

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: P387131

Luminaire Tested: **GPC-SA2D-760-U-T4FT**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P387131  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-16)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: GPC-SA2D-760-U-T4FT  
Description: GALLEON PEDESTRIAN LUMINAIRE  
(2) 70 CRI, 5700K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 16290 lumens  
Efficiency: N/A  
Efficacy: 126.3 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G3

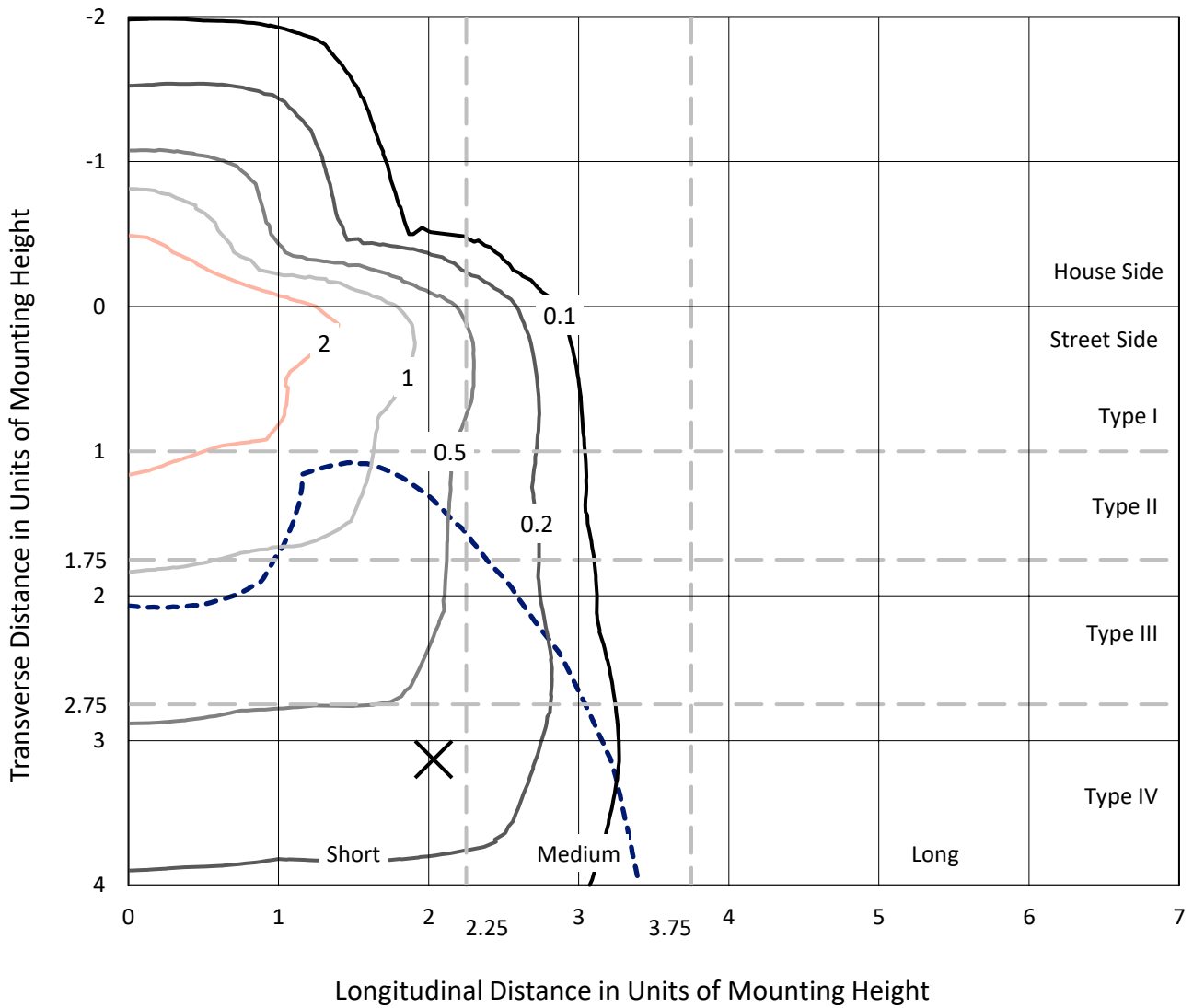
Input Watts (W): 129  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

