

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: P641658

Luminaire Tested: GWS-SA6B-735-U-RW-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P641658  
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-SA6B-735-U-RW-W  
Description: GALLEON WALL SLIM LUMINAIRE. (6) LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS  
Light Source: (96) 3500K CCT, 70 CRI LEDS  
Ballast/Driver: -

**Summary**

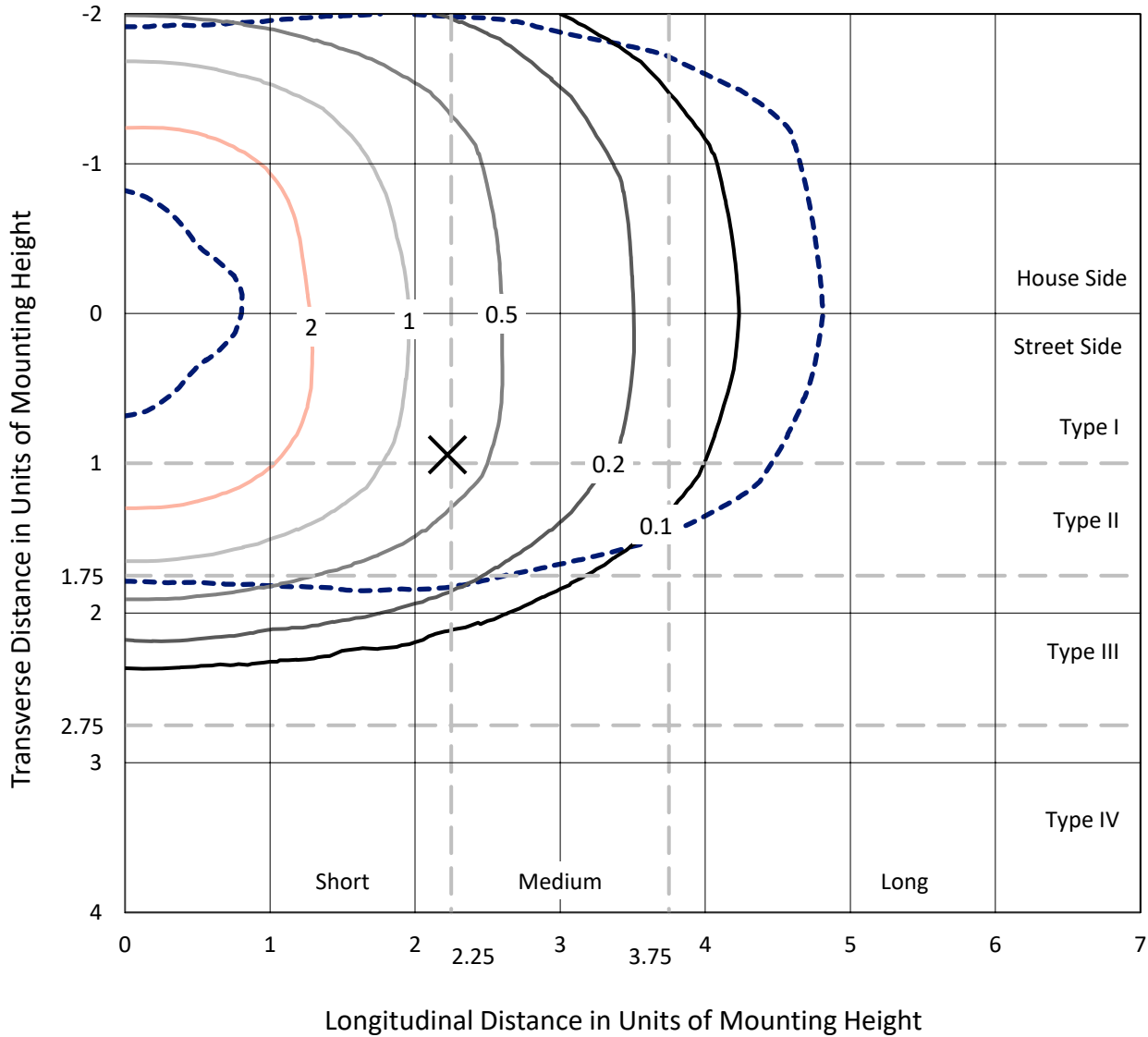
Lumens per Lamp: N/A  
Luminaire Lumens: 21496.9 lumens  
Efficiency: N/A  
Efficacy: 154.8 lumens/watt  
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B4 - U0 - G4  
  
