

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



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P641660

Luminaire Tested: GWS-SA6B-735-U-SL2-W-GRSWH

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P641660  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-29)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA6B-735-U-SL2-W-GRSWH  
Description: GALLEON WALL SLIM LUMINAIRE. (6) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL LIGHT ELIMINATOR OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH  
Light Source: (96) 3500K CCT, 70 CRI LEDS  
Ballast/Driver: -

**Summary**

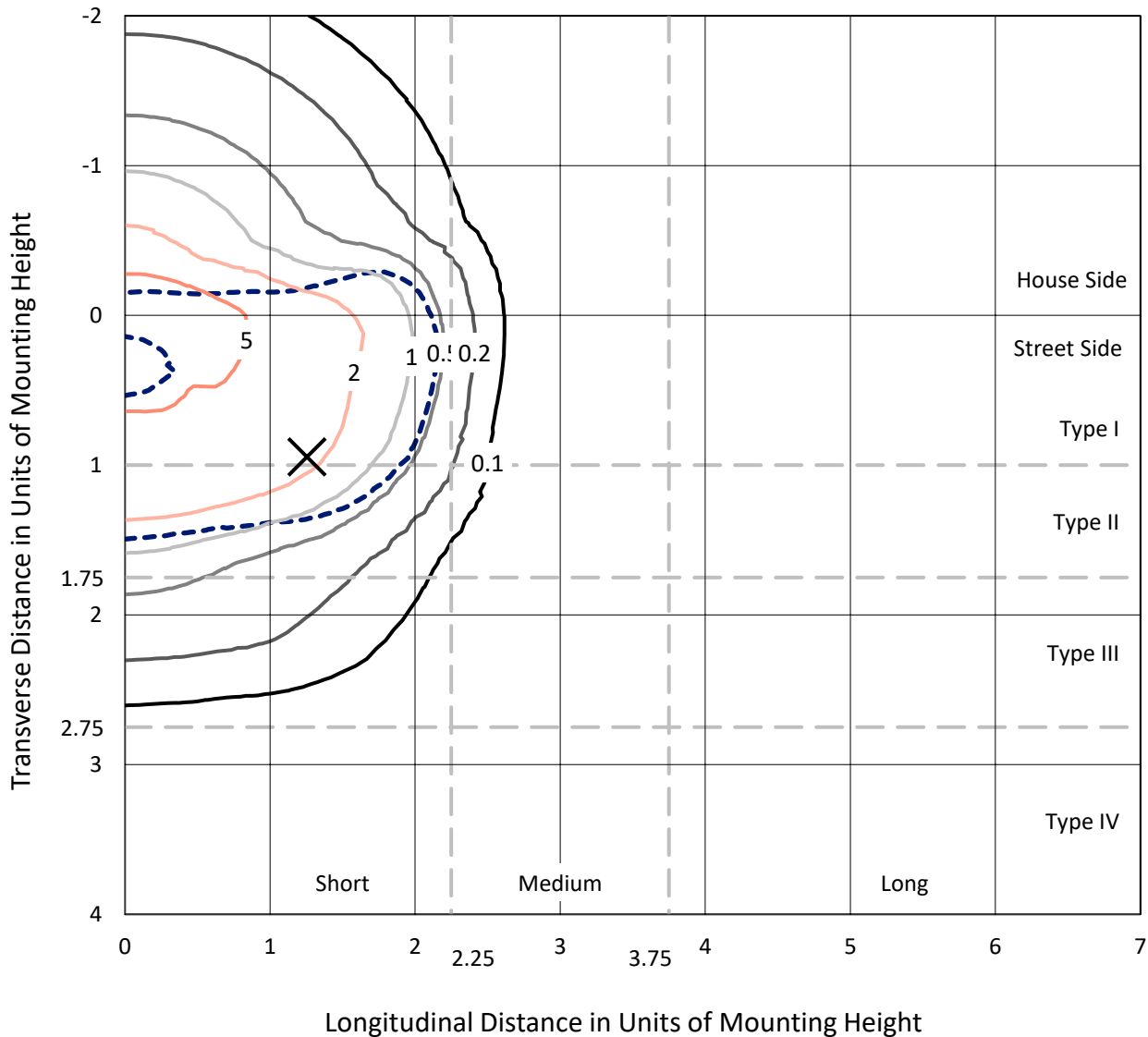
Lumens per Lamp: N/A  
Luminaire Lumens: 17785.8 lumens  
Efficiency: N/A  
Efficacy: 128.0 lumens/watt  
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B3 - U0 - G3  
  
Input Watts (W): 138.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 0  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