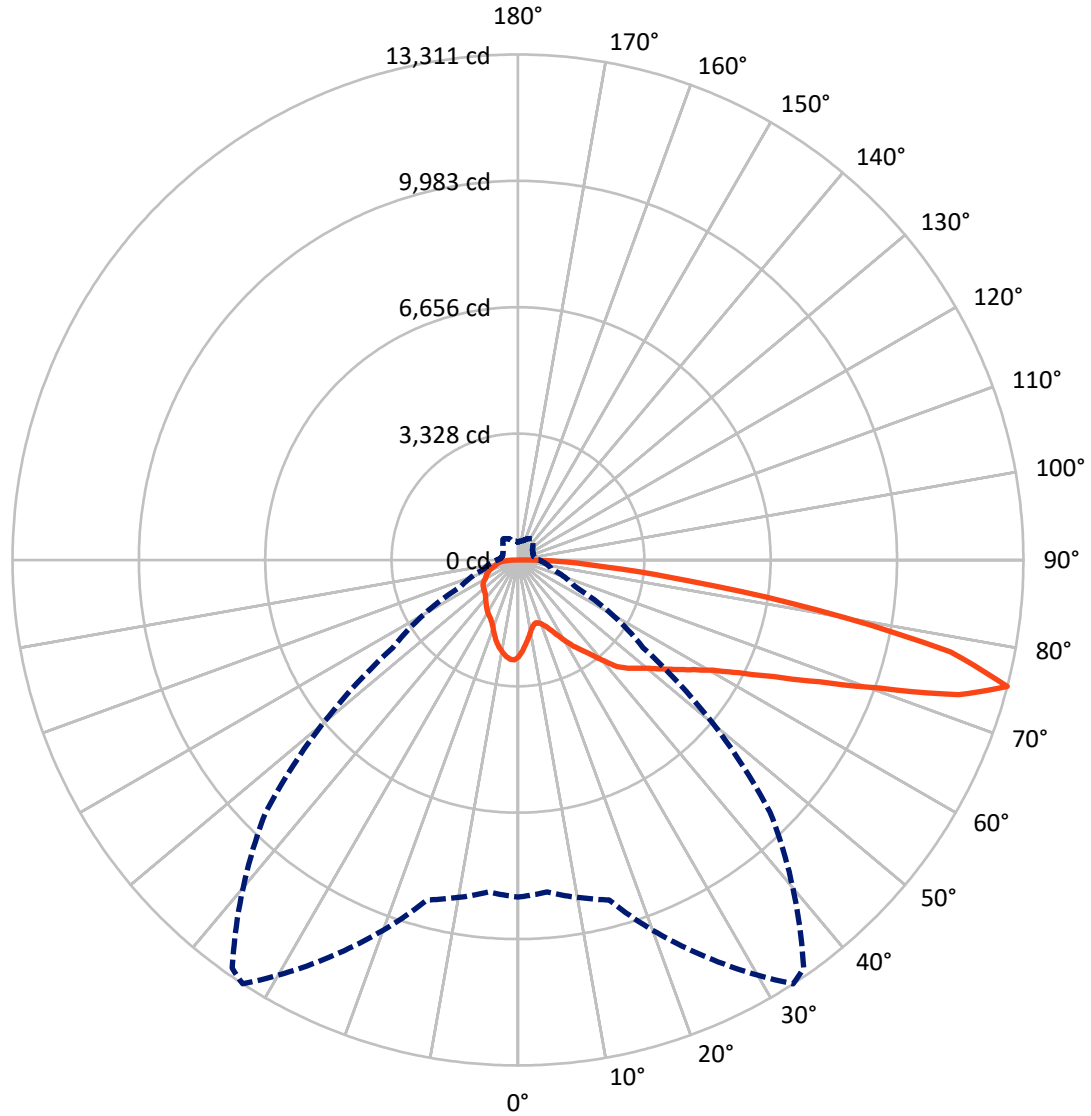
× Max cd  
 - - - 1/2 Max cd



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

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### Luminous Intensity Polar Plot



— Vertical Plane Through 33-Deg Lateral    - - - Horizontal Cone Through 75-Deg Vertical

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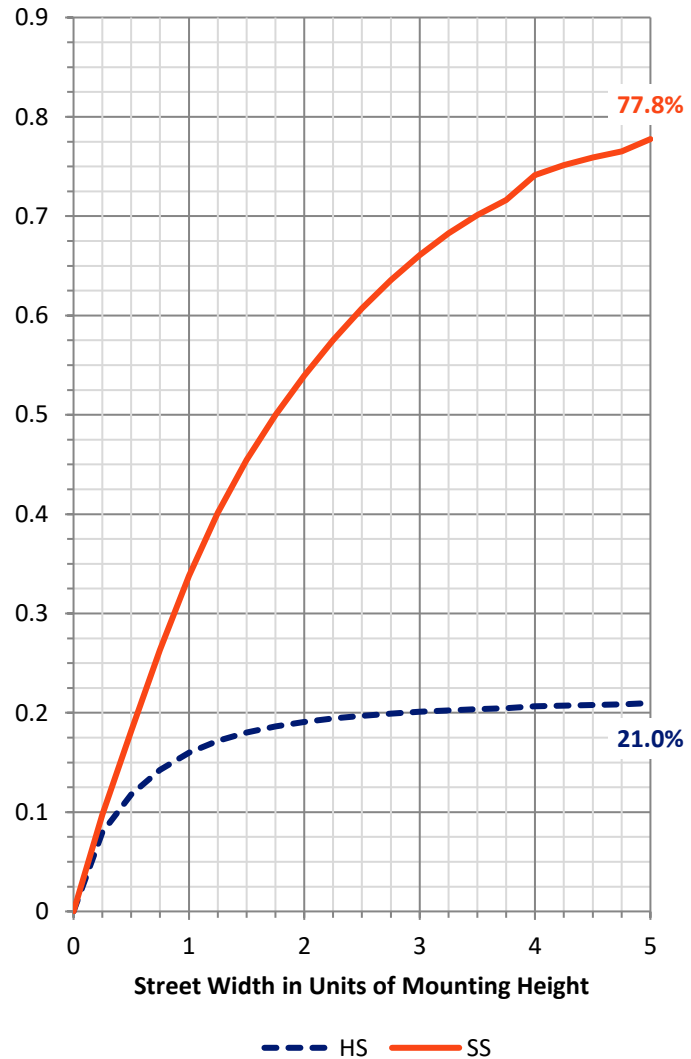
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 3497.9   | 0.0    | 3497.9  |
|                    | % Fixture | 21.5     | 0.0    | 21.5    |
| <b>Street Side</b> | Lumens    | 12792.1  | 0.0    | 12792.1 |
|                    | % Fixture | 78.5     | 0.0    | 78.5    |
| <b>Total</b>       | Lumens    | 16290.0  | 0.0    | 16290.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 230.3   | 1.4       |
| 10°-20°   | 623.7   | 3.8       |
| 20°-30°   | 1018.6  | 6.3       |
| 30°-40°   | 1516.9  | 9.3       |
| 40°-50°   | 2175.6  | 13.4      |
| 50°-60°   | 2986.8  | 18.3      |
| 60°-70°   | 3739.3  | 23.0      |
| 70°-80°   | 3382.8  | 20.8      |
| 80°-90°   | 616.2   | 3.8       |
| 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°    | 16290.0 | 100.0     |
| 0°-180°   | 16290.0 | 100.0     |

