

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: P579459

Luminaire Tested: **CST-CA8-230-730-U-T5N-HSS-HM-EX90**

Issue Date: 11/18/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P579459  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2110-429-4)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 11/18/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: CST-CA8-230-730-U-T5N-HSS-HM-EX90  
Description: CELESTEON HIGH MAST LUMINAIRE WITH FIELD INSTALLED SHIELD  
Light Source: (8) 3000K CCT, 70 CRI LEDS  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 29020 lumens  
Efficiency: N/A  
Efficacy: 127.1 lumens/watt  
Luminous Opening: Circular (Dia: 2.08' x H: 0')  
IES Classification: Type III - 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

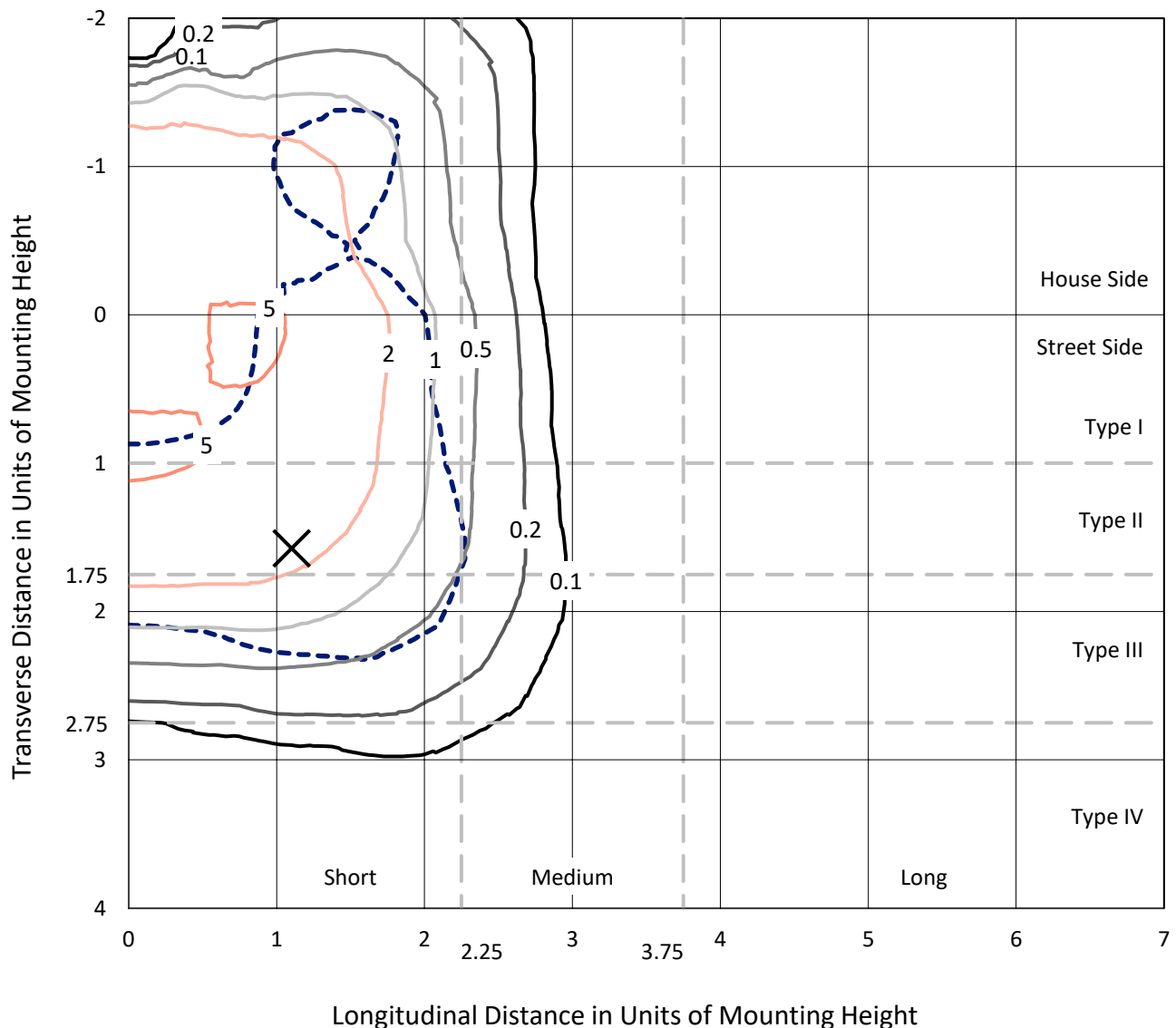


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## Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd  
 - - - 1/2 Max cd

