

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



Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P387060

Luminaire Tested: **GPC-SA2D-740-U-SL4-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P387060  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-25)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: GPC-SA2D-740-U-SL4-HSS  
Description: GALLEON PEDESTRIAN LUMINAIRE  
(2) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV  
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

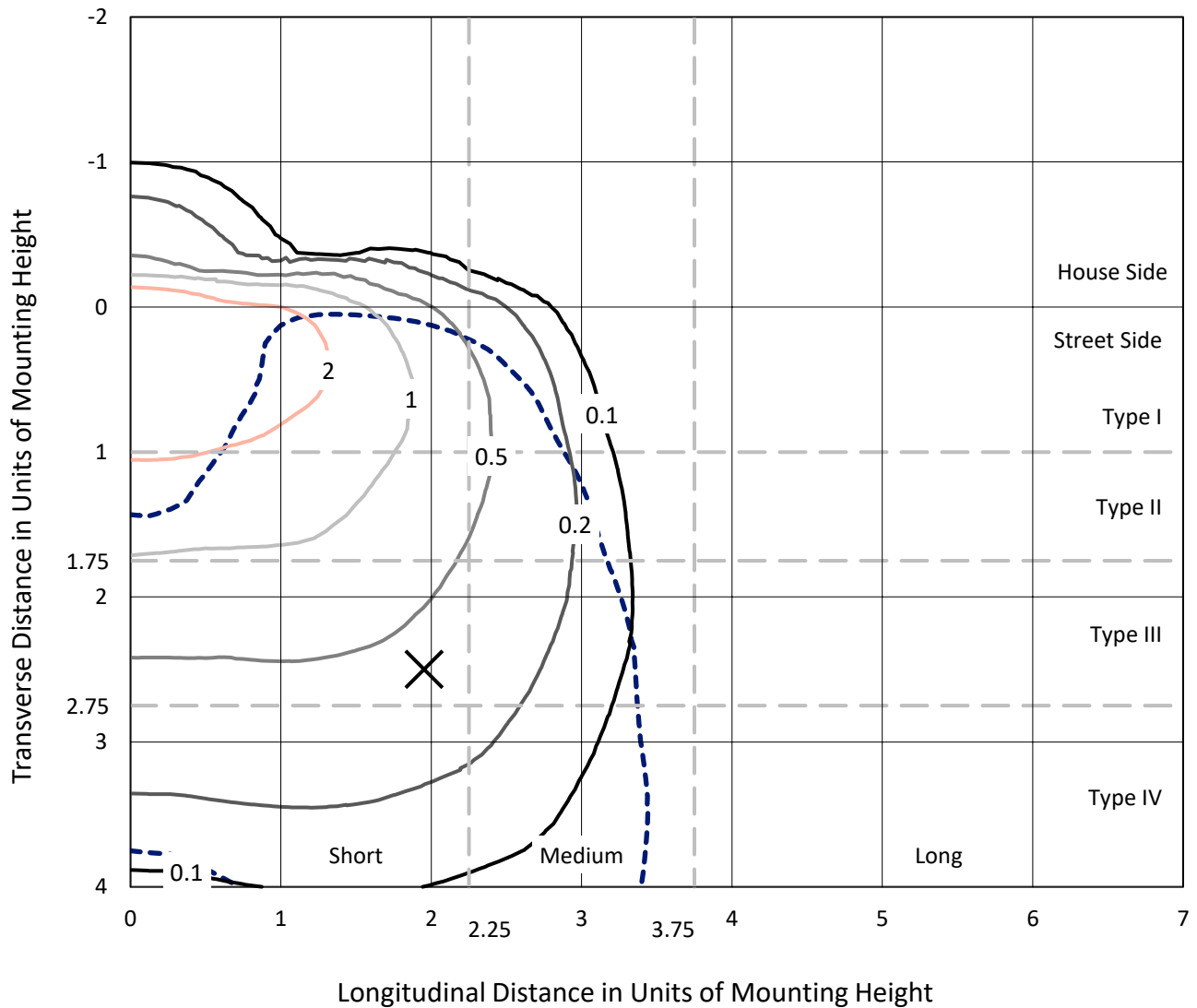
Lumens per Lamp: N/A  
Luminaire Lumens: 13143 lumens  
Efficiency: N/A  
Efficacy: 101.9 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G3  
  
