

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



Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: STREETWORKS

Report Number: P522187

Luminaire Tested: **CST-CA6-230-730-U-T5R-HSS-HM-EX180**

Issue Date: 5/10/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P522187  
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-CA6-230-730-U-T5R-HSS-HM-EX180  
Description: CELESTEON HIGH MAST LUMINAIRE  
Light Source: (6) 3000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 22375 lumens  
Efficiency: N/A  
Efficacy: 98.2 lumens/watt  
Luminous Opening: Circular (Dia: 2.08' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B3 - U2 - G4

Input Watts (W): 227.8  
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

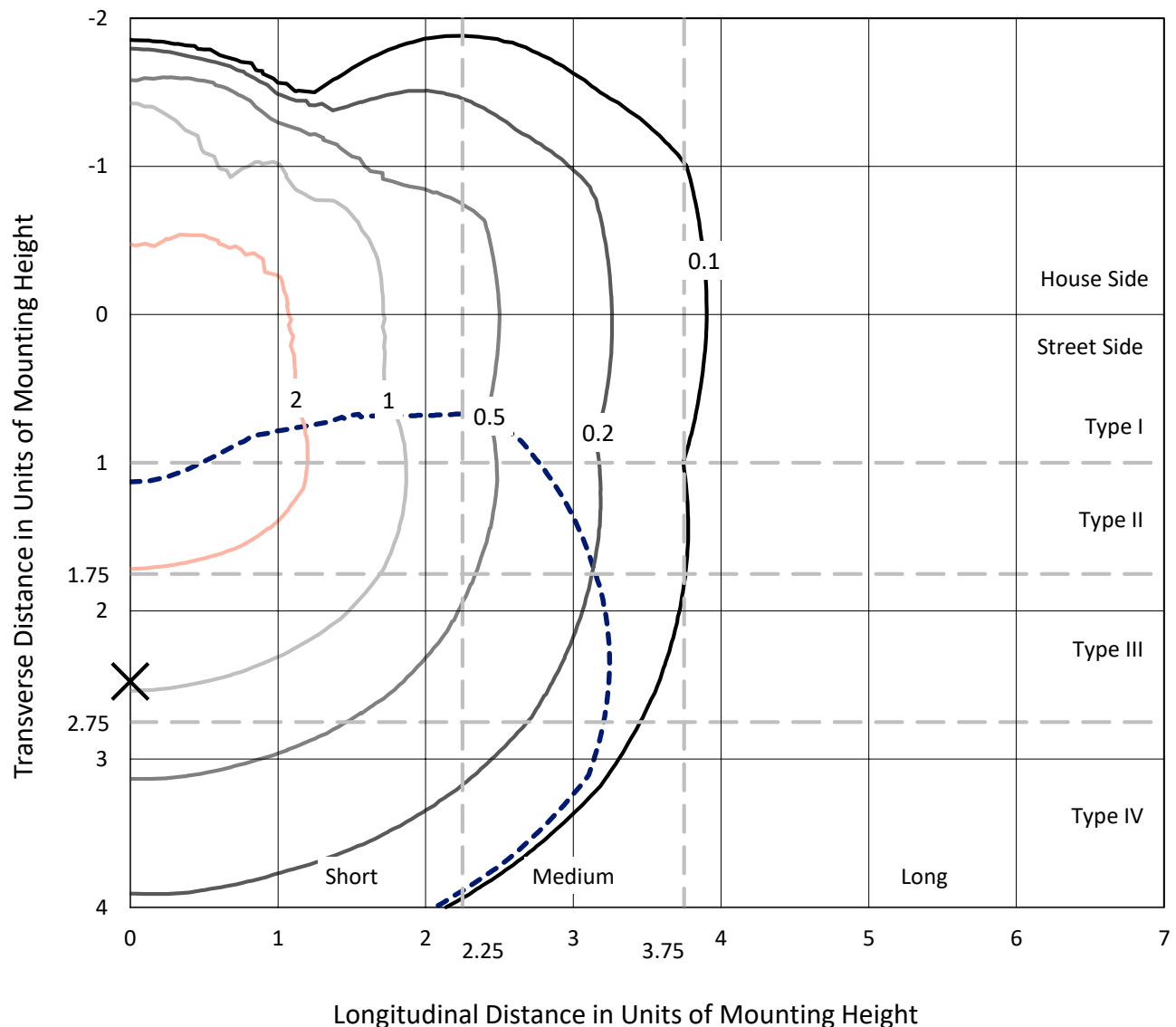


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## Iso-Footcandle Lines of Horizontal Illumination

