

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



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P639183

Luminaire Tested: GWS-SA5B-735-U-RW-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P639183  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-49)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA5B-735-U-RW-W  
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS  
Light Source: (80) 3500K CCT, 70 CRI LEDS  
Ballast/Driver: -

**Summary**

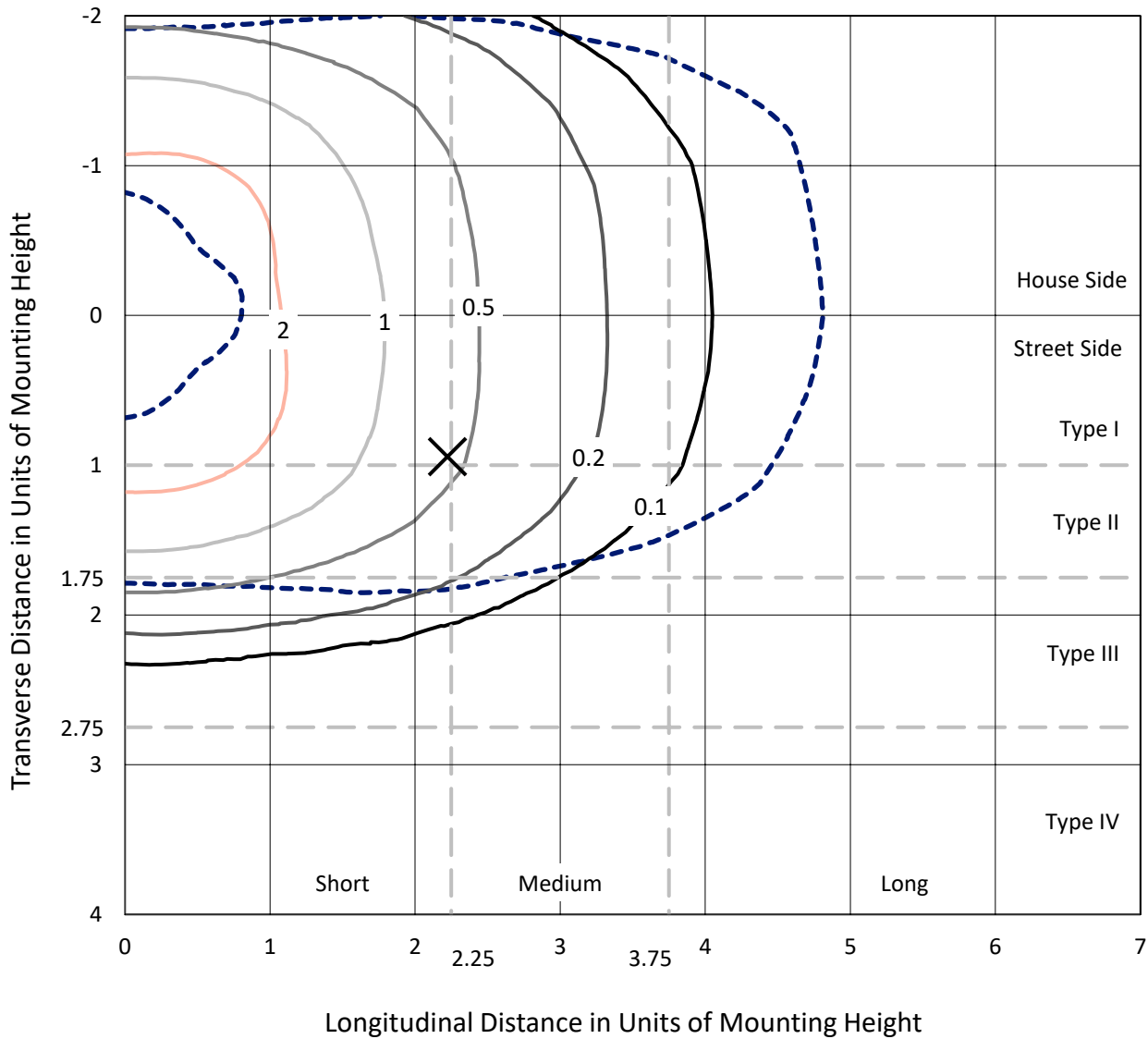
Lumens per Lamp: N/A  
Luminaire Lumens: 18027.8 lumens  
Efficiency: N/A  
Efficacy: 155.8 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B4 - U0 - G4  
  
Input Watts (W): 115.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 0  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



