

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: P641016

Luminaire Tested: GWS-SA5F-722-U-SLR-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P641016  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-41)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA5F-722-U-SLR-W  
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND  
SPILL LIGHT ELIMINATOR RIGHT OPTICS  
Light Source: (80) 2200K CCT, 70 CRI LEDS  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 29110 lumens  
Efficiency: N/A  
Efficacy: 93.8 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B3 - U0 - G4

Input Watts (W): 310.3  
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



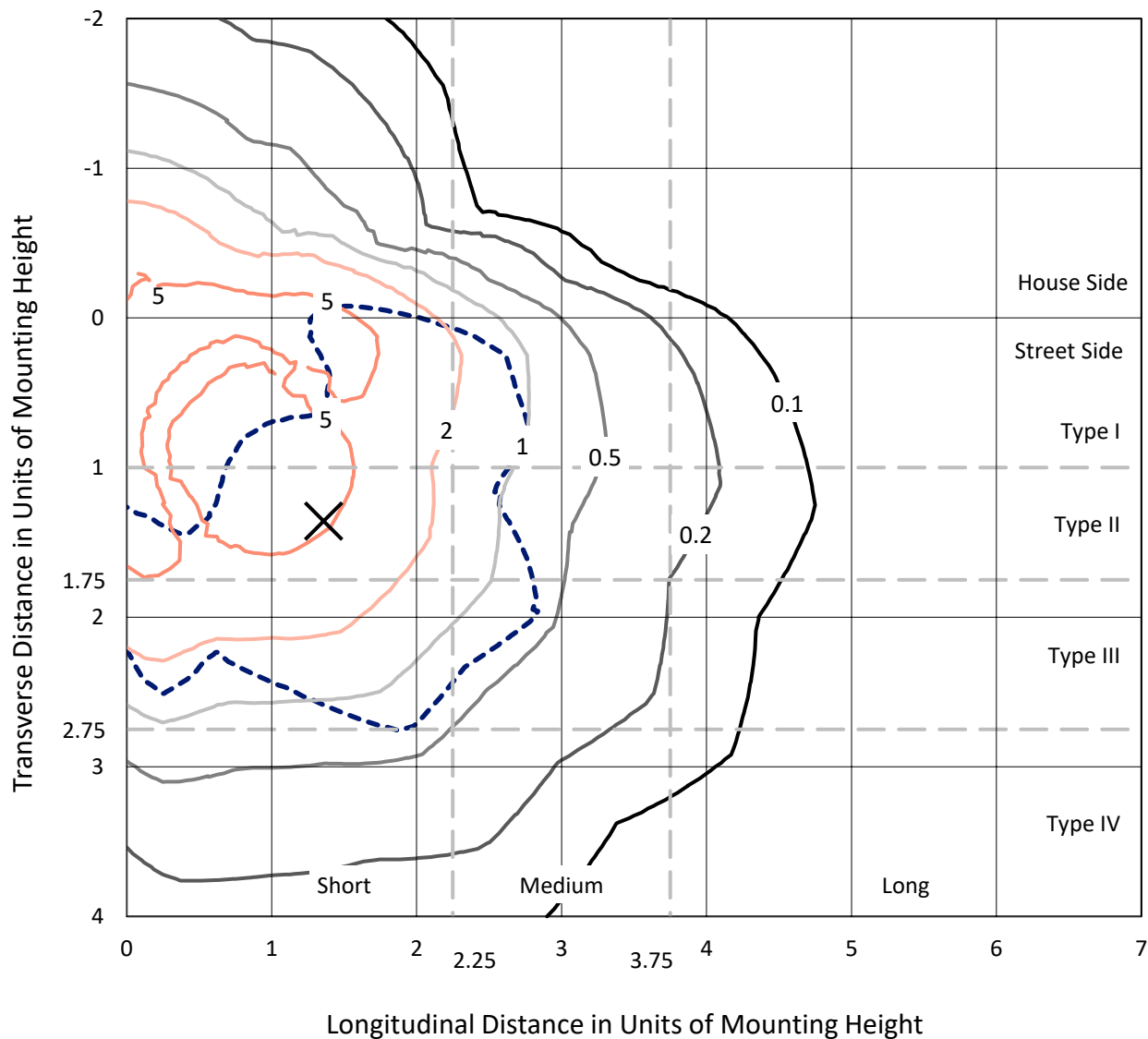
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## Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd

--- 1/2 Max cd

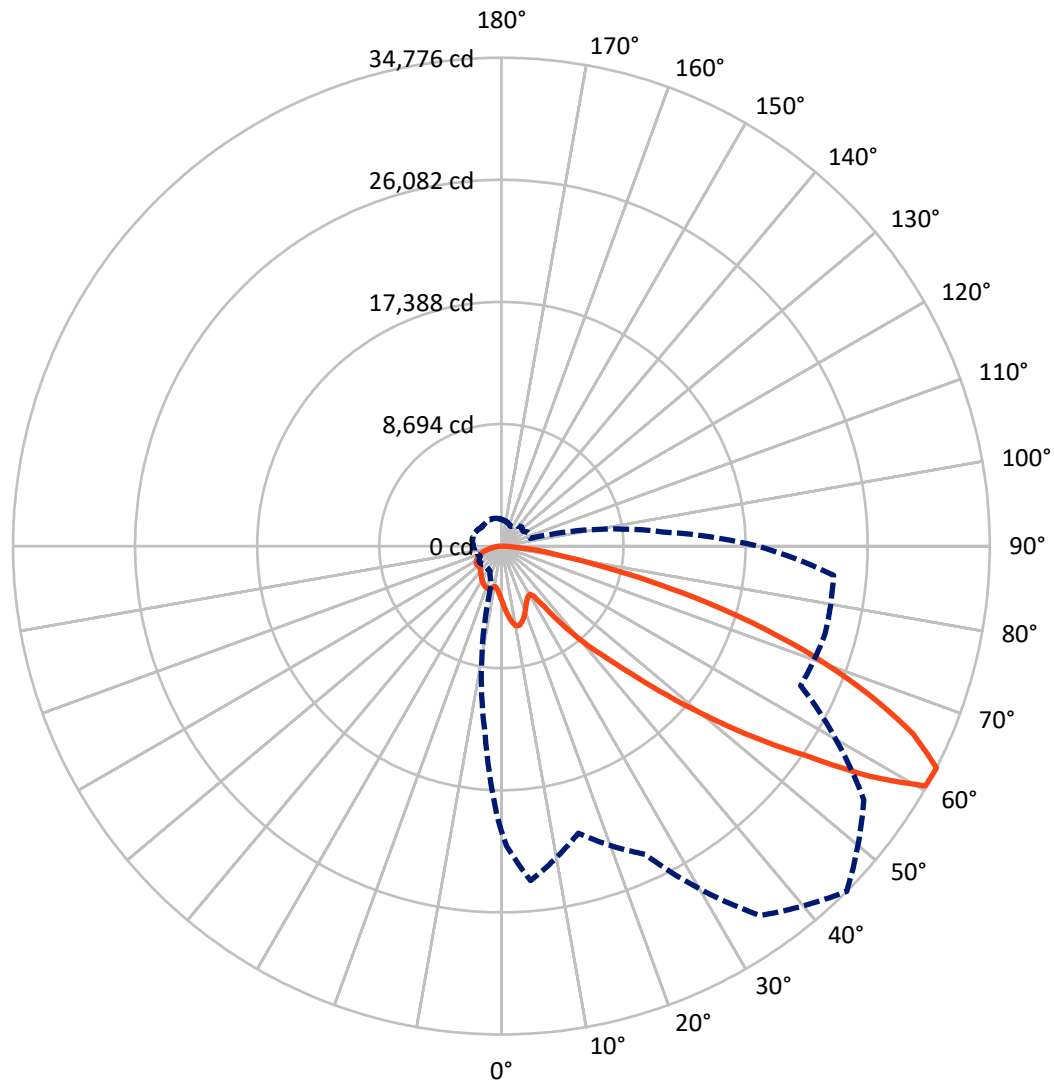


Based on 25 foot mounting height. Maximum calculated value = 8.8 fc  
 Type III - Short - N/A

