

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: P522127

Luminaire Tested: **CST-CA10-310-722-U-T5R-HSS-HM-EX180**

Issue Date: 5/10/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P522127  
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-CA10-310-722-U-T5R-HSS-HM-EX180  
Description: CELESTEON HIGH MAST LUMINAIRE  
Light Source: (10) 2200K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 26117 lumens  
Efficiency: N/A  
Efficacy: 83.6 lumens/watt  
Luminous Opening: Circular (Dia: 2.08' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B3 - U2 - G4

Input Watts (W): 312.4  
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

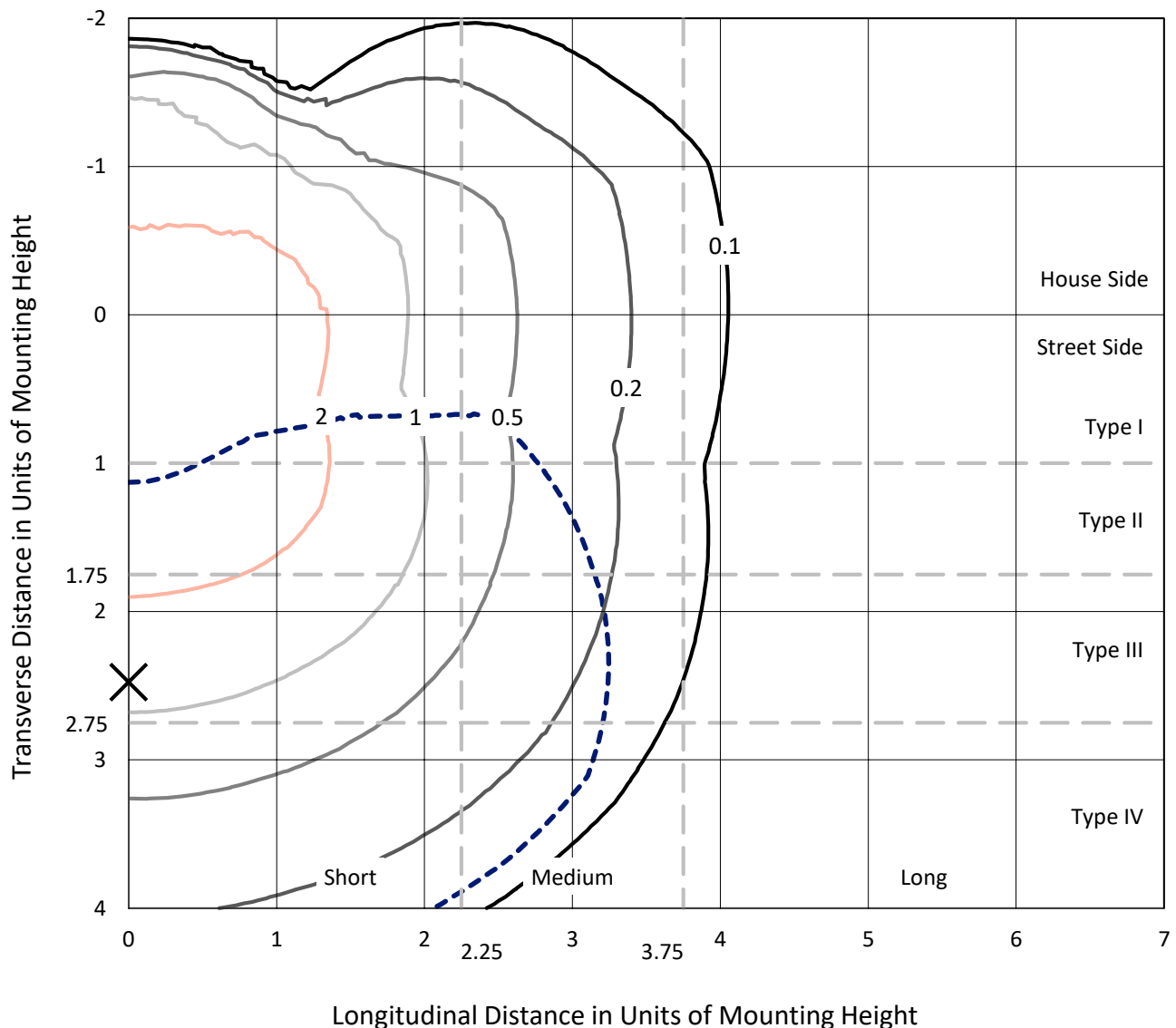


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## Iso-Footcandle Lines of Horizontal Illumination

