

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: P641739

Luminaire Tested: GWS-SA6B-740-U-T2R-W-HSS

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P641739  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-14)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA6B-740-U-T2R-W-HSS  
Description: GALLEON WALL SLIM LUMINAIRE. (6) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS WITH HOUSE SIDE SHIELD  
Light Source: (96) 4000K CCT, 70 CRI LEDS  
Ballast/Driver: -

**Summary**

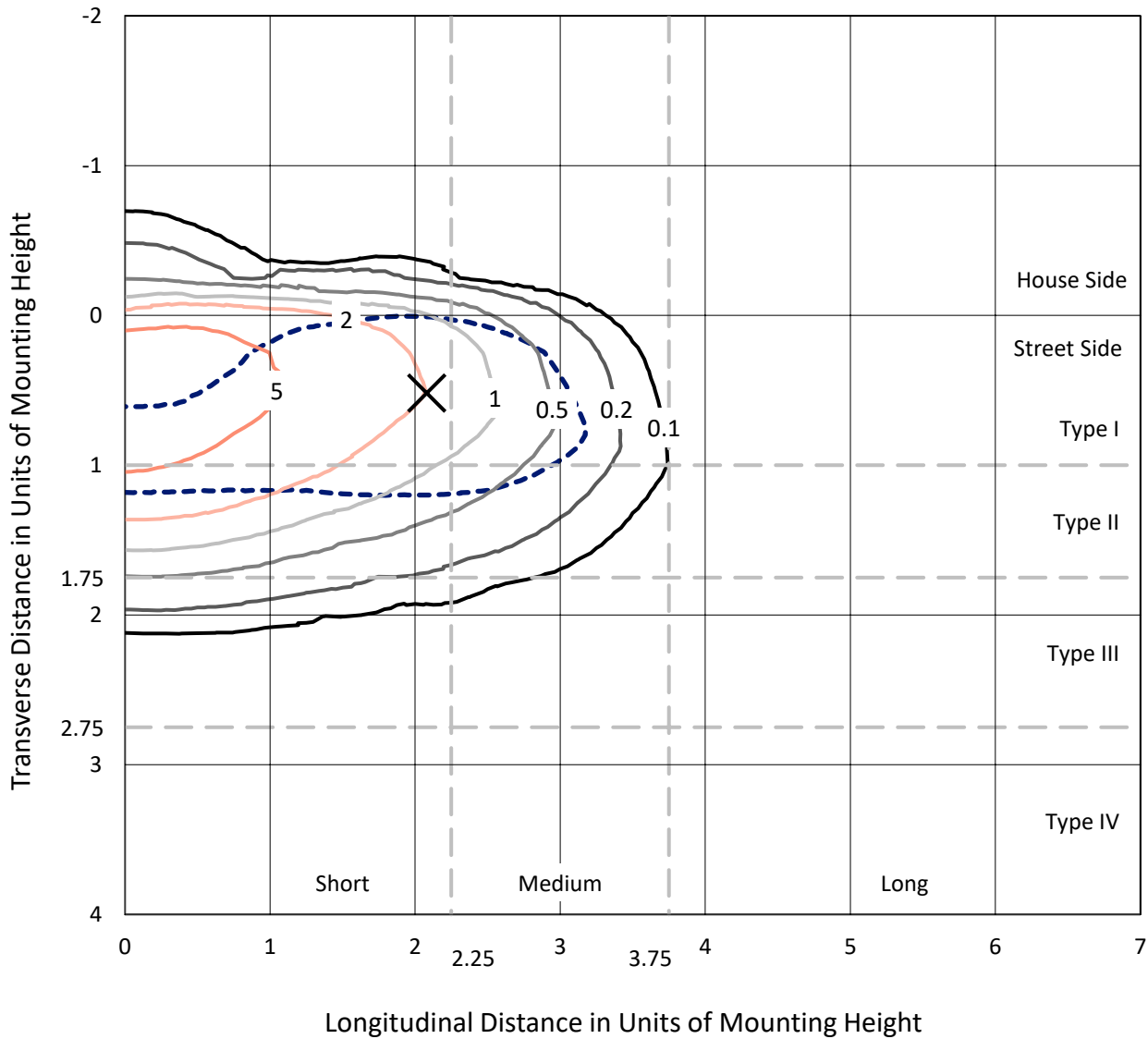
Lumens per Lamp: N/A  
Luminaire Lumens: 17075.2 lumens  
Efficiency: N/A  
Efficacy: 122.9 lumens/watt  
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B1 - U0 - G2  
  
