

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: P522204

Luminaire Tested: **CST-CA8-230-730-U-T5R-HSS-HM-EX120**

Issue Date: 5/10/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P522204  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1808-894-6)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/10/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: CST-CA8-230-730-U-T5R-HSS-HM-EX120  
Description: CELESTEON HIGH MAST LUMINAIRE  
Light Source: (8) 3000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 27115 lumens  
Efficiency: N/A  
Efficacy: 118.7 lumens/watt  
Luminous Opening: Circular (Dia: 2.08' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B4 - U2 - G4

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

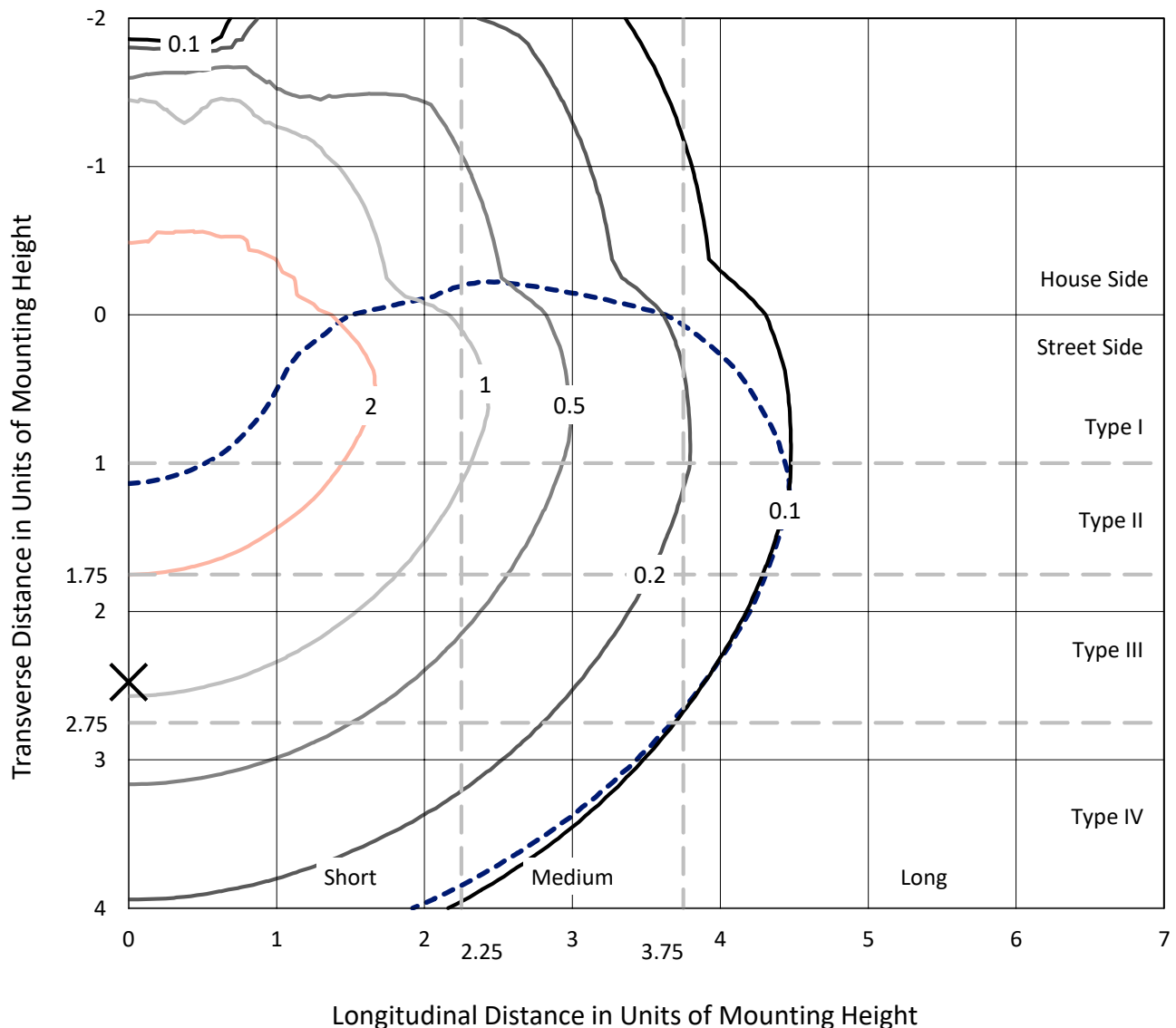


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## Iso-Footcandle Lines of Horizontal Illumination

