

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: P386860

Luminaire Tested: **GPC-SA2C-750-U-SL2-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P386860  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-21)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: GPC-SA2C-750-U-SL2-HSS  
Description: GALLEON PEDESTRIAN LUMINAIRE  
(2) 70 CRI, 5000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II  
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 12226 lumens  
Efficiency: N/A  
Efficacy: 108.2 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B1 - U0 - G2

Input Watts (W): 113  
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

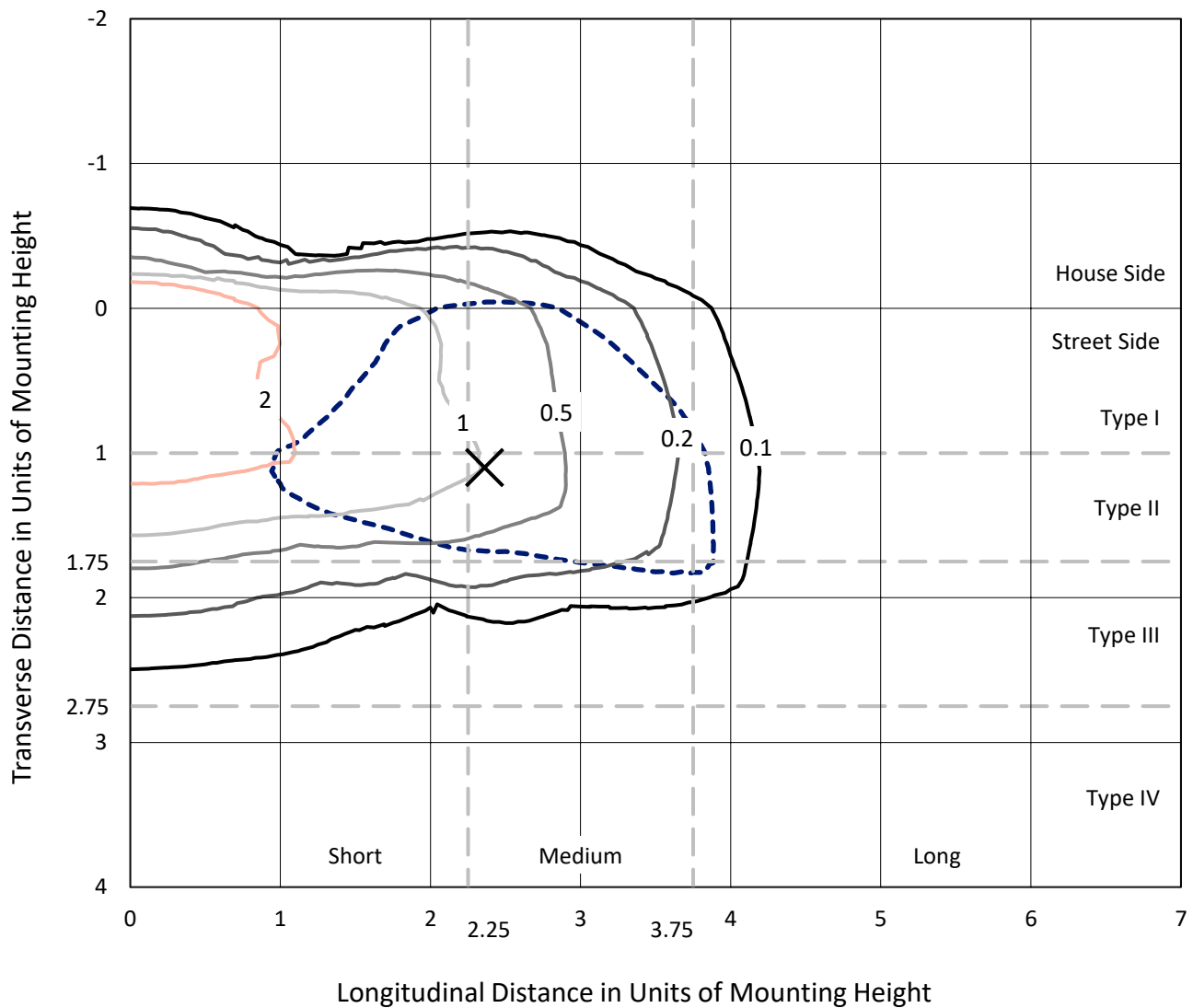


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## Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd  
 - - - 1/2 Max cd

