

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: P579505

Luminaire Tested: **CST-CA8-230-740-U-T5N-HSS-HM-EX120**

Issue Date: 11/18/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P579505  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2110-429-5)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 11/18/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: CST-CA8-230-740-U-T5N-HSS-HM-EX120  
Description: CELESTEON HIGH MAST LUMINAIRE WITH FIELD INSTALLED SHIELD  
Light Source: (8) 4000K CCT, 70 CRI LEDS  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 28157 lumens  
Efficiency: N/A  
Efficacy: 123.3 lumens/watt  
Luminous Opening: Circular (Dia: 2.08' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B4 - U2 - G3

Input Watts (W): 228.4  
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

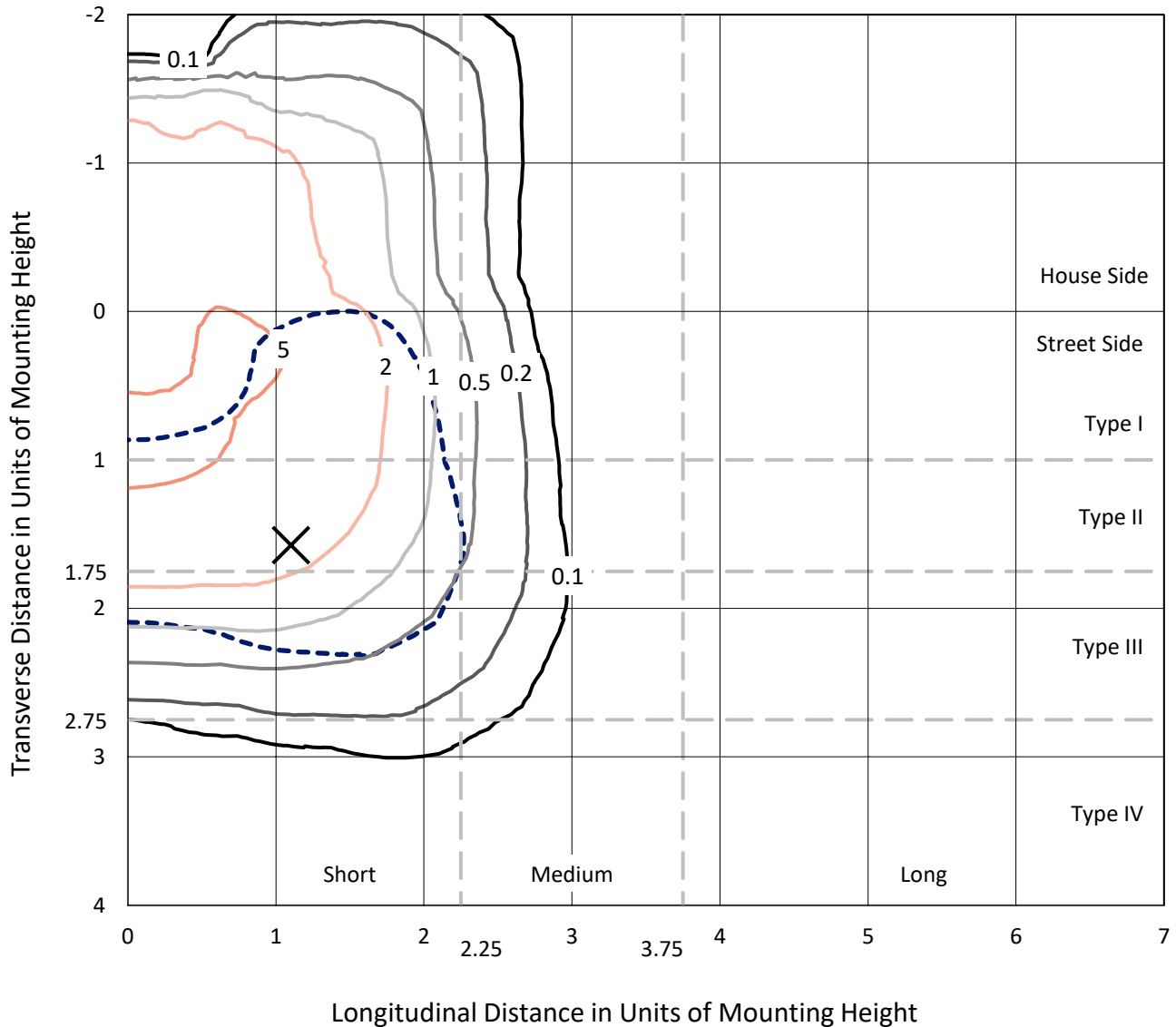


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## Iso-Footcandle Lines of Horizontal Illumination