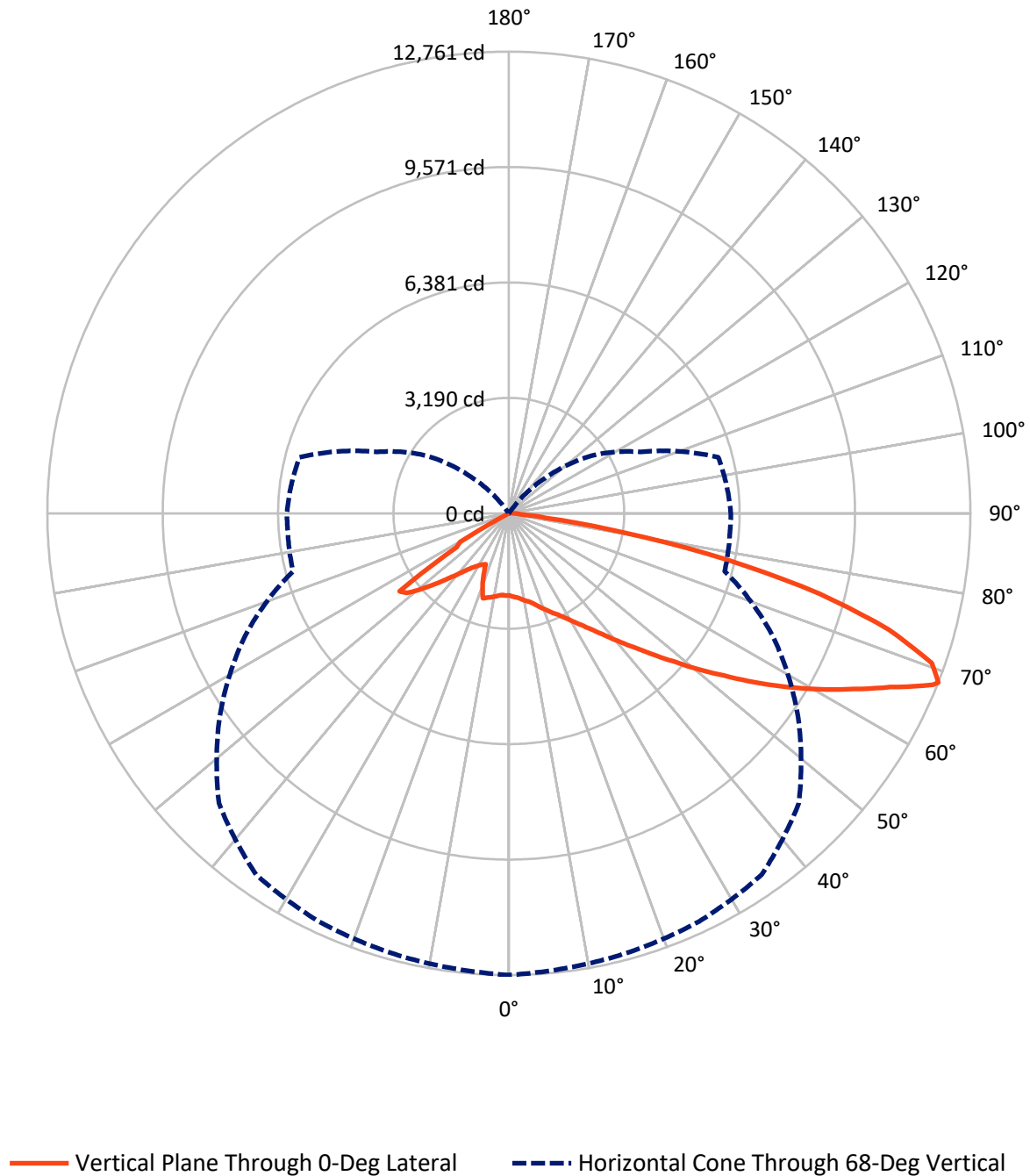
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.8 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    | 6249.4   | 0.1    | 6249.5  |
|                    | % Fixture | 27.9     | 0.0    | 27.9    |
| <b>Street Side</b> | Lumens    | 16112.7  | 12.8   | 16125.5 |
|                    | % Fixture | 72.0     | 0.1    | 72.1    |
| <b>Total</b>       | Lumens    | 22362.1  | 13.0   | 22375.0 |
|                    | % Fixture | 99.9     | 0.1    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 220.0   | 1.0       |
| 10°-20°   | 697.1   | 3.1       |
| 20°-30°   | 1180.3  | 5.3       |
| 30°-40°   | 1869.8  | 8.4       |
| 40°-50°   | 3057.0  | 13.7      |
| 50°-60°   | 4682.6  | 20.9      |
| 60°-70°   | 5757.6  | 25.7      |
| 70°-80°   | 4448.8  | 19.9      |
| 80°-90°   | 448.9   | 2.0       |
| 90°-100°  | 12.7    | 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°    | 22362.1 | 99.9      |
| 0°-180°   | 22375.0 | 100.0     |

**Coefficient of Utilization**



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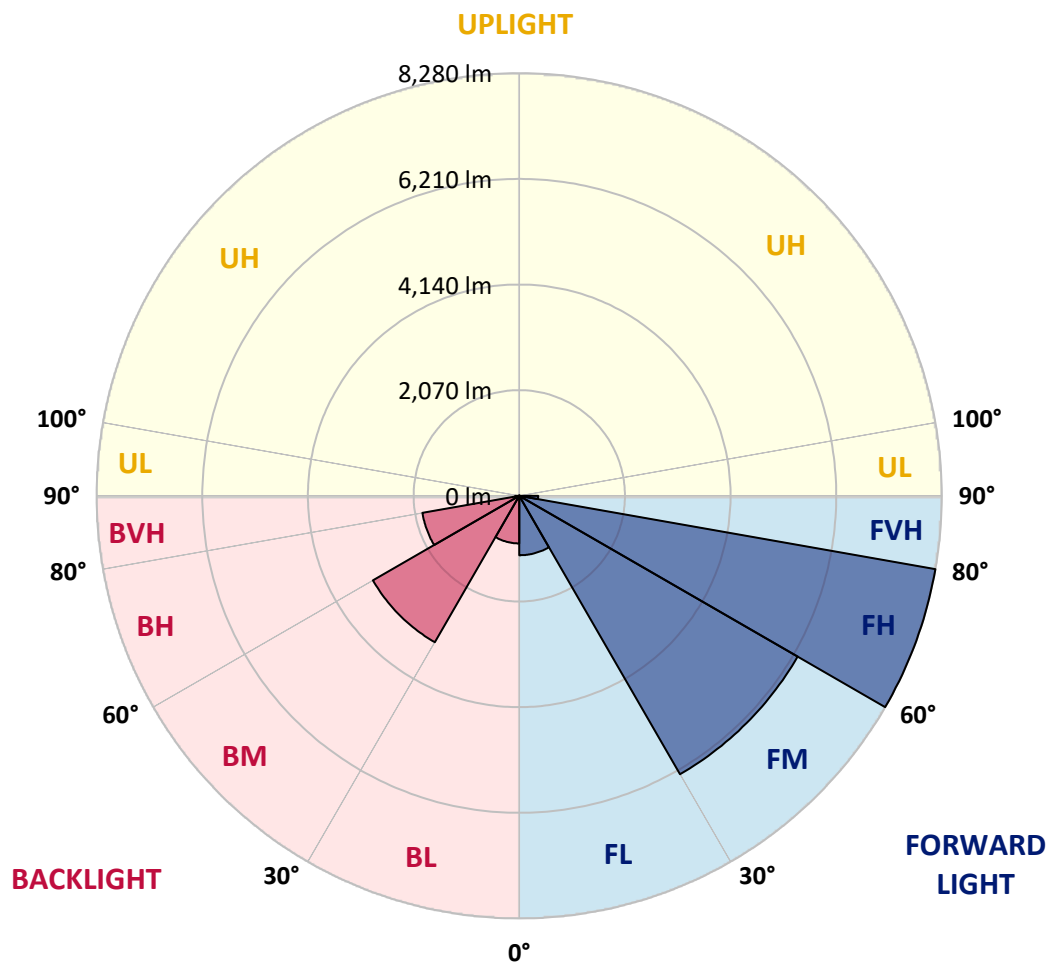
CATALOG NUMBER: CST-CA6-230-730-U-T5R-HSS-HM-EX180