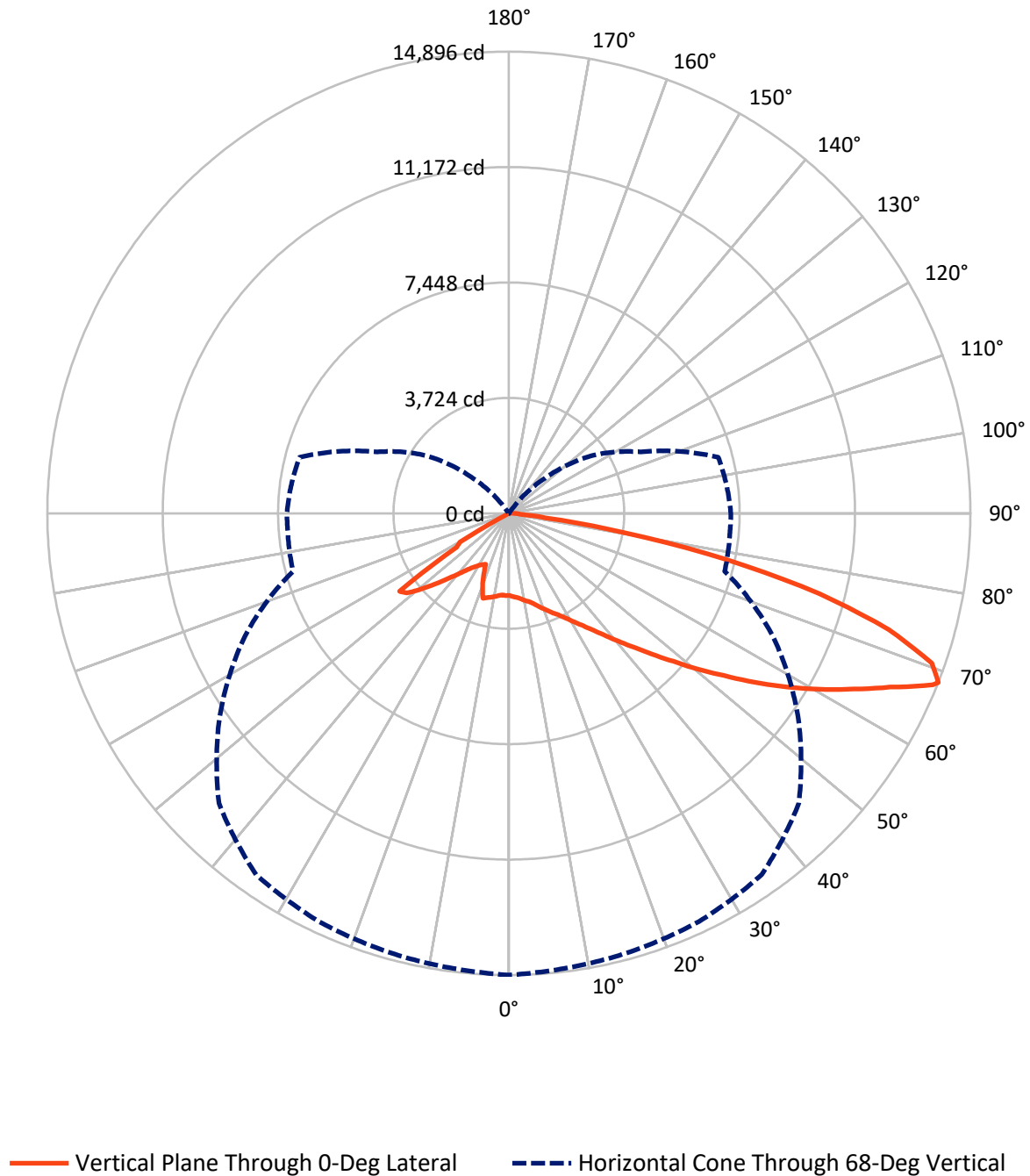
× Max cd  
- - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.4 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    | 7294.5   | 0.2    | 7294.7  |
|                    | % Fixture | 27.9     | 0.0    | 27.9    |
| <b>Street Side</b> | Lumens    | 18807.4  | 15.0   | 18822.3 |
|                    | % Fixture | 72.0     | 0.1    | 72.1    |
| <b>Total</b>       | Lumens    | 26101.9  | 15.1   | 26117.0 |
|                    | % Fixture | 99.9     | 0.1    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 256.8   | 1.0       |
| 10°-20°   | 813.7   | 3.1       |
| 20°-30°   | 1377.6  | 5.3       |
| 30°-40°   | 2182.5  | 8.4       |
| 40°-50°   | 3568.3  | 13.7      |
| 50°-60°   | 5465.7  | 20.9      |
| 60°-70°   | 6720.5  | 25.7      |
| 70°-80°   | 5192.8  | 19.9      |
| 80°-90°   | 523.9   | 2.0       |
| 90°-100°  | 14.9    | 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°    | 26101.9 | 99.9      |
| 0°-180°   | 26117.0 | 100.0     |

**Coefficient of Utilization**



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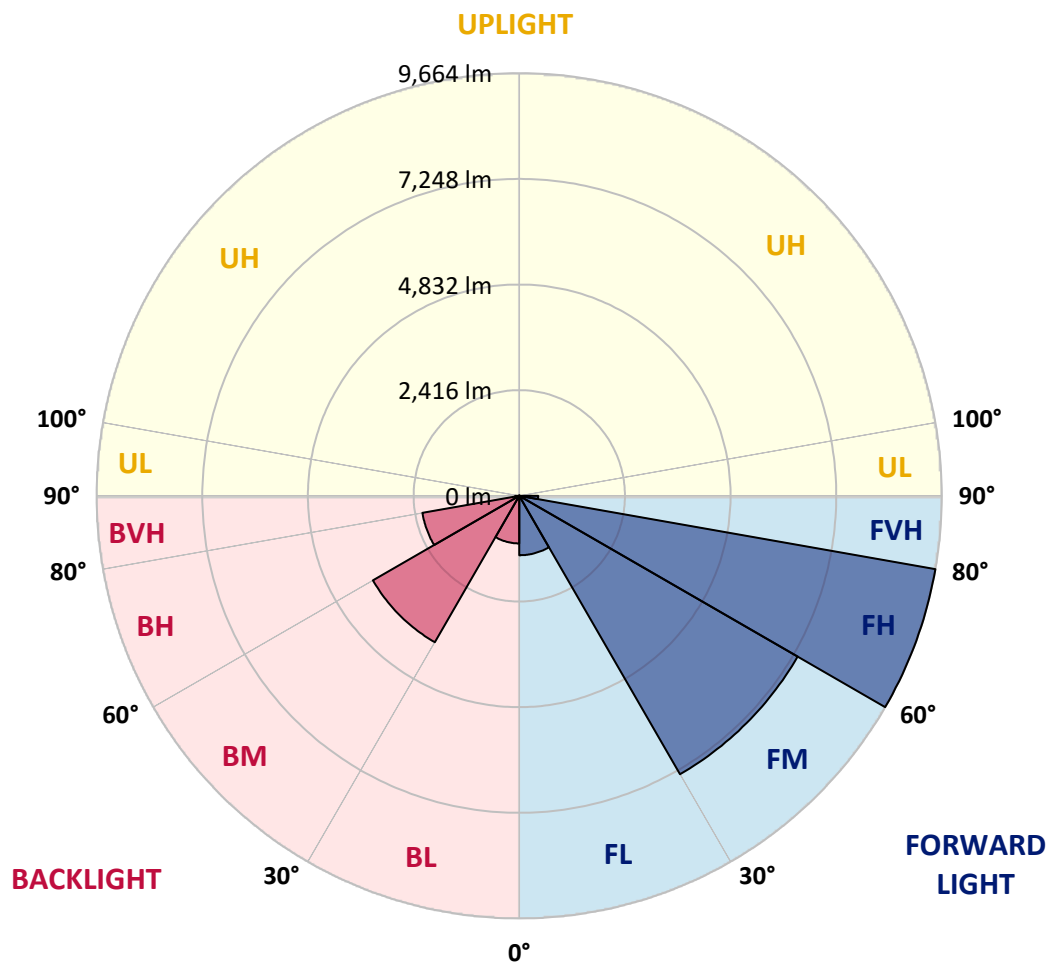
CATALOG NUMBER: CST-CA10-310-722-U-T5R-HSS-HM-EX180