**Coefficient of Utilization**



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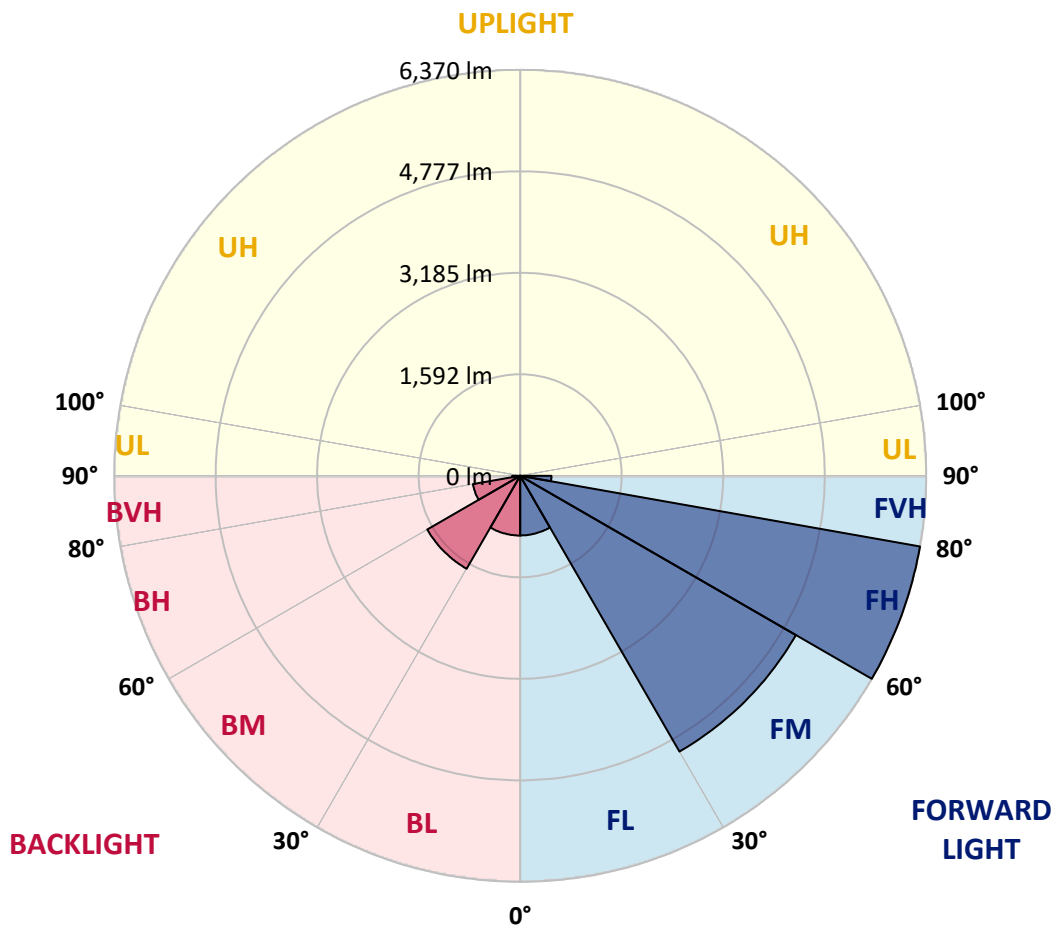
CATALOG NUMBER: GPC-SA2D-760-U-T4FT

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 935.6  | 5.7       |                         |      |         |
| FM   | (30°-60°)   | 4995.8 | 30.7      |                         |      |         |
| FH   | (60°-80°)   | 6370.0 | 39.1      |                         |      | G3/7500 |
| FVH  | (80°-90°)   | 490.7  | 3.0       |                         |      | G3/500  |
| BL   | (0°-30°)    | 936.9  | 5.8       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 1683.4 | 10.3      | B2/2500                 |      |         |
| BH   | (60°-80°)   | 752.1  | 4.6       | B2/1000                 |      | G2/1000 |
| BVH  | (80°-90°)   | 125.4  | 0.8       |                         |      | G2/225  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B2-U0-G3**

Type IV Short





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CATALOG NUMBER: GPC-SA2D-760-U-T4FT