Input Watts (W): 138.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 0  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



REPORT NUMBER: P641658  
 CATALOG NUMBER: GWS-SA6B-735-U-RW-W

### Iso-Footcandle Lines of Horizontal Illumination

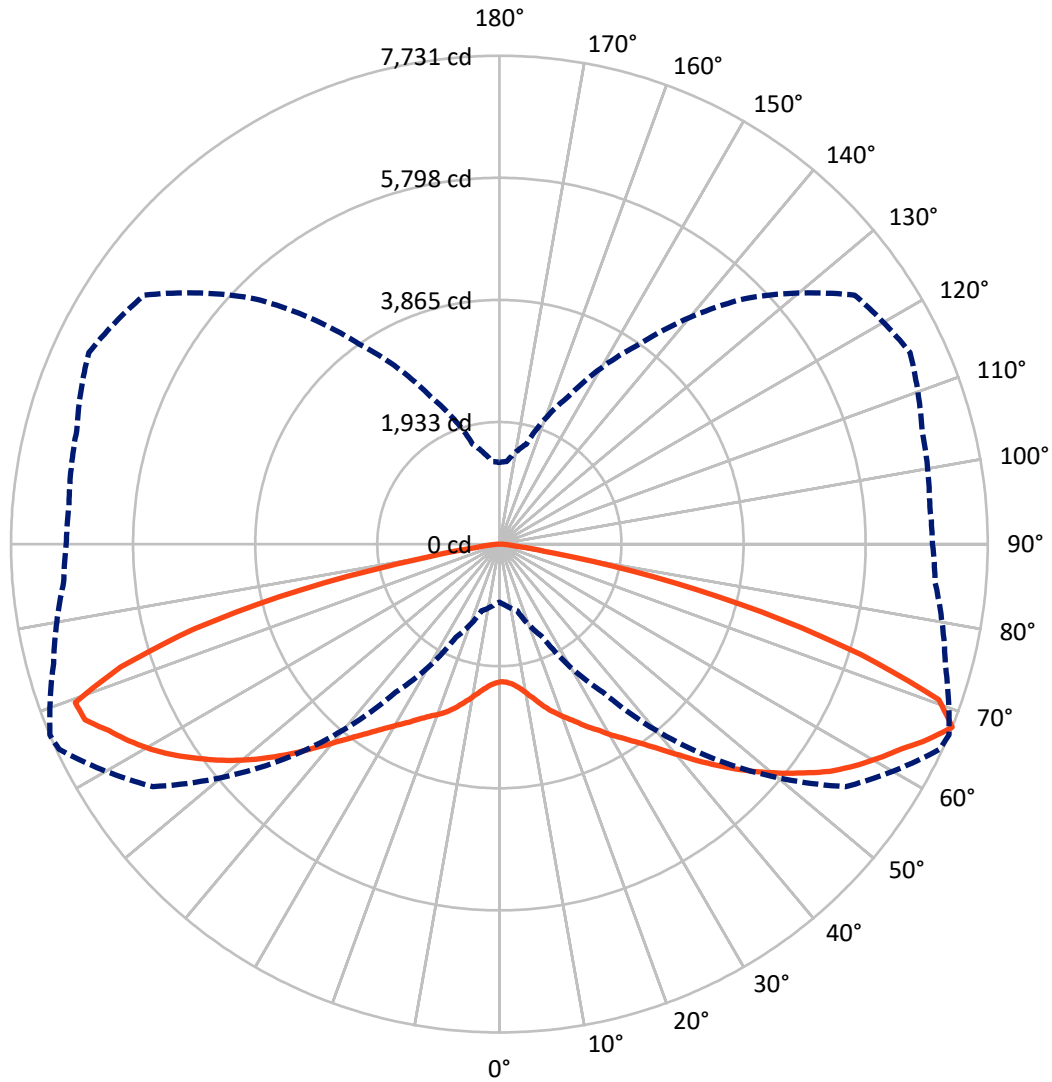
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4 fc  
 Type III - Short - N/A

