

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: STREETWORKS

Report Number: P522118

Luminaire Tested: **CST-CA10-210-740-U-T5R-HSS-HM-EX180**

Issue Date: 5/10/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P522118  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1808-894-7)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/10/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: CST-CA10-210-740-U-T5R-HSS-HM-EX180  
Description: CELESTEON HIGH MAST LUMINAIRE  
Light Source: (10) 4000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 23083 lumens  
Efficiency: N/A  
Efficacy: 108.4 lumens/watt  
Luminous Opening: Circular (Dia: 2.08' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B3 - U2 - G4

Input Watts (W): 212.9  
Input Voltage (V): 120  
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: 24 FT

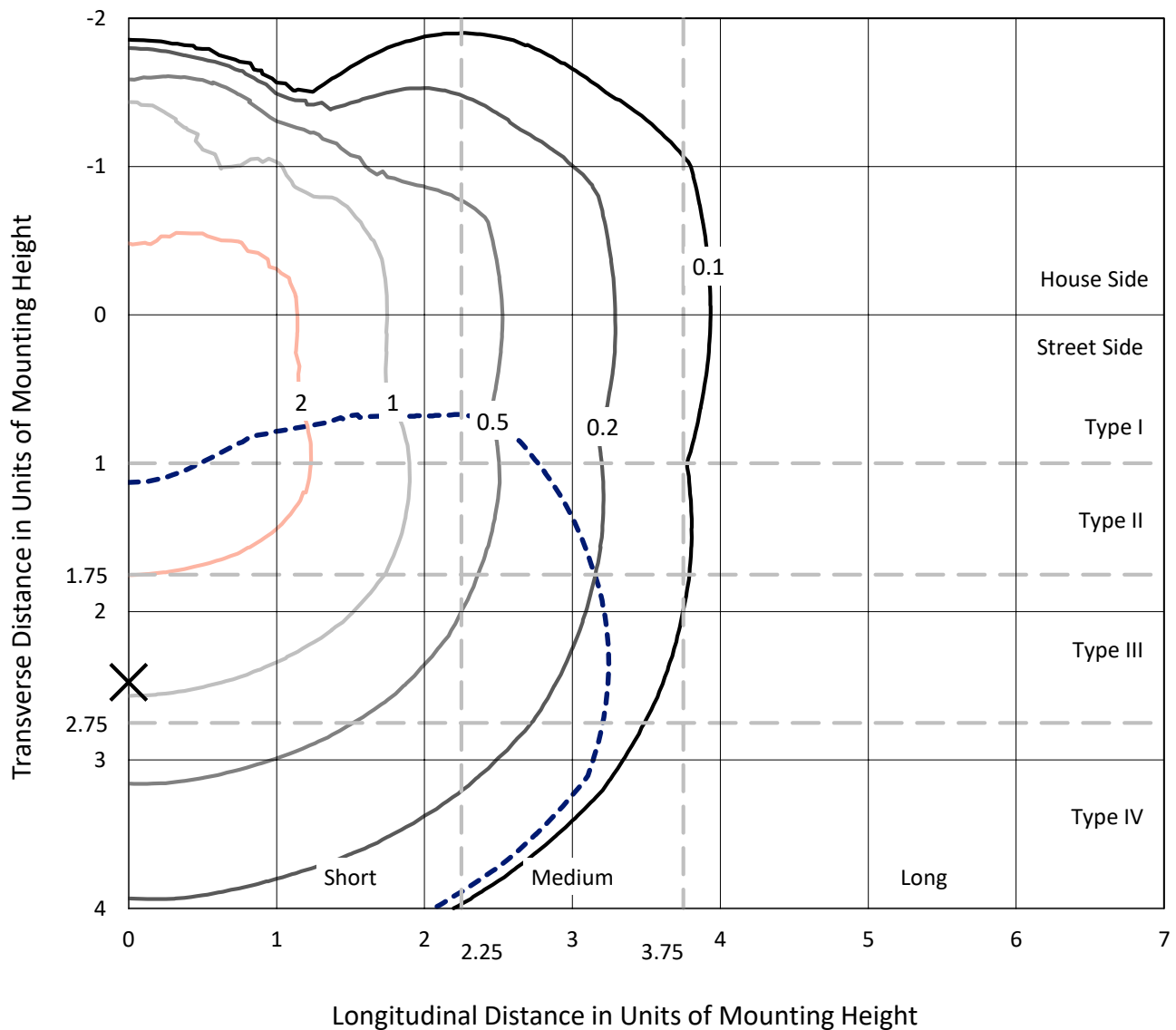


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## Iso-Footcandle Lines of Horizontal Illumination

