

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: P641734

Luminaire Tested: GWS-SA6B-740-U-T2-W-GRSWH

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P641734  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-21)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA6B-740-U-T2-W-GRSWH  
Description: GALLEON WALL SLIM LUMINAIRE. (6) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS W/ FACTORY INSALLED GLARE SHIELD, WH  
Light Source: (96) 4000K CCT, 70 CRI LEDS  
Ballast/Driver: -

**Summary**

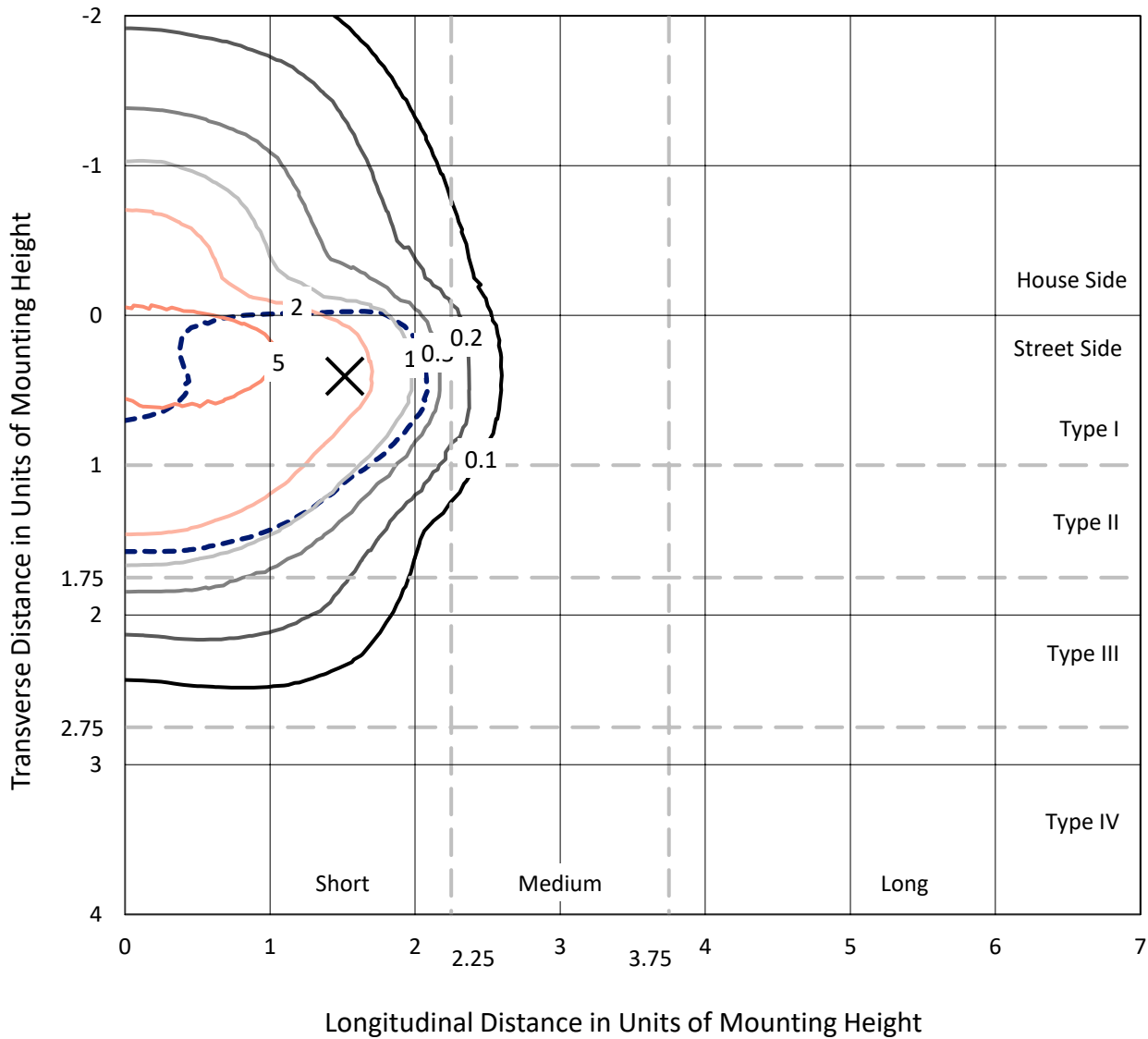
Lumens per Lamp: N/A  
Luminaire Lumens: 17652 lumens  
Efficiency: N/A  
Efficacy: 127.1 lumens/watt  
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B3 - U0 - G2  
  
Input Watts (W): 138.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
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: P641734  
 CATALOG NUMBER: GWS-SA6B-740-U-T2-W-GRSWH