REPORT NUMBER: P639183  
 CATALOG NUMBER: GWS-SA5B-735-U-RW-W

### Iso-Footcandle Lines of Horizontal Illumination

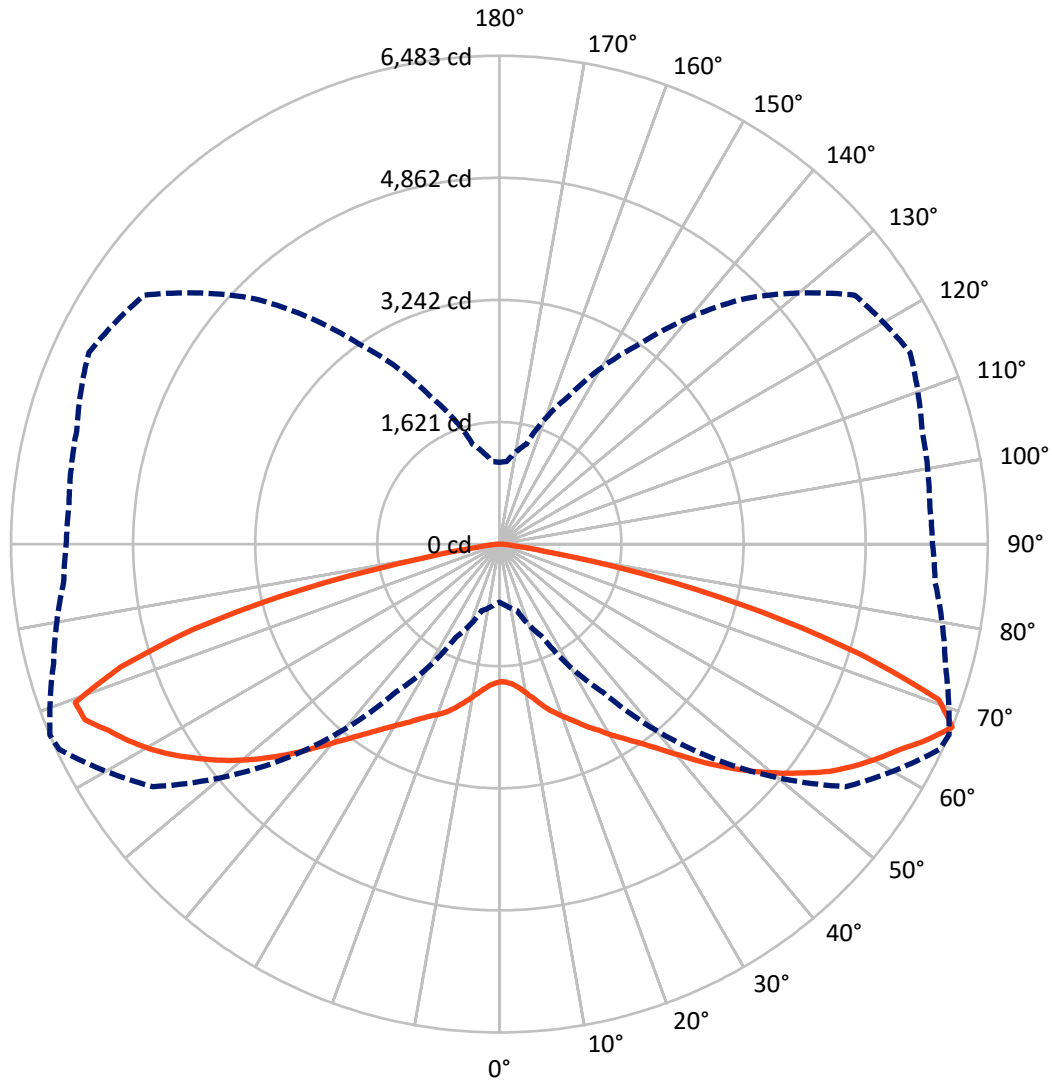
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.4 fc  
 Type III - Short - N/A

REPORT NUMBER: P639183  
CATALOG NUMBER: GWS-SA5B-735-U-RW-W

### Luminous Intensity Polar Plot



— Vertical Plane Through 67-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

REPORT NUMBER: P639183

CATALOG NUMBER: GWS-SA5B-735-U-RW-W

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 8914.4   | 0.0    | 8914.4  |
|                    | % Fixture | 49.4     | 0.0    | 49.4    |
| <b>Street Side</b> | Lumens    | 9113.4   | 0.0    | 9113.4  |
|                    | % Fixture | 50.6     | 0.0    | 50.6    |
| <b>Total</b>       | Lumens    | 18027.8  | 0.0    | 18027.8 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 179.1   | 1.0       |
| 10°-20°   | 605.1   | 3.4       |
| 20°-30°   | 1187.1  | 6.6       |
| 30°-40°   | 2022.4  | 11.2      |
| 40°-50°   | 3247.6  | 18.0      |
| 50°-60°   | 4412.9  | 24.5      |
| 60°-70°   | 4221.2  | 23.4      |
| 70°-80°   | 2006.9  | 11.1      |
| 80°-90°   | 145.4   | 0.8       |
| 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°    | 18027.8 | 100.0     |
| 0°-180°   | 18027.8 | 100.0     |