Input Watts (W): 138.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
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: P641739  
 CATALOG NUMBER: GWS-SA6B-740-U-T2R-W-HSS

### Iso-Footcandle Lines of Horizontal Illumination

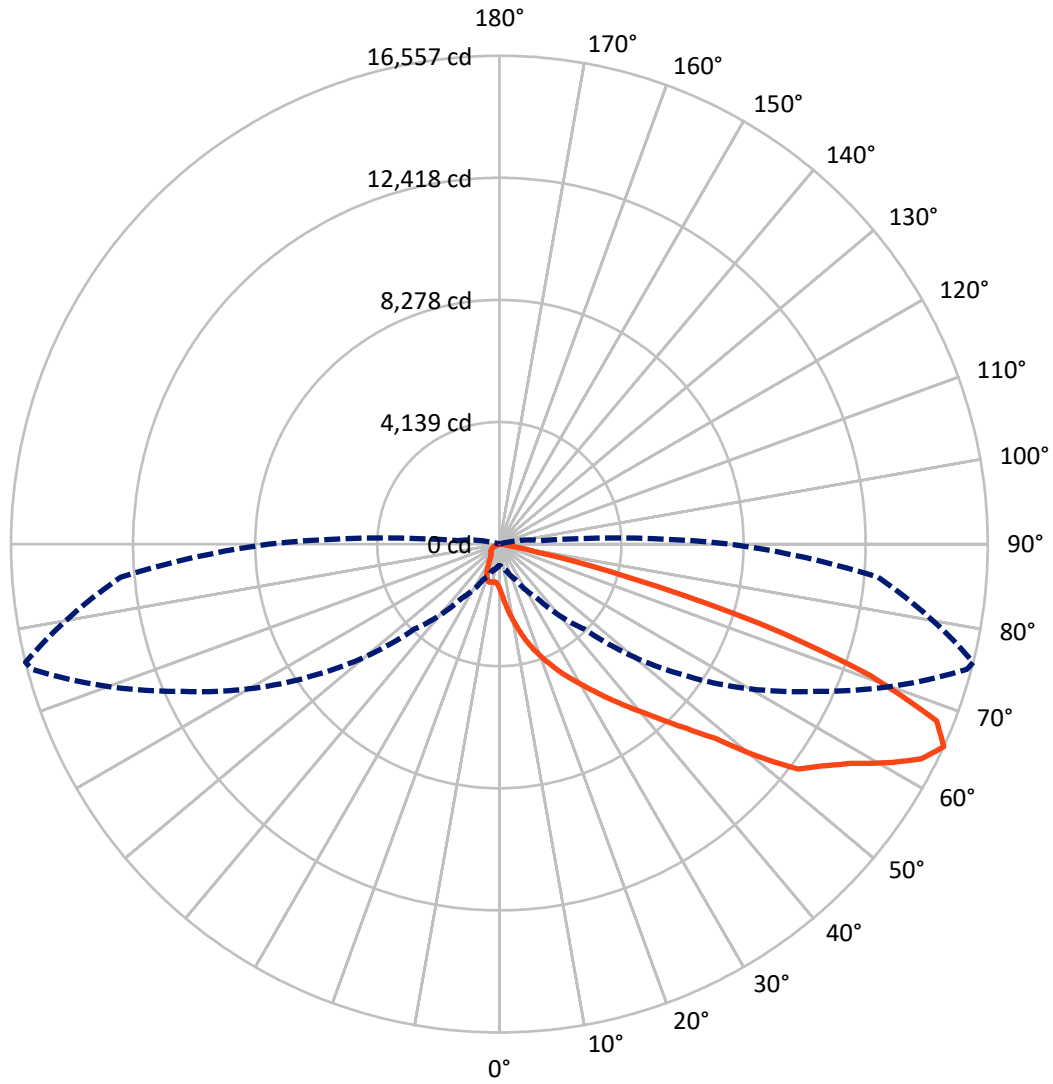
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8.2 fc  
 Type II - Short - N/A

REPORT NUMBER: P641739  
CATALOG NUMBER: GWS-SA6B-740-U-T2R-W-HSS

### Luminous Intensity Polar Plot



— Vertical Plane Through 76-Deg Lateral    - - - Horizontal Cone Through 65-Deg Vertical