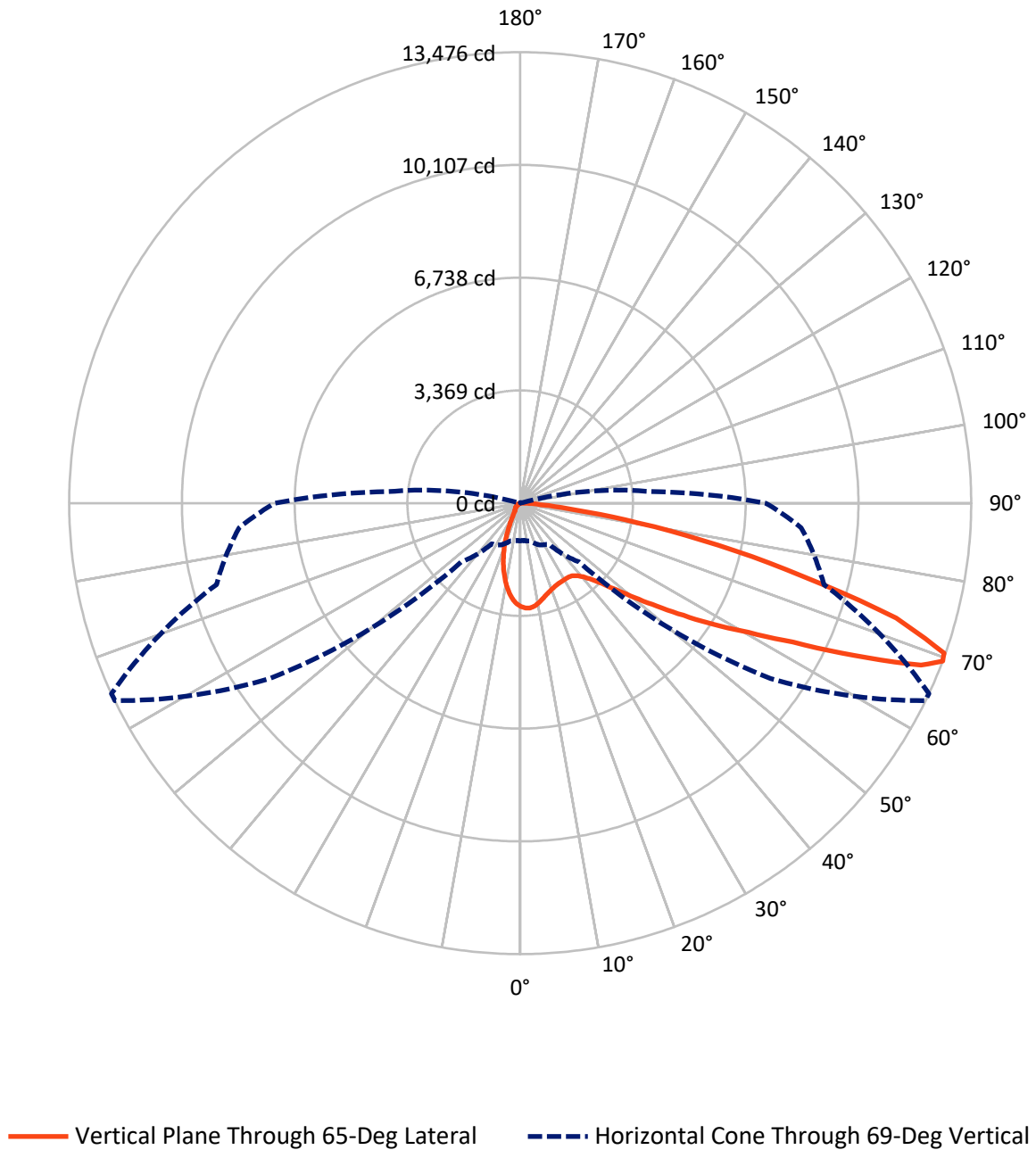


Based on 25 foot mounting height. Maximum calculated value = 4.9 fc  
 Type III - Medium - N/A

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## Luminous Intensity Polar Plot



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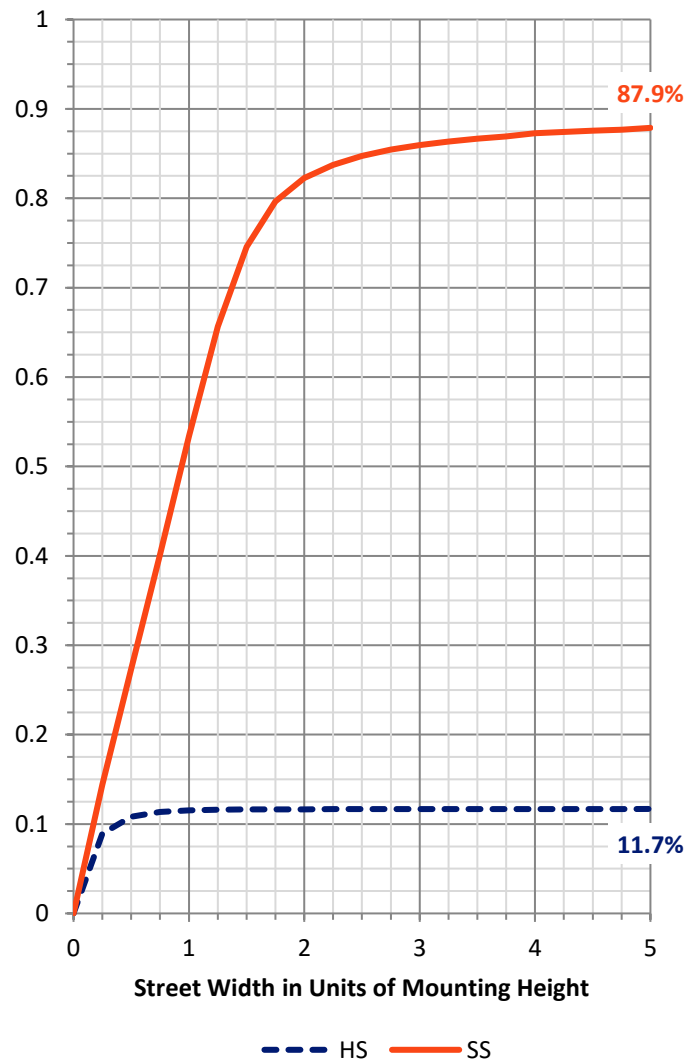
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 1441.2   | 0.0    | 1441.2  |
|                    | % Fixture | 11.8     | 0.0    | 11.8    |
| <b>Street Side</b> | Lumens    | 10784.8  | 0.0    | 10784.8 |
|                    | % Fixture | 88.2     | 0.0    | 88.2    |
| <b>Total</b>       | Lumens    | 12226.0  | 0.0    | 12226.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 258.3   | 2.1       |
| 10°-20°   | 565.5   | 4.6       |
| 20°-30°   | 783.3   | 6.4       |
| 30°-40°   | 1092.2  | 8.9       |
| 40°-50°   | 1697.6  | 13.9      |
| 50°-60°   | 2725.3  | 22.3      |
| 60°-70°   | 3082.7  | 25.2      |
| 70°-80°   | 1810.5  | 14.8      |
| 80°-90°   | 210.6   | 1.7       |
| 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°    | 12226.0 | 100.0     |
| 0°-180°   | 12226.0 | 100.0     |