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CATALOG NUMBER: GWS-SA6B-735-U-RW-W

### Luminous Intensity Polar Plot



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

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CATALOG NUMBER: GWS-SA6B-735-U-RW-W

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 10629.8  | 0.0    | 10629.8 |
|                    | % Fixture | 49.4     | 0.0    | 49.4    |
| <b>Street Side</b> | Lumens    | 10867.1  | 0.0    | 10867.1 |
|                    | % Fixture | 50.6     | 0.0    | 50.6    |
| <b>Total</b>       | Lumens    | 21496.9  | 0.0    | 21496.9 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 213.6   | 1.0       |
| 10°-20°   | 721.5   | 3.4       |
| 20°-30°   | 1415.5  | 6.6       |
| 30°-40°   | 2411.6  | 11.2      |
| 40°-50°   | 3872.6  | 18.0      |
| 50°-60°   | 5262.0  | 24.5      |
| 60°-70°   | 5033.5  | 23.4      |
| 70°-80°   | 2393.1  | 11.1      |
| 80°-90°   | 173.4   | 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°    | 21496.9 | 100.0     |
| 0°-180°   | 21496.9 | 100.0     |

**Coefficient of Utilization**



REPORT NUMBER: P641658

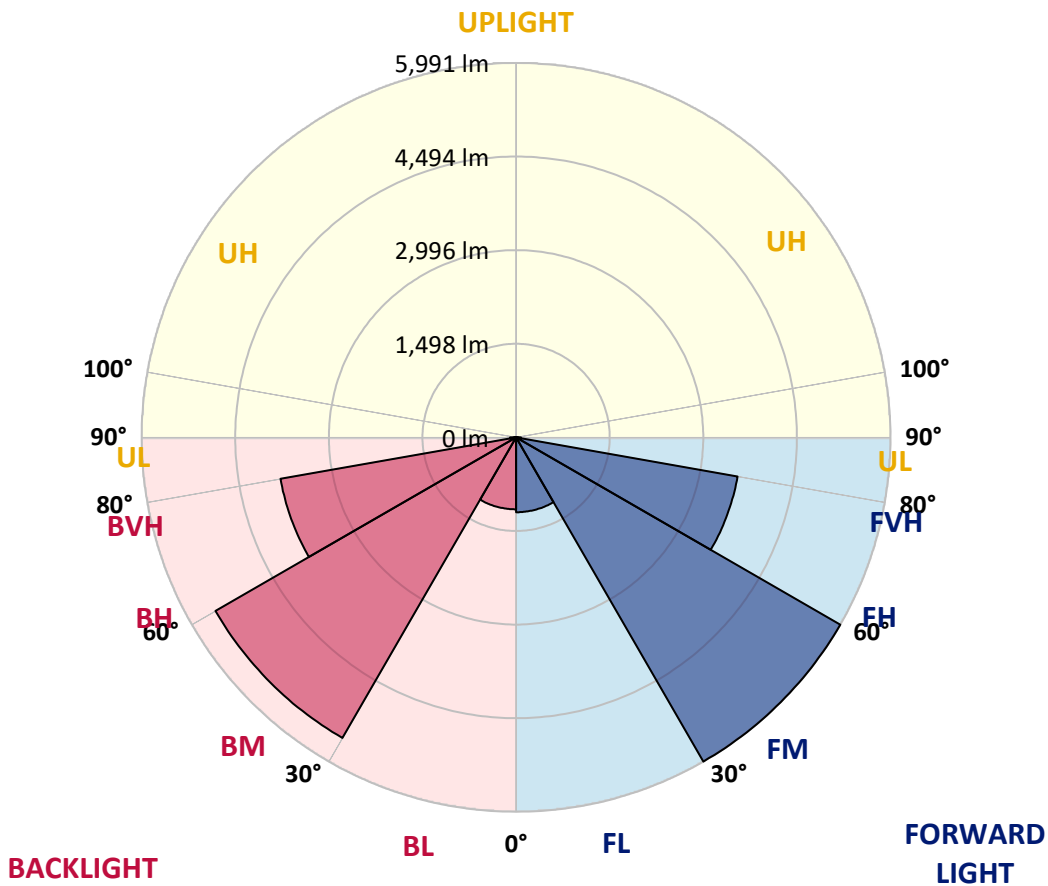
CATALOG NUMBER: GWS-SA6B-735-U-RW-W

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

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 1198.6 | 5.6       |                         |      |         |
| FM (30°-60°)   | 5991.4 | 27.9      |                         |      |         |
| FH (60°-80°)   | 3599.1 | 16.7      |                         |      | G2/5000 |
| FVH (80°-90°)  | 77.9   | 0.4       |                         |      | G1/100  |
| BL (0°-30°)    | 1152.0 | 5.4       | B3/2500                 |      |         |
| BM (30°-60°)   | 5554.9 | 25.8      | B4/8500                 |      |         |
| BH (60°-80°)   | 3827.5 | 17.8      | B4/5000                 |      | G4/5000 |
| BVH (80°-90°)  | 95.5   | 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: P641658