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |       |          |
|------|-------------|--------|-----------|-------------------------|-------|----------|
|      |             |        |           | B                       | U     | G        |
| FL   | (0°-30°)    | 1359.4 | 5.2       |                         |       |          |
| FM   | (30°-60°)   | 7351.5 | 28.1      |                         |       |          |
| FH   | (60°-80°)   | 9664.4 | 37.0      |                         |       | G4/12000 |
| FVH  | (80°-90°)   | 432.1  | 1.7       |                         |       | G3/500   |
| BL   | (0°-30°)    | 1088.8 | 4.2       | B3/2500                 |       |          |
| BM   | (30°-60°)   | 3865.0 | 14.8      | B3/5000                 |       |          |
| BH   | (60°-80°)   | 2248.9 | 8.6       | B3/2500                 |       | G3/2500  |
| BVH  | (80°-90°)   | 91.9   | 0.4       |                         |       | G1/100   |
| UL   | (90°-100°)  | 14.9   | 0.1       |                         | U2/50 |          |
| UH   | (100°-180°) | 0.2    | 0.0       |                         | U1/10 |          |

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

Type IV Short



REPORT NUMBER: P522127

CATALOG NUMBER: CST-CA10-310-722-U-T5R-HSS-HM-EX180

**CANDELA DISTRIBUTION (FULL):**

|        | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 65°    | 75°    | 85°    | 90°    |
|--------|---------|---------|---------|---------|---------|---------|---------|--------|--------|--------|--------|
| 0°     | 2645.9  | 2645.9  | 2645.9  | 2645.9  | 2645.9  | 2645.9  | 2645.9  | 2645.9 | 2645.9 | 2645.9 | 2645.9 |
| 2.5°   | 2693.7  | 2688.7  | 2683.7  | 2695.0  | 2651.0  | 2669.8  | 2654.7  | 2668.6 | 2658.5 | 2669.8 | 2666.1 |
| 5°     | 2729.0  | 2723.9  | 2708.8  | 2721.4  | 2692.5  | 2700.0  | 2681.2  | 2686.2 | 2652.2 | 2672.4 | 2671.1 |
| 7.5°   | 2786.8  | 2773.0  | 2762.9  | 2762.9  | 2737.8  | 2736.5  | 2706.3  | 2707.6 | 2681.2 | 2678.6 | 2683.7 |
| 10°    | 2864.9  | 2854.8  | 2827.1  | 2829.6  | 2794.4  | 2789.4  | 2751.6  | 2750.4 | 2729.0 | 2716.4 | 2727.7 |
| 12.5°  | 2922.7  | 2932.8  | 2907.6  | 2907.6  | 2872.4  | 2847.2  | 2820.8  | 2803.2 | 2786.8 | 2768.0 | 2759.2 |
| 15°    | 3028.4  | 3038.5  | 3004.5  | 3003.3  | 2989.4  | 2959.2  | 2930.3  | 2892.5 | 2863.6 | 2854.8 | 2840.9 |
| 17.5°  | 3165.6  | 3159.3  | 3130.3  | 3131.6  | 3134.1  | 3085.0  | 3056.1  | 3007.0 | 2965.5 | 2935.3 | 2927.8 |
| 20°    | 3305.2  | 3305.2  | 3273.8  | 3283.8  | 3271.2  | 3225.9  | 3207.1  | 3139.1 | 3081.3 | 3048.5 | 3022.1 |
| 22.5°  | 3461.2  | 3454.9  | 3433.5  | 3454.9  | 3429.8  | 3384.5  | 3353.0  | 3285.1 | 3210.8 | 3025.9 | 2950.4 |
| 25°    | 3609.7  | 3605.9  | 3614.7  | 3621.0  | 3589.6  | 3532.9  | 3511.6  | 3439.8 | 3233.5 | 2990.7 | 2838.4 |
| 27.5°  | 3797.2  | 3784.6  | 3804.7  | 3817.3  | 3785.8  | 3736.8  | 3691.5  | 3610.9 | 3174.4 | 2983.1 | 2966.8 |
| 30°    | 4037.5  | 4009.8  | 4038.7  | 4045.0  | 4012.3  | 3982.1  | 3914.2  | 3511.6 | 3194.5 | 3139.1 | 3134.1 |
| 32.5°  | 4294.1  | 4261.4  | 4299.2  | 4304.2  | 4261.4  | 4236.3  | 4065.1  | 3460.0 | 3392.0 | 3327.9 | 3334.1 |
| 35°    | 4598.6  | 4598.6  | 4617.5  | 4620.0  | 4588.5  | 4545.8  | 3894.0  | 3711.6 | 3651.2 | 3592.1 | 3590.8 |
| 37.5°  | 4969.8  | 4958.4  | 5008.8  | 5039.0  | 5005.0  | 4883.0  | 4143.2  | 4057.6 | 3964.5 | 3889.0 | 3733.0 |
| 40°    | 5417.7  | 5437.8  | 5451.6  | 5481.8  | 5449.1  | 5174.9  | 4506.8  | 4409.9 | 4336.9 | 4084.0 | 3690.2 |
| 42.5°  | 5900.8  | 5905.8  | 5936.0  | 5973.8  | 5973.8  | 5684.4  | 4932.0  | 4849.0 | 4754.6 | 3993.4 | 3816.0 |
| 45°    | 6478.3  | 6467.0  | 6524.9  | 6585.3  | 6568.9  | 6269.5  | 5426.5  | 5364.8 | 4923.2 | 4256.4 | 4257.6 |
| 47.5°  | 7133.8  | 7120.0  | 7203.0  | 7282.3  | 7200.5  | 6918.7  | 5970.0  | 5922.2 | 4752.1 | 4701.8 | 4691.7 |
| 50°    | 7891.2  | 7857.3  | 7952.9  | 8058.6  | 7991.9  | 7643.4  | 6630.6  | 5712.1 | 5229.0 | 5188.7 | 5182.4 |
| 52.5°  | 8700.2  | 8673.8  | 8731.7  | 8911.6  | 8823.5  | 8402.1  | 7255.9  | 5893.3 | 5781.3 | 5736.0 | 5724.7 |
| 55°    | 9613.7  | 9562.1  | 9686.6  | 9823.8  | 9721.9  | 9241.3  | 7872.4  | 6494.7 | 6378.9 | 6300.9 | 6187.7 |
| 57.5°  | 10573.7 | 10499.4 | 10563.6 | 10736.0 | 10637.8 | 10100.6 | 8667.5  | 7113.7 | 6976.5 | 5773.7 | 5314.5 |
| 60°    | 11529.9 | 11495.9 | 11521.1 | 11673.3 | 11552.5 | 10936.0 | 9412.4  | 7734.0 | 5904.6 | 5710.8 | 5733.5 |
| 62.5°  | 12491.1 | 12416.9 | 12439.5 | 12595.5 | 12440.8 | 11731.2 | 10118.2 | 8297.6 | 6214.1 | 6146.2 | 6170.1 |
| 65°    | 13521.5 | 13433.5 | 13453.6 | 13498.9 | 13307.7 | 12444.6 | 10742.3 | 8829.8 | 6679.6 | 6607.9 | 6634.3 |
| 67.5°  | 14763.4 | 14682.8 | 14573.4 | 14438.8 | 14174.5 | 13202.0 | 11362.5 | 9389.7 | 7203.0 | 7162.8 | 7171.6 |
| 68°    | 14895.5 | 14817.5 | 14685.4 | 14525.6 | 14228.6 | 13233.4 | 11389.0 | 9406.1 | 7210.6 | 7160.2 | 7162.8 |
| 70°    | 14484.0 | 14530.6 | 14380.9 | 14112.9 | 13865.0 | 12772.9 | 10957.4 | 9043.7 | 6889.7 | 6815.5 | 6796.6 |
| 72.5°  | 12827.0 | 12928.9 | 12722.6 | 12677.3 | 12372.8 | 11378.9 | 9588.5  | 7847.2 | 5992.7 | 6016.6 | 5948.6 |
| 75°    | 10356.0 | 10505.7 | 10255.3 | 10269.2 | 10095.6 | 9491.6  | 8035.9  | 6533.7 | 4920.7 | 5030.2 | 5050.3 |