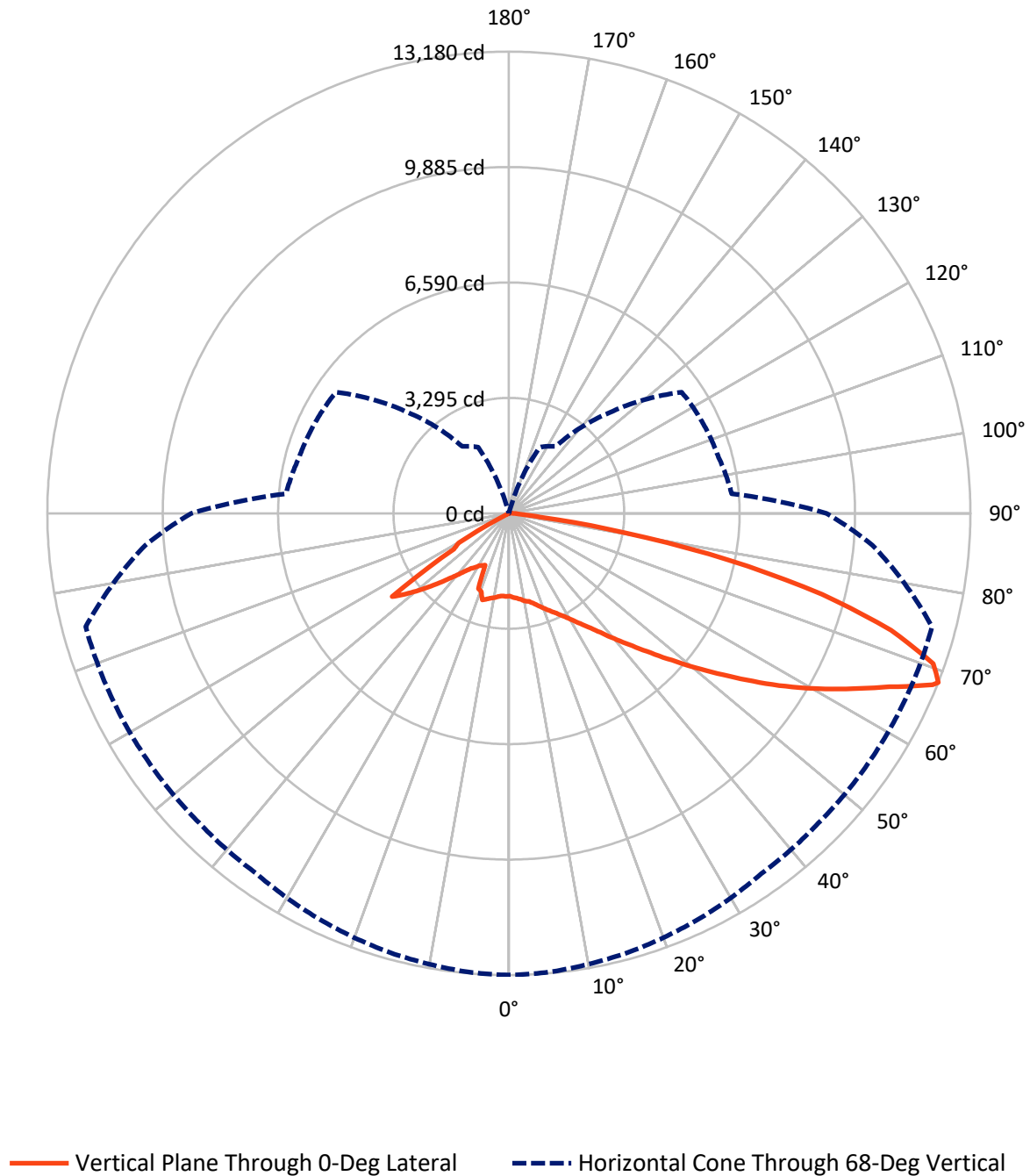
× Max cd  
 - - - 1/2 Max cd



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

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## Luminous Intensity Polar Plot



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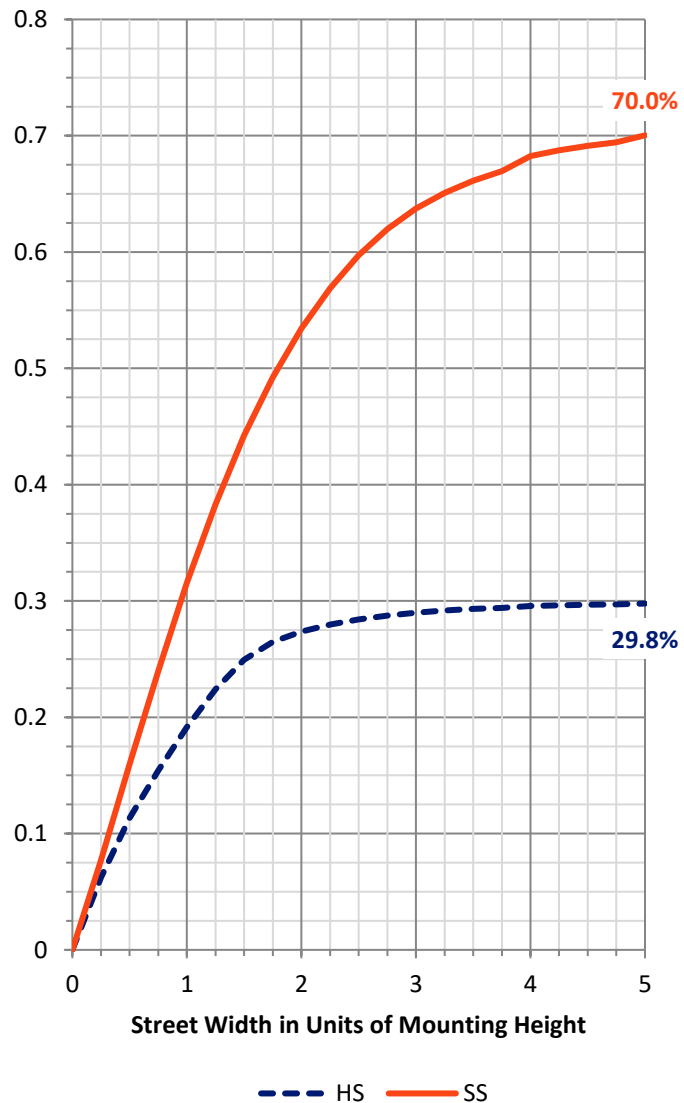
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 8082.7   | 1.2    | 8083.9  |
|                    | % Fixture | 29.8     | 0.0    | 29.8    |
| <b>Street Side</b> | Lumens    | 19020.0  | 11.1   | 19031.1 |
|                    | % Fixture | 70.1     | 0.0    | 70.2    |
| <b>Total</b>       | Lumens    | 27102.6  | 12.3   | 27115.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 229.4   | 0.8       |
| 10°-20°   | 730.2   | 2.7       |
| 20°-30°   | 1250.8  | 4.6       |
| 30°-40°   | 2029.0  | 7.5       |
| 40°-50°   | 3421.9  | 12.6      |
| 50°-60°   | 5577.8  | 20.6      |
| 60°-70°   | 7480.7  | 27.6      |
| 70°-80°   | 5810.6  | 21.4      |
| 80°-90°   | 572.2   | 2.1       |
| 90°-100°  | 10.9    | 0.0       |
| 100°-110° | 0.6     | 0.0       |
| 110°-120° | 0.2     | 0.0       |
| 120°-130° | 0.1     | 0.0       |
| 130°-140° | 0.2     | 0.0       |
| 140°-150° | 0.2     | 0.0       |
| 150°-160° | 0.1     | 0.0       |
| 160°-170° | 0.1     | 0.0       |
| 170°-180° | 0.0     | 0.0       |
| 0°-90°    | 27102.6 | 100.0     |
| 0°-180°   | 27115.0 | 100.0     |