Input Watts (W): 129  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



REPORT NUMBER: P387060  
 CATALOG NUMBER: GPC-SA2D-740-U-SL4-HSS

### Iso-Footcandle Lines of Horizontal Illumination

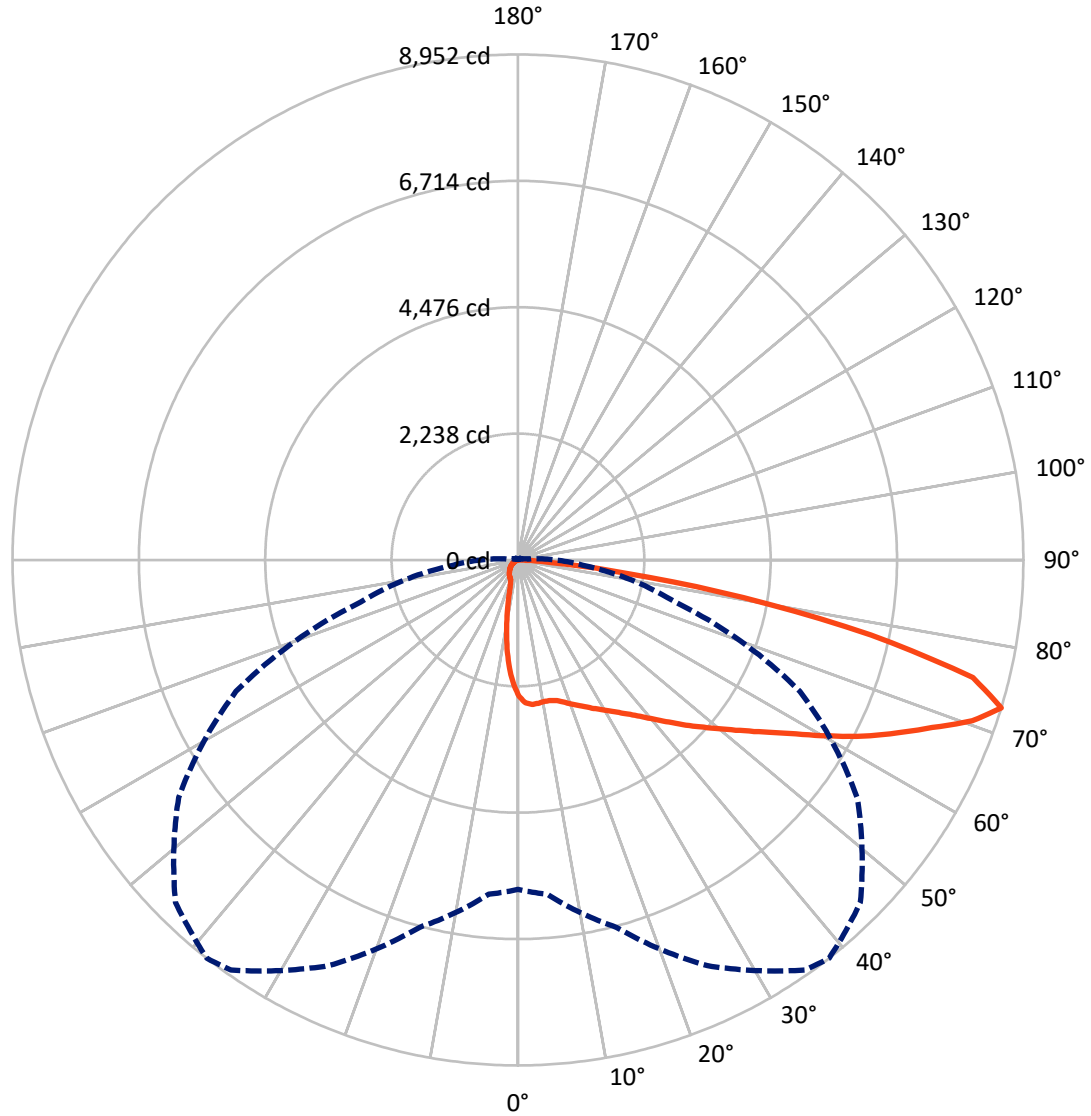
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.1 fc  
 Type IV - Short - N/A