REPORT NUMBER: P641660  
 CATALOG NUMBER: GWS-SA6B-735-U-SL2-W-GRSWH

### Iso-Footcandle Lines of Horizontal Illumination

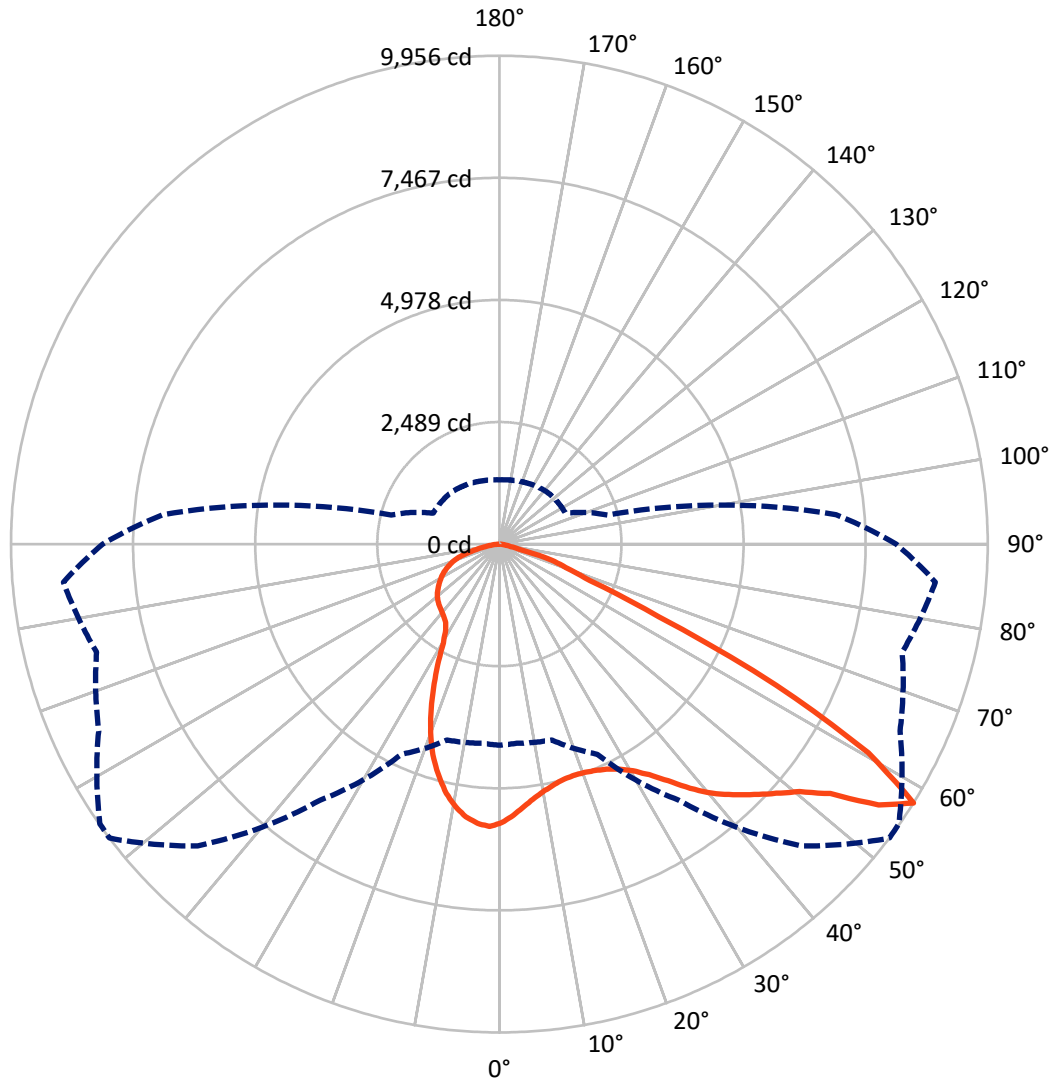
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.1 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 53-Deg Lateral    - - - Horizontal Cone Through 57.5-Deg Vertical

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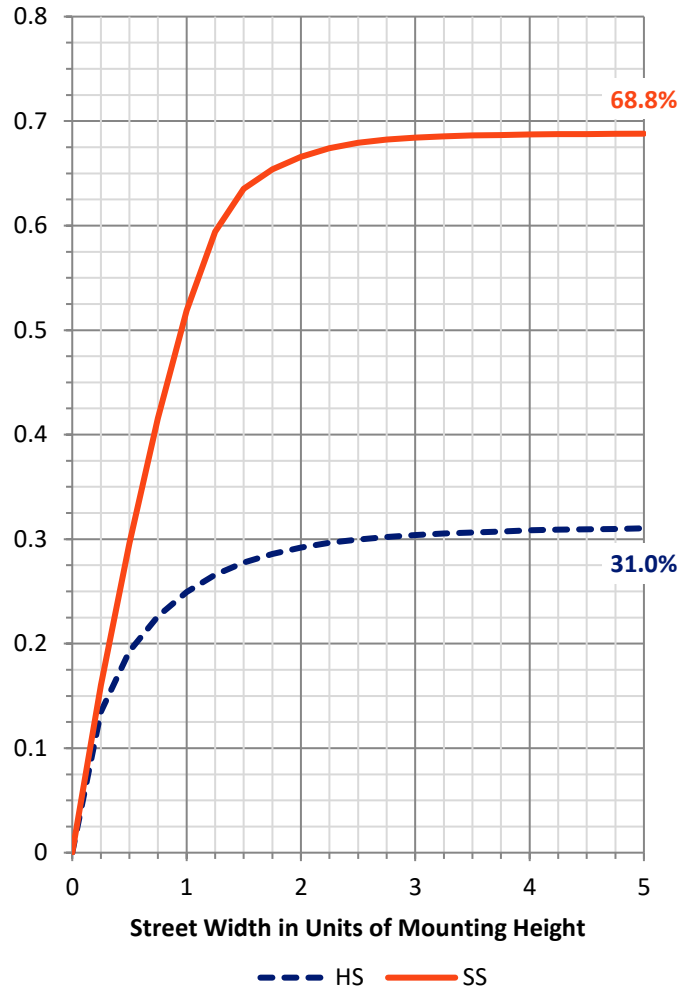
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 5561.0   | 0.0    | 5561.0  |
|                    | % Fixture | 31.3     | 0.0    | 31.3    |
| <b>Street Side</b> | Lumens    | 12224.8  | 0.0    | 12224.8 |
|                    | % Fixture | 68.7     | 0.0    | 68.7    |
| <b>Total</b>       | Lumens    | 17785.8  | 0.0    | 17785.8 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 513.6   | 2.9       |
| 10°-20°   | 1347.4  | 7.6       |
| 20°-30°   | 1985.3  | 11.2      |
| 30°-40°   | 2778.8  | 15.6      |
| 40°-50°   | 3653.0  | 20.5      |
| 50°-60°   | 4283.1  | 24.1      |
| 60°-70°   | 2523.2  | 14.2      |
| 70°-80°   | 627.7   | 3.5       |
| 80°-90°   | 73.6    | 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°    | 17785.8 | 100.0     |
| 0°-180°   | 17785.8 | 100.0     |