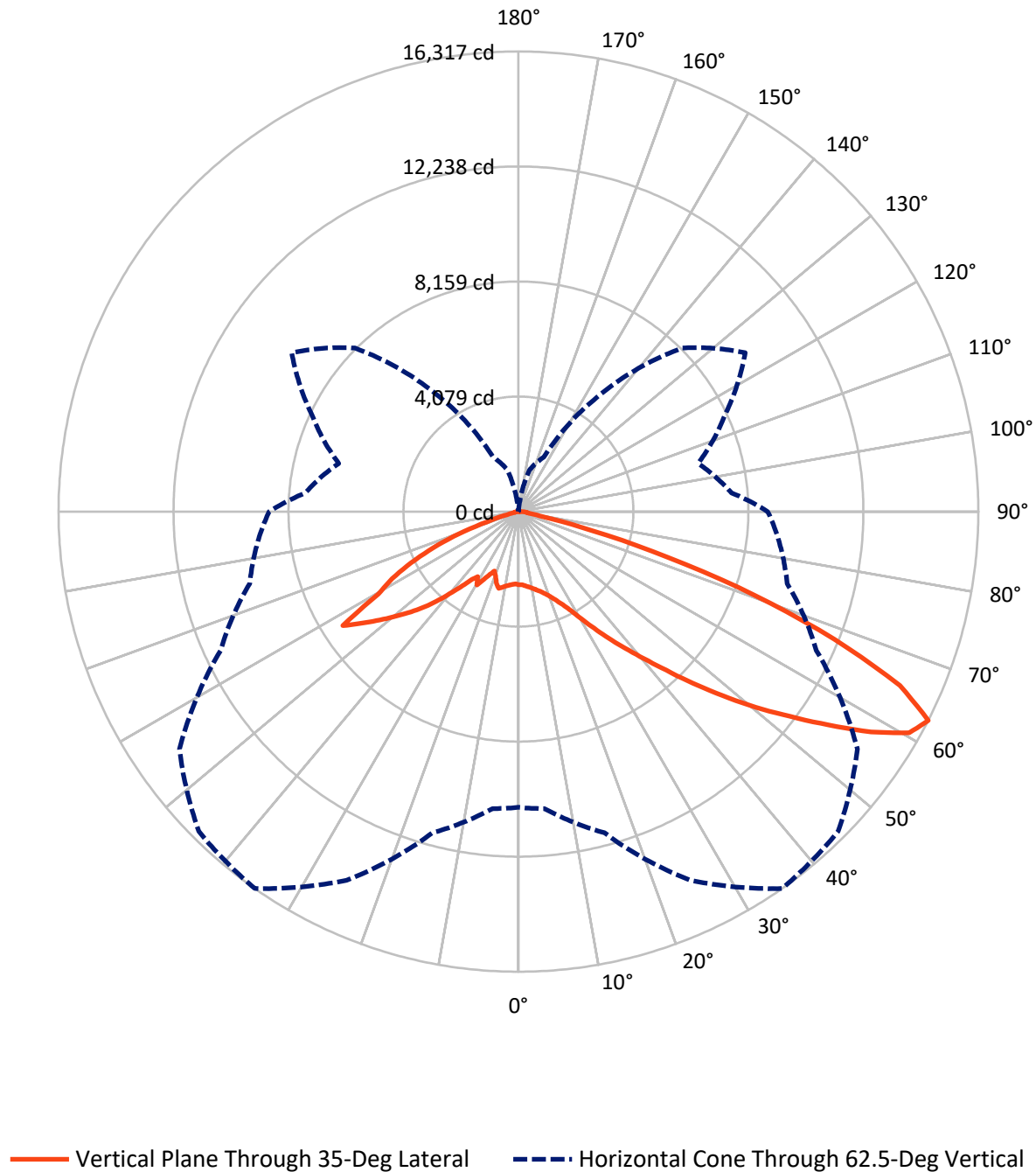


Based on 25 foot mounting height. Maximum calculated value = 5.6 fc  
 Type III - Short - N/A

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## Luminous Intensity Polar Plot



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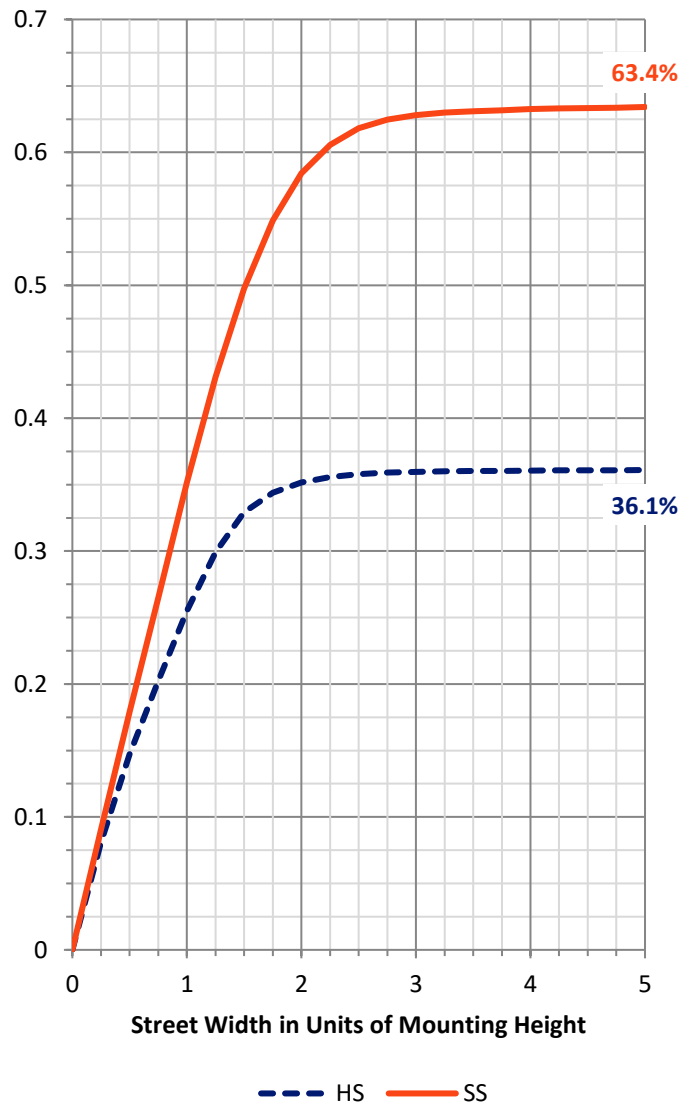
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 10533.6  | 0.0    | 10533.6 |
|                    | % Fixture | 36.3     | 0.0    | 36.3    |
| <b>Street Side</b> | Lumens    | 18472.7  | 13.8   | 18486.4 |
|                    | % Fixture | 63.7     | 0.0    | 63.7    |
| <b>Total</b>       | Lumens    | 29006.2  | 13.8   | 29020.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 255.3   | 0.9       |
| 10°-20°   | 825.1   | 2.8       |
| 20°-30°   | 1587.3  | 5.5       |
| 30°-40°   | 3166.5  | 10.9      |
| 40°-50°   | 5781.8  | 19.9      |
| 50°-60°   | 8640.0  | 29.8      |
| 60°-70°   | 7239.5  | 24.9      |
| 70°-80°   | 1354.8  | 4.7       |
| 80°-90°   | 156.0   | 0.5       |
| 90°-100°  | 12.4    | 0.0       |
| 100°-110° | 1.3     | 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°    | 29006.2 | 100.0     |
| 0°-180°   | 29020.0 | 100.0     |