**Coefficient of Utilization**



REPORT NUMBER: P639183

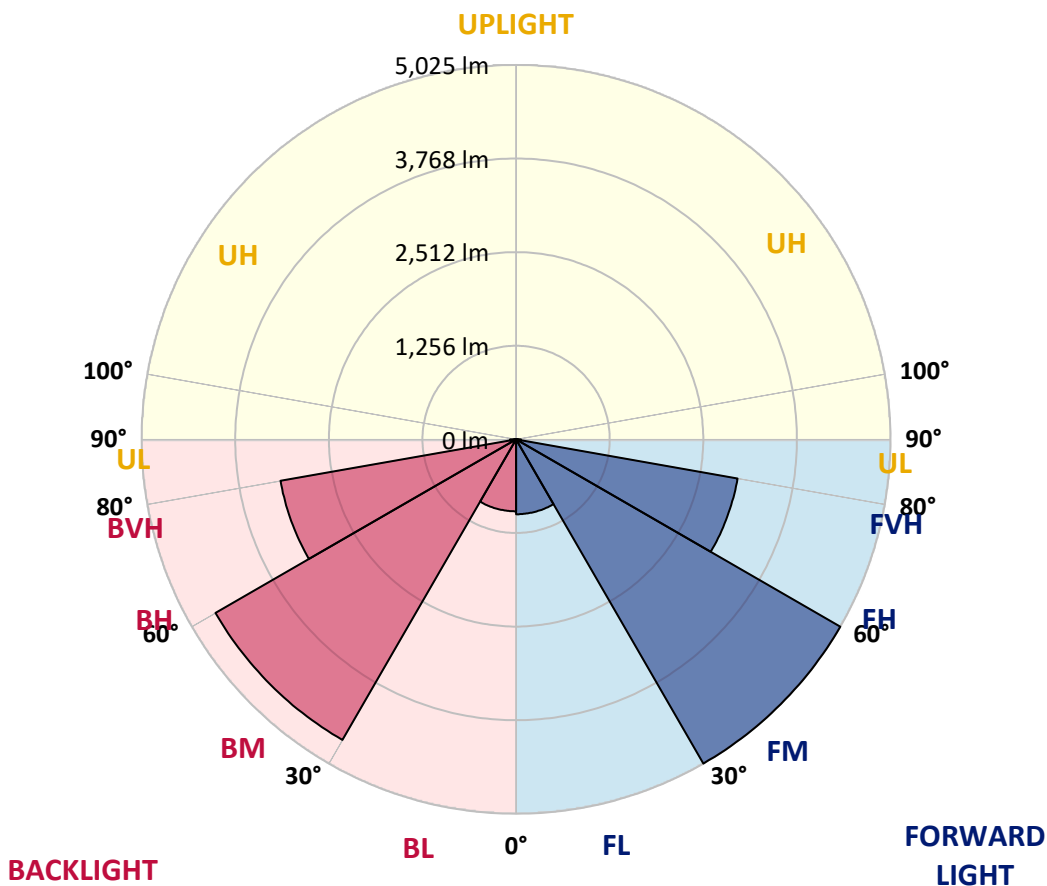
CATALOG NUMBER: GWS-SA5B-735-U-RW-W

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

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 1005.2 | 5.6       |                         |      |         |
| FM (30°-60°)   | 5024.5 | 27.9      |                         |      |         |
| FH (60°-80°)   | 3018.3 | 16.7      |                         |      | G2/5000 |
| FVH (80°-90°)  | 65.4   | 0.4       |                         |      | G1/100  |
| BL (0°-30°)    | 966.1  | 5.4       | B2/1000                 |      |         |
| BM (30°-60°)   | 4658.5 | 25.8      | B3/5000                 |      |         |
| BH (60°-80°)   | 3209.8 | 17.8      | B4/5000                 |      | G4/5000 |
| BVH (80°-90°)  | 80.1   | 0.4       |                         |      | G1/100  |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B4-U0-G4**

Type III Short





REPORT NUMBER: P639183  
 CATALOG NUMBER: GWS-SA5B-735-U-RW-W

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 67°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1825.4 | 1825.4 | 1825.4 | 1825.4 | 1825.4 | 1825.4 | 1825.4 | 1825.4 | 1825.4 | 1825.4 | 1825.4 |
| 2.5°  | 1787.8 | 1790.3 | 1794.0 | 1801.6 | 1809.1 | 1820.4 | 1831.7 | 1830.4 | 1835.5 | 1839.2 | 1843.0 |
| 5°    | 1777.7 | 1780.2 | 1786.5 | 1796.5 | 1807.8 | 1826.7 | 1850.5 | 1860.6 | 1868.1 | 1881.9 | 1894.5 |
| 7.5°  | 1799.1 | 1804.1 | 1812.9 | 1826.7 | 1844.2 | 1868.1 | 1900.7 | 1918.3 | 1929.6 | 1954.7 | 1976.1 |
| 10°   | 1827.9 | 1834.2 | 1851.8 | 1878.1 | 1904.5 | 1940.9 | 1982.3 | 2008.7 | 2016.2 | 2048.9 | 2089.1 |
| 12.5° | 1855.5 | 1863.1 | 1892.0 | 1939.7 | 1987.4 | 2036.3 | 2085.3 | 2117.9 | 2120.4 | 2164.4 | 2209.6 |
| 15°   | 1899.5 | 1905.8 | 1944.7 | 2006.2 | 2079.0 | 2146.8 | 2207.1 | 2229.7 | 2239.7 | 2271.1 | 2327.6 |
| 17.5° | 1996.2 | 2003.7 | 2053.9 | 2120.4 | 2197.0 | 2268.6 | 2328.8 | 2347.7 | 2347.7 | 2374.0 | 2420.5 |
| 20°   | 2100.4 | 2107.9 | 2174.4 | 2259.8 | 2352.7 | 2425.5 | 2472.0 | 2454.4 | 2448.1 | 2455.6 | 2488.3 |
| 22.5° | 2217.1 | 2230.9 | 2295.0 | 2394.1 | 2508.4 | 2597.5 | 2621.4 | 2568.6 | 2551.1 | 2533.5 | 2541.0 |
| 25°   | 2366.5 | 2382.8 | 2445.6 | 2551.1 | 2662.8 | 2757.0 | 2770.8 | 2689.2 | 2679.1 | 2617.6 | 2595.0 |
| 27.5° | 2538.5 | 2551.1 | 2628.9 | 2733.1 | 2837.3 | 2916.4 | 2931.5 | 2831.0 | 2797.1 | 2711.8 | 2659.0 |
| 30°   | 2760.7 | 2772.0 | 2839.8 | 2942.8 | 3033.2 | 3088.4 | 3107.2 | 2969.1 | 2942.8 | 2812.2 | 2730.6 |
| 32.5° | 3003.0 | 3008.0 | 3077.1 | 3176.3 | 3256.6 | 3309.3 | 3283.0 | 3122.3 | 3083.4 | 2936.5 | 2824.7 |
| 35°   | 3280.5 | 3280.5 | 3369.6 | 3450.0 | 3514.0 | 3529.1 | 3478.8 | 3295.5 | 3250.3 | 3090.9 | 2951.5 |
| 37.5° | 3552.9 | 3560.4 | 3643.3 | 3738.7 | 3795.2 | 3792.7 | 3701.0 | 3500.2 | 3448.7 | 3275.5 | 3121.0 |
| 40°   | 3847.9 | 3864.3 | 3947.1 | 4053.8 | 4107.8 | 4100.3 | 3959.7 | 3736.2 | 3683.5 | 3478.8 | 3328.2 |
| 42.5° | 4119.1 | 4145.5 | 4242.1 | 4351.4 | 4410.4 | 4405.4 | 4258.5 | 4007.4 | 3955.9 | 3724.9 | 3574.2 |
| 45°   | 4335.0 | 4362.7 | 4483.2 | 4635.1 | 4729.3 | 4720.5 | 4572.3 | 4288.6 | 4225.8 | 3983.5 | 3817.8 |
| 47.5° | 4524.6 | 4553.5 | 4687.8 | 4848.5 | 4997.9 | 5013.0 | 4877.4 | 4572.3 | 4505.8 | 4261.0 | 4073.9 |
| 50°   | 4670.3 | 4684.1 | 4834.7 | 5010.5 | 5183.7 | 5267.8 | 5149.8 | 4857.3 | 4777.0 | 4534.7 | 4323.7 |
| 52.5° | 4659.0 | 4677.8 | 4863.6 | 5102.1 | 5334.4 | 5472.5 | 5390.9 | 5126.0 | 5048.1 | 4784.5 | 4578.6 |
| 55°   | 4429.2 | 4448.0 | 4669.0 | 5016.8 | 5418.5 | 5621.9 | 5613.1 | 5382.1 | 5325.6 | 5039.4 | 4843.5 |
| 57.5° | 4094.0 | 4135.4 | 4355.1 | 4730.5 | 5308.0 | 5741.1 | 5776.3 | 5615.6 | 5556.6 | 5289.2 | 5105.9 |
| 60°   | 3493.9 | 3549.1 | 3802.7 | 4289.9 | 4954.0 | 5701.0 | 5950.8 | 5812.7 | 5776.3 | 5521.4 | 5343.2 |
| 62.5° | 2538.5 | 2578.7 | 2916.4 | 3555.4 | 4429.2 | 5414.7 | 6097.7 | 6016.1 | 5988.5 | 5729.8 | 5557.8 |
| 65°   | 1520.3 | 1612.0 | 1883.2 | 2514.7 | 3573.0 | 4874.9 | 6017.3 | 6282.2 | 6253.4 | 5944.5 | 5741.1 |
| 67.5° | 769.6  | 811.0  | 917.7  | 1363.4 | 2402.9 | 4033.7 | 5614.3 | 6448.0 | 6483.1 | 6127.8 | 5806.4 |
| 70°   | 477.1  | 488.4  | 518.5  | 672.9  | 1200.2 | 2650.2 | 4591.2 | 6016.1 | 6188.1 | 6098.9 | 5636.9 |
| 72.5° | 382.9  | 385.4  | 390.4  | 419.3  | 576.2  | 1239.1 | 2902.6 | 4711.7 | 5021.8 | 5695.9 | 5394.6 |
| 75°   | 317.6  | 318.9  | 320.1  | 328.9  | 359.1  | 505.9  | 1412.4 | 3237.8 | 3600.6 | 4841.0 | 5001.7 |
| 77.5° | 254.9  | 248.6  | 253.6  | 257.4  | 264.9  | 282.5  | 487.1  | 1727.5 | 2095.3 | 3177.5 | 3868.0 |
| 80°   | 165.7  | 163.2  | 173.3  | 177.0  | 184.6  | 195.8  | 259.9  | 586.3  | 711.8  | 1156.3 | 1230.3 |
| 82.5° | 89.1   | 84.1   | 105.5  | 101.7  | 105.5  | 114.2  | 153.2  | 214.7  | 241.0  | 349.0  | 295.0  |
| 85°   | 27.6   | 27.6   | 28.9   | 33.9   | 41.4   | 40.2   | 66.5   | 105.5  | 116.8  | 149.4  | 110.5  |
| 87.5° | 5.0    | 5.0    | 5.0    | 5.0    | 5.0    | 6.3    | 13.8   | 21.3   | 28.9   | 51.5   | 38.9   |
| 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: P639183  
 CATALOG NUMBER: GWS-SA5B-735-U-RW-W