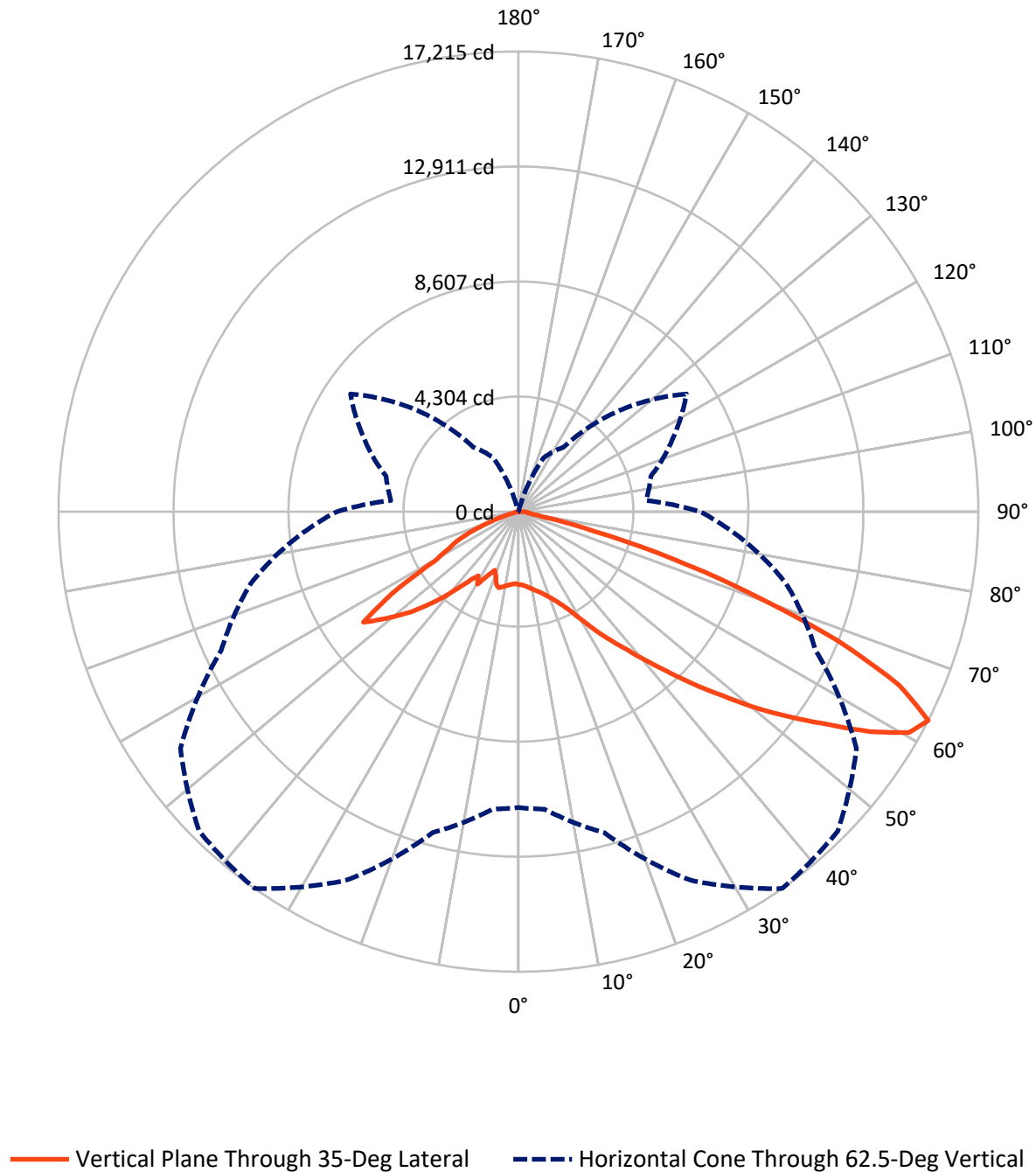
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.9 fc  
 Type III - Short - N/A

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## Luminous Intensity Polar Plot



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CATALOG NUMBER: CST-CA8-230-740-U-T5N-HSS-HM-EX120

