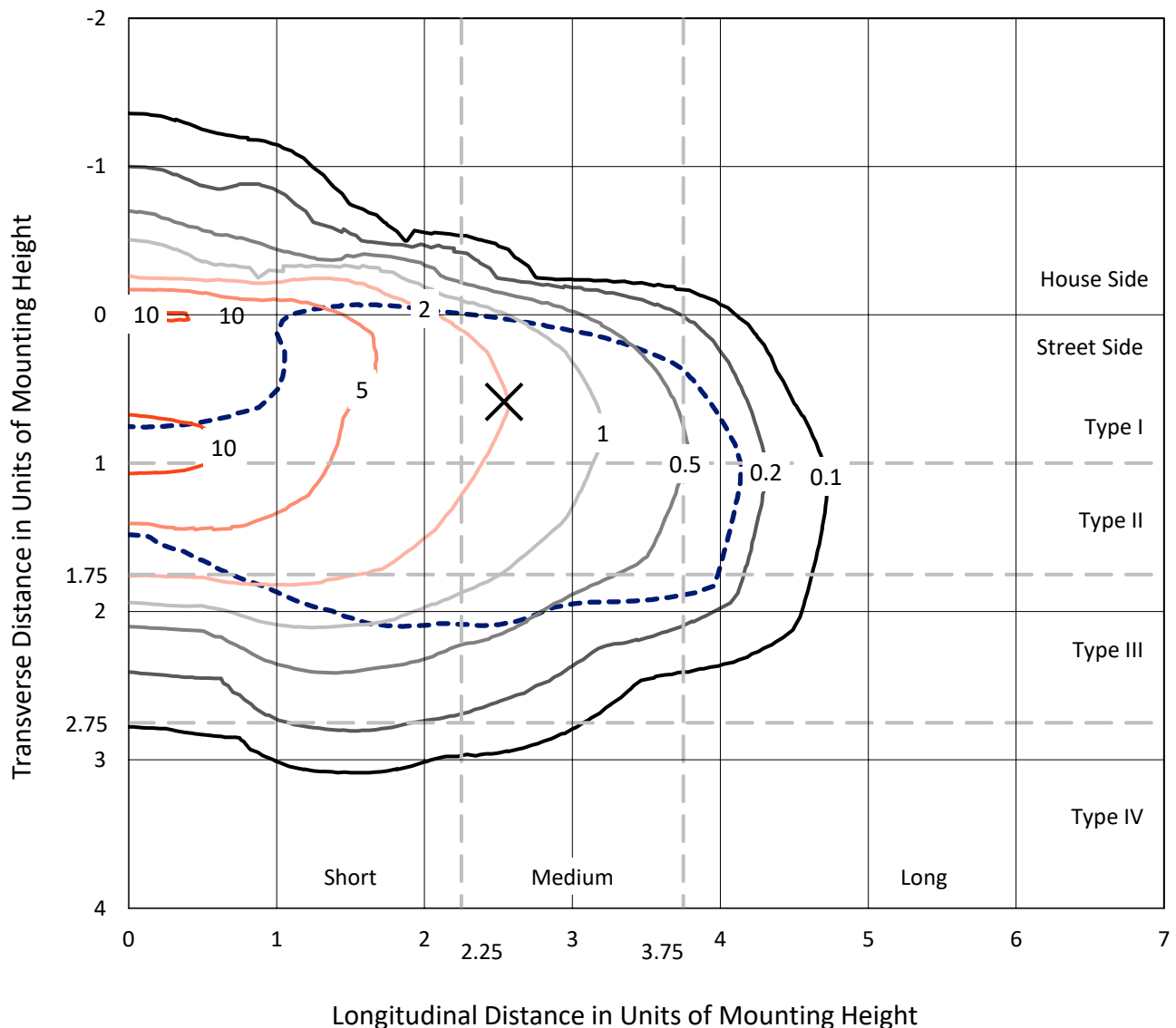
**Summary**

Lumens per Lamp: N/A  
 Luminaire Lumens: 24443.2 lumens  
 Efficiency: N/A  
 Efficacy: 111.6 lumens/watt  
 Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
 IES Classification: Type III - Medium  
 BUG Rating: B2 - U0 - G4  
  
 Input Watts (W): 219  
 Input Voltage (V): 120  
 Input Current (Ain): NR  
 Voltage Rise (V): NR  
 Power Factor: 0.98  
 Total Harmonic Distortion (THDi): 8.7%  
 Frequency (hertz): 60  
 Stabilization Time: NR  
 Operation Time: NR  
 Ambient Temperature (°C): NR  
 Test Distance: 28.75 FT