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1825.4 | 1825.4 | 1825.4 | 1825.4 | 1825.4 | 1825.4 | 1825.4 | 1825.4 | 1825.4 | 1825.4 | 1825.4 |
| 2.5°  | 1850.5 | 1839.2 | 1845.5 | 1849.3 | 1848.0 | 1845.5 | 1832.9 | 1830.4 | 1824.2 | 1814.1 | 1811.6 |
| 5°    | 1905.8 | 1893.2 | 1894.5 | 1890.7 | 1878.1 | 1861.8 | 1834.2 | 1820.4 | 1809.1 | 1796.5 | 1795.3 |
| 7.5°  | 1992.4 | 1978.6 | 1974.8 | 1957.2 | 1922.1 | 1884.4 | 1840.5 | 1815.4 | 1796.5 | 1780.2 | 1777.7 |
| 10°   | 2102.9 | 2089.1 | 2076.5 | 2035.1 | 1977.3 | 1927.1 | 1869.4 | 1832.9 | 1805.3 | 1785.2 | 1781.5 |
| 12.5° | 2225.9 | 2214.6 | 2183.2 | 2123.0 | 2053.9 | 1994.9 | 1935.9 | 1890.7 | 1850.5 | 1820.4 | 1816.6 |
| 15°   | 2362.7 | 2337.6 | 2289.9 | 2212.1 | 2146.8 | 2099.1 | 2027.5 | 1966.0 | 1902.0 | 1861.8 | 1853.0 |
| 17.5° | 2458.2 | 2436.8 | 2380.3 | 2305.0 | 2253.5 | 2212.1 | 2128.0 | 2040.1 | 1953.5 | 1894.5 | 1881.9 |
| 20°   | 2526.0 | 2503.4 | 2439.3 | 2384.1 | 2367.8 | 2332.6 | 2234.7 | 2133.0 | 2032.6 | 1959.7 | 1943.4 |
| 22.5° | 2574.9 | 2551.1 | 2485.8 | 2458.2 | 2480.8 | 2474.5 | 2379.1 | 2263.6 | 2144.3 | 2057.7 | 2037.6 |
| 25°   | 2621.4 | 2598.8 | 2541.0 | 2551.1 | 2611.3 | 2630.2 | 2527.2 | 2392.9 | 2257.3 | 2155.6 | 2131.7 |
| 27.5° | 2665.3 | 2636.4 | 2610.1 | 2665.3 | 2750.7 | 2785.8 | 2676.6 | 2524.7 | 2377.8 | 2273.6 | 2254.8 |
| 30°   | 2733.1 | 2699.2 | 2695.4 | 2775.8 | 2911.4 | 2941.5 | 2821.0 | 2669.1 | 2523.4 | 2418.0 | 2394.1 |
| 32.5° | 2818.5 | 2787.1 | 2789.6 | 2910.1 | 3067.0 | 3092.2 | 2989.2 | 2847.3 | 2701.7 | 2596.3 | 2563.6 |
| 35°   | 2934.0 | 2895.1 | 2916.4 | 3064.5 | 3222.7 | 3269.2 | 3186.3 | 3068.3 | 2926.4 | 2818.5 | 2782.1 |
| 37.5° | 3093.4 | 3036.9 | 3080.9 | 3236.5 | 3396.0 | 3465.0 | 3401.0 | 3313.1 | 3172.5 | 3063.3 | 3029.4 |
| 40°   | 3296.8 | 3250.3 | 3267.9 | 3439.9 | 3604.4 | 3687.2 | 3647.1 | 3560.4 | 3421.1 | 3306.8 | 3267.9 |
| 42.5° | 3537.8 | 3491.4 | 3485.1 | 3668.4 | 3832.9 | 3958.4 | 3919.5 | 3840.4 | 3696.0 | 3565.5 | 3527.8 |
| 45°   | 3773.9 | 3731.2 | 3740.0 | 3927.0 | 4111.6 | 4248.4 | 4209.5 | 4116.6 | 3959.7 | 3809.0 | 3778.9 |
| 47.5° | 4019.9 | 3984.8 | 3992.3 | 4190.7 | 4394.1 | 4530.9 | 4481.9 | 4368.9 | 4185.6 | 4025.0 | 3988.5 |
| 50°   | 4272.3 | 4232.1 | 4243.4 | 4451.8 | 4671.5 | 4800.8 | 4725.5 | 4558.5 | 4356.4 | 4199.5 | 4168.1 |
| 52.5° | 4523.4 | 4475.7 | 4504.5 | 4701.6 | 4928.9 | 5031.8 | 4892.5 | 4690.3 | 4494.5 | 4338.8 | 4303.7 |
| 55°   | 4812.1 | 4761.9 | 4730.5 | 4941.4 | 5166.2 | 5208.8 | 5018.0 | 4782.0 | 4549.7 | 4372.7 | 4351.4 |
| 57.5° | 5075.8 | 5033.1 | 4974.1 | 5185.0 | 5350.7 | 5319.3 | 5114.7 | 4756.9 | 4415.4 | 4188.2 | 4158.0 |
| 60°   | 5311.8 | 5275.4 | 5223.9 | 5403.4 | 5478.8 | 5408.5 | 5036.8 | 4459.3 | 4084.0 | 3846.7 | 3832.9 |
| 62.5° | 5529.0 | 5490.1 | 5442.3 | 5595.5 | 5585.5 | 5422.3 | 4682.8 | 4002.4 | 3500.2 | 3245.3 | 3222.7 |
| 65°   | 5701.0 | 5665.8 | 5652.0 | 5772.5 | 5756.2 | 5152.3 | 4131.7 | 3254.1 | 2557.3 | 2269.8 | 2261.1 |
| 67.5° | 5749.9 | 5736.1 | 5810.2 | 6014.8 | 5760.0 | 4610.0 | 3240.3 | 2158.1 | 1373.5 | 1101.0 | 1084.7 |
| 70°   | 5566.6 | 5565.4 | 5777.6 | 6070.1 | 5237.7 | 3521.5 | 1912.0 | 973.0  | 690.5  | 612.7  | 602.6  |
| 72.5° | 5328.1 | 5324.3 | 5492.6 | 5236.5 | 3884.3 | 1927.1 | 804.7  | 521.0  | 431.9  | 410.5  | 410.5  |
| 75°   | 4936.4 | 4926.4 | 5053.2 | 3983.5 | 2184.5 | 725.6  | 426.9  | 357.8  | 339.0  | 335.2  | 335.2  |
| 77.5° | 4023.7 | 3939.6 | 3740.0 | 2461.9 | 762.1  | 356.5  | 282.5  | 281.2  | 269.9  | 268.7  | 268.7  |
| 80°   | 1323.2 | 1323.2 | 1537.9 | 939.1  | 336.5  | 219.7  | 199.6  | 209.7  | 198.4  | 190.8  | 189.6  |
| 82.5° | 215.9  | 297.5  | 423.1  | 268.7  | 182.0  | 136.8  | 123.0  | 130.6  | 136.8  | 109.2  | 109.2  |
| 85°   | 85.4   | 111.7  | 163.2  | 125.5  | 84.1   | 55.2   | 59.0   | 65.3   | 57.8   | 50.2   | 49.0   |
| 87.5° | 32.6   | 40.2   | 57.8   | 30.1   | 17.6   | 10.0   | 6.3    | 6.3    | 5.0    | 5.0    | 5.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