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 8907.7   | 0.0    | 8907.7  |
|                    | % Fixture | 31.6     | 0.0    | 31.6    |
| <b>Street Side</b> | Lumens    | 19233.2  | 16.1   | 19249.3 |
|                    | % Fixture | 68.3     | 0.1    | 68.4    |
| <b>Total</b>       | Lumens    | 28140.9  | 16.1   | 28157.0 |
|                    | % Fixture | 99.9     | 0.1    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 269.5   | 1.0       |
| 10°-20°   | 866.5   | 3.1       |
| 20°-30°   | 1609.0  | 5.7       |
| 30°-40°   | 3172.3  | 11.3      |
| 40°-50°   | 5694.7  | 20.2      |
| 50°-60°   | 8277.8  | 29.4      |
| 60°-70°   | 6803.0  | 24.2      |
| 70°-80°   | 1293.1  | 4.6       |
| 80°-90°   | 154.8   | 0.5       |
| 90°-100°  | 14.6    | 0.1       |
| 100°-110° | 1.4     | 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°    | 28140.9 | 99.9      |
| 0°-180°   | 28157.0 | 100.0     |

**Coefficient of Utilization**



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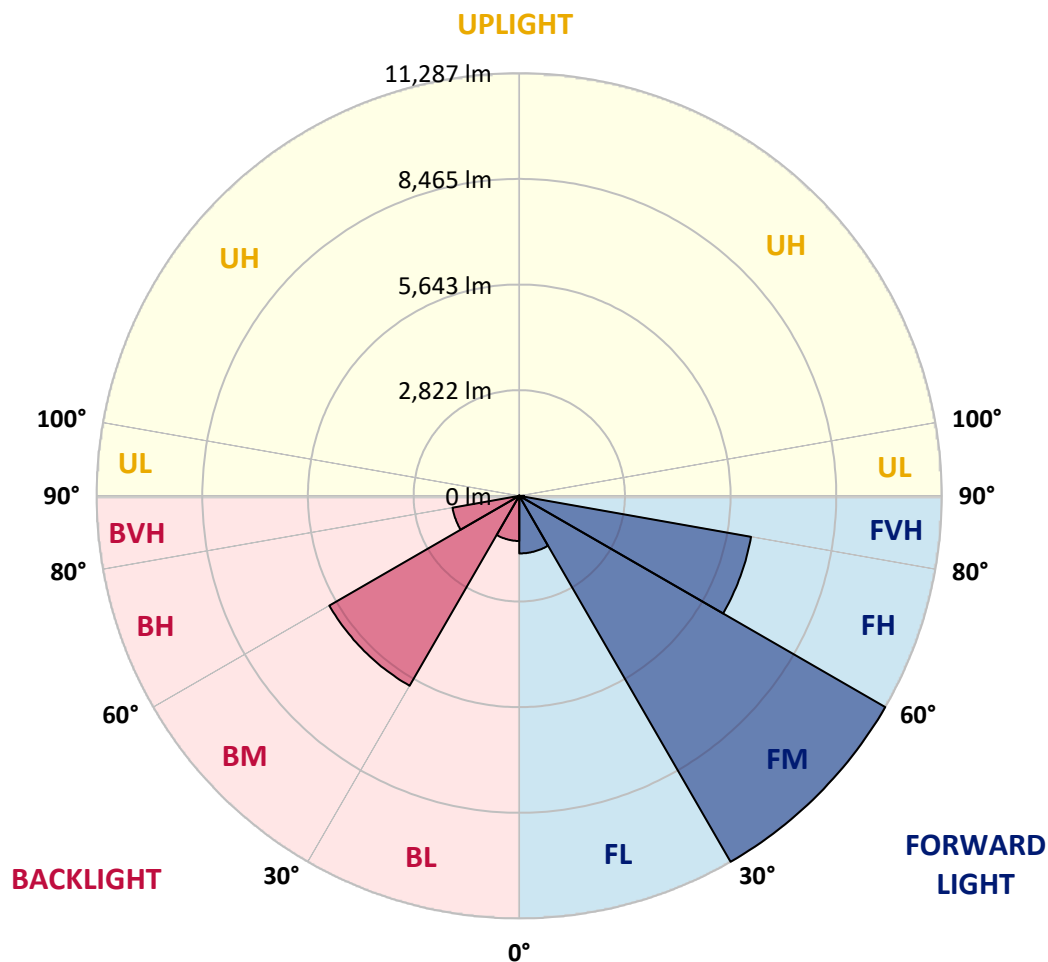
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |       |         |
|------|-------------|---------|-----------|-------------------------|-------|---------|
|      |             |         |           | B                       | U     | G       |
| FL   | (0°-30°)    | 1538.9  | 5.5       |                         |       |         |
| FM   | (30°-60°)   | 11286.6 | 40.1      |                         |       |         |
| FH   | (60°-80°)   | 6285.3  | 22.3      |                         |       | G3/7500 |
| FVH  | (80°-90°)   | 122.4   | 0.4       |                         |       | G2/225  |
| BL   | (0°-30°)    | 1206.1  | 4.3       | B3/2500                 |       |         |
| BM   | (30°-60°)   | 5858.2  | 20.8      | B4/8500                 |       |         |
| BH   | (60°-80°)   | 1810.9  | 6.4       | B3/2500                 |       | G3/2500 |
| BVH  | (80°-90°)   | 32.4    | 0.1       |                         |       | G1/100  |
| UL   | (90°-100°)  | 14.6    | 0.1       |                         | U2/50 |         |
| UH   | (100°-180°) | 1.4     | 0.0       |                         | U1/10 |         |