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°     | 33°     | 35°     | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|---------|---------|---------|--------|--------|--------|--------|--------|
| 0°    | 2546.2 | 2546.2 | 2546.2 | 2546.2  | 2546.2  | 2546.2  | 2546.2 | 2546.2 | 2546.2 | 2546.2 | 2546.2 |
| 2.5°  | 2364.5 | 2355.5 | 2372.3 | 2374.6  | 2389.2  | 2394.9  | 2415.1 | 2446.6 | 2472.5 | 2502.3 | 2529.3 |
| 5°    | 2150.1 | 2143.9 | 2167.5 | 2184.4  | 2216.5  | 2230.0  | 2277.8 | 2344.8 | 2404.4 | 2471.9 | 2533.3 |
| 7.5°  | 1946.4 | 1943.0 | 1969.5 | 2007.7  | 2044.9  | 2063.4  | 2146.1 | 2243.5 | 2343.1 | 2452.2 | 2546.2 |
| 10°   | 1774.8 | 1773.6 | 1799.0 | 1836.7  | 1891.2  | 1912.1  | 2019.0 | 2147.3 | 2286.8 | 2437.1 | 2568.2 |
| 12.5° | 1678.5 | 1682.5 | 1694.3 | 1725.8  | 1776.4  | 1797.3  | 1916.0 | 2066.8 | 2239.5 | 2432.0 | 2600.2 |
| 15°   | 1702.2 | 1708.4 | 1688.1 | 1687.0  | 1723.0  | 1739.3  | 1850.7 | 2009.4 | 2205.8 | 2440.4 | 2646.9 |
| 17.5° | 1802.9 | 1804.0 | 1750.6 | 1716.8  | 1738.7  | 1747.2  | 1830.5 | 1976.8 | 2186.1 | 2459.6 | 2705.5 |
| 20°   | 1944.7 | 1941.9 | 1847.3 | 1791.1  | 1802.9  | 1805.1  | 1859.2 | 1977.3 | 2184.4 | 2492.8 | 2781.4 |
| 22.5° | 2132.6 | 2111.8 | 1984.6 | 1908.1  | 1905.3  | 1901.9  | 1932.9 | 2019.0 | 2209.2 | 2546.8 | 2872.0 |
| 25°   | 2378.0 | 2358.3 | 2183.3 | 2078.6  | 2056.1  | 2047.7  | 2052.2 | 2107.9 | 2258.1 | 2604.7 | 2973.3 |
| 27.5° | 2650.9 | 2616.6 | 2447.7 | 2299.8  | 2253.1  | 2241.2  | 2214.2 | 2233.4 | 2311.6 | 2660.4 | 3093.7 |
| 30°   | 2879.3 | 2860.8 | 2713.3 | 2537.8  | 2482.6  | 2465.8  | 2394.9 | 2374.0 | 2388.7 | 2736.4 | 3245.7 |
| 32.5° | 3007.1 | 2994.7 | 2905.2 | 2763.4  | 2712.2  | 2688.6  | 2588.4 | 2546.8 | 2512.5 | 2856.3 | 3451.6 |
| 35°   | 3161.8 | 3153.9 | 3099.9 | 2996.9  | 2921.0  | 2896.2  | 2818.6 | 2775.2 | 2686.9 | 3021.1 | 3717.8 |
| 37.5° | 3358.8 | 3350.3 | 3351.4 | 3268.2  | 3177.6  | 3154.5  | 3103.3 | 3057.7 | 2913.1 | 3237.8 | 4007.0 |
| 40°   | 3581.6 | 3565.3 | 3559.1 | 3555.1  | 3497.7  | 3484.8  | 3457.8 | 3395.9 | 3196.7 | 3496.6 | 4292.3 |
| 42.5° | 3917.0 | 3859.0 | 3735.2 | 3781.9  | 3838.7  | 3832.0  | 3853.9 | 3765.0 | 3511.8 | 3802.7 | 4570.8 |
| 45°   | 4240.5 | 4145.4 | 3931.6 | 3941.7  | 4066.1  | 4103.8  | 4268.1 | 4205.1 | 3853.4 | 4138.1 | 4858.9 |
| 47.5° | 4387.9 | 4315.9 | 4134.2 | 4134.7  | 4258.0  | 4336.2  | 4696.3 | 4651.3 | 4212.4 | 4519.0 | 5210.6 |
| 50°   | 4552.8 | 4480.8 | 4317.6 | 4378.9  | 4486.4  | 4569.7  | 5109.9 | 5086.8 | 4553.9 | 4936.0 | 5632.1 |
| 52.5° | 4732.9 | 4610.8 | 4507.2 | 4617.0  | 4767.8  | 4864.5  | 5524.0 | 5461.0 | 4867.4 | 5355.8 | 6116.6 |
| 55°   | 4735.1 | 4701.9 | 4780.7 | 4861.2  | 5086.8  | 5205.5  | 5957.9 | 5791.3 | 5122.8 | 5768.2 | 6511.0 |
| 57.5° | 5004.7 | 4950.6 | 5117.8 | 5154.9  | 5449.8  | 5583.7  | 6389.5 | 6078.9 | 5382.8 | 6084.5 | 6723.7 |
| 60°   | 5361.4 | 5315.3 | 5452.0 | 5549.9  | 5898.8  | 6077.7  | 6850.3 | 6374.3 | 5587.1 | 6323.1 | 6713.6 |
| 62.5° | 5977.6 | 5925.2 | 5923.5 | 6060.8  | 6530.7  | 6738.9  | 7367.4 | 6664.1 | 5668.1 | 6370.3 | 6427.2 |
| 65°   | 6879.6 | 6796.3 | 6639.3 | 6704.6  | 7403.4  | 7611.1  | 7945.3 | 6873.9 | 5561.2 | 6117.1 | 5689.5 |
| 67.5° | 7757.4 | 7754.6 | 7561.6 | 7695.5  | 8555.9  | 8722.4  | 8603.7 | 6894.8 | 5227.5 | 5235.4 | 4380.6 |
| 70°   | 8632.4 | 8643.6 | 8611.0 | 9076.9  | 10112.8 | 10286.2 | 9304.8 | 6615.1 | 4477.4 | 3780.8 | 2624.4 |
| 72.5° | 9325.6 | 9322.8 | 9487.1 | 10688.5 | 12133.5 | 12094.7 | 9895.6 | 5767.7 | 3214.7 | 2040.9 | 1254.3 |
| 75°   | 8876.6 | 8778.7 | 9268.2 | 11486.4 | 13311.2 | 13121.6 | 9393.2 | 4023.3 | 1668.4 | 929.0  | 675.2  |
| 77.5° | 5789.6 | 5882.5 | 6601.0 | 9488.8  | 11643.4 | 11412.7 | 6891.4 | 1877.2 | 786.1  | 609.4  | 489.5  |
| 80°   | 2096.6 | 2194.5 | 3090.9 | 5374.9  | 8021.9  | 7984.2  | 3393.6 | 771.5  | 531.8  | 460.3  | 356.8  |
| 82.5° | 721.4  | 757.4  | 1219.4 | 2387.0  | 4529.2  | 4698.0  | 1276.8 | 438.3  | 386.6  | 326.4  | 244.2  |
| 85°   | 283.0  | 324.1  | 557.6  | 1148.5  | 2284.6  | 2301.4  | 517.1  | 262.2  | 269.0  | 213.8  | 133.9  |
| 87.5° | 107.5  | 130.5  | 266.7  | 533.4   | 1043.2  | 958.3   | 185.1  | 124.9  | 153.1  | 127.2  | 63.6   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0     | 0.0     | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



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 CATALOG NUMBER: GPC-SA2D-760-U-T4FT