REPORT NUMBER: P641739  
 CATALOG NUMBER: GWS-SA6B-740-U-T2R-W-HSS

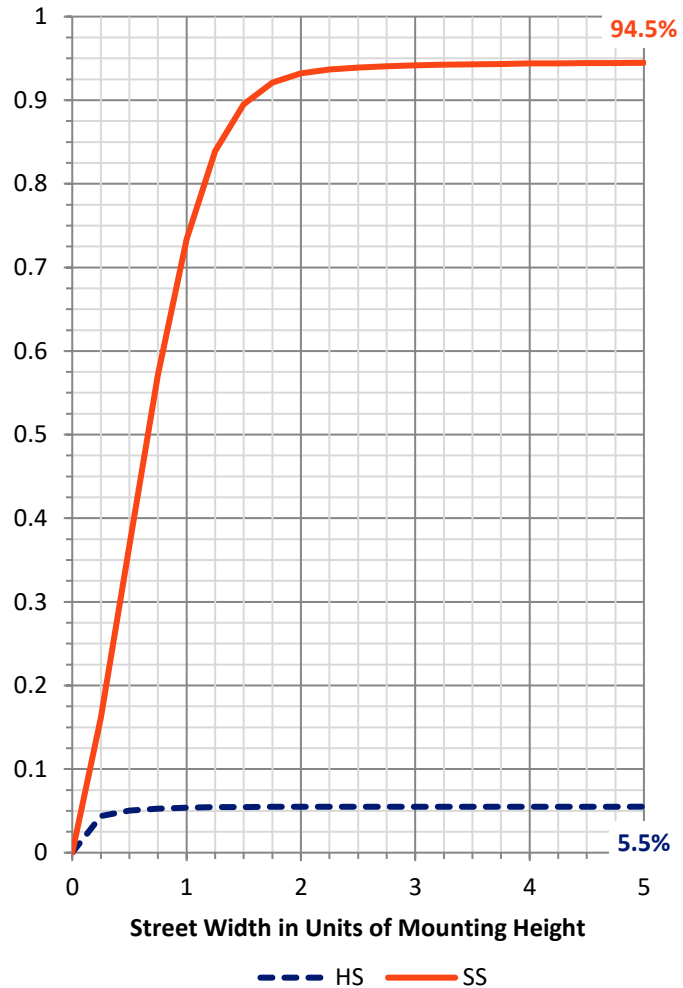
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 944.2    | 0.0    | 944.2   |
|                    | % Fixture | 5.5      | 0.0    | 5.5     |
| <b>Street Side</b> | Lumens    | 16131.1  | 0.0    | 16131.1 |
|                    | % Fixture | 94.5     | 0.0    | 94.5    |
| <b>Total</b>       | Lumens    | 17075.2  | 0.0    | 17075.2 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 183.9   | 1.1       |
| 10°-20°   | 697.9   | 4.1       |
| 20°-30°   | 1423.7  | 8.3       |
| 30°-40°   | 2532.2  | 14.8      |
| 40°-50°   | 3743.2  | 21.9      |
| 50°-60°   | 4285.6  | 25.1      |
| 60°-70°   | 3269.7  | 19.1      |
| 70°-80°   | 915.9   | 5.4       |
| 80°-90°   | 23.1    | 0.1       |
| 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°    | 17075.2 | 100.0     |
| 0°-180°   | 17075.2 | 100.0     |