**Coefficient of Utilization**



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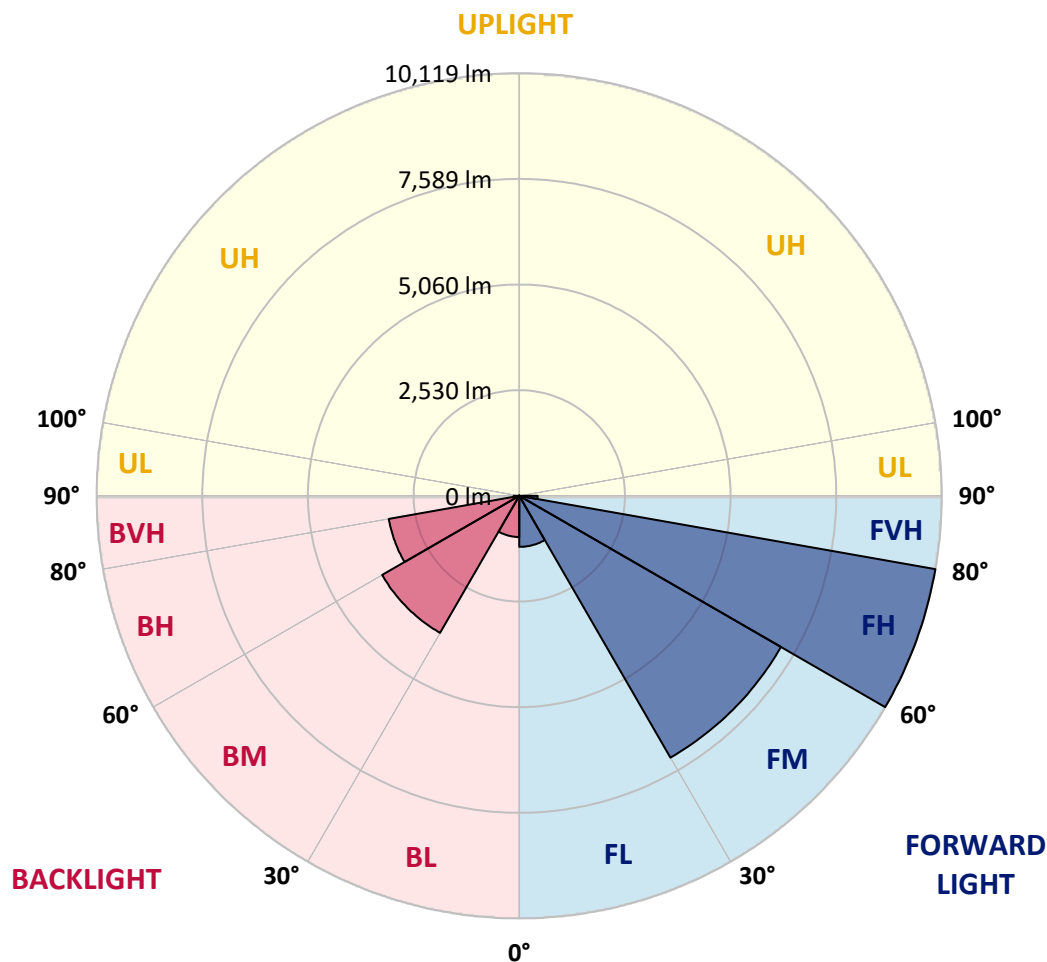
CATALOG NUMBER: CST-CA8-230-730-U-T5R-HSS-HM-EX120

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

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |       |          |
|------|-------------|---------|-----------|-------------------------|-------|----------|
|      |             |         |           | B                       | U     | G        |
| FL   | (0°-30°)    | 1223.0  | 4.5       |                         |       |          |
| FM   | (30°-60°)   | 7237.9  | 26.7      |                         |       |          |
| FH   | (60°-80°)   | 10119.0 | 37.3      |                         |       | G4/12000 |
| FVH  | (80°-90°)   | 440.0   | 1.6       |                         |       | G3/500   |
| BL   | (0°-30°)    | 987.4   | 3.6       | B2/1000                 |       |          |
| BM   | (30°-60°)   | 3790.8  | 14.0      | B3/5000                 |       |          |
| BH   | (60°-80°)   | 3172.3  | 11.7      | B4/5000                 |       | G4/5000  |
| BVH  | (80°-90°)   | 132.3   | 0.5       |                         |       | G2/225   |
| UL   | (90°-100°)  | 10.9    | 0.0       |                         | U2/50 |          |
| UH   | (100°-180°) | 1.5     | 0.0       |                         | U1/10 |          |