CATALOG NUMBER: GWS-SA6B-735-U-RW-W

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 67°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 2176.7 | 2176.7 | 2176.7 | 2176.7 | 2176.7 | 2176.7 | 2176.7 | 2176.7 | 2176.7 | 2176.7 | 2176.7 |
| 2.5°  | 2131.8 | 2134.8 | 2139.3 | 2148.2 | 2157.2 | 2170.7 | 2184.2 | 2182.7 | 2188.7 | 2193.1 | 2197.6 |
| 5°    | 2119.8 | 2122.8 | 2130.3 | 2142.2 | 2155.7 | 2178.2 | 2206.6 | 2218.6 | 2227.6 | 2244.0 | 2259.0 |
| 7.5°  | 2145.2 | 2151.2 | 2161.7 | 2178.2 | 2199.1 | 2227.6 | 2266.5 | 2287.5 | 2300.9 | 2330.9 | 2356.3 |
| 10°   | 2179.7 | 2187.2 | 2208.1 | 2239.6 | 2271.0 | 2314.4 | 2363.8 | 2395.2 | 2404.2 | 2443.2 | 2491.1 |
| 12.5° | 2212.6 | 2221.6 | 2256.0 | 2312.9 | 2369.8 | 2428.2 | 2486.6 | 2525.5 | 2528.5 | 2580.9 | 2634.8 |
| 15°   | 2265.0 | 2272.5 | 2318.9 | 2392.3 | 2479.1 | 2559.9 | 2631.8 | 2658.7 | 2670.7 | 2708.1 | 2775.5 |
| 17.5° | 2380.3 | 2389.3 | 2449.1 | 2528.5 | 2619.8 | 2705.1 | 2777.0 | 2799.4 | 2799.4 | 2830.9 | 2886.3 |
| 20°   | 2504.5 | 2513.5 | 2592.9 | 2694.7 | 2805.4 | 2892.3 | 2947.7 | 2926.7 | 2919.2 | 2928.2 | 2967.1 |
| 22.5° | 2643.8 | 2660.2 | 2736.6 | 2854.8 | 2991.1 | 3097.4 | 3125.8 | 3062.9 | 3042.0 | 3021.0 | 3030.0 |
| 25°   | 2821.9 | 2841.4 | 2916.2 | 3042.0 | 3175.2 | 3287.5 | 3303.9 | 3206.6 | 3194.7 | 3121.3 | 3094.4 |
| 27.5° | 3027.0 | 3042.0 | 3134.8 | 3259.0 | 3383.3 | 3477.6 | 3495.6 | 3375.8 | 3335.4 | 3233.6 | 3170.7 |
| 30°   | 3292.0 | 3305.4 | 3386.3 | 3509.0 | 3616.8 | 3682.7 | 3705.1 | 3540.5 | 3509.0 | 3353.3 | 3256.0 |
| 32.5° | 3580.9 | 3586.9 | 3669.2 | 3787.5 | 3883.3 | 3946.2 | 3914.7 | 3723.1 | 3676.7 | 3501.6 | 3368.3 |
| 35°   | 3911.7 | 3911.7 | 4018.0 | 4113.8 | 4190.2 | 4208.2 | 4148.3 | 3929.7 | 3875.8 | 3685.7 | 3519.5 |
| 37.5° | 4236.6 | 4245.6 | 4344.4 | 4458.2 | 4525.5 | 4522.5 | 4413.2 | 4173.7 | 4112.3 | 3905.8 | 3721.6 |
| 40°   | 4588.4 | 4607.9 | 4706.7 | 4833.9 | 4898.3 | 4889.3 | 4721.6 | 4455.2 | 4392.3 | 4148.3 | 3968.6 |
| 42.5° | 4911.8 | 4943.2 | 5058.5 | 5188.7 | 5259.1 | 5253.1 | 5077.9 | 4778.5 | 4717.1 | 4441.7 | 4262.0 |