**Coefficient of Utilization**



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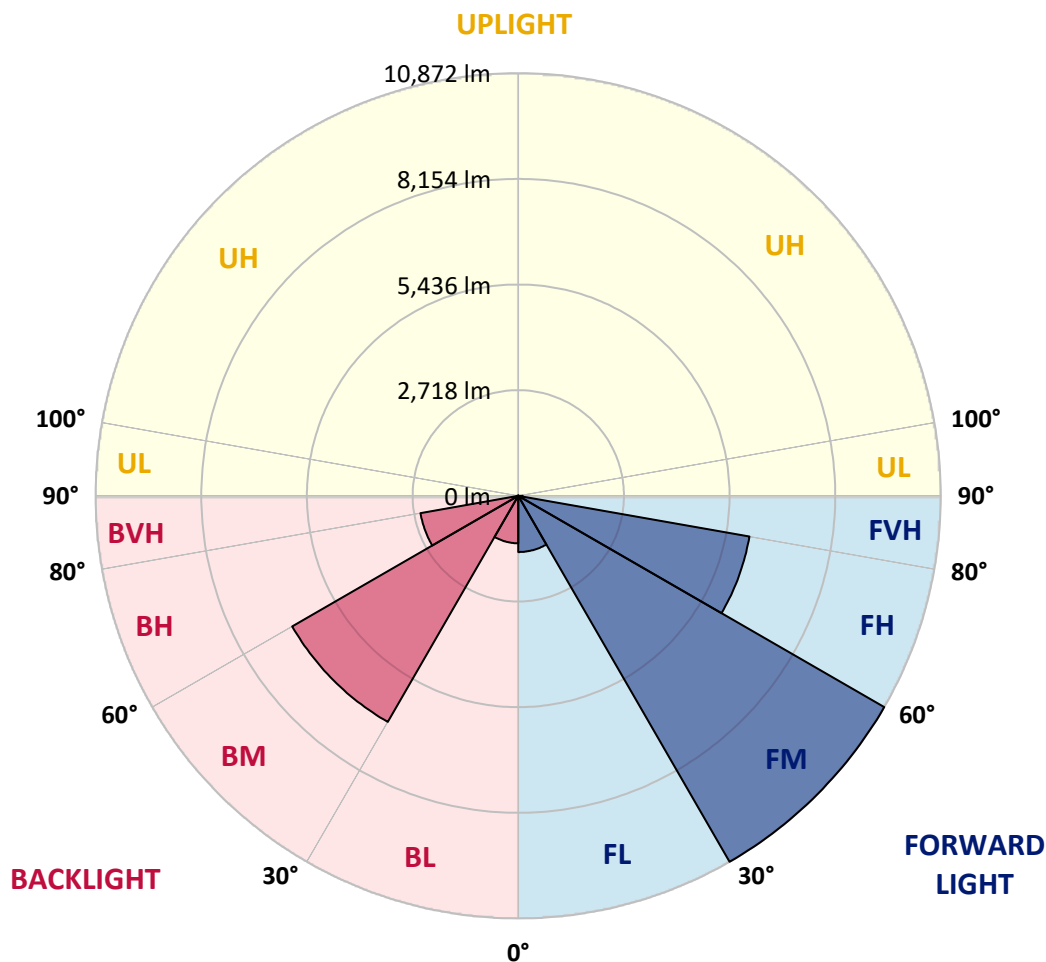
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |       |         |
|------|-------------|---------|-----------|-------------------------|-------|---------|
|      |             |         |           | B                       | U     | G       |
| FL   | (0°-30°)    | 1447.0  | 5.0       |                         |       |         |
| FM   | (30°-60°)   | 10872.2 | 37.5      |                         |       |         |
| FH   | (60°-80°)   | 6039.9  | 20.8      |                         |       | G3/7500 |
| FVH  | (80°-90°)   | 113.6   | 0.4       |                         |       | G2/225  |
| BL   | (0°-30°)    | 1220.6  | 4.2       | B3/2500                 |       |         |
| BM   | (30°-60°)   | 6716.1  | 23.1      | B4/8500                 |       |         |
| BH   | (60°-80°)   | 2554.5  | 8.8       | B4/5000                 |       | G4/5000 |
| BVH  | (80°-90°)   | 42.4    | 0.1       |                         |       | G1/100  |
| UL   | (90°-100°)  | 12.4    | 0.0       |                         | U2/50 |         |
| UH   | (100°-180°) | 1.4     | 0.0       |                         | U1/10 |         |