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## Iso-Footcandle Lines of Horizontal Illumination

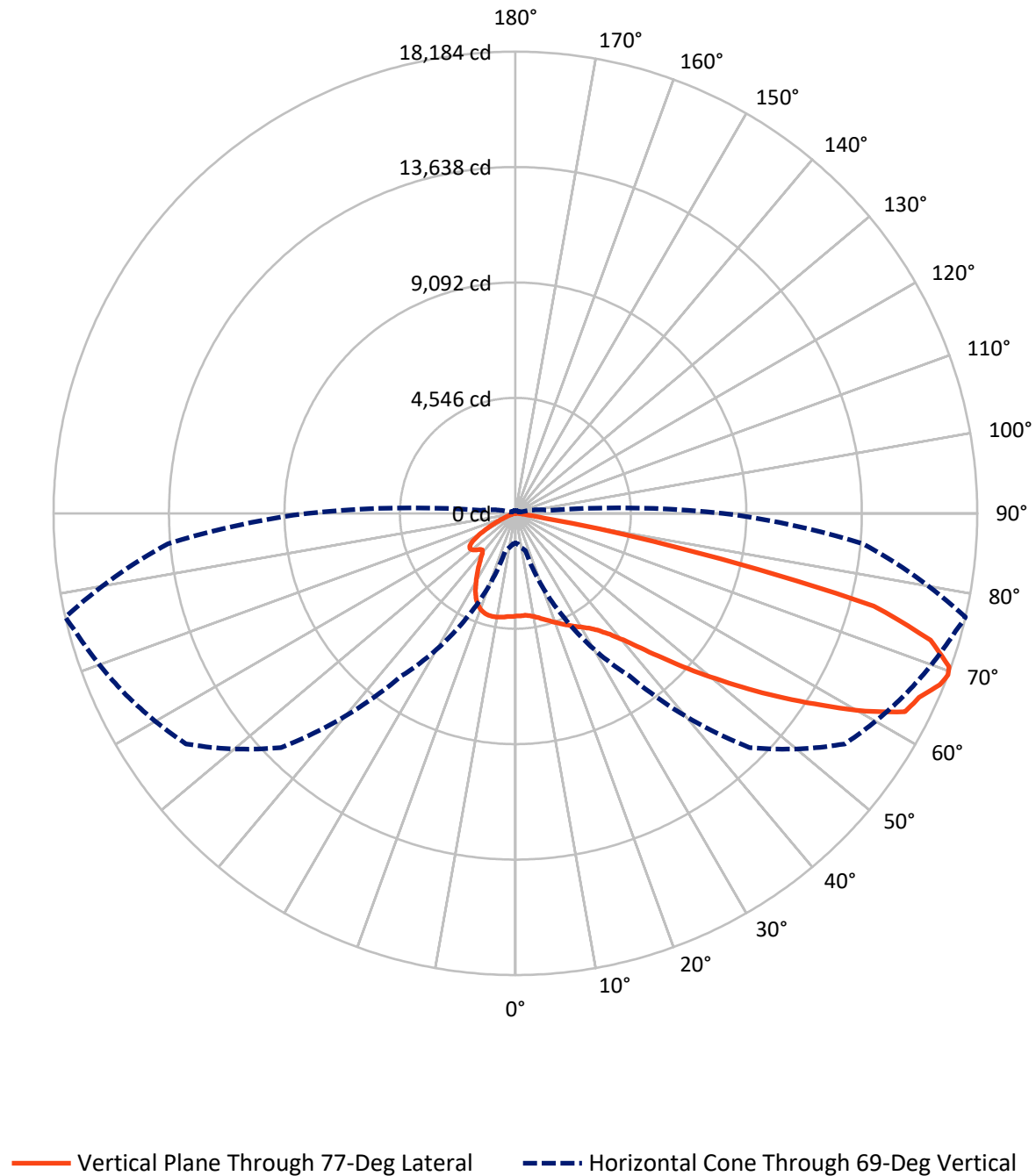
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 11.5 fc  
 Type III - Medium - N/A

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## Luminous Intensity Polar Plot