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |       |          |
|------|-------------|--------|-----------|-------------------------|-------|----------|
|      |             |        |           | B                       | U     | G        |
| FL   | (0°-30°)    | 1164.6 | 5.2       |                         |       |          |
| FM   | (30°-60°)   | 6298.2 | 28.1      |                         |       |          |
| FH   | (60°-80°)   | 8279.7 | 37.0      |                         |       | G4/12000 |
| FVH  | (80°-90°)   | 370.2  | 1.7       |                         |       | G3/500   |
| BL   | (0°-30°)    | 932.8  | 4.2       | B2/1000                 |       |          |
| BM   | (30°-60°)   | 3311.2 | 14.8      | B3/5000                 |       |          |
| BH   | (60°-80°)   | 1926.7 | 8.6       | B3/2500                 |       | G3/2500  |
| BVH  | (80°-90°)   | 78.7   | 0.4       |                         |       | G1/100   |
| UL   | (90°-100°)  | 12.7   | 0.1       |                         | U2/50 |          |
| UH   | (100°-180°) | 0.2    | 0.0       |                         | U1/10 |          |

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

Type IV Short



REPORT NUMBER: P522187

CATALOG NUMBER: CST-CA6-230-730-U-T5R-HSS-HM-EX180

**CANDELA DISTRIBUTION (FULL):**

|        | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°    | 65°    | 75°    | 85°    | 90°    |
|--------|---------|---------|---------|---------|---------|---------|--------|--------|--------|--------|--------|
| 0°     | 2266.8  | 2266.8  | 2266.8  | 2266.8  | 2266.8  | 2266.8  | 2266.8 | 2266.8 | 2266.8 | 2266.8 | 2266.8 |
| 2.5°   | 2307.8  | 2303.5  | 2299.2  | 2308.9  | 2271.1  | 2287.3  | 2274.4 | 2286.2 | 2277.6 | 2287.3 | 2284.1 |
| 5°     | 2338.0  | 2333.7  | 2320.7  | 2331.5  | 2306.7  | 2313.2  | 2297.0 | 2301.3 | 2272.2 | 2289.5 | 2288.4 |
| 7.5°   | 2387.6  | 2375.7  | 2367.1  | 2367.1  | 2345.5  | 2344.4  | 2318.6 | 2319.6 | 2297.0 | 2294.9 | 2299.2 |
| 10°    | 2454.4  | 2445.8  | 2422.0  | 2424.2  | 2394.0  | 2389.7  | 2357.4 | 2356.3 | 2338.0 | 2327.2 | 2336.9 |
| 12.5°  | 2504.0  | 2512.6  | 2491.0  | 2491.0  | 2460.8  | 2439.3  | 2416.7 | 2401.6 | 2387.6 | 2371.4 | 2363.8 |
| 15°    | 2594.5  | 2603.1  | 2574.0  | 2572.9  | 2561.1  | 2535.2  | 2510.4 | 2478.1 | 2453.3 | 2445.8 | 2433.9 |
| 17.5°  | 2712.0  | 2706.6  | 2681.8  | 2682.9  | 2685.1  | 2643.0  | 2618.2 | 2576.2 | 2540.6 | 2514.7 | 2508.3 |
| 20°    | 2831.6  | 2831.6  | 2804.7  | 2813.3  | 2802.5  | 2763.7  | 2747.6 | 2689.4 | 2639.8 | 2611.8 | 2589.1 |
| 22.5°  | 2965.3  | 2959.9  | 2941.6  | 2959.9  | 2938.4  | 2899.6  | 2872.6 | 2814.4 | 2750.8 | 2592.4 | 2527.7 |
| 25°    | 3092.5  | 3089.3  | 3096.8  | 3102.2  | 3075.3  | 3026.7  | 3008.4 | 2947.0 | 2770.2 | 2562.2 | 2431.7 |
| 27.5°  | 3253.1  | 3242.3  | 3259.6  | 3270.4  | 3243.4  | 3201.4  | 3162.6 | 3093.6 | 2719.5 | 2555.7 | 2541.7 |
| 30°    | 3459.0  | 3435.3  | 3460.1  | 3465.5  | 3437.4  | 3411.6  | 3353.4 | 3008.4 | 2736.8 | 2689.4 | 2685.1 |
| 32.5°  | 3678.9  | 3650.9  | 3683.2  | 3687.5  | 3650.9  | 3629.3  | 3482.7 | 2964.2 | 2906.0 | 2851.0 | 2856.4 |
| 35°    | 3939.7  | 3939.7  | 3955.9  | 3958.1  | 3931.1  | 3894.5  | 3336.1 | 3179.8 | 3128.1 | 3077.4 | 3076.3 |
| 37.5°  | 4257.7  | 4248.0  | 4291.1  | 4317.0  | 4287.9  | 4183.3  | 3549.5 | 3476.2 | 3396.5 | 3331.8 | 3198.1 |
| 40°    | 4641.4  | 4658.7  | 4670.5  | 4696.4  | 4668.4  | 4433.4  | 3861.0 | 3778.0 | 3715.5 | 3498.9 | 3161.5 |
| 42.5°  | 5055.4  | 5059.7  | 5085.5  | 5117.9  | 5117.9  | 4870.0  | 4225.4 | 4154.2 | 4073.4 | 3421.3 | 3269.3 |
| 45°    | 5550.1  | 5540.4  | 5590.0  | 5641.7  | 5627.7  | 5371.2  | 4649.0 | 4596.2 | 4217.8 | 3646.5 | 3647.6 |
| 47.5°  | 6111.7  | 6099.8  | 6171.0  | 6238.9  | 6168.8  | 5927.4  | 5114.6 | 5073.7 | 4071.2 | 4028.1 | 4019.5 |
| 50°    | 6760.6  | 6731.5  | 6813.4  | 6904.0  | 6846.8  | 6548.2  | 5680.5 | 4893.7 | 4479.8 | 4445.3 | 4439.9 |
| 52.5°  | 7453.7  | 7431.1  | 7480.6  | 7634.8  | 7559.3  | 7198.2  | 6216.3 | 5048.9 | 4953.0 | 4914.2 | 4904.4 |
| 55°    | 8236.2  | 8192.0  | 8298.8  | 8416.3  | 8328.9  | 7917.2  | 6744.4 | 5564.1 | 5465.0 | 5398.1 | 5301.1 |
| 57.5°  | 9058.7  | 8995.1  | 9050.1  | 9197.7  | 9113.7  | 8653.4  | 7425.7 | 6094.5 | 5977.0 | 4946.5 | 4553.1 |
| 60°    | 9877.9  | 9848.8  | 9870.3  | 10000.8 | 9897.3  | 9369.1  | 8063.8 | 6625.9 | 5058.6 | 4892.6 | 4912.0 |
| 62.5°  | 10701.4 | 10637.8 | 10657.2 | 10790.9 | 10658.3 | 10050.3 | 8668.5 | 7108.8 | 5323.8 | 5265.5 | 5286.0 |
| 65°    | 11584.2 | 11508.8 | 11526.0 | 11564.8 | 11401.0 | 10661.5 | 9203.1 | 7564.7 | 5722.6 | 5661.1 | 5683.8 |
| 67.5°  | 12648.1 | 12579.1 | 12485.3 | 12370.0 | 12143.6 | 11310.4 | 9734.5 | 8044.4 | 6171.0 | 6136.5 | 6144.0 |
| 68°    | 12761.3 | 12694.4 | 12581.3 | 12444.4 | 12190.0 | 11337.4 | 9757.2 | 8058.4 | 6177.5 | 6134.3 | 6136.5 |
| 70°    | 12408.8 | 12448.7 | 12320.4 | 12090.8 | 11878.5 | 10942.9 | 9387.4 | 7748.0 | 5902.6 | 5839.0 | 5822.8 |
| 72.5°  | 10989.2 | 11076.5 | 10899.7 | 10860.9 | 10600.1 | 9748.5  | 8214.7 | 6722.9 | 5134.0 | 5154.5 | 5096.3 |