**BUG Rating: B4-U2-G4**

Type IV Short



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 65°     | 75°     | 85°     | 90°    |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0°     | 2363.9  | 2363.9  | 2363.9  | 2363.9  | 2363.9  | 2363.9  | 2363.9  | 2363.9  | 2363.9  | 2363.9  | 2363.9 |
| 2.5°   | 2403.2  | 2396.4  | 2395.3  | 2408.8  | 2366.2  | 2387.5  | 2368.4  | 2384.1  | 2374.0  | 2381.9  | 2383.0 |
| 5°     | 2435.7  | 2423.4  | 2415.5  | 2431.2  | 2404.3  | 2414.4  | 2393.1  | 2399.8  | 2371.8  | 2387.5  | 2389.7 |
| 7.5°   | 2482.8  | 2462.6  | 2460.4  | 2464.9  | 2441.3  | 2449.2  | 2414.4  | 2422.2  | 2402.1  | 2393.1  | 2400.9 |
| 10°    | 2546.7  | 2527.7  | 2513.1  | 2523.2  | 2491.8  | 2496.3  | 2459.2  | 2460.4  | 2445.8  | 2429.0  | 2442.4 |
| 12.5°  | 2582.6  | 2584.8  | 2578.1  | 2586.0  | 2560.2  | 2545.6  | 2519.8  | 2510.8  | 2496.3  | 2476.1  | 2469.3 |
| 15°    | 2672.3  | 2667.8  | 2654.4  | 2666.7  | 2663.3  | 2649.9  | 2618.5  | 2598.3  | 2566.9  | 2555.7  | 2544.5 |
| 17.5°  | 2782.2  | 2767.6  | 2756.4  | 2772.1  | 2788.9  | 2760.9  | 2730.6  | 2702.6  | 2661.1  | 2638.7  | 2625.2 |
| 20°    | 2897.7  | 2887.6  | 2876.4  | 2901.1  | 2906.7  | 2885.4  | 2863.0  | 2821.5  | 2773.2  | 2744.1  | 2716.0 |
| 22.5°  | 3026.7  | 3006.5  | 3009.9  | 3042.4  | 3032.3  | 3022.2  | 2993.0  | 2959.4  | 2901.1  | 2864.1  | 2783.3 |
| 25°    | 3160.1  | 3148.9  | 3164.6  | 3179.2  | 3171.3  | 3150.0  | 3135.5  | 3110.8  | 3045.7  | 3000.9  | 2883.1 |
| 27.5°  | 3326.1  | 3308.2  | 3328.3  | 3333.9  | 3327.2  | 3321.6  | 3301.4  | 3282.4  | 3211.7  | 3161.2  | 3014.3 |
| 30°    | 3521.2  | 3499.9  | 3532.4  | 3524.6  | 3517.9  | 3522.3  | 3510.0  | 3468.5  | 3405.7  | 3337.3  | 3190.4 |
| 32.5°  | 3753.4  | 3725.3  | 3762.3  | 3745.5  | 3729.8  | 3761.2  | 3732.0  | 3692.8  | 3618.8  | 3539.2  | 3395.6 |
| 35°    | 4022.5  | 4023.6  | 4042.7  | 4014.6  | 4009.0  | 4042.7  | 4023.6  | 3975.4  | 3907.0  | 3824.0  | 3619.9 |
| 37.5°  | 4348.8  | 4339.8  | 4388.1  | 4374.6  | 4354.4  | 4399.3  | 4404.9  | 4344.3  | 4221.0  | 4139.1  | 3898.0 |
| 40°    | 4745.8  | 4743.6  | 4759.3  | 4761.5  | 4755.9  | 4777.2  | 4787.3  | 4706.5  | 4626.9  | 4503.6  | 3678.2 |
| 42.5°  | 5169.7  | 5178.7  | 5206.7  | 5186.5  | 5213.4  | 5241.5  | 5244.8  | 5177.5  | 5063.2  | 4320.8  | 3907.0 |
| 45°    | 5678.8  | 5706.8  | 5725.9  | 5721.4  | 5733.8  | 5774.1  | 5777.5  | 5741.6  | 5629.5  | 4680.8  | 4321.9 |
| 47.5°  | 6263.1  | 6290.0  | 6295.6  | 6331.5  | 6320.3  | 6377.4  | 6369.6  | 6370.7  | 6250.7  | 5182.0  | 4773.8 |
| 50°    | 6934.8  | 6947.1  | 6993.1  | 7013.3  | 6985.2  | 7062.6  | 7042.4  | 7067.1  | 6919.1  | 5756.2  | 5259.4 |
| 52.5°  | 7648.0  | 7669.3  | 7688.4  | 7764.6  | 7728.7  | 7796.0  | 7769.1  | 7826.3  | 7654.7  | 6340.4  | 5798.8 |
| 55°    | 8458.8  | 8462.1  | 8494.7  | 8572.0  | 8524.9  | 8605.7  | 8566.4  | 8587.7  | 8450.9  | 6986.4  | 6360.6 |
| 57.5°  | 9317.8  | 9306.6  | 9318.9  | 9380.6  | 9338.0  | 9398.5  | 9382.8  | 9403.0  | 9275.2  | 7665.9  | 6771.1 |
| 60°    | 10167.8 | 10151.0 | 10168.9 | 10210.4 | 10152.1 | 10256.4 | 10200.3 | 10219.4 | 10081.5 | 8360.1  | 7356.4 |
| 62.5°  | 11022.3 | 11010.0 | 10989.8 | 11031.3 | 10946.1 | 10999.9 | 11023.4 | 10992.0 | 10870.9 | 8988.1  | 7865.6 |
| 65°    | 11939.6 | 11927.3 | 11853.3 | 11879.1 | 11726.6 | 11700.8 | 11709.7 | 11719.8 | 11639.1 | 9610.5  | 8424.0 |
| 67.5°  | 13054.3 | 13036.4 | 12897.3 | 12722.4 | 12502.6 | 12454.4 | 12458.8 | 12485.8 | 12497.0 | 10411.1 | 9077.8 |
| 68°    | 13179.9 | 13147.4 | 12992.6 | 12789.7 | 12559.8 | 12503.7 | 12498.1 | 12503.7 | 12509.3 | 10417.9 | 9071.1 |
| 70°    | 12859.2 | 12846.8 | 12729.1 | 12483.5 | 12248.0 | 12113.4 | 11996.8 | 11992.3 | 11938.5 | 9885.2  | 8569.8 |
| 72.5°  | 11411.4 | 11395.7 | 11255.6 | 11081.7 | 10936.0 | 10725.1 | 10573.8 | 10582.7 | 10494.1 | 8736.9  | 7501.1 |
