

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: P641708

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

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P641708  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-47)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA6B-740-U-AFL-W-GRSWH  
Description: GALLEON WALL SLIM LUMINAIRE. (6) LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH  
Light Source: (96) 4000K CCT, 70 CRI LEDS  
Ballast/Driver: -

**Summary**

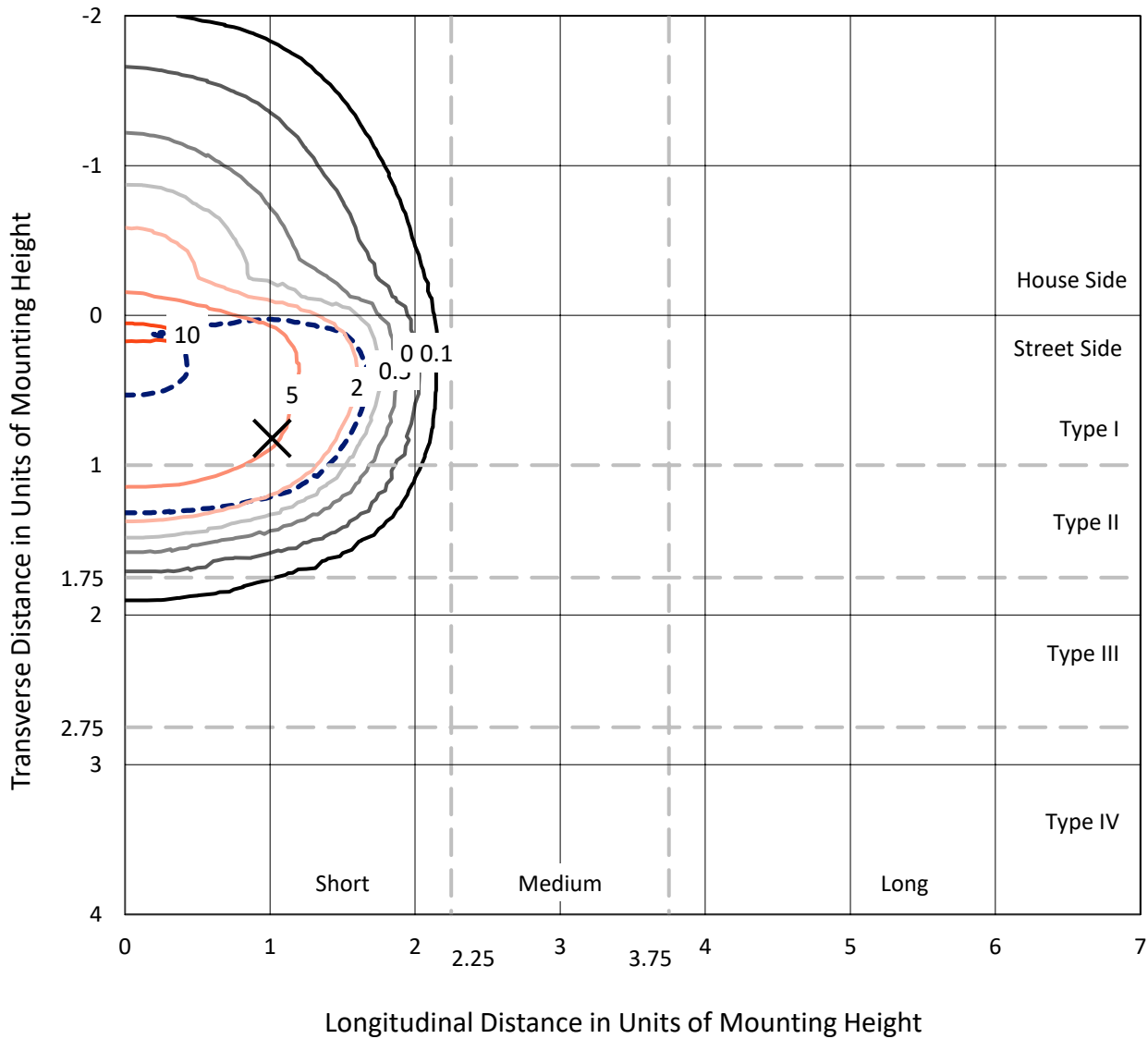
Lumens per Lamp: N/A  
Luminaire Lumens: 19207.8 lumens  
Efficiency: N/A  
Efficacy: 138.3 lumens/watt  
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B3 - U0 - G2  
  