| 45°   | 5169.2 | 5202.2 | 5345.9 | 5527.0 | 5639.3 | 5628.8 | 5452.2 | 5113.9 | 5039.0 | 4750.1 | 4552.5 |
| 47.5° | 5395.3 | 5429.7 | 5589.9 | 5781.5 | 5959.7 | 5977.6 | 5816.0 | 5452.2 | 5372.8 | 5080.9 | 4857.9 |
| 50°   | 5568.9 | 5585.4 | 5765.1 | 5974.6 | 6181.2 | 6281.5 | 6140.8 | 5792.0 | 5696.2 | 5407.3 | 5155.8 |
| 52.5° | 5555.5 | 5577.9 | 5799.5 | 6083.9 | 6360.9 | 6525.6 | 6428.2 | 6112.4 | 6019.6 | 5705.2 | 5459.7 |
| 55°   | 5281.5 | 5304.0 | 5567.5 | 5982.1 | 6461.2 | 6703.7 | 6693.2 | 6417.8 | 6350.4 | 6009.1 | 5775.5 |
| 57.5° | 4881.8 | 4931.2 | 5193.2 | 5640.8 | 6329.4 | 6845.9 | 6887.8 | 6696.2 | 6625.9 | 6307.0 | 6088.4 |
| 60°   | 4166.2 | 4232.1 | 4534.5 | 5115.3 | 5907.3 | 6798.0 | 7095.9 | 6931.2 | 6887.8 | 6583.9 | 6371.4 |
| 62.5° | 3027.0 | 3074.9 | 3477.6 | 4239.6 | 5281.5 | 6456.7 | 7271.1 | 7173.8 | 7140.8 | 6832.4 | 6627.3 |
| 65°   | 1812.9 | 1922.2 | 2245.5 | 2998.6 | 4260.5 | 5813.0 | 7175.3 | 7491.1 | 7456.7 | 7088.4 | 6845.9 |
| 67.5° | 917.7  | 967.1  | 1094.3 | 1625.8 | 2865.3 | 4810.0 | 6694.7 | 7688.7 | 7730.7 | 7307.0 | 6923.8 |
| 70°   | 568.9  | 582.3  | 618.3  | 802.4  | 1431.2 | 3160.2 | 5474.6 | 7173.8 | 7378.9 | 7272.6 | 6721.7 |
| 72.5° | 456.6  | 459.6  | 465.6  | 500.0  | 687.1  | 1477.6 | 3461.1 | 5618.4 | 5988.1 | 6792.0 | 6432.7 |
| 75°   | 378.7  | 380.2  | 381.7  | 392.2  | 428.2  | 603.3  | 1684.2 | 3860.8 | 4293.5 | 5772.5 | 5964.2 |
| 77.5° | 303.9  | 296.4  | 302.4  | 306.9  | 315.9  | 336.8  | 580.8  | 2059.9 | 2498.5 | 3789.0 | 4612.3 |
| 80°   | 197.6  | 194.6  | 206.6  | 211.1  | 220.1  | 233.5  | 309.9  | 699.1  | 848.8  | 1378.8 | 1467.1 |
| 82.5° | 106.3  | 100.3  | 125.8  | 121.3  | 125.8  | 136.2  | 182.6  | 256.0  | 287.4  | 416.2  | 351.8  |
| 85°   | 32.9   | 32.9   | 34.4   | 40.4   | 49.4   | 47.9   | 79.3   | 125.8  | 139.2  | 178.1  | 131.7  |
| 87.5° | 6.0    | 6.0    | 6.0    | 6.0    | 6.0    | 7.5    | 16.5   | 25.4   | 34.4   | 61.4   | 46.4   |
| 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: GWS-SA6B-735-U-RW-W