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## Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral    - - - Horizontal Cone Through 62.5-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 6946.2   | 0.0    | 6946.2  |
|                    | % Fixture | 23.9     | 0.0    | 23.9    |
| <b>Street Side</b> | Lumens    | 22163.8  | 0.0    | 22163.8 |
|                    | % Fixture | 76.1     | 0.0    | 76.1    |
| <b>Total</b>       | Lumens    | 29110.0  | 0.0    | 29110.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 377.3   | 1.3       |
| 10°-20°   | 1182.8  | 4.1       |
| 20°-30°   | 1837.2  | 6.3       |
| 30°-40°   | 2494.4  | 8.6       |
| 40°-50°   | 3953.5  | 13.6      |
| 50°-60°   | 6973.9  | 24.0      |
| 60°-70°   | 7759.6  | 26.7      |
| 70°-80°   | 3935.3  | 13.5      |
| 80°-90°   | 595.9   | 2.0       |
| 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°    | 29110.0 | 100.0     |
| 0°-180°   | 29110.0 | 100.0     |

**Coefficient of Utilization**



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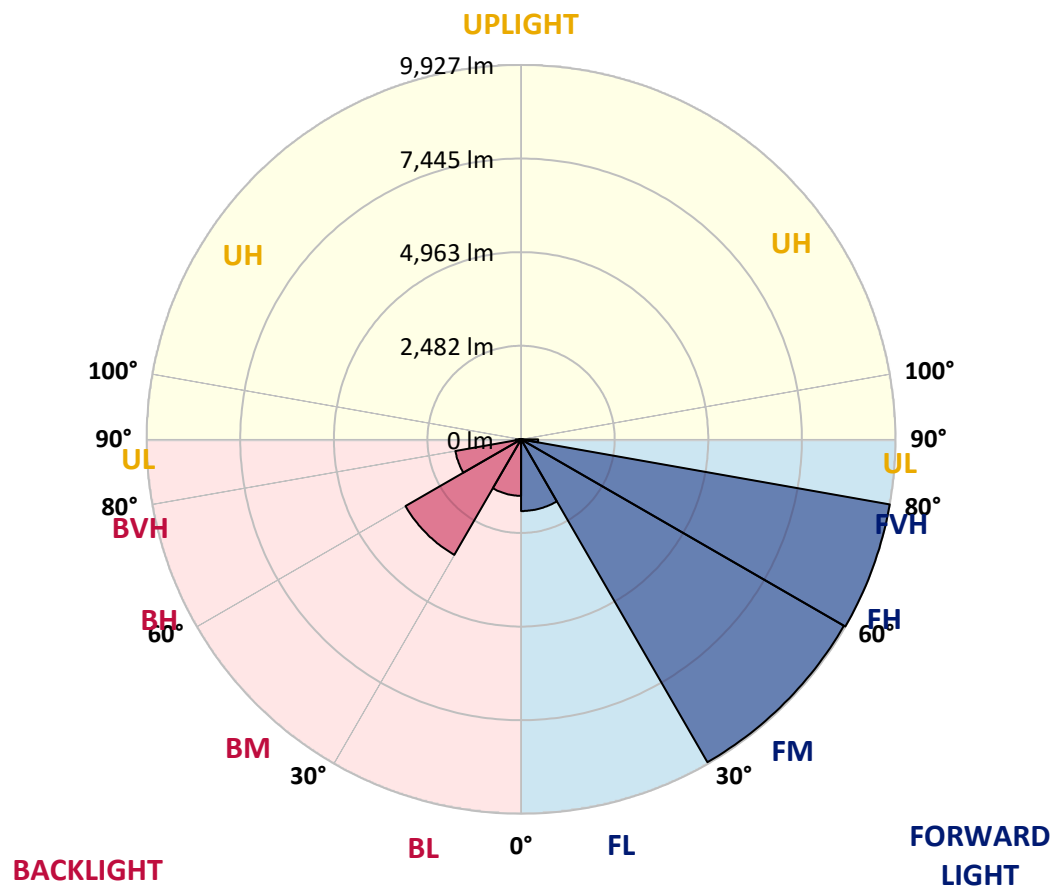
CATALOG NUMBER: GWS-SA5F-722-U-SLR-W

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|--------|-----------|-------------------------|------|----------|
|      |             |        |           | B                       | U    | G        |
| FL   | (0°-30°)    | 1900.6 | 6.5       |                         |      |          |
| FM   | (30°-60°)   | 9884.1 | 34.0      |                         |      |          |
| FH   | (60°-80°)   | 9926.8 | 34.1      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 452.3  | 1.6       |                         |      | G3/500   |
| BL   | (0°-30°)    | 1496.7 | 5.1       | B3/2500                 |      |          |
| BM   | (30°-60°)   | 3537.7 | 12.2      | B3/5000                 |      |          |
| BH   | (60°-80°)   | 1768.1 | 6.1       | B3/2500                 |      | G3/2500  |
| BVH  | (80°-90°)   | 143.6  | 0.5       |                         |      | G2/225   |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |          |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |          |

