

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: P522239

Luminaire Tested: **CST-CA8-480-727-U-T5R-HSS-HM-EX90**

Issue Date: 5/10/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P522239  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1808-894-5)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/10/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: CST-CA8-480-727-U-T5R-HSS-HM-EX90  
Description: CELESTEON HIGH MAST LUMINAIRE  
Light Source: (8) 2700K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 50956 lumens  
Efficiency: N/A  
Efficacy: 106.0 lumens/watt  
Luminous Opening: Circular (Dia: 2.08' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B5 - U2 - G5

Input Watts (W): 480.8  
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

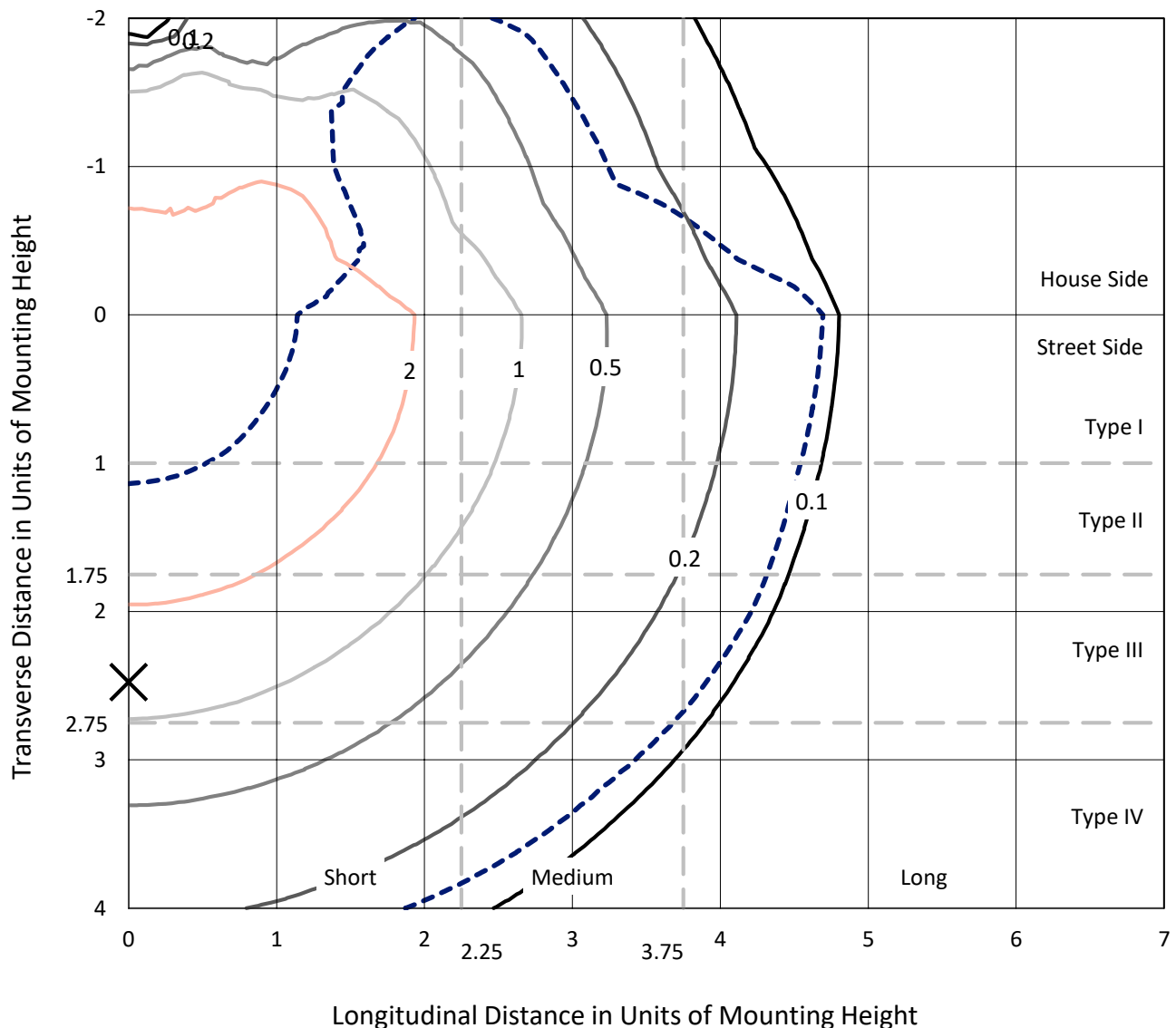


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## Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd  
 - - - 1/2 Max cd