**Coefficient of Utilization**



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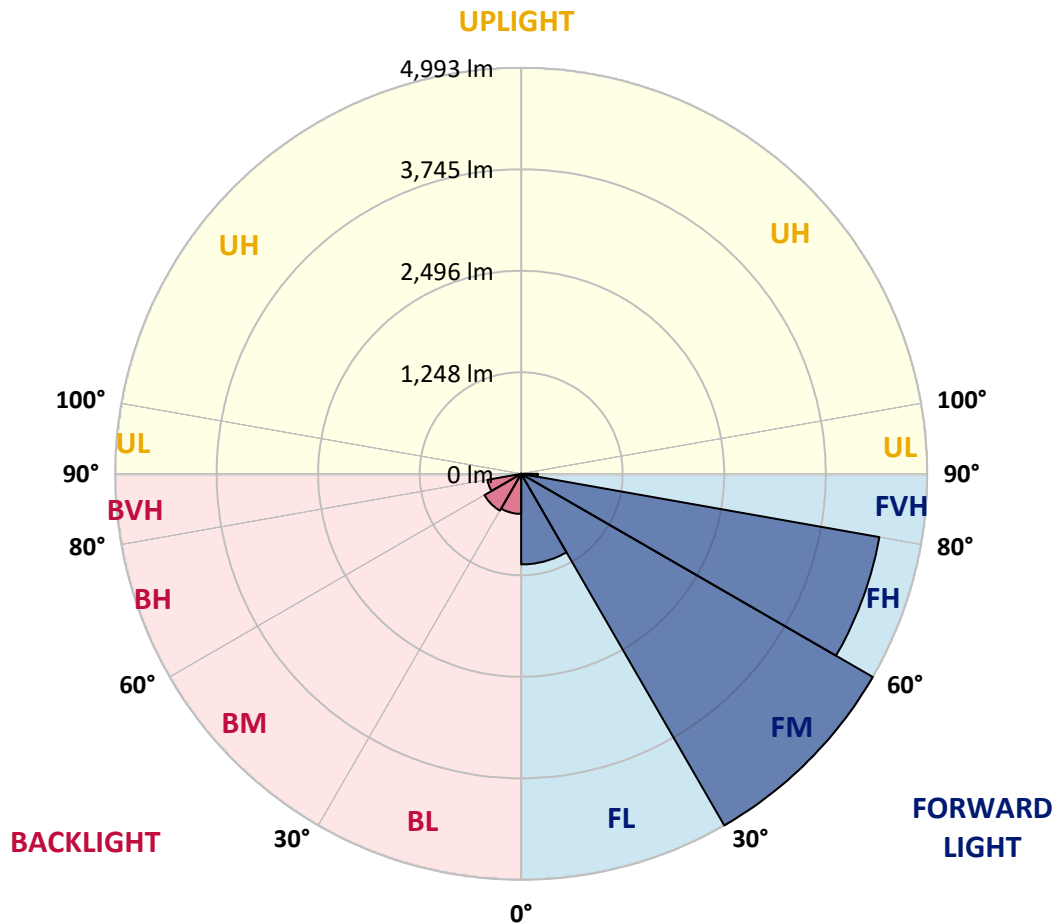
CATALOG NUMBER: GPC-SA2C-750-U-SL2-HSS

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 1114.1 | 9.1       |                         |      |         |
| FM   | (30°-60°)   | 4992.7 | 40.8      |                         |      |         |
| FH   | (60°-80°)   | 4472.2 | 36.6      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 205.9  | 1.7       |                         |      | G2/225  |
| BL   | (0°-30°)    | 493.1  | 4.0       | B1/500                  |      |         |
| BM   | (30°-60°)   | 522.2  | 4.3       | B1/1000                 |      |         |
| BH   | (60°-80°)   | 421.1  | 3.4       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 4.7    | 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 III Medium