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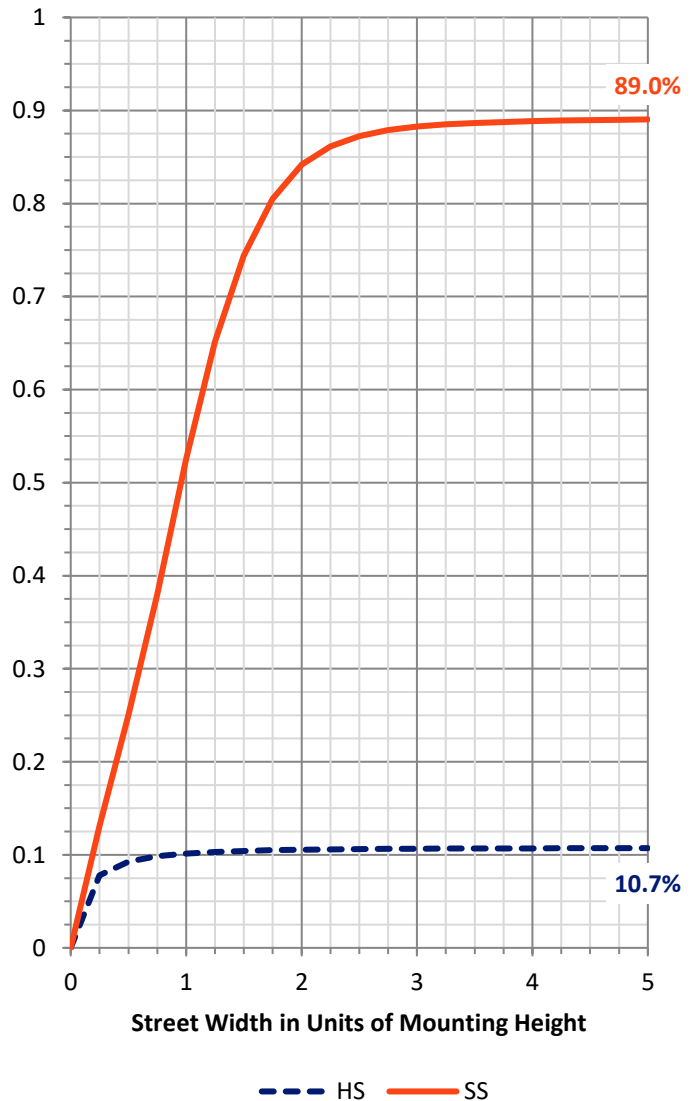
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 2642.1   | 0.0    | 2642.1  |
|                    | % Fixture | 10.8     | 0.0    | 10.8    |
| <b>Street Side</b> | Lumens    | 21801.1  | 0.0    | 21801.1 |
|                    | % Fixture | 89.2     | 0.0    | 89.2    |
| <b>Total</b>       | Lumens    | 24443.2  | 0.0    | 24443.2 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 345.7   | 1.4       |
| 10°-20°   | 820.8   | 3.4       |
| 20°-30°   | 1266.3  | 5.2       |
| 30°-40°   | 2249.5  | 9.2       |
| 40°-50°   | 4345.3  | 17.8      |
| 50°-60°   | 6313.4  | 25.8      |
| 60°-70°   | 6058.6  | 24.8      |
| 70°-80°   | 2936.0  | 12.0      |
| 80°-90°   | 107.7   | 0.4       |
| 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°    | 24443.2 | 100.0     |
| 0°-180°   | 24443.2 | 100.0     |