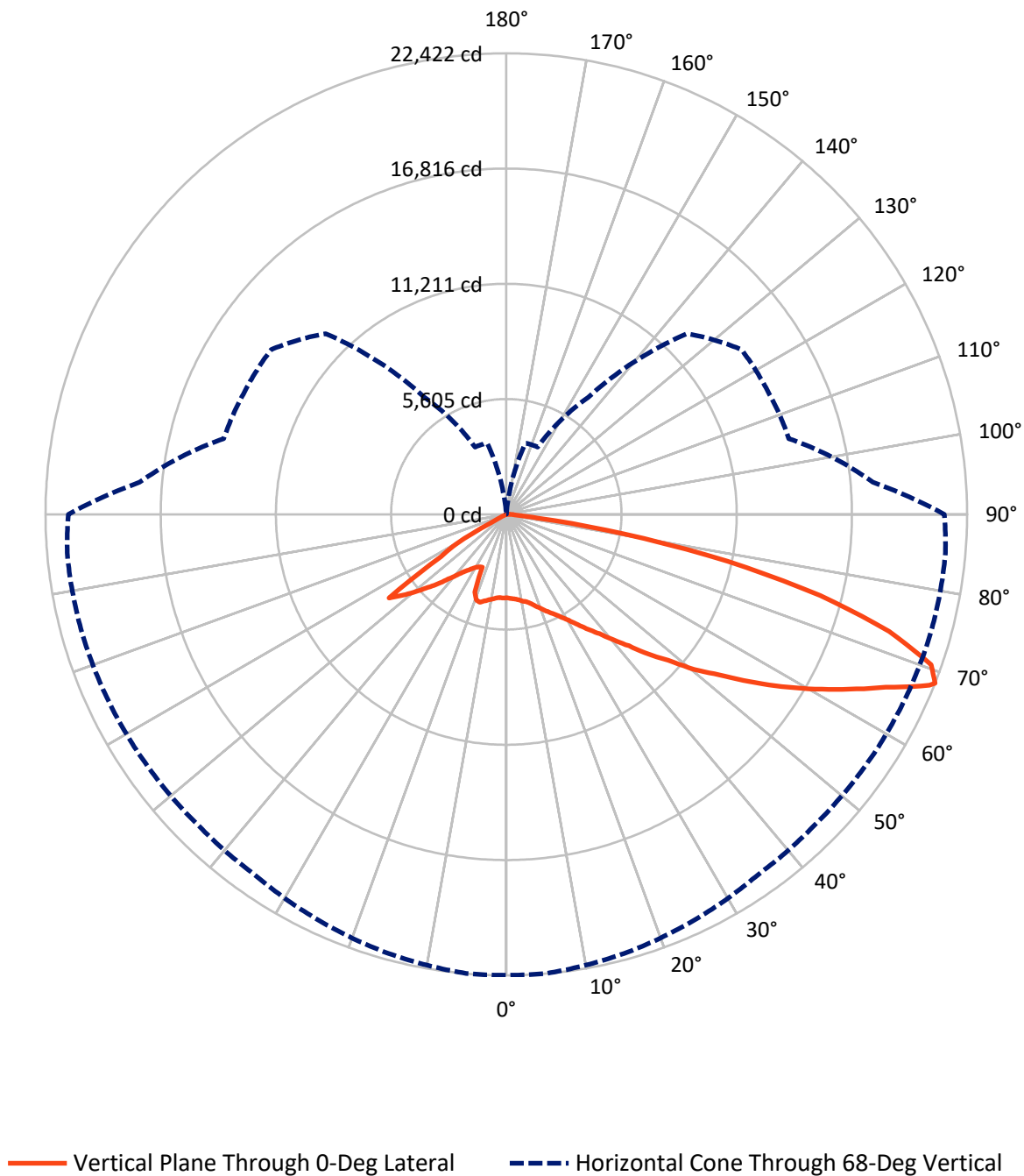


Based on 30 foot mounting height. Maximum calculated value = 4.5 fc  
 Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 17933.0  | 3.1    | 17936.1 |
|                    | % Fixture | 35.2     | 0.0    | 35.2    |
| <b>Street Side</b> | Lumens    | 33006.4  | 13.4   | 33019.9 |
|                    | % Fixture | 64.8     | 0.0    | 64.8    |
| <b>Total</b>       | Lumens    | 50939.5  | 16.5   | 50956.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 392.3   | 0.8       |
| 10°-20°   | 1256.9  | 2.5       |
| 20°-30°   | 2243.9  | 4.4       |
| 30°-40°   | 3650.3  | 7.2       |
| 40°-50°   | 6233.6  | 12.2      |
| 50°-60°   | 10401.1 | 20.4      |
| 60°-70°   | 14470.0 | 28.4      |
| 70°-80°   | 11216.5 | 22.0      |
| 80°-90°   | 1074.8  | 2.1       |
| 90°-100°  | 13.0    | 0.0       |
| 100°-110° | 1.1     | 0.0       |
| 110°-120° | 0.6     | 0.0       |
| 120°-130° | 0.4     | 0.0       |
| 130°-140° | 0.4     | 0.0       |
| 140°-150° | 0.4     | 0.0       |
| 150°-160° | 0.3     | 0.0       |
| 160°-170° | 0.2     | 0.0       |
| 170°-180° | 0.1     | 0.0       |
| 0°-90°    | 50939.5 | 100.0     |
| 0°-180°   | 50956.0 | 100.0     |

**Coefficient of Utilization**



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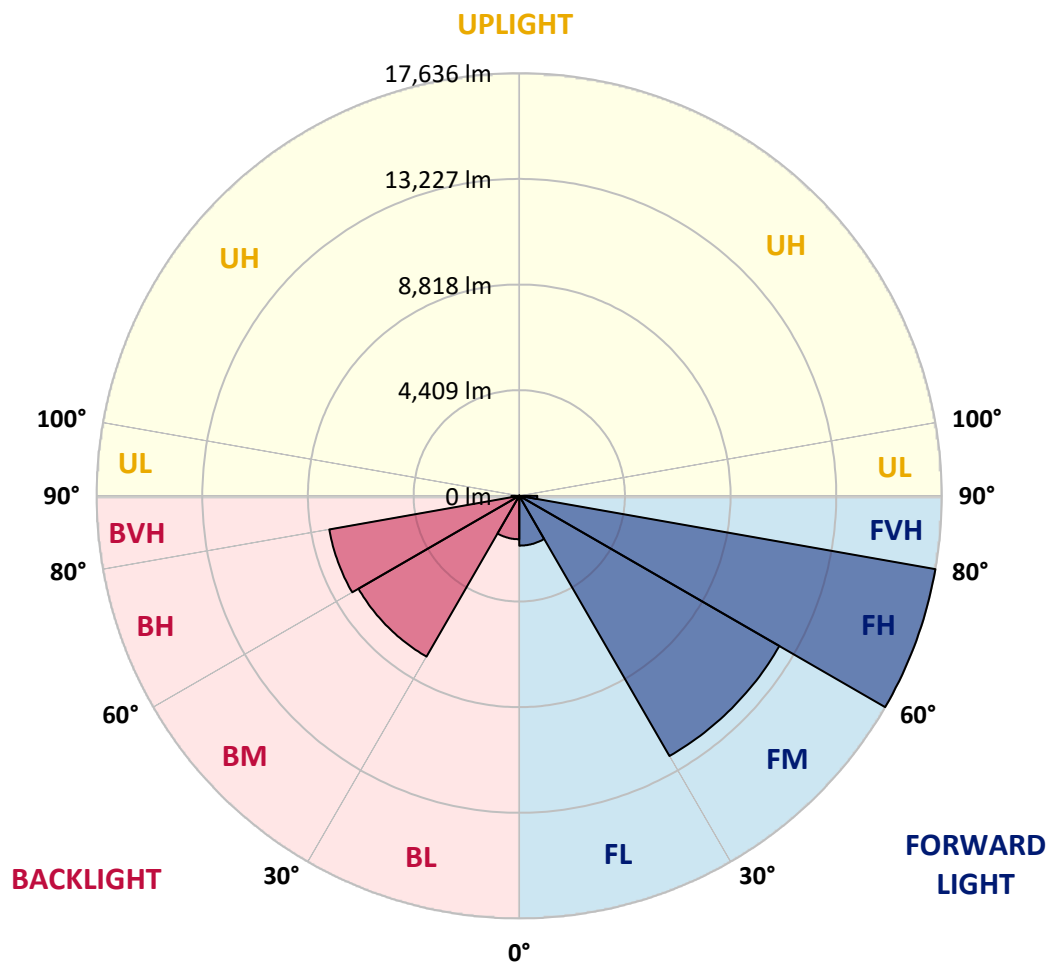
CATALOG NUMBER: CST-CA8-480-727-U-T5R-HSS-HM-EX90

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

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |       |        |
|------|-------------|---------|-----------|-------------------------|-------|--------|
|      |             |         |           | B                       | U     | G      |
| FL   | (0°-30°)    | 2079.7  | 4.1       |                         |       |        |
| FM   | (30°-60°)   | 12538.7 | 24.6      |                         |       |        |
| FH   | (60°-80°)   | 17636.0 | 34.6      |                         |       | G5     |
| FVH  | (80°-90°)   | 751.9   | 1.5       |                         |       | G5     |
| BL   | (0°-30°)    | 1813.4  | 3.6       | B3/2500                 |       |        |
| BM   | (30°-60°)   | 7746.3  | 15.2      | B4/8500                 |       |        |
| BH   | (60°-80°)   | 8050.5  | 15.8      | B5                      |       | G5     |
| BVH  | (80°-90°)   | 322.9   | 0.6       |                         |       | G3/500 |
| UL   | (90°-100°)  | 13.0    | 0.0       |                         | U2/50 |        |
| UH   | (100°-180°) | 3.5     | 0.0       |                         | U1/10 |        |