| 77.5°  | 7201.8  | 7416.9  | 7307.4  | 7416.9  | 7331.4  | 7113.7  | 6219.1  | 5031.4 | 3754.4 | 3880.2 | 3929.3 |
| 80°    | 3755.6  | 4011.0  | 4155.7  | 4201.0  | 4228.7  | 4219.9  | 3787.1  | 3019.6 | 2170.3 | 2216.9 | 2214.4 |
| 82.5°  | 1187.7  | 1126.1  | 1162.5  | 1152.5  | 1121.0  | 1133.6  | 1021.6  | 798.9  | 553.6  | 610.2  | 583.8  |
| 85°    | 358.6   | 361.1   | 351.0   | 348.5   | 322.1   | 283.1   | 231.5   | 133.4  | 65.4   | 76.7   | 71.7   |
| 87.5°  | 264.2   | 266.7   | 246.6   | 234.0   | 218.9   | 190.0   | 147.2   | 83.0   | 31.5   | 30.2   | 23.9   |
| 90°    | 145.9   | 140.9   | 130.8   | 120.8   | 114.5   | 98.1    | 74.2    | 31.5   | 11.3   | 8.8    | 7.5    |
| 92.5°  | 79.3    | 75.5    | 70.5    | 66.7    | 57.9    | 46.6    | 30.2    | 10.1   | 5.0    | 1.3    | 0.0    |
| 95°    | 36.5    | 34.0    | 32.7    | 28.9    | 25.2    | 17.6    | 10.1    | 6.3    | 3.8    | 1.3    | 0.0    |
| 97.5°  | 16.4    | 15.1    | 13.8    | 11.3    | 8.8     | 5.0     | 5.0     | 3.8    | 2.5    | 1.3    | 0.0    |
| 100°   | 3.8     | 3.8     | 2.5     | 2.5     | 2.5     | 2.5     | 2.5     | 2.5    | 2.5    | 1.3    | 0.0    |
| 102.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 1.3    | 1.3    | 0.0    | 0.0    |
| 105°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0    | 1.3    | 0.0    | 0.0    |
| 107.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0    | 1.3    | 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°     | 2645.9 | 2645.9 | 2645.9 | 2645.9 | 2645.9 | 2645.9 | 2645.9 | 2645.9 | 2645.9 | 2645.9 |
| 2.5°   | 2662.3 | 2654.7 | 2651.0 | 2627.1 | 2634.6 | 2613.2 | 2654.7 | 2644.7 | 2638.4 | 2656.0 |
| 5°     | 2664.8 | 2638.4 | 2654.7 | 2640.9 | 2645.9 | 2615.7 | 2648.4 | 2634.6 | 2633.3 | 2640.9 |
| 7.5°   | 2671.1 | 2653.5 | 2669.8 | 2642.2 | 2654.7 | 2642.2 | 2666.1 | 2652.2 | 2663.5 | 2671.1 |
| 10°    | 2705.1 | 2695.0 | 2687.5 | 2681.2 | 2690.0 | 2664.8 | 2695.0 | 2696.3 | 2700.0 | 2722.7 |
| 12.5°  | 2752.9 | 2742.8 | 2730.2 | 2713.9 | 2722.7 | 2712.6 | 2735.3 | 2741.6 | 2755.4 | 2766.7 |
| 15°    | 2819.6 | 2800.7 | 2795.7 | 2780.6 | 2789.4 | 2784.3 | 2789.4 | 2785.6 | 2812.0 | 2808.2 |
| 17.5°  | 2911.4 | 2890.0 | 2818.3 | 2745.3 | 2698.8 | 2712.6 | 2770.5 | 2846.0 | 2864.9 | 2867.4 |
| 20°    | 2945.4 | 2794.4 | 2786.8 | 2703.8 | 2666.1 | 2663.5 | 2544.0 | 2365.4 | 2419.5 | 2546.5 |
| 22.5°  | 2905.1 | 2698.8 | 2677.4 | 2661.0 | 2500.0 | 2235.8 | 2210.6 | 2184.2 | 2177.9 | 2196.8 |
| 25°    | 2814.5 | 2790.6 | 2771.7 | 2557.9 | 2303.7 | 2305.0 | 2268.5 | 2094.9 | 1824.3 | 1801.7 |
| 27.5°  | 2952.9 | 2920.2 | 2737.8 | 2408.1 | 2403.1 | 2400.6 | 2346.5 | 1901.1 | 1843.2 | 1857.1 |
| 30°    | 3110.2 | 3056.1 | 2579.2 | 2536.5 | 2535.2 | 2512.6 | 2103.7 | 1917.5 | 1917.5 | 1920.0 |
| 32.5°  | 3291.4 | 2955.4 | 2669.8 | 2690.0 | 2688.7 | 2581.8 | 2031.9 | 2019.4 | 2014.3 | 2026.9 |
| 35°    | 3429.8 | 2874.9 | 2864.9 | 2901.3 | 2876.2 | 2190.5 | 2159.0 | 2147.7 | 2142.7 | 2136.4 |
| 37.5°  | 3387.0 | 3106.4 | 3106.4 | 3129.1 | 2926.5 | 2332.6 | 2317.5 | 2317.5 | 2307.5 | 2302.5 |
| 40°    | 3452.4 | 3394.5 | 3365.6 | 3374.4 | 2126.3 | 2505.0 | 2516.3 | 2513.8 | 2512.6 | 2521.4 |
| 42.5°  | 3797.2 | 3745.6 | 3719.1 | 3407.1 | 2380.5 | 2489.9 | 2766.7 | 2765.5 | 2769.2 | 2765.5 |
| 45°    | 4236.3 | 4188.4 | 4119.2 | 3188.2 | 2702.5 | 2182.9 | 3049.8 | 3063.6 | 3064.9 | 3063.6 |
| 47.5°  | 4696.7 | 4666.6 | 3958.2 | 3529.2 | 3052.3 | 2342.7 | 2915.2 | 3404.6 | 3398.3 | 3405.9 |
| 50°    | 5183.7 | 5047.8 | 3938.1 | 3933.0 | 3424.7 | 2606.9 | 2608.2 | 3702.8 | 3767.0 | 3787.1 |
| 52.5°  | 5725.9 | 4576.0 | 4364.6 | 3982.1 | 3802.2 | 2878.7 | 2851.0 | 3281.3 | 4157.0 | 4177.1 |
| 55°    | 5318.3 | 4833.9 | 4830.1 | 3544.3 | 3955.7 | 3140.4 | 3144.2 | 3114.0 | 3812.3 | 4333.1 |
| 57.5°  | 5291.9 | 5303.2 | 5294.4 | 3954.4 | 2886.2 | 2944.1 | 3426.0 | 3399.6 | 2468.5 | 2000.5 |
| 60°    | 5748.6 | 5764.9 | 5143.4 | 4270.2 | 3120.3 | 1810.5 | 2110.0 | 1792.9 | 1816.8 | 1835.7 |
| 62.5°  | 6185.2 | 6190.2 | 4183.4 | 2799.4 | 1546.3 | 73.0   | 35.2   | 28.9   | 27.7   | 27.7   |
| 65°    | 6668.3 | 6668.3 | 4484.1 | 3053.6 | 1493.4 | 27.7   | 5.0    | 3.8    | 13.8   | 13.8   |
| 67.5°  | 7135.1 | 7031.9 | 4704.3 | 3242.3 | 1519.9 | 3.8    | 0.0    | 0.0    | 0.0    | 0.0    |
| 68°    | 7108.7 | 6995.4 | 4684.2 | 3237.3 | 1516.1 | 2.5    | 0.0    | 0.0    | 0.0    | 0.0    |
| 70°    | 6713.6 | 6604.1 | 4443.9 | 3090.1 | 1459.5 | 2.5    | 0.0    | 0.0    | 0.0    | 0.0    |
| 72.5°  | 5926.0 | 5825.3 | 3935.6 | 2723.9 | 1316.0 | 1.3    | 0.0    | 0.0    | 0.0    | 0.0    |
| 75°    | 5016.3 | 5002.5 | 3399.6 | 2298.7 | 1128.6 | 1.3    | 0.0    | 0.0    | 0.0    | 0.0    |
| 77.5°  | 4036.2 | 3973.3 | 2657.3 | 1801.7 | 909.7  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 80°    | 2248.3 | 2341.5 | 1555.1 | 1059.4 | 572.5  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 82.5°  | 607.7  | 568.7  | 339.7  | 230.2  | 109.5  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°    | 78.0   | 85.6   | 39.0   | 31.5   | 7.5    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 87.5°  | 40.3   | 47.8   | 12.6   | 10.1   | 2.5    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 90°    | 7.5    | 8.8    | 3.8    | 1.3    | 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: P522127