| 75°    | 9234.8  | 9233.7  | 9065.5  | 8919.7  | 8921.9  | 8906.2  | 8855.8  | 8944.3  | 8852.4  | 7410.3  | 6397.6 |
| 77.5°  | 6435.8  | 6458.2  | 6447.0  | 6361.7  | 6481.7  | 6647.7  | 6828.2  | 6998.7  | 6946.0  | 5853.7  | 5101.3 |
| 80°    | 3362.0  | 3424.8  | 3646.8  | 3656.9  | 3741.0  | 3902.5  | 4025.9  | 4140.2  | 4148.1  | 3321.6  | 2947.1 |
| 82.5°  | 893.8   | 912.8   | 988.0   | 966.7   | 959.9   | 992.4   | 1019.4  | 1022.7  | 1025.0  | 865.7   | 808.5  |
| 85°    | 278.1   | 286.0   | 277.0   | 264.7   | 245.6   | 224.3   | 218.7   | 178.3   | 141.3   | 116.6   | 102.0  |
| 87.5°  | 197.4   | 210.8   | 190.6   | 179.4   | 159.2   | 151.4   | 135.7   | 106.5   | 83.0    | 58.3    | 39.2   |
| 90°    | 102.0   | 104.3   | 93.1    | 79.6    | 74.0    | 69.5    | 59.4    | 42.6    | 21.3    | 11.2    | 10.1   |
| 92.5°  | 51.6    | 52.7    | 46.0    | 39.2    | 33.6    | 29.2    | 22.4    | 12.3    | 6.7     | 3.4     | 1.1    |
| 95°    | 20.2    | 21.3    | 19.1    | 16.8    | 13.5    | 10.1    | 9.0     | 6.7     | 4.5     | 2.2     | 1.1    |
| 97.5°  | 6.7     | 6.7     | 6.7     | 5.6     | 5.6     | 5.6     | 5.6     | 4.5     | 3.4     | 2.2     | 1.1    |
| 100°   | 0.0     | 0.0     | 0.0     | 1.1     | 2.2     | 3.4     | 3.4     | 3.4     | 2.2     | 1.1     | 1.1    |
| 102.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 1.1     | 2.2     | 2.2     | 2.2     | 1.1     | 1.1    |
| 105°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 1.1     | 1.1     | 1.1     | 1.1     | 1.1     | 1.1    |
| 107.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 1.1     | 1.1     | 1.1     | 1.1     | 1.1    |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 5°  | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 110°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 | 1.1 |
| 112.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 |
| 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 | 1.1 |
| 130°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 |
| 132.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 |
| 135°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 | 1.1 |
| 137.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 |
| 140°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 | 1.1 |
| 142.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 | 1.1 |
| 145°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 | 1.1 |
| 147.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 | 1.1 |
| 150°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 | 1.1 | 1.1 |
| 152.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 | 1.1 | 1.1 |
| 155°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 | 1.1 | 1.1 |
| 157.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 | 1.1 | 1.1 |
| 160°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 | 1.1 | 1.1 |
| 162.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 | 1.1 | 1.1 |
| 165°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| 167.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| 170°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| 172.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| 175°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| 177.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| 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°     | 2363.9 | 2363.9 | 2363.9 | 2363.9 | 2363.9 | 2363.9 | 2363.9 | 2363.9 | 2363.9 | 2363.9 |
| 2.5°   | 2377.4 | 2370.7 | 2374.0 | 2346.0 | 2352.7 | 2334.8 | 2372.9 | 2362.8 | 2358.3 | 2374.0 |
| 5°     | 2383.0 | 2358.3 | 2378.5 | 2359.4 | 2362.8 | 2337.0 | 2368.4 | 2356.1 | 2355.0 | 2363.9 |
| 7.5°   | 2385.2 | 2372.9 | 2392.0 | 2360.6 | 2370.7 | 2360.6 | 2384.1 | 2371.8 | 2383.0 | 2390.8 |
| 10°    | 2416.6 | 2409.9 | 2407.7 | 2396.4 | 2404.3 | 2381.9 | 2411.0 | 2411.0 | 2416.6 | 2437.9 |
