

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



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: P1383384

Luminaire Tested: **VAL-T-SB5B-727-U-SL2**

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.

Report Generated By 670245763



**Test Information**

Test Method: LM-79-08  
 Report Number: P1383384  
 Test Lab: INNOVATION CENTER(G1)  
 Issue Date: 02/18/2026  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: STREETWORKS  
 Catalog Number: VAL-T-SB5B-727-U-SL2  
 Description: GALLEON II WALL SLIM HIGH DENSITY LED ARRAYS 55 SQUARE 184W 70CRI  
 2700K FIXTURE w/ TYPE II SPILL CONTROL DISTRIBUTION OPTIC  
 Light Source: (130) 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               |

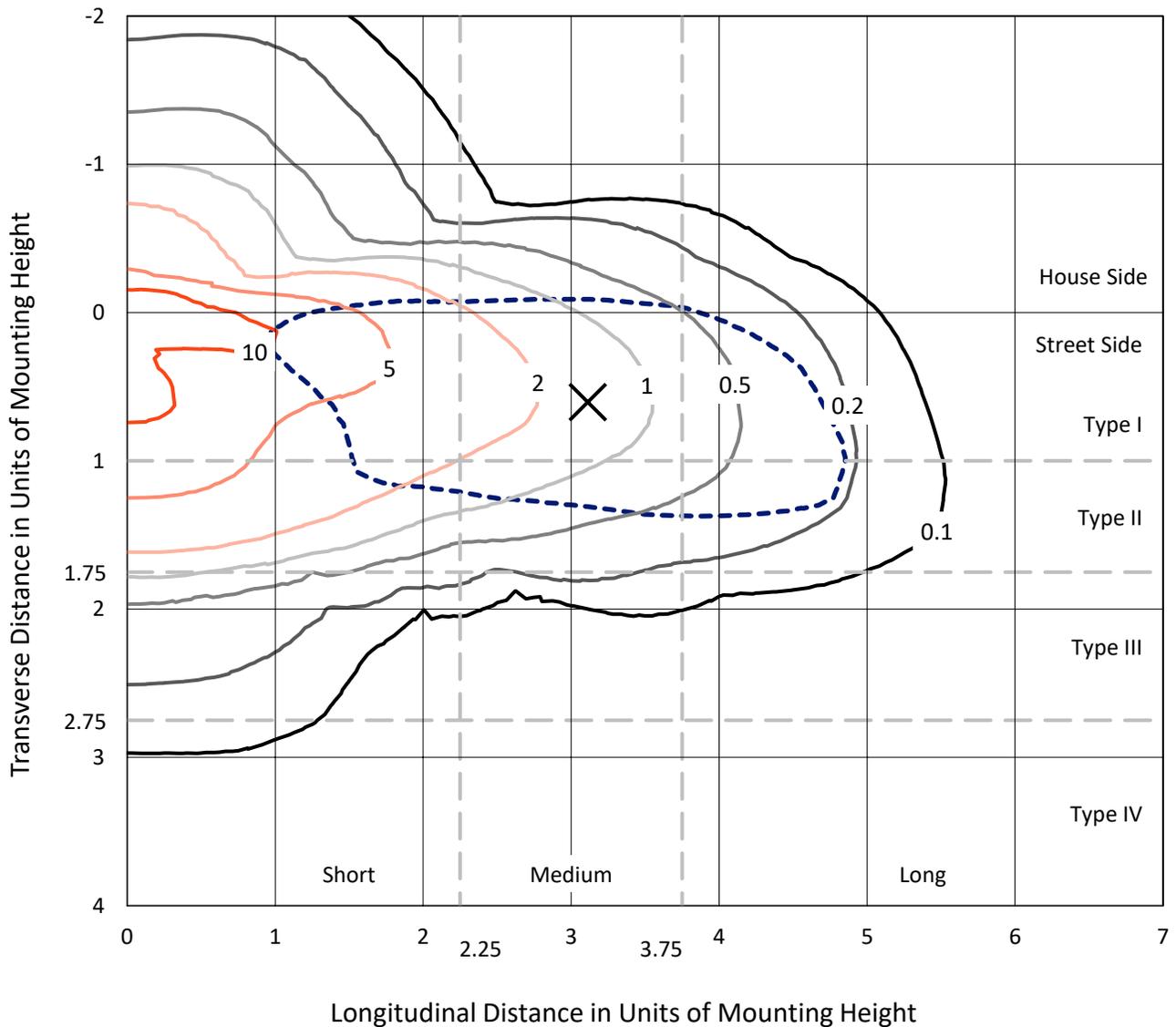
**Summary**

Lumens per Lamp: N/A  
 Luminaire Lumens: 24946.9 lumens  
 Efficiency: N/A  
 Efficacy: 135.6 lumens/watt  
 Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
 IES Classification: Type II - Medium  
 BUG Rating: B3 - U0 - G3  
  
 Input Watts (W): 184  
 Input Voltage (V): 120  
 Input Current (A<sub>in</sub>): NR  
 Voltage Rise (V): NR  
 Power Factor: 0.98  
 Total Harmonic Distortion (THDi): 11.1%  
 Frequency (hertz): 60  
 Stabilization Time: NR  
 Operation Time: NR  
 Ambient Temperature (°C): NR  
 Test Distance: 28.75 FT

REPORT NUMBER: P1383384  
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### Iso-Footcandle Lines of Horizontal Illumination