**Coefficient of Utilization**



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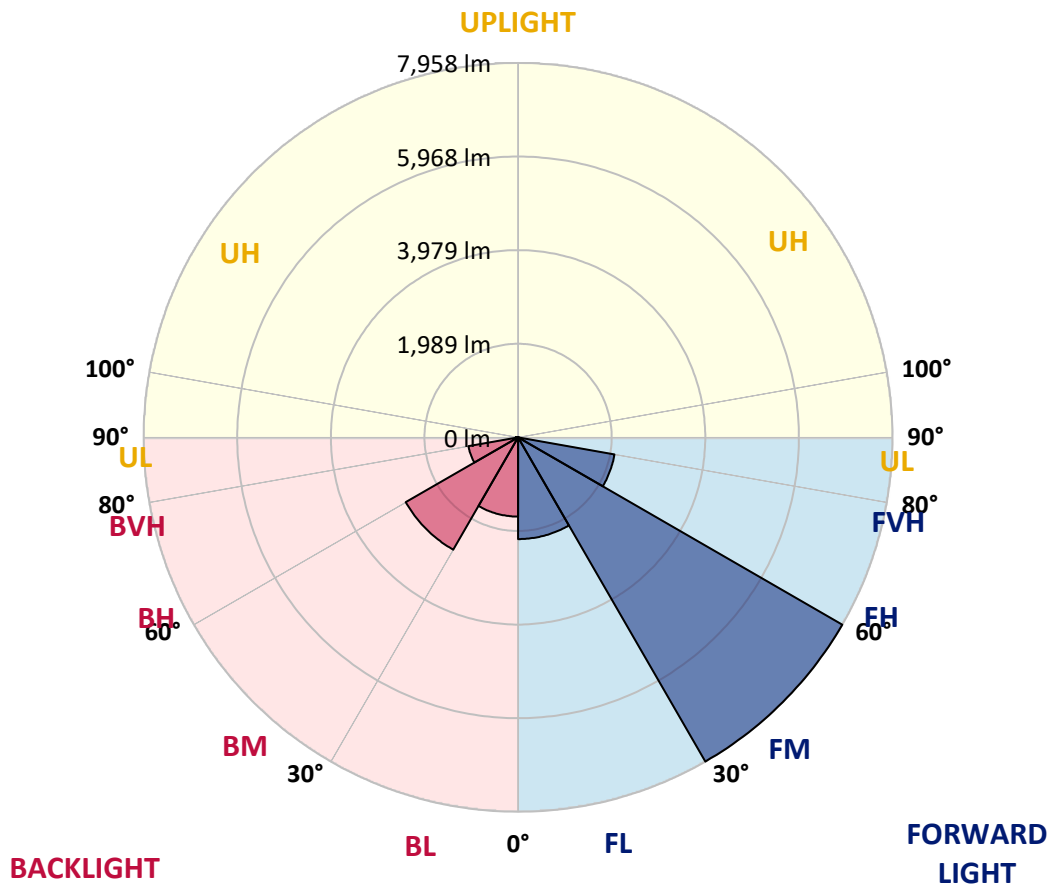
CATALOG NUMBER: GWS-SA6B-735-U-SL2-W-GRSWH

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

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 2162.4 | 12.2      |                         |      |         |
| FM (30°-60°)   | 7957.5 | 44.7      |                         |      |         |
| FH (60°-80°)   | 2080.3 | 11.7      |                         |      | G2/5000 |
| FVH (80°-90°)  | 24.6   | 0.1       |                         |      | G1/100  |
| BL (0°-30°)    | 1683.9 | 9.5       | B3/2500                 |      |         |
| BM (30°-60°)   | 2757.4 | 15.5      | B3/5000                 |      |         |
| BH (60°-80°)   | 1070.7 | 6.0       | B3/2500                 |      | G3/2500 |
| BVH (80°-90°)  | 49.0   | 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 Short