### Iso-Footcandle Lines of Horizontal Illumination

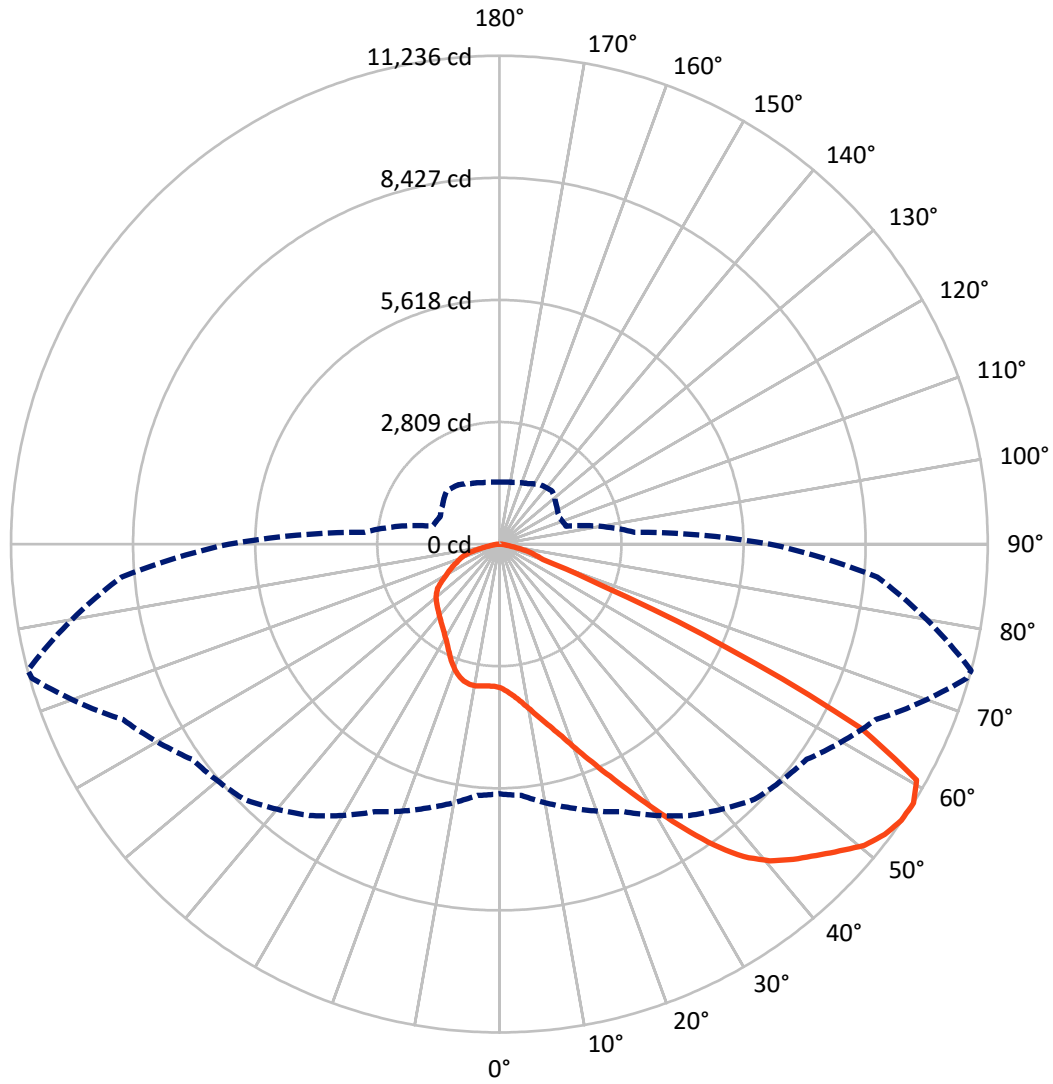
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.5 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral    - - - Horizontal Cone Through 57.5-Deg Vertical

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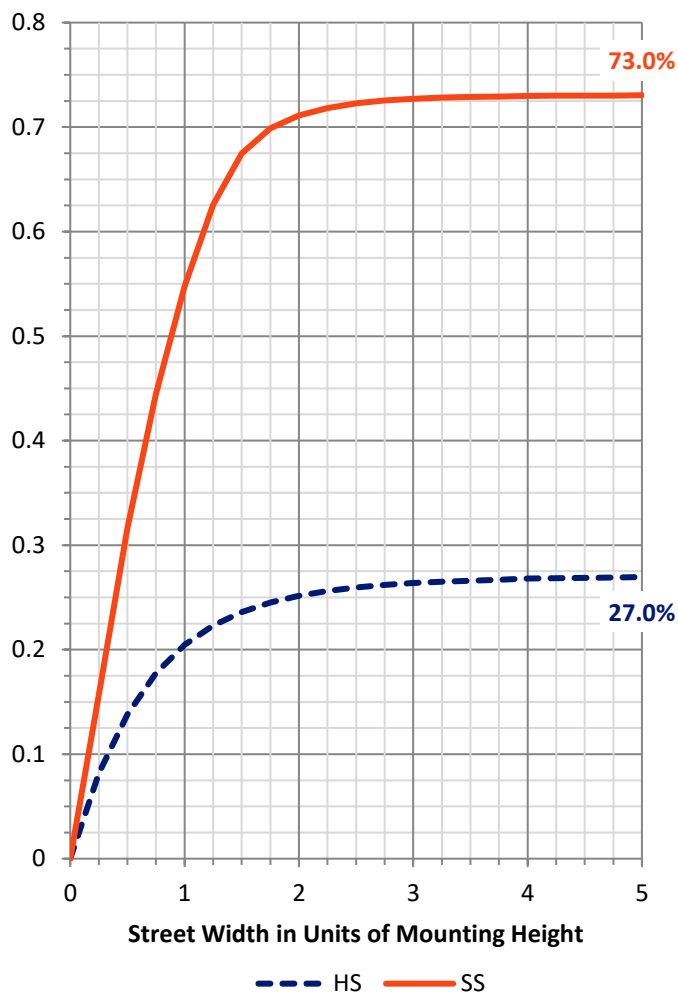
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 4775.2   | 0.0    | 4775.2  |
|                    | % Fixture | 27.1     | 0.0    | 27.1    |
| <b>Street Side</b> | Lumens    | 12876.8  | 0.0    | 12876.8 |
|                    | % Fixture | 72.9     | 0.0    | 72.9    |
| <b>Total</b>       | Lumens    | 17652.0  | 0.0    | 17652.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 330.8   | 1.9       |
| 10°-20°   | 1053.2  | 6.0       |
| 20°-30°   | 1867.9  | 10.6      |
| 30°-40°   | 2859.4  | 16.2      |
| 40°-50°   | 3981.5  | 22.6      |
| 50°-60°   | 4562.0  | 25.8      |
| 60°-70°   | 2344.0  | 13.3      |
| 70°-80°   | 590.1   | 3.3       |
| 80°-90°   | 63.1    | 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°    | 17652.0 | 100.0     |
| 0°-180°   | 17652.0 | 100.0     |