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°     | 64°     | 65°     | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|---------|---------|---------|--------|--------|
| 0°    | 3089.5 | 3089.5 | 3089.5 | 3089.5 | 3089.5 | 3089.5 | 3089.5  | 3089.5  | 3089.5  | 3089.5 | 3089.5 |
| 2.5°  | 3117.0 | 3109.2 | 3115.4 | 3128.8 | 3135.6 | 3135.6 | 3140.7  | 3134.5  | 3136.6  | 3121.6 | 3099.9 |
| 5°    | 2921.9 | 2910.0 | 2927.1 | 2964.9 | 3011.4 | 3051.2 | 3110.2  | 3141.3  | 3144.4  | 3144.9 | 3119.5 |
| 7.5°  | 2711.9 | 2701.0 | 2726.4 | 2770.9 | 2830.9 | 2904.8 | 3007.8  | 3097.8  | 3103.0  | 3151.6 | 3133.0 |
| 10°   | 2541.2 | 2533.4 | 2562.9 | 2610.5 | 2680.8 | 2763.6 | 2889.8  | 3015.0  | 3030.0  | 3137.6 | 3130.9 |
| 12.5° | 2405.6 | 2399.4 | 2427.3 | 2482.2 | 2554.1 | 2645.7 | 2777.6  | 2922.9  | 2943.1  | 3106.1 | 3120.6 |
| 15°   | 2306.8 | 2305.8 | 2329.0 | 2381.8 | 2461.5 | 2546.8 | 2681.9  | 2837.6  | 2860.9  | 3071.9 | 3119.0 |
| 17.5° | 2255.1 | 2256.6 | 2273.7 | 2318.7 | 2387.0 | 2471.8 | 2601.2  | 2765.7  | 2791.0  | 3041.4 | 3126.8 |
| 20°   | 2249.9 | 2251.4 | 2260.8 | 2286.1 | 2341.5 | 2416.5 | 2535.5  | 2705.2  | 2731.5  | 3018.7 | 3139.2 |
| 22.5° | 2295.4 | 2294.4 | 2297.0 | 2294.4 | 2325.4 | 2382.3 | 2492.0  | 2658.6  | 2689.1  | 3003.7 | 3149.0 |
| 25°   | 2382.9 | 2381.3 | 2380.3 | 2361.1 | 2340.4 | 2371.0 | 2473.9  | 2632.2  | 2661.2  | 2992.8 | 3154.7 |
| 27.5° | 2504.4 | 2503.4 | 2501.8 | 2470.3 | 2408.2 | 2389.1 | 2476.0  | 2622.4  | 2646.7  | 2984.0 | 3153.7 |
| 30°   | 2664.3 | 2671.5 | 2669.5 | 2625.5 | 2528.7 | 2444.4 | 2497.7  | 2617.2  | 2638.4  | 2966.9 | 3142.8 |
| 32.5° | 2852.1 | 2866.6 | 2877.9 | 2830.9 | 2709.8 | 2554.1 | 2547.9  | 2622.9  | 2638.4  | 2954.0 | 3123.2 |
| 35°   | 3047.1 | 3065.7 | 3107.6 | 3091.1 | 2931.7 | 2719.1 | 2634.3  | 2657.0  | 2670.0  | 2961.2 | 3113.8 |
| 37.5° | 3239.0 | 3261.3 | 3352.3 | 3400.5 | 3222.5 | 2937.4 | 2768.8  | 2741.4  | 2748.1  | 3005.2 | 3124.2 |
| 40°   | 3462.0 | 3495.6 | 3633.8 | 3711.4 | 3569.6 | 3229.7 | 2970.0  | 2886.2  | 2888.8  | 3101.9 | 3172.3 |
| 42.5° | 3754.8 | 3789.5 | 3939.0 | 4060.6 | 3960.7 | 3599.1 | 3243.2  | 3107.6  | 3105.1  | 3283.0 | 3285.6 |
| 45°   | 4111.8 | 4148.0 | 4302.7 | 4437.7 | 4392.7 | 4036.8 | 3592.9  | 3431.0  | 3427.9  | 3568.6 | 3500.3 |
| 47.5° | 4516.3 | 4552.0 | 4690.2 | 4829.3 | 4878.0 | 4547.9 | 4038.3  | 3872.3  | 3865.0  | 3965.4 | 3831.9 |
| 50°   | 4863.5 | 4886.8 | 5014.0 | 5201.3 | 5420.6 | 5175.9 | 4592.4  | 4432.5  | 4424.8  | 4492.5 | 4318.7 |
| 52.5° | 4989.7 | 5003.2 | 5132.5 | 5394.8 | 5942.1 | 6026.4 | 5320.3  | 5114.4  | 5108.7  | 5138.2 | 4966.9 |
| 55°   | 4734.1 | 4758.5 | 4917.3 | 5306.3 | 6224.6 | 6987.7 | 6239.1  | 5958.7  | 5915.7  | 5852.1 | 5644.7 |
| 57.5° | 4037.8 | 4076.6 | 4247.3 | 4764.7 | 6092.7 | 7750.2 | 7589.3  | 6913.7  | 6850.6  | 6461.5 | 6195.6 |
| 60°   | 3025.4 | 3073.0 | 3214.7 | 3772.9 | 5388.6 | 8021.8 | 9064.8  | 7977.8  | 7835.6  | 6946.8 | 6702.1 |
| 62.5° | 2076.1 | 2099.9 | 2196.1 | 2559.8 | 3968.5 | 7576.9 | 10299.1 | 9403.1  | 9143.4  | 7474.5 | 7249.9 |
| 65°   | 1585.6 | 1593.9 | 1633.2 | 1758.4 | 2363.2 | 6154.7 | 10790.1 | 11283.6 | 10969.6 | 8105.6 | 7818.5 |
| 67.5° | 1277.8 | 1271.1 | 1325.4 | 1504.4 | 1582.5 | 3754.8 | 10217.4 | 13062.7 | 12915.8 | 8949.4 | 8390.7 |
| 69°   | 1126.8 | 1117.4 | 1172.8 | 1380.8 | 1486.3 | 2482.2 | 9134.1  | 13466.8 | 13476.1 | 9394.8 | 8430.0 |
| 70°   | 1014.0 | 1020.2 | 1075.0 | 1307.3 | 1453.7 | 1948.3 | 8099.4  | 13363.8 | 13437.3 | 9561.4 | 8194.1 |
| 72.5° | 677.2  | 693.7  | 803.9  | 1085.4 | 1397.8 | 1474.4 | 4890.4  | 11467.8 | 11750.3 | 9186.3 | 7030.1 |
| 75°   | 381.8  | 394.2  | 525.1  | 818.4  | 1317.1 | 1404.1 | 2583.1  | 8448.6  | 8721.8  | 7681.9 | 5421.2 |
| 77.5° | 187.3  | 194.0  | 297.0  | 528.2  | 1101.4 | 1337.8 | 1465.1  | 5738.8  | 6050.8  | 5014.0 | 3066.3 |
| 80°   | 79.2   | 82.8   | 148.5  | 325.9  | 787.4  | 1276.8 | 1088.0  | 3531.9  | 3570.7  | 1964.3 | 816.9  |
| 82.5° | 30.5   | 31.6   | 62.6   | 203.3  | 500.3  | 995.4  | 910.0   | 1674.6  | 1634.3  | 369.9  | 186.2  |
| 85°   | 3.6    | 4.1    | 22.8   | 122.1  | 278.3  | 512.2  | 739.3   | 721.7   | 667.9   | 73.5   | 95.7   |
| 87.5° | 0.0    | 0.0    | 1.6    | 37.2   | 82.8   | 240.0  | 384.4   | 299.5   | 270.0   | 23.8   | 49.7   |
| 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: P386860