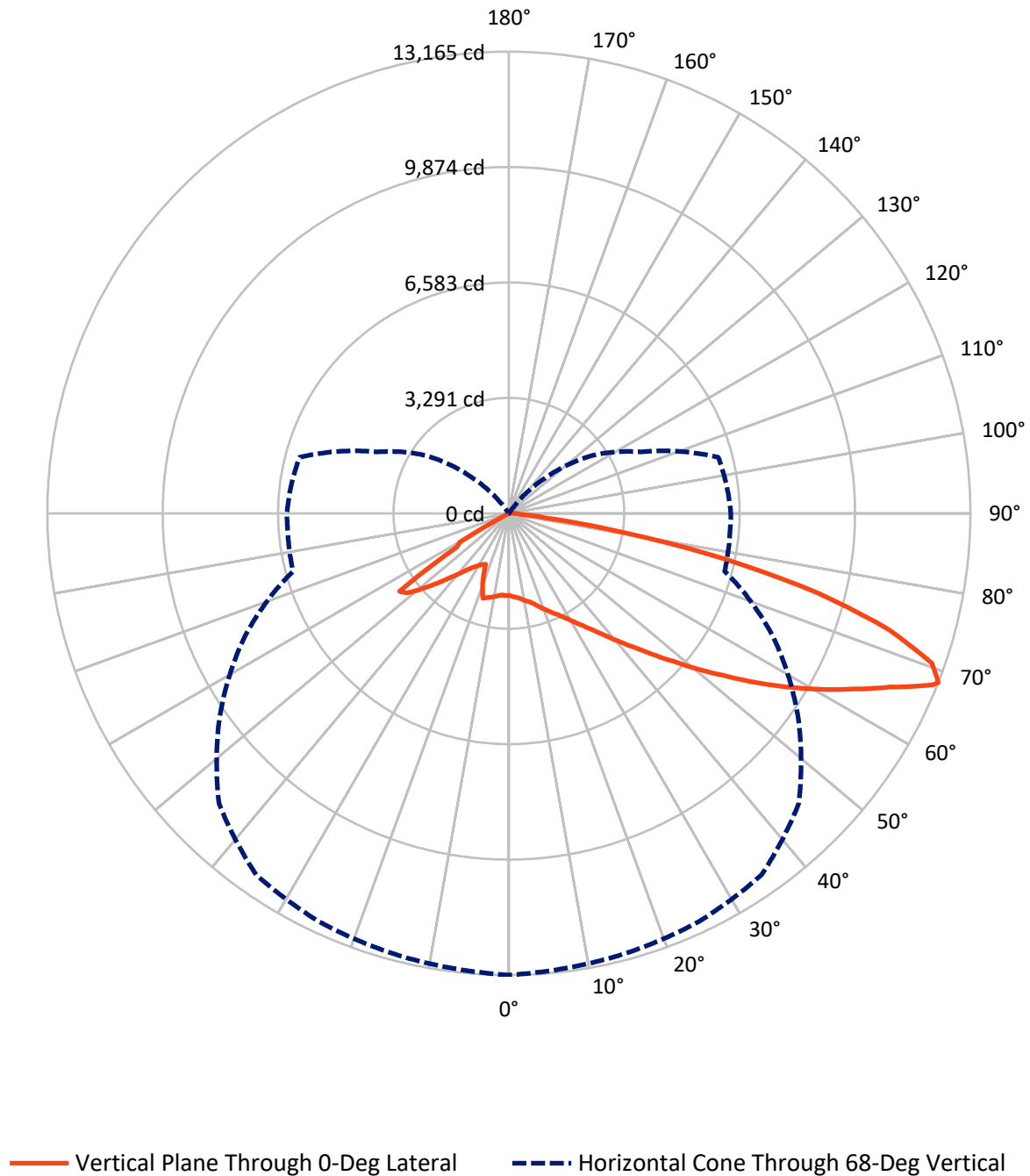
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.9 fc  
 Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 6447.1   | 0.1    | 6447.2  |
|                    | % Fixture | 27.9     | 0.0    | 27.9    |
| <b>Street Side</b> | Lumens    | 16622.5  | 13.2   | 16635.7 |
|                    | % Fixture | 72.0     | 0.1    | 72.1    |
| <b>Total</b>       | Lumens    | 23069.6  | 13.4   | 23083.0 |
|                    | % Fixture | 99.9     | 0.1    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 227.0   | 1.0       |
| 10°-20°   | 719.2   | 3.1       |
| 20°-30°   | 1217.6  | 5.3       |
| 30°-40°   | 1929.0  | 8.4       |
| 40°-50°   | 3153.7  | 13.7      |
| 50°-60°   | 4830.7  | 20.9      |
| 60°-70°   | 5939.7  | 25.7      |
| 70°-80°   | 4589.6  | 19.9      |
| 80°-90°   | 463.1   | 2.0       |
| 90°-100°  | 13.1    | 0.1       |
| 100°-110° | 0.2     | 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°    | 23069.6 | 99.9      |
| 0°-180°   | 23083.0 | 100.0     |

**Coefficient of Utilization**



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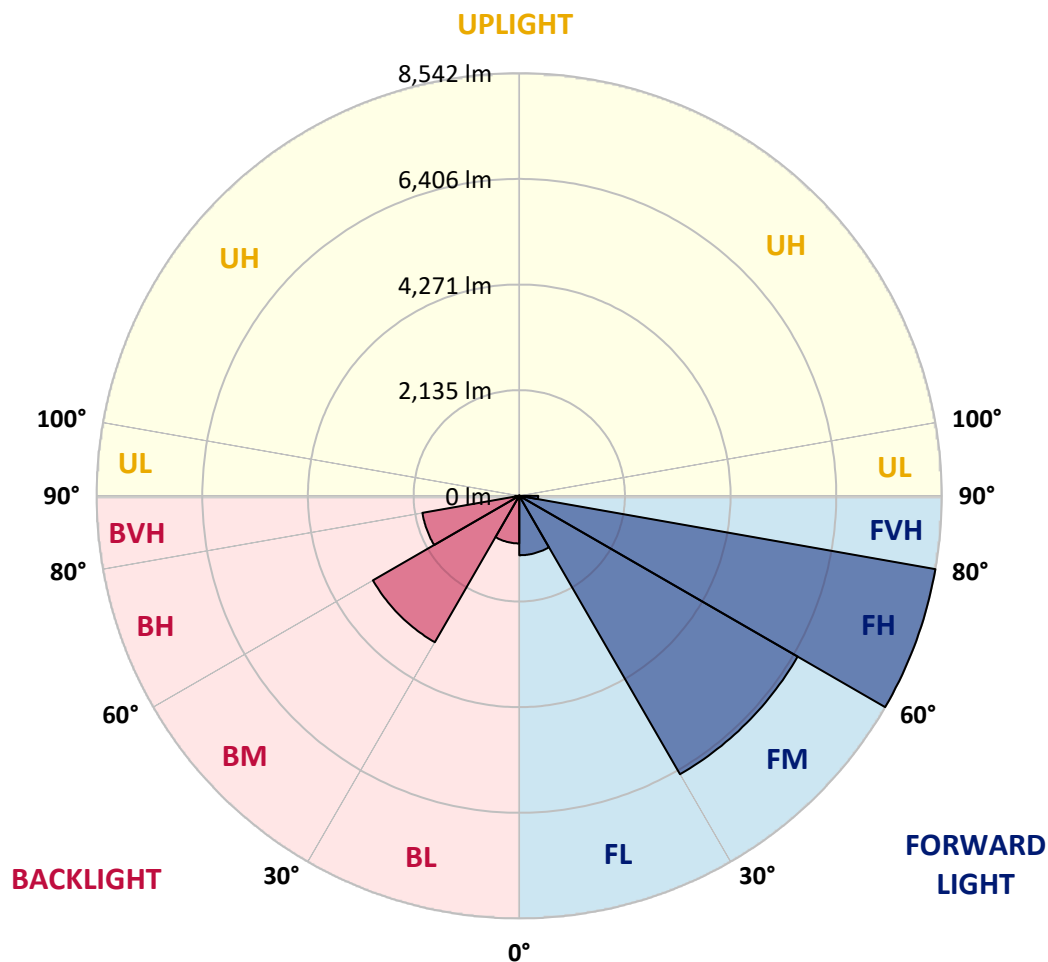
CATALOG NUMBER: CST-CA10-210-740-U-T5R-HSS-HM-EX180

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |       |          |
|------|-------------|--------|-----------|-------------------------|-------|----------|
|      |             |        |           | B                       | U     | G        |
| FL   | (0°-30°)    | 1201.5 | 5.2       |                         |       |          |
| FM   | (30°-60°)   | 6497.5 | 28.1      |                         |       |          |
| FH   | (60°-80°)   | 8541.7 | 37.0      |                         |       | G4/12000 |
| FVH  | (80°-90°)   | 381.9  | 1.7       |                         |       | G3/500   |
| BL   | (0°-30°)    | 962.3  | 4.2       | B2/1000                 |       |          |
| BM   | (30°-60°)   | 3416.0 | 14.8      | B3/5000                 |       |          |
| BH   | (60°-80°)   | 1987.7 | 8.6       | B3/2500                 |       | G3/2500  |
| BVH  | (80°-90°)   | 81.2   | 0.4       |                         |       | G1/100   |
| UL   | (90°-100°)  | 13.1   | 0.1       |                         | U2/50 |          |
| UH   | (100°-180°) | 0.2    | 0.0       |                         | U1/10 |          |