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 2546.2 | 2546.2 | 2546.2 | 2546.2 | 2546.2 | 2546.2 | 2546.2 | 2546.2 | 2546.2 | 2546.2 | 2546.2 |
| 2.5°  | 2550.2 | 2562.0 | 2586.7 | 2603.6 | 2621.6 | 2626.7 | 2628.9 | 2633.4 | 2637.9 | 2636.3 | 2636.8 |
| 5°    | 2565.9 | 2589.0 | 2628.9 | 2645.8 | 2653.7 | 2644.7 | 2627.2 | 2613.2 | 2603.1 | 2597.4 | 2595.7 |
| 7.5°  | 2591.8 | 2624.4 | 2667.2 | 2664.4 | 2646.4 | 2606.4 | 2561.4 | 2527.6 | 2499.5 | 2489.4 | 2483.8 |
| 10°   | 2626.1 | 2664.4 | 2694.2 | 2662.1 | 2609.8 | 2540.6 | 2473.1 | 2420.7 | 2378.5 | 2362.2 | 2359.4 |
| 12.5° | 2670.0 | 2708.8 | 2714.5 | 2646.4 | 2559.7 | 2465.2 | 2373.5 | 2304.3 | 2241.2 | 2221.0 | 2216.5 |
| 15°   | 2726.8 | 2763.4 | 2728.5 | 2618.8 | 2497.8 | 2370.7 | 2251.9 | 2158.0 | 2091.6 | 2066.8 | 2057.8 |
| 17.5° | 2786.5 | 2821.4 | 2731.3 | 2573.2 | 2416.8 | 2258.7 | 2109.6 | 2013.3 | 1937.4 | 1908.7 | 1905.3 |
| 20°   | 2858.0 | 2873.7 | 2719.5 | 2508.0 | 2305.4 | 2113.5 | 1956.5 | 1865.9 | 1825.4 | 1805.1 | 1802.9 |
| 22.5° | 2946.3 | 2929.4 | 2692.5 | 2419.6 | 2164.1 | 1945.8 | 1818.1 | 1775.9 | 1765.8 | 1761.3 | 1762.9 |
| 25°   | 3039.7 | 2987.9 | 2652.6 | 2304.3 | 1985.8 | 1778.1 | 1716.8 | 1728.6 | 1742.1 | 1740.4 | 1740.4 |
| 27.5° | 3142.7 | 3047.6 | 2591.2 | 2151.2 | 1788.3 | 1640.8 | 1648.1 | 1691.5 | 1711.7 | 1711.2 | 1710.6 |
| 30°   | 3274.9 | 3115.1 | 2513.0 | 1967.2 | 1603.7 | 1544.0 | 1588.5 | 1641.4 | 1669.0 | 1667.8 | 1668.4 |
| 32.5° | 3437.5 | 3189.4 | 2406.7 | 1761.8 | 1470.3 | 1472.6 | 1523.8 | 1576.1 | 1608.2 | 1605.4 | 1605.9 |
| 35°   | 3627.7 | 3272.7 | 2262.6 | 1559.2 | 1382.0 | 1415.8 | 1456.3 | 1492.8 | 1523.2 | 1519.3 | 1515.4 |
| 37.5° | 3834.8 | 3354.3 | 2071.3 | 1378.1 | 1310.0 | 1362.9 | 1396.6 | 1402.8 | 1416.9 | 1406.8 | 1399.4 |
| 40°   | 4031.7 | 3416.7 | 1824.8 | 1229.5 | 1237.4 | 1317.8 | 1339.8 | 1315.0 | 1289.7 | 1286.3 | 1276.2 |
| 42.5° | 4203.4 | 3437.5 | 1575.6 | 1110.8 | 1160.9 | 1270.6 | 1284.1 | 1232.3 | 1186.7 | 1165.4 | 1156.3 |
| 45°   | 4384.6 | 3444.9 | 1343.2 | 1011.2 | 1087.1 | 1228.4 | 1243.0 | 1173.8 | 1109.6 | 1063.5 | 1048.3 |
| 47.5° | 4621.5 | 3497.7 | 1162.5 | 937.5  | 1030.9 | 1200.2 | 1221.1 | 1127.1 | 1043.8 | 978.0  | 963.9  |
| 50°   | 4931.5 | 3602.4 | 1015.7 | 881.2  | 994.3  | 1181.7 | 1205.3 | 1081.5 | 989.8  | 910.4  | 896.4  |
| 52.5° | 5275.9 | 3698.6 | 896.9  | 835.6  | 958.8  | 1149.0 | 1185.0 | 1048.9 | 939.1  | 848.0  | 832.8  |
| 55°   | 5516.7 | 3624.9 | 801.3  | 788.3  | 912.7  | 1102.3 | 1156.9 | 1021.3 | 866.6  | 787.2  | 773.7  |
| 57.5° | 5562.9 | 3372.8 | 728.7  | 739.4  | 857.0  | 1043.8 | 1113.6 | 960.0  | 827.2  | 760.8  | 746.7  |
| 60°   | 5436.8 | 3021.7 | 674.7  | 694.4  | 797.3  | 970.1  | 1032.6 | 916.6  | 789.5  | 732.6  | 720.8  |
| 62.5° | 5120.0 | 2662.1 | 634.7  | 653.9  | 741.6  | 895.3  | 981.9  | 871.1  | 751.2  | 700.6  | 688.7  |
| 65°   | 4480.2 | 2235.0 | 596.5  | 617.8  | 689.9  | 830.5  | 936.3  | 828.9  | 713.5  | 674.7  | 663.4  |
| 67.5° | 3381.8 | 1674.0 | 560.4  | 579.6  | 643.7  | 774.3  | 886.8  | 787.2  | 676.9  | 652.2  | 638.7  |
| 70°   | 1991.4 | 1048.3 | 519.4  | 539.6  | 595.3  | 715.8  | 833.9  | 741.6  | 631.3  | 620.1  | 602.7  |
| 72.5° | 926.8  | 630.8  | 472.7  | 492.4  | 534.6  | 637.5  | 765.8  | 682.0  | 577.3  | 552.6  | 528.9  |
| 75°   | 553.1  | 461.4  | 417.5  | 435.0  | 464.8  | 554.3  | 680.3  | 621.2  | 526.1  | 493.5  | 468.7  |
| 77.5° | 413.6  | 352.8  | 356.8  | 375.3  | 399.5  | 485.0  | 602.7  | 573.4  | 486.7  | 461.4  | 444.5  |
| 80°   | 297.7  | 267.8  | 290.9  | 311.2  | 336.5  | 441.2  | 577.3  | 530.1  | 440.0  | 406.3  | 390.5  |
| 82.5° | 198.6  | 192.4  | 218.9  | 239.7  | 264.5  | 386.0  | 542.4  | 464.2  | 375.9  | 333.1  | 298.2  |
| 85°   | 109.7  | 115.9  | 147.4  | 156.4  | 177.8  | 271.8  | 444.5  | 373.1  | 283.0  | 227.9  | 217.8  |
| 87.5° | 45.6   | 53.5   | 79.3   | 76.5   | 94.5   | 162.1  | 292.6  | 225.1  | 180.1  | 134.5  | 104.7  |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