| 75°    | 8872.2  | 9000.5  | 8786.0  | 8797.8  | 8649.1  | 8131.7  | 6884.6 | 5597.5 | 4215.7 | 4309.4 | 4326.7 |
| 77.5°  | 6169.9  | 6354.2  | 6260.4  | 6354.2  | 6280.9  | 6094.5  | 5328.1 | 4310.5 | 3216.5 | 3324.2 | 3366.3 |
| 80°    | 3217.5  | 3436.3  | 3560.3  | 3599.1  | 3622.8  | 3615.3  | 3244.5 | 2587.0 | 1859.4 | 1899.3 | 1897.1 |
| 82.5°  | 1017.5  | 964.7   | 996.0   | 987.4   | 960.4   | 971.2   | 875.3  | 684.5  | 474.3  | 522.8  | 500.1  |
| 85°    | 307.2   | 309.4   | 300.7   | 298.6   | 275.9   | 242.5   | 198.3  | 114.3  | 56.1   | 65.8   | 61.4   |
| 87.5°  | 226.4   | 228.5   | 211.3   | 200.5   | 187.6   | 162.8   | 126.1  | 71.1   | 26.9   | 25.9   | 20.5   |
| 90°    | 125.0   | 120.7   | 112.1   | 103.5   | 98.1    | 84.1    | 63.6   | 26.9   | 9.7    | 7.5    | 6.5    |
| 92.5°  | 67.9    | 64.7    | 60.4    | 57.1    | 49.6    | 39.9    | 25.9   | 8.6    | 4.3    | 1.1    | 0.0    |
| 95°    | 31.3    | 29.1    | 28.0    | 24.8    | 21.6    | 15.1    | 8.6    | 5.4    | 3.2    | 1.1    | 0.0    |
| 97.5°  | 14.0    | 12.9    | 11.9    | 9.7     | 7.5     | 4.3     | 4.3    | 3.2    | 2.2    | 1.1    | 0.0    |
| 100°   | 3.2     | 3.2     | 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°     | 2266.8 | 2266.8 | 2266.8 | 2266.8 | 2266.8 | 2266.8 | 2266.8 | 2266.8 | 2266.8 | 2266.8 |
| 2.5°   | 2280.8 | 2274.4 | 2271.1 | 2250.7 | 2257.1 | 2238.8 | 2274.4 | 2265.7 | 2260.4 | 2275.4 |
| 5°     | 2283.0 | 2260.4 | 2274.4 | 2262.5 | 2266.8 | 2241.0 | 2269.0 | 2257.1 | 2256.0 | 2262.5 |
| 7.5°   | 2288.4 | 2273.3 | 2287.3 | 2263.6 | 2274.4 | 2263.6 | 2284.1 | 2272.2 | 2281.9 | 2288.4 |
| 10°    | 2317.5 | 2308.9 | 2302.4 | 2297.0 | 2304.6 | 2283.0 | 2308.9 | 2309.9 | 2313.2 | 2332.6 |
| 12.5°  | 2358.4 | 2349.8 | 2339.0 | 2325.0 | 2332.6 | 2324.0 | 2343.4 | 2348.7 | 2360.6 | 2370.3 |
| 15°    | 2415.6 | 2399.4 | 2395.1 | 2382.2 | 2389.7 | 2385.4 | 2389.7 | 2386.5 | 2409.1 | 2405.9 |
| 17.5°  | 2494.3 | 2475.9 | 2414.5 | 2352.0 | 2312.1 | 2324.0 | 2373.5 | 2438.2 | 2454.4 | 2456.5 |
| 20°    | 2523.4 | 2394.0 | 2387.6 | 2316.4 | 2284.1 | 2281.9 | 2179.5 | 2026.5 | 2072.8 | 2181.7 |
| 22.5°  | 2488.9 | 2312.1 | 2293.8 | 2279.8 | 2141.8 | 1915.4 | 1893.9 | 1871.2 | 1865.8 | 1882.0 |
| 25°    | 2411.3 | 2390.8 | 2374.6 | 2191.4 | 1973.6 | 1974.7 | 1943.5 | 1794.7 | 1563.0 | 1543.6 |
| 27.5°  | 2529.8 | 2501.8 | 2345.5 | 2063.1 | 2058.8 | 2056.6 | 2010.3 | 1628.7 | 1579.1 | 1591.0 |
| 30°    | 2664.6 | 2618.2 | 2209.7 | 2173.0 | 2172.0 | 2152.6 | 1802.3 | 1642.7 | 1642.7 | 1644.9 |
| 32.5°  | 2819.8 | 2532.0 | 2287.3 | 2304.6 | 2303.5 | 2211.9 | 1740.8 | 1730.0 | 1725.7 | 1736.5 |
| 35°    | 2938.4 | 2463.0 | 2454.4 | 2485.6 | 2464.1 | 1876.6 | 1849.7 | 1840.0 | 1835.7 | 1830.3 |
| 37.5°  | 2901.7 | 2661.3 | 2661.3 | 2680.7 | 2507.2 | 1998.4 | 1985.5 | 1985.5 | 1976.9 | 1972.6 |
| 40°    | 2957.8 | 2908.2 | 2883.4 | 2890.9 | 1821.7 | 2146.1 | 2155.8 | 2153.6 | 2152.6 | 2160.1 |
| 42.5°  | 3253.1 | 3208.9 | 3186.3 | 2919.0 | 2039.4 | 2133.2 | 2370.3 | 2369.2 | 2372.5 | 2369.2 |
| 45°    | 3629.3 | 3588.3 | 3529.0 | 2731.4 | 2315.3 | 1870.2 | 2612.8 | 2624.7 | 2625.8 | 2624.7 |
| 47.5°  | 4023.8 | 3997.9 | 3391.1 | 3023.5 | 2615.0 | 2007.1 | 2497.5 | 2916.8 | 2911.4 | 2917.9 |
| 50°    | 4441.0 | 4324.5 | 3373.8 | 3369.5 | 2934.0 | 2233.4 | 2234.5 | 3172.3 | 3227.2 | 3244.5 |
| 52.5°  | 4905.5 | 3920.3 | 3739.2 | 3411.6 | 3257.4 | 2466.2 | 2442.5 | 2811.2 | 3561.4 | 3578.6 |
| 55°    | 4556.3 | 4141.3 | 4138.1 | 3036.4 | 3388.9 | 2690.4 | 2693.7 | 2667.8 | 3266.0 | 3712.3 |
| 57.5°  | 4533.7 | 4543.4 | 4535.8 | 3387.8 | 2472.7 | 2522.3 | 2935.1 | 2912.5 | 2114.8 | 1713.9 |
| 60°    | 4924.9 | 4938.9 | 4406.5 | 3658.4 | 2673.2 | 1551.1 | 1807.6 | 1536.0 | 1556.5 | 1572.7 |
| 62.5°  | 5299.0 | 5303.3 | 3584.0 | 2398.3 | 1324.7 | 62.5   | 30.2   | 24.8   | 23.7   | 23.7   |
| 65°    | 5712.9 | 5712.9 | 3841.6 | 2616.1 | 1279.5 | 23.7   | 4.3    | 3.2    | 11.9   | 11.9   |
| 67.5°  | 6112.8 | 6024.4 | 4030.3 | 2777.8 | 1302.1 | 3.2    | 0.0    | 0.0    | 0.0    | 0.0    |
| 68°    | 6090.1 | 5993.1 | 4013.0 | 2773.4 | 1298.9 | 2.2    | 0.0    | 0.0    | 0.0    | 0.0    |
| 70°    | 5751.7 | 5657.9 | 3807.1 | 2647.3 | 1250.4 | 2.2    | 0.0    | 0.0    | 0.0    | 0.0    |
| 72.5°  | 5076.9 | 4990.7 | 3371.7 | 2333.7 | 1127.5 | 1.1    | 0.0    | 0.0    | 0.0    | 0.0    |
| 75°    | 4297.6 | 4285.7 | 2912.5 | 1969.3 | 966.9  | 1.1    | 0.0    | 0.0    | 0.0    | 0.0    |
| 77.5°  | 3457.9 | 3404.0 | 2276.5 | 1543.6 | 779.3  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 80°    | 1926.2 | 2006.0 | 1332.3 | 907.6  | 490.4  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 82.5°  | 520.6  | 487.2  | 291.0  | 197.3  | 93.8   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°    | 66.8   | 73.3   | 33.4   | 26.9   | 6.5    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 87.5°  | 34.5   | 41.0   | 10.8   | 8.6    | 2.2    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 90°    | 6.5    | 7.5    | 3.2    | 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: P522187