**BUG Rating: B3-U2-G4**

Type IV Short



REPORT NUMBER: P522118

CATALOG NUMBER: CST-CA10-210-740-U-T5R-HSS-HM-EX180

**CANDELA DISTRIBUTION (FULL):**

|        | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 65°    | 75°    | 85°    | 90°    |
|--------|---------|---------|---------|---------|---------|---------|---------|--------|--------|--------|--------|
| 0°     | 2338.6  | 2338.6  | 2338.6  | 2338.6  | 2338.6  | 2338.6  | 2338.6  | 2338.6 | 2338.6 | 2338.6 | 2338.6 |
| 2.5°   | 2380.8  | 2376.4  | 2371.9  | 2381.9  | 2343.0  | 2359.7  | 2346.3  | 2358.6 | 2349.7 | 2359.7 | 2356.3 |
| 5°     | 2411.9  | 2407.5  | 2394.2  | 2405.3  | 2379.7  | 2386.4  | 2369.7  | 2374.1 | 2344.1 | 2361.9 | 2360.8 |
| 7.5°   | 2463.1  | 2450.9  | 2442.0  | 2442.0  | 2419.7  | 2418.6  | 2391.9  | 2393.0 | 2369.7 | 2367.5 | 2371.9 |
| 10°    | 2532.0  | 2523.1  | 2498.7  | 2500.9  | 2469.8  | 2465.3  | 2432.0  | 2430.9 | 2411.9 | 2400.8 | 2410.8 |
| 12.5°  | 2583.2  | 2592.1  | 2569.9  | 2569.9  | 2538.7  | 2516.5  | 2493.1  | 2477.6 | 2463.1 | 2446.4 | 2438.6 |
| 15°    | 2676.6  | 2685.5  | 2655.5  | 2654.4  | 2642.1  | 2615.4  | 2589.9  | 2556.5 | 2530.9 | 2523.1 | 2510.9 |
| 17.5°  | 2797.8  | 2792.3  | 2766.7  | 2767.8  | 2770.0  | 2726.6  | 2701.1  | 2657.7 | 2621.0 | 2594.3 | 2587.6 |
| 20°    | 2921.2  | 2921.2  | 2893.4  | 2902.3  | 2891.2  | 2851.2  | 2834.5  | 2774.5 | 2723.3 | 2694.4 | 2671.0 |
| 22.5°  | 3059.1  | 3053.6  | 3034.7  | 3053.6  | 3031.3  | 2991.3  | 2963.5  | 2903.5 | 2837.8 | 2674.4 | 2607.7 |
| 25°    | 3190.4  | 3187.0  | 3194.8  | 3200.4  | 3172.6  | 3122.5  | 3103.6  | 3040.2 | 2857.9 | 2643.2 | 2508.7 |
| 27.5°  | 3356.0  | 3344.9  | 3362.7  | 3373.8  | 3346.0  | 3302.7  | 3262.6  | 3191.5 | 2805.6 | 2636.6 | 2622.1 |
| 30°    | 3568.4  | 3544.0  | 3569.5  | 3575.1  | 3546.2  | 3519.5  | 3459.5  | 3103.6 | 2823.4 | 2774.5 | 2770.0 |
| 32.5°  | 3795.3  | 3766.4  | 3799.7  | 3804.2  | 3766.4  | 3744.1  | 3592.9  | 3058.0 | 2998.0 | 2941.3 | 2946.8 |
| 35°    | 4064.4  | 4064.4  | 4081.1  | 4083.3  | 4055.5  | 4017.7  | 3441.7  | 3280.4 | 3227.0 | 3174.8 | 3173.7 |
| 37.5°  | 4392.4  | 4382.4  | 4426.9  | 4453.6  | 4423.6  | 4315.7  | 3661.8  | 3586.2 | 3503.9 | 3437.2 | 3299.3 |
| 40°    | 4788.3  | 4806.1  | 4818.3  | 4845.0  | 4816.1  | 4573.7  | 3983.2  | 3897.6 | 3833.1 | 3609.6 | 3261.5 |
| 42.5°  | 5215.3  | 5219.8  | 5246.5  | 5279.8  | 5279.8  | 5024.1  | 4359.1  | 4285.7 | 4202.3 | 3529.5 | 3372.7 |
| 45°    | 5725.7  | 5715.7  | 5766.9  | 5820.3  | 5805.8  | 5541.1  | 4796.1  | 4741.6 | 4351.3 | 3761.9 | 3763.0 |
| 47.5°  | 6305.1  | 6292.9  | 6366.2  | 6436.3  | 6364.0  | 6114.9  | 5276.5  | 5234.2 | 4200.1 | 4155.6 | 4146.7 |
| 50°    | 6974.5  | 6944.5  | 7029.0  | 7122.4  | 7063.5  | 6755.5  | 5860.3  | 5048.5 | 4621.5 | 4585.9 | 4580.4 |
| 52.5°  | 7689.5  | 7666.2  | 7717.3  | 7876.4  | 7798.5  | 7426.0  | 6413.0  | 5208.6 | 5109.7 | 5069.6 | 5059.6 |
| 55°    | 8496.9  | 8451.3  | 8561.4  | 8682.6  | 8592.5  | 8167.7  | 6957.8  | 5740.2 | 5637.9 | 5568.9 | 5468.9 |
| 57.5°  | 9345.3  | 9279.7  | 9336.4  | 9488.8  | 9402.0  | 8927.2  | 7660.6  | 6287.3 | 6166.1 | 5103.0 | 4697.1 |
| 60°    | 10190.4 | 10160.4 | 10182.7 | 10317.2 | 10210.5 | 9665.6  | 8318.9  | 6835.5 | 5218.7 | 5047.4 | 5067.4 |
| 62.5°  | 11040.0 | 10974.4 | 10994.4 | 11132.3 | 10995.5 | 10368.4 | 8942.8  | 7333.7 | 5492.2 | 5432.2 | 5453.3 |
| 65°    | 11950.8 | 11872.9 | 11890.7 | 11930.7 | 11761.7 | 10998.9 | 9494.3  | 7804.1 | 5903.7 | 5840.3 | 5863.6 |
| 67.5°  | 13048.3 | 12977.1 | 12880.4 | 12761.4 | 12527.9 | 11668.3 | 10042.5 | 8298.9 | 6366.2 | 6330.7 | 6338.4 |
| 68°    | 13165.1 | 13096.1 | 12979.4 | 12838.1 | 12575.7 | 11696.1 | 10065.9 | 8313.4 | 6372.9 | 6328.4 | 6330.7 |
| 70°    | 12801.4 | 12842.6 | 12710.3 | 12473.4 | 12254.3 | 11289.1 | 9684.5  | 7993.1 | 6089.4 | 6023.8 | 6007.1 |
| 72.5°  | 11336.9 | 11427.0 | 11244.6 | 11204.6 | 10935.5 | 10057.0 | 8474.6  | 6935.6 | 5296.5 | 5317.6 | 5257.6 |
| 75°    | 9152.9  | 9285.3  | 9064.0  | 9076.2  | 8922.8  | 8389.0  | 7102.4  | 5774.7 | 4349.1 | 4445.8 | 4463.6 |
| 77.5°  | 6365.1  | 6555.3  | 6458.5  | 6555.3  | 6479.7  | 6287.3  | 5496.7  | 4446.9 | 3318.2 | 3429.4 | 3472.8 |
| 80°    | 3319.3  | 3545.1  | 3673.0  | 3713.0  | 3737.5  | 3729.7  | 3347.1  | 2668.8 | 1918.2 | 1959.4 | 1957.1 |
| 82.5°  | 1049.7  | 995.2   | 1027.5  | 1018.6  | 990.8   | 1001.9  | 903.0   | 706.1  | 489.3  | 539.3  | 516.0  |
| 85°    | 316.9   | 319.1   | 310.3   | 308.0   | 284.7   | 250.2   | 204.6   | 117.9  | 57.8   | 67.8   | 63.4   |
| 87.5°  | 233.5   | 235.7   | 218.0   | 206.8   | 193.5   | 167.9   | 130.1   | 73.4   | 27.8   | 26.7   | 21.1   |
| 90°    | 129.0   | 124.5   | 115.6   | 106.8   | 101.2   | 86.7    | 65.6    | 27.8   | 10.0   | 7.8    | 6.7    |
| 92.5°  | 70.1    | 66.7    | 62.3    | 58.9    | 51.2    | 41.1    | 26.7    | 8.9    | 4.4    | 1.1    | 0.0    |
| 95°    | 32.2    | 30.0    | 28.9    | 25.6    | 22.2    | 15.6    | 8.9     | 5.6    | 3.3    | 1.1    | 0.0    |
| 97.5°  | 14.5    | 13.3    | 12.2    | 10.0    | 7.8     | 4.4     | 4.4     | 3.3    | 2.2    | 1.1    | 0.0    |
| 100°   | 3.3     | 3.3     | 2.2     | 2.2     | 2.2     | 2.2     | 2.2     | 2.2    | 2.2    | 1.1    | 0.0    |
| 102.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 1.1    | 1.1    | 0.0    | 0.0    |
| 105°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0    | 1.1    | 0.0    | 0.0    |
| 107.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0    | 1.1    | 0.0    | 0.0    |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 5°  | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 110°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 112.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 115°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 117.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 120°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 122.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 125°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 127.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 132.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 135°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 137.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 142.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 145°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 147.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 152.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 155°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 157.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 162.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 165°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 167.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 172.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 175°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 177.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180°   | 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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**CANDELA DISTRIBUTION (continued):**