CATALOG NUMBER: GPC-SA2C-750-U-SL2-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3089.5 | 3089.5 | 3089.5 | 3089.5 | 3089.5 | 3089.5 | 3089.5 | 3089.5 | 3089.5 | 3089.5 | 3089.5 |
| 2.5°  | 3081.8 | 3076.6 | 3048.7 | 3008.3 | 2970.0 | 2922.4 | 2876.9 | 2849.5 | 2827.8 | 2813.3 | 2830.3 |
| 5°    | 3090.0 | 3067.3 | 2982.4 | 2873.8 | 2767.2 | 2647.2 | 2535.5 | 2440.8 | 2403.5 | 2362.2 | 2380.8 |
| 7.5°  | 3087.5 | 3044.5 | 2891.9 | 2698.4 | 2502.9 | 2300.6 | 2109.2 | 1961.7 | 1885.2 | 1810.2 | 1829.3 |
| 10°   | 3074.5 | 3002.1 | 2770.9 | 2484.2 | 2191.4 | 1900.7 | 1629.1 | 1422.7 | 1307.3 | 1202.8 | 1217.8 |
| 12.5° | 3046.1 | 2945.2 | 2628.1 | 2239.0 | 1847.4 | 1464.1 | 1145.9 | 881.5  | 739.8  | 677.2  | 685.0  |
| 15°   | 3029.0 | 2889.8 | 2477.0 | 1990.7 | 1480.1 | 1019.7 | 700.5  | 521.0  | 456.3  | 435.6  | 438.2  |
| 17.5° | 3020.7 | 2836.6 | 2320.8 | 1706.7 | 1104.5 | 649.3  | 452.7  | 399.4  | 385.4  | 381.8  | 382.8  |
| 20°   | 3012.4 | 2782.8 | 2159.9 | 1425.8 | 761.0  | 436.6  | 372.0  | 356.4  | 351.3  | 346.6  | 347.6  |
| 22.5° | 2998.5 | 2731.0 | 1987.1 | 1141.2 | 513.2  | 354.4  | 335.2  | 320.2  | 309.4  | 303.7  | 304.7  |
| 25°   | 2981.4 | 2676.7 | 1810.7 | 850.0  | 374.6  | 316.1  | 298.0  | 276.8  | 263.8  | 253.5  | 254.0  |
| 27.5° | 2954.0 | 2610.0 | 1628.6 | 618.7  | 314.5  | 283.0  | 258.7  | 235.4  | 213.7  | 201.8  | 201.8  |
| 30°   | 2915.7 | 2534.4 | 1426.3 | 442.8  | 281.9  | 250.4  | 220.9  | 191.9  | 168.7  | 157.8  | 156.8  |
| 32.5° | 2873.3 | 2455.8 | 1221.9 | 335.8  | 256.1  | 219.9  | 186.2  | 155.7  | 135.0  | 126.2  | 125.7  |
| 35°   | 2837.1 | 2371.0 | 1018.1 | 281.4  | 230.2  | 190.4  | 153.6  | 127.8  | 111.2  | 104.0  | 103.5  |
| 37.5° | 2813.8 | 2286.1 | 819.5  | 251.4  | 206.9  | 163.0  | 128.8  | 105.5  | 93.6   | 87.9   | 87.4   |
| 40°   | 2810.2 | 2223.0 | 637.9  | 228.7  | 185.2  | 138.6  | 107.6  | 89.5   | 78.6   | 72.4   | 71.9   |
| 42.5° | 2857.2 | 2186.8 | 489.4  | 209.5  | 163.0  | 117.4  | 91.6   | 76.6   | 65.2   | 59.0   | 58.5   |
| 45°   | 2980.9 | 2198.2 | 376.6  | 192.4  | 140.7  | 99.3   | 77.6   | 63.6   | 53.3   | 48.6   | 47.6   |
| 47.5° | 3206.4 | 2276.8 | 299.5  | 175.4  | 119.5  | 84.3   | 66.2   | 52.8   | 44.0   | 39.3   | 38.8   |
| 50°   | 3607.9 | 2461.5 | 250.4  | 156.8  | 99.8   | 71.9   | 54.8   | 42.9   | 35.7   | 31.6   | 31.0   |
| 52.5° | 4140.8 | 2790.5 | 223.5  | 138.6  | 82.8   | 61.0   | 45.0   | 34.1   | 27.9   | 24.8   | 24.3   |
| 55°   | 4728.5 | 3188.9 | 205.9  | 119.0  | 67.8   | 50.7   | 35.7   | 26.9   | 21.7   | 19.1   | 18.1   |
| 57.5° | 5302.2 | 3533.9 | 189.3  | 99.8   | 56.4   | 41.4   | 28.5   | 21.2   | 17.1   | 14.5   | 14.0   |
| 60°   | 5829.3 | 3851.1 | 170.2  | 80.2   | 46.0   | 32.6   | 22.2   | 16.6   | 13.5   | 10.9   | 10.9   |
| 62.5° | 6393.8 | 4096.3 | 143.8  | 62.6   | 37.8   | 24.8   | 18.1   | 15.0   | 10.9   | 9.3    | 8.8    |
| 65°   | 6991.8 | 4278.4 | 112.8  | 48.6   | 29.5   | 18.6   | 15.0   | 15.5   | 8.8    | 6.7    | 6.2    |
| 67.5° | 7433.6 | 4242.2 | 83.3   | 38.3   | 22.8   | 14.5   | 14.5   | 16.6   | 7.8    | 5.2    | 4.7    |
| 69°   | 7336.3 | 3947.8 | 69.8   | 33.1   | 19.7   | 12.4   | 13.5   | 16.6   | 7.2    | 4.7    | 4.1    |
| 70°   | 7054.4 | 3621.9 | 61.6   | 29.5   | 17.6   | 11.4   | 12.9   | 16.0   | 6.7    | 4.7    | 4.1    |
| 72.5° | 5874.9 | 2727.9 | 48.1   | 22.2   | 14.0   | 9.3    | 10.9   | 14.0   | 6.7    | 4.7    | 3.6    |
| 75°   | 4419.1 | 1746.0 | 36.7   | 16.0   | 10.3   | 7.2    | 8.3    | 10.3   | 6.7    | 4.1    | 3.6    |
| 77.5° | 2404.6 | 629.6  | 26.4   | 10.9   | 7.2    | 5.7    | 5.7    | 7.8    | 6.2    | 3.1    | 2.1    |
| 80°   | 618.2  | 158.3  | 16.6   | 7.2    | 5.7    | 4.1    | 3.6    | 5.2    | 3.6    | 0.5    | 0.0    |
| 82.5° | 152.6  | 35.7   | 8.8    | 5.2    | 4.1    | 1.6    | 1.6    | 2.6    | 1.6    | 0.0    | 0.0    |
| 85°   | 83.8   | 17.6   | 5.7    | 3.6    | 2.1    | 0.0    | 0.0    | 0.5    | 0.0    | 0.0    | 0.0    |
| 87.5° | 42.9   | 5.2    | 1.6    | 1.0    | 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    |

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

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-4-R4

Test Date: 10/02/2019

Luminaire Tested: SA1C-750-U-5WQ

Data in this report applies to families of products SA1C-760-U-5WQ .