**BUG Rating: B5-U2-G5**

Type IV Short



REPORT NUMBER: P522239

CATALOG NUMBER: CST-CA8-480-727-U-T5R-HSS-HM-EX90

**CANDELA DISTRIBUTION (FULL):**

|        | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 65°     | 75°     | 85°     | 90°     |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°     | 4055.2  | 4055.2  | 4055.2  | 4055.2  | 4055.2  | 4055.2  | 4055.2  | 4055.2  | 4055.2  | 4055.2  | 4055.2  |
| 2.5°   | 4101.3  | 4095.5  | 4091.7  | 4116.6  | 4045.7  | 4074.4  | 4055.2  | 4080.2  | 4074.4  | 4085.9  | 4087.8  |
| 5°     | 4130.0  | 4120.4  | 4107.0  | 4133.9  | 4091.7  | 4110.8  | 4089.8  | 4101.3  | 4064.8  | 4095.5  | 4099.3  |
| 7.5°   | 4195.2  | 4168.4  | 4166.4  | 4174.1  | 4145.4  | 4158.8  | 4122.3  | 4135.8  | 4116.6  | 4105.1  | 4116.6  |
| 10°    | 4293.0  | 4270.0  | 4245.1  | 4260.4  | 4212.5  | 4229.7  | 4191.4  | 4202.9  | 4193.3  | 4168.4  | 4191.4  |
| 12.5°  | 4360.1  | 4367.8  | 4350.5  | 4362.0  | 4319.8  | 4304.5  | 4291.1  | 4289.2  | 4283.4  | 4247.0  | 4241.2  |
| 15°    | 4509.7  | 4513.5  | 4482.8  | 4490.5  | 4480.9  | 4473.2  | 4454.1  | 4438.7  | 4408.0  | 4385.0  | 4369.7  |
| 17.5°  | 4705.2  | 4684.1  | 4655.4  | 4663.0  | 4689.9  | 4655.4  | 4643.9  | 4615.1  | 4571.0  | 4532.7  | 4525.0  |
| 20°    | 4910.4  | 4897.0  | 4870.1  | 4885.5  | 4883.5  | 4860.5  | 4866.3  | 4818.4  | 4755.1  | 4722.5  | 4697.6  |
| 22.5°  | 5138.6  | 5119.4  | 5100.2  | 5129.0  | 5106.0  | 5090.6  | 5084.9  | 5052.3  | 4973.7  | 4937.2  | 4931.5  |
| 25°    | 5366.7  | 5357.1  | 5370.6  | 5361.0  | 5328.4  | 5316.9  | 5324.5  | 5313.0  | 5221.0  | 5176.9  | 5150.1  |
| 27.5°  | 5652.4  | 5629.4  | 5650.5  | 5639.0  | 5604.5  | 5606.4  | 5608.3  | 5610.2  | 5506.7  | 5449.2  | 5410.8  |
| 30°    | 5978.4  | 5970.7  | 5997.5  | 5961.1  | 5928.5  | 5949.6  | 5966.9  | 5928.5  | 5838.4  | 5754.0  | 5740.6  |
| 32.5°  | 6402.1  | 6354.2  | 6384.8  | 6338.8  | 6289.0  | 6338.8  | 6369.5  | 6292.8  | 6220.0  | 6112.6  | 6131.8  |
| 35°    | 6871.9  | 6856.5  | 6856.5  | 6797.1  | 6770.2  | 6848.8  | 6879.5  | 6804.7  | 6691.6  | 6597.7  | 6574.7  |
| 37.5°  | 7370.4  | 7385.7  | 7433.6  | 7408.7  | 7383.8  | 7431.7  | 7500.8  | 7401.1  | 7255.3  | 7155.6  | 7128.8  |
| 40°    | 8031.9  | 8070.2  | 8102.8  | 8070.2  | 8041.5  | 8072.1  | 8150.7  | 8020.4  | 7918.7  | 7865.1  | 7807.5  |
| 42.5°  | 8743.2  | 8808.4  | 8787.3  | 8791.1  | 8816.1  | 8860.2  | 8938.8  | 8819.9  | 8702.9  | 8701.0  | 8616.7  |
| 45°    | 9705.7  | 9705.7  | 9661.6  | 9703.8  | 9700.0  | 9809.3  | 9843.8  | 9778.6  | 9680.8  | 9652.0  | 9579.2  |
| 47.5°  | 10605.0 | 10698.9 | 10681.7 | 10743.0 | 10695.1 | 10787.1 | 10904.1 | 10848.5 | 10735.4 | 10633.7 | 10618.4 |
| 50°    | 11858.9 | 11835.9 | 11812.9 | 11905.0 | 11897.3 | 11960.6 | 12067.9 | 12033.4 | 11876.2 | 11761.2 | 11740.1 |
| 52.5°  | 12961.4 | 13082.2 | 13053.5 | 13191.5 | 13114.8 | 13204.9 | 13333.4 | 13327.6 | 13135.9 | 13022.8 | 12990.2 |
| 55°    | 14353.4 | 14434.0 | 14428.2 | 14570.1 | 14464.6 | 14583.5 | 14690.9 | 14702.4 | 14493.4 | 14332.3 | 14382.2 |
| 57.5°  | 15803.0 | 15870.1 | 15831.7 | 15948.7 | 15845.2 | 16008.1 | 16073.3 | 16031.1 | 15908.4 | 15705.2 | 15780.0 |
| 60°    | 17254.4 | 17311.9 | 17356.0 | 17365.6 | 17306.2 | 17402.1 | 17463.4 | 17499.8 | 17306.2 | 17074.2 | 17164.3 |
| 62.5°  | 18728.9 | 18794.1 | 18755.7 | 18771.1 | 18606.2 | 18736.5 | 18813.2 | 18822.8 | 18600.4 | 18395.3 | 18458.5 |
| 65°    | 20281.9 | 20372.1 | 20234.0 | 20142.0 | 19938.7 | 19936.8 | 20038.4 | 20055.7 | 19898.5 | 19752.8 | 19727.8 |
| 67.5°  | 22205.1 | 22245.3 | 21950.1 | 21641.4 | 21298.2 | 21223.4 | 21294.3 | 21334.6 | 21424.7 | 21420.9 | 21307.7 |
| 68°    | 22421.7 | 22414.1 | 22115.0 | 21746.8 | 21378.7 | 21292.4 | 21326.9 | 21378.7 | 21438.1 | 21449.6 | 21313.5 |
| 70°    | 21929.0 | 21835.0 | 21664.4 | 21200.4 | 20836.1 | 20609.8 | 20489.0 | 20584.9 | 20423.8 | 20425.8 | 20170.7 |
| 72.5°  | 19478.6 | 19467.1 | 19152.6 | 18922.5 | 18598.5 | 18222.7 | 18050.1 | 18048.2 | 18063.6 | 17952.3 | 17689.7 |
| 75°    | 15778.0 | 15793.4 | 15427.2 | 15268.0 | 15168.3 | 15097.4 | 15133.8 | 15246.9 | 15258.4 | 15256.5 | 15164.5 |
| 77.5°  | 11003.8 | 11067.1 | 10969.3 | 10710.4 | 10988.5 | 11226.2 | 11684.5 | 11918.4 | 11843.6 | 12067.9 | 12209.8 |
| 80°    | 5767.5  | 5894.0  | 5897.8  | 6080.0  | 6304.3  | 6521.0  | 6916.0  | 7270.7  | 7009.9  | 6894.9  | 6776.0  |
| 82.5°  | 1516.6  | 1562.7  | 1631.7  | 1526.2  | 1558.8  | 1591.4  | 1898.2  | 1869.4  | 1725.6  | 1802.3  | 1917.4  |
| 85°    | 433.3   | 446.7   | 427.6   | 387.3   | 354.7   | 326.0   | 333.6   | 281.9   | 245.4   | 243.5   | 235.8   |
| 87.5°  | 304.9   | 327.9   | 289.5   | 249.3   | 224.3   | 209.0   | 201.3   | 170.6   | 138.1   | 120.8   | 95.9    |
| 90°    | 141.9   | 140.0   | 120.8   | 94.0    | 82.4    | 78.6    | 78.6    | 61.4    | 34.5    | 21.1    | 19.2    |
| 92.5°  | 59.4    | 61.4    | 49.9    | 40.3    | 34.5    | 26.8    | 21.1    | 13.4    | 7.7     | 3.8     | 1.9     |
| 95°    | 21.1    | 23.0    | 19.2    | 15.3    | 13.4    | 11.5    | 9.6     | 7.7     | 3.8     | 1.9     | 1.9     |
| 97.5°  | 5.8     | 5.8     | 5.8     | 5.8     | 5.8     | 5.8     | 5.8     | 3.8     | 3.8     | 1.9     | 1.9     |
| 100°   | 0.0     | 0.0     | 0.0     | 1.9     | 3.8     | 3.8     | 3.8     | 3.8     | 1.9     | 1.9     | 1.9     |
| 102.5° | 0.0     | 0.0     | 0.0     | 0.0     | 1.9     | 1.9     | 1.9     | 1.9     | 1.9     | 1.9     | 1.9     |
| 105°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 1.9     | 1.9     | 1.9     | 1.9     | 1.9     | 1.9     |
| 107.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 1.9     | 1.9     | 1.9     | 1.9     | 1.9     |