|        | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°     | 2338.6 | 2338.6 | 2338.6 | 2338.6 | 2338.6 | 2338.6 | 2338.6 | 2338.6 | 2338.6 | 2338.6 |
| 2.5°   | 2353.0 | 2346.3 | 2343.0 | 2321.9 | 2328.5 | 2309.6 | 2346.3 | 2337.4 | 2331.9 | 2347.5 |
| 5°     | 2355.2 | 2331.9 | 2346.3 | 2334.1 | 2338.6 | 2311.9 | 2340.8 | 2328.5 | 2327.4 | 2334.1 |
| 7.5°   | 2360.8 | 2345.2 | 2359.7 | 2335.2 | 2346.3 | 2335.2 | 2356.3 | 2344.1 | 2354.1 | 2360.8 |
| 10°    | 2390.8 | 2381.9 | 2375.3 | 2369.7 | 2377.5 | 2355.2 | 2381.9 | 2383.0 | 2386.4 | 2406.4 |
| 12.5°  | 2433.1 | 2424.2 | 2413.1 | 2398.6 | 2406.4 | 2397.5 | 2417.5 | 2423.1 | 2435.3 | 2445.3 |
| 15°    | 2492.0 | 2475.3 | 2470.9 | 2457.5 | 2465.3 | 2460.9 | 2465.3 | 2462.0 | 2485.3 | 2482.0 |
| 17.5°  | 2573.2 | 2554.3 | 2490.9 | 2426.4 | 2385.3 | 2397.5 | 2448.6 | 2515.4 | 2532.0 | 2534.3 |
| 20°    | 2603.2 | 2469.8 | 2463.1 | 2389.7 | 2356.3 | 2354.1 | 2248.5 | 2090.6 | 2138.4 | 2250.7 |
| 22.5°  | 2567.6 | 2385.3 | 2366.4 | 2351.9 | 2209.6 | 1976.0 | 1953.8 | 1930.4 | 1924.9 | 1941.6 |
| 25°    | 2487.6 | 2466.4 | 2449.8 | 2260.7 | 2036.1 | 2037.2 | 2005.0 | 1851.5 | 1612.4 | 1592.4 |
| 27.5°  | 2609.9 | 2581.0 | 2419.7 | 2128.4 | 2123.9 | 2121.7 | 2073.9 | 1680.2 | 1629.1 | 1641.3 |
| 30°    | 2748.9 | 2701.1 | 2279.6 | 2241.8 | 2240.7 | 2220.7 | 1859.3 | 1694.7 | 1694.7 | 1696.9 |
| 32.5°  | 2909.0 | 2612.1 | 2359.7 | 2377.5 | 2376.4 | 2281.8 | 1795.9 | 1784.8 | 1780.3 | 1791.4 |
| 35°    | 3031.3 | 2540.9 | 2532.0 | 2564.3 | 2542.1 | 1936.0 | 1908.2 | 1898.2 | 1893.8 | 1888.2 |
| 37.5°  | 2993.5 | 2745.5 | 2745.5 | 2765.6 | 2586.5 | 2061.7 | 2048.3 | 2048.3 | 2039.4 | 2035.0 |
| 40°    | 3051.4 | 3000.2 | 2974.6 | 2982.4 | 1879.3 | 2214.0 | 2224.0 | 2221.8 | 2220.7 | 2228.5 |
| 42.5°  | 3356.0 | 3310.4 | 3287.1 | 3011.3 | 2103.9 | 2200.7 | 2445.3 | 2444.2 | 2447.5 | 2444.2 |
| 45°    | 3744.1 | 3701.9 | 3640.7 | 2817.8 | 2388.6 | 1929.3 | 2695.5 | 2707.7 | 2708.9 | 2707.7 |
| 47.5°  | 4151.1 | 4124.4 | 3498.4 | 3119.2 | 2697.7 | 2070.6 | 2576.5 | 3009.1 | 3003.5 | 3010.2 |
| 50°    | 4581.5 | 4461.4 | 3480.6 | 3476.1 | 3026.9 | 2304.1 | 2305.2 | 3272.6 | 3329.4 | 3347.1 |
| 52.5°  | 5060.8 | 4044.4 | 3857.6 | 3519.5 | 3360.5 | 2544.3 | 2519.8 | 2900.1 | 3674.1 | 3691.9 |
| 55°    | 4700.5 | 4272.3 | 4269.0 | 3132.5 | 3496.2 | 2775.6 | 2778.9 | 2752.2 | 3369.4 | 3829.8 |
| 57.5°  | 4677.1 | 4687.1 | 4679.3 | 3495.0 | 2550.9 | 2602.1 | 3028.0 | 3004.6 | 2181.8 | 1768.1 |
| 60°    | 5080.8 | 5095.2 | 4545.9 | 3774.2 | 2757.8 | 1600.2 | 1864.8 | 1584.6 | 1605.7 | 1622.4 |
| 62.5°  | 5466.6 | 5471.1 | 3697.4 | 2474.2 | 1366.7 | 64.5   | 31.1   | 25.6   | 24.5   | 24.5   |
| 65°    | 5893.6 | 5893.6 | 3963.2 | 2698.8 | 1320.0 | 24.5   | 4.4    | 3.3    | 12.2   | 12.2   |
| 67.5°  | 6306.2 | 6215.0 | 4157.8 | 2865.6 | 1343.3 | 3.3    | 0.0    | 0.0    | 0.0    | 0.0    |
| 68°    | 6282.8 | 6182.8 | 4140.0 | 2861.2 | 1340.0 | 2.2    | 0.0    | 0.0    | 0.0    | 0.0    |
| 70°    | 5933.7 | 5836.9 | 3927.6 | 2731.1 | 1289.9 | 2.2    | 0.0    | 0.0    | 0.0    | 0.0    |
| 72.5°  | 5237.6 | 5148.6 | 3478.4 | 2407.5 | 1163.2 | 1.1    | 0.0    | 0.0    | 0.0    | 0.0    |
| 75°    | 4433.6 | 4421.3 | 3004.6 | 2031.6 | 997.5  | 1.1    | 0.0    | 0.0    | 0.0    | 0.0    |
| 77.5°  | 3567.3 | 3511.7 | 2348.6 | 1592.4 | 804.0  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 80°    | 1987.2 | 2069.4 | 1374.4 | 936.3  | 506.0  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 82.5°  | 537.1  | 502.6  | 300.2  | 203.5  | 96.7   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°    | 68.9   | 75.6   | 34.5   | 27.8   | 6.7    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 87.5°  | 35.6   | 42.3   | 11.1   | 8.9    | 2.2    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 90°    | 6.7    | 7.8    | 3.3    | 1.1    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 92.5°  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 95°    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 97.5°  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 100°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 102.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 105°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 107.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