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### Test Information

Test Method: LM-79-2008  
 Report Number: SP1-1908-441-4-R4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 10/28/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: MCGRAW-EDISON  
 Catalog Number: **SA1C-750-U-5WQ**  
 Description: MCGRAW EDISON ROADWAY AND AREA LUMINAIRE

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

### Spectral Parameters

|                           |        |           |      |      |       |
|---------------------------|--------|-----------|------|------|-------|
| CCT (K):                  | 4884   | CRI (Ra): | 73.5 |      |       |
| CIE u':                   | 0.2101 | R1:       | 70.5 | R9:  | -28.4 |
| CIE v':                   | 0.4904 | R2:       | 77.7 | R10: | 48.6  |
| Duv:                      | 0.0037 | R3:       | 84.6 | R11: | 73.2  |
| CIE x:                    | 0.3493 | R4:       | 74.7 | R12: | 50.7  |
| CIE y:                    | 0.3624 | R5:       | 71.9 | R13: | 71.2  |
| CIE z:                    | 0.2884 | R6:       | 70.7 | R14: | 91.4  |
| Peak Wavelength (nm):     | 444    | R7:       | 81.2 |      |       |
| Dominant Wavelength (nm): | 571    | R8:       | 56.9 |      |       |
| Purity:                   | 13.7   |           |      |      |       |
| Rf:                       | 74.9   |           |      |      |       |
| Rg:                       | 96.3   |           |      |      |       |



### Test Conditions

Stabilization Time: 240M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.0./44%  
 Sphere Temperature (°C): 25.7

REPORT NUMBER: SP1-1908-441-4-R4

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

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CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 5000K 4-step quadrangle

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**Photopic Flux vs. Wavelength**



#####

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 2945             | NR               | 490       | 37941            | NR               | 620       | 88803            | NR               | 750       | 3908             | NR               | 880       | 2997             | NR               |
| 365       | 2596             | NR               | 495       | 48525            | NR               | 625       | 80578            | NR               | 755       | 3988             | NR               | 885       | 2927             | NR               |
| 370       | 2732             | NR               | 500       | 60609            | NR               | 630       | 73127            | NR               | 760       | 3335             | NR               | 890       | 2649             | NR               |
| 375       | 2894             | NR               | 505       | 72036            | NR               | 635       | 66244            | NR               | 765       | 3438             | NR               | 895       | 2828             | NR               |
| 380       | 2822             | NR               | 510       | 82168            | NR               | 640       | 59440            | NR               | 770       | 3427             | NR               | 900       | 1407             | NR               |
| 385       | 2394             | NR               | 515       | 90898            | NR               | 645       | 52864            | NR               | 775       | 2759             | NR               | 905       | 2224             | NR               |
| 390       | 2370             | NR               | 520       | 97142            | NR               | 650       | 47085            | NR               | 780       | 2340             | NR               | 910       | 2905             | NR               |
| 395       | 2267             | NR               | 525       | 103255           | NR               | 655       | 41789            | NR               | 785       | 2412             | NR               | 915       | 3350             | NR               |
| 400       | 2262             | NR               | 530       | 106697           | NR               | 660       | 37064            | NR               | 790       | 1999             | NR               | 920       | 3114             | NR               |
| 405       | 3000             | NR               | 535       | 110081           | NR               | 665       | 32299            | NR               | 795       | 2054             | NR               | 925       | 2834             | NR               |
| 410       | 5324             | NR               | 540       | 112494           | NR               | 670       | 28142            | NR               | 800       | 2331             | NR               | 930       | 2271             | NR               |
| 415       | 10725            | NR               | 545       | 115513           | NR               | 675       | 24505            | NR               | 805       | 2648             | NR               | 935       | 2228             | NR               |
| 420       | 22128            | NR               | 550       | 117203           | NR               | 680       | 21162            | NR               | 810       | 2485             | NR               | 940       | 2833             | NR               |
| 425       | 44095            | NR               | 555       | 119753           | NR               | 685       | 18400            | NR               | 815       | 2409             | NR               | 945       | 2941             | NR               |
| 430       | 77002            | NR               | 560       | 122602           | NR               | 690       | 16065            | NR               | 820       | 2221             | NR               | 950       | 2323             | NR               |
| 435       | 119881           | NR               | 565       | 124314           | NR               | 695       | 13860            | NR               | 825       | 1562             | NR               | 955       | 1667             | NR               |
| 440       | 164454           | NR               | 570       | 126775           | NR               | 700       | 12177            | NR               | 830       | 2249             | NR               | 960       | 749              | NR               |
| 445       | 179997           | NR               | 575       | 127511           | NR               | 705       | 10757            | NR               | 835       | 2573             | NR               | 965       | 2669             | NR               |
| 450       | 142822           | NR               | 580       | 127577           | NR               | 710       | 9601             | NR               | 840       | 2764             | NR               | 970       | 3968             | NR               |
| 455       | 90008            | NR               | 585       | 126153           | NR               | 715       | 8944             | NR               | 845       | 3109             | NR               | 975       | 3886             | NR               |
| 460       | 60557            | NR               | 590       | 123678           | NR               | 720       | 7947             | NR               | 850       | 2963             | NR               | 980       | 2788             | NR               |
| 465       | 43305            | NR               | 595       | 119774           | NR               | 725       | 7062             | NR               | 855       | 2336             | NR               | 985       | 3496             | NR               |
| 470       | 31089            | NR               | 600       | 115733           | NR               | 730       | 6004             | NR               | 860       | 2118             | NR               | 990       | 2913             | NR               |
| 475       | 26278            | NR               | 605       | 109231           | NR               | 735       | 5594             | NR               | 865       | 3144             | NR               | 995       | 4659             | NR               |
| 480       | 27060            | NR               | 610       | 102408           | NR               | 740       | 5165             | NR               | 870       | 3069             | NR               | 1000      | 1308             | NR               |
| 485       | 30698            | NR               | 615       | 96015            | NR               | 745       | 4687             | NR               | 875       | 3311             | NR               |           |                  |                  |