CATALOG NUMBER: CST-CA6-230-730-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  |

Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

STREETWORKS

Report Number: SP1-2104-215-6

Luminaire Tested: CST-CA6-230-730-U-T4

Test Date: 04/22/2021

### Test Information

Test Method: LM-79-08  
 Report Number: SP1-2104-215-6  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1  
 Measurement Geometry:  $4\pi$   
 Issue Date: 04/22/2021  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: STREETWORKS  
 Catalog Number: **CST-CA6-230-730-U-T4**  
 Description: STREETWORKS HIGH MAST LUMINAIRE

### Spectral Parameters

|                           |         |           |      |      |       |
|---------------------------|---------|-----------|------|------|-------|
| CCT (K):                  | 2914    | CRI (Ra): | 73.2 |      |       |
| CIE u':                   | 0.2541  | R1:       | 70.1 | R9:  | -27.2 |
| CIE v':                   | 0.5212  | R2:       | 83.3 | R10: | 61.9  |
| Duv:                      | -0.0013 | R3:       | 94.2 | R11: | 65.4  |
| CIE x:                    | 0.4410  | R4:       | 69.4 | R12: | 53.3  |
| CIE y:                    | 0.4020  | R5:       | 69.3 | R13: | 72.6  |
| CIE z:                    | 0.1571  | R6:       | 77.3 | R14: | 96.9  |
| Peak Wavelength (nm):     | 599     | R7:       | 77.5 |      |       |
| Dominant Wavelength (nm): | 583     | R8:       | 44.9 |      |       |
| Purity:                   | 53.4    |           |      |      |       |
| Rf:                       | 75.3    |           |      |      |       |
| Rg:                       | 95.7    |           |      |      |       |



### Test Conditions

Stabilization Time: 72M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.6/15%  
 Sphere Temperature (°C): 24.0