REPORT NUMBER: P522118

CATALOG NUMBER: CST-CA10-210-740-U-T5R-HSS-HM-EX180

**CANDELA DISTRIBUTION (continued):**

|        | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|--------|-----|------|------|------|------|------|------|------|------|------|
| 110°   | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 112.5° | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 115°   | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 117.5° | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 120°   | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 122.5° | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 125°   | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 127.5° | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 130°   | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 132.5° | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 135°   | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 137.5° | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 140°   | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 142.5° | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 145°   | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 147.5° | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 150°   | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 152.5° | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 155°   | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 157.5° | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 160°   | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 162.5° | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 165°   | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 167.5° | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 170°   | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 172.5° | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 175°   | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 177.5° | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 180°   | 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

(formerly Eaton)

STREETWORKS

Report Number: SP1-2104-215-1

Luminaire Tested: CST-CA6-230-740-U-T4

Test Date: 04/20/2021

### Test Information

Test Method: LM-79-08  
 Report Number: SP1-2104-215-1  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1  
 Measurement Geometry:  $4\pi$   
 Issue Date: 04/20/2021  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: STREETWORKS  
 Catalog Number: **CST-CA6-230-740-U-T4**  
 Description: STREETWORKS HIGH MAST LUMINAIRE

230W

### Spectral Parameters

|                           |         |           |      |      |       |
|---------------------------|---------|-----------|------|------|-------|
| CCT (K):                  | 3783    | CRI (Ra): | 75.1 |      |       |
| CIE u':                   | 0.2297  | R1:       | 72.8 | R9:  | -19.0 |
| CIE v':                   | 0.5046  | R2:       | 81.9 | R10: | 57.0  |
| Duv:                      | -0.0008 | R3:       | 89.0 | R11: | 70.7  |
| CIE x:                    | 0.3897  | R4:       | 74.1 | R12: | 48.2  |
| CIE y:                    | 0.3804  | R5:       | 72.3 | R13: | 74.4  |
| CIE z:                    | 0.2299  | R6:       | 74.5 | R14: | 93.7  |
| Peak Wavelength (nm):     | 450     | R7:       | 81.7 |      |       |
| Dominant Wavelength (nm): | 580     | R8:       | 54.6 |      |       |
| Purity:                   | 31.3    |           |      |      |       |
| Rf:                       | 76.5    |           |      |      |       |
| Rg:                       | 95.6    |           |      |      |       |



### Test Conditions

Stabilization Time: 47M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.5/39%  
 Sphere Temperature (°C): 24.0

REPORT NUMBER: SP1-2104-215-1

| 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: SP1-2104-215-1

**CIE 1931 Chromaticity Diagram**



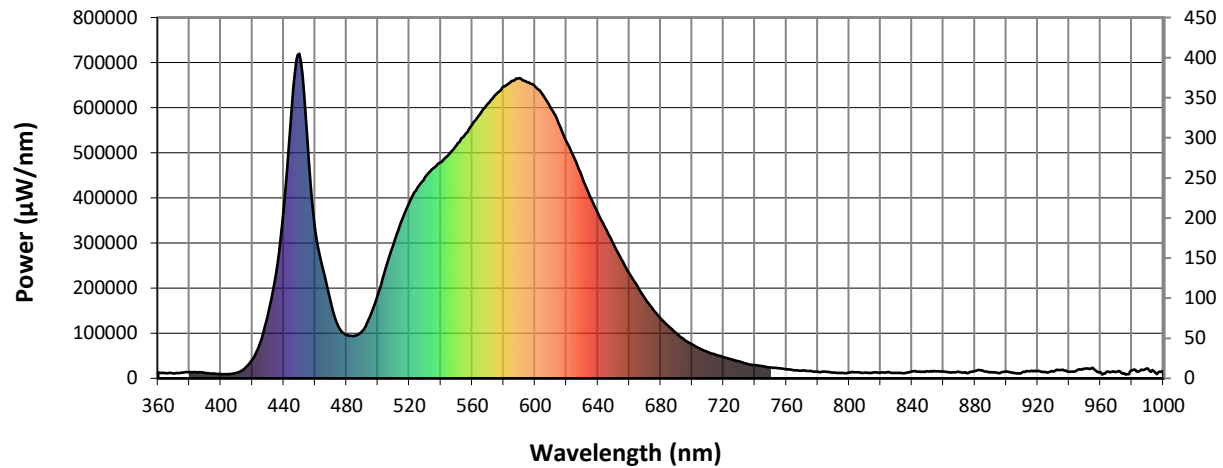
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 4000K 7-step quadrangle