**Coefficient of Utilization**



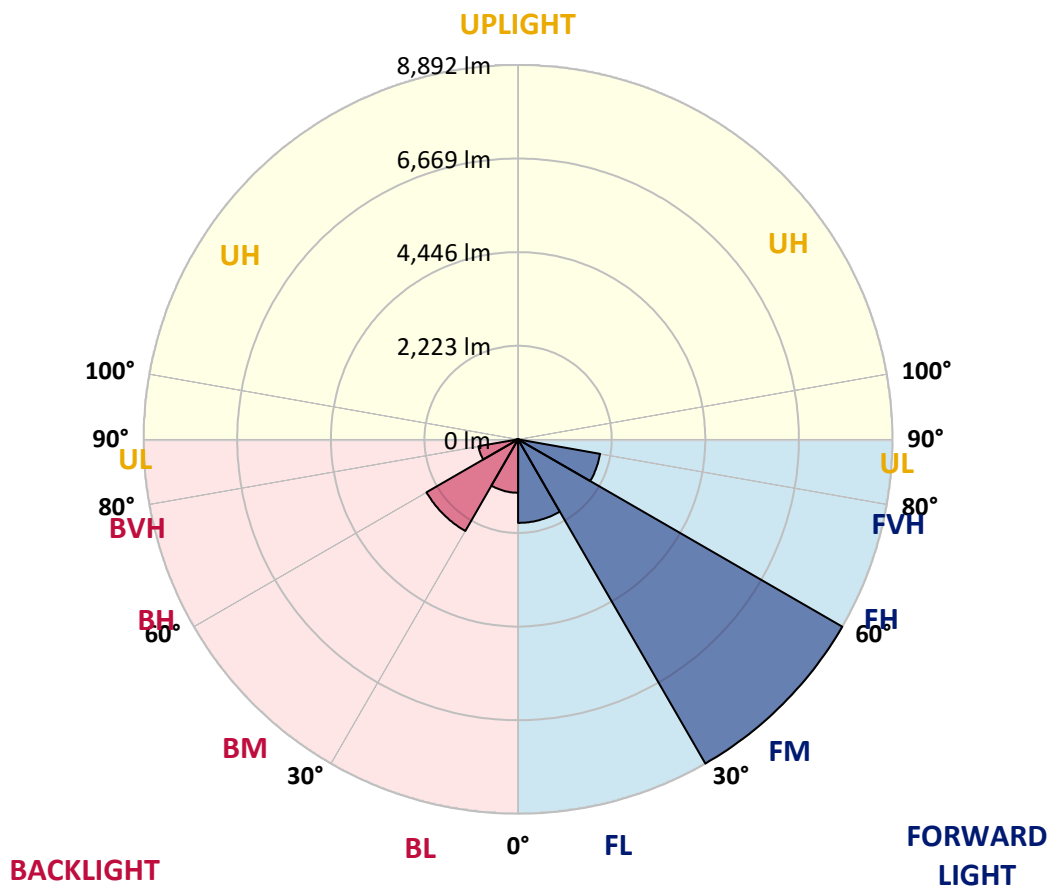
REPORT NUMBER: P641734

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

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 1983.3 | 11.2      |                         |      |         |
| FM (30°-60°)   | 8891.5 | 50.4      |                         |      |         |
| FH (60°-80°)   | 1978.6 | 11.2      |                         |      | G2/5000 |
| FVH (80°-90°)  | 23.3   | 0.1       |                         |      | G1/100  |
| BL (0°-30°)    | 1268.6 | 7.2       | B3/2500                 |      |         |
| BM (30°-60°)   | 2511.3 | 14.2      | B3/5000                 |      |         |
| BH (60°-80°)   | 955.5  | 5.4       | B2/1000                 |      | G2/1000 |
| BVH (80°-90°)  | 39.7   | 0.2       |                         |      | G1/100  |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B3-U0-G2**  
 Type II Short