**BUG Rating: B4-U2-G3**

Type III Short



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CATALOG NUMBER: CST-CA8-230-740-U-T5N-HSS-HM-EX120

**CANDELA DISTRIBUTION (FULL):**

|        | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 65°     | 75°     | 85°     | 90°    |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0°     | 2733.1  | 2733.1  | 2733.1  | 2733.1  | 2733.1  | 2733.1  | 2733.1  | 2733.1  | 2733.1  | 2733.1  | 2733.1 |
| 2.5°   | 2802.9  | 2780.0  | 2782.3  | 2799.5  | 2748.0  | 2765.1  | 2741.1  | 2761.7  | 2752.5  | 2761.7  | 2767.4 |
| 5°     | 2859.0  | 2830.4  | 2829.2  | 2846.4  | 2805.2  | 2815.5  | 2788.0  | 2801.7  | 2789.2  | 2800.6  | 2800.6 |
| 7.5°   | 2927.6  | 2903.6  | 2897.9  | 2911.6  | 2875.0  | 2879.6  | 2852.1  | 2857.8  | 2842.9  | 2857.8  | 2846.4 |
| 10°    | 3013.5  | 2991.7  | 2982.6  | 2989.4  | 2956.2  | 2958.5  | 2928.8  | 2931.1  | 2909.3  | 2921.9  | 2912.8 |
| 12.5°  | 3103.9  | 3074.1  | 3069.6  | 3081.0  | 3046.7  | 3042.1  | 3016.9  | 3019.2  | 2995.2  | 3006.6  | 2999.7 |
| 15°    | 3197.7  | 3166.8  | 3168.0  | 3179.4  | 3145.1  | 3147.4  | 3121.1  | 3125.6  | 3101.6  | 3113.0  | 3103.9 |
| 17.5°  | 3322.5  | 3291.6  | 3289.3  | 3309.9  | 3281.3  | 3290.4  | 3263.0  | 3268.7  | 3251.5  | 3253.8  | 3243.5 |
| 20°    | 3501.0  | 3461.0  | 3453.0  | 3482.7  | 3445.0  | 3456.4  | 3441.5  | 3461.0  | 3454.1  | 3448.4  | 3440.4 |
| 22.5°  | 3713.9  | 3683.0  | 3667.0  | 3689.9  | 3645.2  | 3667.0  | 3675.0  | 3715.1  | 3725.4  | 3718.5  | 3592.6 |
| 25°    | 3998.9  | 3982.9  | 3966.8  | 3956.5  | 3902.8  | 3937.1  | 3978.3  | 4044.7  | 4088.2  | 4105.3  | 3930.2 |
| 27.5°  | 4383.4  | 4391.5  | 4321.6  | 4310.2  | 4249.5  | 4303.3  | 4377.7  | 4485.3  | 4573.4  | 4605.5  | 4369.7 |
| 30°    | 4877.9  | 4888.2  | 4793.2  | 4765.7  | 4729.1  | 4774.9  | 4913.3  | 5031.2  | 5161.7  | 5215.5  | 4900.8 |
| 32.5°  | 5534.8  | 5525.7  | 5386.0  | 5333.4  | 5300.2  | 5318.5  | 5463.9  | 5625.2  | 5771.7  | 5893.0  | 5506.2 |
| 35°    | 6337.1  | 6308.5  | 6159.7  | 6014.4  | 5882.7  | 5938.8  | 6045.3  | 6241.0  | 6463.0  | 6641.5  | 6103.6 |
| 37.5°  | 7268.7  | 7241.3  | 7014.7  | 6777.7  | 6517.9  | 6542.0  | 6637.0  | 6956.3  | 7242.4  | 7289.3  | 6001.8 |
| 40°    | 8231.3  | 8219.8  | 8005.8  | 7704.8  | 7300.8  | 7187.5  | 7313.4  | 7702.5  | 8004.7  | 7186.3  | 6238.7 |