REPORT NUMBER: P641660

CATALOG NUMBER: GWS-SA6B-735-U-SL2-W-GRSWH

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 53°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 5679.5 | 5679.5 | 5679.5 | 5679.5 | 5679.5 | 5679.5 | 5679.5 | 5679.5 | 5679.5 | 5679.5 | 5679.5 |
| 2.5°  | 5353.1 | 5368.1 | 5371.1 | 5417.5 | 5420.5 | 5487.9 | 5532.8 | 5523.8 | 5570.2 | 5627.1 | 5672.0 |
| 5°    | 5097.2 | 5098.7 | 5113.6 | 5169.0 | 5199.0 | 5287.3 | 5362.1 | 5362.1 | 5451.9 | 5568.7 | 5669.0 |
| 7.5°  | 4886.1 | 4884.6 | 4898.1 | 4959.4 | 5008.8 | 5115.1 | 5216.9 | 5228.9 | 5354.6 | 5525.3 | 5688.5 |
| 10°   | 4690.0 | 4700.5 | 4715.4 | 4790.3 | 4853.2 | 4984.9 | 5106.1 | 5125.6 | 5284.3 | 5495.4 | 5715.4 |
| 12.5° | 4564.2 | 4565.7 | 4588.2 | 4672.0 | 4752.9 | 4893.6 | 5020.8 | 5044.8 | 5227.4 | 5466.9 | 5734.9 |
| 15°   | 4483.4 | 4484.9 | 4508.9 | 4601.7 | 4696.0 | 4838.2 | 4968.4 | 4995.4 | 5194.5 | 5462.4 | 5772.3 |
| 17.5° | 4447.5 | 4446.0 | 4468.4 | 4561.3 | 4664.5 | 4812.7 | 4952.0 | 4984.9 | 5209.4 | 5496.9 | 5838.2 |
| 20°   | 4447.5 | 4449.0 | 4461.0 | 4544.8 | 4649.6 | 4806.8 | 4968.4 | 5008.8 | 5267.8 | 5574.7 | 5940.0 |
| 22.5° | 4510.4 | 4516.3 | 4522.3 | 4579.2 | 4661.6 | 4815.7 | 5011.8 | 5065.7 | 5393.6 | 5704.9 | 6073.2 |
| 25°   | 4633.1 | 4634.6 | 4640.6 | 4687.0 | 4724.4 | 4841.2 | 5083.7 | 5164.5 | 5589.7 | 5895.0 | 6240.8 |
| 27.5° | 4797.8 | 4818.7 | 4824.7 | 4854.7 | 4854.7 | 4904.1 | 5196.0 | 5312.7 | 5854.6 | 6169.0 | 6454.9 |
| 30°   | 5028.3 | 5035.8 | 5046.3 | 5079.2 | 5043.3 | 5022.3 | 5360.6 | 5510.3 | 6161.5 | 6499.8 | 6712.4 |
| 32.5° | 5230.4 | 5246.9 | 5303.7 | 5357.6 | 5293.3 | 5227.4 | 5603.1 | 5779.8 | 6456.4 | 6844.1 | 6986.3 |
| 35°   | 5402.5 | 5443.0 | 5552.2 | 5672.0 | 5627.1 | 5561.2 | 5925.0 | 6109.1 | 6698.9 | 7091.1 | 7228.8 |
| 37.5° | 5610.6 | 5642.1 | 5791.8 | 5986.4 | 6026.8 | 5995.3 | 6317.2 | 6448.9 | 6860.6 | 7154.0 | 7360.6 |
| 40°   | 5821.7 | 5869.6 | 6062.7 | 6332.2 | 6486.4 | 6508.8 | 6679.5 | 6767.8 | 6916.0 | 7031.2 | 7335.1 |
| 42.5° | 6037.3 | 6119.6 | 6384.6 | 6698.9 | 6972.9 | 7023.8 | 6984.8 | 7022.3 | 6898.0 | 6862.1 | 7216.9 |
| 45°   | 6300.7 | 6398.0 | 6697.4 | 7098.6 | 7459.4 | 7538.7 | 7284.2 | 7249.8 | 6895.0 | 6797.7 | 7143.5 |
| 47.5° | 6612.1 | 6709.4 | 6995.3 | 7462.4 | 7923.4 | 7981.8 | 7591.1 | 7528.2 | 6999.8 | 6896.5 | 7242.3 |
| 50°   | 6887.5 | 6954.9 | 7210.9 | 7733.3 | 8356.1 | 8390.5 | 7929.4 | 7853.1 | 7260.3 | 7170.5 | 7550.7 |
| 52.5° | 6607.6 | 6600.1 | 6869.6 | 7513.3 | 8580.6 | 8995.3 | 8450.4 | 8377.0 | 7763.3 | 7625.5 | 8028.2 |
| 55°   | 5606.1 | 5520.8 | 5761.8 | 6395.0 | 7953.4 | 9532.7 | 9384.5 | 9237.8 | 8433.9 | 8083.6 | 8475.8 |
| 57.5° | 4098.7 | 4074.7 | 4133.1 | 4727.4 | 6371.1 | 8700.4 | 9956.3 | 9942.8 | 9013.2 | 8502.8 | 8921.9 |
| 60°   | 3205.0 | 3169.1 | 3013.4 | 3029.9 | 4342.7 | 6796.2 | 8640.5 | 9037.2 | 9372.5 | 8754.3 | 9233.3 |
| 62.5° | 2845.7 | 2818.8 | 2737.9 | 2514.9 | 2586.8 | 4556.8 | 6333.7 | 6697.4 | 8189.9 | 7731.8 | 7930.9 |
| 65°   | 2356.2 | 2348.7 | 2416.1 | 2407.1 | 2167.6 | 2516.4 | 3574.8 | 3941.5 | 5149.6 | 5213.9 | 5149.6 |
| 67.5° | 1712.5 | 1699.1 | 1869.7 | 2206.5 | 2086.8 | 1899.6 | 1992.5 | 2119.7 | 2640.6 | 2371.2 | 2134.7 |
| 70°   | 1113.7 | 1094.3 | 1193.1 | 1594.3 | 1868.2 | 1655.6 | 1435.6 | 1414.6 | 1452.1 | 902.7  | 976.0  |
| 72.5° | 747.0  | 724.5  | 723.0  | 877.2  | 1128.7 | 1115.2 | 1112.2 | 1101.8 | 983.5  | 712.6  | 790.4  |
| 75°   | 416.2  | 398.2  | 393.7  | 378.7  | 404.2  | 411.7  | 438.6  | 453.6  | 491.0  | 540.4  | 598.8  |
| 77.5° | 70.4   | 68.9   | 86.8   | 110.8  | 152.7  | 196.1  | 242.5  | 256.0  | 315.9  | 374.2  | 411.7  |
| 80°   | 38.9   | 40.4   | 52.4   | 64.4   | 85.3   | 116.8  | 149.7  | 158.7  | 194.6  | 226.0  | 256.0  |
| 82.5° | 21.0   | 21.0   | 26.9   | 34.4   | 46.4   | 61.4   | 80.8   | 88.3   | 112.3  | 131.7  | 152.7  |
| 85°   | 7.5    | 7.5    | 10.5   | 13.5   | 19.5   | 25.4   | 31.4   | 35.9   | 49.4   | 67.4   | 76.3   |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 1.5    | 3.0    | 6.0    | 6.0    | 7.5    | 13.5   | 19.5   |
| 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: P641660