LM-79-08: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

All Brands

Data applicable to all product families using SA light engines

Report Number: SP1-2101-121-7

Luminaire Tested: IFLD-S-SA2A-735-U-T2

Test Date: 03/04/2021

**Test Information**

Test Method: LM-79-08  
 Report Number: SP1-2101-121-7  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1  
 Measurement Geometry: 4π  
 Issue Date: 03/04/2021  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: STREETWORKS  
 Catalog Number: **IFLD-S-SA2A-735-U-T2**  
 Description: STREETWORKS INF FLOOD

PROGRAMMED @ 615mA.

**Spectral Parameters**

|                           |        |           |      |      |       |
|---------------------------|--------|-----------|------|------|-------|
| CCT (K):                  | 3388   | CRI (Ra): | 73.1 | R9:  | -34.6 |
| CIE u':                   | 0.2371 | R1:       | 68.9 | R10: | 57.8  |
| CIE v':                   | 0.5177 | R2:       | 81.1 | R11: | 68.6  |
| Duv:                      | 0.0032 | R3:       | 93.1 | R12: | 53.9  |
| CIE x:                    | 0.4153 | R4:       | 71.6 | R13: | 70.9  |
| CIE y:                    | 0.4030 | R5:       | 69.4 | R14: | 96.2  |
| CIE z:                    | 0.1817 | R6:       | 75.0 |      |       |
| Peak Wavelength (nm):     | 590    | R7:       | 79.5 |      |       |
| Dominant Wavelength (nm): | 580    | R8:       | 46.4 |      |       |
| Purity:                   | 45.7   |           |      |      |       |
| Rf:                       | 76.9   |           |      |      |       |
| Rg:                       | 94.4   |           |      |      |       |



**Test Conditions**

Stabilization Time: 81M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.0/30%  
 Sphere Temperature (°C): 24.1