**Coefficient of Utilization**



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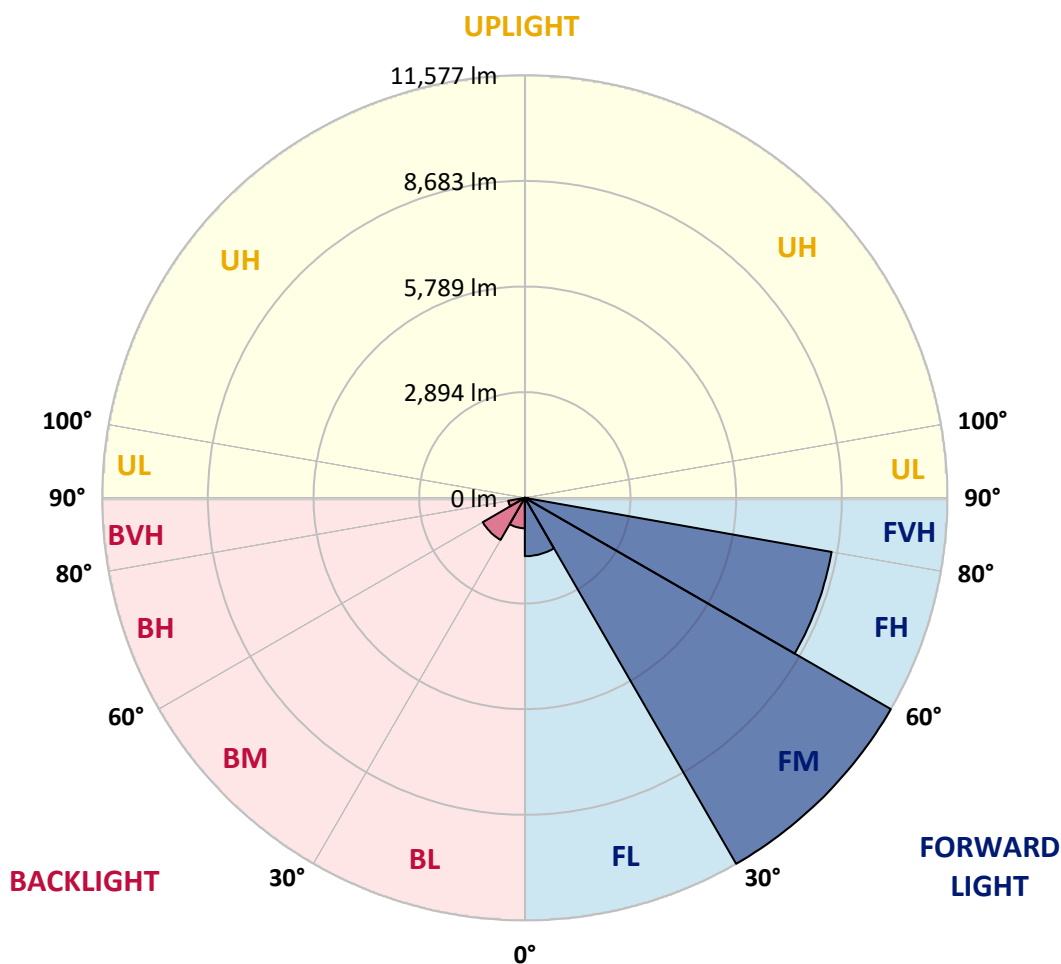
CATALOG NUMBER: VAL-T-SB6B-727-U-T3R-HSS

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

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|---------|-----------|-------------------------|------|----------|
|      |             |         |           | B                       | U    | G        |
| FL   | (0°-30°)    | 1599.1  | 6.5       |                         |      |          |
| FM   | (30°-60°)   | 11577.3 | 47.4      |                         |      |          |
| FH   | (60°-80°)   | 8534.0  | 34.9      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 90.7    | 0.4       |                         |      | G1/100   |
| BL   | (0°-30°)    | 833.7   | 3.4       | B2/1000                 |      |          |
| BM   | (30°-60°)   | 1330.8  | 5.4       | B2/2500                 |      |          |
| BH   | (60°-80°)   | 460.6   | 1.9       | B1/500                  |      | G1/500   |
| BVH  | (80°-90°)   | 17.0    | 0.1       |                         |      | G1/100   |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |          |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |          |