CATALOG NUMBER: CST-CA10-310-722-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: SP1-2104-215-4

Luminaire Tested: CST-CA10-630-722-U-T3

Test Date: 04/20/2021

### Test Information

Test Method: LM-79-08  
 Report Number: SP1-2104-215-4  
 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-CA10-630-722-U-T3**  
 Description: STREETWORKS HIGH MAST LUMINAIRE

### Spectral Parameters

|                           |         |           |      |      |       |
|---------------------------|---------|-----------|------|------|-------|
| CCT (K):                  | 2174    | CRI (Ra): | 72.8 |      |       |
| CIE u':                   | 0.2919  | R1:       | 70.2 | R9:  | -23.3 |
| CIE v':                   | 0.5354  | R2:       | 86.8 | R10: | 71.8  |
| Duv:                      | -0.0007 | R3:       | 92.8 | R11: | 63.6  |
| CIE x:                    | 0.5067  | R4:       | 66.8 | R12: | 66.0  |
| CIE y:                    | 0.4131  | R5:       | 69.1 | R13: | 73.5  |
| CIE z:                    | 0.0802  | R6:       | 84.7 | R14: | 96.9  |
| Peak Wavelength (nm):     | 608     | R7:       | 73.2 |      |       |
| Dominant Wavelength (nm): | 587     | R8:       | 39.0 |      |       |
| Purity:                   | 76.7    |           |      |      |       |
| Rf:                       | 75.7    |           |      |      |       |
| Rg:                       | 96.7    |           |      |      |       |



### Test Conditions

Stabilization Time: 79M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.7/32%  
 Sphere Temperature (°C): 24.8