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

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

|        | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 65°     | 75°     | 85°     | 90°     |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°     | 2596.6  | 2596.6  | 2596.6  | 2596.6  | 2596.6  | 2596.6  | 2596.6  | 2596.6  | 2596.6  | 2596.6  | 2596.6  |
| 2.5°   | 2652.1  | 2630.3  | 2633.6  | 2648.8  | 2601.0  | 2620.5  | 2599.9  | 2619.5  | 2612.9  | 2621.6  | 2628.2  |
| 5°     | 2690.2  | 2663.0  | 2665.1  | 2682.5  | 2645.6  | 2661.9  | 2641.2  | 2654.3  | 2643.4  | 2655.4  | 2656.4  |
| 7.5°   | 2742.4  | 2719.5  | 2716.3  | 2733.7  | 2702.1  | 2716.3  | 2695.6  | 2702.1  | 2691.2  | 2705.4  | 2701.0  |
| 10°    | 2812.0  | 2791.3  | 2785.9  | 2797.9  | 2772.8  | 2780.4  | 2758.7  | 2767.4  | 2751.1  | 2767.4  | 2759.8  |
| 12.5°  | 2889.2  | 2862.0  | 2863.1  | 2876.2  | 2851.2  | 2856.6  | 2839.2  | 2849.0  | 2829.4  | 2846.8  | 2841.4  |
| 15°    | 2980.6  | 2941.4  | 2949.1  | 2963.2  | 2939.3  | 2955.6  | 2934.9  | 2949.1  | 2930.6  | 2949.1  | 2942.5  |
| 17.5°  | 3099.2  | 3054.6  | 3060.0  | 3082.9  | 3063.3  | 3089.4  | 3065.5  | 3082.9  | 3074.2  | 3086.1  | 3083.9  |
| 20°    | 3249.3  | 3219.9  | 3214.5  | 3242.8  | 3214.5  | 3247.1  | 3234.1  | 3264.5  | 3266.7  | 3278.7  | 3284.1  |
| 22.5°  | 3449.5  | 3429.9  | 3416.8  | 3436.4  | 3411.4  | 3434.2  | 3452.7  | 3504.9  | 3524.5  | 3556.1  | 3558.2  |
| 25°    | 3716.0  | 3714.9  | 3685.5  | 3686.6  | 3655.1  | 3685.5  | 3737.7  | 3819.3  | 3871.5  | 3911.8  | 3896.5  |
| 27.5°  | 4076.0  | 4082.6  | 4038.0  | 4020.6  | 3983.6  | 4029.3  | 4137.0  | 4238.1  | 4332.8  | 4389.3  | 4389.3  |
| 30°    | 4546.0  | 4552.5  | 4487.2  | 4452.4  | 4418.7  | 4498.1  | 4626.5  | 4758.1  | 4893.0  | 4974.6  | 4956.1  |
| 32.5°  | 5168.2  | 5147.5  | 5054.0  | 4990.9  | 4933.2  | 5024.6  | 5172.5  | 5321.6  | 5505.4  | 5622.9  | 5608.8  |
| 35°    | 5923.1  | 5848.1  | 5754.5  | 5637.0  | 5513.0  | 5584.8  | 5724.1  | 5911.2  | 6166.8  | 6343.0  | 6298.4  |
| 37.5°  | 6799.9  | 6725.9  | 6566.0  | 6363.7  | 6147.2  | 6155.9  | 6265.8  | 6590.0  | 6909.8  | 7053.4  | 7022.9  |
| 40°    | 7710.4  | 7652.8  | 7505.9  | 7245.9  | 6854.3  | 6764.0  | 6944.6  | 7335.1  | 7640.8  | 7821.4  | 7770.2  |
| 42.5°  | 8638.3  | 8579.6  | 8468.6  | 8207.5  | 7688.7  | 7471.1  | 7659.3  | 8084.6  | 8411.0  | 8588.3  | 8529.5  |
| 45°    | 9564.0  | 9496.6  | 9408.5  | 9177.9  | 8682.9  | 8364.2  | 8469.7  | 8860.2  | 9158.3  | 9359.5  | 9238.8  |
| 47.5°  | 10377.7 | 10333.1 | 10273.3 | 10179.7 | 9746.8  | 9394.3  | 9386.7  | 9644.5  | 9850.1  | 9982.9  | 9834.9  |
| 50°    | 11085.9 | 11054.4 | 11088.1 | 11068.5 | 10910.8 | 10589.9 | 10393.0 | 10375.6 | 10441.9 | 10538.7 | 10327.7 |