| 12.5°  | 2462.6 | 2453.6 | 2448.0 | 2427.8 | 2435.7 | 2429.0 | 2452.5 | 2457.0 | 2467.1 | 2476.1 |
| 15°    | 2525.4 | 2509.7 | 2504.1 | 2486.2 | 2491.8 | 2490.6 | 2507.5 | 2508.6 | 2531.0 | 2529.9 |
| 17.5°  | 2606.2 | 2583.7 | 2590.5 | 2577.0 | 2578.1 | 2569.1 | 2560.2 | 2560.2 | 2580.4 | 2584.8 |
| 20°    | 2702.6 | 2574.8 | 2406.5 | 2312.3 | 2295.5 | 2307.9 | 2356.1 | 2435.7 | 2335.9 | 2363.9 |
| 22.5°  | 2528.8 | 2413.3 | 2405.4 | 2384.1 | 2370.7 | 2070.1 | 1992.7 | 1968.1 | 2097.0 | 2319.1 |
| 25°    | 2551.2 | 2501.9 | 2487.3 | 2460.4 | 2063.4 | 2060.0 | 2037.6 | 2000.6 | 1635.0 | 1627.2 |
| 27.5°  | 2670.1 | 2621.9 | 2598.3 | 2155.3 | 2146.4 | 2145.3 | 2111.6 | 1740.4 | 1656.3 | 1667.5 |
| 30°    | 2809.1 | 2753.1 | 2331.4 | 2264.1 | 2256.3 | 2238.3 | 2045.4 | 1719.1 | 1718.0 | 1719.1 |
| 32.5°  | 2969.5 | 2783.3 | 2398.7 | 2395.3 | 2399.8 | 2344.9 | 1812.2 | 1805.5 | 1804.3 | 1815.6 |
| 35°    | 3189.3 | 2582.6 | 2566.9 | 2583.7 | 2560.2 | 2027.5 | 1921.0 | 1917.6 | 1918.7 | 1913.1 |
| 37.5°  | 3043.5 | 2784.5 | 2781.1 | 2781.1 | 2726.1 | 2074.6 | 2053.3 | 2069.0 | 2066.8 | 2058.9 |
| 40°    | 3105.2 | 3028.9 | 3008.7 | 3002.0 | 2304.5 | 2238.3 | 2226.0 | 2246.2 | 2249.5 | 2255.2 |
| 42.5°  | 3404.6 | 3335.1 | 3325.0 | 3245.4 | 2507.5 | 2486.2 | 2448.0 | 2469.3 | 2467.1 | 2473.8 |
| 45°    | 3772.4 | 3725.3 | 3681.6 | 2813.6 | 2781.1 | 2754.2 | 2714.9 | 2739.6 | 2746.3 | 2741.8 |
| 47.5°  | 4200.8 | 4149.2 | 3833.0 | 3094.0 | 3092.8 | 3071.5 | 3027.8 | 3048.0 | 3044.6 | 3044.6 |
| 50°    | 4631.4 | 4575.3 | 3482.0 | 3450.6 | 3439.4 | 3405.7 | 3369.8 | 3373.2 | 3374.3 | 3385.5 |
| 52.5°  | 5112.5 | 4086.4 | 3854.3 | 3791.5 | 3800.4 | 3778.0 | 3743.3 | 2833.8 | 3726.4 | 3736.5 |
| 55°    | 4778.3 | 4277.0 | 4263.6 | 4180.6 | 4201.9 | 4172.8 | 4150.3 | 2795.7 | 3706.3 | 4095.4 |
| 57.5°  | 4724.5 | 4688.6 | 4677.4 | 4592.2 | 4619.1 | 4342.1 | 4549.5 | 3059.2 | 2563.5 | 1872.8 |
| 60°    | 5136.0 | 5097.9 | 5091.2 | 5016.1 | 5013.8 | 3450.6 | 4135.8 | 2098.2 | 1639.5 | 1650.7 |
| 62.5°  | 5535.3 | 5473.6 | 5490.4 | 5401.8 | 3808.3 | 2102.6 | 1853.7 | 47.1   | 75.1   | 79.6   |
| 65°    | 5980.5 | 5877.3 | 5894.1 | 5812.3 | 3928.3 | 2217.0 | 2004.0 | 24.7   | 21.3   | 20.2   |
| 67.5°  | 6408.8 | 6228.3 | 6141.9 | 6055.6 | 4079.7 | 2334.8 | 2088.1 | 6.7    | 0.0    | 0.0    |
| 68°    | 6387.5 | 6196.9 | 6108.3 | 6026.4 | 4064.0 | 2331.4 | 2083.6 | 6.7    | 0.0    | 0.0    |
| 70°    | 6027.6 | 5856.0 | 5771.9 | 5709.1 | 3880.1 | 2251.8 | 1999.5 | 6.7    | 0.0    | 0.0    |
| 72.5°  | 5269.5 | 5174.2 | 5120.3 | 5065.4 | 3447.2 | 2014.0 | 1793.1 | 6.7    | 0.0    | 0.0    |
| 75°    | 4477.8 | 4450.9 | 4417.2 | 4296.1 | 2873.0 | 1648.5 | 1473.5 | 6.7    | 0.0    | 0.0    |
| 77.5°  | 3548.1 | 3547.0 | 3465.1 | 3322.7 | 2163.2 | 1210.0 | 1086.6 | 5.6    | 0.0    | 0.0    |
| 80°    | 1918.7 | 2091.4 | 2028.6 | 1955.7 | 1226.8 | 658.3  | 626.9  | 4.5    | 0.0    | 0.0    |
| 82.5°  | 539.4  | 510.2  | 490.1  | 458.7  | 257.9  | 143.5  | 140.2  | 4.5    | 0.0    | 0.0    |
| 85°    | 75.1   | 83.0   | 92.0   | 104.3  | 59.4   | 38.1   | 33.6   | 2.2    | 0.0    | 0.0    |
| 87.5°  | 42.6   | 48.2   | 59.4   | 61.7   | 22.4   | 17.9   | 5.6    | 0.0    | 0.0    | 0.0    |
| 90°    | 9.0    | 10.1   | 11.2   | 11.2   | 4.5    | 4.5    | 0.0    | 0.0    | 0.0    | 0.0    |
| 92.5°  | 0.0    | 1.1    | 1.1    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 95°    | 1.1    | 1.1    | 1.1    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 97.5°  | 1.1    | 1.1    | 1.1    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 100°   | 1.1    | 1.1    | 1.1    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 102.5° | 1.1    | 1.1    | 1.1    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 105°   | 1.1    | 1.1    | 1.1    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 107.5° | 1.1    | 1.1    | 1.1    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