**Coefficient of Utilization**



REPORT NUMBER: P641739

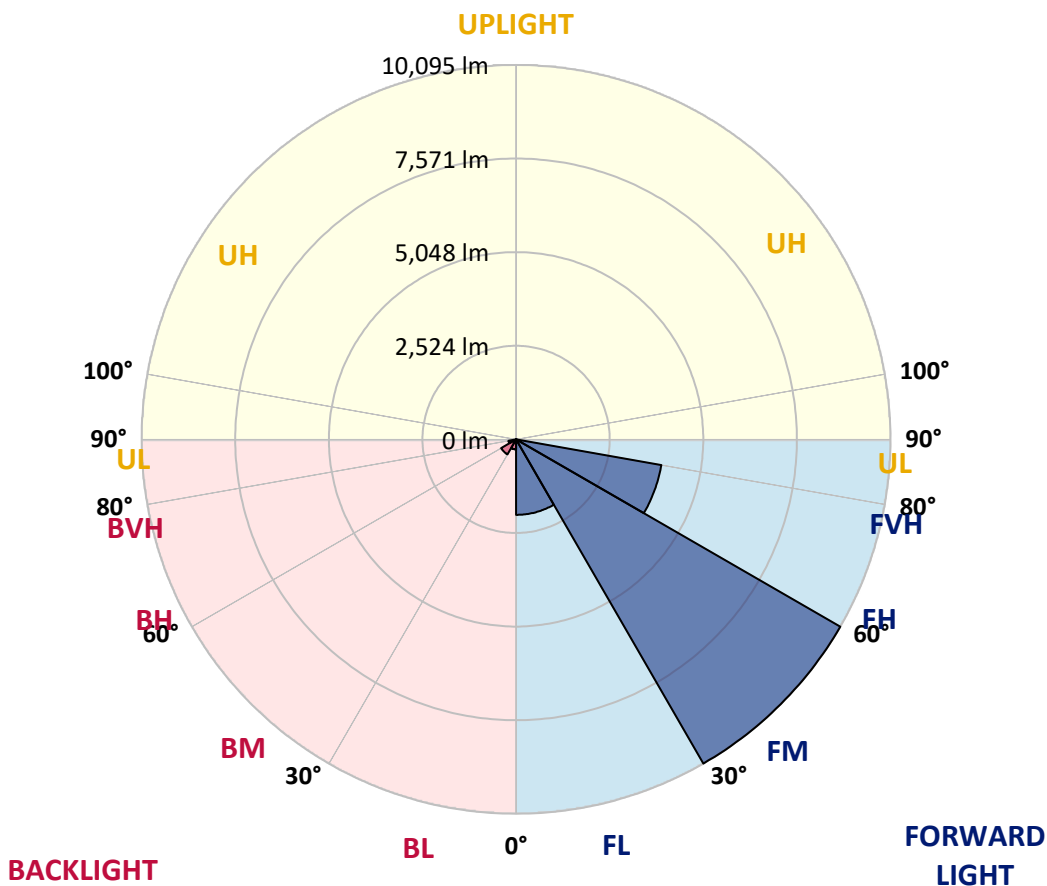
CATALOG NUMBER: GWS-SA6B-740-U-T2R-W-HSS

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

| Zone           | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|---------|-----------|-------------------------|------|---------|
|                |         |           | B                       | U    | G       |
| FL (0°-30°)    | 2036.1  | 11.9      |                         |      |         |
| FM (30°-60°)   | 10095.1 | 59.1      |                         |      |         |
| FH (60°-80°)   | 3978.1  | 23.3      |                         |      | G2/5000 |
| FVH (80°-90°)  | 21.7    | 0.1       |                         |      | G1/100  |
| BL (0°-30°)    | 269.4   | 1.6       | B1/500                  |      |         |
| BM (30°-60°)   | 465.8   | 2.7       | B1/1000                 |      |         |
| BH (60°-80°)   | 207.6   | 1.2       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 1.3     | 0.0       |                         |      | G0/10   |
| UL (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0     | 0.0       |                         | U0/0 |         |