REPORT NUMBER: SP1-2104-215-1

### Photopic Flux vs. Wavelength



#####

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 13329            | 0.0              | 490       | 105235           | 15.0             | 620       | 524343           | 136.4            | 750       | 24224            | 0.0              | 880       | 16135            | 0.0              |
| 365       | 11697            | 0.0              | 495       | 137678           | 25.0             | 625       | 488932           | 107.9            | 755       | 22376            | 0.0              | 885       | 16876            | 0.0              |
| 370       | 10917            | 0.0              | 500       | 186689           | 41.2             | 630       | 445400           | 80.6             | 760       | 20109            | 0.0              | 890       | 13554            | 0.0              |
| 375       | 12548            | 0.0              | 505       | 244611           | 68.4             | 635       | 403534           | 60.6             | 765       | 18097            | 0.0              | 895       | 11525            | 0.0              |
| 380       | 13932            | 0.0              | 510       | 298987           | 102.7            | 640       | 366414           | 43.8             | 770       | 17366            | 0.0              | 900       | 14656            | 0.0              |
| 385       | 13265            | 0.0              | 515       | 348170           | 144.2            | 645       | 331272           | 31.9             | 775       | 16226            | 0.0              | 905       | 11999            | 0.0              |
| 390       | 11808            | 0.0              | 520       | 390427           | 189.3            | 650       | 297360           | 21.7             | 780       | 14803            | 0.0              | 910       | 12965            | 0.0              |
| 395       | 10395            | 0.0              | 525       | 421211           | 226.1            | 655       | 263291           | 15.1             | 785       | 15199            | 0.0              | 915       | 15939            | 0.0              |
| 400       | 9348             | 0.0              | 530       | 446063           | 262.6            | 660       | 232931           | 9.7              | 790       | 12989            | 0.0              | 920       | 16238            | 0.0              |
| 405       | 9479             | 0.0              | 535       | 465110           | 288.4            | 665       | 204719           | 6.5              | 795       | 12106            | 0.0              | 925       | 14419            | 0.0              |
| 410       | 12414            | 0.0              | 540       | 479189           | 312.2            | 670       | 177096           | 3.9              | 800       | 12942            | 0.0              | 930       | 14788            | 0.0              |
| 415       | 21574            | 0.0              | 545       | 495864           | 330.0            | 675       | 153254           | 2.6              | 805       | 13253            | 0.0              | 935       | 18619            | 0.0              |
| 420       | 41448            | 0.1              | 550       | 516625           | 351.1            | 680       | 132874           | 1.5              | 810       | 12808            | 0.0              | 940       | 13995            | 0.0              |
| 425       | 79385            | 0.4              | 555       | 538555           | 367.8            | 685       | 115378           | 1.0              | 815       | 12903            | 0.0              | 945       | 18047            | 0.0              |
| 430       | 141845           | 1.1              | 560       | 562412           | 382.2            | 690       | 100157           | 0.6              | 820       | 12621            | 0.0              | 950       | 21418            | 0.0              |
| 435       | 231290           | 2.7              | 565       | 585835           | 389.5            | 695       | 85561            | 0.4              | 825       | 13903            | 0.0              | 955       | 23138            | 0.0              |
| 440       | 374482           | 5.9              | 570       | 608681           | 395.8            | 700       | 75396            | 0.2              | 830       | 11870            | 0.0              | 960       | 13665            | 0.0              |
| 445       | 596715           | 12.4             | 575       | 629563           | 391.7            | 705       | 65658            | 0.1              | 835       | 11069            | 0.0              | 965       | 14793            | 0.0              |
| 450       | 719656           | 18.7             | 580       | 646820           | 384.3            | 710       | 58172            | 0.1              | 840       | 15291            | 0.0              | 970       | 14396            | 0.0              |
| 455       | 530438           | 17.8             | 585       | 659231           | 366.3            | 715       | 52563            | 0.1              | 845       | 15125            | 0.0              | 975       | 11155            | 0.0              |
| 460       | 330446           | 13.5             | 590       | 665630           | 344.2            | 720       | 47085            | 0.0              | 850       | 15336            | 0.0              | 980       | 17987            | 0.0              |
| 465       | 241999           | 12.5             | 595       | 656228           | 311.1            | 725       | 41741            | 0.0              | 855       | 15791            | 0.0              | 985       | 16185            | 0.0              |
| 470       | 167096           | 10.4             | 600       | 646946           | 278.8            | 730       | 37415            | 0.0              | 860       | 14660            | 0.0              | 990       | 22120            | 0.0              |
| 475       | 113791           | 8.9              | 605       | 628643           | 243.4            | 735       | 32125            | 0.0              | 865       | 12528            | 0.0              | 995       | 11943            | 0.0              |
| 480       | 96126            | 9.1              | 610       | 599057           | 205.8            | 740       | 29322            | 0.0              | 870       | 14089            | 0.0              | 1000      | 16020            | 0.0              |
| 485       | 94467            | 11.2             | 615       | 565669           | 170.8            | 745       | 26862            | 0.0              | 875       | 11732            | 0.0              |           |                  |                  |