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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 | 1.9 | 1.9 | 1.9 | 1.9 |
| 112.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 1.9 |
| 115°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 |
| 117.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 |
| 120°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 |
| 122.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 |
| 125°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 |
| 127.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 |
| 130°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 |
| 132.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 |
| 135°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 |
| 137.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 1.9 |
| 140°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 1.9 |
| 142.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 1.9 |
| 145°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| 147.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| 150°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| 152.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| 155°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 1.9 |
| 157.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| 160°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| 162.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| 165°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| 167.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| 170°   | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| 172.5° | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| 175°   | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| 177.5° | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| 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°     | 4055.2  | 4055.2  | 4055.2  | 4055.2  | 4055.2  | 4055.2 | 4055.2 | 4055.2 | 4055.2 | 4055.2 |
| 2.5°   | 4084.0  | 4074.4  | 4070.6  | 4022.6  | 4036.1  | 4007.3 | 4074.4 | 4055.2 | 4051.4 | 4078.2 |
| 5°     | 4093.6  | 4049.5  | 4076.3  | 4045.7  | 4053.3  | 4011.1 | 4064.8 | 4041.8 | 4043.7 | 4057.2 |
| 7.5°   | 4099.3  | 4074.4  | 4101.3  | 4047.6  | 4068.7  | 4053.3 | 4091.7 | 4068.7 | 4091.7 | 4103.2 |
| 10°    | 4156.9  | 4145.4  | 4126.2  | 4110.8  | 4126.2  | 4089.8 | 4137.7 | 4133.9 | 4147.3 | 4181.8 |
| 12.5°  | 4235.5  | 4222.1  | 4202.9  | 4176.0  | 4187.5  | 4174.1 | 4210.5 | 4214.4 | 4239.3 | 4256.6 |
| 15°    | 4352.4  | 4335.2  | 4325.6  | 4298.7  | 4302.6  | 4293.0 | 4314.1 | 4317.9 | 4367.8 | 4362.0 |
| 17.5°  | 4517.3  | 4498.2  | 4505.8  | 4480.9  | 4471.3  | 4448.3 | 4410.0 | 4396.5 | 4456.0 | 4473.2 |
| 20°    | 4697.6  | 4676.5  | 4686.1  | 4665.0  | 4486.6  | 4124.3 | 4367.8 | 4534.6 | 4408.0 | 4398.4 |
| 22.5°  | 4902.7  | 4879.7  | 4887.4  | 4854.8  | 4634.3  | 3955.5 | 3441.7 | 3399.5 | 3882.7 | 4078.2 |
| 25°    | 5129.0  | 5098.3  | 5094.5  | 5052.3  | 4327.5  | 3581.6 | 3524.1 | 3449.4 | 3096.6 | 2816.6 |
| 27.5°  | 5408.9  | 5362.9  | 5339.9  | 4703.3  | 4296.8  | 3721.6 | 3635.3 | 3368.8 | 2856.9 | 2874.1 |
| 30°    | 5711.8  | 5644.7  | 5213.3  | 4793.4  | 4521.2  | 3886.5 | 3771.5 | 2952.8 | 2956.6 | 2948.9 |
| 32.5°  | 6057.0  | 5907.4  | 5107.9  | 5069.5  | 4789.6  | 4062.9 | 3131.1 | 3096.6 | 3100.4 | 3111.9 |
| 35°    | 6509.5  | 5483.7  | 5462.6  | 5464.5  | 5117.5  | 3930.6 | 3317.1 | 3284.5 | 3288.3 | 3296.0 |
| 37.5°  | 6605.3  | 5911.3  | 5915.1  | 5871.0  | 5466.4  | 3591.2 | 3543.3 | 3541.4 | 3533.7 | 3526.0 |
| 40°    | 6682.0  | 6450.0  | 6394.4  | 6323.5  | 5067.6  | 3867.3 | 3852.0 | 3840.5 | 3846.2 | 3861.6 |
| 42.5°  | 7282.2  | 7107.7  | 7054.0  | 6969.6  | 5198.0  | 4285.3 | 4235.5 | 4222.1 | 4237.4 | 4229.7 |
| 45°    | 8079.8  | 7934.1  | 7828.6  | 6444.3  | 5742.5  | 4739.7 | 4699.5 | 4682.2 | 4688.0 | 4735.9 |
| 47.5°  | 8923.4  | 8837.2  | 8515.0  | 6962.0  | 6377.2  | 5276.6 | 5236.3 | 5209.5 | 5219.1 | 5207.6 |
| 50°    | 9841.9  | 9763.3  | 7882.3  | 7742.3  | 7078.9  | 5855.7 | 5796.2 | 5786.6 | 5790.5 | 5788.5 |
| 52.5°  | 10838.9 | 9195.7  | 8735.5  | 8589.8  | 7819.0  | 6461.5 | 6440.4 | 6388.7 | 6400.2 | 6388.7 |
| 55°    | 12008.5 | 9686.6  | 9675.1  | 9504.4  | 8651.2  | 7165.2 | 7140.3 | 7067.4 | 6609.2 | 7009.9 |
| 57.5°  | 13118.7 | 10624.2 | 10624.2 | 10459.3 | 9502.5  | 7865.1 | 7824.8 | 7771.1 | 4697.6 | 3788.7 |
| 60°    | 14334.3 | 11563.7 | 11536.8 | 11400.7 | 10323.1 | 8532.3 | 6935.1 | 6919.8 | 2837.7 | 2847.3 |
| 62.5°  | 15385.0 | 12401.6 | 12449.5 | 12322.9 | 11113.1 | 6388.7 | 3213.5 | 3148.3 | 279.9  | 431.4  |
| 65°    | 16562.2 | 13327.6 | 13385.2 | 13254.8 | 11968.2 | 6776.0 | 3487.7 | 3455.1 | 63.3   | 57.5   |
| 67.5°  | 17896.7 | 14251.8 | 14121.4 | 13977.6 | 12468.7 | 6977.3 | 3623.8 | 3595.1 | 17.3   | 11.5   |
| 68°    | 17908.2 | 14232.6 | 14063.9 | 13966.1 | 12420.7 | 6939.0 | 3612.3 | 3585.5 | 17.3   | 11.5   |
| 70°    | 16987.9 | 13515.5 | 13346.8 | 13371.7 | 11826.3 | 6636.0 | 3462.8 | 3412.9 | 17.3   | 11.5   |
| 72.5°  | 14903.7 | 12027.7 | 11837.8 | 11703.6 | 10488.0 | 5899.8 | 3104.2 | 3010.3 | 17.3   | 11.5   |
| 75°    | 12752.4 | 10192.7 | 9878.3  | 9583.0  | 8438.3  | 4827.9 | 2546.3 | 2440.8 | 17.3   | 11.5   |
| 77.5°  | 10050.9 | 7769.2  | 7322.4  | 7128.8  | 6340.7  | 3566.3 | 1892.4 | 1777.4 | 17.3   | 9.6    |
| 80°    | 5554.6  | 4457.9  | 4078.2  | 3959.4  | 3625.7  | 2095.7 | 1085.2 | 1016.2 | 15.3   | 9.6    |
| 82.5°  | 1436.1  | 1077.6  | 939.5   | 906.9   | 851.3   | 496.6  | 264.6  | 251.2  | 13.4   | 7.7    |
| 85°    | 205.2   | 151.5   | 166.8   | 197.5   | 189.8   | 128.5  | 92.0   | 78.6   | 11.5   | 5.8    |
| 87.5°  | 107.4   | 90.1    | 105.5   | 118.9   | 120.8   | 74.8   | 38.3   | 21.1   | 5.8    | 0.0    |
| 90°    | 17.3    | 17.3    | 19.2    | 21.1    | 21.1    | 9.6    | 7.7    | 0.0    | 0.0    | 0.0    |
| 92.5°  | 1.9     | 1.9     | 1.9     | 0.0     | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 95°    | 1.9     | 1.9     | 1.9     | 1.9     | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 97.5°  | 1.9     | 1.9     | 1.9     | 1.9     | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 100°   | 1.9     | 1.9     | 1.9     | 1.9     | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 102.5° | 1.9     | 1.9     | 1.9     | 1.9     | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 105°   | 1.9     | 1.9     | 1.9     | 1.9     | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 107.5° | 1.9     | 3.8     | 1.9     | 1.9     | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