REPORT NUMBER: SP1-2104-215-4

| 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: SP1-2104-215-4

**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 2200K 7-step quadrangle

REPORT NUMBER: SP1-2104-215-4

### 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       | 23398            | 0.0              | 490       | 137099           | 19.5             | 620       | 2038916          | 530.6            | 750       | 99721            | 0.0              | 880       | 32326            | 0.0              |
| 365       | 18626            | 0.0              | 495       | 174286           | 31.6             | 625       | 1946743          | 429.5            | 755       | 91432            | 0.0              | 885       | 29783            | 0.0              |
| 370       | 21702            | 0.0              | 500       | 232711           | 51.3             | 630       | 1814508          | 328.4            | 760       | 83300            | 0.0              | 890       | 12135            | 0.0              |
| 375       | 22606            | 0.0              | 505       | 303528           | 84.9             | 635       | 1681061          | 252.6            | 765       | 72172            | 0.0              | 895       | 22953            | 0.0              |
| 380       | 25296            | 0.0              | 510       | 374456           | 128.6            | 640       | 1557170          | 186.1            | 770       | 65008            | 0.0              | 900       | 27214            | 0.0              |
| 385       | 27032            | 0.0              | 515       | 445274           | 184.5            | 645       | 1430182          | 137.7            | 775       | 56809            | 0.0              | 905       | 17038            | 0.0              |
| 390       | 22156            | 0.0              | 520       | 510296           | 247.5            | 650       | 1300435          | 95.0             | 780       | 49368            | 0.0              | 910       | 6896             | 0.0              |
| 395       | 20190            | 0.0              | 525       | 566771           | 304.3            | 655       | 1165554          | 66.9             | 785       | 51733            | 0.0              | 915       | 17142            | 0.0              |
| 400       | 18423            | 0.0              | 530       | 617892           | 363.8            | 660       | 1044122          | 43.5             | 790       | 41796            | 0.0              | 920       | 7675             | 0.0              |
| 405       | 16139            | 0.0              | 535       | 664903           | 412.3            | 665       | 932131           | 29.6             | 795       | 42601            | 0.0              | 925       | 21587            | 0.0              |
| 410       | 19812            | 0.0              | 540       | 711603           | 463.7            | 670       | 808971           | 17.7             | 800       | 36382            | 0.0              | 930       | 32992            | 0.0              |
| 415       | 29121            | 0.1              | 545       | 768835           | 511.7            | 675       | 701208           | 11.7             | 805       | 41419            | 0.0              | 935       | 35464            | 0.0              |
| 420       | 46007            | 0.1              | 550       | 841179           | 571.6            | 680       | 610741           | 7.1              | 810       | 35865            | 0.0              | 940       | 34460            | 0.0              |
| 425       | 76329            | 0.4              | 555       | 932641           | 637.0            | 685       | 533825           | 4.6              | 815       | 39722            | 0.0              | 945       | 46305            | 0.0              |
| 430       | 117696           | 0.9              | 560       | 1040487          | 707.1            | 690       | 459427           | 2.6              | 820       | 37236            | 0.0              | 950       | 38353            | 0.0              |
| 435       | 166890           | 2.0              | 565       | 1164360          | 774.2            | 695       | 399973           | 1.7              | 825       | 31566            | 0.0              | 955       | 30772            | 0.0              |
| 440       | 227762           | 3.6              | 570       | 1307677          | 850.3            | 700       | 347460           | 1.0              | 830       | 42647            | 0.0              | 960       | 32413            | 0.0              |
| 445       | 315427           | 6.6              | 575       | 1470810          | 915.2            | 705       | 302187           | 0.6              | 835       | 41433            | 0.0              | 965       | 35310            | 0.0              |
| 450       | 409560           | 10.6             | 580       | 1637734          | 973.2            | 710       | 262909           | 0.4              | 840       | 24213            | 0.0              | 970       | 28048            | 0.0              |
| 455       | 381103           | 12.8             | 585       | 1807622          | 1004.4           | 715       | 236689           | 0.3              | 845       | 31358            | 0.0              | 975       | 26258            | 0.0              |
| 460       | 269221           | 11.0             | 590       | 1958195          | 1012.4           | 720       | 209675           | 0.1              | 850       | 30957            | 0.0              | 980       | 31067            | 0.0              |
| 465       | 203513           | 10.5             | 595       | 2055425          | 974.3            | 725       | 184999           | 0.1              | 855       | 38865            | 0.0              | 985       | 40288            | 0.0              |
| 470       | 163989           | 10.2             | 600       | 2141598          | 923.0            | 730       | 160261           | 0.1              | 860       | 23238            | 0.0              | 990       | 29366            | 0.0              |
| 475       | 129159           | 10.1             | 605       | 2185430          | 846.3            | 735       | 140736           | 0.0              | 865       | 32686            | 0.0              | 995       | 54854            | 0.0              |
| 480       | 115440           | 11.0             | 610       | 2170089          | 745.5            | 740       | 125207           | 0.0              | 870       | 41855            | 0.0              | 1000      | 50994            | 0.0              |
| 485       | 120959           | 14.3             | 615       | 2123505          | 641.1            | 745       | 110736           | 0.0              | 875       | 35838            | 0.0              |           |                  |                  |

REPORT NUMBER: SP1-2104-215-4

### Scotopic Flux vs. Wavelength



Scotopic Lumens: 72942.9

S/P: 0.88

| 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       | 23398            | 0.0              | 490       | 137099           | 211.1            | 620       | 2038916          | 25.5             | 750       | 99721            | 0.0              | 880       | 32326            | 0.0              |
| 365       | 18626            | 0.0              | 495       | 174286           | 281.7            | 625       | 1946743          | 16.4             | 755       | 91432            | 0.0              | 885       | 29783            | 0.0              |
| 370       | 21702            | 0.0              | 500       | 232711           | 389.3            | 630       | 1814508          | 10.3             | 760       | 83300            | 0.0              | 890       | 12135            | 0.0              |
| 375       | 22606            | 0.0              | 505       | 303528           | 516.0            | 635       | 1681061          | 6.4              | 765       | 72172            | 0.0              | 895       | 22953            | 0.0              |
| 380       | 25296            | 0.0              | 510       | 374456           | 634.7            | 640       | 1557170          | 4.0              | 770       | 65008            | 0.0              | 900       | 27214            | 0.0              |
| 385       | 27032            | 0.1              | 515       | 445274           | 738.0            | 645       | 1430182          | 2.4              | 775       | 56809            | 0.0              | 905       | 17038            | 0.0              |
| 390       | 22156            | 0.1              | 520       | 510296           | 811.1            | 650       | 1300435          | 1.5              | 780       | 49368            | 0.0              | 910       | 6896             | 0.0              |
| 395       | 20190            | 0.2              | 525       | 566771           | 847.9            | 655       | 1165554          | 0.9              | 785       | 51733            | 0.0              | 915       | 17142            | 0.0              |
| 400       | 18423            | 0.3              | 530       | 617892           | 851.9            | 660       | 1044122          | 0.6              | 790       | 41796            | 0.0              | 920       | 7675             | 0.0              |
| 405       | 16139            | 0.5              | 535       | 664903           | 828.5            | 665       | 932131           | 0.3              | 795       | 42601            | 0.0              | 925       | 21587            | 0.0              |
| 410       | 19812            | 1.2              | 540       | 711603           | 786.3            | 670       | 808971           | 0.2              | 800       | 36382            | 0.0              | 930       | 32992            | 0.0              |
| 415       | 29121            | 3.0              | 545       | 768835           | 737.2            | 675       | 701208           | 0.1              | 805       | 41419            | 0.0              | 935       | 35464            | 0.0              |
| 420       | 46007            | 7.6              | 550       | 841179           | 687.8            | 680       | 610741           | 0.1              | 810       | 35865            | 0.0              | 940       | 34460            | 0.0              |
| 425       | 76329            | 18.7             | 555       | 932641           | 637.4            | 685       | 533825           | 0.0              | 815       | 39722            | 0.0              | 945       | 46305            | 0.0              |
| 430       | 117696           | 40.1             | 560       | 1040487          | 581.6            | 690       | 459427           | 0.0              | 820       | 37236            | 0.0              | 950       | 38353            | 0.0              |
| 435       | 166890           | 74.6             | 565       | 1164360          | 522.4            | 695       | 399973           | 0.0              | 825       | 31566            | 0.0              | 955       | 30772            | 0.0              |
| 440       | 227762           | 127.3            | 570       | 1307677          | 461.5            | 700       | 347460           | 0.0              | 830       | 42647            | 0.0              | 960       | 32413            | 0.0              |
| 445       | 315427           | 211.2            | 575       | 1470810          | 400.6            | 705       | 302187           | 0.0              | 835       | 41433            | 0.0              | 965       | 35310            | 0.0              |
| 450       | 409560           | 317.4            | 580       | 1637734          | 337.4            | 710       | 262909           | 0.0              | 840       | 24213            | 0.0              | 970       | 28048            | 0.0              |
| 455       | 381103           | 333.0            | 585       | 1807622          | 276.3            | 715       | 236689           | 0.0              | 845       | 31358            | 0.0              | 975       | 26258            | 0.0              |
| 460       | 269221           | 260.0            | 590       | 1958195          | 218.0            | 720       | 209675           | 0.0              | 850       | 30957            | 0.0              | 980       | 31067            | 0.0              |
| 465       | 203513           | 214.9            | 595       | 2055425          | 163.9            | 725       | 184999           | 0.0              | 855       | 38865            | 0.0              | 985       | 40288            | 0.0              |
| 470       | 163989           | 188.8            | 600       | 2141598          | 120.7            | 730       | 160261           | 0.0              | 860       | 23238            | 0.0              | 990       | 29366            | 0.0              |
| 475       | 129159           | 161.5            | 605       | 2185430          | 85.9             | 735       | 140736           | 0.0              | 865       | 32686            | 0.0              | 995       | 54854            | 0.0              |
| 480       | 115440           | 155.9            | 610       | 2170089          | 58.8             | 740       | 125207           | 0.0              | 870       | 41855            | 0.0              | 1000      | 50994            | 0.0              |
| 485       | 120959           | 175.3            | 615       | 2123505          | 39.3             | 745       | 110736           | 0.0              | 875       | 35838            | 0.0              |           |                  |                  |