REPORT NUMBER: SP1-2101-121-7

| 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: SP1-2101-121-7

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-7

**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    | 2672          | 0.0           | 490    | 34553         | 4.9           | 620    | 136720        | 35.6          | 750    | 5870          | 0.0           | 880    | 4216          | 0.0           |
| 365    | 2252          | 0.0           | 495    | 44336         | 8.0           | 625    | 126308        | 27.9          | 755    | 5421          | 0.0           | 885    | 4132          | 0.0           |
| 370    | 2217          | 0.0           | 500    | 54643         | 12.1          | 630    | 114625        | 20.7          | 760    | 5097          | 0.0           | 890    | 3992          | 0.0           |
| 375    | 2697          | 0.0           | 505    | 64676         | 18.1          | 635    | 103216        | 15.5          | 765    | 4626          | 0.0           | 895    | 3214          | 0.0           |
| 380    | 3039          | 0.0           | 510    | 73825         | 25.4          | 640    | 92605         | 11.1          | 770    | 3782          | 0.0           | 900    | 2580          | 0.0           |
| 385    | 2655          | 0.0           | 515    | 81872         | 33.9          | 645    | 83234         | 8.0           | 775    | 3506          | 0.0           | 905    | 1776          | 0.0           |
| 390    | 2357          | 0.0           | 520    | 88574         | 43.0          | 650    | 73263         | 5.4           | 780    | 3507          | 0.0           | 910    | 3995          | 0.0           |
| 395    | 2186          | 0.0           | 525    | 93289         | 50.1          | 655    | 64627         | 3.7           | 785    | 3267          | 0.0           | 915    | 4288          | 0.0           |
| 400    | 2015          | 0.0           | 530    | 98393         | 57.9          | 660    | 56614         | 2.4           | 790    | 2849          | 0.0           | 920    | 2446          | 0.0           |
| 405    | 2234          | 0.0           | 535    | 103269        | 64.0          | 665    | 49537         | 1.6           | 795    | 3037          | 0.0           | 925    | 3009          | 0.0           |
| 410    | 3412          | 0.0           | 540    | 107316        | 69.9          | 670    | 42866         | 0.9           | 800    | 2716          | 0.0           | 930    | 3026          | 0.0           |
| 415    | 6135          | 0.0           | 545    | 113101        | 75.3          | 675    | 36708         | 0.6           | 805    | 2648          | 0.0           | 935    | 4734          | 0.0           |
| 420    | 12146         | 0.0           | 550    | 120690        | 82.0          | 680    | 31814         | 0.4           | 810    | 3187          | 0.0           | 940    | 3719          | 0.0           |
| 425    | 23983         | 0.1           | 555    | 128583        | 87.8          | 685    | 27485         | 0.2           | 815    | 2931          | 0.0           | 945    | 1480          | 0.0           |
| 430    | 42142         | 0.3           | 560    | 137796        | 93.6          | 690    | 23698         | 0.1           | 820    | 2717          | 0.0           | 950    | 3450          | 0.0           |
| 435    | 68228         | 0.8           | 565    | 146577        | 97.5          | 695    | 20309         | 0.1           | 825    | 2236          | 0.0           | 955    | 5051          | 0.0           |
| 440    | 99323         | 1.6           | 570    | 154581        | 100.5         | 700    | 17890         | 0.1           | 830    | 2628          | 0.0           | 960    | 3176          | 0.0           |
| 445    | 115584        | 2.4           | 575    | 162633        | 101.2         | 705    | 15500         | 0.0           | 835    | 3140          | 0.0           | 965    | 5178          | 0.0           |
| 450    | 94997         | 2.5           | 580    | 168101        | 99.9          | 710    | 13699         | 0.0           | 840    | 3675          | 0.0           | 970    | 6385          | 0.0           |
| 455    | 61433         | 2.1           | 585    | 173145        | 96.2          | 715    | 12398         | 0.0           | 845    | 3283          | 0.0           | 975    | 3810          | 0.0           |
| 460    | 43373         | 1.8           | 590    | 174675        | 90.3          | 720    | 11147         | 0.0           | 850    | 3055          | 0.0           | 980    | 4322          | 0.0           |
| 465    | 32472         | 1.7           | 595    | 173724        | 82.3          | 725    | 9761          | 0.0           | 855    | 2932          | 0.0           | 985    | 4200          | 0.0           |
| 470    | 24257         | 1.5           | 600    | 171241        | 73.8          | 730    | 8651          | 0.0           | 860    | 3382          | 0.0           | 990    | 4661          | 0.0           |
| 475    | 21690         | 1.7           | 605    | 165134        | 64.0          | 735    | 7730          | 0.0           | 865    | 2605          | 0.0           | 995    | 6746          | 0.0           |
| 480    | 23173         | 2.2           | 610    | 156652        | 53.8          | 740    | 6847          | 0.0           | 870    | 3325          | 0.0           | 1000   | 4150          | 0.0           |
| 485    | 27564         | 3.3           | 615    | 147879        | 44.6          | 745    | 6124          | 0.0           | 875    | 3325          | 0.0           |        |               |               |