REPORT NUMBER: P387060  
CATALOG NUMBER: GPC-SA2D-740-U-SL4-HSS

### Luminous Intensity Polar Plot



— Vertical Plane Through 38-Deg Lateral    - - - Horizontal Cone Through 72.5-Deg Vertical

REPORT NUMBER: P387060  
 CATALOG NUMBER: GPC-SA2D-740-U-SL4-HSS

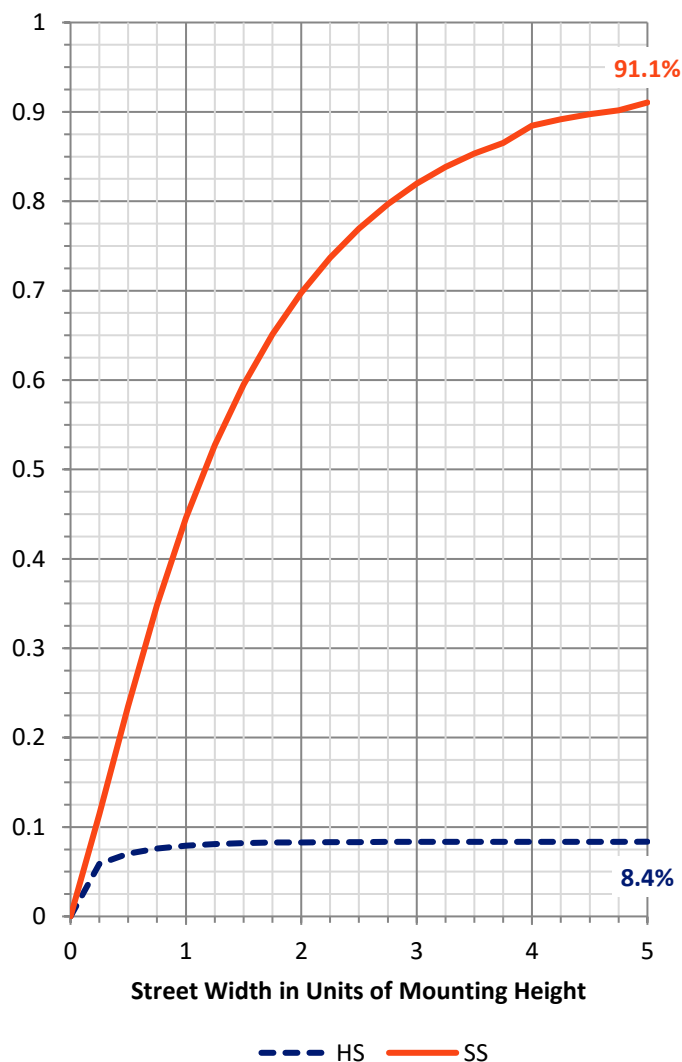
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 1106.0   | 0.0    | 1106.0  |
|                    | % Fixture | 8.4      | 0.0    | 8.4     |
| <b>Street Side</b> | Lumens    | 12037.0  | 0.0    | 12037.0 |
|                    | % Fixture | 91.6     | 0.0    | 91.6    |
| <b>Total</b>       | Lumens    | 13143.0  | 0.0    | 13143.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 206.0   | 1.6       |
| 10°-20°   | 503.6   | 3.8       |
| 20°-30°   | 801.0   | 6.1       |
| 30°-40°   | 1204.3  | 9.2       |
| 40°-50°   | 1837.2  | 14.0      |
| 50°-60°   | 2596.6  | 19.8      |
| 60°-70°   | 3257.0  | 24.8      |
| 70°-80°   | 2435.3  | 18.5      |
| 80°-90°   | 302.0   | 2.3       |
| 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°    | 13143.0 | 100.0     |
| 0°-180°   | 13143.0 | 100.0     |