**BUG Rating: B3-U0-G4**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 1°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 3863.5  | 3863.5  | 3863.5  | 3863.5  | 3863.5  | 3863.5  | 3863.5  | 3863.5  | 3863.5  | 3863.5  | 3863.5  |
| 2.5°  | 4152.2  | 4150.0  | 4191.9  | 4255.8  | 4315.3  | 4341.7  | 4385.8  | 4381.4  | 4346.2  | 4299.9  | 4284.4  |
| 5°    | 4478.4  | 4487.2  | 4559.9  | 4701.0  | 4857.5  | 4923.6  | 4952.2  | 4941.2  | 4877.3  | 4795.8  | 4652.5  |
| 7.5°  | 4773.7  | 4789.1  | 4901.5  | 5113.1  | 5307.1  | 5395.2  | 5465.7  | 5452.5  | 5360.0  | 5207.9  | 4996.3  |
| 10°   | 4989.7  | 5007.3  | 5141.8  | 5390.8  | 5606.8  | 5683.9  | 5774.3  | 5778.7  | 5697.2  | 5492.2  | 5276.2  |
| 12.5° | 5205.7  | 5223.3  | 5348.9  | 5575.9  | 5717.0  | 5719.2  | 5772.1  | 5800.7  | 5805.2  | 5710.4  | 5494.4  |
| 15°   | 5430.5  | 5445.9  | 5560.5  | 5688.3  | 5681.7  | 5558.3  | 5558.3  | 5613.4  | 5734.6  | 5803.0  | 5653.1  |
| 17.5° | 5622.2  | 5642.1  | 5730.2  | 5688.3  | 5492.2  | 5269.6  | 5243.2  | 5313.7  | 5525.3  | 5787.5  | 5772.1  |
| 20°   | 5780.9  | 5796.3  | 5844.8  | 5567.1  | 5210.1  | 4919.2  | 4868.5  | 4950.0  | 5236.5  | 5692.8  | 5862.5  |
| 22.5° | 5933.0  | 5941.8  | 5915.4  | 5408.4  | 4906.0  | 4573.2  | 4511.4  | 4597.4  | 4906.0  | 5525.3  | 5939.6  |
| 25°   | 6113.7  | 6104.9  | 5979.3  | 5243.2  | 4628.3  | 4299.9  | 4236.0  | 4332.9  | 4654.7  | 5302.7  | 6023.3  |
| 27.5° | 6323.1  | 6290.0  | 6034.4  | 5064.6  | 4414.5  | 4097.1  | 4053.0  | 4156.6  | 4456.3  | 5097.7  | 6089.5  |
| 30°   | 6501.6  | 6437.7  | 6043.2  | 4906.0  | 4304.3  | 4011.2  | 3984.7  | 4081.7  | 4359.4  | 4958.8  | 6173.2  |
| 32.5° | 6700.0  | 6611.8  | 6093.9  | 4864.1  | 4366.0  | 4218.3  | 4253.6  | 4260.2  | 4385.8  | 4919.2  | 6298.8  |
| 35°   | 6984.3  | 6869.7  | 6232.7  | 4985.3  | 5000.7  | 5249.8  | 5377.6  | 5205.7  | 4784.7  | 5007.3  | 6536.9  |
| 37.5° | 7414.0  | 7268.6  | 6514.8  | 5509.8  | 6312.1  | 6869.7  | 7178.2  | 6785.9  | 5996.9  | 5340.1  | 6896.1  |
| 40°   | 7936.4  | 7751.2  | 6876.3  | 6479.6  | 7537.4  | 8430.0  | 8978.8  | 8403.6  | 7244.3  | 6171.0  | 7400.8  |
| 42.5° | 8665.9  | 8471.9  | 7577.1  | 7431.7  | 8672.5  | 10001.4 | 10717.7 | 9860.4  | 8344.1  | 7244.3  | 8209.6  |
| 45°   | 9937.5  | 9750.2  | 8862.0  | 8386.0  | 10001.4 | 11936.5 | 12941.5 | 11749.2 | 9461.5  | 8322.0  | 9721.5  |
| 47.5° | 12286.9 | 12066.5 | 10770.6 | 9443.8  | 11517.7 | 14449.0 | 15855.1 | 14118.4 | 10622.9 | 9556.2  | 12260.5 |
| 50°   | 15107.9 | 14896.4 | 13166.3 | 10695.7 | 13192.7 | 17135.6 | 19090.5 | 16901.9 | 11960.7 | 11057.1 | 15295.3 |
| 52.5° | 18502.0 | 18462.3 | 16584.6 | 12278.1 | 14936.0 | 20000.7 | 22680.7 | 19985.2 | 13426.3 | 13078.1 | 18733.4 |
| 55°   | 21561.1 | 21949.0 | 20926.3 | 14691.4 | 17188.5 | 23599.7 | 26372.2 | 23348.4 | 15414.3 | 16419.3 | 22760.0 |
| 57.5° | 23209.6 | 24252.1 | 25823.5 | 19615.0 | 20463.5 | 27901.8 | 30927.8 | 27454.4 | 18830.4 | 21982.0 | 26493.5 |
| 60°   | 22120.9 | 23302.2 | 26149.6 | 23322.0 | 23712.1 | 31348.7 | 34687.7 | 30905.7 | 22184.8 | 25843.3 | 26281.9 |
| 62.5° | 20309.2 | 21369.3 | 23901.6 | 21157.7 | 24214.6 | 32106.9 | 34775.8 | 31507.4 | 23518.2 | 23884.0 | 23740.7 |
| 65°   | 18160.4 | 19229.3 | 21911.5 | 18468.9 | 22616.7 | 30306.3 | 32210.5 | 29737.6 | 21122.5 | 21578.7 | 21631.6 |
| 67.5° | 15306.3 | 16293.7 | 19024.3 | 16421.5 | 20615.6 | 27663.7 | 28272.0 | 27216.3 | 19451.9 | 20179.2 | 19418.8 |
| 70°   | 11436.2 | 12326.6 | 14737.7 | 13344.8 | 17378.0 | 24221.2 | 23729.7 | 23886.2 | 17576.4 | 18299.2 | 16220.9 |
| 72.5° | 7815.1  | 8485.1  | 10552.4 | 10486.3 | 13307.3 | 19390.2 | 18704.8 | 20188.0 | 14680.4 | 15639.1 | 12366.3 |
| 75°   | 5465.7  | 5988.1  | 7627.8  | 8284.6  | 10058.7 | 14371.8 | 13320.6 | 15110.2 | 11464.9 | 12833.5 | 9022.9  |
| 77.5° | 3354.4  | 3700.4  | 4817.8  | 6137.9  | 6470.7  | 9836.1  | 8273.6  | 11370.1 | 8051.0  | 9360.1  | 6018.9  |
| 80°   | 1677.2  | 1844.7  | 2340.6  | 3859.1  | 4291.1  | 5796.3  | 4568.7  | 6600.8  | 5448.1  | 5796.3  | 3330.1  |
| 82.5° | 506.9   | 559.8   | 685.4   | 1465.6  | 2223.8  | 3336.8  | 2699.8  | 3834.8  | 2975.3  | 2717.4  | 1311.3  |
| 85°   | 134.4   | 152.1   | 189.5   | 434.2   | 780.2   | 1196.7  | 912.4   | 1857.9  | 1425.9  | 1002.8  | 493.7   |
| 87.5° | 11.0    | 11.0    | 8.8     | 8.8     | 4.4     | 0.0     | 0.0     | 132.2   | 266.7   | 152.1   | 86.0    |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |

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**CANDELA DISTRIBUTION (continued):**

|       | 90°     | 95°     | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3863.5  | 3863.5  | 3863.5 | 3863.5 | 3863.5 | 3863.5 | 3863.5 | 3863.5 | 3863.5 | 3863.5 | 3863.5 |
| 2.5°  | 4207.3  | 4198.5  | 4108.1 | 4042.0 | 3964.9 | 3889.9 | 3812.8 | 3744.5 | 3667.3 | 3590.2 | 3568.2 |
| 5°    | 4546.7  | 4485.0  | 4293.3 | 4132.4 | 3973.7 | 3834.8 | 3713.6 | 3588.0 | 3486.6 | 3387.4 | 3350.0 |
| 7.5°  | 4846.4  | 4738.5  | 4460.8 | 4216.1 | 3995.7 | 3823.8 | 3645.3 | 3462.4 | 3319.1 | 3178.1 | 3142.8 |
| 10°   | 5117.5  | 4974.3  | 4623.8 | 4315.3 | 4070.7 | 3874.5 | 3665.1 | 3420.5 | 3213.3 | 3041.4 | 2995.1 |
| 12.5° | 5318.1  | 5161.6  | 4764.9 | 4410.1 | 4132.4 | 3912.0 | 3704.8 | 3488.8 | 3270.6 | 3048.0 | 2997.3 |
| 15°   | 5476.8  | 5313.7  | 4881.7 | 4482.8 | 4134.6 | 3850.3 | 3649.7 | 3574.8 | 3506.5 | 3288.3 | 3195.7 |
| 17.5° | 5604.6  | 5432.7  | 4983.1 | 4526.9 | 4075.1 | 3662.9 | 3488.8 | 3599.0 | 3773.1 | 3636.5 | 3462.4 |
| 20°   | 5721.4  | 5547.3  | 5060.2 | 4557.7 | 3942.8 | 3405.1 | 3308.1 | 3541.7 | 3804.0 | 3799.6 | 3643.1 |
| 22.5° | 5849.2  | 5679.5  | 5172.6 | 4575.4 | 3757.7 | 3142.8 | 3200.1 | 3458.0 | 3671.7 | 3735.7 | 3638.7 |
| 25°   | 6012.3  | 5862.5  | 5329.1 | 4615.0 | 3548.3 | 2962.1 | 3120.8 | 3350.0 | 3528.5 | 3543.9 | 3486.6 |
| 27.5° | 6201.9  | 6089.5  | 5562.7 | 4707.6 | 3345.6 | 2869.5 | 3028.2 | 3197.9 | 3361.0 | 3367.6 | 3299.3 |
| 30°   | 6409.0  | 6334.1  | 5778.7 | 4784.7 | 3193.5 | 2840.9 | 2909.2 | 3045.8 | 3149.4 | 3167.0 | 3107.5 |
| 32.5° | 6673.5  | 6607.4  | 5970.4 | 4734.0 | 3103.1 | 2834.3 | 2799.0 | 2869.5 | 2955.5 | 2955.5 | 2909.2 |
| 35°   | 7037.2  | 6944.6  | 6173.2 | 4540.1 | 2992.9 | 2807.8 | 2682.2 | 2702.0 | 2739.5 | 2746.1 | 2719.7 |
| 37.5° | 7552.9  | 7400.8  | 6378.2 | 4156.6 | 2812.2 | 2713.0 | 2547.7 | 2523.5 | 2536.7 | 2554.4 | 2547.7 |
| 40°   | 8192.0  | 7943.0  | 6677.9 | 3696.0 | 2596.2 | 2530.1 | 2408.9 | 2362.6 | 2351.6 | 2386.9 | 2400.1 |
| 42.5° | 8996.4  | 8615.2  | 6999.7 | 3266.2 | 2400.1 | 2320.7 | 2245.8 | 2206.1 | 2188.5 | 2248.0 | 2283.3 |
| 45°   | 10281.3 | 9653.2  | 7308.2 | 2840.9 | 2289.9 | 2142.2 | 2091.5 | 2062.9 | 2071.7 | 2142.2 | 2186.3 |
| 47.5° | 12500.7 | 11237.8 | 7601.4 | 2572.0 | 2281.1 | 2014.4 | 1952.7 | 1959.3 | 1983.5 | 2058.5 | 2111.4 |
| 50°   | 15308.5 | 13360.2 | 7797.5 | 2459.6 | 2307.5 | 1937.3 | 1855.7 | 1891.0 | 1928.4 | 2001.2 | 2062.9 |
| 52.5° | 18167.0 | 15337.2 | 7563.9 | 2397.9 | 2305.3 | 1939.5 | 1765.3 | 1871.1 | 1888.8 | 1961.5 | 2027.6 |
| 55°   | 20132.9 | 15557.6 | 6534.7 | 2303.1 | 2270.0 | 2027.6 | 1694.8 | 1862.3 | 1873.3 | 1939.5 | 1999.0 |
| 57.5° | 20882.2 | 14803.8 | 4983.1 | 2329.6 | 2164.3 | 2095.9 | 1664.0 | 1800.6 | 1880.0 | 1937.3 | 1999.0 |
| 60°   | 19976.4 | 13382.3 | 3028.2 | 2397.9 | 1994.6 | 2091.5 | 1683.8 | 1688.2 | 1824.9 | 1921.8 | 1983.5 |
| 62.5° | 18268.4 | 11557.4 | 2126.8 | 2203.9 | 1871.1 | 1974.7 | 1730.1 | 1556.0 | 1727.9 | 1844.7 | 1899.8 |
| 65°   | 16311.3 | 9410.8  | 1622.1 | 1897.6 | 1811.6 | 1794.0 | 1745.5 | 1439.2 | 1595.6 | 1710.3 | 1758.7 |
| 67.5° | 14272.7 | 7314.8  | 1318.0 | 1414.9 | 1637.5 | 1622.1 | 1595.6 | 1335.6 | 1439.2 | 1520.7 | 1575.8 |
| 70°   | 11705.1 | 5117.5  | 1113.0 | 1062.3 | 1403.9 | 1454.6 | 1395.1 | 1205.6 | 1238.6 | 1322.4 | 1366.4 |
| 72.5° | 8562.3  | 3189.1  | 914.6  | 877.2  | 1128.4 | 1271.7 | 1240.8 | 1062.3 | 1077.7 | 1157.1 | 1192.3 |
| 75°   | 6157.8  | 1824.9  | 733.9  | 722.9  | 861.7  | 1088.7 | 1027.0 | 914.6  | 932.3  | 991.8  | 1016.0 |
| 77.5° | 3914.2  | 1016.0  | 566.4  | 581.8  | 617.1  | 813.3  | 877.2  | 782.4  | 782.4  | 817.7  | 837.5  |
| 80°   | 2095.9  | 581.8   | 414.3  | 421.0  | 432.0  | 621.5  | 692.0  | 606.1  | 606.1  | 581.8  | 606.1  |
| 82.5° | 855.1   | 335.0   | 284.3  | 264.5  | 288.7  | 425.4  | 484.9  | 385.7  | 403.3  | 363.6  | 372.5  |
| 85°   | 282.1   | 167.5   | 141.1  | 138.8  | 136.6  | 187.3  | 233.6  | 191.7  | 229.2  | 145.5  | 152.1  |
| 87.5° | 37.5    | 30.9    | 17.6   | 13.2   | 15.4   | 6.6    | 13.2   | 15.4   | 15.4   | 11.0   | 11.0   |
| 90°   | 0.0     | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