| 42.5°  | 9192.6  | 9137.7  | 9017.5  | 8716.5  | 8178.6  | 7929.1  | 8098.5  | 8487.6  | 8812.7  | 7534.3  | 6788.0 |
| 45°    | 10162.0 | 10106.0 | 10004.1 | 9783.2  | 9223.5  | 8860.7  | 8910.0  | 9341.4  | 9635.6  | 8186.6  | 7360.3 |
| 47.5°  | 11022.7 | 10981.5 | 10908.3 | 10784.6 | 10285.6 | 9957.2  | 9862.2  | 10164.3 | 10364.6 | 8716.5  | 7799.8 |
| 50°    | 11764.3 | 11728.9 | 11757.5 | 11716.3 | 11569.8 | 11225.3 | 10911.7 | 10892.2 | 10988.4 | 9188.1  | 8203.8 |
| 52.5°  | 12416.7 | 12368.6 | 12491.1 | 12636.5 | 12771.5 | 12694.8 | 11936.0 | 11582.4 | 11495.4 | 9541.7  | 8475.0 |
| 55°    | 12955.8 | 12938.6 | 13149.2 | 13541.8 | 14055.6 | 14257.1 | 13031.3 | 12219.9 | 11948.6 | 9841.6  | 8500.2 |
| 57.5°  | 13278.5 | 13319.7 | 13764.9 | 14524.9 | 15529.8 | 15624.7 | 14313.1 | 12897.4 | 12348.0 | 10023.6 | 8620.4 |
| 60°    | 12726.9 | 12866.5 | 13667.6 | 15261.9 | 16784.1 | 16825.3 | 15234.5 | 13032.4 | 11825.0 | 9368.9  | 7978.3 |
| 62.5°  | 11074.2 | 11174.9 | 12435.0 | 15215.0 | 17214.5 | 16900.9 | 15440.5 | 12270.2 | 10363.5 | 7947.4  | 6785.8 |
| 65°    | 7825.0  | 7941.7  | 9460.5  | 13720.3 | 15661.4 | 15672.8 | 14143.8 | 10610.7 | 8283.9  | 6152.8  | 5239.5 |
| 67.5°  | 4719.9  | 4908.8  | 6347.4  | 9960.6  | 12895.1 | 13129.7 | 11799.8 | 8033.3  | 5928.5  | 4017.2  | 3391.2 |
| 70°    | 1548.5  | 1721.3  | 2897.9  | 5895.3  | 9295.6  | 10300.5 | 8861.9  | 5220.1  | 3095.9  | 1698.4  | 1367.7 |
| 72.5°  | 613.5   | 692.4   | 1020.9  | 2607.2  | 5990.3  | 6877.3  | 5460.4  | 2522.5  | 1039.2  | 450.9   | 392.6  |
| 75°    | 409.7   | 417.7   | 471.5   | 888.1   | 2931.1  | 3760.8  | 2632.4  | 733.6   | 385.7   | 281.5   | 247.2  |
| 77.5°  | 357.1   | 358.2   | 382.3   | 468.1   | 954.5   | 1442.1  | 757.7   | 393.7   | 319.3   | 231.2   | 204.9  |
| 80°    | 327.3   | 331.9   | 346.8   | 399.4   | 437.2   | 489.8   | 374.3   | 328.5   | 277.0   | 212.9   | 193.4  |
| 82.5°  | 313.6   | 317.0   | 326.2   | 361.7   | 353.7   | 367.4   | 302.1   | 260.9   | 233.5   | 195.7   | 185.4  |
| 85°    | 286.1   | 291.8   | 297.6   | 319.3   | 290.7   | 251.8   | 233.5   | 175.1   | 167.1   | 147.6   | 136.2  |
| 87.5°  | 216.3   | 215.2   | 209.4   | 212.9   | 194.6   | 159.1   | 131.6   | 98.4    | 80.1    | 66.4    | 54.9   |
| 90°    | 90.4    | 91.6    | 88.1    | 83.5    | 73.2    | 60.7    | 45.8    | 27.5    | 13.7    | 4.6     | 2.3    |