REPORT NUMBER: SP1-2104-215-6

| 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: SP1-2104-215-6

**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 3000K 7-step quadrangle

REPORT NUMBER: SP1-2104-215-6

### 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       | 12827            | 0.0              | 490       | 80096            | 11.4             | 620       | 649050           | 168.9            | 750       | 30187            | 0.0              | 880       | 19756            | 0.0              |
| 365       | 11336            | 0.0              | 495       | 104447           | 18.9             | 625       | 608162           | 134.2            | 755       | 27442            | 0.0              | 885       | 21245            | 0.0              |
| 370       | 11776            | 0.0              | 500       | 142477           | 31.4             | 630       | 557990           | 101.0            | 760       | 25382            | 0.0              | 890       | 17771            | 0.0              |
| 375       | 13009            | 0.0              | 505       | 187724           | 52.5             | 635       | 506861           | 76.2             | 765       | 23778            | 0.0              | 895       | 14356            | 0.0              |
| 380       | 13906            | 0.0              | 510       | 232209           | 79.8             | 640       | 460827           | 55.1             | 770       | 21474            | 0.0              | 900       | 16683            | 0.0              |
| 385       | 12960            | 0.0              | 515       | 273388           | 113.2            | 645       | 418064           | 40.3             | 775       | 21394            | 0.0              | 905       | 16548            | 0.0              |
| 390       | 11750            | 0.0              | 520       | 308378           | 149.5            | 650       | 376246           | 27.5             | 780       | 18945            | 0.0              | 910       | 15630            | 0.0              |
| 395       | 10399            | 0.0              | 525       | 336804           | 180.8            | 655       | 332016           | 19.0             | 785       | 16318            | 0.0              | 915       | 20907            | 0.0              |
| 400       | 9192             | 0.0              | 530       | 361609           | 212.9            | 660       | 294638           | 12.3             | 790       | 17841            | 0.0              | 920       | 16083            | 0.0              |
| 405       | 8943             | 0.0              | 535       | 382440           | 237.2            | 665       | 259105           | 8.2              | 795       | 16506            | 0.0              | 925       | 20203            | 0.0              |
| 410       | 11120            | 0.0              | 540       | 401976           | 261.9            | 670       | 223041           | 4.9              | 800       | 15058            | 0.0              | 930       | 22625            | 0.0              |
| 415       | 18193            | 0.0              | 545       | 426232           | 283.7            | 675       | 193569           | 3.2              | 805       | 16851            | 0.0              | 935       | 24828            | 0.0              |
| 420       | 32317            | 0.1              | 550       | 455969           | 309.9            | 680       | 167520           | 1.9              | 810       | 16679            | 0.0              | 940       | 21275            | 0.0              |
| 425       | 59220            | 0.3              | 555       | 490448           | 335.0            | 685       | 144697           | 1.2              | 815       | 15851            | 0.0              | 945       | 23270            | 0.0              |
| 430       | 100522           | 0.8              | 560       | 530799           | 360.7            | 690       | 125032           | 0.7              | 820       | 15536            | 0.0              | 950       | 21756            | 0.0              |
| 435       | 155311           | 1.8              | 565       | 572799           | 380.9            | 695       | 107458           | 0.5              | 825       | 16381            | 0.0              | 955       | 24823            | 0.0              |
| 440       | 239817           | 3.8              | 570       | 615361           | 400.1            | 700       | 93549            | 0.3              | 830       | 16149            | 0.0              | 960       | 19499            | 0.0              |
| 445       | 368265           | 7.7              | 575       | 659689           | 410.5            | 705       | 81608            | 0.2              | 835       | 16687            | 0.0              | 965       | 27077            | 0.0              |
| 450       | 439895           | 11.4             | 580       | 700037           | 416.0            | 710       | 71559            | 0.1              | 840       | 16206            | 0.0              | 970       | 28727            | 0.0              |
| 455       | 329010           | 11.0             | 585       | 734518           | 408.1            | 715       | 65193            | 0.1              | 845       | 16062            | 0.0              | 975       | 21725            | 0.0              |
| 460       | 207545           | 8.5              | 590       | 760906           | 393.4            | 720       | 58466            | 0.0              | 850       | 18530            | 0.0              | 980       | 33536            | 0.0              |
| 465       | 154577           | 8.0              | 595       | 763605           | 362.0            | 725       | 52265            | 0.0              | 855       | 17709            | 0.0              | 985       | 30537            | 0.0              |
| 470       | 110708           | 6.9              | 600       | 766048           | 330.1            | 730       | 46287            | 0.0              | 860       | 18086            | 0.0              | 990       | 25187            | 0.0              |
| 475       | 78445            | 6.2              | 605       | 756483           | 293.0            | 735       | 40164            | 0.0              | 865       | 19763            | 0.0              | 995       | 35676            | 0.0              |
| 480       | 68887            | 6.5              | 610       | 730981           | 251.1            | 740       | 35097            | 0.0              | 870       | 19416            | 0.0              | 1000      | 32909            | 0.0              |
| 485       | 69832            | 8.3              | 615       | 694682           | 209.7            | 745       | 32334            | 0.0              | 875       | 19352            | 0.0              |           |                  |                  |

REPORT NUMBER: SP1-2104-215-6

### Scotopic Flux vs. Wavelength



Scotopic Lumens: 43125.2

S/P: 1.19

| 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       | 12827            | 0.0              | 490       | 80096            | 123.3            | 620       | 649050           | 8.1              | 750       | 30187            | 0.0              | 880       | 19756            | 0.0              |
| 365       | 11336            | 0.0              | 495       | 104447           | 168.8            | 625       | 608162           | 5.1              | 755       | 27442            | 0.0              | 885       | 21245            | 0.0              |
| 370       | 11776            | 0.0              | 500       | 142477           | 238.3            | 630       | 557990           | 3.2              | 760       | 25382            | 0.0              | 890       | 17771            | 0.0              |
| 375       | 13009            | 0.0              | 505       | 187724           | 319.1            | 635       | 506861           | 1.9              | 765       | 23778            | 0.0              | 895       | 14356            | 0.0              |
| 380       | 13906            | 0.0              | 510       | 232209           | 393.6            | 640       | 460827           | 1.2              | 770       | 21474            | 0.0              | 900       | 16683            | 0.0              |
| 385       | 12960            | 0.0              | 515       | 273388           | 453.1            | 645       | 418064           | 0.7              | 775       | 21394            | 0.0              | 905       | 16548            | 0.0              |
| 390       | 11750            | 0.0              | 520       | 308378           | 490.2            | 650       | 376246           | 0.4              | 780       | 18945            | 0.0              | 910       | 15630            | 0.0              |
| 395       | 10399            | 0.1              | 525       | 336804           | 503.9            | 655       | 332016           | 0.3              | 785       | 16318            | 0.0              | 915       | 20907            | 0.0              |
| 400       | 9192             | 0.1              | 530       | 361609           | 498.6            | 660       | 294638           | 0.2              | 790       | 17841            | 0.0              | 920       | 16083            | 0.0              |
| 405       | 8943             | 0.3              | 535       | 382440           | 476.6            | 665       | 259105           | 0.1              | 795       | 16506            | 0.0              | 925       | 20203            | 0.0              |
| 410       | 11120            | 0.7              | 540       | 401976           | 444.2            | 670       | 223041           | 0.1              | 800       | 15058            | 0.0              | 930       | 22625            | 0.0              |
| 415       | 18193            | 1.9              | 545       | 426232           | 408.7            | 675       | 193569           | 0.0              | 805       | 16851            | 0.0              | 935       | 24828            | 0.0              |
| 420       | 32317            | 5.3              | 550       | 455969           | 372.8            | 680       | 167520           | 0.0              | 810       | 16679            | 0.0              | 940       | 21275            | 0.0              |
| 425       | 59220            | 14.5             | 555       | 490448           | 335.2            | 685       | 144697           | 0.0              | 815       | 15851            | 0.0              | 945       | 23270            | 0.0              |
| 430       | 100522           | 34.2             | 560       | 530799           | 296.7            | 690       | 125032           | 0.0              | 820       | 15536            | 0.0              | 950       | 21756            | 0.0              |
| 435       | 155311           | 69.4             | 565       | 572799           | 257.0            | 695       | 107458           | 0.0              | 825       | 16381            | 0.0              | 955       | 24823            | 0.0              |
| 440       | 239817           | 134.0            | 570       | 615361           | 217.2            | 700       | 93549            | 0.0              | 830       | 16149            | 0.0              | 960       | 19499            | 0.0              |
| 445       | 368265           | 246.6            | 575       | 659689           | 179.7            | 705       | 81608            | 0.0              | 835       | 16687            | 0.0              | 965       | 27077            | 0.0              |
| 450       | 439895           | 340.9            | 580       | 700037           | 144.2            | 710       | 71559            | 0.0              | 840       | 16206            | 0.0              | 970       | 28727            | 0.0              |
| 455       | 329010           | 287.5            | 585       | 734518           | 112.3            | 715       | 65193            | 0.0              | 845       | 16062            | 0.0              | 975       | 21725            | 0.0              |
| 460       | 207545           | 200.5            | 590       | 760906           | 84.7             | 720       | 58466            | 0.0              | 850       | 18530            | 0.0              | 980       | 33536            | 0.0              |
| 465       | 154577           | 163.3            | 595       | 763605           | 60.9             | 725       | 52265            | 0.0              | 855       | 17709            | 0.0              | 985       | 30537            | 0.0              |
| 470       | 110708           | 127.5            | 600       | 766048           | 43.2             | 730       | 46287            | 0.0              | 860       | 18086            | 0.0              | 990       | 25187            | 0.0              |
| 475       | 78445            | 98.1             | 605       | 756483           | 29.7             | 735       | 40164            | 0.0              | 865       | 19763            | 0.0              | 995       | 35676            | 0.0              |
| 480       | 68887            | 93.1             | 610       | 730981           | 19.8             | 740       | 35097            | 0.0              | 870       | 19416            | 0.0              | 1000      | 32909            | 0.0              |
| 485       | 69832            | 101.2            | 615       | 694682           | 12.8             | 745       | 32334            | 0.0              | 875       | 19352            | 0.0              |           |                  |                  |