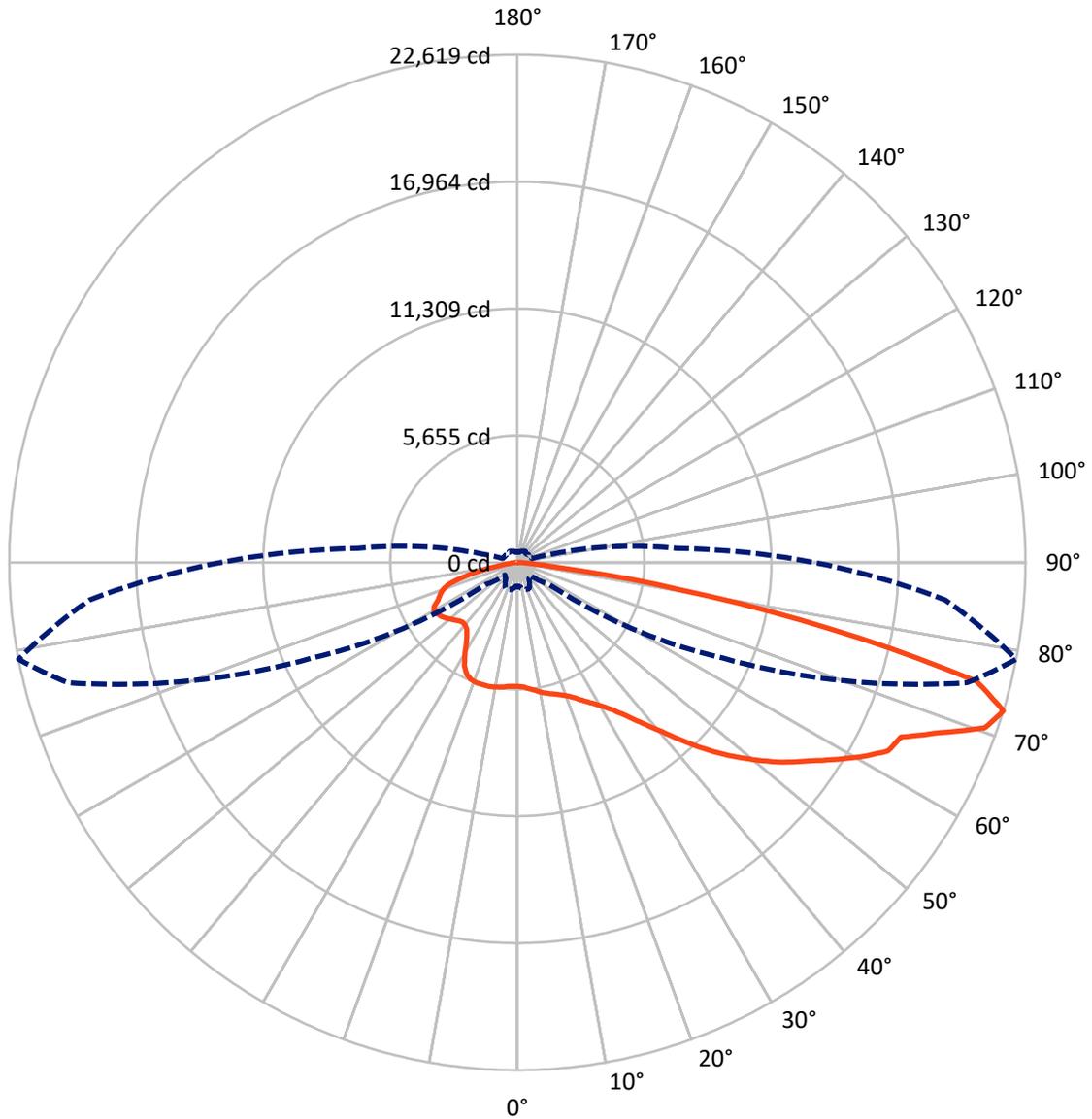
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 13.9 fc  
 Type II - Medium - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 79-Deg Lateral      - - - Horizontal Cone Through 72.5-Deg Vertical

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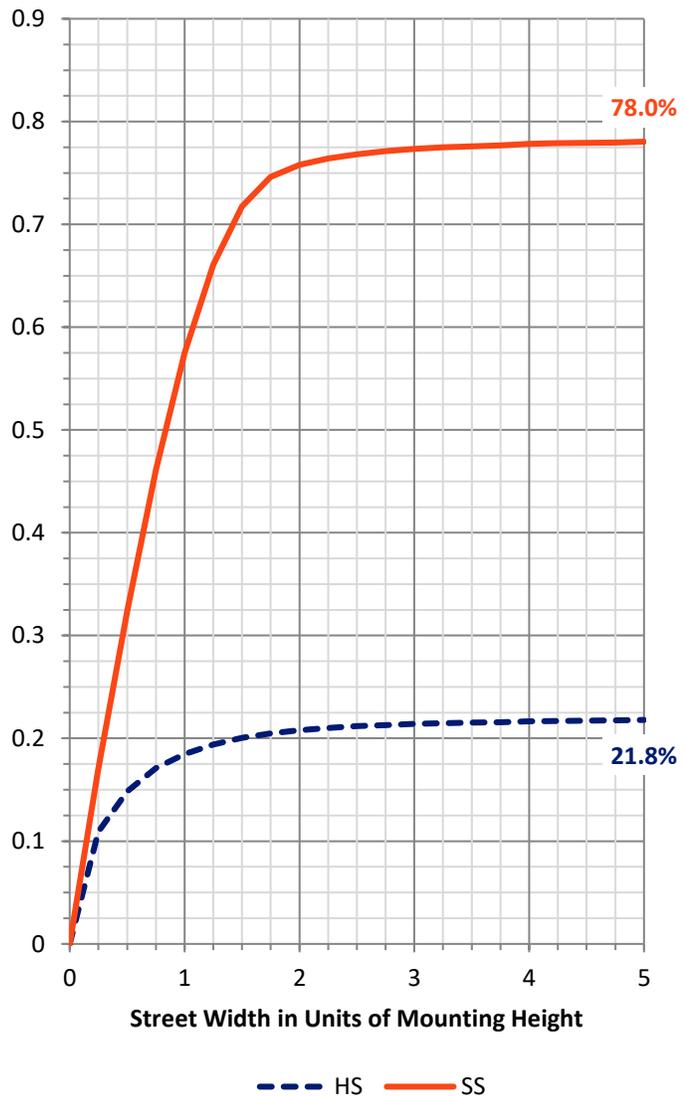
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 5480.0   | 0.0    | 5480.0  |
|                    | % Fixture | 22.0     | 0.0    | 22.0    |
| <b>Street Side</b> | Lumens    | 19466.9  | 0.0    | 19466.9 |
|                    | % Fixture | 78.0     | 0.0    | 78.0    |
| <b>Total</b>       | Lumens    | 24946.9  | 0.0    | 24946.9 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 512.9   | 2.1       |
| 10°-20°   | 1273.7  | 5.1       |
| 20°-30°   | 2005.4  | 8.0       |
| 30°-40°   | 2992.7  | 12.0      |
| 40°-50°   | 4255.2  | 17.1      |
| 50°-60°   | 5375.1  | 21.5      |
| 60°-70°   | 5031.2  | 20.2      |
| 70°-80°   | 3195.9  | 12.8      |
| 80°-90°   | 304.9   | 1.2       |
| 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°    | 24946.9 | 100.0     |
| 0°-180°   | 24946.9 | 100.0     |