| 92.5°  | 68.7    | 69.8    | 67.5    | 60.7    | 52.6    | 42.3    | 30.9    | 16.0    | 9.2     | 3.4     | 1.1    |
| 95°    | 42.3    | 43.5    | 41.2    | 36.6    | 32.0    | 24.0    | 16.0    | 10.3    | 5.7     | 2.3     | 0.0    |
| 97.5°  | 25.2    | 26.3    | 24.0    | 21.7    | 17.2    | 11.4    | 9.2     | 6.9     | 4.6     | 2.3     | 0.0    |
| 100°   | 14.9    | 14.9    | 13.7    | 11.4    | 8.0     | 6.9     | 5.7     | 4.6     | 3.4     | 1.1     | 0.0    |
| 102.5° | 6.9     | 6.9     | 6.9     | 4.6     | 3.4     | 3.4     | 3.4     | 3.4     | 3.4     | 1.1     | 0.0    |
| 105°   | 2.3     | 2.3     | 1.1     | 1.1     | 1.1     | 2.3     | 2.3     | 2.3     | 2.3     | 1.1     | 0.0    |
| 107.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 1.1     | 2.3     | 2.3     | 1.1     | 0.0    |
| 110°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 1.1     | 1.1     | 1.1     | 0.0    |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 5°  | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 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°     | 2733.1 | 2733.1 | 2733.1 | 2733.1 | 2733.1 | 2733.1 | 2733.1 | 2733.1 | 2733.1 | 2733.1 |
| 2.5°   | 2761.7 | 2739.9 | 2743.4 | 2723.9 | 2719.3 | 2698.7 | 2735.4 | 2738.8 | 2728.5 | 2738.8 |
| 5°     | 2796.0 | 2769.7 | 2776.6 | 2754.8 | 2749.1 | 2720.5 | 2750.2 | 2748.0 | 2739.9 | 2750.2 |
| 7.5°   | 2846.4 | 2816.6 | 2820.1 | 2794.9 | 2789.2 | 2757.1 | 2784.6 | 2776.6 | 2767.4 | 2780.0 |
| 10°    | 2910.5 | 2881.9 | 2883.0 | 2848.7 | 2845.2 | 2808.6 | 2844.1 | 2829.2 | 2815.5 | 2833.8 |
| 12.5°  | 2999.7 | 2959.7 | 2956.2 | 2918.5 | 2917.3 | 2879.6 | 2916.2 | 2903.6 | 2885.3 | 2913.9 |
| 15°    | 3102.7 | 3049.0 | 3035.2 | 2987.2 | 2986.0 | 2945.9 | 2982.6 | 2963.1 | 2954.0 | 2988.3 |
| 17.5°  | 3236.7 | 3169.1 | 3065.0 | 2901.3 | 2826.9 | 2839.5 | 2968.8 | 3015.8 | 2893.3 | 2911.6 |
| 20°    | 3317.9 | 2990.6 | 2838.4 | 2770.8 | 2735.4 | 2531.6 | 2255.8 | 2278.7 | 2550.0 | 2679.3 |
| 22.5°  | 3180.6 | 3083.3 | 3027.2 | 2932.2 | 2437.8 | 2368.0 | 2384.0 | 2379.4 | 2029.2 | 1925.1 |
| 25°    | 3466.7 | 3375.1 | 3273.3 | 2687.3 | 2585.4 | 2555.7 | 2563.7 | 2235.2 | 2044.1 | 2052.1 |
| 27.5°  | 3878.7 | 3760.8 | 3115.3 | 2861.3 | 2840.7 | 2797.2 | 2639.2 | 2244.4 | 2268.4 | 2284.4 |
| 30°    | 4399.5 | 3980.6 | 3317.9 | 3206.9 | 3165.7 | 3118.8 | 2449.2 | 2507.6 | 2552.2 | 2601.5 |
| 32.5°  | 4903.0 | 3871.9 | 3705.9 | 3590.3 | 3526.2 | 2831.5 | 2762.8 | 2870.4 | 2915.0 | 2957.4 |