REPORT NUMBER: SP1-2104-215-6

### Melanopic Flux vs. Wavelength


**Melanopic Lumens: 15555.2      M/P: 0.43**

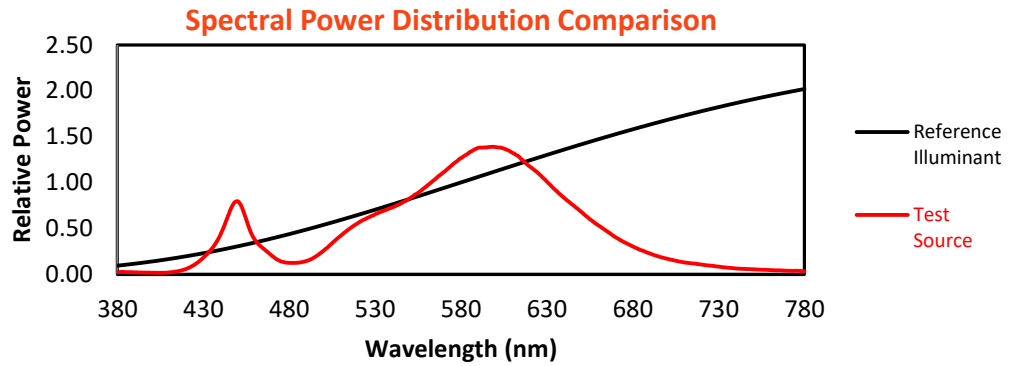
| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 12827            | 0.0              | 490       | 80096            | 66.7             | 620       | 649050           | 0.5              | 750       | 30187            | 0.0              | 880       | 19756            | 0.0              |
| 365       | 11336            | 0.0              | 495       | 104447           | 86.2             | 625       | 608162           | 0.3              | 755       | 27442            | 0.0              | 885       | 21245            | 0.0              |
| 370       | 11776            | 0.0              | 500       | 142477           | 114.5            | 630       | 557990           | 0.2              | 760       | 25382            | 0.0              | 890       | 17771            | 0.0              |
| 375       | 13009            | 0.0              | 505       | 187724           | 144.1            | 635       | 506861           | 0.1              | 765       | 23778            | 0.0              | 895       | 14356            | 0.0              |
| 380       | 13906            | 0.0              | 510       | 232209           | 166.7            | 640       | 460827           | 0.1              | 770       | 21474            | 0.0              | 900       | 16683            | 0.0              |
| 385       | 12960            | 0.0              | 515       | 273388           | 178.6            | 645       | 418064           | 0.0              | 775       | 21394            | 0.0              | 905       | 16548            | 0.0              |
| 390       | 11750            | 0.0              | 520       | 308378           | 179.5            | 650       | 376246           | 0.0              | 780       | 18945            | 0.0              | 910       | 15630            | 0.0              |
| 395       | 10399            | 0.1              | 525       | 336804           | 170.8            | 655       | 332016           | 0.0              | 785       | 16318            | 0.0              | 915       | 20907            | 0.0              |
| 400       | 9192             | 0.1              | 530       | 361609           | 156.3            | 660       | 294638           | 0.0              | 790       | 17841            | 0.0              | 920       | 16083            | 0.0              |
| 405       | 8943             | 0.2              | 535       | 382440           | 137.6            | 665       | 259105           | 0.0              | 795       | 16506            | 0.0              | 925       | 20203            | 0.0              |
| 410       | 11120            | 0.4              | 540       | 401976           | 117.6            | 670       | 223041           | 0.0              | 800       | 15058            | 0.0              | 930       | 22625            | 0.0              |
| 415       | 18193            | 1.2              | 545       | 426232           | 99.0             | 675       | 193569           | 0.0              | 805       | 16851            | 0.0              | 935       | 24828            | 0.0              |
| 420       | 32317            | 3.7              | 550       | 455969           | 81.9             | 680       | 167520           | 0.0              | 810       | 16679            | 0.0              | 940       | 21275            | 0.0              |
| 425       | 59220            | 9.2              | 555       | 490448           | 66.1             | 685       | 144697           | 0.0              | 815       | 15851            | 0.0              | 945       | 23270            | 0.0              |
| 430       | 100522           | 21.2             | 560       | 530799           | 52.4             | 690       | 125032           | 0.0              | 820       | 15536            | 0.0              | 950       | 21756            | 0.0              |
| 435       | 155311           | 41.4             | 565       | 572799           | 40.2             | 695       | 107458           | 0.0              | 825       | 16381            | 0.0              | 955       | 24823            | 0.0              |
| 440       | 239817           | 80.1             | 570       | 615361           | 30.1             | 700       | 93549            | 0.0              | 830       | 16149            | 0.0              | 960       | 19499            | 0.0              |
| 445       | 368265           | 145.3            | 575       | 659689           | 22.0             | 705       | 81608            | 0.0              | 835       | 16687            | 0.0              | 965       | 27077            | 0.0              |
| 450       | 439895           | 202.7            | 580       | 700037           | 15.7             | 710       | 71559            | 0.0              | 840       | 16206            | 0.0              | 970       | 28727            | 0.0              |
| 455       | 329010           | 172.4            | 585       | 734518           | 10.9             | 715       | 65193            | 0.0              | 845       | 16062            | 0.0              | 975       | 21725            | 0.0              |
| 460       | 207545           | 122.3            | 590       | 760906           | 7.5              | 720       | 58466            | 0.0              | 850       | 18530            | 0.0              | 980       | 33536            | 0.0              |
| 465       | 154577           | 101.0            | 595       | 763605           | 4.9              | 725       | 52265            | 0.0              | 855       | 17709            | 0.0              | 985       | 30537            | 0.0              |
| 470       | 110708           | 79.3             | 600       | 766048           | 3.2              | 730       | 46287            | 0.0              | 860       | 18086            | 0.0              | 990       | 25187            | 0.0              |
| 475       | 78445            | 59.9             | 605       | 756483           | 2.1              | 735       | 40164            | 0.0              | 865       | 19763            | 0.0              | 995       | 35676            | 0.0              |
| 480       | 68887            | 55.4             | 610       | 730981           | 1.3              | 740       | 35097            | 0.0              | 870       | 19416            | 0.0              | 1000      | 32909            | 0.0              |
| 485       | 69832            | 57.6             | 615       | 694682           | 0.8              | 745       | 32334            | 0.0              | 875       | 19352            | 0.0              |           |                  |                  |