REPORT NUMBER: P522239

CATALOG NUMBER: CST-CA8-480-727-U-T5R-HSS-HM-EX90

**CANDELA DISTRIBUTION (continued):**

|        | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|--------|-----|------|------|------|------|------|------|------|------|------|
| 110°   | 1.9 | 1.9  | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 112.5° | 1.9 | 1.9  | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 115°   | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 117.5° | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 120°   | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 122.5° | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 125°   | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 127.5° | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 130°   | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 132.5° | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 135°   | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 137.5° | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 140°   | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 142.5° | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 145°   | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 147.5° | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 150°   | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 152.5° | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 155°   | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 157.5° | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 160°   | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 162.5° | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 165°   | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 167.5° | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 170°   | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 172.5° | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 175°   | 1.9 | 1.9  | 1.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 177.5° | 1.9 | 1.9  | 1.9  | 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: SP1-2104-215-5

Luminaire Tested: CST-CA6-230-727-U-T4

Test Date: 04/22/2021

### Test Information

Test Method: LM-79-08  
 Report Number: SP1-2104-215-5  
 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-CA6-230-727-U-T4**  
 Description: STREETWORKS HIGH MAST LUMINAIRE

### Spectral Parameters

|                           |         |           |      |      |       |
|---------------------------|---------|-----------|------|------|-------|
| CCT (K):                  | 2613    | CRI (Ra): | 72.6 |      |       |
| CIE u':                   | 0.2668  | R1:       | 69.4 | R9:  | -28.6 |
| CIE v':                   | 0.5272  | R2:       | 84.5 | R10: | 65.5  |
| Duv:                      | -0.0012 | R3:       | 95.0 | R11: | 63.4  |
| CIE x:                    | 0.4648  | R4:       | 67.5 | R12: | 56.9  |
| CIE y:                    | 0.4082  | R5:       | 68.5 | R13: | 72.3  |
| CIE z:                    | 0.1270  | R6:       | 79.7 | R14: | 97.8  |
| Peak Wavelength (nm):     | 603     | R7:       | 75.4 |      |       |
| Dominant Wavelength (nm): | 585     | R8:       | 41.2 |      |       |
| Purity:                   | 62.2    |           |      |      |       |
|                           |         |           |      |      |       |
| Rf:                       | 75.3    |           |      |      |       |
| Rg:                       | 95.8    |           |      |      |       |



### Test Conditions

Stabilization Time: 121M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.5/25%  
 Sphere Temperature (°C): 24.8