CATALOG NUMBER: GWS-SA6B-735-U-SL2-W-GRSWH

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 5679.5 | 5679.5 | 5679.5 | 5679.5 | 5679.5 | 5679.5 | 5679.5 | 5679.5 | 5679.5 | 5679.5 | 5679.5 |
| 2.5°  | 5709.4 | 5669.0 | 5724.4 | 5749.8 | 5758.8 | 5764.8 | 5725.9 | 5698.9 | 5690.0 | 5661.5 | 5645.1 |
| 5°    | 5730.4 | 5703.4 | 5755.8 | 5755.8 | 5718.4 | 5679.5 | 5600.1 | 5544.8 | 5505.8 | 5459.4 | 5451.9 |
| 7.5°  | 5766.3 | 5746.8 | 5775.3 | 5716.9 | 5622.6 | 5517.8 | 5380.1 | 5272.3 | 5185.5 | 5128.6 | 5130.1 |
| 10°   | 5814.2 | 5790.3 | 5767.8 | 5637.6 | 5465.4 | 5272.3 | 5061.2 | 4904.1 | 4760.3 | 4694.5 | 4658.6 |
| 12.5° | 5845.6 | 5811.2 | 5716.9 | 5501.3 | 5248.4 | 4989.4 | 4691.5 | 4458.0 | 4249.9 | 4155.6 | 4148.1 |
| 15°   | 5884.6 | 5821.7 | 5633.1 | 5324.7 | 4972.9 | 4619.6 | 4236.4 | 3911.6 | 3630.1 | 3483.4 | 3476.0 |
| 17.5° | 5935.5 | 5832.2 | 5532.8 | 5122.6 | 4682.5 | 4161.6 | 3679.5 | 3270.9 | 2971.5 | 2857.7 | 2877.2 |
| 20°   | 6007.3 | 5844.2 | 5419.0 | 4898.1 | 4321.7 | 3640.6 | 3040.3 | 2664.6 | 2549.3 | 2541.8 | 2526.9 |
| 22.5° | 6088.2 | 5851.6 | 5293.3 | 4646.6 | 3884.6 | 3085.2 | 2511.9 | 2351.7 | 2350.2 | 2387.7 | 2396.6 |
| 25°   | 6179.5 | 5857.6 | 5151.1 | 4353.2 | 3411.6 | 2531.4 | 2221.5 | 2173.6 | 2211.0 | 2281.4 | 2290.4 |
| 27.5° | 6296.2 | 5869.6 | 4978.9 | 4031.3 | 2908.6 | 2187.1 | 2061.3 | 2049.3 | 2094.3 | 2160.1 | 2157.1 |
| 30°   | 6468.4 | 5913.0 | 4796.3 | 3661.6 | 2392.2 | 2023.9 | 1964.0 | 1965.5 | 1983.5 | 2014.9 | 2019.4 |
| 32.5° | 6643.5 | 5980.4 | 4618.1 | 3245.4 | 2095.8 | 1931.1 | 1904.1 | 1901.1 | 1901.1 | 1914.6 | 1917.6 |
| 35°   | 6809.7 | 6056.7 | 4425.0 | 2811.3 | 1952.0 | 1877.2 | 1859.2 | 1850.2 | 1845.8 | 1842.8 | 1838.3 |
| 37.5° | 6902.5 | 6094.1 | 4236.4 | 2383.2 | 1875.7 | 1841.3 | 1823.3 | 1811.3 | 1794.9 | 1782.9 | 1779.9 |
| 40°   | 6862.1 | 6050.7 | 4017.9 | 2062.8 | 1829.3 | 1806.8 | 1785.9 | 1769.4 | 1747.0 | 1736.5 | 1730.5 |
| 42.5° | 6727.4 | 5916.0 | 3779.8 | 1911.6 | 1791.9 | 1769.4 | 1744.0 | 1717.0 | 1702.0 | 1693.1 | 1691.6 |
| 45°   | 6585.2 | 5752.8 | 3492.4 | 1823.3 | 1755.9 | 1729.0 | 1699.1 | 1669.1 | 1652.6 | 1648.2 | 1646.7 |
| 47.5° | 6580.7 | 5672.0 | 3187.0 | 1752.9 | 1712.5 | 1685.6 | 1648.2 | 1618.2 | 1600.3 | 1594.3 | 1588.3 |
| 50°   | 6778.3 | 5754.3 | 2842.7 | 1691.6 | 1667.6 | 1639.2 | 1597.3 | 1564.3 | 1541.9 | 1534.4 | 1532.9 |
| 52.5° | 7188.4 | 6064.2 | 2534.4 | 1630.2 | 1607.7 | 1574.8 | 1540.4 | 1507.4 | 1480.5 | 1467.0 | 1465.5 |
| 55°   | 7631.5 | 6457.9 | 2342.8 | 1567.3 | 1537.4 | 1508.9 | 1477.5 | 1441.6 | 1411.6 | 1390.7 | 1387.7 |
| 57.5° | 8089.6 | 6887.5 | 2284.4 | 1488.0 | 1465.5 | 1446.1 | 1408.6 | 1369.7 | 1335.3 | 1315.8 | 1311.3 |
| 60°   | 8466.8 | 7257.3 | 2393.6 | 1404.2 | 1392.2 | 1366.7 | 1332.3 | 1294.9 | 1270.9 | 1256.0 | 1253.0 |
| 62.5° | 7088.1 | 5908.5 | 1932.6 | 1312.8 | 1312.8 | 1285.9 | 1247.0 | 1220.0 | 1203.6 | 1193.1 | 1190.1 |
| 65°   | 4498.4 | 3658.6 | 1318.8 | 1221.5 | 1220.0 | 1184.1 | 1151.2 | 1133.2 | 1125.7 | 1109.3 | 1106.3 |
| 67.5° | 1959.5 | 1672.1 | 1127.2 | 1128.7 | 1122.7 | 1083.8 | 1050.9 | 1037.4 | 1022.4 | 1004.5 | 1003.0 |
| 70°   | 1016.4 | 1035.9 | 1009.0 | 1025.4 | 1014.9 | 968.5  | 937.1  | 916.1  | 884.7  | 866.7  | 868.2  |
| 72.5° | 820.3  | 841.3  | 871.2  | 896.7  | 874.2  | 836.8  | 787.4  | 762.0  | 721.5  | 702.1  | 703.6  |
| 75°   | 625.7  | 648.2  | 676.6  | 703.6  | 685.6  | 639.2  | 607.8  | 582.3  | 535.9  | 513.5  | 518.0  |
| 77.5° | 431.1  | 443.1  | 477.5  | 476.0  | 470.0  | 456.6  | 410.2  | 380.2  | 332.3  | 305.4  | 308.4  |
| 80°   | 268.0  | 275.4  | 291.9  | 299.4  | 296.4  | 278.4  | 241.0  | 218.6  | 190.1  | 173.6  | 175.1  |
| 82.5° | 161.7  | 166.2  | 181.1  | 182.6  | 181.1  | 167.7  | 139.2  | 122.8  | 104.8  | 95.8   | 95.8   |
| 85°   | 82.3   | 85.3   | 94.3   | 94.3   | 85.3   | 71.9   | 64.4   | 56.9   | 46.4   | 41.9   | 41.9   |
| 87.5° | 22.5   | 22.5   | 28.4   | 24.0   | 19.5   | 18.0   | 9.0    | 7.5    | 3.0    | 1.5    | 1.5    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



LM-79-08: Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

All Brands

Data applicable to all product families using SA light engines

Report Number: SP1-2101-121-7

Luminaire Tested: IFLD-S-SA2A-735-U-T2

Test Date: 03/04/2021

**Test Information**

Test Method: LM-79-08  
 Report Number: SP1-2101-121-7  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1  
 Measurement Geometry: 4π  
 Issue Date: 03/04/2021  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: STREETWORKS  
 Catalog Number: **IFLD-S-SA2A-735-U-T2**  
 Description: STREETWORKS INF FLOOD

PROGRAMMED @ 615mA.