Input Watts (W): 138.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
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: P641708  
 CATALOG NUMBER: GWS-SA6B-740-U-AFL-W-GRSWH

### Iso-Footcandle Lines of Horizontal Illumination

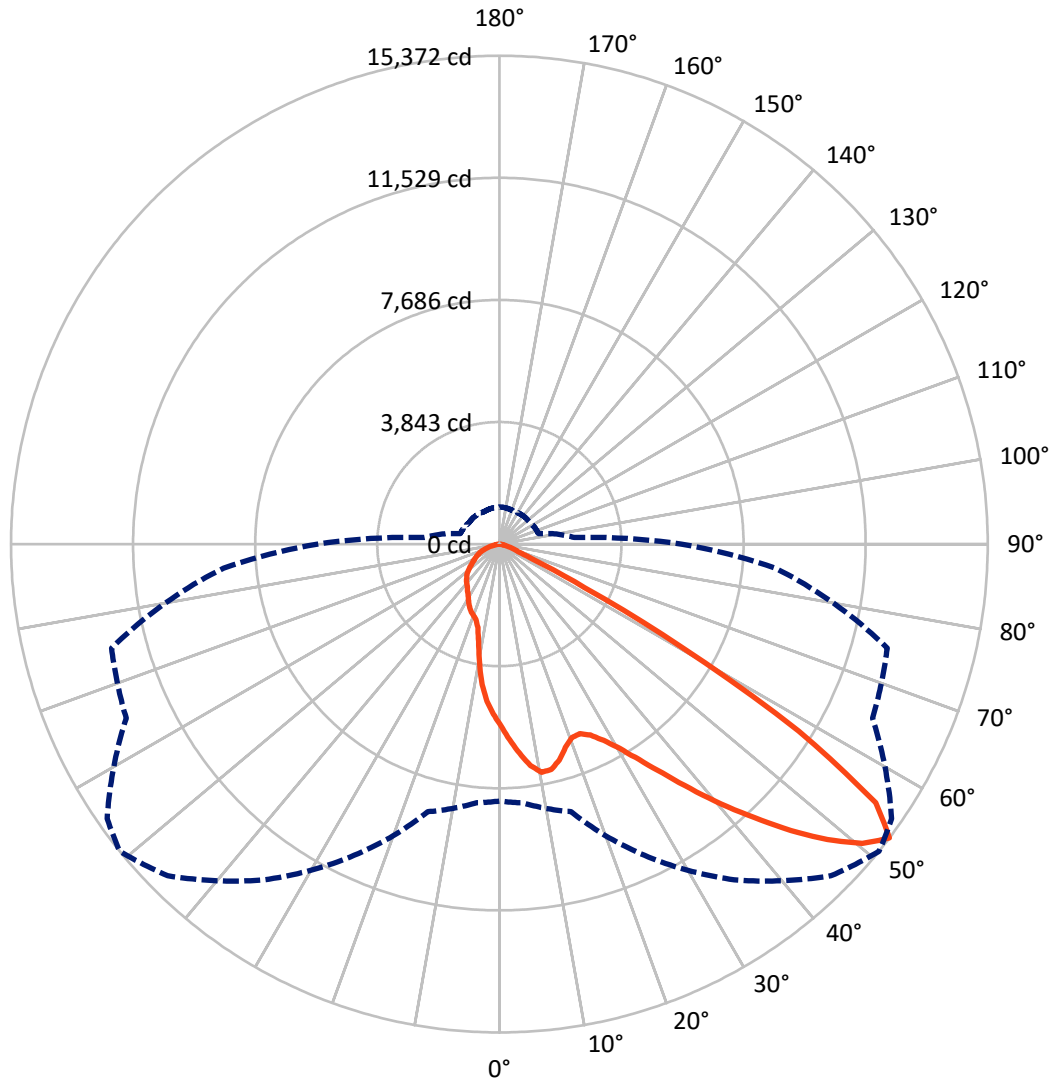
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 11.2 fc  
 Type II - Short - N/A