**BUG Rating: B2-U0-G4**

Type III Medium



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 65°     | 75°     | 77°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 4046.3  | 4046.3  | 4046.3  | 4046.3  | 4046.3  | 4046.3  | 4046.3  | 4046.3  | 4046.3  | 4046.3  | 4046.3  |
| 2.5°  | 3890.4  | 3904.6  | 3883.3  | 3897.5  | 3918.7  | 3932.9  | 3968.3  | 3982.5  | 4032.1  | 4046.3  | 4060.5  |
| 5°    | 3699.1  | 3713.2  | 3713.2  | 3741.6  | 3777.0  | 3819.5  | 3876.2  | 3932.9  | 4025.0  | 4032.1  | 4095.9  |
| 7.5°  | 3472.3  | 3465.2  | 3486.5  | 3543.2  | 3614.0  | 3720.3  | 3819.5  | 3918.7  | 4053.4  | 4074.6  | 4188.0  |
| 10°   | 3181.8  | 3181.8  | 3224.3  | 3302.2  | 3415.6  | 3592.8  | 3762.8  | 3911.7  | 4088.8  | 4138.4  | 4287.2  |
| 12.5° | 3018.8  | 3025.9  | 3047.1  | 3110.9  | 3273.9  | 3479.4  | 3706.1  | 3947.1  | 4180.9  | 4230.5  | 4436.0  |
| 15°   | 2955.0  | 2962.1  | 2990.4  | 3054.2  | 3181.8  | 3422.7  | 3692.0  | 3989.6  | 4280.1  | 4343.9  | 4591.9  |
| 17.5° | 2962.1  | 2955.0  | 2976.3  | 3025.9  | 3153.4  | 3387.3  | 3706.1  | 4060.5  | 4386.4  | 4464.4  | 4754.9  |
| 20°   | 3004.6  | 3004.6  | 3004.6  | 3040.0  | 3160.5  | 3387.3  | 3748.7  | 4159.7  | 4521.1  | 4591.9  | 4953.3  |
| 22.5° | 3082.6  | 3068.4  | 3075.5  | 3089.6  | 3203.0  | 3429.8  | 3812.4  | 4266.0  | 4655.7  | 4740.8  | 5137.6  |
| 25°   | 3139.2  | 3132.2  | 3132.2  | 3160.5  | 3266.8  | 3472.3  | 3876.2  | 4429.0  | 4804.5  | 4882.5  | 5328.9  |
| 27.5° | 3493.6  | 3458.1  | 3344.7  | 3252.6  | 3337.7  | 3564.4  | 3968.3  | 4570.7  | 4960.4  | 5045.5  | 5506.1  |
| 30°   | 4606.1  | 4549.4  | 4202.2  | 3706.1  | 3493.6  | 3670.7  | 4088.8  | 4719.5  | 5130.5  | 5201.4  | 5732.8  |
| 32.5° | 6278.5  | 6207.6  | 5669.1  | 4719.5  | 4010.9  | 3883.3  | 4251.8  | 4896.7  | 5321.8  | 5399.8  | 6002.1  |
| 35°   | 8028.8  | 7936.7  | 7405.2  | 6328.1  | 5109.2  | 4358.1  | 4499.8  | 5123.4  | 5584.0  | 5669.1  | 6384.8  |
| 37.5° | 9318.5  | 9254.7  | 8879.2  | 7986.3  | 6519.4  | 5258.1  | 4910.8  | 5449.4  | 5952.5  | 6044.6  | 6909.2  |
| 40°   | 10388.6 | 10346.0 | 10232.7 | 9488.6  | 8106.8  | 6561.9  | 5605.3  | 5952.5  | 6455.6  | 6554.9  | 7546.9  |
| 42.5° | 11324.0 | 11309.8 | 11359.4 | 11026.3 | 9885.4  | 8071.3  | 6654.1  | 6689.5  | 7143.0  | 7249.3  | 8354.8  |