**Spectral Parameters**

CCT (K): 3388  
 CIE u': 0.2371  
 CIE v': 0.5177  
 Duv: 0.0032  
 CIE x: 0.4153  
 CIE y: 0.4030  
 CIE z: 0.1817  
 Peak Wavelength (nm): 590  
 Dominant Wavelength (nm): 580  
 Purity: 45.7  
 Rf: 76.9  
 Rg: 94.4

|           |      |      |       |
|-----------|------|------|-------|
| CRI (Ra): | 73.1 |      |       |
| R1:       | 68.9 | R9:  | -34.6 |
| R2:       | 81.1 | R10: | 57.8  |
| R3:       | 93.1 | R11: | 68.6  |
| R4:       | 71.6 | R12: | 53.9  |
| R5:       | 69.4 | R13: | 70.9  |
| R6:       | 75.0 | R14: | 96.2  |
| R7:       | 79.5 |      |       |
| R8:       | 46.4 |      |       |

**Test Conditions**

Stabilization Time: 81M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.0/30%  
 Sphere Temperature (°C): 24.1



REPORT NUMBER: SP1-2101-121-7

| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 1/31/2021        | 7/31/2021            |
| Power Meter                    | IN0071                | 12/1/2020        | 12/1/2021            |
| AC Power Source                | IN0063                | 12/1/2020        | 12/1/2021            |
| DC Power Source                | IN0208                | 12/1/2020        | 12/1/2021            |
| Sphere Thermometer             | IN0085                | 12/1/2020        | 12/1/2021            |
| Room Thermometer               | IN0046                | 12/1/2020        | 12/1/2021            |

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CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-7

**Photopic Flux vs. Wavelength**



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| λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360    | 2672          | 0.0           | 490    | 34553         | 4.9           | 620    | 136720        | 35.6          | 750    | 5870          | 0.0           | 880    | 4216          | 0.0           |
| 365    | 2252          | 0.0           | 495    | 44336         | 8.0           | 625    | 126308        | 27.9          | 755    | 5421          | 0.0           | 885    | 4132          | 0.0           |
| 370    | 2217          | 0.0           | 500    | 54643         | 12.1          | 630    | 114625        | 20.7          | 760    | 5097          | 0.0           | 890    | 3992          | 0.0           |
| 375    | 2697          | 0.0           | 505    | 64676         | 18.1          | 635    | 103216        | 15.5          | 765    | 4626          | 0.0           | 895    | 3214          | 0.0           |
| 380    | 3039          | 0.0           | 510    | 73825         | 25.4          | 640    | 92605         | 11.1          | 770    | 3782          | 0.0           | 900    | 2580          | 0.0           |
| 385    | 2655          | 0.0           | 515    | 81872         | 33.9          | 645    | 83234         | 8.0           | 775    | 3506          | 0.0           | 905    | 1776          | 0.0           |
| 390    | 2357          | 0.0           | 520    | 88574         | 43.0          | 650    | 73263         | 5.4           | 780    | 3507          | 0.0           | 910    | 3995          | 0.0           |
| 395    | 2186          | 0.0           | 525    | 93289         | 50.1          | 655    | 64627         | 3.7           | 785    | 3267          | 0.0           | 915    | 4288          | 0.0           |
| 400    | 2015          | 0.0           | 530    | 98393         | 57.9          | 660    | 56614         | 2.4           | 790    | 2849          | 0.0           | 920    | 2446          | 0.0           |
| 405    | 2234          | 0.0           | 535    | 103269        | 64.0          | 665    | 49537         | 1.6           | 795    | 3037          | 0.0           | 925    | 3009          | 0.0           |
| 410    | 3412          | 0.0           | 540    | 107316        | 69.9          | 670    | 42866         | 0.9           | 800    | 2716          | 0.0           | 930    | 3026          | 0.0           |
| 415    | 6135          | 0.0           | 545    | 113101        | 75.3          | 675    | 36708         | 0.6           | 805    | 2648          | 0.0           | 935    | 4734          | 0.0           |
| 420    | 12146         | 0.0           | 550    | 120690        | 82.0          | 680    | 31814         | 0.4           | 810    | 3187          | 0.0           | 940    | 3719          | 0.0           |
| 425    | 23983         | 0.1           | 555    | 128583        | 87.8          | 685    | 27485         | 0.2           | 815    | 2931          | 0.0           | 945    | 1480          | 0.0           |
| 430    | 42142         | 0.3           | 560    | 137796        | 93.6          | 690    | 23698         | 0.1           | 820    | 2717          | 0.0           | 950    | 3450          | 0.0           |
| 435    | 68228         | 0.8           | 565    | 146577        | 97.5          | 695    | 20309         | 0.1           | 825    | 2236          | 0.0           | 955    | 5051          | 0.0           |
| 440    | 99323         | 1.6           | 570    | 154581        | 100.5         | 700    | 17890         | 0.1           | 830    | 2628          | 0.0           | 960    | 3176          | 0.0           |
| 445    | 115584        | 2.4           | 575    | 162633        | 101.2         | 705    | 15500         | 0.0           | 835    | 3140          | 0.0           | 965    | 5178          | 0.0           |
| 450    | 94997         | 2.5           | 580    | 168101        | 99.9          | 710    | 13699         | 0.0           | 840    | 3675          | 0.0           | 970    | 6385          | 0.0           |
| 455    | 61433         | 2.1           | 585    | 173145        | 96.2          | 715    | 12398         | 0.0           | 845    | 3283          | 0.0           | 975    | 3810          | 0.0           |
| 460    | 43373         | 1.8           | 590    | 174675        | 90.3          | 720    | 11147         | 0.0           | 850    | 3055          | 0.0           | 980    | 4322          | 0.0           |
| 465    | 32472         | 1.7           | 595    | 173724        | 82.3          | 725    | 9761          | 0.0           | 855    | 2932          | 0.0           | 985    | 4200          | 0.0           |
| 470    | 24257         | 1.5           | 600    | 171241        | 73.8          | 730    | 8651          | 0.0           | 860    | 3382          | 0.0           | 990    | 4661          | 0.0           |
| 475    | 21690         | 1.7           | 605    | 165134        | 64.0          | 735    | 7730          | 0.0           | 865    | 2605          | 0.0           | 995    | 6746          | 0.0           |
| 480    | 23173         | 2.2           | 610    | 156652        | 53.8          | 740    | 6847          | 0.0           | 870    | 3325          | 0.0           | 1000   | 4150          | 0.0           |
| 485    | 27564         | 3.3           | 615    | 147879        | 44.6          | 745    | 6124          | 0.0           | 875    | 3325          | 0.0           |        |               |               |