REPORT NUMBER: P522204

CATALOG NUMBER: CST-CA8-230-730-U-T5R-HSS-HM-EX120

**CANDELA DISTRIBUTION (continued):**

|        | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|--------|-----|------|------|------|------|------|------|------|------|------|
| 110°   | 1.1 | 1.1  | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 112.5° | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 115°   | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 117.5° | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 120°   | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 122.5° | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 125°   | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 127.5° | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 130°   | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 132.5° | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 135°   | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 137.5° | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 140°   | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 142.5° | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 145°   | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 147.5° | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 150°   | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 152.5° | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 155°   | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 157.5° | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 160°   | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 162.5° | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 165°   | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 167.5° | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 170°   | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 172.5° | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 175°   | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 177.5° | 1.1 | 1.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 180°   | 0.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |

Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

STREETWORKS

Report Number: SP1-2104-215-6

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

Test Date: 04/22/2021

### Test Information

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

### Spectral Parameters

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



### Test Conditions

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

REPORT NUMBER: SP1-2104-215-6

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



REPORT NUMBER: SP1-2104-215-6

**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 3000K 7-step quadrangle

REPORT NUMBER: SP1-2104-215-6

### Photopic Flux vs. Wavelength



#####

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 12827            | 0.0              | 490       | 80096            | 11.4             | 620       | 649050           | 168.9            | 750       | 30187            | 0.0              | 880       | 19756            | 0.0              |
| 365       | 11336            | 0.0              | 495       | 104447           | 18.9             | 625       | 608162           | 134.2            | 755       | 27442            | 0.0              | 885       | 21245            | 0.0              |
| 370       | 11776            | 0.0              | 500       | 142477           | 31.4             | 630       | 557990           | 101.0            | 760       | 25382            | 0.0              | 890       | 17771            | 0.0              |
| 375       | 13009            | 0.0              | 505       | 187724           | 52.5             | 635       | 506861           | 76.2             | 765       | 23778            | 0.0              | 895       | 14356            | 0.0              |
| 380       | 13906            | 0.0              | 510       | 232209           | 79.8             | 640       | 460827           | 55.1             | 770       | 21474            | 0.0              | 900       | 16683            | 0.0              |
| 385       | 12960            | 0.0              | 515       | 273388           | 113.2            | 645       | 418064           | 40.3             | 775       | 21394            | 0.0              | 905       | 16548            | 0.0              |
| 390       | 11750            | 0.0              | 520       | 308378           | 149.5            | 650       | 376246           | 27.5             | 780       | 18945            | 0.0              | 910       | 15630            | 0.0              |
| 395       | 10399            | 0.0              | 525       | 336804           | 180.8            | 655       | 332016           | 19.0             | 785       | 16318            | 0.0              | 915       | 20907            | 0.0              |
| 400       | 9192             | 0.0              | 530       | 361609           | 212.9            | 660       | 294638           | 12.3             | 790       | 17841            | 0.0              | 920       | 16083            | 0.0              |
| 405       | 8943             | 0.0              | 535       | 382440           | 237.2            | 665       | 259105           | 8.2              | 795       | 16506            | 0.0              | 925       | 20203            | 0.0              |
| 410       | 11120            | 0.0              | 540       | 401976           | 261.9            | 670       | 223041           | 4.9              | 800       | 15058            | 0.0              | 930       | 22625            | 0.0              |
| 415       | 18193            | 0.0              | 545       | 426232           | 283.7            | 675       | 193569           | 3.2              | 805       | 16851            | 0.0              | 935       | 24828            | 0.0              |
| 420       | 32317            | 0.1              | 550       | 455969           | 309.9            | 680       | 167520           | 1.9              | 810       | 16679            | 0.0              | 940       | 21275            | 0.0              |
| 425       | 59220            | 0.3              | 555       | 490448           | 335.0            | 685       | 144697           | 1.2              | 815       | 15851            | 0.0              | 945       | 23270            | 0.0              |
| 430       | 100522           | 0.8              | 560       | 530799           | 360.7            | 690       | 125032           | 0.7              | 820       | 15536            | 0.0              | 950       | 21756            | 0.0              |
| 435       | 155311           | 1.8              | 565       | 572799           | 380.9            | 695       | 107458           | 0.5              | 825       | 16381            | 0.0              | 955       | 24823            | 0.0              |
| 440       | 239817           | 3.8              | 570       | 615361           | 400.1            | 700       | 93549            | 0.3              | 830       | 16149            | 0.0              | 960       | 19499            | 0.0              |
| 445       | 368265           | 7.7              | 575       | 659689           | 410.5            | 705       | 81608            | 0.2              | 835       | 16687            | 0.0              | 965       | 27077            | 0.0              |
| 450       | 439895           | 11.4             | 580       | 700037           | 416.0            | 710       | 71559            | 0.1              | 840       | 16206            | 0.0              | 970       | 28727            | 0.0              |
| 455       | 329010           | 11.0             | 585       | 734518           | 408.1            | 715       | 65193            | 0.1              | 845       | 16062            | 0.0              | 975       | 21725            | 0.0              |
| 460       | 207545           | 8.5              | 590       | 760906           | 393.4            | 720       | 58466            | 0.0              | 850       | 18530            | 0.0              | 980       | 33536            | 0.0              |
| 465       | 154577           | 8.0              | 595       | 763605           | 362.0            | 725       | 52265            | 0.0              | 855       | 17709            | 0.0              | 985       | 30537            | 0.0              |
| 470       | 110708           | 6.9              | 600       | 766048           | 330.1            | 730       | 46287            | 0.0              | 860       | 18086            | 0.0              | 990       | 25187            | 0.0              |
| 475       | 78445            | 6.2              | 605       | 756483           | 293.0            | 735       | 40164            | 0.0              | 865       | 19763            | 0.0              | 995       | 35676            | 0.0              |
| 480       | 68887            | 6.5              | 610       | 730981           | 251.1            | 740       | 35097            | 0.0              | 870       | 19416            | 0.0              | 1000      | 32909            | 0.0              |
| 485       | 69832            | 8.3              | 615       | 694682           | 209.7            | 745       | 32334            | 0.0              | 875       | 19352            | 0.0              |           |                  |                  |