| 52.5°  | 11721.2 | 11665.7 | 11790.8 | 11946.4 | 12062.8 | 11997.5 | 11360.0 | 11002.1 | 10929.3 | 10961.9 | 10722.6 |
| 55°    | 12241.2 | 12215.0 | 12425.0 | 12815.5 | 13354.0 | 13497.6 | 12353.2 | 11611.3 | 11342.6 | 11325.2 | 11053.3 |
| 57.5°  | 12558.8 | 12595.8 | 13015.7 | 13759.7 | 14747.5 | 14793.2 | 13572.6 | 12262.9 | 11745.1 | 11558.0 | 11244.7 |
| 60°    | 12053.0 | 12195.5 | 12912.3 | 14447.2 | 15929.9 | 15958.2 | 14467.9 | 12382.6 | 11242.5 | 10823.7 | 10435.4 |
| 62.5°  | 10488.7 | 10573.5 | 11793.0 | 14424.4 | 16317.2 | 16040.9 | 14681.1 | 11660.3 | 9870.8  | 9202.9  | 8843.9  |
| 65°    | 7388.4  | 7547.2  | 8853.7  | 12977.6 | 14869.3 | 14904.1 | 13468.2 | 10081.8 | 7882.3  | 7143.7  | 6912.0  |
| 67.5°  | 4462.2  | 4614.5  | 6005.8  | 9368.2  | 12087.8 | 12478.3 | 11234.9 | 7633.2  | 5652.3  | 4718.9  | 4485.1  |
| 70°    | 1449.0  | 1614.3  | 2736.9  | 5521.7  | 8891.8  | 9828.4  | 8454.5  | 4968.0  | 2959.9  | 2073.4  | 1822.1  |
| 72.5°  | 550.4   | 600.5   | 890.9   | 2411.7  | 5538.1  | 6561.7  | 5229.1  | 2492.2  | 917.0   | 546.1   | 479.7   |
| 75°    | 357.9   | 365.5   | 416.6   | 845.2   | 2670.6  | 3612.6  | 2520.5  | 729.9   | 367.7   | 326.3   | 302.4   |
| 77.5°  | 307.9   | 313.3   | 335.0   | 421.0   | 850.7   | 1381.5  | 723.4   | 373.1   | 306.8   | 272.0   | 255.6   |
| 80°    | 290.4   | 292.6   | 306.8   | 356.8   | 398.1   | 461.2   | 348.1   | 312.2   | 267.6   | 255.6   | 243.7   |
| 82.5°  | 275.2   | 282.8   | 290.4   | 324.2   | 323.1   | 331.8   | 279.6   | 244.8   | 227.4   | 239.3   | 235.0   |
| 85°    | 256.7   | 261.1   | 266.5   | 289.4   | 263.3   | 223.0   | 215.4   | 168.6   | 164.3   | 175.1   | 164.3   |
| 87.5°  | 180.6   | 191.5   | 184.9   | 194.7   | 182.8   | 142.5   | 120.7   | 95.7    | 76.1    | 63.1    | 60.9    |
| 90°    | 74.0    | 75.1    | 70.7    | 65.3    | 57.7    | 47.9    | 38.1    | 23.9    | 10.9    | 5.4     | 2.2     |
| 92.5°  | 57.7    | 57.7    | 55.5    | 50.0    | 43.5    | 35.9    | 27.2    | 15.2    | 7.6     | 3.3     | 1.1     |
| 95°    | 35.9    | 37.0    | 34.8    | 31.5    | 27.2    | 21.8    | 16.3    | 8.7     | 5.4     | 2.2     | 1.1     |
| 97.5°  | 22.8    | 22.8    | 20.7    | 18.5    | 15.2    | 10.9    | 7.6     | 6.5     | 4.4     | 2.2     | 0.0     |
| 100°   | 13.1    | 13.1    | 12.0    | 9.8     | 7.6     | 5.4     | 5.4     | 4.4     | 3.3     | 1.1     | 0.0     |
| 102.5° | 7.6     | 7.6     | 5.4     | 4.4     | 3.3     | 3.3     | 3.3     | 3.3     | 2.2     | 1.1     | 0.0     |
| 105°   | 3.3     | 3.3     | 2.2     | 2.2     | 1.1     | 1.1     | 2.2     | 2.2     | 2.2     | 1.1     | 0.0     |
| 107.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 1.1     | 2.2     | 2.2     | 1.1     | 0.0     |
| 110°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 1.1     | 2.2     | 1.1     | 1.1     |