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Scotopic Flux vs. Wavelength



Scotopic Lumens: 13493.5

S/P: 1.77

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 2945             | NR               | 490       | 37941            | NR               | 620       | 88803            | NR               | 750       | 3908             | NR               | 880       | 2997             | NR               |
| 365       | 2596             | NR               | 495       | 48525            | NR               | 625       | 80578            | NR               | 755       | 3988             | NR               | 885       | 2927             | NR               |
| 370       | 2732             | NR               | 500       | 60609            | NR               | 630       | 73127            | NR               | 760       | 3335             | NR               | 890       | 2649             | NR               |
| 375       | 2894             | NR               | 505       | 72036            | NR               | 635       | 66244            | NR               | 765       | 3438             | NR               | 895       | 2828             | NR               |
| 380       | 2822             | NR               | 510       | 82168            | NR               | 640       | 59440            | NR               | 770       | 3427             | NR               | 900       | 1407             | NR               |
| 385       | 2394             | NR               | 515       | 90898            | NR               | 645       | 52864            | NR               | 775       | 2759             | NR               | 905       | 2224             | NR               |
| 390       | 2370             | NR               | 520       | 97142            | NR               | 650       | 47085            | NR               | 780       | 2340             | NR               | 910       | 2905             | NR               |
| 395       | 2267             | NR               | 525       | 103255           | NR               | 655       | 41789            | NR               | 785       | 2412             | NR               | 915       | 3350             | NR               |
| 400       | 2262             | NR               | 530       | 106697           | NR               | 660       | 37064            | NR               | 790       | 1999             | NR               | 920       | 3114             | NR               |
| 405       | 3000             | NR               | 535       | 110081           | NR               | 665       | 32299            | NR               | 795       | 2054             | NR               | 925       | 2834             | NR               |
| 410       | 5324             | NR               | 540       | 112494           | NR               | 670       | 28142            | NR               | 800       | 2331             | NR               | 930       | 2271             | NR               |
| 415       | 10725            | NR               | 545       | 115513           | NR               | 675       | 24505            | NR               | 805       | 2648             | NR               | 935       | 2228             | NR               |
| 420       | 22128            | NR               | 550       | 117203           | NR               | 680       | 21162            | NR               | 810       | 2485             | NR               | 940       | 2833             | NR               |
| 425       | 44095            | NR               | 555       | 119753           | NR               | 685       | 18400            | NR               | 815       | 2409             | NR               | 945       | 2941             | NR               |
| 430       | 77002            | NR               | 560       | 122602           | NR               | 690       | 16065            | NR               | 820       | 2221             | NR               | 950       | 2323             | NR               |
| 435       | 119881           | NR               | 565       | 124314           | NR               | 695       | 13860            | NR               | 825       | 1562             | NR               | 955       | 1667             | NR               |
| 440       | 164454           | NR               | 570       | 126775           | NR               | 700       | 12177            | NR               | 830       | 2249             | NR               | 960       | 749              | NR               |
| 445       | 179997           | NR               | 575       | 127511           | NR               | 705       | 10757            | NR               | 835       | 2573             | NR               | 965       | 2669             | NR               |
| 450       | 142822           | NR               | 580       | 127577           | NR               | 710       | 9601             | NR               | 840       | 2764             | NR               | 970       | 3968             | NR               |
| 455       | 90008            | NR               | 585       | 126153           | NR               | 715       | 8944             | NR               | 845       | 3109             | NR               | 975       | 3886             | NR               |
| 460       | 60557            | NR               | 590       | 123678           | NR               | 720       | 7947             | NR               | 850       | 2963             | NR               | 980       | 2788             | NR               |
| 465       | 43305            | NR               | 595       | 119774           | NR               | 725       | 7062             | NR               | 855       | 2336             | NR               | 985       | 3496             | NR               |
| 470       | 31089            | NR               | 600       | 115733           | NR               | 730       | 6004             | NR               | 860       | 2118             | NR               | 990       | 2913             | NR               |
| 475       | 26278            | NR               | 605       | 109231           | NR               | 735       | 5594             | NR               | 865       | 3144             | NR               | 995       | 4659             | NR               |
| 480       | 27060            | NR               | 610       | 102408           | NR               | 740       | 5165             | NR               | 870       | 3069             | NR               | 1000      | 1308             | NR               |
| 485       | 30698            | NR               | 615       | 96015            | NR               | 745       | 4687             | NR               | 875       | 3311             | NR               |           |                  |                  |

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**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 5378.9**