REPORT NUMBER: SP1-2104-215-5

| 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: SP1-2104-215-5

**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 2700K 7-step quadrangle

REPORT NUMBER: SP1-2104-215-5

### 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       | 11220            | 0.0              | 490       | 69401            | 9.9              | 620       | 692536           | 180.2            | 750       | 31541            | 0.0              | 880       | 18253            | 0.0              |
| 365       | 10182            | 0.0              | 495       | 90053            | 16.3             | 625       | 651217           | 143.7            | 755       | 28760            | 0.0              | 885       | 21369            | 0.0              |
| 370       | 10420            | 0.0              | 500       | 121940           | 26.9             | 630       | 598624           | 108.3            | 760       | 26534            | 0.0              | 890       | 16745            | 0.0              |
| 375       | 12164            | 0.0              | 505       | 159641           | 44.7             | 635       | 546251           | 82.1             | 765       | 24261            | 0.0              | 895       | 14205            | 0.0              |
| 380       | 12715            | 0.0              | 510       | 197034           | 67.7             | 640       | 499000           | 59.6             | 770       | 21584            | 0.0              | 900       | 14113            | 0.0              |
| 385       | 11387            | 0.0              | 515       | 232805           | 96.4             | 645       | 451749           | 43.5             | 775       | 20805            | 0.0              | 905       | 13457            | 0.0              |
| 390       | 10503            | 0.0              | 520       | 263165           | 127.6            | 650       | 406338           | 29.7             | 780       | 17853            | 0.0              | 910       | 12811            | 0.0              |
| 395       | 8950             | 0.0              | 525       | 288012           | 154.6            | 655       | 360522           | 20.7             | 785       | 17033            | 0.0              | 915       | 17471            | 0.0              |
| 400       | 8271             | 0.0              | 530       | 310825           | 183.0            | 660       | 321663           | 13.4             | 790       | 16986            | 0.0              | 920       | 15483            | 0.0              |
| 405       | 7777             | 0.0              | 535       | 330894           | 205.2            | 665       | 283133           | 9.0              | 795       | 16655            | 0.0              | 925       | 19757            | 0.0              |
| 410       | 9299             | 0.0              | 540       | 349086           | 227.5            | 670       | 244093           | 5.3              | 800       | 15070            | 0.0              | 930       | 16307            | 0.0              |
| 415       | 13971            | 0.0              | 545       | 372506           | 247.9            | 675       | 210996           | 3.5              | 805       | 15366            | 0.0              | 935       | 18687            | 0.0              |
| 420       | 23461            | 0.1              | 550       | 403721           | 274.3            | 680       | 183942           | 2.1              | 810       | 15472            | 0.0              | 940       | 17986            | 0.0              |
| 425       | 41887            | 0.2              | 555       | 442032           | 301.9            | 685       | 158373           | 1.4              | 815       | 17184            | 0.0              | 945       | 15266            | 0.0              |
| 430       | 69840            | 0.6              | 560       | 485515           | 329.9            | 690       | 137120           | 0.8              | 820       | 14166            | 0.0              | 950       | 21027            | 0.0              |
| 435       | 106868           | 1.3              | 565       | 532962           | 354.4            | 695       | 116757           | 0.5              | 825       | 13854            | 0.0              | 955       | 19232            | 0.0              |
| 440       | 164642           | 2.6              | 570       | 582457           | 378.7            | 700       | 102093           | 0.3              | 830       | 14283            | 0.0              | 960       | 11261            | 0.0              |
| 445       | 256049           | 5.3              | 575       | 634550           | 394.8            | 705       | 87819            | 0.2              | 835       | 14112            | 0.0              | 965       | 20156            | 0.0              |
| 450       | 327314           | 8.5              | 580       | 686476           | 407.9            | 710       | 78011            | 0.1              | 840       | 13092            | 0.0              | 970       | 22393            | 0.0              |
| 455       | 265614           | 8.9              | 585       | 730571           | 405.9            | 715       | 70264            | 0.1              | 845       | 12158            | 0.0              | 975       | 20121            | 0.0              |
| 460       | 168394           | 6.9              | 590       | 768228           | 397.2            | 720       | 63584            | 0.0              | 850       | 14790            | 0.0              | 980       | 28091            | 0.0              |
| 465       | 127370           | 6.6              | 595       | 780593           | 370.0            | 725       | 55749            | 0.0              | 855       | 15683            | 0.0              | 985       | 27040            | 0.0              |
| 470       | 94724            | 5.9              | 600       | 791888           | 341.3            | 730       | 48683            | 0.0              | 860       | 19011            | 0.0              | 990       | 20772            | 0.0              |
| 475       | 67810            | 5.3              | 605       | 789088           | 305.6            | 735       | 42520            | 0.0              | 865       | 18194            | 0.0              | 995       | 26800            | 0.0              |
| 480       | 59825            | 5.7              | 610       | 765121           | 262.9            | 740       | 37531            | 0.0              | 870       | 15713            | 0.0              | 1000      | 28539            | 0.0              |
| 485       | 61079            | 7.2              | 615       | 735839           | 222.1            | 745       | 34522            | 0.0              | 875       | 19703            | 0.0              |           |                  |                  |