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### Melanopic Flux vs. Wavelength



**Melanopic Lumens: 23955.7**    **M/P: 0.29**

| 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       | 23398            | 0.0              | 490       | 137099           | 114.1            | 620       | 2038916          | 1.6              | 750       | 99721            | 0.0              | 880       | 32326            | 0.0              |
| 365       | 18626            | 0.0              | 495       | 174286           | 143.9            | 625       | 1946743          | 1.0              | 755       | 91432            | 0.0              | 885       | 29783            | 0.0              |
| 370       | 21702            | 0.0              | 500       | 232711           | 187.1            | 630       | 1814508          | 0.6              | 760       | 83300            | 0.0              | 890       | 12135            | 0.0              |
| 375       | 22606            | 0.0              | 505       | 303528           | 232.9            | 635       | 1681061          | 0.4              | 765       | 72172            | 0.0              | 895       | 22953            | 0.0              |
| 380       | 25296            | 0.0              | 510       | 374456           | 268.9            | 640       | 1557170          | 0.2              | 770       | 65008            | 0.0              | 900       | 27214            | 0.0              |
| 385       | 27032            | 0.0              | 515       | 445274           | 290.9            | 645       | 1430182          | 0.2              | 775       | 56809            | 0.0              | 905       | 17038            | 0.0              |
| 390       | 22156            | 0.1              | 520       | 510296           | 297.1            | 650       | 1300435          | 0.1              | 780       | 49368            | 0.0              | 910       | 6896             | 0.0              |
| 395       | 20190            | 0.1              | 525       | 566771           | 287.4            | 655       | 1165554          | 0.1              | 785       | 51733            | 0.0              | 915       | 17142            | 0.0              |
| 400       | 18423            | 0.2              | 530       | 617892           | 267.0            | 660       | 1044122          | 0.0              | 790       | 41796            | 0.0              | 920       | 7675             | 0.0              |
| 405       | 16139            | 0.3              | 535       | 664903           | 239.3            | 665       | 932131           | 0.0              | 795       | 42601            | 0.0              | 925       | 21587            | 0.0              |
| 410       | 19812            | 0.8              | 540       | 711603           | 208.3            | 670       | 808971           | 0.0              | 800       | 36382            | 0.0              | 930       | 32992            | 0.0              |
| 415       | 29121            | 1.9              | 545       | 768835           | 178.6            | 675       | 701208           | 0.0              | 805       | 41419            | 0.0              | 935       | 35464            | 0.0              |
| 420       | 46007            | 5.3              | 550       | 841179           | 151.0            | 680       | 610741           | 0.0              | 810       | 35865            | 0.0              | 940       | 34460            | 0.0              |
| 425       | 76329            | 11.9             | 555       | 932641           | 125.8            | 685       | 533825           | 0.0              | 815       | 39722            | 0.0              | 945       | 46305            | 0.0              |
| 430       | 117696           | 24.9             | 560       | 1040487          | 102.6            | 690       | 459427           | 0.0              | 820       | 37236            | 0.0              | 950       | 38353            | 0.0              |
| 435       | 166890           | 44.5             | 565       | 1164360          | 81.7             | 695       | 399973           | 0.0              | 825       | 31566            | 0.0              | 955       | 30772            | 0.0              |
| 440       | 227762           | 76.1             | 570       | 1307677          | 63.9             | 700       | 347460           | 0.0              | 830       | 42647            | 0.0              | 960       | 32413            | 0.0              |
| 445       | 315427           | 124.4            | 575       | 1470810          | 49.0             | 705       | 302187           | 0.0              | 835       | 41433            | 0.0              | 965       | 35310            | 0.0              |
| 450       | 409560           | 188.7            | 580       | 1637734          | 36.6             | 710       | 262909           | 0.0              | 840       | 24213            | 0.0              | 970       | 28048            | 0.0              |
| 455       | 381103           | 199.7            | 585       | 1807622          | 26.9             | 715       | 236689           | 0.0              | 845       | 31358            | 0.0              | 975       | 26258            | 0.0              |
| 460       | 269221           | 158.6            | 590       | 1958195          | 19.2             | 720       | 209675           | 0.0              | 850       | 30957            | 0.0              | 980       | 31067            | 0.0              |
| 465       | 203513           | 133.0            | 595       | 2055425          | 13.2             | 725       | 184999           | 0.0              | 855       | 38865            | 0.0              | 985       | 40288            | 0.0              |
| 470       | 163989           | 117.4            | 600       | 2141598          | 9.0              | 730       | 160261           | 0.0              | 860       | 23238            | 0.0              | 990       | 29366            | 0.0              |
| 475       | 129159           | 98.6             | 605       | 2185430          | 6.0              | 735       | 140736           | 0.0              | 865       | 32686            | 0.0              | 995       | 54854            | 0.0              |
| 480       | 115440           | 92.8             | 610       | 2170089          | 3.9              | 740       | 125207           | 0.0              | 870       | 41855            | 0.0              | 1000      | 50994            | 0.0              |
| 485       | 120959           | 99.7             | 615       | 2123505          | 2.5              | 745       | 110736           | 0.0              | 875       | 35838            | 0.0              |           |                  |                  |