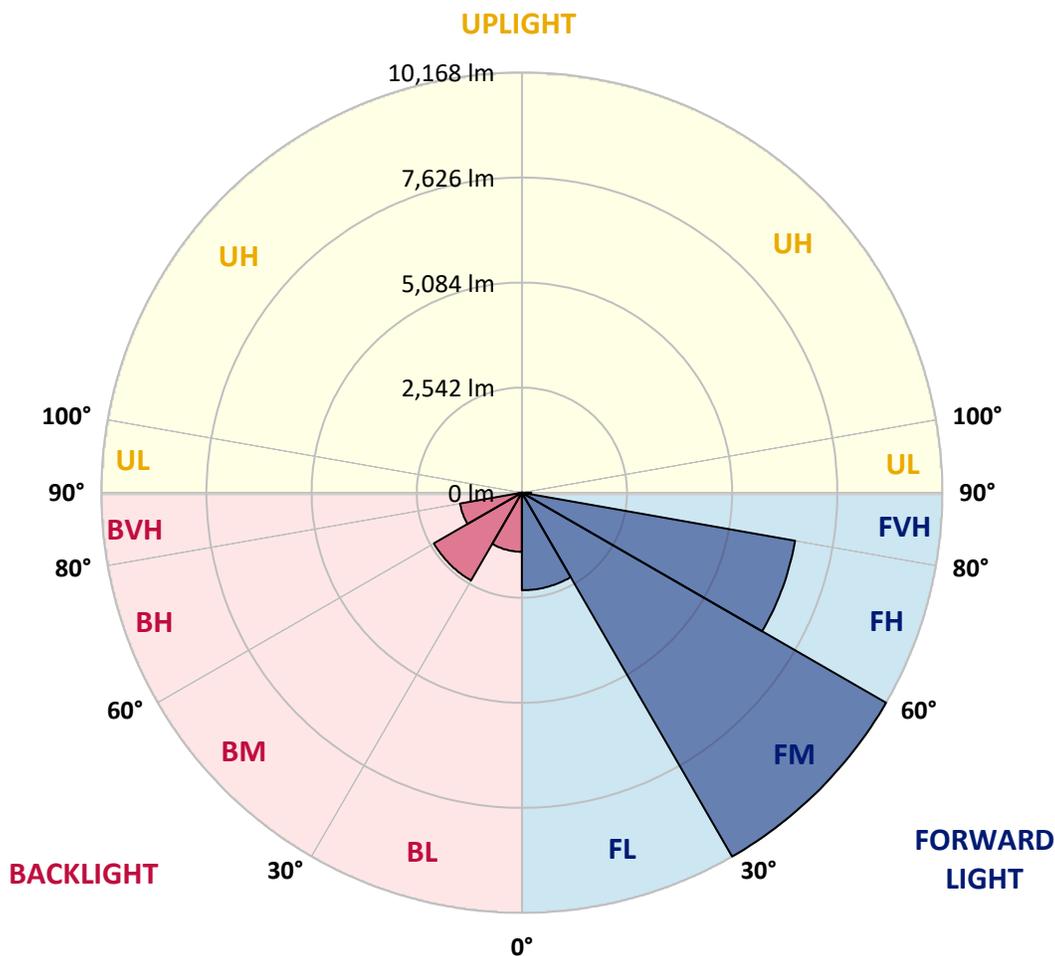


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|---------|-----------|-------------------------|------|---------|
|      |             |         |           | B                       | U    | G       |
| FL   | (0°-30°)    | 2361.3  | 9.5       |                         |      |         |
| FM   | (30°-60°)   | 10168.4 | 40.8      |                         |      |         |
| FH   | (60°-80°)   | 6710.1  | 26.9      |                         |      | G3/7500 |
| FVH  | (80°-90°)   | 227.1   | 0.9       |                         |      | G3/500  |
| BL   | (0°-30°)    | 1430.7  | 5.7       | B3/2500                 |      |         |
| BM   | (30°-60°)   | 2454.6  | 9.8       | B2/2500                 |      |         |
| BH   | (60°-80°)   | 1517.0  | 6.1       | B3/2500                 |      | G3/2500 |
| BVH  | (80°-90°)   | 77.8    | 0.3       |                         |      | 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 II Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°     | 65°     | 75°     | 79°     | 85°     |
|-------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|
| 0°    | 5524.8 | 5524.8 | 5524.8 | 5524.8 | 5524.8 | 5524.8 | 5524.8  | 5524.8  | 5524.8  | 5524.8  | 5524.8  |
| 2.5°  | 5654.6 | 5660.5 | 5636.9 | 5636.9 | 5642.8 | 5619.2 | 5589.7  | 5583.8  | 5560.2  | 5560.2  | 5560.2  |
| 5°    | 5684.1 | 5684.1 | 5678.2 | 5707.8 | 5719.6 | 5737.3 | 5713.7  | 5695.9  | 5660.5  | 5660.5  | 5613.3  |
| 7.5°  | 5371.3 | 5359.5 | 5406.7 | 5542.5 | 5684.1 | 5760.9 | 5808.1  | 5808.1  | 5790.4  | 5760.9  | 5719.6  |
| 10°   | 4781.1 | 4798.8 | 4869.6 | 5052.6 | 5312.3 | 5660.5 | 5849.4  | 5926.1  | 5896.6  | 5884.8  | 5814.0  |
| 12.5° | 4468.2 | 4462.3 | 4515.4 | 4651.2 | 4875.5 | 5300.5 | 5766.8  | 6008.8  | 6014.7  | 5985.2  | 5902.5  |
| 15°   | 4432.8 | 4415.1 | 4438.7 | 4485.9 | 4633.5 | 4975.8 | 5518.9  | 6038.3  | 6097.3  | 6085.5  | 5991.1  |
| 17.5° | 4633.5 | 4627.6 | 4592.2 | 4580.4 | 4574.5 | 4763.3 | 5276.9  | 6014.7  | 6209.5  | 6197.7  | 6091.4  |
| 20°   | 4981.7 | 4952.2 | 4887.3 | 4828.3 | 4704.3 | 4722.0 | 5088.0  | 5985.2  | 6362.9  | 6345.2  | 6239.0  |
| 22.5° | 5353.6 | 5365.4 | 5306.4 | 5164.7 | 4946.3 | 4846.0 | 5029.0  | 5943.9  | 6569.5  | 6557.7  | 6416.1  |
| 25°   | 5808.1 | 5796.3 | 5725.5 | 5566.1 | 5276.9 | 5058.5 | 5093.9  | 5932.1  | 6805.6  | 6817.4  | 6646.3  |
| 27.5° | 6274.4 | 6262.6 | 6174.1 | 5973.4 | 5636.9 | 5318.2 | 5241.5  | 5979.3  | 7106.7  | 7100.8  | 6888.3  |
| 30°   | 6793.8 | 6799.7 | 6687.6 | 6416.1 | 6008.8 | 5642.8 | 5477.6  | 6103.2  | 7407.7  | 7425.4  | 7165.7  |