REPORT NUMBER: P641734

CATALOG NUMBER: GWS-SA6B-740-U-T2-W-GRSWH

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 74°     | 75°     | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|--------|
| 0°    | 3305.8 | 3305.8 | 3305.8 | 3305.8 | 3305.8 | 3305.8 | 3305.8 | 3305.8 | 3305.8  | 3305.8  | 3305.8 |
| 2.5°  | 3551.7 | 3560.8 | 3551.7 | 3566.9 | 3536.5 | 3522.8 | 3489.5 | 3439.4 | 3399.9  | 3393.8  | 3349.8 |
| 5°    | 3827.9 | 3847.7 | 3835.5 | 3829.4 | 3788.5 | 3758.1 | 3708.0 | 3607.8 | 3525.9  | 3513.7  | 3427.2 |
| 7.5°  | 4005.5 | 4019.2 | 4019.2 | 4023.7 | 4008.5 | 3973.6 | 3920.5 | 3802.1 | 3686.8  | 3668.6  | 3538.0 |
| 10°   | 4064.7 | 4075.3 | 4095.1 | 4133.0 | 4163.4 | 4174.0 | 4139.1 | 4025.2 | 3884.1  | 3865.9  | 3683.7 |
| 12.5° | 4078.4 | 4090.5 | 4120.9 | 4190.7 | 4274.2 | 4350.1 | 4356.1 | 4272.6 | 4114.8  | 4095.1  | 3852.2 |
| 15°   | 4104.2 | 4116.3 | 4157.3 | 4243.8 | 4366.7 | 4512.5 | 4602.0 | 4544.3 | 4369.8  | 4348.5  | 4043.5 |
| 17.5° | 4101.1 | 4114.8 | 4175.5 | 4290.9 | 4456.3 | 4667.3 | 4840.3 | 4864.6 | 4684.0  | 4647.5  | 4260.5 |
| 20°   | 4093.5 | 4105.7 | 4170.9 | 4312.1 | 4517.0 | 4806.9 | 5119.6 | 5245.6 | 5051.3  | 5017.9  | 4514.0 |
| 22.5° | 4154.3 | 4167.9 | 4218.0 | 4334.9 | 4548.9 | 4914.7 | 5377.6 | 5681.2 | 5486.9  | 5439.8  | 4805.4 |
| 25°   | 4290.9 | 4310.6 | 4340.9 | 4421.4 | 4606.6 | 5010.3 | 5641.7 | 6174.5 | 5975.6  | 5919.5  | 5122.6 |
| 27.5° | 4501.8 | 4526.1 | 4568.6 | 4606.6 | 4735.6 | 5131.7 | 5904.3 | 6726.9 | 6528.1  | 6468.9  | 5458.1 |
| 30°   | 4759.9 | 4791.7 | 4846.4 | 4872.2 | 4960.2 | 5310.8 | 6189.6 | 7296.1 | 7180.8  | 7098.8  | 5836.0 |
| 32.5° | 5116.5 | 5160.6 | 5212.2 | 5219.8 | 5272.9 | 5582.5 | 6472.0 | 7860.8 | 7859.2  | 7801.6  | 6265.5 |
| 35°   | 5581.0 | 5628.0 | 5638.7 | 5649.3 | 5675.1 | 5955.9 | 6813.5 | 8375.3 | 8574.1  | 8507.3  | 6733.0 |
| 37.5° | 6087.9 | 6156.2 | 6172.9 | 6125.9 | 6162.3 | 6405.2 | 7197.5 | 8788.1 | 9196.4  | 9125.1  | 7185.3 |
| 40°   | 6629.8 | 6657.1 | 6702.7 | 6628.3 | 6673.8 | 6919.7 | 7573.9 | 9052.2 | 9660.9  | 9585.0  | 7542.0 |
| 42.5° | 7018.4 | 7068.5 | 7136.8 | 7109.4 | 7135.2 | 7359.9 | 7838.0 | 9179.7 | 9991.8  | 9915.9  | 7798.5 |
| 45°   | 7440.3 | 7455.5 | 7499.5 | 7493.4 | 7508.6 | 7718.1 | 8027.7 | 9235.9 | 10287.7 | 10219.4 | 8017.1 |
| 47.5° | 7807.6 | 7830.4 | 7859.2 | 7825.8 | 7792.4 | 7929.1 | 8182.5 | 9284.5 | 10629.2 | 10547.3 | 8246.3 |
| 50°   | 8161.3 | 8181.0 | 8215.9 | 8118.8 | 7994.3 | 8029.2 | 8258.4 | 9351.2 | 10949.5 | 10891.8 | 8426.9 |
| 52.5° | 8226.5 | 8247.8 | 8411.7 | 8431.4 | 8272.1 | 8149.1 | 8392.0 | 9498.5 | 11137.7 | 11101.3 | 8492.2 |
| 55°   | 7405.4 | 7443.4 | 7769.7 | 8144.6 | 8537.7 | 8498.2 | 8606.0 | 9575.9 | 11212.1 | 11221.2 | 8609.0 |
| 57.5° | 5748.0 | 5802.6 | 6279.2 | 6793.7 | 7620.9 | 8305.5 | 8633.3 | 9556.1 | 11186.3 | 11236.4 | 8728.9 |
| 60°   | 3770.2 | 3802.1 | 4366.7 | 4943.5 | 5801.1 | 6748.2 | 7727.2 | 9201.0 | 10957.1 | 11028.4 | 8698.6 |
| 62.5° | 2276.7 | 2313.1 | 2767.0 | 3204.1 | 3709.5 | 4342.5 | 5241.0 | 7394.8 | 9184.3  | 9343.7  | 6966.8 |
| 65°   | 1589.1 | 1637.7 | 2035.4 | 2395.1 | 2569.7 | 2439.1 | 2654.7 | 4130.0 | 5722.2  | 5788.9  | 4257.5 |
| 67.5° | 1152.0 | 1185.4 | 1511.7 | 1939.8 | 2132.5 | 1722.7 | 1312.9 | 1829.0 | 2492.2  | 2516.5  | 1756.1 |
| 70°   | 754.4  | 792.3  | 1088.3 | 1476.8 | 1740.9 | 1396.4 | 982.0  | 989.6  | 1048.8  | 1061.0  | 1020.0 |
| 72.5° | 414.4  | 437.1  | 672.4  | 980.5  | 1029.1 | 834.8  | 766.5  | 822.7  | 863.6   | 863.6   | 874.3  |
| 75°   | 214.0  | 233.7  | 274.7  | 323.3  | 390.1  | 456.9  | 552.5  | 636.0  | 680.0   | 683.0   | 678.5  |
| 77.5° | 109.3  | 116.9  | 147.2  | 159.4  | 174.5  | 203.4  | 264.1  | 338.5  | 377.9   | 393.1   | 390.1  |
| 80°   | 51.6   | 54.6   | 62.2   | 72.9   | 89.6   | 113.8  | 142.7  | 170.0  | 194.3   | 197.3   | 214.0  |
| 82.5° | 27.3   | 30.4   | 33.4   | 39.5   | 48.6   | 60.7   | 83.5   | 100.2  | 115.4   | 118.4   | 132.0  |
| 85°   | 10.6   | 12.1   | 13.7   | 15.2   | 21.2   | 25.8   | 34.9   | 47.1   | 57.7    | 57.7    | 68.3   |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 1.5    | 3.0    | 6.1    | 7.6    | 10.6    | 10.6    | 18.2   |
| 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: P641734