REPORT NUMBER: SP1-2104-215-6

### Scotopic Flux vs. Wavelength



Scotopic Lumens: 43125.2

S/P: 1.19

| $\lambda$<br>(nm) | Power<br>( $\mu\text{W/nm}$ ) | Lumens<br>( $\Phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W/nm}$ ) | Lumens<br>( $\Phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W/nm}$ ) | Lumens<br>( $\Phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W/nm}$ ) | Lumens<br>( $\Phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W/nm}$ ) | Lumens<br>( $\Phi/\text{nm}$ ) |
|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|
| 360               | 12827                         | 0.0                            | 490               | 80096                         | 123.3                          | 620               | 649050                        | 8.1                            | 750               | 30187                         | 0.0                            | 880               | 19756                         | 0.0                            |
| 365               | 11336                         | 0.0                            | 495               | 104447                        | 168.8                          | 625               | 608162                        | 5.1                            | 755               | 27442                         | 0.0                            | 885               | 21245                         | 0.0                            |
| 370               | 11776                         | 0.0                            | 500               | 142477                        | 238.3                          | 630               | 557990                        | 3.2                            | 760               | 25382                         | 0.0                            | 890               | 17771                         | 0.0                            |
| 375               | 13009                         | 0.0                            | 505               | 187724                        | 319.1                          | 635               | 506861                        | 1.9                            | 765               | 23778                         | 0.0                            | 895               | 14356                         | 0.0                            |
| 380               | 13906                         | 0.0                            | 510               | 232209                        | 393.6                          | 640               | 460827                        | 1.2                            | 770               | 21474                         | 0.0                            | 900               | 16683                         | 0.0                            |
| 385               | 12960                         | 0.0                            | 515               | 273388                        | 453.1                          | 645               | 418064                        | 0.7                            | 775               | 21394                         | 0.0                            | 905               | 16548                         | 0.0                            |
| 390               | 11750                         | 0.0                            | 520               | 308378                        | 490.2                          | 650               | 376246                        | 0.4                            | 780               | 18945                         | 0.0                            | 910               | 15630                         | 0.0                            |
| 395               | 10399                         | 0.1                            | 525               | 336804                        | 503.9                          | 655               | 332016                        | 0.3                            | 785               | 16318                         | 0.0                            | 915               | 20907                         | 0.0                            |
| 400               | 9192                          | 0.1                            | 530               | 361609                        | 498.6                          | 660               | 294638                        | 0.2                            | 790               | 17841                         | 0.0                            | 920               | 16083                         | 0.0                            |
| 405               | 8943                          | 0.3                            | 535               | 382440                        | 476.6                          | 665               | 259105                        | 0.1                            | 795               | 16506                         | 0.0                            | 925               | 20203                         | 0.0                            |
| 410               | 11120                         | 0.7                            | 540               | 401976                        | 444.2                          | 670               | 223041                        | 0.1                            | 800               | 15058                         | 0.0                            | 930               | 22625                         | 0.0                            |
| 415               | 18193                         | 1.9                            | 545               | 426232                        | 408.7                          | 675               | 193569                        | 0.0                            | 805               | 16851                         | 0.0                            | 935               | 24828                         | 0.0                            |
| 420               | 32317                         | 5.3                            | 550               | 455969                        | 372.8                          | 680               | 167520                        | 0.0                            | 810               | 16679                         | 0.0                            | 940               | 21275                         | 0.0                            |
| 425               | 59220                         | 14.5                           | 555               | 490448                        | 335.2                          | 685               | 144697                        | 0.0                            | 815               | 15851                         | 0.0                            | 945               | 23270                         | 0.0                            |
| 430               | 100522                        | 34.2                           | 560               | 530799                        | 296.7                          | 690               | 125032                        | 0.0                            | 820               | 15536                         | 0.0                            | 950               | 21756                         | 0.0                            |
| 435               | 155311                        | 69.4                           | 565               | 572799                        | 257.0                          | 695               | 107458                        | 0.0                            | 825               | 16381                         | 0.0                            | 955               | 24823                         | 0.0                            |
| 440               | 239817                        | 134.0                          | 570               | 615361                        | 217.2                          | 700               | 93549                         | 0.0                            | 830               | 16149                         | 0.0                            | 960               | 19499                         | 0.0                            |
| 445               | 368265                        | 246.6                          | 575               | 659689                        | 179.7                          | 705               | 81608                         | 0.0                            | 835               | 16687                         | 0.0                            | 965               | 27077                         | 0.0                            |
| 450               | 439895                        | 340.9                          | 580               | 700037                        | 144.2                          | 710               | 71559                         | 0.0                            | 840               | 16206                         | 0.0                            | 970               | 28727                         | 0.0                            |
| 455               | 329010                        | 287.5                          | 585               | 734518                        | 112.3                          | 715               | 65193                         | 0.0                            | 845               | 16062                         | 0.0                            | 975               | 21725                         | 0.0                            |
| 460               | 207545                        | 200.5                          | 590               | 760906                        | 84.7                           | 720               | 58466                         | 0.0                            | 850               | 18530                         | 0.0                            | 980               | 33536                         | 0.0                            |
| 465               | 154577                        | 163.3                          | 595               | 763605                        | 60.9                           | 725               | 52265                         | 0.0                            | 855               | 17709                         | 0.0                            | 985               | 30537                         | 0.0                            |
| 470               | 110708                        | 127.5                          | 600               | 766048                        | 43.2                           | 730               | 46287                         | 0.0                            | 860               | 18086                         | 0.0                            | 990               | 25187                         | 0.0                            |
| 475               | 78445                         | 98.1                           | 605               | 756483                        | 29.7                           | 735               | 40164                         | 0.0                            | 865               | 19763                         | 0.0                            | 995               | 35676                         | 0.0                            |
| 480               | 68887                         | 93.1                           | 610               | 730981                        | 19.8                           | 740               | 35097                         | 0.0                            | 870               | 19416                         | 0.0                            | 1000              | 32909                         | 0.0                            |
| 485               | 69832                         | 101.2                          | 615               | 694682                        | 12.8                           | 745               | 32334                         | 0.0                            | 875               | 19352                         | 0.0                            |                   |                               |                                |

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### Melanopic Flux vs. Wavelength



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

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

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TM-30-18

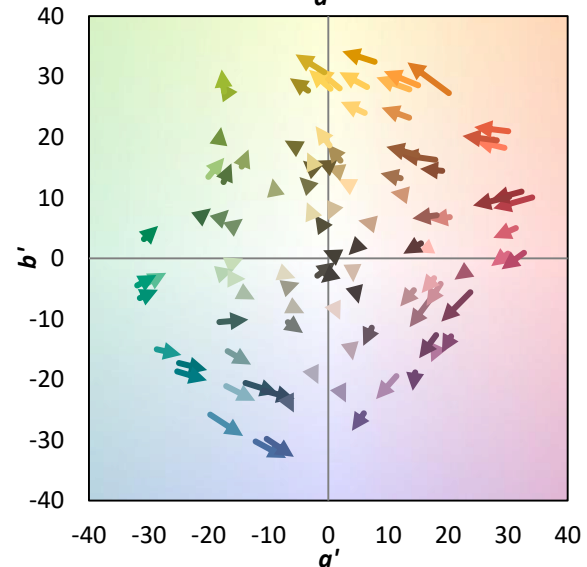
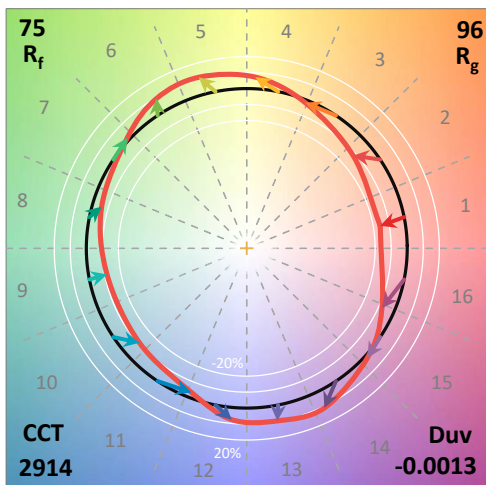
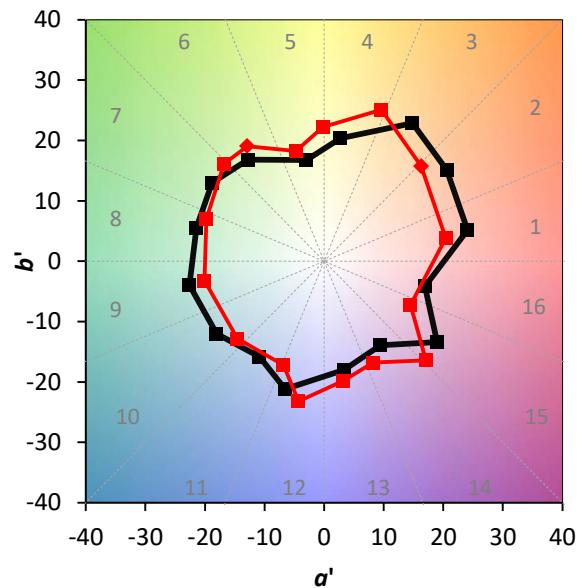
### Summary

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

### Spectral Power Distribution Comparison



### Color Vector Graphics



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

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



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)