REPORT NUMBER: SP1-2101-121-7

**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: 12126**

**S/P: 1.36**

| $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 2672                                 | 0.0                            | 490               | 34553                                | 53.2                           | 620               | 136720                               | 1.7                            | 750               | 5870                                 | 0.0                            | 880               | 4216                                 | 0.0                            |
| 365               | 2252                                 | 0.0                            | 495               | 44336                                | 71.7                           | 625               | 126308                               | 1.1                            | 755               | 5421                                 | 0.0                            | 885               | 4132                                 | 0.0                            |
| 370               | 2217                                 | 0.0                            | 500               | 54643                                | 91.4                           | 630               | 114625                               | 0.6                            | 760               | 5097                                 | 0.0                            | 890               | 3992                                 | 0.0                            |
| 375               | 2697                                 | 0.0                            | 505               | 64676                                | 110.0                          | 635               | 103216                               | 0.4                            | 765               | 4626                                 | 0.0                            | 895               | 3214                                 | 0.0                            |
| 380               | 3039                                 | 0.0                            | 510               | 73825                                | 125.1                          | 640               | 92605                                | 0.2                            | 770               | 3782                                 | 0.0                            | 900               | 2580                                 | 0.0                            |
| 385               | 2655                                 | 0.0                            | 515               | 81872                                | 135.7                          | 645               | 83234                                | 0.1                            | 775               | 3506                                 | 0.0                            | 905               | 1776                                 | 0.0                            |
| 390               | 2357                                 | 0.0                            | 520               | 88574                                | 140.8                          | 650               | 73263                                | 0.1                            | 780               | 3507                                 | 0.0                            | 910               | 3995                                 | 0.0                            |
| 395               | 2186                                 | 0.0                            | 525               | 93289                                | 139.6                          | 655               | 64627                                | 0.1                            | 785               | 3267                                 | 0.0                            | 915               | 4288                                 | 0.0                            |
| 400               | 2015                                 | 0.0                            | 530               | 98393                                | 135.7                          | 660               | 56614                                | 0.0                            | 790               | 2849                                 | 0.0                            | 920               | 2446                                 | 0.0                            |
| 405               | 2234                                 | 0.1                            | 535               | 103269                               | 128.7                          | 665               | 49537                                | 0.0                            | 795               | 3037                                 | 0.0                            | 925               | 3009                                 | 0.0                            |
| 410               | 3412                                 | 0.2                            | 540               | 107316                               | 118.6                          | 670               | 42866                                | 0.0                            | 800               | 2716                                 | 0.0                            | 930               | 3026                                 | 0.0                            |
| 415               | 6135                                 | 0.6                            | 545               | 113101                               | 108.4                          | 675               | 36708                                | 0.0                            | 805               | 2648                                 | 0.0                            | 935               | 4734                                 | 0.0                            |
| 420               | 12146                                | 2.0                            | 550               | 120690                               | 98.7                           | 680               | 31814                                | 0.0                            | 810               | 3187                                 | 0.0                            | 940               | 3719                                 | 0.0                            |
| 425               | 23983                                | 5.9                            | 555               | 128583                               | 87.9                           | 685               | 27485                                | 0.0                            | 815               | 2931                                 | 0.0                            | 945               | 1480                                 | 0.0                            |
| 430               | 42142                                | 14.3                           | 560               | 137796                               | 77.0                           | 690               | 23698                                | 0.0                            | 820               | 2717                                 | 0.0                            | 950               | 3450                                 | 0.0                            |
| 435               | 68228                                | 30.5                           | 565               | 146577                               | 65.8                           | 695               | 20309                                | 0.0                            | 825               | 2236                                 | 0.0                            | 955               | 5051                                 | 0.0                            |
| 440               | 99323                                | 55.5                           | 570               | 154581                               | 54.6                           | 700               | 17890                                | 0.0                            | 830               | 2628                                 | 0.0                            | 960               | 3176                                 | 0.0                            |
| 445               | 115584                               | 77.4                           | 575               | 162633                               | 44.3                           | 705               | 15500                                | 0.0                            | 835               | 3140                                 | 0.0                            | 965               | 5178                                 | 0.0                            |
| 450               | 94997                                | 73.6                           | 580               | 168101                               | 34.6                           | 710               | 13699                                | 0.0                            | 840               | 3675                                 | 0.0                            | 970               | 6385                                 | 0.0                            |
| 455               | 61433                                | 53.7                           | 585               | 173145                               | 26.5                           | 715               | 12398                                | 0.0                            | 845               | 3283                                 | 0.0                            | 975               | 3810                                 | 0.0                            |
| 460               | 43373                                | 41.9                           | 590               | 174675                               | 19.5                           | 720               | 11147                                | 0.0                            | 850               | 3055                                 | 0.0                            | 980               | 4322                                 | 0.0                            |
| 465               | 32472                                | 34.3                           | 595               | 173724                               | 13.9                           | 725               | 9761                                 | 0.0                            | 855               | 2932                                 | 0.0                            | 985               | 4200                                 | 0.0                            |
| 470               | 24257                                | 27.9                           | 600               | 171241                               | 9.7                            | 730               | 8651                                 | 0.0                            | 860               | 3382                                 | 0.0                            | 990               | 4661                                 | 0.0                            |
| 475               | 21690                                | 27.1                           | 605               | 165134                               | 6.5                            | 735               | 7730                                 | 0.0                            | 865               | 2605                                 | 0.0                            | 995               | 6746                                 | 0.0                            |
| 480               | 23173                                | 31.3                           | 610               | 156652                               | 4.2                            | 740               | 6847                                 | 0.0                            | 870               | 3325                                 | 0.0                            | 1000              | 4150                                 | 0.0                            |
| 485               | 27564                                | 40.0                           | 615               | 147879                               | 2.7                            | 745               | 6124                                 | 0.0                            | 875               | 3325                                 | 0.0                            |                   |                                      |                                |