CATALOG NUMBER: GWS-SA6B-740-U-T2-W-GRSWH

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3305.8 | 3305.8 | 3305.8 | 3305.8 | 3305.8 | 3305.8 | 3305.8 | 3305.8 | 3305.8 | 3305.8 | 3305.8 |
| 2.5°  | 3339.2 | 3295.2 | 3275.4 | 3243.6 | 3217.8 | 3188.9 | 3166.2 | 3149.5 | 3138.8 | 3132.8 | 3126.7 |
| 5°    | 3393.8 | 3327.0 | 3273.9 | 3210.2 | 3166.2 | 3123.7 | 3088.7 | 3064.5 | 3052.3 | 3043.2 | 3037.1 |
| 7.5°  | 3478.8 | 3389.3 | 3289.1 | 3190.4 | 3113.0 | 3044.7 | 3000.7 | 2974.9 | 2958.2 | 2952.1 | 2947.6 |
| 10°   | 3595.7 | 3471.2 | 3305.8 | 3149.5 | 3034.1 | 2959.7 | 2929.4 | 2917.2 | 2918.8 | 2915.7 | 2914.2 |
| 12.5° | 3727.7 | 3557.8 | 3301.2 | 3076.6 | 2949.1 | 2905.1 | 2906.6 | 2926.3 | 2949.1 | 2955.2 | 2956.7 |
| 15°   | 3870.4 | 3642.8 | 3257.2 | 2982.5 | 2882.3 | 2886.9 | 2926.3 | 2973.4 | 3015.9 | 3032.6 | 3035.6 |
| 17.5° | 4025.2 | 3714.1 | 3176.8 | 2879.3 | 2827.7 | 2876.3 | 2949.1 | 3026.5 | 3088.7 | 3116.1 | 3123.7 |
| 20°   | 4198.3 | 3774.8 | 3062.9 | 2777.6 | 2776.1 | 2856.5 | 2962.8 | 3064.5 | 3143.4 | 3179.8 | 3185.9 |
| 22.5° | 4381.9 | 3812.7 | 2923.3 | 2683.5 | 2723.0 | 2830.7 | 2952.1 | 3058.4 | 3141.9 | 3178.3 | 3185.9 |
| 25°   | 4567.1 | 3824.9 | 2770.0 | 2597.0 | 2668.3 | 2789.7 | 2900.5 | 2985.5 | 3064.5 | 3096.3 | 3102.4 |
| 27.5° | 4740.1 | 3790.0 | 2624.3 | 2522.6 | 2618.2 | 2729.0 | 2803.4 | 2848.9 | 2903.6 | 2927.9 | 2932.4 |
| 30°   | 4916.2 | 3720.2 | 2501.4 | 2463.4 | 2562.1 | 2645.5 | 2678.9 | 2682.0 | 2703.2 | 2703.2 | 2706.3 |
| 32.5° | 5093.8 | 3616.9 | 2393.6 | 2405.7 | 2492.2 | 2546.9 | 2551.4 | 2516.5 | 2490.7 | 2448.2 | 2446.7 |
| 35°   | 5298.7 | 3512.2 | 2305.6 | 2340.5 | 2410.3 | 2443.7 | 2430.0 | 2363.2 | 2301.0 | 2231.2 | 2228.1 |
| 37.5° | 5488.4 | 3404.5 | 2231.2 | 2273.7 | 2317.7 | 2342.0 | 2310.1 | 2229.7 | 2178.1 | 2106.7 | 2096.1 |
| 40°   | 5644.7 | 3307.3 | 2159.8 | 2203.9 | 2225.1 | 2246.4 | 2194.8 | 2129.5 | 2137.1 | 2097.6 | 2096.1 |
| 42.5° | 5735.8 | 3213.2 | 2093.1 | 2126.5 | 2140.1 | 2155.3 | 2109.8 | 2061.2 | 2102.2 | 2071.8 | 2073.3 |
| 45°   | 5802.6 | 3131.2 | 2032.4 | 2044.5 | 2077.9 | 2100.7 | 2058.2 | 2003.5 | 2012.6 | 1895.7 | 1868.4 |
| 47.5° | 5878.5 | 3085.7 | 1974.7 | 1962.5 | 2021.7 | 2061.2 | 1995.9 | 1917.0 | 1862.4 | 1747.0 | 1736.4 |
| 50°   | 5958.9 | 3069.0 | 1914.0 | 1880.6 | 1951.9 | 1989.9 | 1914.0 | 1815.3 | 1744.0 | 1681.7 | 1675.7 |
| 52.5° | 5986.3 | 3067.5 | 1838.1 | 1781.9 | 1853.2 | 1906.4 | 1842.6 | 1742.4 | 1657.5 | 1596.7 | 1593.7 |
| 55°   | 6094.0 | 3111.5 | 1740.9 | 1646.8 | 1713.6 | 1822.9 | 1775.8 | 1631.6 | 1563.3 | 1536.0 | 1533.0 |
| 57.5° | 6220.0 | 3119.1 | 1587.6 | 1499.6 | 1592.2 | 1721.2 | 1662.0 | 1537.5 | 1463.2 | 1429.8 | 1426.7 |
| 60°   | 6168.4 | 2932.4 | 1423.7 | 1387.3 | 1489.0 | 1625.6 | 1570.9 | 1463.2 | 1376.7 | 1344.8 | 1341.7 |
| 62.5° | 4700.7 | 2070.3 | 1303.8 | 1290.1 | 1378.2 | 1487.5 | 1476.8 | 1364.5 | 1282.6 | 1259.8 | 1256.7 |
| 65°   | 2827.7 | 1454.1 | 1188.4 | 1186.9 | 1249.2 | 1353.9 | 1367.5 | 1276.5 | 1190.0 | 1158.1 | 1158.1 |
| 67.5° | 1397.9 | 1112.6 | 1057.9 | 1050.3 | 1089.8 | 1164.2 | 1221.8 | 1147.5 | 1074.6 | 1044.3 | 1039.7 |
| 70°   | 988.1  | 980.5  | 962.3  | 941.0  | 948.6  | 979.0  | 1003.3 | 941.0  | 863.6  | 833.3  | 827.2  |
| 72.5° | 854.5  | 856.0  | 843.9  | 827.2  | 821.1  | 799.9  | 778.6  | 733.1  | 686.1  | 654.2  | 657.2  |
| 75°   | 663.3  | 666.3  | 673.9  | 667.8  | 651.1  | 628.4  | 605.6  | 547.9  | 510.0  | 479.6  | 473.6  |
| 77.5° | 387.0  | 402.2  | 426.5  | 420.4  | 423.5  | 391.6  | 382.5  | 326.3  | 291.4  | 270.2  | 265.6  |
| 80°   | 218.6  | 227.7  | 238.3  | 245.9  | 236.8  | 223.1  | 203.4  | 173.0  | 162.4  | 147.2  | 144.2  |
| 82.5° | 132.0  | 141.2  | 145.7  | 151.8  | 148.7  | 130.5  | 115.4  | 95.6   | 86.5   | 78.9   | 77.4   |
| 85°   | 66.8   | 72.9   | 77.4   | 80.4   | 71.3   | 59.2   | 53.1   | 42.5   | 36.4   | 31.9   | 31.9   |
| 87.5° | 16.7   | 18.2   | 21.2   | 18.2   | 16.7   | 7.6    | 6.1    | 1.5    | 0.0    | 0.0    | 0.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



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

Report Prepared for

Cooper Lighting Solutions

MCGRAW, INVUE, LUMARK AND STREETWORKS

DATA VALID FOR LUMINAIRES UTILIZING SA LIGHT ENGINES

Report Number: SP1-2101-121-2

Luminaire Tested: IFLD-S-SA2A-740-U-T3R-HSS

Test Date: 03/05/2021

**Test Information**

Test Method: LM-79-08  
 Report Number: SP1-2101-121-2  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1  
 Measurement Geometry: 4π  
 Issue Date: 03/05/2021  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: STREETWORKS  
 Catalog Number: **IFLD-S-SA2A-740-U-T3R-HSS**  
 Description: STREETWORKS INF FLOOD

SHIELD, DRIVER PROGRAMMED @ 615mA.