| 45°   | 12096.4 | 12103.4 | 12301.9 | 12464.9 | 11713.7 | 9722.4  | 7865.8  | 7568.2  | 7972.1  | 8113.8  | 9233.5  |
| 47.5° | 12854.6 | 12797.9 | 13159.3 | 13513.6 | 13244.3 | 11394.8 | 9120.1  | 8560.3  | 8992.6  | 9155.5  | 10211.4 |
| 50°   | 12960.9 | 12982.2 | 13605.7 | 14193.9 | 14427.8 | 12975.1 | 10480.7 | 9672.8  | 10076.8 | 10232.7 | 11253.1 |
| 52.5° | 12358.6 | 12486.1 | 13428.6 | 14505.7 | 15122.2 | 14371.1 | 11897.9 | 10863.3 | 11224.7 | 11494.0 | 12323.1 |
| 55°   | 9417.7  | 9715.4  | 12805.0 | 14165.6 | 15235.6 | 15313.6 | 13208.9 | 11997.2 | 12507.4 | 12833.3 | 13329.4 |
| 57.5° | 8191.8  | 8276.8  | 9970.5  | 13456.9 | 14852.9 | 15816.7 | 14314.4 | 13131.0 | 13896.3 | 14257.7 | 14349.8 |
| 60°   | 7036.7  | 7079.2  | 8383.1  | 12330.2 | 14193.9 | 15611.2 | 15242.7 | 14456.1 | 15405.7 | 15823.8 | 15221.4 |
| 62.5° | 4138.4  | 4471.5  | 5931.3  | 9935.0  | 13371.9 | 15341.9 | 15951.3 | 15823.8 | 16837.1 | 17212.7 | 15327.7 |
| 65°   | 2097.6  | 2281.8  | 3167.6  | 7362.7  | 11947.5 | 15193.1 | 16596.2 | 16596.2 | 17106.4 | 17467.8 | 14548.2 |
| 67.5° | 1360.6  | 1431.4  | 1785.8  | 5470.6  | 9283.1  | 14633.3 | 16326.9 | 16610.4 | 17623.7 | 18020.5 | 14229.3 |
| 69°   | 1169.2  | 1218.8  | 1516.5  | 4535.2  | 7816.2  | 13045.9 | 15830.9 | 16915.1 | 17942.6 | 18183.5 | 13726.2 |
| 70°   | 1048.8  | 1091.3  | 1381.8  | 3954.2  | 6788.7  | 11005.1 | 15547.4 | 17007.2 | 17893.0 | 18112.7 | 13216.0 |
| 72.5° | 729.9   | 737.0   | 1027.5  | 2338.5  | 4301.4  | 6994.2  | 12613.7 | 16263.1 | 17092.2 | 17092.2 | 11642.8 |
| 75°   | 304.7   | 361.4   | 581.1   | 1027.5  | 1792.8  | 3876.2  | 6108.4  | 13867.9 | 14831.7 | 14576.6 | 8971.3  |
| 77.5° | 240.9   | 283.5   | 503.1   | 566.9   | 651.9   | 1601.5  | 2168.4  | 8113.8  | 7072.2  | 6675.3  | 2933.7  |
| 80°   | 177.2   | 205.5   | 425.2   | 382.7   | 240.9   | 467.7   | 538.6   | 1849.5  | 1325.1  | 1162.2  | 446.4   |
| 82.5° | 77.9    | 99.2    | 326.0   | 240.9   | 134.6   | 148.8   | 198.4   | 389.7   | 382.7   | 340.1   | 184.2   |
| 85°   | 42.5    | 63.8    | 141.7   | 85.0    | 56.7    | 56.7    | 77.9    | 120.5   | 106.3   | 106.3   | 77.9    |
| 87.5° | 0.0     | 0.0     | 7.1     | 7.1     | 14.2    | 21.3    | 28.3    | 42.5    | 49.6    | 49.6    | 49.6    |
| 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: P1387612