REPORT NUMBER: SP1-2101-121-7

**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 4490.7 M/P: 0.5**

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360    | 2672          | 0.0           | 490    | 34553         | 28.8          | 620    | 136720        | 0.1           | 750    | 5870          | 0.0           | 880    | 4216          | 0.0           |
| 365    | 2252          | 0.0           | 495    | 44336         | 36.6          | 625    | 126308        | 0.1           | 755    | 5421          | 0.0           | 885    | 4132          | 0.0           |
| 370    | 2217          | 0.0           | 500    | 54643         | 43.9          | 630    | 114625        | 0.0           | 760    | 5097          | 0.0           | 890    | 3992          | 0.0           |
| 375    | 2697          | 0.0           | 505    | 64676         | 49.6          | 635    | 103216        | 0.0           | 765    | 4626          | 0.0           | 895    | 3214          | 0.0           |
| 380    | 3039          | 0.0           | 510    | 73825         | 53.0          | 640    | 92605         | 0.0           | 770    | 3782          | 0.0           | 900    | 2580          | 0.0           |
| 385    | 2655          | 0.0           | 515    | 81872         | 53.5          | 645    | 83234         | 0.0           | 775    | 3506          | 0.0           | 905    | 1776          | 0.0           |
| 390    | 2357          | 0.0           | 520    | 88574         | 51.6          | 650    | 73263         | 0.0           | 780    | 3507          | 0.0           | 910    | 3995          | 0.0           |
| 395    | 2186          | 0.0           | 525    | 93289         | 47.3          | 655    | 64627         | 0.0           | 785    | 3267          | 0.0           | 915    | 4288          | 0.0           |
| 400    | 2015          | 0.0           | 530    | 98393         | 42.5          | 660    | 56614         | 0.0           | 790    | 2849          | 0.0           | 920    | 2446          | 0.0           |
| 405    | 2234          | 0.0           | 535    | 103269        | 37.2          | 665    | 49537         | 0.0           | 795    | 3037          | 0.0           | 925    | 3009          | 0.0           |
| 410    | 3412          | 0.1           | 540    | 107316        | 31.4          | 670    | 42866         | 0.0           | 800    | 2716          | 0.0           | 930    | 3026          | 0.0           |
| 415    | 6135          | 0.4           | 545    | 113101        | 26.3          | 675    | 36708         | 0.0           | 805    | 2648          | 0.0           | 935    | 4734          | 0.0           |
| 420    | 12146         | 1.4           | 550    | 120690        | 21.7          | 680    | 31814         | 0.0           | 810    | 3187          | 0.0           | 940    | 3719          | 0.0           |
| 425    | 23983         | 3.7           | 555    | 128583        | 17.3          | 685    | 27485         | 0.0           | 815    | 2931          | 0.0           | 945    | 1480          | 0.0           |
| 430    | 42142         | 8.9           | 560    | 137796        | 13.6          | 690    | 23698         | 0.0           | 820    | 2717          | 0.0           | 950    | 3450          | 0.0           |
| 435    | 68228         | 18.2          | 565    | 146577        | 10.3          | 695    | 20309         | 0.0           | 825    | 2236          | 0.0           | 955    | 5051          | 0.0           |
| 440    | 99323         | 33.2          | 570    | 154581        | 7.6           | 700    | 17890         | 0.0           | 830    | 2628          | 0.0           | 960    | 3176          | 0.0           |
| 445    | 115584        | 45.6          | 575    | 162633        | 5.4           | 705    | 15500         | 0.0           | 835    | 3140          | 0.0           | 965    | 5178          | 0.0           |
| 450    | 94997         | 43.8          | 580    | 168101        | 3.8           | 710    | 13699         | 0.0           | 840    | 3675          | 0.0           | 970    | 6385          | 0.0           |
| 455    | 61433         | 32.2          | 585    | 173145        | 2.6           | 715    | 12398         | 0.0           | 845    | 3283          | 0.0           | 975    | 3810          | 0.0           |
| 460    | 43373         | 25.6          | 590    | 174675        | 1.7           | 720    | 11147         | 0.0           | 850    | 3055          | 0.0           | 980    | 4322          | 0.0           |
| 465    | 32472         | 21.2          | 595    | 173724        | 1.1           | 725    | 9761          | 0.0           | 855    | 2932          | 0.0           | 985    | 4200          | 0.0           |
| 470    | 24257         | 17.4          | 600    | 171241        | 0.7           | 730    | 8651          | 0.0           | 860    | 3382          | 0.0           | 990    | 4661          | 0.0           |
| 475    | 21690         | 16.6          | 605    | 165134        | 0.5           | 735    | 7730          | 0.0           | 865    | 2605          | 0.0           | 995    | 6746          | 0.0           |
| 480    | 23173         | 18.6          | 610    | 156652        | 0.3           | 740    | 6847          | 0.0           | 870    | 3325          | 0.0           | 1000   | 4150          | 0.0           |
| 485    | 27564         | 22.7          | 615    | 147879        | 0.2           | 745    | 6124          | 0.0           | 875    | 3325          | 0.0           |        |               |               |

**Summary**

$R_f = 76.9$   
 $R_g = 94.4$   
 CIE  $R_a = 73.1$   
 $R_g = -34.6$



**Color Vector Graphics**





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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 68 | CES51 = 90 | CES76 = 63 |
| CES02 = 62 | CES27 = 88 | CES52 = 89 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 80 | CES78 = 65 |
| CES04 = 70 | CES29 = 67 | CES54 = 84 | CES79 = 87 |
| CES05 = 48 | CES30 = 74 | CES55 = 84 | CES80 = 86 |
| CES06 = 51 | CES31 = 71 | CES56 = 75 | CES81 = 75 |
| CES07 = 40 | CES32 = 67 | CES57 = 74 | CES82 = 94 |
| CES08 = 39 | CES33 = 74 | CES58 = 76 | CES83 = 91 |
| CES09 = 29 | CES34 = 78 | CES59 = 87 | CES84 = 89 |
| CES10 = 75 | CES35 = 89 | CES60 = 93 | CES85 = 80 |
| CES11 = 58 | CES36 = 98 | CES61 = 86 | CES86 = 66 |
| CES12 = 64 | CES37 = 86 | CES62 = 89 | CES87 = 79 |
| CES13 = 43 | CES38 = 82 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 95 | CES64 = 74 | CES89 = 70 |
| CES15 = 71 | CES40 = 91 | CES65 = 68 | CES90 = 77 |
| CES16 = 47 | CES41 = 89 | CES66 = 71 | CES91 = 88 |
| CES17 = 50 | CES42 = 88 | CES67 = 69 | CES92 = 60 |
| CES18 = 56 | CES43 = 82 | CES68 = 74 | CES93 = 77 |
| CES19 = 72 | CES44 = 99 | CES69 = 82 | CES94 = 52 |
| CES20 = 65 | CES45 = 87 | CES70 = 67 | CES95 = 69 |
| CES21 = 86 | CES46 = 82 | CES71 = 66 | CES96 = 78 |
| CES22 = 79 | CES47 = 82 | CES72 = 88 | CES97 = 85 |
| CES23 = 92 | CES48 = 72 | CES73 = 59 | CES98 = 76 |
| CES24 = 91 | CES49 = 82 | CES74 = 97 | CES99 = 63 |
| CES25 = 72 | CES50 = 88 | CES75 = 66 |            |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)