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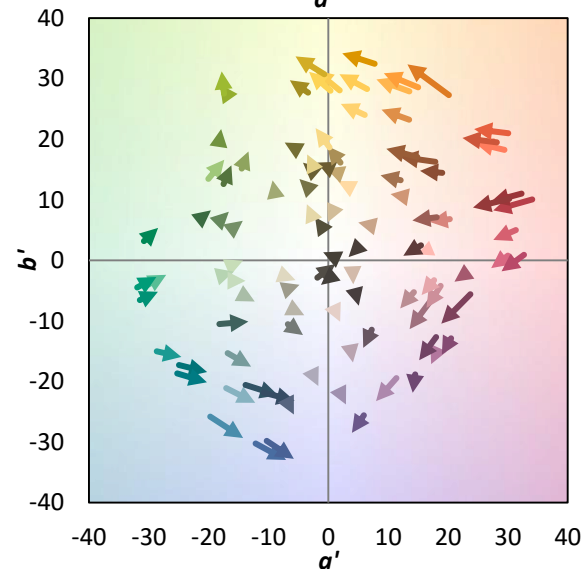
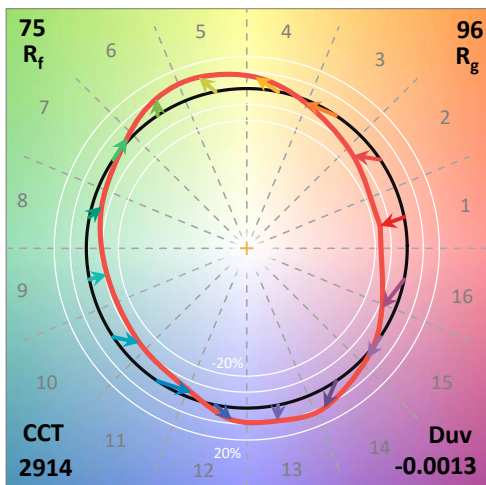
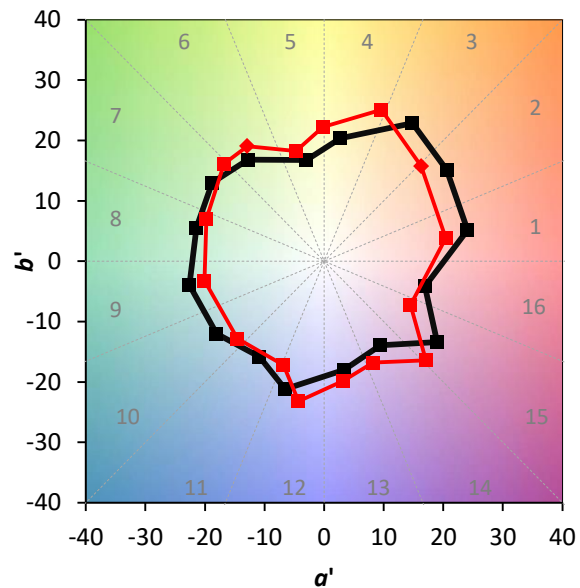
TM-30-18

### Summary

$R_f = 75.3$   
 $R_g = 95.7$   
 CIE  $R_a = 73.2$   
 $R_g = -27.2$



### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 65 | CES51 = 87 | CES76 = 59 |
| CES02 = 63 | CES27 = 88 | CES52 = 86 | CES77 = 78 |
| CES03 = 31 | CES28 = 85 | CES53 = 77 | CES78 = 63 |
| CES04 = 71 | CES29 = 64 | CES54 = 86 | CES79 = 86 |
| CES05 = 49 | CES30 = 77 | CES55 = 85 | CES80 = 84 |
| CES06 = 51 | CES31 = 68 | CES56 = 75 | CES81 = 72 |
| CES07 = 42 | CES32 = 62 | CES57 = 75 | CES82 = 93 |
| CES08 = 40 | CES33 = 74 | CES58 = 76 | CES83 = 89 |
| CES09 = 29 | CES34 = 75 | CES59 = 86 | CES84 = 89 |
| CES10 = 76 | CES35 = 87 | CES60 = 92 | CES85 = 77 |
| CES11 = 59 | CES36 = 98 | CES61 = 84 | CES86 = 64 |
| CES12 = 65 | CES37 = 84 | CES62 = 92 | CES87 = 78 |
| CES13 = 43 | CES38 = 85 | CES63 = 75 | CES88 = 80 |
| CES14 = 74 | CES39 = 95 | CES64 = 70 | CES89 = 67 |
| CES15 = 71 | CES40 = 90 | CES65 = 67 | CES90 = 79 |
| CES16 = 47 | CES41 = 89 | CES66 = 65 | CES91 = 84 |
| CES17 = 50 | CES42 = 84 | CES67 = 63 | CES92 = 60 |
| CES18 = 56 | CES43 = 75 | CES68 = 69 | CES93 = 75 |
| CES19 = 73 | CES44 = 99 | CES69 = 78 | CES94 = 52 |
| CES20 = 66 | CES45 = 83 | CES70 = 63 | CES95 = 70 |
| CES21 = 87 | CES46 = 80 | CES71 = 61 | CES96 = 78 |
| CES22 = 79 | CES47 = 81 | CES72 = 86 | CES97 = 83 |
| CES23 = 92 | CES48 = 72 | CES73 = 55 | CES98 = 77 |
| CES24 = 91 | CES49 = 77 | CES74 = 96 | CES99 = 66 |
| CES25 = 73 | CES50 = 86 | CES75 = 63 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)