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**CANDELA DISTRIBUTION (continued):**

|       | 185°   | 195°   | 205°   | 215°   | 225°   | 235°   | 245°   | 255°   | 265°   | 270°   | 275°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3863.5 | 3863.5 | 3863.5 | 3863.5 | 3863.5 | 3863.5 | 3863.5 | 3863.5 | 3863.5 | 3863.5 | 3863.5 |
| 2.5°  | 3552.7 | 3535.1 | 3471.2 | 3486.6 | 3475.6 | 3458.0 | 3475.6 | 3442.5 | 3469.0 | 3477.8 | 3532.9 |
| 5°    | 3321.3 | 3279.4 | 3217.7 | 3186.9 | 3180.3 | 3162.6 | 3164.8 | 3149.4 | 3153.8 | 3191.3 | 3253.0 |
| 7.5°  | 3114.2 | 3074.5 | 3026.0 | 3004.0 | 2984.1 | 2964.3 | 2962.1 | 2959.9 | 2977.5 | 3010.6 | 3070.1 |
| 10°   | 2964.3 | 2942.2 | 2922.4 | 2931.2 | 2922.4 | 2913.6 | 2898.2 | 2898.2 | 2926.8 | 2986.3 | 3059.1 |
| 12.5° | 2964.3 | 2959.9 | 2964.3 | 2990.7 | 2988.5 | 2990.7 | 2970.9 | 2981.9 | 3061.3 | 3162.6 | 3266.2 |
| 15°   | 3123.0 | 3087.7 | 3087.7 | 3100.9 | 3096.5 | 3096.5 | 3096.5 | 3142.8 | 3323.5 | 3480.0 | 3590.2 |
| 17.5° | 3316.9 | 3213.3 | 3169.3 | 3162.6 | 3160.4 | 3160.4 | 3169.3 | 3268.4 | 3550.5 | 3715.8 | 3779.7 |
| 20°   | 3451.4 | 3255.2 | 3182.5 | 3153.8 | 3156.0 | 3160.4 | 3186.9 | 3323.5 | 3634.3 | 3718.0 | 3702.6 |
| 22.5° | 3475.6 | 3222.1 | 3134.0 | 3092.1 | 3098.7 | 3103.1 | 3142.8 | 3288.3 | 3519.7 | 3532.9 | 3502.0 |
| 25°   | 3363.2 | 3129.6 | 3034.8 | 3001.8 | 3010.6 | 3008.4 | 3043.6 | 3149.4 | 3314.7 | 3310.3 | 3292.7 |
| 27.5° | 3195.7 | 2981.9 | 2911.4 | 2889.4 | 2904.8 | 2887.1 | 2898.2 | 2979.7 | 3107.5 | 3103.1 | 3096.5 |
| 30°   | 3023.8 | 2838.7 | 2774.7 | 2763.7 | 2783.6 | 2757.1 | 2759.3 | 2827.6 | 2915.8 | 2911.4 | 2909.2 |
| 32.5° | 2851.9 | 2695.4 | 2638.1 | 2638.1 | 2657.9 | 2629.3 | 2633.7 | 2693.2 | 2752.7 | 2735.1 | 2735.1 |
| 35°   | 2688.8 | 2578.6 | 2532.3 | 2523.5 | 2538.9 | 2519.1 | 2527.9 | 2583.0 | 2605.0 | 2580.8 | 2565.4 |
| 37.5° | 2545.5 | 2497.1 | 2450.8 | 2419.9 | 2422.1 | 2424.3 | 2450.8 | 2492.6 | 2479.4 | 2444.2 | 2424.3 |
| 40°   | 2413.3 | 2413.3 | 2369.2 | 2311.9 | 2305.3 | 2320.7 | 2364.8 | 2411.1 | 2373.6 | 2334.0 | 2309.7 |
| 42.5° | 2318.5 | 2338.4 | 2296.5 | 2239.2 | 2226.0 | 2252.4 | 2300.9 | 2334.0 | 2289.9 | 2245.8 | 2212.7 |
| 45°   | 2230.4 | 2278.9 | 2250.2 | 2186.3 | 2168.7 | 2199.5 | 2261.2 | 2274.5 | 2215.0 | 2173.1 | 2148.8 |
| 47.5° | 2168.7 | 2234.8 | 2215.0 | 2153.2 | 2126.8 | 2170.9 | 2234.8 | 2232.6 | 2157.6 | 2113.6 | 2093.7 |
| 50°   | 2124.6 | 2208.3 | 2206.1 | 2153.2 | 2124.6 | 2179.7 | 2237.0 | 2208.3 | 2126.8 | 2080.5 | 2060.7 |
| 52.5° | 2089.3 | 2206.1 | 2221.6 | 2190.7 | 2170.9 | 2219.4 | 2254.6 | 2199.5 | 2104.8 | 2056.3 | 2040.8 |
| 55°   | 2073.9 | 2215.0 | 2226.0 | 2197.3 | 2179.7 | 2223.8 | 2254.6 | 2217.2 | 2104.8 | 2060.7 | 2047.5 |
| 57.5° | 2078.3 | 2203.9 | 2206.1 | 2166.5 | 2135.6 | 2190.7 | 2239.2 | 2228.2 | 2129.0 | 2078.3 | 2062.9 |
| 60°   | 2051.9 | 2144.4 | 2148.8 | 2087.1 | 2051.9 | 2118.0 | 2203.9 | 2197.3 | 2118.0 | 2065.1 | 2036.4 |
| 62.5° | 1963.7 | 2045.2 | 2047.5 | 1990.1 | 1939.5 | 2034.2 | 2129.0 | 2126.8 | 2054.1 | 2001.2 | 1968.1 |
| 65°   | 1816.0 | 1902.0 | 1924.0 | 1868.9 | 1829.3 | 1930.6 | 2029.8 | 2025.4 | 1952.7 | 1904.2 | 1871.1 |
| 67.5° | 1633.1 | 1725.7 | 1767.6 | 1730.1 | 1714.7 | 1807.2 | 1899.8 | 1897.6 | 1838.1 | 1791.8 | 1763.1 |
| 70°   | 1410.5 | 1487.7 | 1558.2 | 1558.2 | 1547.2 | 1652.9 | 1752.1 | 1743.3 | 1688.2 | 1652.9 | 1630.9 |
| 72.5° | 1225.4 | 1284.9 | 1306.9 | 1329.0 | 1362.0 | 1472.2 | 1556.0 | 1562.6 | 1522.9 | 1505.3 | 1522.9 |
| 75°   | 1042.5 | 1079.9 | 1099.8 | 1082.1 | 1139.4 | 1254.0 | 1364.2 | 1375.3 | 1333.4 | 1304.7 | 1311.3 |
| 77.5° | 857.3  | 899.2  | 919.0  | 879.4  | 875.0  | 1020.4 | 1154.9 | 1179.1 | 1143.8 | 1099.8 | 1113.0 |
| 80°   | 619.3  | 674.4  | 707.5  | 681.0  | 672.2  | 736.1  | 921.2  | 947.7  | 914.6  | 879.4  | 899.2  |
| 82.5° | 379.1  | 409.9  | 418.7  | 445.2  | 500.3  | 526.7  | 592.9  | 681.0  | 656.8  | 625.9  | 681.0  |
| 85°   | 149.9  | 178.5  | 198.4  | 224.8  | 262.3  | 310.8  | 365.9  | 436.4  | 396.7  | 383.5  | 451.8  |
| 87.5° | 8.8    | 2.2    | 0.0    | 4.4    | 37.5   | 72.7   | 156.5  | 216.0  | 180.7  | 193.9  | 233.6  |
| 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: P641016