REPORT NUMBER: P641708  
CATALOG NUMBER: GWS-SA6B-740-U-AFL-W-GRSWH

### Luminous Intensity Polar Plot



— Vertical Plane Through 51-Deg Lateral    - - - Horizontal Cone Through 52.5-Deg Vertical

REPORT NUMBER: P641708

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

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 3742.5   | 0.0    | 3742.5  |
|                    | % Fixture | 19.5     | 0.0    | 19.5    |
| <b>Street Side</b> | Lumens    | 15465.3  | 0.0    | 15465.3 |
|                    | % Fixture | 80.5     | 0.0    | 80.5    |
| <b>Total</b>       | Lumens    | 19207.8  | 0.0    | 19207.8 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 533.7   | 2.8       |
| 10°-20°   | 1386.7  | 7.2       |
| 20°-30°   | 2254.7  | 11.7      |
| 30°-40°   | 3573.1  | 18.6      |
| 40°-50°   | 5389.0  | 28.1      |
| 50°-60°   | 4661.9  | 24.3      |
| 60°-70°   | 1056.9  | 5.5       |
| 70°-80°   | 311.6   | 1.6       |
| 80°-90°   | 40.1    | 0.2       |
| 90°-100°  | 0.0     | 0.0       |
| 100°-110° | 0.0     | 0.0       |
| 110°-120° | 0.0     | 0.0       |
| 120°-130° | 0.0     | 0.0       |
| 130°-140° | 0.0     | 0.0       |
| 140°-150° | 0.0     | 0.0       |
| 150°-160° | 0.0     | 0.0       |
| 160°-170° | 0.0     | 0.0       |
| 170°-180° | 0.0     | 0.0       |
| 0°-90°    | 19207.8 | 100.0     |
| 0°-180°   | 19207.8 | 100.0     |

**Coefficient of Utilization**



REPORT NUMBER: P641708

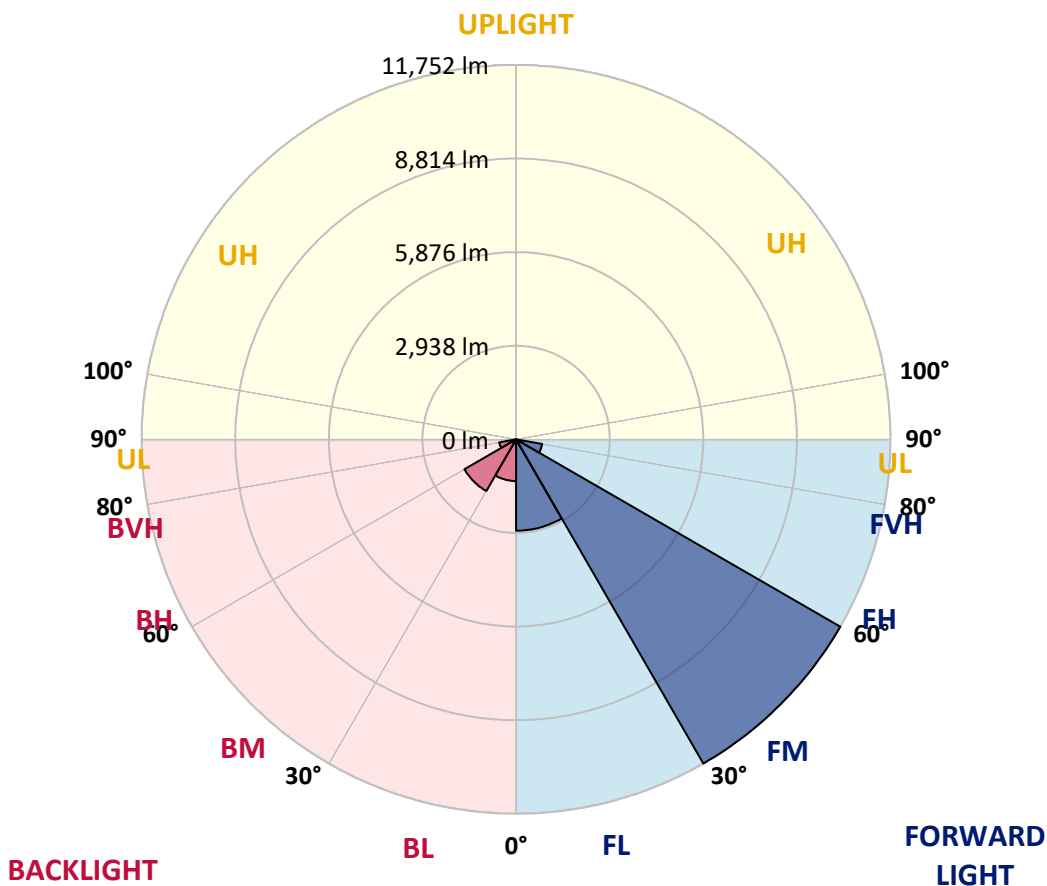
CATALOG NUMBER: GWS-SA6B-740-U-AFL-W-GRSWH