| 32.5° | 7260.1 | 7289.6 | 7224.7 | 6970.9 | 6463.3 | 5979.3 | 5766.8  | 6303.9  | 7809.1  | 7838.6  | 7519.8  |
| 35°   | 7555.2 | 7573.0 | 7567.1 | 7449.0 | 6947.3 | 6362.9 | 6056.0  | 6557.7  | 8293.1  | 8405.2  | 7992.0  |
| 37.5° | 7838.6 | 7879.9 | 7885.8 | 7797.3 | 7419.5 | 6817.4 | 6398.4  | 6911.9  | 8912.8  | 9095.8  | 8611.8  |
| 40°   | 8145.5 | 8133.7 | 8216.3 | 8110.1 | 7844.5 | 7301.4 | 6752.5  | 7313.2  | 9597.5  | 9898.6  | 9337.8  |
| 42.5° | 8328.5 | 8358.0 | 8464.2 | 8440.6 | 8175.0 | 7750.0 | 7153.9  | 7761.8  | 10453.4 | 10896.1 | 10217.3 |
| 45°   | 8446.5 | 8476.0 | 8629.5 | 8653.1 | 8511.5 | 8057.0 | 7531.6  | 8192.7  | 11238.4 | 11929.0 | 11161.7 |
| 47.5° | 8487.8 | 8505.6 | 8706.2 | 8800.7 | 8741.7 | 8251.7 | 7826.8  | 8682.6  | 12011.7 | 12902.9 | 12106.1 |
| 50°   | 8322.6 | 8387.5 | 8647.2 | 8859.7 | 8901.0 | 8352.1 | 8080.6  | 9202.1  | 12843.9 | 13847.4 | 13056.4 |
| 52.5° | 8068.8 | 8104.2 | 8417.0 | 8871.5 | 9001.4 | 8517.4 | 8393.4  | 9751.0  | 13629.0 | 14791.8 | 13871.0 |
| 55°   | 7573.0 | 7643.8 | 8033.4 | 8676.7 | 9060.4 | 8735.8 | 8800.7  | 10370.8 | 14443.5 | 15618.1 | 14756.3 |
| 57.5° | 6168.2 | 6292.1 | 6935.5 | 7844.5 | 8901.0 | 9166.6 | 9408.6  | 11138.1 | 15334.8 | 16574.3 | 15547.3 |
| 60°   | 3866.2 | 4031.4 | 4704.3 | 6174.1 | 7997.9 | 9420.5 | 10376.7 | 12135.6 | 16397.3 | 17577.8 | 16426.8 |
| 62.5° | 2095.4 | 2089.5 | 2290.2 | 3157.9 | 5766.8 | 8759.4 | 11208.9 | 13865.1 | 17766.6 | 18510.4 | 16940.3 |
| 65°   | 1818.0 | 1818.0 | 1841.6 | 1835.7 | 2490.9 | 6463.3 | 10382.6 | 14898.0 | 18711.0 | 18758.3 | 16503.5 |
| 67.5° | 1635.0 | 1635.0 | 1670.4 | 1581.9 | 1357.6 | 2892.2 | 7596.6  | 14284.1 | 20275.2 | 20245.7 | 17064.2 |
| 70°   | 1440.2 | 1446.1 | 1505.1 | 1452.0 | 1092.0 | 1174.6 | 4155.4  | 13009.2 | 21443.9 | 22075.5 | 18179.8 |
| 72.5° | 1056.6 | 1092.0 | 1263.1 | 1263.1 | 897.2  | 790.9  | 1688.1  | 10087.4 | 20712.0 | 22618.5 | 19106.5 |
| 75°   | 743.7  | 749.6  | 838.2  | 903.1  | 708.3  | 596.2  | 820.5   | 6752.5  | 19000.3 | 21101.6 | 18280.2 |
| 77.5° | 566.6  | 572.5  | 602.1  | 720.1  | 484.0  | 436.8  | 566.6   | 3689.1  | 13705.7 | 14248.7 | 11858.2 |
| 80°   | 377.8  | 371.9  | 413.2  | 507.6  | 342.3  | 295.1  | 366.0   | 1233.6  | 7691.0  | 7336.9  | 4952.2  |
| 82.5° | 188.9  | 194.8  | 224.3  | 265.6  | 200.7  | 177.1  | 212.5   | 637.5   | 3016.2  | 1753.1  | 720.1   |
| 85°   | 53.1   | 64.9   | 76.7   | 106.2  | 82.6   | 76.7   | 100.3   | 224.3   | 383.7   | 283.3   | 194.8   |
| 87.5° | 5.9    | 5.9    | 11.8   | 11.8   | 11.8   | 17.7   | 29.5    | 47.2    | 64.9    | 64.9    | 64.9    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |



REPORT NUMBER: P1383384  
 CATALOG NUMBER: VAL-T-SB5B-727-U-SL2

**CANDELA DISTRIBUTION (continued):**

|       | 90°     | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 5524.8  | 5524.8 | 5524.8 | 5524.8 | 5524.8 | 5524.8 | 5524.8 | 5524.8 | 5524.8 | 5524.8 | 5524.8 |
| 2.5°  | 5548.4  | 5530.7 | 5507.1 | 5471.7 | 5471.7 | 5430.3 | 5406.7 | 5359.5 | 5377.2 | 5353.6 | 5341.8 |
| 5°    | 5601.5  | 5577.9 | 5524.8 | 5465.8 | 5406.7 | 5318.2 | 5247.4 | 5147.0 | 5135.2 | 5111.6 | 5076.2 |
| 7.5°  | 5695.9  | 5636.9 | 5572.0 | 5436.2 | 5324.1 | 5123.4 | 4964.0 | 4763.3 | 4651.2 | 4580.4 | 4586.3 |
| 10°   | 5790.4  | 5713.7 | 5577.9 | 5400.8 | 5158.8 | 4828.3 | 4415.1 | 4019.6 | 3718.6 | 3547.4 | 3582.8 |
| 12.5° | 5855.3  | 5772.7 | 5589.7 | 5306.4 | 4857.8 | 4196.7 | 3429.4 | 2868.6 | 2650.2 | 2538.1 | 2538.1 |
| 15°   | 5920.2  | 5814.0 | 5572.0 | 5105.7 | 4291.1 | 3163.8 | 2555.8 | 2343.3 | 2284.3 | 2248.9 | 2237.1 |
| 17.5° | 6002.9  | 5878.9 | 5518.9 | 4733.8 | 3382.2 | 2473.2 | 2260.7 | 2195.7 | 2195.7 | 2189.8 | 2178.0 |
| 20°   | 6103.2  | 5955.7 | 5453.9 | 4143.6 | 2597.1 | 2219.4 | 2160.3 | 2148.5 | 2160.3 | 2154.4 | 2148.5 |
| 22.5° | 6256.7  | 6050.1 | 5288.7 | 3329.0 | 2231.2 | 2101.3 | 2095.4 | 2036.4 | 2048.2 | 2060.0 | 2054.1 |
| 25°   | 6451.5  | 6168.2 | 4975.8 | 2544.0 | 2048.2 | 2024.6 | 1965.5 | 1912.4 | 1906.5 | 1912.4 | 1912.4 |
| 27.5° | 6634.5  | 6256.7 | 4468.2 | 2095.4 | 1918.3 | 1912.4 | 1859.3 | 1812.1 | 1812.1 | 1818.0 | 1818.0 |
| 30°   | 6835.1  | 6309.8 | 3689.1 | 1865.2 | 1841.6 | 1812.1 | 1794.4 | 1776.7 | 1782.6 | 1800.3 | 1800.3 |
| 32.5° | 7100.8  | 6362.9 | 2927.7 | 1735.3 | 1764.9 | 1723.5 | 1735.3 | 1729.4 | 1741.2 | 1770.8 | 1776.7 |
| 35°   | 7425.4  | 6386.5 | 2343.3 | 1658.6 | 1658.6 | 1623.2 | 1629.1 | 1605.5 | 1605.5 | 1623.2 | 1635.0 |
| 37.5° | 7856.3  | 6398.4 | 1971.4 | 1617.3 | 1576.0 | 1558.3 | 1546.5 | 1517.0 | 1475.6 | 1446.1 | 1452.0 |
| 40°   | 8322.6  | 6427.9 | 1770.8 | 1587.8 | 1540.6 | 1534.7 | 1511.0 | 1469.7 | 1351.7 | 1257.2 | 1251.3 |
| 42.5° | 8942.3  | 6510.5 | 1670.4 | 1540.6 | 1540.6 | 1540.6 | 1505.1 | 1322.2 | 1227.7 | 1162.8 | 1156.9 |
| 45°   | 9568.0  | 6728.9 | 1617.3 | 1499.2 | 1534.7 | 1540.6 | 1381.2 | 1269.0 | 1192.3 | 1121.5 | 1103.8 |
| 47.5° | 10264.5 | 7041.7 | 1593.7 | 1475.6 | 1493.3 | 1505.1 | 1298.6 | 1245.4 | 1156.9 | 1074.3 | 1056.6 |
| 50°   | 10955.1 | 7372.3 | 1570.1 | 1434.3 | 1434.3 | 1357.6 | 1280.9 | 1221.8 | 1133.3 | 1044.7 | 1032.9 |
| 52.5° | 11687.0 | 7755.9 | 1546.5 | 1363.5 | 1357.6 | 1274.9 | 1263.1 | 1215.9 | 1121.5 | 1009.3 | 985.7  |
| 55°   | 12324.5 | 8104.2 | 1505.1 | 1280.9 | 1274.9 | 1192.3 | 1251.3 | 1192.3 | 1050.7 | 920.8  | 897.2  |
| 57.5° | 12932.5 | 8387.5 | 1452.0 | 1192.3 | 1204.1 | 1127.4 | 1204.1 | 1145.1 | 985.7  | 855.9  | 844.1  |
| 60°   | 13510.9 | 8682.6 | 1381.2 | 1115.6 | 1115.6 | 1068.4 | 1145.1 | 1068.4 | 920.8  | 790.9  | 773.2  |
| 62.5° | 13682.1 | 8588.2 | 1263.1 | 1032.9 | 1027.0 | 991.6  | 1068.4 | 979.8  | 838.2  | 720.1  | 702.4  |
| 65°   | 13091.8 | 8104.2 | 1121.5 | 950.3  | 932.6  | 903.1  | 956.2  | 873.6  | 743.7  | 649.3  | 643.4  |
| 67.5° | 13174.5 | 7915.3 | 962.1  | 844.1  | 826.4  | 802.7  | 820.5  | 755.5  | 655.2  | 584.4  | 578.4  |
| 70°   | 13280.7 | 7708.7 | 814.6  | 743.7  | 702.4  | 661.1  | 702.4  | 649.3  | 578.4  | 519.4  | 513.5  |
| 72.5° | 13198.1 | 7136.2 | 672.9  | 625.7  | 596.2  | 548.9  | 602.1  | 560.7  | 501.7  | 454.5  | 442.7  |
| 75°   | 12005.8 | 5737.3 | 548.9  | 513.5  | 478.1  | 448.6  | 484.0  | 472.2  | 425.0  | 419.1  | 377.8  |
| 77.5° | 8074.7  | 3677.3 | 425.0  | 395.5  | 383.7  | 354.2  | 377.8  | 360.1  | 336.4  | 312.8  | 295.1  |
| 80°   | 3500.2  | 1646.8 | 306.9  | 277.4  | 265.6  | 247.9  | 271.5  | 265.6  | 253.8  | 236.1  | 230.2  |
| 82.5° | 501.7   | 389.6  | 206.6  | 188.9  | 159.4  | 147.6  | 159.4  | 171.2  | 247.9  | 301.0  | 295.1  |
| 85°   | 141.7   | 118.1  | 100.3  | 88.5   | 70.8   | 59.0   | 64.9   | 106.2  | 141.7  | 88.5   | 76.7   |
| 87.5° | 64.9    | 59.0   | 47.2   | 29.5   | 17.7   | 17.7   | 11.8   | 5.9    | 5.9    | 0.0    | 0.0    |
| 90°   | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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