**Spectral Parameters**

|                           |         |           |      |      |       |
|---------------------------|---------|-----------|------|------|-------|
| CCT (K):                  | 3905    | CRI (Ra): | 71.2 | R9:  | -29.7 |
| CIE u':                   | 0.2273  | R1:       | 68.9 | R10: | 46.2  |
| CIE v':                   | 0.5024  | R2:       | 77.0 | R11: | 68.8  |
| Duv:                      | -0.0008 | R3:       | 84.0 | R12: | 45.6  |
| CIE x:                    | 0.3841  | R4:       | 71.6 | R13: | 69.5  |
| CIE y:                    | 0.3774  | R5:       | 68.9 | R14: | 90.7  |
| CIE z:                    | 0.2385  | R6:       | 68.3 |      |       |
| Peak Wavelength (nm):     | 443     | R7:       | 78.7 |      |       |
| Dominant Wavelength (nm): | 579     | R8:       | 52.2 |      |       |
| Purity:                   | 28.7    |           |      |      |       |
| Rf:                       | 71.7    |           |      |      |       |
| Rg:                       | 96.9    |           |      |      |       |



**Test Conditions**

Stabilization Time: 211M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 24.8/312%  
 Sphere Temperature (°C): 24.1

REPORT NUMBER: SP1-2101-121-2

| 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            |

REPORT NUMBER: SP1-2101-121-2

**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 4000K 4-step quadrangle

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**Photopic Flux vs. Wavelength**



#####

| 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    | 2304          | 0.0           | 490    | 19043         | 2.7           | 620    | 97577         | 25.4          | 750    | 4830          | 0.0           | 880    | 3505          | 0.0           |
| 365    | 2150          | 0.0           | 495    | 26606         | 4.8           | 625    | 90158         | 19.9          | 755    | 4664          | 0.0           | 885    | 2991          | 0.0           |
| 370    | 2146          | 0.0           | 500    | 36376         | 8.0           | 630    | 82240         | 14.9          | 760    | 4006          | 0.0           | 890    | 2327          | 0.0           |
| 375    | 2332          | 0.0           | 505    | 47714         | 13.3          | 635    | 74361         | 11.2          | 765    | 3715          | 0.0           | 895    | 2775          | 0.0           |
| 380    | 2527          | 0.0           | 510    | 58741         | 20.2          | 640    | 66994         | 8.0           | 770    | 3696          | 0.0           | 900    | 2141          | 0.0           |
| 385    | 2304          | 0.0           | 515    | 68716         | 28.5          | 645    | 60405         | 5.8           | 775    | 3117          | 0.0           | 905    | 2421          | 0.0           |
| 390    | 2064          | 0.0           | 520    | 77136         | 37.4          | 650    | 53806         | 3.9           | 780    | 3062          | 0.0           | 910    | 2200          | 0.0           |
| 395    | 1856          | 0.0           | 525    | 83567         | 44.9          | 655    | 47610         | 2.7           | 785    | 2907          | 0.0           | 915    | 2716          | 0.0           |
| 400    | 1856          | 0.0           | 530    | 89283         | 52.6          | 660    | 42018         | 1.8           | 790    | 2655          | 0.0           | 920    | 2656          | 0.0           |
| 405    | 2374          | 0.0           | 535    | 94097         | 58.4          | 665    | 36742         | 1.2           | 795    | 2467          | 0.0           | 925    | 2671          | 0.0           |
| 410    | 4084          | 0.0           | 540    | 96845         | 63.1          | 670    | 32105         | 0.7           | 800    | 2609          | 0.0           | 930    | 3292          | 0.0           |
| 415    | 8543          | 0.0           | 545    | 100829        | 67.1          | 675    | 27946         | 0.5           | 805    | 2293          | 0.0           | 935    | 3188          | 0.0           |
| 420    | 18394         | 0.1           | 550    | 105648        | 71.8          | 680    | 24146         | 0.3           | 810    | 2188          | 0.0           | 940    | 1997          | 0.0           |
| 425    | 37987         | 0.2           | 555    | 110017        | 75.1          | 685    | 21191         | 0.2           | 815    | 2386          | 0.0           | 945    | 2623          | 0.0           |
| 430    | 67605         | 0.5           | 560    | 114586        | 77.9          | 690    | 18544         | 0.1           | 820    | 2712          | 0.0           | 950    | 2969          | 0.0           |
| 435    | 102160        | 1.2           | 565    | 118987        | 79.1          | 695    | 16058         | 0.1           | 825    | 2473          | 0.0           | 955    | 2277          | 0.0           |
| 440    | 135103        | 2.1           | 570    | 122326        | 79.5          | 700    | 14133         | 0.0           | 830    | 1969          | 0.0           | 960    | 4267          | 0.0           |
| 445    | 140126        | 2.9           | 575    | 125968        | 78.4          | 705    | 12309         | 0.0           | 835    | 1917          | 0.0           | 965    | 2034          | 0.0           |
| 450    | 102339        | 2.7           | 580    | 127613        | 75.8          | 710    | 11142         | 0.0           | 840    | 2248          | 0.0           | 970    | 3586          | 0.0           |
| 455    | 58751         | 2.0           | 585    | 129466        | 71.9          | 715    | 10143         | 0.0           | 845    | 2266          | 0.0           | 975    | 2505          | 0.0           |
| 460    | 36892         | 1.5           | 590    | 128813        | 66.6          | 720    | 9072          | 0.0           | 850    | 2558          | 0.0           | 980    | 2666          | 0.0           |
| 465    | 24637         | 1.3           | 595    | 126387        | 59.9          | 725    | 8130          | 0.0           | 855    | 2767          | 0.0           | 985    | 2934          | 0.0           |
| 470    | 16738         | 1.0           | 600    | 123477        | 53.2          | 730    | 7149          | 0.0           | 860    | 2826          | 0.0           | 990    | 4120          | 0.0           |
| 475    | 13456         | 1.1           | 605    | 118718        | 46.0          | 735    | 6311          | 0.0           | 865    | 2385          | 0.0           | 995    | 3858          | 0.0           |
| 480    | 13081         | 1.2           | 610    | 112091        | 38.5          | 740    | 5711          | 0.0           | 870    | 3194          | 0.0           | 1000   | 3405          | 0.0           |
| 485    | 14734         | 1.7           | 615    | 105039        | 31.7          | 745    | 5111          | 0.0           | 875    | 3189          | 0.0           |        |               |               |