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

| Zone           | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|---------|-----------|-------------------------|------|---------|
|                |         |           | B                       | U    | G       |
| FL (0°-30°)    | 2866.8  | 14.9      |                         |      |         |
| FM (30°-60°)   | 11751.6 | 61.2      |                         |      |         |
| FH (60°-80°)   | 831.8   | 4.3       |                         |      | G1/1800 |
| FVH (80°-90°)  | 15.1    | 0.1       |                         |      | G1/100  |
| BL (0°-30°)    | 1308.2  | 6.8       | B3/2500                 |      |         |
| BM (30°-60°)   | 1872.5  | 9.7       | B2/2500                 |      |         |
| BH (60°-80°)   | 536.8   | 2.8       | B2/1000                 |      | G2/1000 |
| BVH (80°-90°)  | 25.0    | 0.1       |                         |      | 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: P641708

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

**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 51°     | 55°     | 65°     | 75°     | 85°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0°    | 5719.1  | 5719.1  | 5719.1  | 5719.1  | 5719.1  | 5719.1  | 5719.1  | 5719.1  | 5719.1  | 5719.1  | 5719.1 |
| 2.5°  | 6373.3  | 6409.7  | 6353.6  | 6332.3  | 6297.4  | 6236.7  | 6166.9  | 6147.1  | 5996.9  | 5898.2  | 5787.4 |
| 5°    | 7013.8  | 7033.5  | 6988.0  | 6942.5  | 6856.0  | 6748.2  | 6613.1  | 6584.3  | 6311.1  | 6084.9  | 5849.7 |
| 7.5°  | 7156.5  | 7148.9  | 7188.4  | 7214.2  | 7203.5  | 7161.0  | 7041.1  | 6985.0  | 6658.6  | 6300.4  | 5952.9 |
| 10°   | 6591.9  | 6549.4  | 6695.1  | 6868.1  | 7076.0  | 7315.9  | 7302.2  | 7297.6  | 7013.8  | 6590.3  | 6084.9 |
| 12.5° | 5843.6  | 5822.3  | 5940.7  | 6157.8  | 6550.9  | 7082.1  | 7281.0  | 7435.8  | 7334.1  | 6866.6  | 6232.1 |
| 15°   | 5415.6  | 5408.0  | 5488.4  | 5644.7  | 5957.4  | 6628.3  | 7053.3  | 7359.9  | 7608.8  | 7162.6  | 6388.5 |
| 17.5° | 5338.1  | 5342.7  | 5370.0  | 5459.6  | 5684.2  | 6236.7  | 6728.5  | 7156.5  | 7822.8  | 7487.4  | 6584.3 |
| 20°   | 5564.3  | 5594.7  | 5547.6  | 5561.3  | 5682.7  | 6095.5  | 6506.9  | 6951.6  | 7959.4  | 7813.7  | 6795.2 |
| 22.5° | 6066.7  | 6056.1  | 5952.9  | 5892.2  | 5893.7  | 6182.1  | 6482.6  | 6856.0  | 8049.0  | 8130.9  | 6986.5 |
| 25°   | 6635.9  | 6623.7  | 6500.8  | 6365.7  | 6280.7  | 6417.3  | 6657.1  | 6957.7  | 8129.4  | 8420.8  | 7139.8 |
| 27.5° | 7308.3  | 7270.3  | 7133.7  | 6960.7  | 6772.5  | 6831.7  | 6994.1  | 7232.4  | 8253.9  | 8706.2  | 7241.5 |
| 30°   | 7959.4  | 8003.4  | 7807.6  | 7602.7  | 7403.9  | 7367.5  | 7461.6  | 7677.1  | 8507.3  | 9040.1  | 7362.9 |