**Coefficient of Utilization**



REPORT NUMBER: P387060

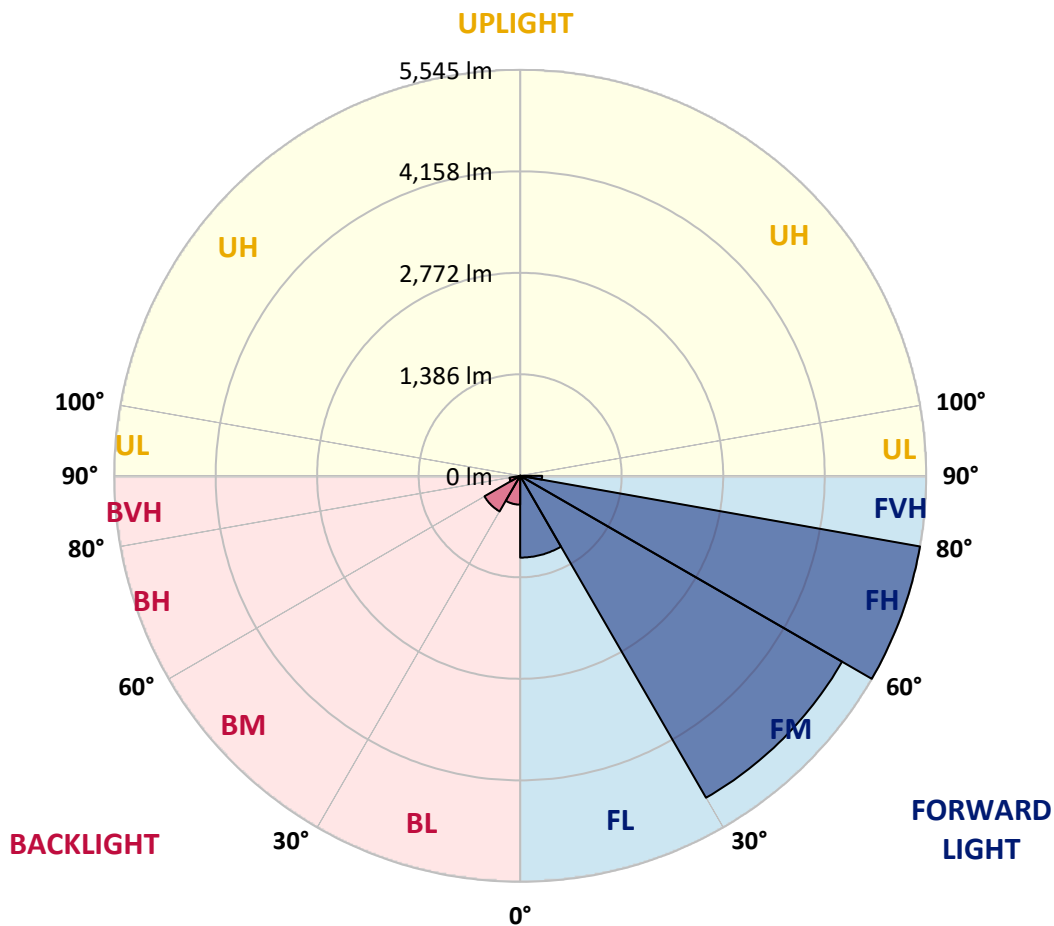
CATALOG NUMBER: GPC-SA2D-740-U-SL4-HSS

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

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 1116.8 | 8.5       |                         |      |         |
| FM (30°-60°)   | 5076.4 | 38.6      |                         |      |         |
| FH (60°-80°)   | 5544.6 | 42.2      |                         |      | G3/7500 |
| FVH (80°-90°)  | 299.2  | 2.3       |                         |      | G3/500  |
| BL (0°-30°)    | 393.8  | 3.0       | B1/500                  |      |         |
| BM (30°-60°)   | 561.7  | 4.3       | B1/1000                 |      |         |
| BH (60°-80°)   | 147.7  | 1.1       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 2.8    | 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-G3**