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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°     | 2596.6 | 2596.6 | 2596.6 | 2596.6  | 2596.6 | 2596.6 | 2596.6 | 2596.6 | 2596.6 | 2596.6 |
| 2.5°   | 2623.8 | 2604.2 | 2607.5 | 2589.0  | 2585.7 | 2567.2 | 2604.2 | 2608.6 | 2597.7 | 2607.5 |
| 5°     | 2654.3 | 2630.3 | 2637.9 | 2617.3  | 2614.0 | 2589.0 | 2621.6 | 2619.5 | 2610.8 | 2620.5 |
| 7.5°   | 2700.0 | 2674.9 | 2679.3 | 2656.4  | 2652.1 | 2624.9 | 2655.4 | 2645.6 | 2636.9 | 2648.8 |
| 10°    | 2764.1 | 2735.8 | 2738.0 | 2708.7  | 2711.9 | 2676.0 | 2713.0 | 2695.6 | 2684.7 | 2701.0 |
| 12.5°  | 2841.4 | 2809.8 | 2810.9 | 2780.4  | 2779.4 | 2744.6 | 2777.2 | 2767.4 | 2751.1 | 2776.1 |
| 15°    | 2941.4 | 2905.5 | 2902.3 | 2862.0  | 2851.2 | 2812.0 | 2842.5 | 2824.0 | 2813.1 | 2849.0 |
| 17.5°  | 3081.8 | 3041.5 | 3029.6 | 2980.6  | 2777.2 | 2659.7 | 2822.9 | 2878.4 | 2810.9 | 2800.0 |
| 20°    | 3268.9 | 3235.2 | 3208.0 | 3134.0  | 2792.4 | 2425.8 | 2155.0 | 2157.1 | 2442.1 | 2573.8 |
| 22.5°  | 3522.3 | 3482.1 | 3431.0 | 3325.4  | 2561.8 | 2272.4 | 2273.5 | 2270.3 | 1948.3 | 1812.3 |
| 25°    | 3869.3 | 3820.4 | 3716.0 | 3119.8  | 2719.5 | 2451.9 | 2445.4 | 2126.7 | 1949.4 | 1959.2 |
| 27.5°  | 4338.2 | 4238.1 | 3626.8 | 3379.8  | 3000.2 | 2684.7 | 2528.1 | 2140.8 | 2162.6 | 2177.8 |
| 30°    | 4934.3 | 4531.8 | 3919.4 | 3772.5  | 3337.4 | 2993.7 | 2337.7 | 2391.0 | 2434.5 | 2444.3 |
| 32.5°  | 5545.7 | 4544.9 | 4387.1 | 4231.6  | 3753.0 | 2723.9 | 2634.7 | 2735.8 | 2781.5 | 2787.0 |
| 35°    | 5540.2 | 5101.8 | 4898.4 | 4723.3  | 4138.0 | 2914.2 | 2970.8 | 3126.4 | 3242.8 | 3237.3 |