**BUG Rating: B1-U0-G2**

Type II Short





REPORT NUMBER: P641739

CATALOG NUMBER: GWS-SA6B-740-U-T2R-W-HSS

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°     | 55°     | 65°     | 75°     | 76°     | 85°     |
|-------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| 0°    | 1511.8 | 1511.8 | 1511.8 | 1511.8 | 1511.8 | 1511.8  | 1511.8  | 1511.8  | 1511.8  | 1511.8  | 1511.8  |
| 2.5°  | 2329.9 | 2364.8 | 2337.5 | 2292.0 | 2203.9 | 2118.9  | 2009.6  | 1859.4  | 1739.5  | 1724.3  | 1612.0  |
| 5°    | 3146.5 | 3143.5 | 3084.3 | 3025.1 | 2932.5 | 2786.8  | 2566.7  | 2287.4  | 2018.7  | 1996.0  | 1744.0  |
| 7.5°  | 3632.2 | 3636.8 | 3603.4 | 3557.8 | 3466.8 | 3316.5  | 3087.3  | 2750.3  | 2357.2  | 2311.7  | 1924.6  |
| 10°   | 4040.5 | 4039.0 | 4014.7 | 3993.5 | 3911.5 | 3811.3  | 3565.4  | 3195.1  | 2721.5  | 2650.2  | 2126.5  |
| 12.5° | 4347.1 | 4357.7 | 4369.9 | 4391.1 | 4356.2 | 4257.6  | 4025.3  | 3621.6  | 3090.3  | 3011.4  | 2357.2  |
| 15°   | 4590.0 | 4593.0 | 4638.5 | 4720.5 | 4749.4 | 4697.7  | 4486.8  | 4034.4  | 3454.6  | 3386.3  | 2622.8  |
| 17.5° | 4662.8 | 4668.9 | 4746.3 | 4896.6 | 5048.4 | 5077.2  | 4917.8  | 4450.3  | 3812.8  | 3740.0  | 2880.9  |
| 20°   | 4816.1 | 4829.8 | 4887.5 | 5019.5 | 5210.8 | 5365.6  | 5303.4  | 4870.8  | 4171.1  | 4075.4  | 3145.0  |
| 22.5° | 5298.8 | 5306.4 | 5286.7 | 5303.4 | 5402.0 | 5581.1  | 5619.1  | 5277.6  | 4538.4  | 4436.7  | 3430.3  |
| 25°   | 6129.1 | 6132.1 | 5994.0 | 5863.5 | 5789.1 | 5822.5  | 5906.0  | 5652.5  | 4902.7  | 4802.5  | 3696.0  |
| 27.5° | 6991.2 | 7001.8 | 6836.4 | 6614.8 | 6349.2 | 6197.4  | 6173.1  | 5995.5  | 5270.0  | 5159.2  | 3958.6  |
| 30°   | 7803.3 | 7803.3 | 7628.7 | 7358.5 | 7003.4 | 6707.4  | 6532.8  | 6341.6  | 5663.1  | 5541.7  | 4227.2  |
| 32.5° | 8533.3 | 8527.3 | 8304.2 | 8011.2 | 7660.6 | 7335.8  | 6968.4  | 6702.8  | 6100.2  | 5965.1  | 4536.9  |
| 35°   | 9135.9 | 9120.8 | 8867.3 | 8586.5 | 8211.6 | 7970.2  | 7560.4  | 7091.4  | 6573.8  | 6438.7  | 4855.6  |
| 37.5° | 9591.3 | 9574.6 | 9342.4 | 9044.9 | 8697.3 | 8540.9  | 8197.9  | 7557.4  | 7073.2  | 6950.2  | 5209.3  |
| 40°   | 9838.7 | 9805.3 | 9644.4 | 9422.8 | 9131.4 | 8994.8  | 8852.1  | 8135.7  | 7660.6  | 7507.3  | 5626.7  |