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



**Test Information**

Test Method: LM-79-2008  
 Report Number: SP1-1908-441-9-R4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 10/28/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: McGRAW-EDISON  
 Catalog Number: **SA1C-760-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): 5474  
 CIE u': 0.2052  
 CIE v': 0.4804  
 Duv: 0.0025  
 CIE x: 0.3330  
 CIE y: 0.3466  
 CIE z: 0.3204  
 Peak Wavelength (nm): 442  
 Dominant Wavelength (nm): 554  
 Purity: 4.1

|           |      |      |       |
|-----------|------|------|-------|
| CRI (Ra): | 71.7 |      |       |
| R1:       | 70.6 | R9:  | -27.1 |
| R2:       | 74.6 | R10: | 40.8  |
| R3:       | 78.3 | R11: | 74.6  |
| R4:       | 73.8 | R12: | 50.4  |
| R5:       | 72.4 | R13: | 70.0  |
| R6:       | 67.5 | R14: | 87.8  |
| R7:       | 77.5 |      |       |
| R8:       | 58.9 |      |       |

Rf: 72.1  
 Rg: 97.2



**Test Conditions**

Stabilization Time: 240M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 24.6/31%  
 Sphere Temperature (°C): 25.9

REPORT NUMBER: SP1-1908-441-9-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            |

REPORT NUMBER: SP1-1908-441-9-R4

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 5700K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-9-R4

**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    | 3540          | NR            | 490    | 33363         | NR            | 620    | 80193         | NR            | 750    | 4663          | NR            | 880    | 4678          | NR            |
| 365    | 2862          | NR            | 495    | 44177         | NR            | 625    | 73091         | NR            | 755    | 4147          | NR            | 885    | 4128          | NR            |
| 370    | 2865          | NR            | 500    | 57019         | NR            | 630    | 66269         | NR            | 760    | 4040          | NR            | 890    | 4504          | NR            |
| 375    | 3254          | NR            | 505    | 70030         | NR            | 635    | 60012         | NR            | 765    | 3474          | NR            | 895    | 4371          | NR            |
| 380    | 3076          | NR            | 510    | 81972         | NR            | 640    | 53914         | NR            | 770    | 3469          | NR            | 900    | 4082          | NR            |
| 385    | 2904          | NR            | 515    | 92590         | NR            | 645    | 48385         | NR            | 775    | 3181          | NR            | 905    | 2982          | NR            |
| 390    | 2689          | NR            | 520    | 100305        | NR            | 650    | 43219         | NR            | 780    | 2969          | NR            | 910    | 4351          | NR            |
| 395    | 2619          | NR            | 525    | 107452        | NR            | 655    | 38562         | NR            | 785    | 3132          | NR            | 915    | 3365          | NR            |
| 400    | 2679          | NR            | 530    | 111373        | NR            | 660    | 34110         | NR            | 790    | 2507          | NR            | 920    | 3430          | NR            |
| 405    | 3515          | NR            | 535    | 114505        | NR            | 665    | 30085         | NR            | 795    | 2968          | NR            | 925    | 4264          | NR            |
| 410    | 6934          | NR            | 540    | 116408        | NR            | 670    | 26205         | NR            | 800    | 2758          | NR            | 930    | 4095          | NR            |
| 415    | 14943         | NR            | 545    | 118700        | NR            | 675    | 22906         | NR            | 805    | 2872          | NR            | 935    | 5048          | NR            |
| 420    | 31939         | NR            | 550    | 119209        | NR            | 680    | 20058         | NR            | 810    | 3094          | NR            | 940    | 4074          | NR            |
| 425    | 64701         | NR            | 555    | 120742        | NR            | 685    | 17413         | NR            | 815    | 3222          | NR            | 945    | 4949          | NR            |
| 430    | 110939        | NR            | 560    | 121594        | NR            | 690    | 15447         | NR            | 820    | 3238          | NR            | 950    | 4387          | NR            |
| 435    | 164597        | NR            | 565    | 121913        | NR            | 695    | 13398         | NR            | 825    | 3524          | NR            | 955    | 4978          | NR            |
| 440    | 207696        | NR            | 570    | 122147        | NR            | 700    | 11777         | NR            | 830    | 2921          | NR            | 960    | 4706          | NR            |
| 445    | 201830        | NR            | 575    | 121605        | NR            | 705    | 10412         | NR            | 835    | 3595          | NR            | 965    | 5083          | NR            |
| 450    | 145410        | NR            | 580    | 120248        | NR            | 710    | 9544          | NR            | 840    | 3016          | NR            | 970    | 4522          | NR            |
| 455    | 89594         | NR            | 585    | 117717        | NR            | 715    | 8940          | NR            | 845    | 4032          | NR            | 975    | 4740          | NR            |
| 460    | 58321         | NR            | 590    | 114359        | NR            | 720    | 7897          | NR            | 850    | 3579          | NR            | 980    | 6122          | NR            |
| 465    | 39318         | NR            | 595    | 109974        | NR            | 725    | 7045          | NR            | 855    | 4571          | NR            | 985    | 6450          | NR            |
| 470    | 27693         | NR            | 600    | 105269        | NR            | 730    | 6483          | NR            | 860    | 4485          | NR            | 990    | 4875          | NR            |
| 475    | 23081         | NR            | 605    | 99453         | NR            | 735    | 5838          | NR            | 865    | 3978          | NR            | 995    | 4764          | NR            |
| 480    | 23002         | NR            | 610    | 92921         | NR            | 740    | 5261          | NR            | 870    | 4298          | NR            | 1000   | 3640          | NR            |
| 485    | 26201         | NR            | 615    | 86989         | NR            | 745    | 4760          | NR            | 875    | 4356          | NR            |        |               |               |