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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-3

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  
 CIE u': 0.2638  
 CIE v': 0.5276  
 Duv: -0.0002  
 CIE x: 0.4619  
 CIE y: 0.4106  
 CIE z: 0.1275  
 Peak Wavelength (nm): 601  
 Dominant Wavelength (nm): 584  
 Purity: 61.88407  
 R<sub>f</sub>: 67.9  
 R<sub>g</sub>: 98.6

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



**Test Conditions**

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

REPORT NUMBER: SP1-2407-184-3

| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 6/18/2024        | 12/18/2024           |
| Power Meter                    | INXT2011004           | 2/8/2024         | 2/8/2025             |
| AC Power Source                | IN0063                | 10/24/2023       | 10/24/2024           |
| DC Power Source                | IN0208                | 10/24/2023       | 10/24/2024           |
| Sphere Thermometer             | IN0085                | 10/24/2023       | 10/24/2024           |
| Room Thermometer               | IN0046                | 10/24/2023       | 10/24/2024           |

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CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 2700K 4-step quadrangle

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**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 52                       | NR            | 620    | 888                      | NR            | 750    | 27                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 87                       | NR            | 625    | 834                      | NR            | 755    | 23                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 135                      | NR            | 630    | 776                      | NR            | 760    | 20                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 196                      | NR            | 635    | 712                      | NR            | 765    | 17                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 258                      | NR            | 640    | 648                      | NR            | 770    | 15                       | NR            | 900    | 0                        | NR            |
| 385    | 1                        | NR            | 515    | 317                      | NR            | 645    | 583                      | NR            | 775    | 12                       | NR            | 905    | 0                        | NR            |
| 390    | 2                        | NR            | 520    | 368                      | NR            | 650    | 523                      | NR            | 780    | 11                       | NR            | 910    | 0                        | NR            |
| 395    | 4                        | NR            | 525    | 408                      | NR            | 655    | 465                      | NR            | 785    | 9                        | NR            | 915    | 0                        | NR            |
| 400    | 6                        | NR            | 530    | 443                      | NR            | 660    | 410                      | NR            | 790    | 8                        | NR            | 920    | 0                        | NR            |
| 405    | 11                       | NR            | 535    | 473                      | NR            | 665    | 360                      | NR            | 795    | 7                        | NR            | 925    | 0                        | NR            |
| 410    | 23                       | NR            | 540    | 498                      | NR            | 670    | 313                      | NR            | 800    | 6                        | NR            | 930    | 0                        | NR            |
| 415    | 51                       | NR            | 545    | 530                      | NR            | 675    | 272                      | NR            | 805    | 5                        | NR            | 935    | 0                        | NR            |
| 420    | 111                      | NR            | 550    | 563                      | NR            | 680    | 236                      | NR            | 810    | 4                        | NR            | 940    | 0                        | NR            |
| 425    | 214                      | NR            | 555    | 605                      | NR            | 685    | 203                      | NR            | 815    | 4                        | NR            | 945    | 0                        | NR            |
| 430    | 339                      | NR            | 560    | 651                      | NR            | 690    | 175                      | NR            | 820    | 3                        | NR            | 950    | 0                        | NR            |
| 435    | 467                      | NR            | 565    | 705                      | NR            | 695    | 150                      | NR            | 825    | 3                        | NR            | 955    | 0                        | NR            |
| 440    | 535                      | NR            | 570    | 765                      | NR            | 700    | 128                      | NR            | 830    | 3                        | NR            | 960    | 0                        | NR            |
| 445    | 372                      | NR            | 575    | 824                      | NR            | 705    | 110                      | NR            | 835    | 2                        | NR            | 965    | 0                        | NR            |
| 450    | 160                      | NR            | 580    | 882                      | NR            | 710    | 94                       | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 89                       | NR            | 585    | 930                      | NR            | 715    | 80                       | NR            | 845    | 2                        | NR            | 975    | 0                        | NR            |
| 460    | 53                       | NR            | 590    | 968                      | NR            | 720    | 69                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 31                       | NR            | 595    | 991                      | NR            | 725    | 59                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 23                       | NR            | 600    | 999                      | NR            | 730    | 50                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 21                       | NR            | 605    | 992                      | NR            | 735    | 43                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 23                       | NR            | 610    | 969                      | NR            | 740    | 36                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 32                       | NR            | 615    | 935                      | NR            | 745    | 31                       | NR            | 875    | 1                        | NR            |        |                          |               |