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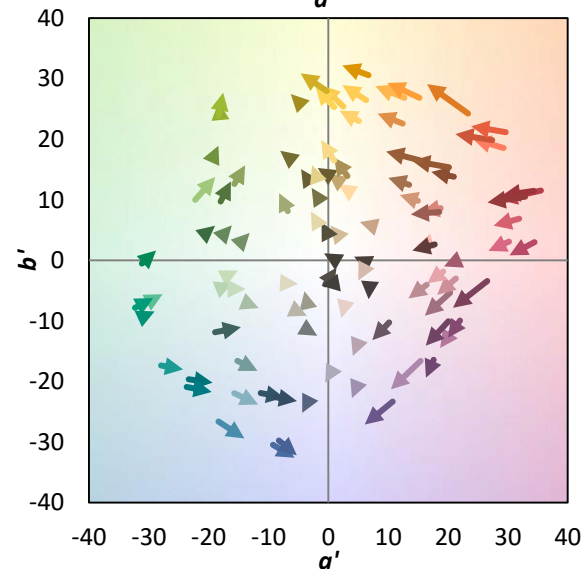
TM-30-18

### Summary

$R_f = 75.7$   
 $R_g = 96.7$   
 CIE  $R_a = 72.8$   
 $R_g = -23.3$

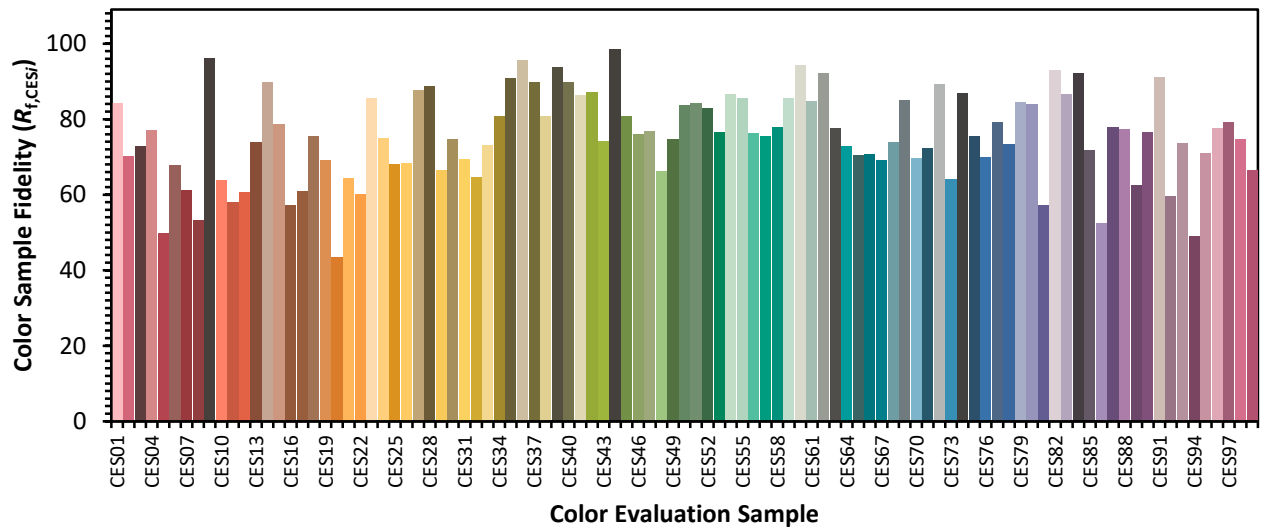


### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 68 | CES51 = 84 | CES76 = 70 |
| CES02 = 65 | CES27 = 88 | CES52 = 83 | CES77 = 79 |
| CES03 = 32 | CES28 = 89 | CES53 = 77 | CES78 = 73 |
| CES04 = 72 | CES29 = 66 | CES54 = 87 | CES79 = 85 |
| CES05 = 52 | CES30 = 75 | CES55 = 85 | CES80 = 84 |
| CES06 = 53 | CES31 = 69 | CES56 = 76 | CES81 = 57 |
| CES07 = 44 | CES32 = 65 | CES57 = 75 | CES82 = 93 |
| CES08 = 43 | CES33 = 73 | CES58 = 78 | CES83 = 87 |
| CES09 = 29 | CES34 = 81 | CES59 = 86 | CES84 = 92 |
| CES10 = 79 | CES35 = 91 | CES60 = 94 | CES85 = 72 |
| CES11 = 62 | CES36 = 96 | CES61 = 85 | CES86 = 52 |
| CES12 = 68 | CES37 = 90 | CES62 = 92 | CES87 = 78 |
| CES13 = 45 | CES38 = 81 | CES63 = 78 | CES88 = 77 |
| CES14 = 75 | CES39 = 94 | CES64 = 73 | CES89 = 62 |
| CES15 = 72 | CES40 = 90 | CES65 = 71 | CES90 = 77 |
| CES16 = 49 | CES41 = 86 | CES66 = 71 | CES91 = 91 |
| CES17 = 51 | CES42 = 87 | CES67 = 69 | CES92 = 60 |
| CES18 = 57 | CES43 = 74 | CES68 = 74 | CES93 = 74 |
| CES19 = 74 | CES44 = 99 | CES69 = 85 | CES94 = 49 |
| CES20 = 69 | CES45 = 81 | CES70 = 70 | CES95 = 71 |
| CES21 = 89 | CES46 = 76 | CES71 = 72 | CES96 = 77 |
| CES22 = 81 | CES47 = 77 | CES72 = 89 | CES97 = 79 |
| CES23 = 92 | CES48 = 66 | CES73 = 64 | CES98 = 75 |
| CES24 = 92 | CES49 = 75 | CES74 = 87 | CES99 = 67 |
| CES25 = 74 | CES50 = 84 | CES75 = 75 |            |



**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**



(END OF REPORT)