| 35°    | 4857.3 | 4337.7 | 4122.5 | 3976.0 | 3855.8 | 3055.8 | 3116.5 | 3280.1 | 3398.0 | 3396.9 |
| 37.5°  | 4983.2 | 4844.7 | 4596.3 | 4410.9 | 3346.5 | 3423.2 | 3550.2 | 3736.8 | 3879.9 | 3878.7 |
| 40°    | 5508.5 | 5358.6 | 5125.1 | 4726.8 | 3708.2 | 3886.7 | 4060.7 | 4235.8 | 4338.8 | 4346.8 |
| 42.5°  | 6030.4 | 5914.8 | 5704.2 | 4175.1 | 4151.1 | 4398.3 | 4580.3 | 4691.3 | 4754.3 | 4776.0 |
| 45°    | 6550.0 | 6441.3 | 5604.6 | 4618.1 | 4691.3 | 4936.2 | 5047.3 | 5069.0 | 5136.5 | 5134.2 |
| 47.5°  | 6963.2 | 6870.4 | 5156.0 | 5144.5 | 5326.5 | 5495.9 | 5460.4 | 5433.0 | 5450.1 | 5459.3 |
| 50°    | 7344.3 | 5981.2 | 5558.8 | 5725.9 | 6002.9 | 6023.5 | 5875.9 | 4654.7 | 5762.6 | 5743.1 |
| 52.5°  | 6822.4 | 5837.0 | 5934.2 | 6325.7 | 6797.2 | 6558.0 | 6269.6 | 4080.2 | 5404.3 | 5918.2 |
| 55°    | 5969.7 | 6068.2 | 6287.9 | 6944.8 | 7410.7 | 7126.8 | 6645.0 | 4201.5 | 3586.9 | 2919.6 |
| 57.5°  | 6088.8 | 6244.4 | 6662.1 | 7569.7 | 7976.0 | 5644.7 | 6202.1 | 2962.0 | 2005.2 | 2004.0 |
| 60°    | 5669.9 | 5905.6 | 6654.1 | 7850.1 | 6456.1 | 3616.6 | 2484.7 | 67.5   | 389.1  | 385.7  |
| 62.5°  | 4793.2 | 5128.5 | 6348.6 | 7672.7 | 5348.3 | 2939.1 | 2213.5 | 5.7    | 2.3    | 2.3    |
| 65°    | 3707.0 | 4101.9 | 5293.3 | 6643.8 | 4738.2 | 2531.6 | 1643.5 | 0.0    | 0.0    | 0.0    |
| 67.5°  | 2430.9 | 2797.2 | 3974.9 | 5518.8 | 3933.7 | 1913.6 | 1104.4 | 0.0    | 0.0    | 0.0    |
| 70°    | 1012.9 | 1465.0 | 2469.8 | 3988.6 | 2893.3 | 1253.2 | 524.2  | 0.0    | 0.0    | 0.0    |
| 72.5°  | 293.0  | 446.4  | 1112.5 | 2381.7 | 1795.7 | 655.8  | 194.6  | 0.0    | 0.0    | 0.0    |
| 75°    | 193.4  | 203.7  | 336.5  | 957.9  | 873.3  | 240.3  | 79.0   | 0.0    | 0.0    | 0.0    |
| 77.5°  | 162.5  | 167.1  | 214.0  | 267.8  | 280.4  | 95.0   | 64.1   | 0.0    | 0.0    | 0.0    |
| 80°    | 149.9  | 151.1  | 192.3  | 199.1  | 149.9  | 79.0   | 62.9   | 0.0    | 0.0    | 0.0    |
| 82.5°  | 139.6  | 136.2  | 163.7  | 157.9  | 124.8  | 68.7   | 58.4   | 0.0    | 0.0    | 0.0    |
| 85°    | 96.1   | 98.4   | 111.0  | 140.8  | 75.5   | 34.3   | 41.2   | 0.0    | 0.0    | 0.0    |
| 87.5°  | 29.8   | 34.3   | 43.5   | 44.6   | 13.7   | 4.6    | 0.0    | 0.0    | 0.0    | 0.0    |
| 90°    | 1.1    | 0.0    | 0.0    | 0.0    | 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    |
| 110°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