CATALOG NUMBER: VAL-T-SB6B-727-U-T3R-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°     | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 4046.3  | 4046.3 | 4046.3 | 4046.3 | 4046.3 | 4046.3 | 4046.3 | 4046.3 | 4046.3 | 4046.3 | 4046.3 |
| 2.5°  | 4060.5  | 4067.6 | 4067.6 | 4046.3 | 4025.0 | 3996.7 | 3947.1 | 3918.7 | 3904.6 | 3890.4 | 3883.3 |
| 5°    | 4095.9  | 4110.1 | 4074.6 | 3982.5 | 3869.1 | 3713.2 | 3571.5 | 3458.1 | 3358.9 | 3337.7 | 3316.4 |
| 7.5°  | 4188.0  | 4202.2 | 4095.9 | 3862.0 | 3571.5 | 3309.3 | 3025.9 | 2827.4 | 2664.5 | 2629.0 | 2636.1 |
| 10°   | 4308.5  | 4322.7 | 4103.0 | 3699.1 | 3259.7 | 2813.3 | 2423.5 | 2083.4 | 1863.7 | 1814.1 | 1750.3 |
| 12.5° | 4478.6  | 4464.4 | 4081.7 | 3493.6 | 2862.9 | 2232.2 | 1707.8 | 1339.3 | 1155.1 | 1041.7 | 1062.9 |
| 15°   | 4641.5  | 4606.1 | 4039.2 | 3238.5 | 2359.7 | 1594.4 | 1077.1 | 871.6  | 807.8  | 800.8  | 800.8  |
| 17.5° | 4840.0  | 4754.9 | 3961.3 | 2905.4 | 1785.8 | 1070.0 | 814.9  | 772.4  | 758.2  | 765.3  | 758.2  |
| 20°   | 5024.2  | 4868.3 | 3833.7 | 2487.3 | 1282.6 | 822.0  | 758.2  | 737.0  | 729.9  | 722.8  | 722.8  |
| 22.5° | 5222.6  | 4960.4 | 3642.4 | 2005.4 | 921.2  | 751.2  | 722.8  | 701.5  | 680.3  | 673.2  | 673.2  |
| 25°   | 5414.0  | 5024.2 | 3387.3 | 1523.6 | 758.2  | 708.6  | 673.2  | 644.9  | 623.6  | 609.4  | 609.4  |
| 27.5° | 5576.9  | 5045.5 | 3068.4 | 1112.6 | 694.5  | 666.1  | 616.5  | 581.1  | 552.7  | 545.6  | 545.6  |
| 30°   | 5768.3  | 5038.4 | 2678.6 | 836.2  | 651.9  | 609.4  | 552.7  | 503.1  | 481.9  | 489.0  | 489.0  |
| 32.5° | 5966.7  | 5066.7 | 2288.9 | 701.5  | 609.4  | 545.6  | 467.7  | 425.2  | 411.0  | 411.0  | 418.1  |
| 35°   | 6221.8  | 5109.2 | 1920.4 | 659.0  | 566.9  | 467.7  | 396.8  | 347.2  | 340.1  | 354.3  | 354.3  |
| 37.5° | 6554.9  | 5158.8 | 1566.1 | 651.9  | 531.5  | 403.9  | 326.0  | 297.6  | 290.5  | 297.6  | 297.6  |
| 40°   | 7022.6  | 5314.7 | 1233.0 | 651.9  | 503.1  | 361.4  | 276.4  | 262.2  | 262.2  | 262.2  | 262.2  |
| 42.5° | 7688.7  | 5669.1 | 1006.3 | 644.9  | 489.0  | 333.1  | 248.0  | 233.8  | 233.8  | 240.9  | 240.9  |
| 45°   | 8404.4  | 6207.6 | 935.4  | 623.6  | 474.8  | 333.1  | 233.8  | 219.7  | 226.8  | 226.8  | 226.8  |
| 47.5° | 9091.8  | 6753.3 | 956.7  | 588.2  | 460.6  | 340.1  | 226.8  | 212.6  | 212.6  | 212.6  | 212.6  |
| 50°   | 9701.2  | 7135.9 | 992.1  | 538.6  | 432.3  | 333.1  | 226.8  | 198.4  | 205.5  | 205.5  | 205.5  |
| 52.5° | 10339.0 | 7298.9 | 1006.3 | 467.7  | 389.7  | 318.9  | 226.8  | 191.3  | 191.3  | 198.4  | 198.4  |
| 55°   | 10877.5 | 7249.3 | 949.6  | 396.8  | 340.1  | 297.6  | 212.6  | 184.2  | 184.2  | 184.2  | 184.2  |
| 57.5° | 11331.0 | 6887.9 | 772.4  | 333.1  | 290.5  | 248.0  | 198.4  | 177.2  | 177.2  | 177.2  | 177.2  |
| 60°   | 11494.0 | 5980.9 | 566.9  | 283.5  | 233.8  | 205.5  | 184.2  | 170.1  | 163.0  | 163.0  | 155.9  |
| 62.5° | 10870.4 | 4613.2 | 389.7  | 240.9  | 198.4  | 177.2  | 163.0  | 155.9  | 148.8  | 134.6  | 127.6  |
| 65°   | 9694.1  | 3174.7 | 283.5  | 198.4  | 170.1  | 148.8  | 148.8  | 141.7  | 120.5  | 106.3  | 99.2   |
| 67.5° | 8801.2  | 1948.7 | 226.8  | 163.0  | 141.7  | 127.6  | 127.6  | 127.6  | 113.4  | 92.1   | 92.1   |
| 69°   | 8184.7  | 1353.5 | 205.5  | 148.8  | 127.6  | 113.4  | 113.4  | 120.5  | 106.3  | 85.0   | 85.0   |
| 70°   | 7653.2  | 1062.9 | 191.3  | 134.6  | 113.4  | 106.3  | 106.3  | 113.4  | 99.2   | 77.9   | 77.9   |
| 72.5° | 6384.8  | 524.4  | 163.0  | 113.4  | 92.1   | 85.0   | 92.1   | 92.1   | 85.0   | 63.8   | 63.8   |
| 75°   | 4655.7  | 311.8  | 134.6  | 92.1   | 70.9   | 63.8   | 77.9   | 77.9   | 63.8   | 49.6   | 49.6   |
| 77.5° | 1509.4  | 184.2  | 106.3  | 77.9   | 63.8   | 56.7   | 63.8   | 56.7   | 49.6   | 35.4   | 35.4   |
| 80°   | 318.9   | 113.4  | 77.9   | 56.7   | 49.6   | 42.5   | 42.5   | 35.4   | 35.4   | 28.3   | 28.3   |
| 82.5° | 141.7   | 85.0   | 56.7   | 49.6   | 35.4   | 35.4   | 28.3   | 28.3   | 21.3   | 21.3   | 21.3   |
| 85°   | 70.9    | 56.7   | 42.5   | 35.4   | 28.3   | 28.3   | 21.3   | 21.3   | 21.3   | 21.3   | 21.3   |
| 87.5° | 49.6    | 42.5   | 35.4   | 21.3   | 21.3   | 21.3   | 14.2   | 14.2   | 14.2   | 14.2   | 14.2   |
| 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