REPORT NUMBER: SP1-2101-121-7

**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: 12126**

**S/P: 1.36**

| $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 2672                                 | 0.0                            | 490               | 34553                                | 53.2                           | 620               | 136720                               | 1.7                            | 750               | 5870                                 | 0.0                            | 880               | 4216                                 | 0.0                            |
| 365               | 2252                                 | 0.0                            | 495               | 44336                                | 71.7                           | 625               | 126308                               | 1.1                            | 755               | 5421                                 | 0.0                            | 885               | 4132                                 | 0.0                            |
| 370               | 2217                                 | 0.0                            | 500               | 54643                                | 91.4                           | 630               | 114625                               | 0.6                            | 760               | 5097                                 | 0.0                            | 890               | 3992                                 | 0.0                            |
| 375               | 2697                                 | 0.0                            | 505               | 64676                                | 110.0                          | 635               | 103216                               | 0.4                            | 765               | 4626                                 | 0.0                            | 895               | 3214                                 | 0.0                            |
| 380               | 3039                                 | 0.0                            | 510               | 73825                                | 125.1                          | 640               | 92605                                | 0.2                            | 770               | 3782                                 | 0.0                            | 900               | 2580                                 | 0.0                            |
| 385               | 2655                                 | 0.0                            | 515               | 81872                                | 135.7                          | 645               | 83234                                | 0.1                            | 775               | 3506                                 | 0.0                            | 905               | 1776                                 | 0.0                            |
| 390               | 2357                                 | 0.0                            | 520               | 88574                                | 140.8                          | 650               | 73263                                | 0.1                            | 780               | 3507                                 | 0.0                            | 910               | 3995                                 | 0.0                            |
| 395               | 2186                                 | 0.0                            | 525               | 93289                                | 139.6                          | 655               | 64627                                | 0.1                            | 785               | 3267                                 | 0.0                            | 915               | 4288                                 | 0.0                            |
| 400               | 2015                                 | 0.0                            | 530               | 98393                                | 135.7                          | 660               | 56614                                | 0.0                            | 790               | 2849                                 | 0.0                            | 920               | 2446                                 | 0.0                            |
| 405               | 2234                                 | 0.1                            | 535               | 103269                               | 128.7                          | 665               | 49537                                | 0.0                            | 795               | 3037                                 | 0.0                            | 925               | 3009                                 | 0.0                            |
| 410               | 3412                                 | 0.2                            | 540               | 107316                               | 118.6                          | 670               | 42866                                | 0.0                            | 800               | 2716                                 | 0.0                            | 930               | 3026                                 | 0.0                            |
| 415               | 6135                                 | 0.6                            | 545               | 113101                               | 108.4                          | 675               | 36708                                | 0.0                            | 805               | 2648                                 | 0.0                            | 935               | 4734                                 | 0.0                            |
| 420               | 12146                                | 2.0                            | 550               | 120690                               | 98.7                           | 680               | 31814                                | 0.0                            | 810               | 3187                                 | 0.0                            | 940               | 3719                                 | 0.0                            |
| 425               | 23983                                | 5.9                            | 555               | 128583                               | 87.9                           | 685               | 27485                                | 0.0                            | 815               | 2931                                 | 0.0                            | 945               | 1480                                 | 0.0                            |
| 430               | 42142                                | 14.3                           | 560               | 137796                               | 77.0                           | 690               | 23698                                | 0.0                            | 820               | 2717                                 | 0.0                            | 950               | 3450                                 | 0.0                            |
| 435               | 68228                                | 30.5                           | 565               | 146577                               | 65.8                           | 695               | 20309                                | 0.0                            | 825               | 2236                                 | 0.0                            | 955               | 5051                                 | 0.0                            |
| 440               | 99323                                | 55.5                           | 570               | 154581                               | 54.6                           | 700               | 17890                                | 0.0                            | 830               | 2628                                 | 0.0                            | 960               | 3176                                 | 0.0                            |
| 445               | 115584                               | 77.4                           | 575               | 162633                               | 44.3                           | 705               | 15500                                | 0.0                            | 835               | 3140                                 | 0.0                            | 965               | 5178                                 | 0.0                            |
| 450               | 94997                                | 73.6                           | 580               | 168101                               | 34.6                           | 710               | 13699                                | 0.0                            | 840               | 3675                                 | 0.0                            | 970               | 6385                                 | 0.0                            |
| 455               | 61433                                | 53.7                           | 585               | 173145                               | 26.5                           | 715               | 12398                                | 0.0                            | 845               | 3283                                 | 0.0                            | 975               | 3810                                 | 0.0                            |
| 460               | 43373                                | 41.9                           | 590               | 174675                               | 19.5                           | 720               | 11147                                | 0.0                            | 850               | 3055                                 | 0.0                            | 980               | 4322                                 | 0.0                            |
| 465               | 32472                                | 34.3                           | 595               | 173724                               | 13.9                           | 725               | 9761                                 | 0.0                            | 855               | 2932                                 | 0.0                            | 985               | 4200                                 | 0.0                            |
| 470               | 24257                                | 27.9                           | 600               | 171241                               | 9.7                            | 730               | 8651                                 | 0.0                            | 860               | 3382                                 | 0.0                            | 990               | 4661                                 | 0.0                            |
| 475               | 21690                                | 27.1                           | 605               | 165134                               | 6.5                            | 735               | 7730                                 | 0.0                            | 865               | 2605                                 | 0.0                            | 995               | 6746                                 | 0.0                            |
| 480               | 23173                                | 31.3                           | 610               | 156652                               | 4.2                            | 740               | 6847                                 | 0.0                            | 870               | 3325                                 | 0.0                            | 1000              | 4150                                 | 0.0                            |
| 485               | 27564                                | 40.0                           | 615               | 147879                               | 2.7                            | 745               | 6124                                 | 0.0                            | 875               | 3325                                 | 0.0                            |                   |                                      |                                |