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 2176.7 | 2176.7 | 2176.7 | 2176.7 | 2176.7 | 2176.7 | 2176.7 | 2176.7 | 2176.7 | 2176.7 | 2176.7 |
| 2.5°  | 2206.6 | 2193.1 | 2200.6 | 2205.1 | 2203.6 | 2200.6 | 2185.7 | 2182.7 | 2175.2 | 2163.2 | 2160.2 |
| 5°    | 2272.5 | 2257.5 | 2259.0 | 2254.5 | 2239.6 | 2220.1 | 2187.2 | 2170.7 | 2157.2 | 2142.2 | 2140.8 |
| 7.5°  | 2375.8 | 2359.3 | 2354.8 | 2333.9 | 2292.0 | 2247.0 | 2194.6 | 2164.7 | 2142.2 | 2122.8 | 2119.8 |
| 10°   | 2507.5 | 2491.1 | 2476.1 | 2426.7 | 2357.8 | 2297.9 | 2229.1 | 2185.7 | 2152.7 | 2128.8 | 2124.3 |
| 12.5° | 2654.2 | 2640.8 | 2603.3 | 2531.5 | 2449.1 | 2378.8 | 2308.4 | 2254.5 | 2206.6 | 2170.7 | 2166.2 |
| 15°   | 2817.4 | 2787.5 | 2730.6 | 2637.8 | 2559.9 | 2503.0 | 2417.7 | 2344.3 | 2268.0 | 2220.1 | 2209.6 |
| 17.5° | 2931.2 | 2905.7 | 2838.4 | 2748.5 | 2687.2 | 2637.8 | 2537.5 | 2432.7 | 2329.4 | 2259.0 | 2244.0 |
| 20°   | 3012.0 | 2985.1 | 2908.7 | 2842.9 | 2823.4 | 2781.5 | 2664.7 | 2543.5 | 2423.7 | 2336.9 | 2317.4 |
| 22.5° | 3070.4 | 3042.0 | 2964.1 | 2931.2 | 2958.1 | 2950.6 | 2836.9 | 2699.1 | 2556.9 | 2453.6 | 2429.7 |
| 25°   | 3125.8 | 3098.9 | 3030.0 | 3042.0 | 3113.8 | 3136.3 | 3013.5 | 2853.3 | 2691.7 | 2570.4 | 2542.0 |
| 27.5° | 3178.2 | 3143.8 | 3112.3 | 3178.2 | 3280.0 | 3321.9 | 3191.7 | 3010.5 | 2835.4 | 2711.1 | 2688.7 |
| 30°   | 3259.0 | 3218.6 | 3214.1 | 3309.9 | 3471.6 | 3507.5 | 3363.8 | 3182.7 | 3009.0 | 2883.3 | 2854.8 |
| 32.5° | 3360.8 | 3323.4 | 3326.4 | 3470.1 | 3657.2 | 3687.2 | 3564.4 | 3395.3 | 3221.6 | 3095.9 | 3056.9 |
| 35°   | 3498.6 | 3452.2 | 3477.6 | 3654.2 | 3842.9 | 3898.3 | 3799.5 | 3658.7 | 3489.6 | 3360.8 | 3317.4 |
| 37.5° | 3688.7 | 3621.3 | 3673.7 | 3859.3 | 4049.5 | 4131.8 | 4055.5 | 3950.7 | 3783.0 | 3652.8 | 3612.3 |
| 40°   | 3931.2 | 3875.8 | 3896.8 | 4101.9 | 4298.0 | 4396.8 | 4348.9 | 4245.6 | 4079.4 | 3943.2 | 3896.8 |
| 42.5° | 4218.6 | 4163.2 | 4155.8 | 4374.3 | 4570.4 | 4720.1 | 4673.7 | 4579.4 | 4407.3 | 4251.6 | 4206.7 |
| 45°   | 4500.1 | 4449.2 | 4459.7 | 4682.7 | 4902.8 | 5065.9 | 5019.5 | 4908.8 | 4721.6 | 4542.0 | 4506.1 |