REPORT NUMBER: SP1-2104-215-5

### Scotopic Flux vs. Wavelength



Scotopic Lumens: 37163.1

S/P: 1.07

| 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       | 11220            | 0.0              | 490       | 69401            | 106.9            | 620       | 692536           | 8.7              | 750       | 31541            | 0.0              | 880       | 18253            | 0.0              |
| 365       | 10182            | 0.0              | 495       | 90053            | 145.6            | 625       | 651217           | 5.5              | 755       | 28760            | 0.0              | 885       | 21369            | 0.0              |
| 370       | 10420            | 0.0              | 500       | 121940           | 204.0            | 630       | 598624           | 3.4              | 760       | 26534            | 0.0              | 890       | 16745            | 0.0              |
| 375       | 12164            | 0.0              | 505       | 159641           | 271.4            | 635       | 546251           | 2.1              | 765       | 24261            | 0.0              | 895       | 14205            | 0.0              |
| 380       | 12715            | 0.0              | 510       | 197034           | 334.0            | 640       | 499000           | 1.3              | 770       | 21584            | 0.0              | 900       | 14113            | 0.0              |
| 385       | 11387            | 0.0              | 515       | 232805           | 385.9            | 645       | 451749           | 0.8              | 775       | 20805            | 0.0              | 905       | 13457            | 0.0              |
| 390       | 10503            | 0.0              | 520       | 263165           | 418.3            | 650       | 406338           | 0.5              | 780       | 17853            | 0.0              | 910       | 12811            | 0.0              |
| 395       | 8950             | 0.1              | 525       | 288012           | 430.9            | 655       | 360522           | 0.3              | 785       | 17033            | 0.0              | 915       | 17471            | 0.0              |
| 400       | 8271             | 0.1              | 530       | 310825           | 428.5            | 660       | 321663           | 0.2              | 790       | 16986            | 0.0              | 920       | 15483            | 0.0              |
| 405       | 7777             | 0.2              | 535       | 330894           | 412.3            | 665       | 283133           | 0.1              | 795       | 16655            | 0.0              | 925       | 19757            | 0.0              |
| 410       | 9299             | 0.6              | 540       | 349086           | 385.7            | 670       | 244093           | 0.1              | 800       | 15070            | 0.0              | 930       | 16307            | 0.0              |
| 415       | 13971            | 1.4              | 545       | 372506           | 357.2            | 675       | 210996           | 0.0              | 805       | 15366            | 0.0              | 935       | 18687            | 0.0              |
| 420       | 23461            | 3.9              | 550       | 403721           | 330.1            | 680       | 183942           | 0.0              | 810       | 15472            | 0.0              | 940       | 17986            | 0.0              |
| 425       | 41887            | 10.2             | 555       | 442032           | 302.1            | 685       | 158373           | 0.0              | 815       | 17184            | 0.0              | 945       | 15266            | 0.0              |
| 430       | 69840            | 23.8             | 560       | 485515           | 271.4            | 690       | 137120           | 0.0              | 820       | 14166            | 0.0              | 950       | 21027            | 0.0              |
| 435       | 106868           | 47.8             | 565       | 532962           | 239.1            | 695       | 116757           | 0.0              | 825       | 13854            | 0.0              | 955       | 19232            | 0.0              |
| 440       | 164642           | 92.0             | 570       | 582457           | 205.6            | 700       | 102093           | 0.0              | 830       | 14283            | 0.0              | 960       | 11261            | 0.0              |
| 445       | 256049           | 171.5            | 575       | 634550           | 172.8            | 705       | 87819            | 0.0              | 835       | 14112            | 0.0              | 965       | 20156            | 0.0              |
| 450       | 327314           | 253.7            | 580       | 686476           | 141.4            | 710       | 78011            | 0.0              | 840       | 13092            | 0.0              | 970       | 22393            | 0.0              |
| 455       | 265614           | 232.1            | 585       | 730571           | 111.7            | 715       | 70264            | 0.0              | 845       | 12158            | 0.0              | 975       | 20121            | 0.0              |
| 460       | 168394           | 162.6            | 590       | 768228           | 85.5             | 720       | 63584            | 0.0              | 850       | 14790            | 0.0              | 980       | 28091            | 0.0              |
| 465       | 127370           | 134.5            | 595       | 780593           | 62.2             | 725       | 55749            | 0.0              | 855       | 15683            | 0.0              | 985       | 27040            | 0.0              |
| 470       | 94724            | 109.1            | 600       | 791888           | 44.6             | 730       | 48683            | 0.0              | 860       | 19011            | 0.0              | 990       | 20772            | 0.0              |
| 475       | 67810            | 84.8             | 605       | 789088           | 31.0             | 735       | 42520            | 0.0              | 865       | 18194            | 0.0              | 995       | 26800            | 0.0              |
| 480       | 59825            | 80.8             | 610       | 765121           | 20.7             | 740       | 37531            | 0.0              | 870       | 15713            | 0.0              | 1000      | 28539            | 0.0              |
| 485       | 61079            | 88.5             | 615       | 735839           | 13.6             | 745       | 34522            | 0.0              | 875       | 19703            | 0.0              |           |                  |                  |



REPORT NUMBER: SP1-2104-215-5

### Melanopic Flux vs. Wavelength


**Melanopic Lumens: 13012.4      M/P: 0.38**

| 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       | 11220            | 0.0              | 490       | 69401            | 57.8             | 620       | 692536           | 0.5              | 750       | 31541            | 0.0              | 880       | 18253            | 0.0              |
| 365       | 10182            | 0.0              | 495       | 90053            | 74.3             | 625       | 651217           | 0.3              | 755       | 28760            | 0.0              | 885       | 21369            | 0.0              |
| 370       | 10420            | 0.0              | 500       | 121940           | 98.0             | 630       | 598624           | 0.2              | 760       | 26534            | 0.0              | 890       | 16745            | 0.0              |
| 375       | 12164            | 0.0              | 505       | 159641           | 122.5            | 635       | 546251           | 0.1              | 765       | 24261            | 0.0              | 895       | 14205            | 0.0              |
| 380       | 12715            | 0.0              | 510       | 197034           | 141.5            | 640       | 499000           | 0.1              | 770       | 21584            | 0.0              | 900       | 14113            | 0.0              |
| 385       | 11387            | 0.0              | 515       | 232805           | 152.1            | 645       | 451749           | 0.0              | 775       | 20805            | 0.0              | 905       | 13457            | 0.0              |
| 390       | 10503            | 0.0              | 520       | 263165           | 153.2            | 650       | 406338           | 0.0              | 780       | 17853            | 0.0              | 910       | 12811            | 0.0              |
| 395       | 8950             | 0.0              | 525       | 288012           | 146.1            | 655       | 360522           | 0.0              | 785       | 17033            | 0.0              | 915       | 17471            | 0.0              |
| 400       | 8271             | 0.1              | 530       | 310825           | 134.3            | 660       | 321663           | 0.0              | 790       | 16986            | 0.0              | 920       | 15483            | 0.0              |
| 405       | 7777             | 0.1              | 535       | 330894           | 119.1            | 665       | 283133           | 0.0              | 795       | 16655            | 0.0              | 925       | 19757            | 0.0              |
| 410       | 9299             | 0.4              | 540       | 349086           | 102.2            | 670       | 244093           | 0.0              | 800       | 15070            | 0.0              | 930       | 16307            | 0.0              |
| 415       | 13971            | 0.9              | 545       | 372506           | 86.5             | 675       | 210996           | 0.0              | 805       | 15366            | 0.0              | 935       | 18687            | 0.0              |
| 420       | 23461            | 2.7              | 550       | 403721           | 72.5             | 680       | 183942           | 0.0              | 810       | 15472            | 0.0              | 940       | 17986            | 0.0              |
| 425       | 41887            | 6.5              | 555       | 442032           | 59.6             | 685       | 158373           | 0.0              | 815       | 17184            | 0.0              | 945       | 15266            | 0.0              |
| 430       | 69840            | 14.8             | 560       | 485515           | 47.9             | 690       | 137120           | 0.0              | 820       | 14166            | 0.0              | 950       | 21027            | 0.0              |
| 435       | 106868           | 28.5             | 565       | 532962           | 37.4             | 695       | 116757           | 0.0              | 825       | 13854            | 0.0              | 955       | 19232            | 0.0              |
| 440       | 164642           | 55.0             | 570       | 582457           | 28.5             | 700       | 102093           | 0.0              | 830       | 14283            | 0.0              | 960       | 11261            | 0.0              |
| 445       | 256049           | 101.0            | 575       | 634550           | 21.1             | 705       | 87819            | 0.0              | 835       | 14112            | 0.0              | 965       | 20156            | 0.0              |
| 450       | 327314           | 150.8            | 580       | 686476           | 15.4             | 710       | 78011            | 0.0              | 840       | 13092            | 0.0              | 970       | 22393            | 0.0              |
| 455       | 265614           | 139.2            | 585       | 730571           | 10.9             | 715       | 70264            | 0.0              | 845       | 12158            | 0.0              | 975       | 20121            | 0.0              |
| 460       | 168394           | 99.2             | 590       | 768228           | 7.5              | 720       | 63584            | 0.0              | 850       | 14790            | 0.0              | 980       | 28091            | 0.0              |
| 465       | 127370           | 83.2             | 595       | 780593           | 5.0              | 725       | 55749            | 0.0              | 855       | 15683            | 0.0              | 985       | 27040            | 0.0              |
| 470       | 94724            | 67.8             | 600       | 791888           | 3.3              | 730       | 48683            | 0.0              | 860       | 19011            | 0.0              | 990       | 20772            | 0.0              |
| 475       | 67810            | 51.8             | 605       | 789088           | 2.2              | 735       | 42520            | 0.0              | 865       | 18194            | 0.0              | 995       | 26800            | 0.0              |
| 480       | 59825            | 48.1             | 610       | 765121           | 1.4              | 740       | 37531            | 0.0              | 870       | 15713            | 0.0              | 1000      | 28539            | 0.0              |
| 485       | 61079            | 50.3             | 615       | 735839           | 0.9              | 745       | 34522            | 0.0              | 875       | 19703            | 0.0              |           |                  |                  |