| 32.5° | 8823.0  | 8807.9  | 8590.8  | 8323.7  | 8039.9  | 8012.5  | 8086.9  | 8284.2  | 8962.7  | 9501.5  | 7548.1 |
| 35°   | 9868.8  | 9871.9  | 9563.7  | 9202.5  | 8798.8  | 8725.9  | 8850.4  | 9041.6  | 9641.1  | 10126.9 | 7841.0 |
| 37.5° | 10955.6 | 10951.0 | 10682.4 | 10272.6 | 9721.6  | 9618.4  | 9761.1  | 9903.7  | 10489.6 | 10978.3 | 8296.4 |
| 40°   | 11717.5 | 11747.9 | 11621.9 | 11406.4 | 10884.2 | 10632.3 | 10758.3 | 10856.9 | 11412.4 | 11980.1 | 8895.9 |
| 42.5° | 12150.1 | 12195.6 | 12223.0 | 12352.0 | 12077.2 | 11808.6 | 11763.1 | 11814.7 | 12236.6 | 12910.5 | 9459.0 |
| 45°   | 12242.7 | 12303.4 | 12502.2 | 12980.3 | 13086.6 | 13010.7 | 12861.9 | 12737.5 | 12851.3 | 13570.8 | 9827.8 |
| 47.5° | 11834.4 | 11940.6 | 12365.6 | 13201.9 | 13822.7 | 14061.0 | 13895.6 | 13705.9 | 13206.5 | 13740.8 | 9789.9 |
| 50°   | 10216.4 | 10340.9 | 11298.6 | 12749.6 | 13927.5 | 14795.6 | 14810.8 | 14530.0 | 13164.0 | 13250.5 | 9313.3 |
| 52.5° | 8088.4  | 8173.4  | 8721.4  | 10808.3 | 12899.9 | 14765.3 | 15372.4 | 15071.9 | 12959.1 | 12637.3 | 8716.8 |
| 55°   | 4834.2  | 4970.8  | 5482.3  | 7130.7  | 10049.4 | 13086.6 | 14379.8 | 14525.5 | 12858.9 | 12122.8 | 8310.0 |
| 57.5° | 1631.6  | 1698.4  | 2187.2  | 3149.5  | 5922.5  | 9582.0  | 11110.4 | 11702.3 | 11673.5 | 11336.5 | 7516.2 |
| 60°   | 777.1   | 792.3   | 891.0   | 1194.5  | 2370.8  | 5007.3  | 6576.7  | 7259.7  | 7882.0  | 7944.2  | 4676.4 |
| 62.5° | 591.9   | 601.1   | 651.1   | 716.4   | 953.2   | 2109.8  | 3014.4  | 3536.5  | 3777.8  | 3242.0  | 1703.0 |
| 65°   | 494.8   | 502.4   | 540.3   | 581.3   | 648.1   | 913.7   | 1156.6  | 1334.2  | 1202.1  | 936.5   | 812.0  |
| 67.5° | 412.8   | 418.9   | 447.8   | 491.8   | 537.3   | 611.7   | 642.0   | 660.2   | 692.1   | 777.1   | 746.8  |
| 70°   | 323.3   | 329.4   | 359.7   | 397.7   | 441.7   | 459.9   | 488.7   | 506.9   | 570.7   | 680.0   | 676.9  |
| 72.5° | 248.9   | 256.5   | 273.2   | 297.5   | 333.9   | 352.1   | 384.0   | 405.3   | 441.7   | 529.7   | 566.1  |
| 75°   | 182.1   | 186.7   | 201.9   | 209.5   | 214.0   | 209.5   | 241.3   | 265.6   | 314.2   | 347.6   | 356.7  |
| 77.5° | 74.4    | 83.5    | 80.4    | 80.4    | 95.6    | 115.4   | 132.0   | 147.2   | 180.6   | 200.4   | 201.9  |
| 80°   | 30.4    | 33.4    | 39.5    | 44.0    | 53.1    | 68.3    | 78.9    | 85.0    | 100.2   | 112.3   | 121.4  |
| 82.5° | 18.2    | 19.7    | 22.8    | 24.3    | 30.4    | 39.5    | 45.5    | 50.1    | 62.2    | 74.4    | 78.9   |
| 85°   | 9.1     | 9.1     | 10.6    | 12.1    | 15.2    | 18.2    | 21.2    | 24.3    | 31.9    | 39.5    | 44.0   |
| 87.5° | 1.5     | 1.5     | 1.5     | 3.0     | 4.6     | 6.1     | 7.6     | 9.1     | 10.6    | 12.1    | 15.2   |
| 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: P641708