REPORT NUMBER: P579505

CATALOG NUMBER: CST-CA8-230-740-U-T5N-HSS-HM-EX120

**CANDELA DISTRIBUTION (continued):**

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

LM-79-08: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

STREETWORKS

Report Number: SP1-2104-215-1

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

Test Date: 04/20/2021

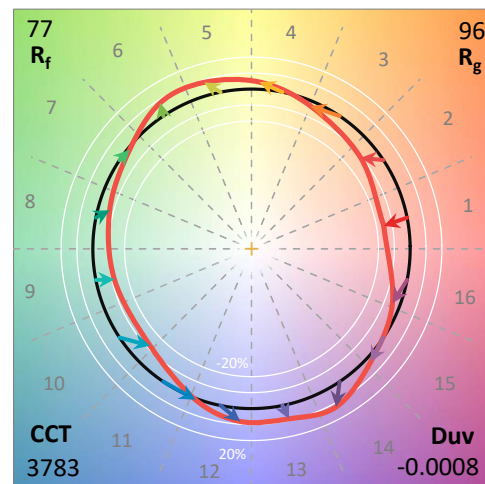
### Test Information

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

230W

### Spectral Parameters

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



### Test Conditions

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

REPORT NUMBER: SP1-2104-215-1

| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 1/31/2021        | 7/31/2021            |
| Power Meter                    | IN0071                | 12/1/2020        | 12/1/2021            |
| AC Power Source                | IN0063                | 12/1/2020        | 12/1/2021            |
| DC Power Source                | IN0208                | 12/1/2020        | 12/1/2021            |
| Sphere Thermometer             | IN0085                | 12/1/2020        | 12/1/2021            |
| Room Thermometer               | IN0046                | 12/1/2020        | 12/1/2021            |

REPORT NUMBER: SP1-2104-215-1

**CIE 1931 Chromaticity Diagram**



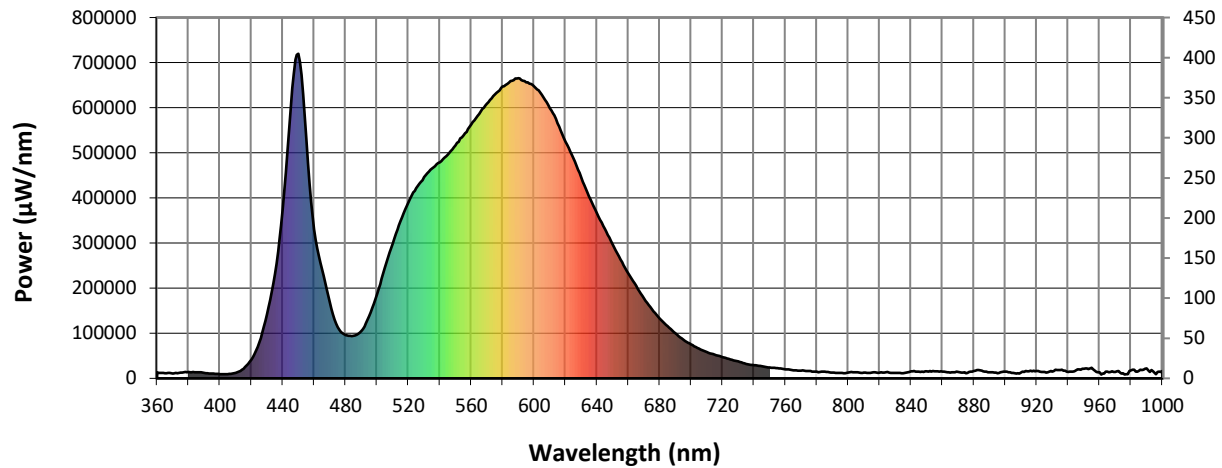
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 4000K 7-step quadrangle

REPORT NUMBER: SP1-2104-215-1

### Photopic Flux vs. Wavelength



#####

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

REPORT NUMBER: SP1-2104-215-1

### Scotopic Flux vs. Wavelength



Scotopic Lumens: 54268.8

S/P: 1.5

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

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### Melanopic Flux vs. Wavelength


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

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

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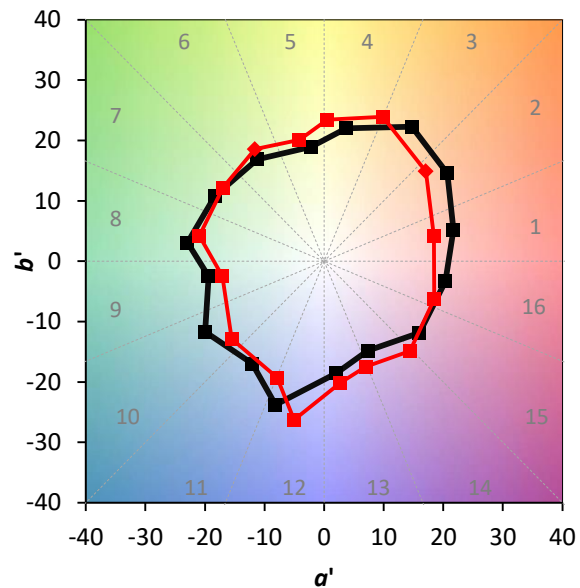
TM-30-18

### Summary

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



### Color Vector Graphics



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

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



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)