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| 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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### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

| $\lambda$<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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### 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

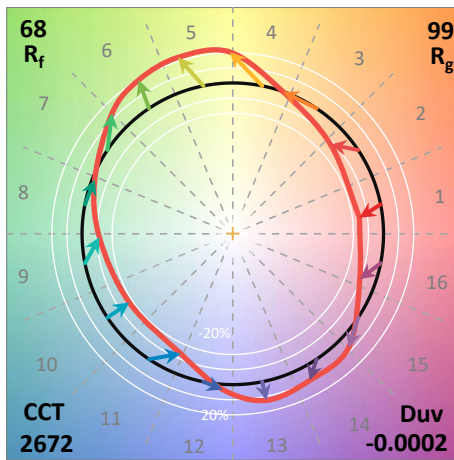
### Summary

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

### Spectral Power Distribution Comparison



### Color Vector Graphics



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

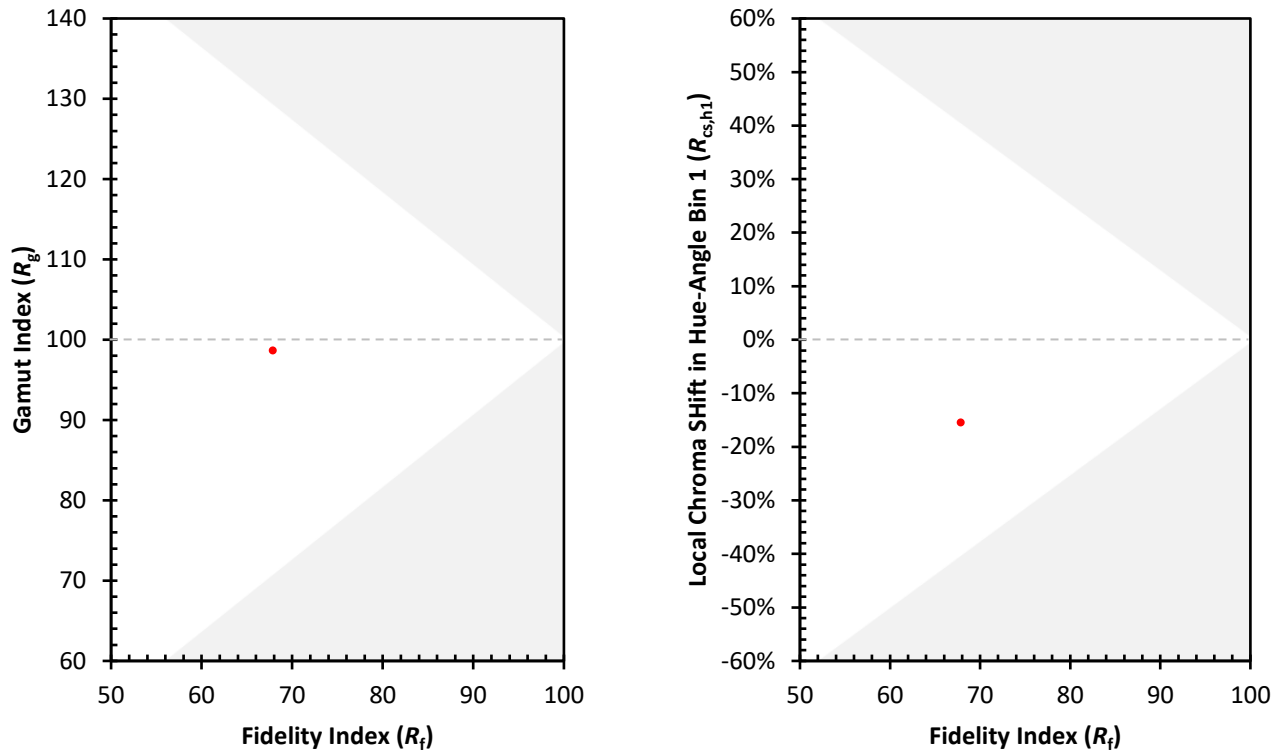
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 53 | CES51 = 75 | CES76 = 51 |
| CES02 = 63 | CES27 = 70 | CES52 = 80 | CES77 = 79 |
| CES03 = 31 | CES28 = 81 | CES53 = 64 | CES78 = 58 |
| CES04 = 71 | CES29 = 37 | CES54 = 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)