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

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 5719.1 | 5719.1 | 5719.1 | 5719.1 | 5719.1 | 5719.1 | 5719.1 | 5719.1 | 5719.1 | 5719.1 | 5719.1 |
| 2.5°  | 5722.2 | 5640.2 | 5544.6 | 5468.7 | 5380.6 | 5315.4 | 5222.8 | 5165.1 | 5110.5 | 5064.9 | 5031.6 |
| 5°    | 5728.2 | 5590.1 | 5391.3 | 5215.2 | 5033.1 | 4860.0 | 4682.5 | 4538.3 | 4409.2 | 4301.5 | 4292.4 |
| 7.5°  | 5763.1 | 5564.3 | 5253.2 | 4945.0 | 4589.9 | 4246.8 | 3903.8 | 3624.5 | 3412.0 | 3301.2 | 3278.5 |
| 10°   | 5822.3 | 5561.3 | 5112.0 | 4620.2 | 4014.6 | 3462.1 | 3055.4 | 2842.9 | 2719.9 | 2675.9 | 2660.7 |
| 12.5° | 5884.6 | 5553.7 | 4931.4 | 4161.8 | 3321.0 | 2836.8 | 2613.7 | 2587.9 | 2610.6 | 2613.7 | 2612.2 |
| 15°   | 5960.5 | 5549.1 | 4703.7 | 3624.5 | 2814.0 | 2546.9 | 2562.1 | 2616.7 | 2669.8 | 2682.0 | 2682.0 |
| 17.5° | 6053.0 | 5538.5 | 4394.1 | 3099.4 | 2496.8 | 2490.7 | 2571.2 | 2644.0 | 2694.1 | 2703.2 | 2703.2 |
| 20°   | 6150.2 | 5511.2 | 4013.1 | 2671.4 | 2367.8 | 2455.8 | 2542.3 | 2598.5 | 2633.4 | 2645.5 | 2647.1 |
| 22.5° | 6217.0 | 5438.3 | 3574.5 | 2354.1 | 2287.3 | 2389.0 | 2451.3 | 2508.9 | 2508.9 | 2478.6 | 2469.5 |
| 25°   | 6230.6 | 5282.0 | 3099.4 | 2137.1 | 2191.7 | 2285.8 | 2349.6 | 2316.2 | 2254.0 | 2229.7 | 2228.1 |
| 27.5° | 6180.5 | 5054.3 | 2630.4 | 1982.3 | 2076.4 | 2170.5 | 2159.8 | 2111.3 | 2084.0 | 2059.7 | 2068.8 |
| 30°   | 6119.8 | 4781.1 | 2223.6 | 1854.8 | 1942.8 | 2035.4 | 1999.0 | 1982.3 | 1962.5 | 1935.2 | 1941.3 |
| 32.5° | 6078.8 | 4476.0 | 1910.9 | 1756.1 | 1853.2 | 1868.4 | 1894.2 | 1892.7 | 1874.5 | 1822.9 | 1819.9 |
| 35°   | 6091.0 | 4167.9 | 1701.5 | 1675.7 | 1778.9 | 1772.8 | 1821.4 | 1812.3 | 1686.3 | 1615.0 | 1610.4 |
| 37.5° | 6188.1 | 3871.9 | 1578.5 | 1611.9 | 1660.5 | 1698.4 | 1740.9 | 1631.6 | 1587.6 | 1542.1 | 1545.1 |
| 40°   | 6373.3 | 3597.2 | 1511.7 | 1577.0 | 1589.2 | 1645.3 | 1546.7 | 1545.1 | 1525.4 | 1484.4 | 1482.9 |
| 42.5° | 6582.8 | 3365.0 | 1466.2 | 1560.3 | 1543.6 | 1554.2 | 1449.5 | 1461.7 | 1460.1 | 1434.3 | 1426.7 |