**M/P: 0.71**

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 2945             | NR               | 490       | 37941            | NR               | 620       | 88803            | NR               | 750       | 3908             | NR               | 880       | 2997             | NR               |
| 365       | 2596             | NR               | 495       | 48525            | NR               | 625       | 80578            | NR               | 755       | 3988             | NR               | 885       | 2927             | NR               |
| 370       | 2732             | NR               | 500       | 60609            | NR               | 630       | 73127            | NR               | 760       | 3335             | NR               | 890       | 2649             | NR               |
| 375       | 2894             | NR               | 505       | 72036            | NR               | 635       | 66244            | NR               | 765       | 3438             | NR               | 895       | 2828             | NR               |
| 380       | 2822             | NR               | 510       | 82168            | NR               | 640       | 59440            | NR               | 770       | 3427             | NR               | 900       | 1407             | NR               |
| 385       | 2394             | NR               | 515       | 90898            | NR               | 645       | 52864            | NR               | 775       | 2759             | NR               | 905       | 2224             | NR               |
| 390       | 2370             | NR               | 520       | 97142            | NR               | 650       | 47085            | NR               | 780       | 2340             | NR               | 910       | 2905             | NR               |
| 395       | 2267             | NR               | 525       | 103255           | NR               | 655       | 41789            | NR               | 785       | 2412             | NR               | 915       | 3350             | NR               |
| 400       | 2262             | NR               | 530       | 106697           | NR               | 660       | 37064            | NR               | 790       | 1999             | NR               | 920       | 3114             | NR               |
| 405       | 3000             | NR               | 535       | 110081           | NR               | 665       | 32299            | NR               | 795       | 2054             | NR               | 925       | 2834             | NR               |
| 410       | 5324             | NR               | 540       | 112494           | NR               | 670       | 28142            | NR               | 800       | 2331             | NR               | 930       | 2271             | NR               |
| 415       | 10725            | NR               | 545       | 115513           | NR               | 675       | 24505            | NR               | 805       | 2648             | NR               | 935       | 2228             | NR               |
| 420       | 22128            | NR               | 550       | 117203           | NR               | 680       | 21162            | NR               | 810       | 2485             | NR               | 940       | 2833             | NR               |
| 425       | 44095            | NR               | 555       | 119753           | NR               | 685       | 18400            | NR               | 815       | 2409             | NR               | 945       | 2941             | NR               |
| 430       | 77002            | NR               | 560       | 122602           | NR               | 690       | 16065            | NR               | 820       | 2221             | NR               | 950       | 2323             | NR               |
| 435       | 119881           | NR               | 565       | 124314           | NR               | 695       | 13860            | NR               | 825       | 1562             | NR               | 955       | 1667             | NR               |
| 440       | 164454           | NR               | 570       | 126775           | NR               | 700       | 12177            | NR               | 830       | 2249             | NR               | 960       | 749              | NR               |
| 445       | 179997           | NR               | 575       | 127511           | NR               | 705       | 10757            | NR               | 835       | 2573             | NR               | 965       | 2669             | NR               |
| 450       | 142822           | NR               | 580       | 127577           | NR               | 710       | 9601             | NR               | 840       | 2764             | NR               | 970       | 3968             | NR               |
| 455       | 90008            | NR               | 585       | 126153           | NR               | 715       | 8944             | NR               | 845       | 3109             | NR               | 975       | 3886             | NR               |
| 460       | 60557            | NR               | 590       | 123678           | NR               | 720       | 7947             | NR               | 850       | 2963             | NR               | 980       | 2788             | NR               |
| 465       | 43305            | NR               | 595       | 119774           | NR               | 725       | 7062             | NR               | 855       | 2336             | NR               | 985       | 3496             | NR               |
| 470       | 31089            | NR               | 600       | 115733           | NR               | 730       | 6004             | NR               | 860       | 2118             | NR               | 990       | 2913             | NR               |
| 475       | 26278            | NR               | 605       | 109231           | NR               | 735       | 5594             | NR               | 865       | 3144             | NR               | 995       | 4659             | NR               |
| 480       | 27060            | NR               | 610       | 102408           | NR               | 740       | 5165             | NR               | 870       | 3069             | NR               | 1000      | 1308             | NR               |
| 485       | 30698            | NR               | 615       | 96015            | NR               | 745       | 4687             | NR               | 875       | 3311             | NR               |           |                  |                  |

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**Summary**

$R_f = 74.9$   
 $R_g = 96.3$   
 CIE  $R_a = 73.5$   
 $R_g = -28.4$

**Spectral Power Distribution Comparison**



**Color Vector Graphics**



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 61 | CES51 = 90 | CES76 = 52 |
| CES02 = 60 | CES27 = 84 | CES52 = 91 | CES77 = 71 |
| CES03 = 30 | CES28 = 81 | CES53 = 79 | CES78 = 54 |
| CES04 = 69 | CES29 = 58 | CES54 = 83 | CES79 = 80 |
| CES05 = 46 | CES30 = 67 | CES55 = 83 | CES80 = 77 |
| CES06 = 50 | CES31 = 63 | CES56 = 73 | CES81 = 77 |
| CES07 = 39 | CES32 = 59 | CES57 = 72 | CES82 = 90 |
| CES08 = 38 | CES33 = 69 | CES58 = 73 | CES83 = 86 |
| CES09 = 29 | CES34 = 69 | CES59 = 88 | CES84 = 88 |
| CES10 = 73 | CES35 = 83 | CES60 = 93 | CES85 = 84 |
| CES11 = 56 | CES36 = 95 | CES61 = 88 | CES86 = 75 |
| CES12 = 61 | CES37 = 78 | CES62 = 85 | CES87 = 78 |
| CES13 = 41 | CES38 = 76 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 93 | CES64 = 74 | CES89 = 75 |
| CES15 = 70 | CES40 = 86 | CES65 = 67 | CES90 = 77 |
| CES16 = 46 | CES41 = 87 | CES66 = 69 | CES91 = 89 |
| CES17 = 49 | CES42 = 78 | CES67 = 67 | CES92 = 66 |
| CES18 = 55 | CES43 = 75 | CES68 = 73 | CES93 = 80 |
| CES19 = 71 | CES44 = 99 | CES69 = 81 | CES94 = 57 |
| CES20 = 64 | CES45 = 83 | CES70 = 63 | CES95 = 71 |
| CES21 = 85 | CES46 = 81 | CES71 = 60 | CES96 = 78 |
| CES22 = 77 | CES47 = 80 | CES72 = 86 | CES97 = 85 |
| CES23 = 91 | CES48 = 72 | CES73 = 53 | CES98 = 75 |
| CES24 = 90 | CES49 = 81 | CES74 = 96 | CES99 = 62 |
| CES25 = 71 | CES50 = 89 | CES75 = 58 |            |



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**Color Rendition by Hue-Angle Bin**



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**Measure Comparisons**



(END OF REPORT)