Type IV Short





REPORT NUMBER: P387060  
 CATALOG NUMBER: GPC-SA2D-740-U-SL4-HSS

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 38°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 2417.0 | 2417.0 | 2417.0 | 2417.0 | 2417.0 | 2417.0 | 2417.0 | 2417.0 | 2417.0 | 2417.0 | 2417.0 |
| 2.5°  | 2565.4 | 2566.0 | 2560.0 | 2550.1 | 2537.6 | 2531.0 | 2520.1 | 2502.7 | 2484.1 | 2450.8 | 2414.8 |
| 5°    | 2617.8 | 2617.8 | 2610.2 | 2597.1 | 2576.9 | 2570.9 | 2550.1 | 2522.3 | 2484.1 | 2430.1 | 2369.5 |
| 7.5°  | 2612.4 | 2613.5 | 2603.1 | 2589.4 | 2569.2 | 2563.8 | 2538.7 | 2507.6 | 2460.1 | 2394.6 | 2317.1 |
| 10°   | 2584.0 | 2586.7 | 2578.5 | 2572.0 | 2553.4 | 2547.4 | 2523.9 | 2492.8 | 2445.3 | 2375.5 | 2286.5 |
| 12.5° | 2555.1 | 2557.8 | 2560.5 | 2566.5 | 2555.1 | 2552.9 | 2534.3 | 2508.1 | 2462.8 | 2390.2 | 2289.8 |
| 15°   | 2536.5 | 2542.0 | 2561.6 | 2585.1 | 2587.8 | 2585.6 | 2573.6 | 2549.0 | 2503.2 | 2427.9 | 2313.2 |
| 17.5° | 2536.5 | 2545.2 | 2586.2 | 2630.9 | 2646.8 | 2648.4 | 2638.0 | 2603.6 | 2549.0 | 2468.3 | 2335.1 |
| 20°   | 2557.8 | 2569.8 | 2633.7 | 2697.0 | 2723.2 | 2723.2 | 2703.0 | 2654.9 | 2591.1 | 2504.8 | 2349.8 |
| 22.5° | 2612.4 | 2628.2 | 2708.4 | 2781.6 | 2809.4 | 2803.4 | 2776.1 | 2706.2 | 2634.7 | 2546.3 | 2368.4 |
| 25°   | 2719.9 | 2731.9 | 2815.4 | 2889.1 | 2906.0 | 2892.4 | 2858.0 | 2768.5 | 2690.4 | 2602.5 | 2402.2 |
| 27.5° | 2858.5 | 2860.2 | 2946.4 | 3008.6 | 2998.3 | 2989.0 | 2945.9 | 2846.5 | 2770.7 | 2682.8 | 2460.6 |
| 30°   | 3010.8 | 3010.8 | 3086.7 | 3134.2 | 3102.5 | 3094.9 | 3051.8 | 2941.0 | 2873.3 | 2791.9 | 2543.6 |
| 32.5° | 3158.2 | 3164.7 | 3226.4 | 3256.4 | 3221.0 | 3213.3 | 3171.3 | 3060.5 | 3009.7 | 2958.4 | 2673.0 |
| 35°   | 3300.7 | 3305.6 | 3364.0 | 3380.4 | 3346.5 | 3348.7 | 3318.7 | 3224.8 | 3205.7 | 3199.1 | 2867.8 |
| 37.5° | 3438.8 | 3439.8 | 3499.3 | 3509.7 | 3492.8 | 3511.4 | 3514.1 | 3431.1 | 3466.6 | 3519.5 | 3142.4 |
| 40°   | 3564.8 | 3565.9 | 3624.9 | 3651.6 | 3680.6 | 3704.6 | 3725.9 | 3681.7 | 3799.0 | 3921.8 | 3469.3 |
| 42.5° | 3665.8 | 3677.3 | 3752.1 | 3802.8 | 3879.2 | 3925.1 | 3983.0 | 3980.8 | 4194.7 | 4379.2 | 3864.5 |
| 45°   | 3754.8 | 3774.4 | 3878.7 | 3967.7 | 4098.7 | 4171.8 | 4262.4 | 4333.4 | 4640.1 | 4888.5 | 4264.6 |
| 47.5° | 3872.1 | 3890.7 | 4009.7 | 4155.4 | 4330.1 | 4426.2 | 4576.3 | 4729.7 | 5129.8 | 5388.5 | 4655.4 |
| 50°   | 4037.5 | 4029.3 | 4146.7 | 4355.8 | 4580.1 | 4706.2 | 4920.2 | 5149.9 | 5615.5 | 5824.1 | 4885.2 |
| 52.5° | 4213.8 | 4210.6 | 4297.4 | 4573.5 | 4874.8 | 5022.2 | 5305.0 | 5584.4 | 6080.0 | 6124.3 | 4990.6 |
| 55°   | 4432.2 | 4408.7 | 4481.8 | 4821.9 | 5224.7 | 5383.0 | 5716.0 | 6014.5 | 6450.1 | 6293.5 | 5043.5 |