REPORT NUMBER: SP1-2101-121-2

Scotopic Flux vs. Wavelength



Scotopic Lumens: 10425.8 S/P: 1.47

| 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    | 2304          | 0.0           | 490    | 19043         | 29.3          | 620    | 97577         | 1.2           | 750    | 4830          | 0.0           | 880    | 3505          | 0.0           |
| 365    | 2150          | 0.0           | 495    | 26606         | 43.0          | 625    | 90158         | 0.8           | 755    | 4664          | 0.0           | 885    | 2991          | 0.0           |
| 370    | 2146          | 0.0           | 500    | 36376         | 60.8          | 630    | 82240         | 0.5           | 760    | 4006          | 0.0           | 890    | 2327          | 0.0           |
| 375    | 2332          | 0.0           | 505    | 47714         | 81.1          | 635    | 74361         | 0.3           | 765    | 3715          | 0.0           | 895    | 2775          | 0.0           |
| 380    | 2527          | 0.0           | 510    | 58741         | 99.6          | 640    | 66994         | 0.2           | 770    | 3696          | 0.0           | 900    | 2141          | 0.0           |
| 385    | 2304          | 0.0           | 515    | 68716         | 113.9         | 645    | 60405         | 0.1           | 775    | 3117          | 0.0           | 905    | 2421          | 0.0           |
| 390    | 2064          | 0.0           | 520    | 77136         | 122.6         | 650    | 53806         | 0.1           | 780    | 3062          | 0.0           | 910    | 2200          | 0.0           |
| 395    | 1856          | 0.0           | 525    | 83567         | 125.0         | 655    | 47610         | 0.0           | 785    | 2907          | 0.0           | 915    | 2716          | 0.0           |
| 400    | 1856          | 0.0           | 530    | 89283         | 123.1         | 660    | 42018         | 0.0           | 790    | 2655          | 0.0           | 920    | 2656          | 0.0           |
| 405    | 2374          | 0.1           | 535    | 94097         | 117.3         | 665    | 36742         | 0.0           | 795    | 2467          | 0.0           | 925    | 2671          | 0.0           |
| 410    | 4084          | 0.2           | 540    | 96845         | 107.0         | 670    | 32105         | 0.0           | 800    | 2609          | 0.0           | 930    | 3292          | 0.0           |
| 415    | 8543          | 0.9           | 545    | 100829        | 96.7          | 675    | 27946         | 0.0           | 805    | 2293          | 0.0           | 935    | 3188          | 0.0           |
| 420    | 18394         | 3.0           | 550    | 105648        | 86.4          | 680    | 24146         | 0.0           | 810    | 2188          | 0.0           | 940    | 1997          | 0.0           |
| 425    | 37987         | 9.3           | 555    | 110017        | 75.2          | 685    | 21191         | 0.0           | 815    | 2386          | 0.0           | 945    | 2623          | 0.0           |
| 430    | 67605         | 23.0          | 560    | 114586        | 64.0          | 690    | 18544         | 0.0           | 820    | 2712          | 0.0           | 950    | 2969          | 0.0           |
| 435    | 102160        | 45.7          | 565    | 118987        | 53.4          | 695    | 16058         | 0.0           | 825    | 2473          | 0.0           | 955    | 2277          | 0.0           |
| 440    | 135103        | 75.5          | 570    | 122326        | 43.2          | 700    | 14133         | 0.0           | 830    | 1969          | 0.0           | 960    | 4267          | 0.0           |
| 445    | 140126        | 93.8          | 575    | 125968        | 34.3          | 705    | 12309         | 0.0           | 835    | 1917          | 0.0           | 965    | 2034          | 0.0           |
| 450    | 102339        | 79.3          | 580    | 127613        | 26.3          | 710    | 11142         | 0.0           | 840    | 2248          | 0.0           | 970    | 3586          | 0.0           |
| 455    | 58751         | 51.3          | 585    | 129466        | 19.8          | 715    | 10143         | 0.0           | 845    | 2266          | 0.0           | 975    | 2505          | 0.0           |
| 460    | 36892         | 35.6          | 590    | 128813        | 14.3          | 720    | 9072          | 0.0           | 850    | 2558          | 0.0           | 980    | 2666          | 0.0           |
| 465    | 24637         | 26.0          | 595    | 126387        | 10.1          | 725    | 8130          | 0.0           | 855    | 2767          | 0.0           | 985    | 2934          | 0.0           |
| 470    | 16738         | 19.3          | 600    | 123477        | 7.0           | 730    | 7149          | 0.0           | 860    | 2826          | 0.0           | 990    | 4120          | 0.0           |
| 475    | 13456         | 16.8          | 605    | 118718        | 4.7           | 735    | 6311          | 0.0           | 865    | 2385          | 0.0           | 995    | 3858          | 0.0           |
| 480    | 13081         | 17.7          | 610    | 112091        | 3.0           | 740    | 5711          | 0.0           | 870    | 3194          | 0.0           | 1000   | 3405          | 0.0           |
| 485    | 14734         | 21.4          | 615    | 105039        | 1.9           | 745    | 5111          | 0.0           | 875    | 3189          | 0.0           |        |               |               |