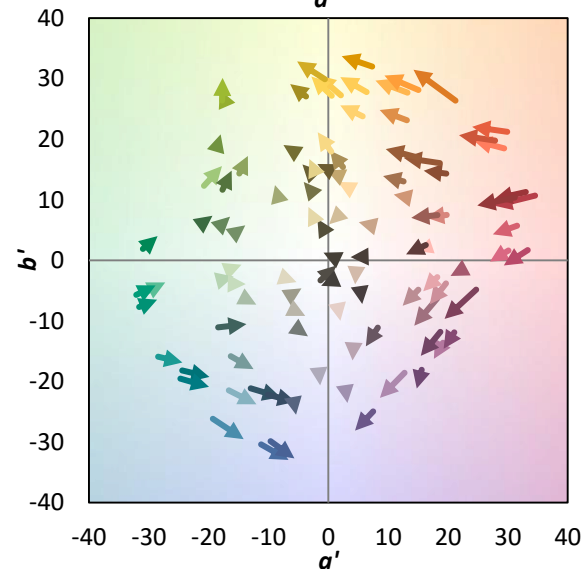
### Summary

$R_f = 75.3$   
 $R_g = 95.8$   
 CIE  $R_a = 72.6$   
 $R_g = -28.6$

### Spectral Power Distribution Comparison

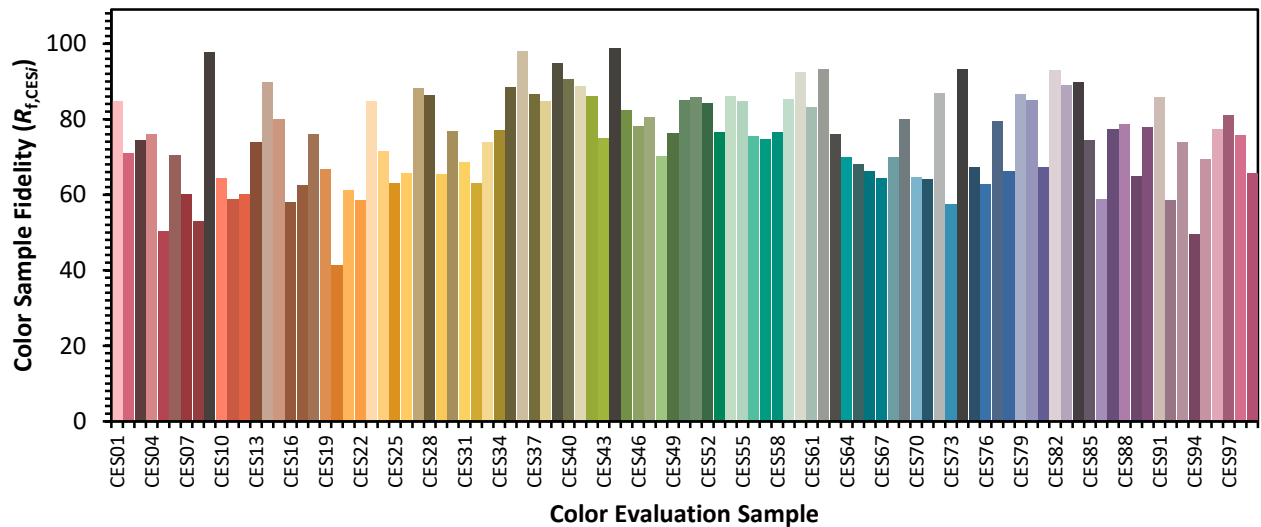


### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 66 | CES51 = 86 | CES76 = 63 |
| CES02 = 64 | CES27 = 88 | CES52 = 84 | CES77 = 79 |
| CES03 = 31 | CES28 = 86 | CES53 = 77 | CES78 = 66 |
| CES04 = 71 | CES29 = 65 | CES54 = 86 | CES79 = 87 |
| CES05 = 50 | CES30 = 77 | CES55 = 85 | CES80 = 85 |
| CES06 = 52 | CES31 = 69 | CES56 = 75 | CES81 = 67 |
| CES07 = 42 | CES32 = 63 | CES57 = 75 | CES82 = 93 |
| CES08 = 41 | CES33 = 74 | CES58 = 77 | CES83 = 89 |
| CES09 = 29 | CES34 = 77 | CES59 = 85 | CES84 = 90 |
| CES10 = 77 | CES35 = 88 | CES60 = 92 | CES85 = 74 |
| CES11 = 60 | CES36 = 98 | CES61 = 83 | CES86 = 59 |
| CES12 = 66 | CES37 = 86 | CES62 = 93 | CES87 = 77 |
| CES13 = 44 | CES38 = 85 | CES63 = 76 | CES88 = 79 |
| CES14 = 74 | CES39 = 95 | CES64 = 70 | CES89 = 65 |
| CES15 = 72 | CES40 = 91 | CES65 = 68 | CES90 = 78 |
| CES16 = 48 | CES41 = 89 | CES66 = 66 | CES91 = 86 |
| CES17 = 51 | CES42 = 86 | CES67 = 64 | CES92 = 59 |
| CES18 = 57 | CES43 = 75 | CES68 = 70 | CES93 = 74 |
| CES19 = 73 | CES44 = 99 | CES69 = 80 | CES94 = 50 |
| CES20 = 67 | CES45 = 83 | CES70 = 65 | CES95 = 69 |
| CES21 = 88 | CES46 = 78 | CES71 = 64 | CES96 = 77 |
| CES22 = 80 | CES47 = 80 | CES72 = 87 | CES97 = 81 |
| CES23 = 92 | CES48 = 70 | CES73 = 58 | CES98 = 76 |
| CES24 = 91 | CES49 = 76 | CES74 = 93 | CES99 = 66 |
| CES25 = 73 | CES50 = 85 | CES75 = 67 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)