| 47.5° | 4793.5 | 4751.6 | 4760.6 | 4997.1 | 5239.6 | 5402.8 | 5344.4 | 5209.7 | 4991.1 | 4799.5 | 4756.1 |
| 50°   | 5094.4 | 5046.5 | 5060.0 | 5308.5 | 5570.4 | 5724.6 | 5634.8 | 5435.7 | 5194.7 | 5007.6 | 4970.1 |
| 52.5° | 5393.8 | 5336.9 | 5371.3 | 5606.4 | 5877.3 | 6000.1 | 5833.9 | 5592.9 | 5359.4 | 5173.7 | 5131.8 |
| 55°   | 5738.1 | 5678.2 | 5640.8 | 5892.3 | 6160.3 | 6211.2 | 5983.6 | 5702.2 | 5425.2 | 5214.2 | 5188.7 |
| 57.5° | 6052.5 | 6001.6 | 5931.2 | 6182.7 | 6380.3 | 6342.9 | 6098.9 | 5672.2 | 5265.1 | 4994.1 | 4958.2 |
| 60°   | 6333.9 | 6290.5 | 6229.1 | 6443.2 | 6533.0 | 6449.2 | 6006.1 | 5317.4 | 4869.8 | 4586.9 | 4570.4 |
| 62.5° | 6592.9 | 6546.5 | 6489.6 | 6672.3 | 6660.3 | 6465.7 | 5583.9 | 4772.5 | 4173.7 | 3869.8 | 3842.9 |
| 65°   | 6798.0 | 6756.1 | 6739.6 | 6883.3 | 6863.9 | 6143.8 | 4926.7 | 3880.3 | 3049.4 | 2706.6 | 2696.2 |
| 67.5° | 6856.4 | 6839.9 | 6928.3 | 7172.3 | 6868.4 | 5497.1 | 3863.8 | 2573.4 | 1637.8 | 1312.9 | 1293.4 |
| 70°   | 6637.8 | 6636.3 | 6889.3 | 7238.1 | 6245.6 | 4199.2 | 2280.0 | 1160.2 | 823.4  | 730.6  | 718.6  |
| 72.5° | 6353.4 | 6348.9 | 6549.5 | 6244.1 | 4631.8 | 2297.9 | 959.6  | 621.3  | 515.0  | 489.5  | 489.5  |
| 75°   | 5886.3 | 5874.3 | 6025.5 | 4750.1 | 2604.8 | 865.3  | 509.0  | 426.7  | 404.2  | 399.7  | 399.7  |
| 77.5° | 4798.0 | 4697.7 | 4459.7 | 2935.7 | 908.7  | 425.2  | 336.8  | 335.3  | 321.9  | 320.4  | 320.4  |
| 80°   | 1577.9 | 1577.9 | 1833.9 | 1119.8 | 401.2  | 262.0  | 238.0  | 250.0  | 236.5  | 227.5  | 226.1  |
| 82.5° | 257.5  | 354.8  | 504.5  | 320.4  | 217.1  | 163.2  | 146.7  | 155.7  | 163.2  | 130.2  | 130.2  |
| 85°   | 101.8  | 133.2  | 194.6  | 149.7  | 100.3  | 65.9   | 70.4   | 77.8   | 68.9   | 59.9   | 58.4   |
| 87.5° | 38.9   | 47.9   | 68.9   | 35.9   | 21.0   | 12.0   | 7.5    | 7.5    | 6.0    | 6.0    | 6.0    |
| 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  
 CIE u': 0.2371  
 CIE v': 0.5177  
 Duv: 0.0032  
 CIE x: 0.4153  
 CIE y: 0.4030  
 CIE z: 0.1817  
 Peak Wavelength (nm): 590  
 Dominant Wavelength (nm): 580  
 Purity: 45.7  
 Rf: 76.9  
 Rg: 94.4