| 45°   | 6710.3 | 3151.0 | 1429.8 | 1498.1 | 1502.6 | 1396.4 | 1364.5 | 1378.2 | 1385.8 | 1372.1 | 1370.6 |
| 47.5° | 6578.2 | 2905.1 | 1391.8 | 1402.5 | 1441.9 | 1325.1 | 1285.6 | 1287.1 | 1300.8 | 1302.3 | 1296.2 |
| 50°   | 6207.9 | 2630.4 | 1346.3 | 1320.5 | 1294.7 | 1250.7 | 1214.3 | 1206.7 | 1220.3 | 1234.0 | 1238.5 |
| 52.5° | 5729.7 | 2367.8 | 1270.4 | 1230.9 | 1170.2 | 1170.2 | 1153.5 | 1129.3 | 1147.5 | 1165.7 | 1171.8 |
| 55°   | 5379.1 | 2173.5 | 1162.6 | 1118.6 | 1051.8 | 1074.6 | 1071.6 | 1050.3 | 1074.6 | 1088.3 | 1092.8 |
| 57.5° | 4661.2 | 1747.0 | 1023.0 | 1009.3 | 953.2  | 980.5  | 986.6  | 959.3  | 947.1  | 950.2  | 954.7  |
| 60°   | 2767.0 | 1127.7 | 922.8  | 921.3  | 871.2  | 903.1  | 921.3  | 894.0  | 857.6  | 862.1  | 868.2  |
| 62.5° | 1241.6 | 862.1  | 796.9  | 790.8  | 789.3  | 830.2  | 850.0  | 824.2  | 772.6  | 777.1  | 783.2  |
| 65°   | 781.7  | 745.2  | 692.1  | 692.1  | 716.4  | 751.3  | 766.5  | 745.2  | 686.1  | 678.5  | 684.5  |
| 67.5° | 725.5  | 693.6  | 639.0  | 628.4  | 640.5  | 669.4  | 670.9  | 629.9  | 595.0  | 588.9  | 588.9  |
| 70°   | 651.1  | 626.9  | 573.7  | 552.5  | 547.9  | 546.4  | 541.9  | 531.2  | 508.5  | 502.4  | 505.4  |
| 72.5° | 538.8  | 522.1  | 488.7  | 466.0  | 453.8  | 452.3  | 434.1  | 425.0  | 405.3  | 402.2  | 400.7  |
| 75°   | 356.7  | 361.2  | 361.2  | 358.2  | 347.6  | 343.0  | 323.3  | 314.2  | 291.4  | 282.3  | 280.8  |
| 77.5° | 211.0  | 215.5  | 221.6  | 223.1  | 221.6  | 221.6  | 203.4  | 192.8  | 170.0  | 157.9  | 154.8  |
| 80°   | 129.0  | 132.0  | 135.1  | 139.6  | 133.6  | 129.0  | 112.3  | 101.7  | 91.1   | 83.5   | 82.0   |
| 82.5° | 83.5   | 86.5   | 88.0   | 91.1   | 88.0   | 82.0   | 68.3   | 62.2   | 54.6   | 48.6   | 47.1   |
| 85°   | 47.1   | 48.6   | 51.6   | 51.6   | 47.1   | 42.5   | 34.9   | 30.4   | 25.8   | 22.8   | 22.8   |
| 87.5° | 16.7   | 16.7   | 16.7   | 18.2   | 15.2   | 13.7   | 9.1    | 6.1    | 4.6    | 4.6    | 4.6    |
| 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  $R_a = 71.2$   
 $R_g = -29.7$



**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)