REPORT NUMBER: SP1-2101-121-7

**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 4490.7 M/P: 0.5**

| 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    | 2672          | 0.0           | 490    | 34553         | 28.8          | 620    | 136720        | 0.1           | 750    | 5870          | 0.0           | 880    | 4216          | 0.0           |
| 365    | 2252          | 0.0           | 495    | 44336         | 36.6          | 625    | 126308        | 0.1           | 755    | 5421          | 0.0           | 885    | 4132          | 0.0           |
| 370    | 2217          | 0.0           | 500    | 54643         | 43.9          | 630    | 114625        | 0.0           | 760    | 5097          | 0.0           | 890    | 3992          | 0.0           |
| 375    | 2697          | 0.0           | 505    | 64676         | 49.6          | 635    | 103216        | 0.0           | 765    | 4626          | 0.0           | 895    | 3214          | 0.0           |
| 380    | 3039          | 0.0           | 510    | 73825         | 53.0          | 640    | 92605         | 0.0           | 770    | 3782          | 0.0           | 900    | 2580          | 0.0           |
| 385    | 2655          | 0.0           | 515    | 81872         | 53.5          | 645    | 83234         | 0.0           | 775    | 3506          | 0.0           | 905    | 1776          | 0.0           |
| 390    | 2357          | 0.0           | 520    | 88574         | 51.6          | 650    | 73263         | 0.0           | 780    | 3507          | 0.0           | 910    | 3995          | 0.0           |
| 395    | 2186          | 0.0           | 525    | 93289         | 47.3          | 655    | 64627         | 0.0           | 785    | 3267          | 0.0           | 915    | 4288          | 0.0           |
| 400    | 2015          | 0.0           | 530    | 98393         | 42.5          | 660    | 56614         | 0.0           | 790    | 2849          | 0.0           | 920    | 2446          | 0.0           |
| 405    | 2234          | 0.0           | 535    | 103269        | 37.2          | 665    | 49537         | 0.0           | 795    | 3037          | 0.0           | 925    | 3009          | 0.0           |
| 410    | 3412          | 0.1           | 540    | 107316        | 31.4          | 670    | 42866         | 0.0           | 800    | 2716          | 0.0           | 930    | 3026          | 0.0           |
| 415    | 6135          | 0.4           | 545    | 113101        | 26.3          | 675    | 36708         | 0.0           | 805    | 2648          | 0.0           | 935    | 4734          | 0.0           |
| 420    | 12146         | 1.4           | 550    | 120690        | 21.7          | 680    | 31814         | 0.0           | 810    | 3187          | 0.0           | 940    | 3719          | 0.0           |
| 425    | 23983         | 3.7           | 555    | 128583        | 17.3          | 685    | 27485         | 0.0           | 815    | 2931          | 0.0           | 945    | 1480          | 0.0           |
| 430    | 42142         | 8.9           | 560    | 137796        | 13.6          | 690    | 23698         | 0.0           | 820    | 2717          | 0.0           | 950    | 3450          | 0.0           |
| 435    | 68228         | 18.2          | 565    | 146577        | 10.3          | 695    | 20309         | 0.0           | 825    | 2236          | 0.0           | 955    | 5051          | 0.0           |
| 440    | 99323         | 33.2          | 570    | 154581        | 7.6           | 700    | 17890         | 0.0           | 830    | 2628          | 0.0           | 960    | 3176          | 0.0           |
| 445    | 115584        | 45.6          | 575    | 162633        | 5.4           | 705    | 15500         | 0.0           | 835    | 3140          | 0.0           | 965    | 5178          | 0.0           |
| 450    | 94997         | 43.8          | 580    | 168101        | 3.8           | 710    | 13699         | 0.0           | 840    | 3675          | 0.0           | 970    | 6385          | 0.0           |
| 455    | 61433         | 32.2          | 585    | 173145        | 2.6           | 715    | 12398         | 0.0           | 845    | 3283          | 0.0           | 975    | 3810          | 0.0           |
| 460    | 43373         | 25.6          | 590    | 174675        | 1.7           | 720    | 11147         | 0.0           | 850    | 3055          | 0.0           | 980    | 4322          | 0.0           |
| 465    | 32472         | 21.2          | 595    | 173724        | 1.1           | 725    | 9761          | 0.0           | 855    | 2932          | 0.0           | 985    | 4200          | 0.0           |
| 470    | 24257         | 17.4          | 600    | 171241        | 0.7           | 730    | 8651          | 0.0           | 860    | 3382          | 0.0           | 990    | 4661          | 0.0           |
| 475    | 21690         | 16.6          | 605    | 165134        | 0.5           | 735    | 7730          | 0.0           | 865    | 2605          | 0.0           | 995    | 6746          | 0.0           |
| 480    | 23173         | 18.6          | 610    | 156652        | 0.3           | 740    | 6847          | 0.0           | 870    | 3325          | 0.0           | 1000   | 4150          | 0.0           |
| 485    | 27564         | 22.7          | 615    | 147879        | 0.2           | 745    | 6124          | 0.0           | 875    | 3325          | 0.0           |        |               |               |

**Summary**

$R_f = 76.9$   
 $R_g = 94.4$   
 CIE  $R_a = 73.1$   
 $R_g = -34.6$



**Color Vector Graphics**





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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 68 | CES51 = 90 | CES76 = 63 |
| CES02 = 62 | CES27 = 88 | CES52 = 89 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 80 | CES78 = 65 |
| CES04 = 70 | CES29 = 67 | CES54 = 84 | CES79 = 87 |
| CES05 = 48 | CES30 = 74 | CES55 = 84 | CES80 = 86 |
| CES06 = 51 | CES31 = 71 | CES56 = 75 | CES81 = 75 |
| CES07 = 40 | CES32 = 67 | CES57 = 74 | CES82 = 94 |
| CES08 = 39 | CES33 = 74 | CES58 = 76 | CES83 = 91 |
| CES09 = 29 | CES34 = 78 | CES59 = 87 | CES84 = 89 |
| CES10 = 75 | CES35 = 89 | CES60 = 93 | CES85 = 80 |
| CES11 = 58 | CES36 = 98 | CES61 = 86 | CES86 = 66 |
| CES12 = 64 | CES37 = 86 | CES62 = 89 | CES87 = 79 |
| CES13 = 43 | CES38 = 82 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 95 | CES64 = 74 | CES89 = 70 |
| CES15 = 71 | CES40 = 91 | CES65 = 68 | CES90 = 77 |
| CES16 = 47 | CES41 = 89 | CES66 = 71 | CES91 = 88 |
| CES17 = 50 | CES42 = 88 | CES67 = 69 | CES92 = 60 |
| CES18 = 56 | CES43 = 82 | CES68 = 74 | CES93 = 77 |
| CES19 = 72 | CES44 = 99 | CES69 = 82 | CES94 = 52 |
| CES20 = 65 | CES45 = 87 | CES70 = 67 | CES95 = 69 |
| CES21 = 86 | CES46 = 82 | CES71 = 66 | CES96 = 78 |
| CES22 = 79 | CES47 = 82 | CES72 = 88 | CES97 = 85 |
| CES23 = 92 | CES48 = 72 | CES73 = 59 | CES98 = 76 |
| CES24 = 91 | CES49 = 82 | CES74 = 97 | CES99 = 63 |
| CES25 = 72 | CES50 = 88 | CES75 = 66 |            |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)