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**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 1.02**

| $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) |
|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|
| 360            | 0                        | NR                   | 490            | 52                       | NR                   | 620            | 888                      | NR                   | 750            | 27                       | NR                   | 880            | 1                        | NR                   |
| 365            | 0                        | NR                   | 495            | 87                       | NR                   | 625            | 834                      | NR                   | 755            | 23                       | NR                   | 885            | 1                        | NR                   |
| 370            | 0                        | NR                   | 500            | 135                      | NR                   | 630            | 776                      | NR                   | 760            | 20                       | NR                   | 890            | 1                        | NR                   |
| 375            | 0                        | NR                   | 505            | 196                      | NR                   | 635            | 712                      | NR                   | 765            | 17                       | NR                   | 895            | 0                        | NR                   |
| 380            | 0                        | NR                   | 510            | 258                      | NR                   | 640            | 648                      | NR                   | 770            | 15                       | NR                   | 900            | 0                        | NR                   |
| 385            | 1                        | NR                   | 515            | 317                      | NR                   | 645            | 583                      | NR                   | 775            | 12                       | NR                   | 905            | 0                        | NR                   |
| 390            | 2                        | NR                   | 520            | 368                      | NR                   | 650            | 523                      | NR                   | 780            | 11                       | NR                   | 910            | 0                        | NR                   |
| 395            | 4                        | NR                   | 525            | 408                      | NR                   | 655            | 465                      | NR                   | 785            | 9                        | NR                   | 915            | 0                        | NR                   |
| 400            | 6                        | NR                   | 530            | 443                      | NR                   | 660            | 410                      | NR                   | 790            | 8                        | NR                   | 920            | 0                        | NR                   |
| 405            | 11                       | NR                   | 535            | 473                      | NR                   | 665            | 360                      | NR                   | 795            | 7                        | NR                   | 925            | 0                        | NR                   |
| 410            | 23                       | NR                   | 540            | 498                      | NR                   | 670            | 313                      | NR                   | 800            | 6                        | NR                   | 930            | 0                        | NR                   |
| 415            | 51                       | NR                   | 545            | 530                      | NR                   | 675            | 272                      | NR                   | 805            | 5                        | NR                   | 935            | 0                        | NR                   |
| 420            | 111                      | NR                   | 550            | 563                      | NR                   | 680            | 236                      | NR                   | 810            | 4                        | NR                   | 940            | 0                        | NR                   |
| 425            | 214                      | NR                   | 555            | 605                      | NR                   | 685            | 203                      | NR                   | 815            | 4                        | NR                   | 945            | 0                        | NR                   |
| 430            | 339                      | NR                   | 560            | 651                      | NR                   | 690            | 175                      | NR                   | 820            | 3                        | NR                   | 950            | 0                        | NR                   |
| 435            | 467                      | NR                   | 565            | 705                      | NR                   | 695            | 150                      | NR                   | 825            | 3                        | NR                   | 955            | 0                        | NR                   |
| 440            | 535                      | NR                   | 570            | 765                      | NR                   | 700            | 128                      | NR                   | 830            | 3                        | NR                   | 960            | 0                        | NR                   |
| 445            | 372                      | NR                   | 575            | 824                      | NR                   | 705            | 110                      | NR                   | 835            | 2                        | NR                   | 965            | 0                        | NR                   |
| 450            | 160                      | NR                   | 580            | 882                      | NR                   | 710            | 94                       | NR                   | 840            | 2                        | NR                   | 970            | 0                        | NR                   |
| 455            | 89                       | NR                   | 585            | 930                      | NR                   | 715            | 80                       | NR                   | 845            | 2                        | NR                   | 975            | 0                        | NR                   |
| 460            | 53                       | NR                   | 590            | 968                      | NR                   | 720            | 69                       | NR                   | 850            | 1                        | NR                   | 980            | 0                        | NR                   |
| 465            | 31                       | NR                   | 595            | 991                      | NR                   | 725            | 59                       | NR                   | 855            | 1                        | NR                   | 985            | 0                        | NR                   |
| 470            | 23                       | NR                   | 600            | 999                      | NR                   | 730            | 50                       | NR                   | 860            | 1                        | NR                   | 990            | 0                        | NR                   |
| 475            | 21                       | NR                   | 605            | 992                      | NR                   | 735            | 43                       | NR                   | 865            | 1                        | NR                   | 995            | 0                        | NR                   |
| 480            | 23                       | NR                   | 610            | 969                      | NR                   | 740            | 36                       | NR                   | 870            | 1                        | NR                   | 1000           | 0                        | NR                   |
| 485            | 32                       | NR                   | 615            | 935                      | NR                   | 745            | 31                       | NR                   | 875            | 1                        | NR                   |                |                          |                      |

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**Melanopic Flux vs. Wavelength**