REPORT NUMBER: SP1-2104-215-1

### Scotopic Flux vs. Wavelength



Scotopic Lumens: 54268.8

S/P: 1.5

| $\lambda$<br>(nm) | Power<br>( $\mu\text{W/nm}$ ) | Lumens<br>( $\Phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W/nm}$ ) | Lumens<br>( $\Phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W/nm}$ ) | Lumens<br>( $\Phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W/nm}$ ) | Lumens<br>( $\Phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W/nm}$ ) | Lumens<br>( $\Phi/\text{nm}$ ) |
|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|
| 360               | 13329                         | 0.0                            | 490               | 105235                        | 162.0                          | 620               | 524343                        | 6.6                            | 750               | 24224                         | 0.0                            | 880               | 16135                         | 0.0                            |
| 365               | 11697                         | 0.0                            | 495               | 137678                        | 222.6                          | 625               | 488932                        | 4.1                            | 755               | 22376                         | 0.0                            | 885               | 16876                         | 0.0                            |
| 370               | 10917                         | 0.0                            | 500               | 186689                        | 312.3                          | 630               | 445400                        | 2.5                            | 760               | 20109                         | 0.0                            | 890               | 13554                         | 0.0                            |
| 375               | 12548                         | 0.0                            | 505               | 244611                        | 415.8                          | 635               | 403534                        | 1.5                            | 765               | 18097                         | 0.0                            | 895               | 11525                         | 0.0                            |
| 380               | 13932                         | 0.0                            | 510               | 298987                        | 506.8                          | 640               | 366414                        | 0.9                            | 770               | 17366                         | 0.0                            | 900               | 14656                         | 0.0                            |
| 385               | 13265                         | 0.0                            | 515               | 348170                        | 577.1                          | 645               | 331272                        | 0.6                            | 775               | 16226                         | 0.0                            | 905               | 11999                         | 0.0                            |
| 390               | 11808                         | 0.0                            | 520               | 390427                        | 620.6                          | 650               | 297360                        | 0.3                            | 780               | 14803                         | 0.0                            | 910               | 12965                         | 0.0                            |
| 395               | 10395                         | 0.1                            | 525               | 421211                        | 630.1                          | 655               | 263291                        | 0.2                            | 785               | 15199                         | 0.0                            | 915               | 15939                         | 0.0                            |
| 400               | 9348                          | 0.1                            | 530               | 446063                        | 615.0                          | 660               | 232931                        | 0.1                            | 790               | 12989                         | 0.0                            | 920               | 16238                         | 0.0                            |
| 405               | 9479                          | 0.3                            | 535               | 465110                        | 579.6                          | 665               | 204719                        | 0.1                            | 795               | 12106                         | 0.0                            | 925               | 14419                         | 0.0                            |
| 410               | 12414                         | 0.7                            | 540               | 479189                        | 529.5                          | 670               | 177096                        | 0.0                            | 800               | 12942                         | 0.0                            | 930               | 14788                         | 0.0                            |
| 415               | 21574                         | 2.2                            | 545               | 495864                        | 475.4                          | 675               | 153254                        | 0.0                            | 805               | 13253                         | 0.0                            | 935               | 18619                         | 0.0                            |
| 420               | 41448                         | 6.8                            | 550               | 516625                        | 422.4                          | 680               | 132874                        | 0.0                            | 810               | 12808                         | 0.0                            | 940               | 13995                         | 0.0                            |
| 425               | 79385                         | 19.4                           | 555               | 538555                        | 368.0                          | 685               | 115378                        | 0.0                            | 815               | 12903                         | 0.0                            | 945               | 18047                         | 0.0                            |
| 430               | 141845                        | 48.3                           | 560               | 562412                        | 314.4                          | 690               | 100157                        | 0.0                            | 820               | 12621                         | 0.0                            | 950               | 21418                         | 0.0                            |
| 435               | 231290                        | 103.4                          | 565               | 585835                        | 262.8                          | 695               | 85561                         | 0.0                            | 825               | 13903                         | 0.0                            | 955               | 23138                         | 0.0                            |
| 440               | 374482                        | 209.3                          | 570               | 608681                        | 214.8                          | 700               | 75396                         | 0.0                            | 830               | 11870                         | 0.0                            | 960               | 13665                         | 0.0                            |
| 445               | 596715                        | 399.6                          | 575               | 629563                        | 171.5                          | 705               | 65658                         | 0.0                            | 835               | 11069                         | 0.0                            | 965               | 14793                         | 0.0                            |
| 450               | 719656                        | 557.8                          | 580               | 646820                        | 133.3                          | 710               | 58172                         | 0.0                            | 840               | 15291                         | 0.0                            | 970               | 14396                         | 0.0                            |
| 455               | 530438                        | 463.5                          | 585               | 659231                        | 100.8                          | 715               | 52563                         | 0.0                            | 845               | 15125                         | 0.0                            | 975               | 11155                         | 0.0                            |
| 460               | 330446                        | 319.2                          | 590               | 665630                        | 74.1                           | 720               | 47085                         | 0.0                            | 850               | 15336                         | 0.0                            | 980               | 17987                         | 0.0                            |
| 465               | 241999                        | 255.6                          | 595               | 656228                        | 52.3                           | 725               | 41741                         | 0.0                            | 855               | 15791                         | 0.0                            | 985               | 16185                         | 0.0                            |
| 470               | 167096                        | 192.4                          | 600               | 646946                        | 36.5                           | 730               | 37415                         | 0.0                            | 860               | 14660                         | 0.0                            | 990               | 22120                         | 0.0                            |
| 475               | 113791                        | 142.3                          | 605               | 628643                        | 24.7                           | 735               | 32125                         | 0.0                            | 865               | 12528                         | 0.0                            | 995               | 11943                         | 0.0                            |
| 480               | 96126                         | 129.8                          | 610               | 599057                        | 16.2                           | 740               | 29322                         | 0.0                            | 870               | 14089                         | 0.0                            | 1000              | 16020                         | 0.0                            |
| 485               | 94467                         | 136.9                          | 615               | 565669                        | 10.5                           | 745               | 26862                         | 0.0                            | 875               | 11732                         | 0.0                            |                   |                               |                                |