| 42.5° | 9911.6 | 9872.1 | 9765.8 | 9662.6 | 9486.6 | 9378.8  | 9532.1  | 8788.3  | 8305.7  | 8173.6  | 6103.3  |
| 45°   | 9696.0 | 9673.3 | 9664.1 | 9738.5 | 9770.4 | 9800.8  | 10178.7 | 9510.8  | 9017.5  | 8917.4  | 6702.8  |
| 47.5° | 9176.9 | 9170.8 | 9251.3 | 9560.9 | 9897.9 | 10218.2 | 10881.5 | 10401.8 | 9940.4  | 9832.6  | 7540.7  |
| 50°   | 8217.6 | 8279.9 | 8504.5 | 9047.9 | 9721.8 | 10454.9 | 11538.7 | 11637.4 | 11434.0 | 11276.1 | 8633.5  |
| 52.5° | 6718.0 | 6837.9 | 7341.8 | 8167.5 | 9135.9 | 10388.2 | 11842.3 | 12627.0 | 12834.9 | 12671.0 | 9416.7  |
| 55°   | 5271.5 | 5383.8 | 5833.1 | 6880.4 | 8172.1 | 9879.7  | 11855.9 | 12968.5 | 13422.3 | 13270.6 | 9946.5  |
| 57.5° | 3926.7 | 4029.9 | 4438.2 | 5440.0 | 6860.7 | 8879.4  | 11531.1 | 13158.2 | 14119.0 | 14021.9 | 10782.8 |
| 60°   | 2566.7 | 2668.4 | 3037.2 | 3913.0 | 5321.6 | 7422.3  | 10731.2 | 13118.8 | 15067.7 | 15058.6 | 11810.4 |
| 62.5° | 1423.7 | 1504.2 | 1771.3 | 2454.4 | 3714.2 | 5748.1  | 9474.4  | 12722.6 | 15986.0 | 16043.7 | 12657.3 |
| 65°   | 728.6  | 780.2  | 942.6  | 1349.4 | 2247.9 | 4075.4  | 7821.5  | 11814.9 | 16411.0 | 16556.7 | 12880.5 |
| 67.5° | 476.6  | 493.3  | 532.8  | 701.2  | 1203.7 | 2563.6  | 5886.2  | 10359.3 | 15813.0 | 15983.0 | 12132.2 |
| 70°   | 387.1  | 400.7  | 423.5  | 467.5  | 620.8  | 1361.5  | 3866.0  | 8273.8  | 13212.9 | 13328.2 | 9661.1  |
| 72.5° | 283.8  | 302.1  | 346.1  | 374.9  | 447.8  | 746.8   | 2011.2  | 5430.9  | 9073.7  | 9277.1  | 6071.4  |
| 75°   | 209.5  | 220.1  | 256.5  | 296.0  | 365.8  | 472.1   | 769.5   | 2855.1  | 4685.6  | 4567.2  | 2550.0  |
| 77.5° | 126.0  | 133.6  | 163.9  | 189.7  | 261.1  | 294.5   | 268.7   | 1054.9  | 1425.3  | 1340.3  | 616.2   |
| 80°   | 62.2   | 69.8   | 107.8  | 142.7  | 167.0  | 118.4   | 112.3   | 294.5   | 317.2   | 317.2   | 154.8   |
| 82.5° | 21.2   | 27.3   | 57.7   | 94.1   | 82.0   | 45.5    | 53.1    | 75.9    | 85.0    | 89.6    | 45.5    |
| 85°   | 0.0    | 0.0    | 13.7   | 27.3   | 12.1   | 6.1     | 13.7    | 16.7    | 21.2    | 22.8    | 15.2    |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0     | 0.0     | 1.5     | 4.6     | 6.1     | 6.1     |
| 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: P641739