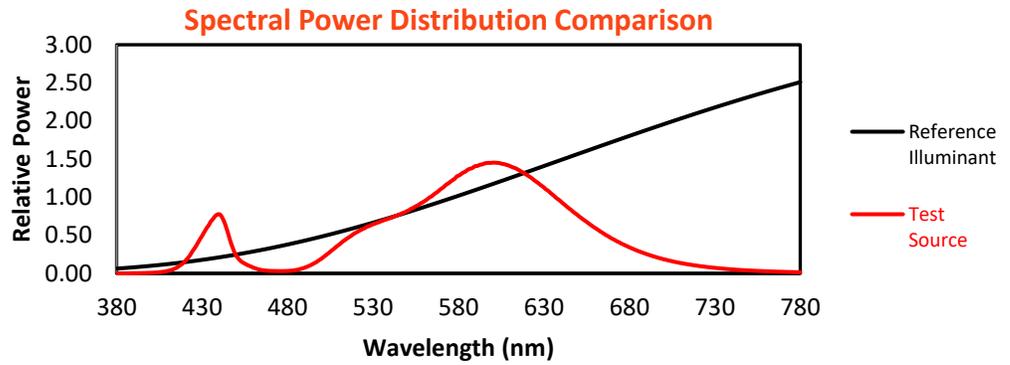
**Melanopic Lumens: NR**

**M/P: 1.71**

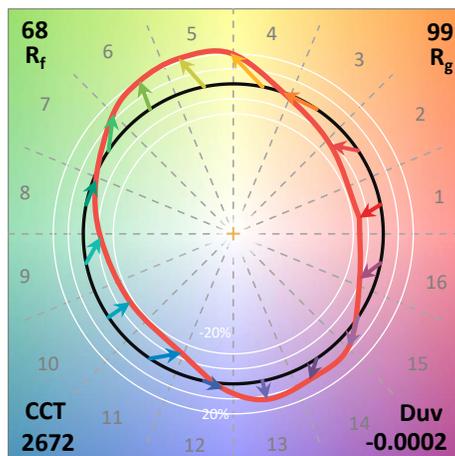
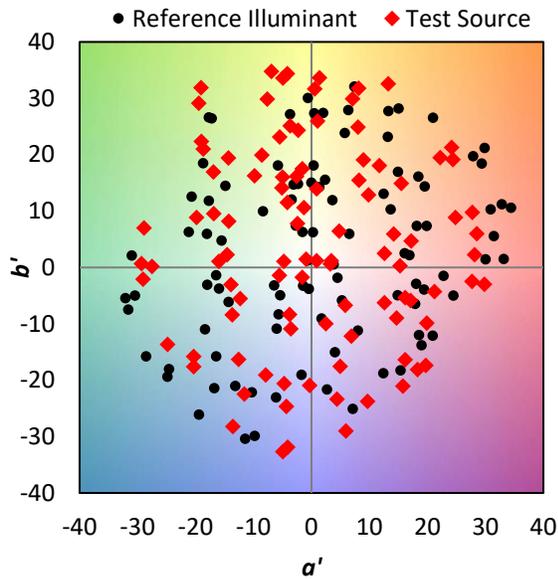
| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 52                       | NR            | 620    | 888                      | NR            | 750    | 27                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 87                       | NR            | 625    | 834                      | NR            | 755    | 23                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 135                      | NR            | 630    | 776                      | NR            | 760    | 20                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 196                      | NR            | 635    | 712                      | NR            | 765    | 17                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 258                      | NR            | 640    | 648                      | NR            | 770    | 15                       | NR            | 900    | 0                        | NR            |
| 385    | 1                        | NR            | 515    | 317                      | NR            | 645    | 583                      | NR            | 775    | 12                       | NR            | 905    | 0                        | NR            |
| 390    | 2                        | NR            | 520    | 368                      | NR            | 650    | 523                      | NR            | 780    | 11                       | NR            | 910    | 0                        | NR            |
| 395    | 4                        | NR            | 525    | 408                      | NR            | 655    | 465                      | NR            | 785    | 9                        | NR            | 915    | 0                        | NR            |
| 400    | 6                        | NR            | 530    | 443                      | NR            | 660    | 410                      | NR            | 790    | 8                        | NR            | 920    | 0                        | NR            |
| 405    | 11                       | NR            | 535    | 473                      | NR            | 665    | 360                      | NR            | 795    | 7                        | NR            | 925    | 0                        | NR            |
| 410    | 23                       | NR            | 540    | 498                      | NR            | 670    | 313                      | NR            | 800    | 6                        | NR            | 930    | 0                        | NR            |
| 415    | 51                       | NR            | 545    | 530                      | NR            | 675    | 272                      | NR            | 805    | 5                        | NR            | 935    | 0                        | NR            |
| 420    | 111                      | NR            | 550    | 563                      | NR            | 680    | 236                      | NR            | 810    | 4                        | NR            | 940    | 0                        | NR            |
| 425    | 214                      | NR            | 555    | 605                      | NR            | 685    | 203                      | NR            | 815    | 4                        | NR            | 945    | 0                        | NR            |
| 430    | 339                      | NR            | 560    | 651                      | NR            | 690    | 175                      | NR            | 820    | 3                        | NR            | 950    | 0                        | NR            |
| 435    | 467                      | NR            | 565    | 705                      | NR            | 695    | 150                      | NR            | 825    | 3                        | NR            | 955    | 0                        | NR            |
| 440    | 535                      | NR            | 570    | 765                      | NR            | 700    | 128                      | NR            | 830    | 3                        | NR            | 960    | 0                        | NR            |
| 445    | 372                      | NR            | 575    | 824                      | NR            | 705    | 110                      | NR            | 835    | 2                        | NR            | 965    | 0                        | NR            |
| 450    | 160                      | NR            | 580    | 882                      | NR            | 710    | 94                       | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 89                       | NR            | 585    | 930                      | NR            | 715    | 80                       | NR            | 845    | 2                        | NR            | 975    | 0                        | NR            |
| 460    | 53                       | NR            | 590    | 968                      | NR            | 720    | 69                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 31                       | NR            | 595    | 991                      | NR            | 725    | 59                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 23                       | NR            | 600    | 999                      | NR            | 730    | 50                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 21                       | NR            | 605    | 992                      | NR            | 735    | 43                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 23                       | NR            | 610    | 969                      | NR            | 740    | 36                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 32                       | NR            | 615    | 935                      | NR            | 745    | 31                       | NR            | 875    | 1                        | NR            |        |                          |               |

**Summary**

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



**Color Vector Graphics**

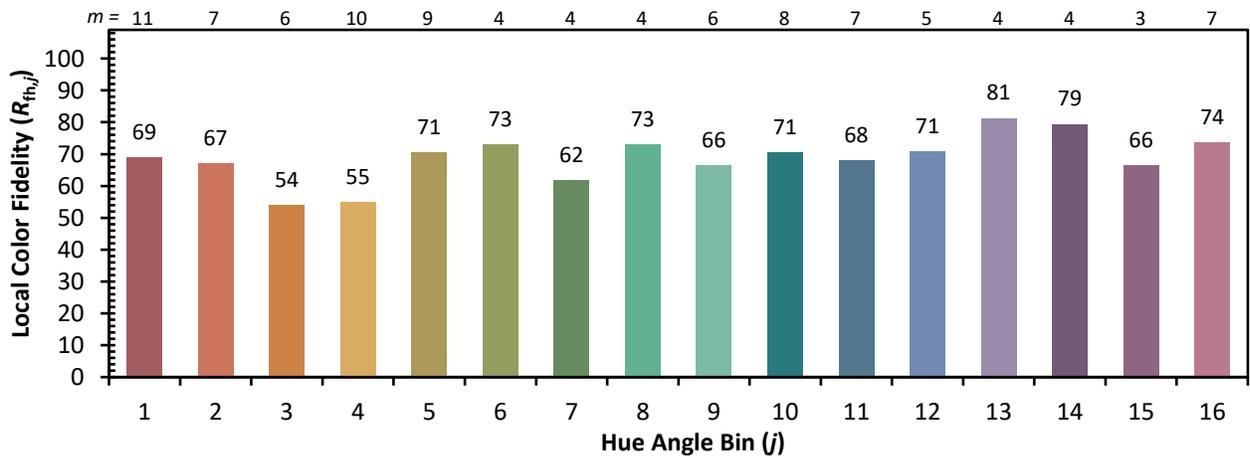


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

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



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)