CATALOG NUMBER: GWS-SA5F-722-U-SLR-W

**CANDELA DISTRIBUTION (continued):**

|       | 285°   | 295°   | 305°   | 315°   | 325°   | 335°   | 345°   | 355°    | 359°    | 360°    |
|-------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|
| 0°    | 3863.5 | 3863.5 | 3863.5 | 3863.5 | 3863.5 | 3863.5 | 3863.5 | 3863.5  | 3863.5  | 3863.5  |
| 2.5°  | 3577.0 | 3634.3 | 3711.4 | 3775.3 | 3856.9 | 3934.0 | 4013.4 | 4092.7  | 4134.6  | 4152.2  |
| 5°    | 3323.5 | 3429.3 | 3552.7 | 3689.4 | 3848.1 | 4015.6 | 4185.3 | 4359.4  | 4469.6  | 4478.4  |
| 7.5°  | 3171.5 | 3323.5 | 3493.2 | 3665.1 | 3861.3 | 4092.7 | 4361.6 | 4630.5  | 4742.9  | 4773.7  |
| 10°   | 3219.9 | 3389.6 | 3524.1 | 3685.0 | 3901.0 | 4189.7 | 4507.0 | 4822.2  | 4952.2  | 4989.7  |
| 12.5° | 3413.9 | 3446.9 | 3488.8 | 3636.5 | 3901.0 | 4273.4 | 4656.9 | 5031.6  | 5170.4  | 5205.7  |
| 15°   | 3574.8 | 3416.1 | 3341.2 | 3497.6 | 3848.1 | 4346.2 | 4815.6 | 5229.9  | 5397.4  | 5430.5  |
| 17.5° | 3588.0 | 3314.7 | 3151.6 | 3292.7 | 3755.5 | 4396.8 | 4967.7 | 5450.3  | 5591.4  | 5622.2  |
| 20°   | 3453.6 | 3206.7 | 2995.1 | 3081.1 | 3629.9 | 4418.9 | 5077.9 | 5611.2  | 5750.1  | 5780.9  |
| 22.5° | 3301.5 | 3118.6 | 2889.4 | 2884.9 | 3477.8 | 4443.1 | 5210.1 | 5763.3  | 5913.1  | 5933.0  |
| 25°   | 3158.2 | 2997.3 | 2803.4 | 2741.7 | 3301.5 | 4489.4 | 5388.6 | 5992.5  | 6107.1  | 6113.7  |
| 27.5° | 2990.7 | 2867.3 | 2735.1 | 2675.6 | 3147.2 | 4577.6 | 5653.1 | 6265.8  | 6334.1  | 6323.1  |
| 30°   | 2838.7 | 2746.1 | 2686.6 | 2669.0 | 3050.2 | 4643.7 | 5904.3 | 6534.7  | 6539.1  | 6501.6  |
| 32.5° | 2677.8 | 2642.5 | 2642.5 | 2699.8 | 2970.9 | 4628.3 | 6109.3 | 6796.9  | 6755.0  | 6700.0  |
| 35°   | 2534.5 | 2541.1 | 2587.4 | 2721.9 | 2838.7 | 4474.0 | 6305.4 | 7125.3  | 7063.6  | 6984.3  |
| 37.5° | 2397.9 | 2448.6 | 2514.7 | 2644.7 | 2664.6 | 4244.8 | 6534.7 | 7590.3  | 7513.2  | 7414.0  |
| 40°   | 2281.1 | 2358.2 | 2435.3 | 2499.3 | 2479.4 | 3918.6 | 6854.2 | 8136.9  | 8051.0  | 7936.4  |
| 42.5° | 2188.5 | 2263.4 | 2349.4 | 2356.0 | 2362.6 | 3579.2 | 7193.6 | 8806.9  | 8791.5  | 8665.9  |
| 45°   | 2129.0 | 2177.5 | 2259.0 | 2248.0 | 2356.0 | 3204.5 | 7506.6 | 9829.5  | 10032.3 | 9937.5  |
| 47.5° | 2089.3 | 2126.8 | 2135.6 | 2181.9 | 2413.3 | 2869.5 | 7909.9 | 11830.7 | 12394.9 | 12286.9 |
| 50°   | 2067.3 | 2104.8 | 2005.6 | 2186.3 | 2422.1 | 2653.5 | 8467.5 | 14343.2 | 15251.2 | 15107.9 |
| 52.5° | 2065.1 | 2056.3 | 1906.4 | 2232.6 | 2373.6 | 2521.3 | 8758.4 | 16176.9 | 18191.2 | 18502.0 |
| 55°   | 2069.5 | 1959.3 | 1855.7 | 2245.8 | 2276.7 | 2472.8 | 7784.3 | 17058.4 | 20904.3 | 21561.1 |
| 57.5° | 2029.8 | 1853.5 | 1884.4 | 2192.9 | 2093.7 | 2602.8 | 5754.5 | 16743.3 | 21988.6 | 23209.6 |
| 60°   | 1954.9 | 1752.1 | 1937.3 | 2049.7 | 1906.4 | 2380.2 | 3962.7 | 15337.2 | 20864.6 | 22120.9 |
| 62.5° | 1846.9 | 1681.6 | 1930.6 | 1864.5 | 1838.1 | 1948.3 | 2724.1 | 13369.0 | 19081.6 | 20309.2 |
| 65°   | 1725.7 | 1624.3 | 1827.1 | 1686.0 | 1701.4 | 1498.7 | 1926.2 | 11147.5 | 16952.6 | 18160.4 |
| 67.5° | 1595.6 | 1589.0 | 1675.0 | 1500.9 | 1437.0 | 1187.9 | 1403.9 | 8934.7  | 14217.6 | 15306.3 |
| 70°   | 1448.0 | 1496.5 | 1522.9 | 1333.4 | 1165.9 | 932.3  | 1042.5 | 6248.1  | 10488.5 | 11436.2 |
| 72.5° | 1300.3 | 1304.7 | 1342.2 | 1159.3 | 872.8  | 747.1  | 782.4  | 3784.1  | 7125.3  | 7815.1  |
| 75°   | 1150.5 | 1108.6 | 1143.8 | 943.3  | 650.2  | 612.7  | 603.9  | 2338.4  | 4921.4  | 5465.7  |
| 77.5° | 989.6  | 943.3  | 897.0  | 709.7  | 522.3  | 473.8  | 462.8  | 1311.3  | 3019.4  | 3354.4  |
| 80°   | 804.4  | 742.7  | 670.0  | 520.1  | 381.3  | 339.4  | 337.2  | 639.1   | 1505.3  | 1677.2  |
| 82.5° | 625.9  | 509.1  | 489.3  | 324.0  | 235.8  | 207.2  | 220.4  | 244.6   | 454.0   | 506.9   |
| 85°   | 438.6  | 370.3  | 260.1  | 130.0  | 105.8  | 86.0   | 83.7   | 72.7    | 121.2   | 134.4   |
| 87.5° | 244.6  | 160.9  | 83.7   | 15.4   | 17.6   | 19.8   | 15.4   | 11.0    | 11.0    | 11.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0     | 0.0     | 0.0     |

LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-10-R4

Test Date: 10/25/2019

Luminaire Tested: SA1C-722-U-5WQ

Data in this report applies to families of products SA1C-722-U-5WQ.

### Test Information

Test Method: LM-79-2008 Report  
 Number: SP1-1908-441-10-R4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 10/28/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: MCGRAW-EDISON  
 Catalog Number: **SA1C-722-U-5WQ**  
 Description: MCGRAW EDISON ROADWAY AND AREA LUMINAIRE

\*\*\*THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.\*\*\*TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

### Spectral Parameters

|                           |         |           |      |      |       |
|---------------------------|---------|-----------|------|------|-------|
| CCT (K):                  | 2237    | CRI (Ra): | 72.0 |      |       |
| CIE u':                   | 0.2876  | R1:       | 68.9 | R9:  | -17.4 |
| CIE v':                   | 0.5346  | R2:       | 83.0 | R10: | 61.3  |
| Duv:                      | -0.0006 | R3:       | 95.2 | R11: | 59.8  |
| CIE x:                    | 0.5005  | R4:       | 66.2 | R12: | 50.5  |
| CIE y:                    | 0.4134  | R5:       | 65.9 | R13: | 71.1  |
| CIE z:                    | 0.0860  | R6:       | 76.3 | R14: | 96.9  |
| Peak Wavelength (nm):     | 603     | R7:       | 76.7 |      |       |
| Dominant Wavelength (nm): | 587     | R8:       | 43.8 |      |       |
| Purity:                   | 74.5    |           |      |      |       |
| Rf:                       | 69.8    |           |      |      |       |
| Rg:                       | 99.2    |           |      |      |       |



### Test Conditions

Stabilization Time: 71M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 24.7/41%  
 Sphere Temperature (°C): 25.6

REPORT NUMBER: SP1-1908-441-10-R4

| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 6/28/2019        | 12/28/2019           |
| Power Meter                    | IN0071                | 12/5/2018        | 12/5/2019            |
| AC Power Source                | IN0063                | 12/5/2018        | 12/5/2019            |
| DC Power Source                | IN0208                | 12/5/2018        | 12/5/2019            |
| Sphere Thermometer             | IN0085                | 12/5/2018        | 12/5/2019            |
| Room Thermometer               | IN0046                | 12/5/2018        | 12/5/2019            |

REPORT NUMBER: SP1-1908-441-10-R4

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 2200K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-10-R4

**Photopic Flux vs. Wavelength**



#####

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 1768             | NR               | 490       | 5206             | NR               | 620       | 130919           | NR               | 750       | 8553             | NR               | 880       | 2713             | NR               |
| 365       | 1569             | NR               | 495       | 7286             | NR               | 625       | 125335           | NR               | 755       | 7696             | NR               | 885       | 2316             | NR               |
| 370       | 1594             | NR               | 500       | 10654            | NR               | 630       | 118388           | NR               | 760       | 6978             | NR               | 890       | 2539             | NR               |
| 375       | 1744             | NR               | 505       | 15189            | NR               | 635       | 111855           | NR               | 765       | 6377             | NR               | 895       | 1933             | NR               |
| 380       | 1659             | NR               | 510       | 20541            | NR               | 640       | 104062           | NR               | 770       | 5600             | NR               | 900       | 2216             | NR               |
| 385       | 1504             | NR               | 515       | 26492            | NR               | 645       | 96365            | NR               | 775       | 5000             | NR               | 905       | 2067             | NR               |
| 390       | 1541             | NR               | 520       | 32294            | NR               | 650       | 88651            | NR               | 780       | 4709             | NR               | 910       | 1959             | NR               |
| 395       | 1355             | NR               | 525       | 38123            | NR               | 655       | 81152            | NR               | 785       | 4305             | NR               | 915       | 1874             | NR               |
| 400       | 1243             | NR               | 530       | 43232            | NR               | 660       | 73523            | NR               | 790       | 4040             | NR               | 920       | 1484             | NR               |
| 405       | 1417             | NR               | 535       | 48012            | NR               | 665       | 66123            | NR               | 795       | 3642             | NR               | 925       | 1914             | NR               |
| 410       | 2147             | NR               | 540       | 52623            | NR               | 670       | 58677            | NR               | 800       | 3594             | NR               | 930       | 1948             | NR               |
| 415       | 3837             | NR               | 545       | 57516            | NR               | 675       | 52349            | NR               | 805       | 3190             | NR               | 935       | 2079             | NR               |
| 420       | 7159             | NR               | 550       | 62613            | NR               | 680       | 46159            | NR               | 810       | 3241             | NR               | 940       | 2263             | NR               |
| 425       | 12599            | NR               | 555       | 68554            | NR               | 685       | 40525            | NR               | 815       | 2732             | NR               | 945       | 1688             | NR               |
| 430       | 19019            | NR               | 560       | 75325            | NR               | 690       | 35615            | NR               | 820       | 2612             | NR               | 950       | 1560             | NR               |
| 435       | 24875            | NR               | 565       | 82533            | NR               | 695       | 31158            | NR               | 825       | 2966             | NR               | 955       | 2826             | NR               |
| 440       | 29103            | NR               | 570       | 90909            | NR               | 700       | 27409            | NR               | 830       | 2574             | NR               | 960       | 1477             | NR               |
| 445       | 29901            | NR               | 575       | 99621            | NR               | 705       | 24204            | NR               | 835       | 2633             | NR               | 965       | 1568             | NR               |
| 450       | 24862            | NR               | 580       | 108484           | NR               | 710       | 21558            | NR               | 840       | 2526             | NR               | 970       | 2030             | NR               |
| 455       | 15942            | NR               | 585       | 116679           | NR               | 715       | 19222            | NR               | 845       | 2631             | NR               | 975       | 1986             | NR               |
| 460       | 9916             | NR               | 590       | 123752           | NR               | 720       | 17310            | NR               | 850       | 2079             | NR               | 980       | 2540             | NR               |
| 465       | 7051             | NR               | 595       | 129324           | NR               | 725       | 15280            | NR               | 855       | 2309             | NR               | 985       | 1139             | NR               |
| 470       | 5227             | NR               | 600       | 134082           | NR               | 730       | 13282            | NR               | 860       | 2528             | NR               | 990       | 2018             | NR               |
| 475       | 4257             | NR               | 605       | 135698           | NR               | 735       | 11753            | NR               | 865       | 2121             | NR               | 995       | 3445             | NR               |
| 480       | 4052             | NR               | 610       | 135144           | NR               | 740       | 10654            | NR               | 870       | 2751             | NR               | 1000      | 3704             | NR               |
| 485       | 4298             | NR               | 615       | 134180           | NR               | 745       | 9451             | NR               | 875       | 2317             | NR               |           |                  |                  |

REPORT NUMBER: SP1-1908-441-10-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 4696.9