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Scotopic Flux vs. Wavelength



Scotopic Lumens: 13759.3 S/P: 1.85

| 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    | 3540          | NR            | 490    | 33363         | NR            | 620    | 80193         | NR            | 750    | 4663          | NR            | 880    | 4678          | NR            |
| 365    | 2862          | NR            | 495    | 44177         | NR            | 625    | 73091         | NR            | 755    | 4147          | NR            | 885    | 4128          | NR            |
| 370    | 2865          | NR            | 500    | 57019         | NR            | 630    | 66269         | NR            | 760    | 4040          | NR            | 890    | 4504          | NR            |
| 375    | 3254          | NR            | 505    | 70030         | NR            | 635    | 60012         | NR            | 765    | 3474          | NR            | 895    | 4371          | NR            |
| 380    | 3076          | NR            | 510    | 81972         | NR            | 640    | 53914         | NR            | 770    | 3469          | NR            | 900    | 4082          | NR            |
| 385    | 2904          | NR            | 515    | 92590         | NR            | 645    | 48385         | NR            | 775    | 3181          | NR            | 905    | 2982          | NR            |
| 390    | 2689          | NR            | 520    | 100305        | NR            | 650    | 43219         | NR            | 780    | 2969          | NR            | 910    | 4351          | NR            |
| 395    | 2619          | NR            | 525    | 107452        | NR            | 655    | 38562         | NR            | 785    | 3132          | NR            | 915    | 3365          | NR            |
| 400    | 2679          | NR            | 530    | 111373        | NR            | 660    | 34110         | NR            | 790    | 2507          | NR            | 920    | 3430          | NR            |
| 405    | 3515          | NR            | 535    | 114505        | NR            | 665    | 30085         | NR            | 795    | 2968          | NR            | 925    | 4264          | NR            |
| 410    | 6934          | NR            | 540    | 116408        | NR            | 670    | 26205         | NR            | 800    | 2758          | NR            | 930    | 4095          | NR            |
| 415    | 14943         | NR            | 545    | 118700        | NR            | 675    | 22906         | NR            | 805    | 2872          | NR            | 935    | 5048          | NR            |
| 420    | 31939         | NR            | 550    | 119209        | NR            | 680    | 20058         | NR            | 810    | 3094          | NR            | 940    | 4074          | NR            |
| 425    | 64701         | NR            | 555    | 120742        | NR            | 685    | 17413         | NR            | 815    | 3222          | NR            | 945    | 4949          | NR            |
| 430    | 110939        | NR            | 560    | 121594        | NR            | 690    | 15447         | NR            | 820    | 3238          | NR            | 950    | 4387          | NR            |
| 435    | 164597        | NR            | 565    | 121913        | NR            | 695    | 13398         | NR            | 825    | 3524          | NR            | 955    | 4978          | NR            |
| 440    | 207696        | NR            | 570    | 122147        | NR            | 700    | 11777         | NR            | 830    | 2921          | NR            | 960    | 4706          | NR            |
| 445    | 201830        | NR            | 575    | 121605        | NR            | 705    | 10412         | NR            | 835    | 3595          | NR            | 965    | 5083          | NR            |
| 450    | 145410        | NR            | 580    | 120248        | NR            | 710    | 9544          | NR            | 840    | 3016          | NR            | 970    | 4522          | NR            |
| 455    | 89594         | NR            | 585    | 117717        | NR            | 715    | 8940          | NR            | 845    | 4032          | NR            | 975    | 4740          | NR            |
| 460    | 58321         | NR            | 590    | 114359        | NR            | 720    | 7897          | NR            | 850    | 3579          | NR            | 980    | 6122          | NR            |
| 465    | 39318         | NR            | 595    | 109974        | NR            | 725    | 7045          | NR            | 855    | 4571          | NR            | 985    | 6450          | NR            |
| 470    | 27693         | NR            | 600    | 105269        | NR            | 730    | 6483          | NR            | 860    | 4485          | NR            | 990    | 4875          | NR            |
| 475    | 23081         | NR            | 605    | 99453         | NR            | 735    | 5838          | NR            | 865    | 3978          | NR            | 995    | 4764          | NR            |
| 480    | 23002         | NR            | 610    | 92921         | NR            | 740    | 5261          | NR            | 870    | 4298          | NR            | 1000   | 3640          | NR            |
| 485    | 26201         | NR            | 615    | 86989         | NR            | 745    | 4760          | NR            | 875    | 4356          | NR            |        |               |               |

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**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 5527.6 M/P: 0.74**