| 57.5° | 4660.9 | 4622.1 | 4692.0 | 5098.6 | 5619.4 | 5806.6 | 6171.2 | 6433.7 | 6696.3 | 6409.2 | 5043.0 |
| 60°   | 4897.2 | 4851.4 | 4934.3 | 5444.7 | 6109.5 | 6326.2 | 6664.6 | 6717.0 | 6926.1 | 6467.6 | 5005.8 |
| 62.5° | 5094.8 | 5067.5 | 5190.9 | 5814.8 | 6657.0 | 6869.9 | 7037.4 | 6974.7 | 7119.9 | 6512.9 | 4919.1 |
| 65°   | 5303.9 | 5305.5 | 5504.7 | 6246.5 | 7238.9 | 7382.4 | 7396.6 | 7308.7 | 7282.0 | 6503.6 | 4625.4 |
| 67.5° | 5586.6 | 5612.8 | 5945.2 | 6832.8 | 7804.9 | 7915.7 | 7914.6 | 7670.6 | 7400.4 | 6134.6 | 3974.2 |
| 70°   | 5885.7 | 5947.4 | 6452.9 | 7503.6 | 8422.8 | 8535.2 | 8477.4 | 7901.0 | 6968.1 | 4960.5 | 2812.7 |
| 72.5° | 5835.5 | 5942.5 | 6735.0 | 7926.6 | 8866.5 | 8952.2 | 8576.1 | 7334.9 | 5507.5 | 2883.1 | 1197.6 |
| 75°   | 4502.0 | 4625.9 | 6175.6 | 7507.4 | 8400.9 | 8324.0 | 7368.8 | 5707.8 | 3009.7 | 804.6  | 269.6  |
| 77.5° | 2378.2 | 2444.2 | 4079.6 | 5719.3 | 6550.6 | 6389.5 | 5190.9 | 3166.4 | 917.5  | 199.2  | 121.2  |
| 80°   | 1245.6 | 1260.9 | 1777.8 | 3245.0 | 4043.0 | 4044.1 | 3076.3 | 1390.8 | 378.3  | 102.1  | 81.3   |
| 82.5° | 667.0  | 680.1  | 939.4  | 1499.4 | 2118.4 | 1920.2 | 1177.9 | 765.3  | 220.0  | 57.9   | 78.1   |
| 85°   | 160.5  | 163.2  | 532.7  | 685.0  | 832.9  | 595.0  | 349.9  | 642.4  | 59.5   | 33.8   | 63.3   |
| 87.5° | 61.7   | 62.8   | 197.6  | 296.4  | 212.3  | 137.6  | 163.8  | 239.6  | 7.6    | 13.1   | 9.8    |
| 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: P387060  
 CATALOG NUMBER: GPC-SA2D-740-U-SL4-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 2417.0 | 2417.0 | 2417.0 | 2417.0 | 2417.0 | 2417.0 | 2417.0 | 2417.0 | 2417.0 | 2417.0 | 2417.0 |
| 2.5°  | 2392.9 | 2378.7 | 2343.8 | 2299.6 | 2260.3 | 2231.9 | 2189.3 | 2161.5 | 2142.9 | 2142.4 | 2135.3 |
| 5°    | 2332.4 | 2303.4 | 2228.1 | 2138.6 | 2057.2 | 1984.1 | 1897.9 | 1829.6 | 1778.9 | 1770.7 | 1753.2 |
| 7.5°  | 2267.4 | 2219.9 | 2104.2 | 1964.5 | 1828.0 | 1689.4 | 1528.3 | 1428.4 | 1342.8 | 1301.8 | 1297.4 |
| 10°   | 2227.5 | 2161.0 | 1996.7 | 1794.7 | 1580.7 | 1355.3 | 1144.6 | 998.9  | 893.5  | 863.5  | 841.1  |
| 12.5° | 2219.4 | 2131.5 | 1913.7 | 1635.3 | 1329.7 | 1031.6 | 798.6  | 643.5  | 559.5  | 532.7  | 525.6  |
| 15°   | 2227.5 | 2117.8 | 1843.8 | 1477.6 | 1075.3 | 732.0  | 536.0  | 445.9  | 414.3  | 406.6  | 406.1  |
| 17.5° | 2232.5 | 2101.5 | 1764.7 | 1302.4 | 828.6  | 522.9  | 410.5  | 384.3  | 379.4  | 378.8  | 379.9  |
| 20°   | 2231.9 | 2076.4 | 1670.3 | 1107.0 | 616.2  | 411.0  | 371.2  | 365.7  | 364.6  | 365.2  | 364.6  |
| 22.5° | 2228.1 | 2046.9 | 1566.5 | 905.5  | 465.6  | 367.3  | 354.2  | 351.0  | 350.4  | 350.4  | 350.4  |
| 25°   | 2235.2 | 2023.4 | 1452.5 | 712.9  | 383.7  | 347.2  | 339.0  | 336.2  | 335.7  | 335.7  | 334.6  |