|           |      |      |       |
|-----------|------|------|-------|
| CRI (Ra): | 73.1 |      |       |
| R1:       | 68.9 | R9:  | -34.6 |
| R2:       | 81.1 | R10: | 57.8  |
| R3:       | 93.1 | R11: | 68.6  |
| R4:       | 71.6 | R12: | 53.9  |
| R5:       | 69.4 | R13: | 70.9  |
| R6:       | 75.0 | R14: | 96.2  |
| R7:       | 79.5 |      |       |
| R8:       | 46.4 |      |       |

**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            |

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CIE 1931 Chromaticity Diagram



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

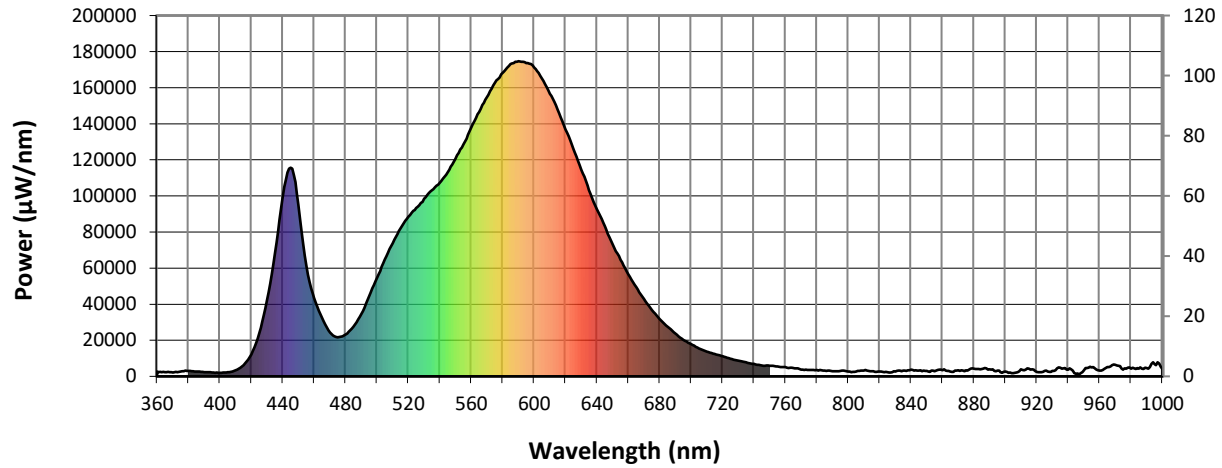


CCT = 3388K  
 CIE x = 0.4153  
 CIE y = 0.4030  
 Duv = 0.0032

Point lies inside the ANSI 3500K 4-step quadrangle

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**Photopic Flux vs. Wavelength**



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| 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           |        |               |               |

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**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: 12126**

**S/P: 1.36**

| 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         | 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           |        |               |               |

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**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)