CATALOG NUMBER: GWS-SA6B-740-U-T2R-W-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1511.8 | 1511.8 | 1511.8 | 1511.8 | 1511.8 | 1511.8 | 1511.8 | 1511.8 | 1511.8 | 1511.8 | 1511.8 |
| 2.5°  | 1551.2 | 1479.9 | 1372.1 | 1275.0 | 1200.6 | 1130.8 | 1077.7 | 1035.2 | 1027.6 | 1003.3 | 1006.3 |
| 5°    | 1621.1 | 1492.0 | 1293.2 | 1139.9 | 1032.1 | 959.3  | 898.6  | 853.0  | 833.3  | 813.6  | 798.4  |
| 7.5°  | 1728.8 | 1542.1 | 1262.9 | 1076.2 | 950.2  | 837.9  | 743.7  | 667.9  | 631.4  | 608.7  | 593.5  |
| 10°   | 1860.9 | 1612.0 | 1264.4 | 1038.2 | 851.5  | 680.0  | 551.0  | 467.5  | 428.0  | 415.9  | 414.4  |
| 12.5° | 2018.7 | 1700.0 | 1276.5 | 976.0  | 708.8  | 505.4  | 408.3  | 370.4  | 358.2  | 347.6  | 347.6  |
| 15°   | 2185.7 | 1798.7 | 1276.5 | 862.1  | 540.4  | 394.6  | 353.7  | 329.4  | 314.2  | 308.1  | 305.1  |
| 17.5° | 2361.8 | 1891.2 | 1246.2 | 705.8  | 414.4  | 347.6  | 314.2  | 291.4  | 279.3  | 270.2  | 267.1  |
| 20°   | 2550.0 | 1979.3 | 1170.3 | 540.4  | 355.2  | 311.2  | 279.3  | 256.5  | 244.4  | 235.3  | 235.3  |
| 22.5° | 2741.2 | 2061.2 | 1047.3 | 415.9  | 314.2  | 276.2  | 245.9  | 224.6  | 212.5  | 203.4  | 203.4  |
| 25°   | 2918.8 | 2115.9 | 889.5  | 343.0  | 283.8  | 245.9  | 218.6  | 197.3  | 183.7  | 177.6  | 174.6  |
| 27.5° | 3084.3 | 2150.8 | 714.9  | 302.1  | 255.0  | 220.1  | 191.2  | 171.5  | 160.9  | 156.3  | 153.3  |
| 30°   | 3255.8 | 2159.9 | 546.4  | 274.7  | 230.7  | 194.3  | 167.0  | 151.8  | 142.7  | 136.6  | 136.6  |
| 32.5° | 3422.8 | 2149.3 | 417.4  | 252.0  | 209.5  | 171.5  | 148.7  | 135.1  | 127.5  | 122.9  | 121.4  |
| 35°   | 3592.7 | 2100.7 | 338.5  | 232.2  | 188.2  | 150.3  | 132.1  | 121.4  | 116.9  | 110.8  | 110.8  |
| 37.5° | 3777.9 | 2035.4 | 294.5  | 212.5  | 167.0  | 135.1  | 118.4  | 110.8  | 104.7  | 100.2  | 98.7   |
| 40°   | 4008.6 | 1959.5 | 270.2  | 195.8  | 147.2  | 121.4  | 106.2  | 98.7   | 94.1   | 89.6   | 88.0   |
| 42.5° | 4281.9 | 1885.2 | 258.0  | 177.6  | 132.1  | 107.8  | 95.6   | 86.5   | 82.0   | 75.9   | 74.4   |
| 45°   | 4668.9 | 1868.5 | 244.4  | 157.9  | 118.4  | 97.1   | 83.5   | 74.4   | 68.3   | 63.7   | 62.2   |
| 47.5° | 5291.2 | 1915.5 | 221.6  | 136.6  | 104.7  | 85.0   | 71.3   | 63.7   | 56.2   | 51.6   | 48.6   |
| 50°   | 5909.0 | 1903.4 | 198.8  | 118.4  | 92.6   | 72.9   | 60.7   | 53.1   | 45.5   | 41.0   | 39.5   |
| 52.5° | 6246.0 | 1845.7 | 177.6  | 104.7  | 80.4   | 62.2   | 51.6   | 42.5   | 37.9   | 33.4   | 31.9   |
| 55°   | 6551.0 | 1822.9 | 156.3  | 91.1   | 68.3   | 54.6   | 42.5   | 34.9   | 31.9   | 27.3   | 25.8   |
| 57.5° | 7149.1 | 1876.1 | 138.1  | 78.9   | 59.2   | 47.1   | 36.4   | 28.8   | 25.8   | 21.2   | 19.7   |
| 60°   | 7774.4 | 1882.1 | 118.4  | 68.3   | 51.6   | 39.5   | 28.8   | 22.8   | 19.7   | 15.2   | 13.7   |
| 62.5° | 8100.8 | 1728.8 | 97.1   | 57.7   | 42.5   | 33.4   | 24.3   | 18.2   | 15.2   | 9.1    | 9.1    |
| 65°   | 7827.5 | 1397.9 | 82.0   | 47.1   | 33.4   | 25.8   | 18.2   | 13.7   | 9.1    | 4.6    | 1.5    |
| 67.5° | 6927.5 | 994.2  | 68.3   | 37.9   | 24.3   | 18.2   | 13.7   | 9.1    | 1.5    | 0.0    | 0.0    |
| 70°   | 5072.7 | 567.7  | 53.1   | 27.3   | 18.2   | 12.1   | 9.1    | 4.6    | 0.0    | 0.0    | 0.0    |
| 72.5° | 3117.7 | 303.6  | 39.5   | 18.2   | 13.7   | 9.1    | 7.6    | 3.0    | 0.0    | 0.0    | 0.0    |
| 75°   | 1182.4 | 145.7  | 24.3   | 12.1   | 10.6   | 7.6    | 4.6    | 1.5    | 0.0    | 0.0    | 0.0    |
| 77.5° | 320.3  | 71.3   | 13.7   | 9.1    | 7.6    | 4.6    | 3.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 80°   | 83.5   | 33.4   | 9.1    | 6.1    | 4.6    | 3.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 82.5° | 28.8   | 15.2   | 4.6    | 4.6    | 3.0    | 1.5    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 12.1   | 6.1    | 3.0    | 3.0    | 1.5    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 87.5° | 4.6    | 1.5    | 1.5    | 1.5    | 1.5    | 0.0    | 0.0    | 0.0    | 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

REPORT NUMBER: SP1-2101-121-2

**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  $R_a = 71.2$   
 $R_9 = -29.7$



**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)