| 27.5° | 2260.8 | 2010.3 | 1327.5 | 548.6  | 346.6  | 329.1  | 322.6  | 322.0  | 320.4  | 319.9  | 321.0  |
| 30°   | 2302.3 | 2010.3 | 1190.5 | 426.8  | 324.2  | 310.6  | 305.7  | 304.6  | 304.0  | 303.5  | 304.0  |
| 32.5° | 2375.5 | 2025.6 | 1040.9 | 354.8  | 302.9  | 289.8  | 286.6  | 288.2  | 286.6  | 286.6  | 286.6  |
| 35°   | 2507.6 | 2071.4 | 884.3  | 309.5  | 280.6  | 269.6  | 266.4  | 268.6  | 267.5  | 267.5  | 266.9  |
| 37.5° | 2700.2 | 2156.6 | 726.5  | 282.2  | 260.9  | 249.4  | 245.1  | 248.4  | 247.3  | 247.3  | 246.7  |
| 40°   | 2935.0 | 2280.5 | 576.4  | 261.5  | 241.8  | 229.8  | 226.0  | 227.6  | 224.9  | 224.9  | 226.0  |
| 42.5° | 3224.8 | 2437.7 | 445.4  | 241.3  | 222.7  | 211.2  | 209.1  | 207.4  | 202.5  | 199.8  | 200.3  |
| 45°   | 3546.8 | 2601.4 | 347.2  | 221.6  | 204.7  | 195.4  | 192.1  | 187.8  | 179.6  | 174.1  | 174.7  |
| 47.5° | 3834.5 | 2727.5 | 282.2  | 202.5  | 188.3  | 181.2  | 176.3  | 168.1  | 156.1  | 149.6  | 150.1  |
| 50°   | 3985.7 | 2746.6 | 240.2  | 183.4  | 173.0  | 165.9  | 158.8  | 146.3  | 132.1  | 125.0  | 124.5  |
| 52.5° | 4024.4 | 2657.1 | 209.1  | 165.9  | 157.7  | 149.6  | 140.3  | 123.4  | 107.5  | 99.9   | 98.8   |
| 55°   | 4038.6 | 2520.7 | 181.2  | 149.6  | 141.4  | 132.1  | 120.1  | 101.0  | 86.2   | 78.6   | 78.1   |
| 57.5° | 3991.7 | 2317.1 | 159.4  | 134.8  | 125.0  | 113.5  | 98.8   | 80.8   | 66.6   | 60.6   | 60.6   |
| 60°   | 3887.4 | 2041.4 | 142.5  | 119.0  | 108.1  | 95.0   | 79.7   | 62.8   | 49.7   | 44.8   | 44.8   |
| 62.5° | 3679.5 | 1684.4 | 126.6  | 102.6  | 92.2   | 78.6   | 64.4   | 47.5   | 34.9   | 32.2   | 32.8   |
| 65°   | 3287.0 | 1277.8 | 110.8  | 87.9   | 78.6   | 65.0   | 50.2   | 33.8   | 23.5   | 23.5   | 24.6   |
| 67.5° | 2680.6 | 887.5  | 94.4   | 74.8   | 67.7   | 52.9   | 38.2   | 23.5   | 16.4   | 18.6   | 20.7   |
| 70°   | 1774.5 | 497.8  | 80.8   | 61.7   | 57.9   | 42.0   | 28.4   | 15.8   | 13.1   | 17.5   | 21.3   |
| 72.5° | 669.7  | 193.8  | 67.7   | 49.7   | 50.2   | 32.2   | 20.2   | 12.0   | 12.0   | 19.1   | 25.1   |
| 75°   | 186.7  | 95.0   | 48.6   | 36.6   | 39.3   | 23.5   | 14.7   | 10.4   | 11.5   | 21.8   | 29.5   |
| 77.5° | 109.7  | 69.9   | 31.7   | 21.3   | 26.7   | 16.4   | 9.8    | 8.2    | 9.8    | 18.6   | 28.4   |
| 80°   | 88.4   | 37.1   | 18.6   | 10.9   | 14.7   | 9.3    | 6.6    | 4.9    | 2.7    | 7.1    | 14.7   |
| 82.5° | 88.4   | 22.4   | 8.7    | 7.6    | 7.6    | 4.9    | 3.3    | 2.2    | 0.5    | 0.0    | 3.8    |
| 85°   | 59.5   | 9.3    | 5.5    | 4.9    | 3.8    | 1.6    | 1.1    | 0.5    | 0.0    | 0.0    | 0.0    |
| 87.5° | 9.8    | 3.8    | 2.2    | 1.1    | 0.5    | 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    |



Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



**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**

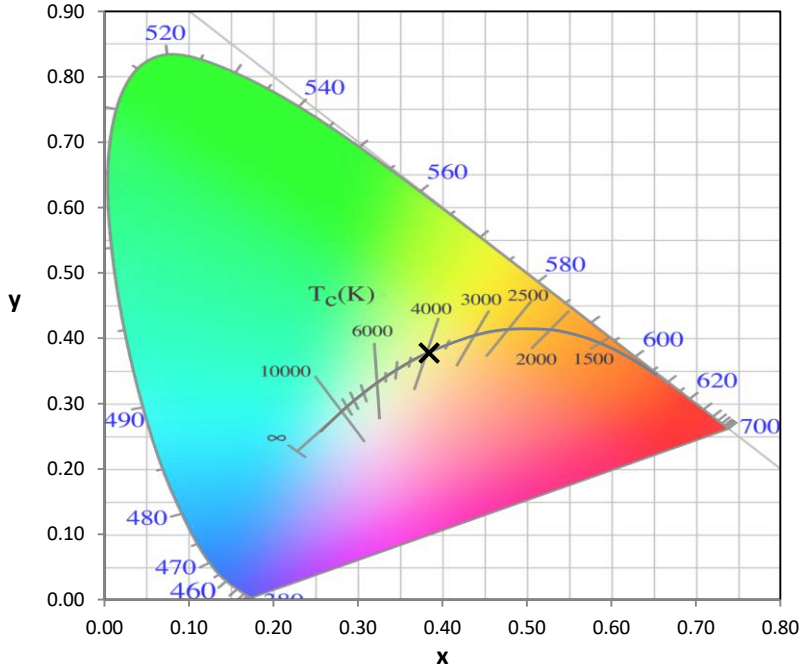
Stabilization Time: 211M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 24.8/312%  
 Sphere Temperature (°C): 24.1

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)