S/P: 0.85

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 1768             | NR               | 490       | 5206             | NR               | 620       | 130919           | NR               | 750       | 8553             | NR               | 880       | 2713             | NR               |
| 365       | 1569             | NR               | 495       | 7286             | NR               | 625       | 125335           | NR               | 755       | 7696             | NR               | 885       | 2316             | NR               |
| 370       | 1594             | NR               | 500       | 10654            | NR               | 630       | 118388           | NR               | 760       | 6978             | NR               | 890       | 2539             | NR               |
| 375       | 1744             | NR               | 505       | 15189            | NR               | 635       | 111855           | NR               | 765       | 6377             | NR               | 895       | 1933             | NR               |
| 380       | 1659             | NR               | 510       | 20541            | NR               | 640       | 104062           | NR               | 770       | 5600             | NR               | 900       | 2216             | NR               |
| 385       | 1504             | NR               | 515       | 26492            | NR               | 645       | 96365            | NR               | 775       | 5000             | NR               | 905       | 2067             | NR               |
| 390       | 1541             | NR               | 520       | 32294            | NR               | 650       | 88651            | NR               | 780       | 4709             | NR               | 910       | 1959             | NR               |
| 395       | 1355             | NR               | 525       | 38123            | NR               | 655       | 81152            | NR               | 785       | 4305             | NR               | 915       | 1874             | NR               |
| 400       | 1243             | NR               | 530       | 43232            | NR               | 660       | 73523            | NR               | 790       | 4040             | NR               | 920       | 1484             | NR               |
| 405       | 1417             | NR               | 535       | 48012            | NR               | 665       | 66123            | NR               | 795       | 3642             | NR               | 925       | 1914             | NR               |
| 410       | 2147             | NR               | 540       | 52623            | NR               | 670       | 58677            | NR               | 800       | 3594             | NR               | 930       | 1948             | NR               |
| 415       | 3837             | NR               | 545       | 57516            | NR               | 675       | 52349            | NR               | 805       | 3190             | NR               | 935       | 2079             | NR               |
| 420       | 7159             | NR               | 550       | 62613            | NR               | 680       | 46159            | NR               | 810       | 3241             | NR               | 940       | 2263             | NR               |
| 425       | 12599            | NR               | 555       | 68554            | NR               | 685       | 40525            | NR               | 815       | 2732             | NR               | 945       | 1688             | NR               |
| 430       | 19019            | NR               | 560       | 75325            | NR               | 690       | 35615            | NR               | 820       | 2612             | NR               | 950       | 1560             | NR               |
| 435       | 24875            | NR               | 565       | 82533            | NR               | 695       | 31158            | NR               | 825       | 2966             | NR               | 955       | 2826             | NR               |
| 440       | 29103            | NR               | 570       | 90909            | NR               | 700       | 27409            | NR               | 830       | 2574             | NR               | 960       | 1477             | NR               |
| 445       | 29901            | NR               | 575       | 99621            | NR               | 705       | 24204            | NR               | 835       | 2633             | NR               | 965       | 1568             | NR               |
| 450       | 24862            | NR               | 580       | 108484           | NR               | 710       | 21558            | NR               | 840       | 2526             | NR               | 970       | 2030             | NR               |
| 455       | 15942            | NR               | 585       | 116679           | NR               | 715       | 19222            | NR               | 845       | 2631             | NR               | 975       | 1986             | NR               |
| 460       | 9916             | NR               | 590       | 123752           | NR               | 720       | 17310            | NR               | 850       | 2079             | NR               | 980       | 2540             | NR               |
| 465       | 7051             | NR               | 595       | 129324           | NR               | 725       | 15280            | NR               | 855       | 2309             | NR               | 985       | 1139             | NR               |
| 470       | 5227             | NR               | 600       | 134082           | NR               | 730       | 13282            | NR               | 860       | 2528             | NR               | 990       | 2018             | NR               |
| 475       | 4257             | NR               | 605       | 135698           | NR               | 735       | 11753            | NR               | 865       | 2121             | NR               | 995       | 3445             | NR               |
| 480       | 4052             | NR               | 610       | 135144           | NR               | 740       | 10654            | NR               | 870       | 2751             | NR               | 1000      | 3704             | NR               |
| 485       | 4298             | NR               | 615       | 134180           | NR               | 745       | 9451             | NR               | 875       | 2317             | NR               |           |                  |                  |

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**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 1470.8 M/P: 0.27**

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 1768             | NR               | 490       | 5206             | NR               | 620       | 130919           | NR               | 750       | 8553             | NR               | 880       | 2713             | NR               |
| 365       | 1569             | NR               | 495       | 7286             | NR               | 625       | 125335           | NR               | 755       | 7696             | NR               | 885       | 2316             | NR               |
| 370       | 1594             | NR               | 500       | 10654            | NR               | 630       | 118388           | NR               | 760       | 6978             | NR               | 890       | 2539             | NR               |
| 375       | 1744             | NR               | 505       | 15189            | NR               | 635       | 111855           | NR               | 765       | 6377             | NR               | 895       | 1933             | NR               |
| 380       | 1659             | NR               | 510       | 20541            | NR               | 640       | 104062           | NR               | 770       | 5600             | NR               | 900       | 2216             | NR               |
| 385       | 1504             | NR               | 515       | 26492            | NR               | 645       | 96365            | NR               | 775       | 5000             | NR               | 905       | 2067             | NR               |
| 390       | 1541             | NR               | 520       | 32294            | NR               | 650       | 88651            | NR               | 780       | 4709             | NR               | 910       | 1959             | NR               |
| 395       | 1355             | NR               | 525       | 38123            | NR               | 655       | 81152            | NR               | 785       | 4305             | NR               | 915       | 1874             | NR               |
| 400       | 1243             | NR               | 530       | 43232            | NR               | 660       | 73523            | NR               | 790       | 4040             | NR               | 920       | 1484             | NR               |
| 405       | 1417             | NR               | 535       | 48012            | NR               | 665       | 66123            | NR               | 795       | 3642             | NR               | 925       | 1914             | NR               |
| 410       | 2147             | NR               | 540       | 52623            | NR               | 670       | 58677            | NR               | 800       | 3594             | NR               | 930       | 1948             | NR               |
| 415       | 3837             | NR               | 545       | 57516            | NR               | 675       | 52349            | NR               | 805       | 3190             | NR               | 935       | 2079             | NR               |
| 420       | 7159             | NR               | 550       | 62613            | NR               | 680       | 46159            | NR               | 810       | 3241             | NR               | 940       | 2263             | NR               |
| 425       | 12599            | NR               | 555       | 68554            | NR               | 685       | 40525            | NR               | 815       | 2732             | NR               | 945       | 1688             | NR               |
| 430       | 19019            | NR               | 560       | 75325            | NR               | 690       | 35615            | NR               | 820       | 2612             | NR               | 950       | 1560             | NR               |
| 435       | 24875            | NR               | 565       | 82533            | NR               | 695       | 31158            | NR               | 825       | 2966             | NR               | 955       | 2826             | NR               |
| 440       | 29103            | NR               | 570       | 90909            | NR               | 700       | 27409            | NR               | 830       | 2574             | NR               | 960       | 1477             | NR               |
| 445       | 29901            | NR               | 575       | 99621            | NR               | 705       | 24204            | NR               | 835       | 2633             | NR               | 965       | 1568             | NR               |
| 450       | 24862            | NR               | 580       | 108484           | NR               | 710       | 21558            | NR               | 840       | 2526             | NR               | 970       | 2030             | NR               |
| 455       | 15942            | NR               | 585       | 116679           | NR               | 715       | 19222            | NR               | 845       | 2631             | NR               | 975       | 1986             | NR               |
| 460       | 9916             | NR               | 590       | 123752           | NR               | 720       | 17310            | NR               | 850       | 2079             | NR               | 980       | 2540             | NR               |
| 465       | 7051             | NR               | 595       | 129324           | NR               | 725       | 15280            | NR               | 855       | 2309             | NR               | 985       | 1139             | NR               |
| 470       | 5227             | NR               | 600       | 134082           | NR               | 730       | 13282            | NR               | 860       | 2528             | NR               | 990       | 2018             | NR               |
| 475       | 4257             | NR               | 605       | 135698           | NR               | 735       | 11753            | NR               | 865       | 2121             | NR               | 995       | 3445             | NR               |
| 480       | 4052             | NR               | 610       | 135144           | NR               | 740       | 10654            | NR               | 870       | 2751             | NR               | 1000      | 3704             | NR               |
| 485       | 4298             | NR               | 615       | 134180           | NR               | 745       | 9451             | NR               | 875       | 2317             | NR               |           |                  |                  |