REPORT NUMBER: SP1-2104-215-1

### Melanopic Flux vs. Wavelength



**Melanopic Lumens: 20938.3**      **M/P: 0.58**

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 13329            | 0.0              | 490       | 105235           | 87.6             | 620       | 524343           | 0.4              | 750       | 24224            | 0.0              | 880       | 16135            | 0.0              |
| 365       | 11697            | 0.0              | 495       | 137678           | 113.7            | 625       | 488932           | 0.3              | 755       | 22376            | 0.0              | 885       | 16876            | 0.0              |
| 370       | 10917            | 0.0              | 500       | 186689           | 150.1            | 630       | 445400           | 0.2              | 760       | 20109            | 0.0              | 890       | 13554            | 0.0              |
| 375       | 12548            | 0.0              | 505       | 244611           | 187.7            | 635       | 403534           | 0.1              | 765       | 18097            | 0.0              | 895       | 11525            | 0.0              |
| 380       | 13932            | 0.0              | 510       | 298987           | 214.7            | 640       | 366414           | 0.1              | 770       | 17366            | 0.0              | 900       | 14656            | 0.0              |
| 385       | 13265            | 0.0              | 515       | 348170           | 227.5            | 645       | 331272           | 0.0              | 775       | 16226            | 0.0              | 905       | 11999            | 0.0              |
| 390       | 11808            | 0.0              | 520       | 390427           | 227.3            | 650       | 297360           | 0.0              | 780       | 14803            | 0.0              | 910       | 12965            | 0.0              |
| 395       | 10395            | 0.1              | 525       | 421211           | 213.6            | 655       | 263291           | 0.0              | 785       | 15199            | 0.0              | 915       | 15939            | 0.0              |
| 400       | 9348             | 0.1              | 530       | 446063           | 192.8            | 660       | 232931           | 0.0              | 790       | 12989            | 0.0              | 920       | 16238            | 0.0              |
| 405       | 9479             | 0.2              | 535       | 465110           | 167.4            | 665       | 204719           | 0.0              | 795       | 12106            | 0.0              | 925       | 14419            | 0.0              |
| 410       | 12414            | 0.5              | 540       | 479189           | 140.2            | 670       | 177096           | 0.0              | 800       | 12942            | 0.0              | 930       | 14788            | 0.0              |
| 415       | 21574            | 1.4              | 545       | 495864           | 115.2            | 675       | 153254           | 0.0              | 805       | 13253            | 0.0              | 935       | 18619            | 0.0              |
| 420       | 41448            | 4.7              | 550       | 516625           | 92.7             | 680       | 132874           | 0.0              | 810       | 12808            | 0.0              | 940       | 13995            | 0.0              |
| 425       | 79385            | 12.4             | 555       | 538555           | 72.6             | 685       | 115378           | 0.0              | 815       | 12903            | 0.0              | 945       | 18047            | 0.0              |
| 430       | 141845           | 30.0             | 560       | 562412           | 55.5             | 690       | 100157           | 0.0              | 820       | 12621            | 0.0              | 950       | 21418            | 0.0              |
| 435       | 231290           | 61.7             | 565       | 585835           | 41.1             | 695       | 85561            | 0.0              | 825       | 13903            | 0.0              | 955       | 23138            | 0.0              |
| 440       | 374482           | 125.1            | 570       | 608681           | 29.7             | 700       | 75396            | 0.0              | 830       | 11870            | 0.0              | 960       | 13665            | 0.0              |
| 445       | 596715           | 235.4            | 575       | 629563           | 21.0             | 705       | 65658            | 0.0              | 835       | 11069            | 0.0              | 965       | 14793            | 0.0              |
| 450       | 719656           | 331.6            | 580       | 646820           | 14.5             | 710       | 58172            | 0.0              | 840       | 15291            | 0.0              | 970       | 14396            | 0.0              |
| 455       | 530438           | 277.9            | 585       | 659231           | 9.8              | 715       | 52563            | 0.0              | 845       | 15125            | 0.0              | 975       | 11155            | 0.0              |
| 460       | 330446           | 194.7            | 590       | 665630           | 6.5              | 720       | 47085            | 0.0              | 850       | 15336            | 0.0              | 980       | 17987            | 0.0              |
| 465       | 241999           | 158.1            | 595       | 656228           | 4.2              | 725       | 41741            | 0.0              | 855       | 15791            | 0.0              | 985       | 16185            | 0.0              |
| 470       | 167096           | 119.6            | 600       | 646946           | 2.7              | 730       | 37415            | 0.0              | 860       | 14660            | 0.0              | 990       | 22120            | 0.0              |
| 475       | 113791           | 86.9             | 605       | 628643           | 1.7              | 735       | 32125            | 0.0              | 865       | 12528            | 0.0              | 995       | 11943            | 0.0              |
| 480       | 96126            | 77.2             | 610       | 599057           | 1.1              | 740       | 29322            | 0.0              | 870       | 14089            | 0.0              | 1000      | 16020            | 0.0              |
| 485       | 94467            | 77.9             | 615       | 565669           | 0.7              | 745       | 26862            | 0.0              | 875       | 11732            | 0.0              |           |                  |                  |

### Summary

$R_f = 76.5$   
 $R_g = 95.6$   
 CIE  $R_a = 75.1$   
 $R_g = -19.0$



### Color Vector Graphics

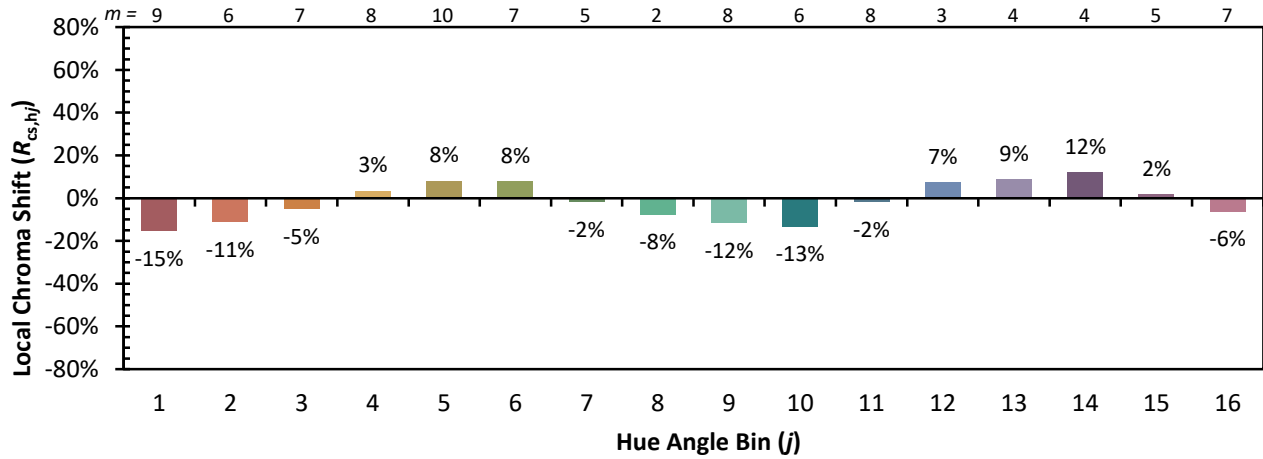


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 66 | CES51 = 90 | CES76 = 56 |
| CES02 = 61 | CES27 = 89 | CES52 = 89 | CES77 = 73 |
| CES03 = 31 | CES28 = 83 | CES53 = 81 | CES78 = 58 |
| CES04 = 70 | CES29 = 69 | CES54 = 87 | CES79 = 84 |
| CES05 = 48 | CES30 = 84 | CES55 = 86 | CES80 = 81 |
| CES06 = 51 | CES31 = 72 | CES56 = 77 | CES81 = 79 |
| CES07 = 40 | CES32 = 64 | CES57 = 77 | CES82 = 92 |
| CES08 = 39 | CES33 = 79 | CES58 = 77 | CES83 = 90 |
| CES09 = 29 | CES34 = 73 | CES59 = 87 | CES84 = 87 |
| CES10 = 74 | CES35 = 85 | CES60 = 90 | CES85 = 78 |
| CES11 = 57 | CES36 = 91 | CES61 = 84 | CES86 = 73 |
| CES12 = 63 | CES37 = 81 | CES62 = 87 | CES87 = 79 |
| CES13 = 42 | CES38 = 94 | CES63 = 75 | CES88 = 83 |
| CES14 = 74 | CES39 = 96 | CES64 = 69 | CES89 = 73 |
| CES15 = 71 | CES40 = 91 | CES65 = 66 | CES90 = 83 |
| CES16 = 47 | CES41 = 94 | CES66 = 63 | CES91 = 76 |
| CES17 = 49 | CES42 = 82 | CES67 = 60 | CES92 = 62 |
| CES18 = 56 | CES43 = 78 | CES68 = 68 | CES93 = 77 |
| CES19 = 72 | CES44 = 99 | CES69 = 76 | CES94 = 57 |
| CES20 = 65 | CES45 = 86 | CES70 = 60 | CES95 = 69 |
| CES21 = 86 | CES46 = 84 | CES71 = 54 | CES96 = 79 |
| CES22 = 78 | CES47 = 87 | CES72 = 85 | CES97 = 86 |
| CES23 = 92 | CES48 = 80 | CES73 = 52 | CES98 = 79 |
| CES24 = 91 | CES49 = 82 | CES74 = 94 | CES99 = 69 |
| CES25 = 72 | CES50 = 90 | CES75 = 56 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)