| 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    | 3540          | NR            | 490    | 33363         | NR            | 620    | 80193         | NR            | 750    | 4663          | NR            | 880    | 4678          | NR            |
| 365    | 2862          | NR            | 495    | 44177         | NR            | 625    | 73091         | NR            | 755    | 4147          | NR            | 885    | 4128          | NR            |
| 370    | 2865          | NR            | 500    | 57019         | NR            | 630    | 66269         | NR            | 760    | 4040          | NR            | 890    | 4504          | NR            |
| 375    | 3254          | NR            | 505    | 70030         | NR            | 635    | 60012         | NR            | 765    | 3474          | NR            | 895    | 4371          | NR            |
| 380    | 3076          | NR            | 510    | 81972         | NR            | 640    | 53914         | NR            | 770    | 3469          | NR            | 900    | 4082          | NR            |
| 385    | 2904          | NR            | 515    | 92590         | NR            | 645    | 48385         | NR            | 775    | 3181          | NR            | 905    | 2982          | NR            |
| 390    | 2689          | NR            | 520    | 100305        | NR            | 650    | 43219         | NR            | 780    | 2969          | NR            | 910    | 4351          | NR            |
| 395    | 2619          | NR            | 525    | 107452        | NR            | 655    | 38562         | NR            | 785    | 3132          | NR            | 915    | 3365          | NR            |
| 400    | 2679          | NR            | 530    | 111373        | NR            | 660    | 34110         | NR            | 790    | 2507          | NR            | 920    | 3430          | NR            |
| 405    | 3515          | NR            | 535    | 114505        | NR            | 665    | 30085         | NR            | 795    | 2968          | NR            | 925    | 4264          | NR            |
| 410    | 6934          | NR            | 540    | 116408        | NR            | 670    | 26205         | NR            | 800    | 2758          | NR            | 930    | 4095          | NR            |
| 415    | 14943         | NR            | 545    | 118700        | NR            | 675    | 22906         | NR            | 805    | 2872          | NR            | 935    | 5048          | NR            |
| 420    | 31939         | NR            | 550    | 119209        | NR            | 680    | 20058         | NR            | 810    | 3094          | NR            | 940    | 4074          | NR            |
| 425    | 64701         | NR            | 555    | 120742        | NR            | 685    | 17413         | NR            | 815    | 3222          | NR            | 945    | 4949          | NR            |
| 430    | 110939        | NR            | 560    | 121594        | NR            | 690    | 15447         | NR            | 820    | 3238          | NR            | 950    | 4387          | NR            |
| 435    | 164597        | NR            | 565    | 121913        | NR            | 695    | 13398         | NR            | 825    | 3524          | NR            | 955    | 4978          | NR            |
| 440    | 207696        | NR            | 570    | 122147        | NR            | 700    | 11777         | NR            | 830    | 2921          | NR            | 960    | 4706          | NR            |
| 445    | 201830        | NR            | 575    | 121605        | NR            | 705    | 10412         | NR            | 835    | 3595          | NR            | 965    | 5083          | NR            |
| 450    | 145410        | NR            | 580    | 120248        | NR            | 710    | 9544          | NR            | 840    | 3016          | NR            | 970    | 4522          | NR            |
| 455    | 89594         | NR            | 585    | 117717        | NR            | 715    | 8940          | NR            | 845    | 4032          | NR            | 975    | 4740          | NR            |
| 460    | 58321         | NR            | 590    | 114359        | NR            | 720    | 7897          | NR            | 850    | 3579          | NR            | 980    | 6122          | NR            |
| 465    | 39318         | NR            | 595    | 109974        | NR            | 725    | 7045          | NR            | 855    | 4571          | NR            | 985    | 6450          | NR            |
| 470    | 27693         | NR            | 600    | 105269        | NR            | 730    | 6483          | NR            | 860    | 4485          | NR            | 990    | 4875          | NR            |
| 475    | 23081         | NR            | 605    | 99453         | NR            | 735    | 5838          | NR            | 865    | 3978          | NR            | 995    | 4764          | NR            |
| 480    | 23002         | NR            | 610    | 92921         | NR            | 740    | 5261          | NR            | 870    | 4298          | NR            | 1000   | 3640          | NR            |
| 485    | 26201         | NR            | 615    | 86989         | NR            | 745    | 4760          | NR            | 875    | 4356          | NR            |        |               |               |

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**Summary**

$R_f = 72.1$   
 $R_g = 97.2$   
 CIE  $R_a = 71.7$   
 $R_g = -27.1$



**Color Vector Graphics**





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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 54 | CES51 = 88 | CES76 = 43 |
| CES02 = 59 | CES27 = 79 | CES52 = 90 | CES77 = 64 |
| CES03 = 30 | CES28 = 77 | CES53 = 77 | CES78 = 46 |
| CES04 = 69 | CES29 = 50 | CES54 = 81 | CES79 = 74 |
| CES05 = 46 | CES30 = 59 | CES55 = 80 | CES80 = 70 |
| CES06 = 50 | CES31 = 55 | CES56 = 70 | CES81 = 71 |
| CES07 = 38 | CES32 = 52 | CES57 = 68 | CES82 = 88 |
| CES08 = 38 | CES33 = 63 | CES58 = 70 | CES83 = 82 |
| CES09 = 29 | CES34 = 63 | CES59 = 88 | CES84 = 87 |
| CES10 = 72 | CES35 = 79 | CES60 = 92 | CES85 = 84 |
| CES11 = 55 | CES36 = 90 | CES61 = 88 | CES86 = 76 |
| CES12 = 61 | CES37 = 72 | CES62 = 81 | CES87 = 75 |
| CES13 = 41 | CES38 = 68 | CES63 = 75 | CES88 = 77 |
| CES14 = 74 | CES39 = 91 | CES64 = 72 | CES89 = 76 |
| CES15 = 70 | CES40 = 83 | CES65 = 65 | CES90 = 76 |
| CES16 = 46 | CES41 = 84 | CES66 = 66 | CES91 = 92 |
| CES17 = 48 | CES42 = 70 | CES67 = 64 | CES92 = 70 |
| CES18 = 55 | CES43 = 69 | CES68 = 71 | CES93 = 83 |
| CES19 = 70 | CES44 = 98 | CES69 = 80 | CES94 = 60 |
| CES20 = 64 | CES45 = 79 | CES70 = 58 | CES95 = 73 |
| CES21 = 85 | CES46 = 78 | CES71 = 55 | CES96 = 79 |
| CES22 = 77 | CES47 = 76 | CES72 = 84 | CES97 = 84 |
| CES23 = 91 | CES48 = 68 | CES73 = 47 | CES98 = 73 |
| CES24 = 90 | CES49 = 78 | CES74 = 94 | CES99 = 62 |
| CES25 = 71 | CES50 = 87 | CES75 = 51 |            |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)