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### Summary

$R_f = 69.8$   
 $R_g = 99.2$   
 CIE  $R_a = 72.0$   
 $R_9 = -17.4$



### Color Vector Graphics



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

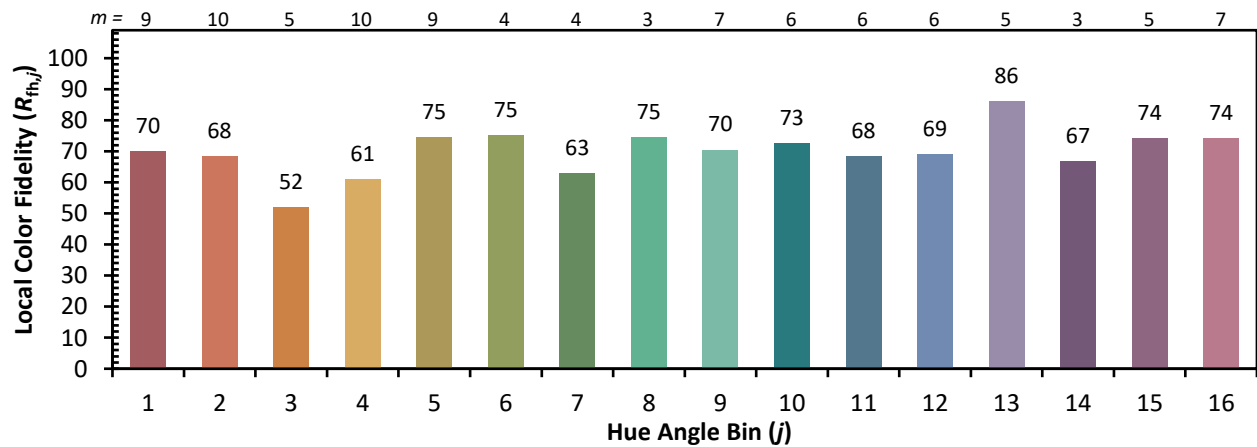
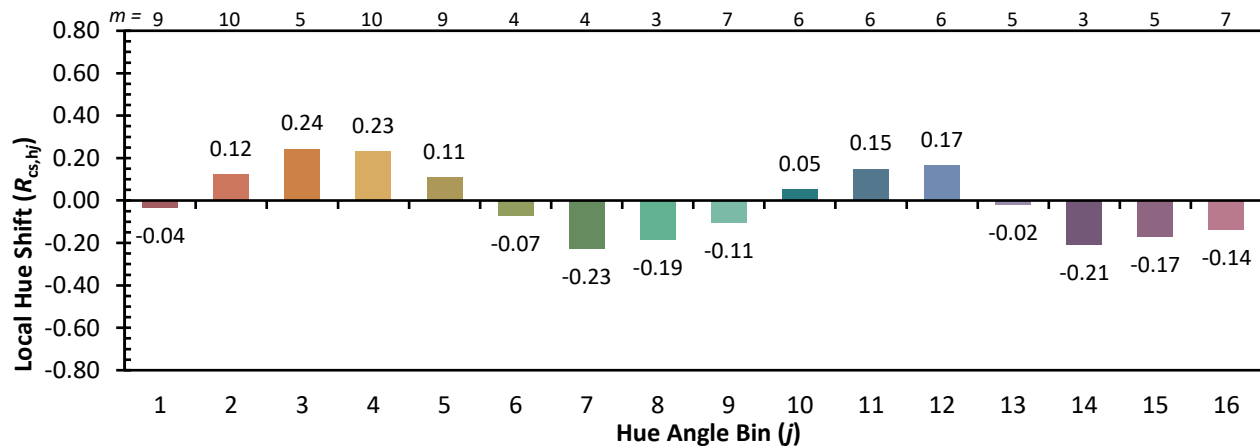
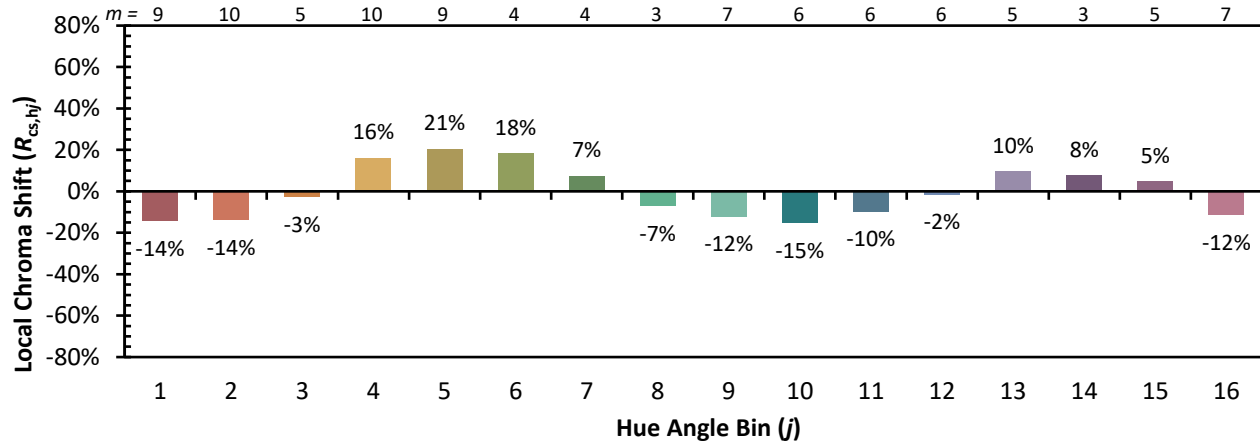
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 56 | CES51 = 74 | CES76 = 56 |
| CES02 = 65 | CES27 = 76 | CES52 = 76 | CES77 = 81 |
| CES03 = 32 | CES28 = 83 | CES53 = 65 | CES78 = 63 |
| CES04 = 72 | CES29 = 46 | CES54 = 78 | CES79 = 84 |
| CES05 = 52 | CES30 = 48 | CES55 = 75 | CES80 = 84 |
| CES06 = 52 | CES31 = 51 | CES56 = 65 | CES81 = 63 |
| CES07 = 44 | CES32 = 51 | CES57 = 62 | CES82 = 92 |
| CES08 = 42 | CES33 = 53 | CES58 = 66 | CES83 = 83 |
| CES09 = 29 | CES34 = 70 | CES59 = 84 | CES84 = 92 |
| CES10 = 78 | CES35 = 85 | CES60 = 90 | CES85 = 81 |
| CES11 = 61 | CES36 = 78 | CES61 = 84 | CES86 = 56 |
| CES12 = 68 | CES37 = 80 | CES62 = 70 | CES87 = 78 |
| CES13 = 45 | CES38 = 53 | CES63 = 68 | CES88 = 72 |
| CES14 = 75 | CES39 = 90 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 84 | CES65 = 67 | CES90 = 67 |
| CES16 = 49 | CES41 = 75 | CES66 = 64 | CES91 = 90 |
| CES17 = 51 | CES42 = 79 | CES67 = 63 | CES92 = 67 |
| CES18 = 57 | CES43 = 64 | CES68 = 69 | CES93 = 79 |
| CES19 = 74 | CES44 = 98 | CES69 = 80 | CES94 = 52 |
| CES20 = 68 | CES45 = 73 | CES70 = 63 | CES95 = 76 |
| CES21 = 89 | CES46 = 67 | CES71 = 63 | CES96 = 78 |
| CES22 = 81 | CES47 = 60 | CES72 = 87 | CES97 = 77 |
| CES23 = 92 | CES48 = 48 | CES73 = 56 | CES98 = 71 |
| CES24 = 92 | CES49 = 64 | CES74 = 87 | CES99 = 65 |
| CES25 = 74 | CES50 = 74 | CES75 = 66 |            |



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Color Rendition by Hue-Angle Bin



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**Measure Comparisons**



(END OF REPORT)