REPORT NUMBER: SP1-2101-121-2

**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 3927.2 M/P: 0.55**

| 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    | 2304          | 0.0           | 490    | 19043         | 15.8          | 620    | 97577         | 0.1           | 750    | 4830          | 0.0           | 880    | 3505          | 0.0           |
| 365    | 2150          | 0.0           | 495    | 26606         | 22.0          | 625    | 90158         | 0.0           | 755    | 4664          | 0.0           | 885    | 2991          | 0.0           |
| 370    | 2146          | 0.0           | 500    | 36376         | 29.2          | 630    | 82240         | 0.0           | 760    | 4006          | 0.0           | 890    | 2327          | 0.0           |
| 375    | 2332          | 0.0           | 505    | 47714         | 36.6          | 635    | 74361         | 0.0           | 765    | 3715          | 0.0           | 895    | 2775          | 0.0           |
| 380    | 2527          | 0.0           | 510    | 58741         | 42.2          | 640    | 66994         | 0.0           | 770    | 3696          | 0.0           | 900    | 2141          | 0.0           |
| 385    | 2304          | 0.0           | 515    | 68716         | 44.9          | 645    | 60405         | 0.0           | 775    | 3117          | 0.0           | 905    | 2421          | 0.0           |
| 390    | 2064          | 0.0           | 520    | 77136         | 44.9          | 650    | 53806         | 0.0           | 780    | 3062          | 0.0           | 910    | 2200          | 0.0           |
| 395    | 1856          | 0.0           | 525    | 83567         | 42.4          | 655    | 47610         | 0.0           | 785    | 2907          | 0.0           | 915    | 2716          | 0.0           |
| 400    | 1856          | 0.0           | 530    | 89283         | 38.6          | 660    | 42018         | 0.0           | 790    | 2655          | 0.0           | 920    | 2656          | 0.0           |
| 405    | 2374          | 0.0           | 535    | 94097         | 33.9          | 665    | 36742         | 0.0           | 795    | 2467          | 0.0           | 925    | 2671          | 0.0           |
| 410    | 4084          | 0.2           | 540    | 96845         | 28.3          | 670    | 32105         | 0.0           | 800    | 2609          | 0.0           | 930    | 3292          | 0.0           |
| 415    | 8543          | 0.6           | 545    | 100829        | 23.4          | 675    | 27946         | 0.0           | 805    | 2293          | 0.0           | 935    | 3188          | 0.0           |
| 420    | 18394         | 2.1           | 550    | 105648        | 19.0          | 680    | 24146         | 0.0           | 810    | 2188          | 0.0           | 940    | 1997          | 0.0           |
| 425    | 37987         | 5.9           | 555    | 110017        | 14.8          | 685    | 21191         | 0.0           | 815    | 2386          | 0.0           | 945    | 2623          | 0.0           |
| 430    | 67605         | 14.3          | 560    | 114586        | 11.3          | 690    | 18544         | 0.0           | 820    | 2712          | 0.0           | 950    | 2969          | 0.0           |
| 435    | 102160        | 27.3          | 565    | 118987        | 8.4           | 695    | 16058         | 0.0           | 825    | 2473          | 0.0           | 955    | 2277          | 0.0           |
| 440    | 135103        | 45.1          | 570    | 122326        | 6.0           | 700    | 14133         | 0.0           | 830    | 1969          | 0.0           | 960    | 4267          | 0.0           |
| 445    | 140126        | 55.3          | 575    | 125968        | 4.2           | 705    | 12309         | 0.0           | 835    | 1917          | 0.0           | 965    | 2034          | 0.0           |
| 450    | 102339        | 47.2          | 580    | 127613        | 2.9           | 710    | 11142         | 0.0           | 840    | 2248          | 0.0           | 970    | 3586          | 0.0           |
| 455    | 58751         | 30.8          | 585    | 129466        | 1.9           | 715    | 10143         | 0.0           | 845    | 2266          | 0.0           | 975    | 2505          | 0.0           |
| 460    | 36892         | 21.7          | 590    | 128813        | 1.3           | 720    | 9072          | 0.0           | 850    | 2558          | 0.0           | 980    | 2666          | 0.0           |
| 465    | 24637         | 16.1          | 595    | 126387        | 0.8           | 725    | 8130          | 0.0           | 855    | 2767          | 0.0           | 985    | 2934          | 0.0           |
| 470    | 16738         | 12.0          | 600    | 123477        | 0.5           | 730    | 7149          | 0.0           | 860    | 2826          | 0.0           | 990    | 4120          | 0.0           |
| 475    | 13456         | 10.3          | 605    | 118718        | 0.3           | 735    | 6311          | 0.0           | 865    | 2385          | 0.0           | 995    | 3858          | 0.0           |
| 480    | 13081         | 10.5          | 610    | 112091        | 0.2           | 740    | 5711          | 0.0           | 870    | 3194          | 0.0           | 1000   | 3405          | 0.0           |
| 485    | 14734         | 12.1          | 615    | 105039        | 0.1           | 745    | 5111          | 0.0           | 875    | 3189          | 0.0           |        |               |               |

**Summary**

$R_f = 71.7$   
 $R_g = 96.9$   
 CIE  $R_a = 71.2$   
 $R_g = -29.7$



**Color Vector Graphics**





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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 55 | CES51 = 86 | CES76 = 45 |
| CES02 = 61 | CES27 = 80 | CES52 = 87 | CES77 = 68 |
| CES03 = 30 | CES28 = 79 | CES53 = 74 | CES78 = 49 |
| CES04 = 70 | CES29 = 51 | CES54 = 81 | CES79 = 77 |
| CES05 = 47 | CES30 = 60 | CES55 = 80 | CES80 = 75 |
| CES06 = 50 | CES31 = 56 | CES56 = 69 | CES81 = 75 |
| CES07 = 40 | CES32 = 52 | CES57 = 67 | CES82 = 90 |
| CES08 = 39 | CES33 = 62 | CES58 = 69 | CES83 = 85 |
| CES09 = 29 | CES34 = 65 | CES59 = 86 | CES84 = 87 |
| CES10 = 74 | CES35 = 81 | CES60 = 91 | CES85 = 83 |
| CES11 = 57 | CES36 = 92 | CES61 = 85 | CES86 = 72 |
| CES12 = 63 | CES37 = 74 | CES62 = 81 | CES87 = 77 |
| CES13 = 42 | CES38 = 69 | CES63 = 72 | CES88 = 77 |
| CES14 = 74 | CES39 = 92 | CES64 = 69 | CES89 = 72 |
| CES15 = 71 | CES40 = 86 | CES65 = 64 | CES90 = 75 |
| CES16 = 46 | CES41 = 84 | CES66 = 63 | CES91 = 91 |
| CES17 = 49 | CES42 = 75 | CES67 = 60 | CES92 = 66 |
| CES18 = 56 | CES43 = 70 | CES68 = 67 | CES93 = 80 |
| CES19 = 72 | CES44 = 98 | CES69 = 77 | CES94 = 56 |
| CES20 = 65 | CES45 = 80 | CES70 = 57 | CES95 = 72 |
| CES21 = 86 | CES46 = 77 | CES71 = 53 | CES96 = 78 |
| CES22 = 78 | CES47 = 74 | CES72 = 84 | CES97 = 83 |
| CES23 = 92 | CES48 = 66 | CES73 = 47 | CES98 = 73 |
| CES24 = 91 | CES49 = 76 | CES74 = 96 | CES99 = 63 |
| CES25 = 72 | CES50 = 85 | CES75 = 52 |            |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)