| 37.5°  | 5863.3 | 5716.5 | 5473.9 | 5252.0  | 3724.7 | 3283.0 | 3384.2 | 3560.4 | 3701.8 | 3697.5 |
| 40°    | 6538.8 | 6369.1 | 6112.4 | 5646.8  | 4123.9 | 3705.1 | 3846.5 | 4035.8 | 4135.9 | 4141.3 |
| 42.5°  | 7177.4 | 7037.1 | 6774.9 | 5275.9  | 4623.2 | 4213.1 | 4341.5 | 4468.7 | 4530.7 | 4550.3 |
| 45°    | 7812.7 | 7712.6 | 6840.2 | 5830.7  | 5226.9 | 4724.4 | 4809.2 | 4833.2 | 4898.4 | 4890.8 |
| 47.5°  | 8328.3 | 8217.3 | 6576.9 | 6526.9  | 5959.0 | 5209.5 | 5203.0 | 5171.5 | 5195.4 | 5200.8 |
| 50°    | 8799.3 | 7462.4 | 7105.6 | 7272.0  | 6727.0 | 5704.5 | 5580.5 | 5516.3 | 5483.7 | 5469.5 |
| 52.5°  | 9171.3 | 7464.6 | 7599.5 | 8042.2  | 7594.0 | 6241.9 | 5975.4 | 5794.8 | 5073.6 | 5638.1 |
| 55°    | 9487.9 | 7772.4 | 8067.2 | 8865.7  | 8341.3 | 6804.3 | 6332.2 | 6010.2 | 3386.4 | 2715.2 |
| 57.5°  | 9669.6 | 8006.3 | 8530.6 | 9636.9  | 8994.0 | 7429.8 | 5829.6 | 5040.9 | 1914.6 | 1912.4 |
| 60°    | 8967.9 | 7586.4 | 8517.6 | 10041.6 | 8805.8 | 5763.2 | 2373.6 | 1986.3 | 362.2  | 372.0  |
| 62.5°  | 7591.8 | 6599.8 | 8078.1 | 9819.7  | 8201.0 | 5070.3 | 2128.8 | 1529.5 | 12.0   | 9.8    |
| 65°    | 5881.8 | 5265.0 | 6802.1 | 8637.2  | 7461.3 | 4230.5 | 1587.1 | 1102.0 | 3.3    | 0.0    |
| 67.5°  | 3847.6 | 3710.5 | 5019.2 | 7162.2  | 6085.2 | 3277.6 | 1065.0 | 527.6  | 2.2    | 0.0    |
| 70°    | 1640.4 | 1900.4 | 3179.7 | 5193.2  | 4658.0 | 2255.0 | 513.4  | 190.4  | 1.1    | 0.0    |
| 72.5°  | 459.1  | 608.1  | 1415.2 | 3042.6  | 2929.5 | 1185.7 | 200.2  | 80.5   | 1.1    | 0.0    |
| 75°    | 272.0  | 233.9  | 405.8  | 1214.0  | 1426.1 | 416.6  | 92.5   | 62.0   | 1.1    | 0.0    |
| 77.5°  | 226.3  | 182.8  | 232.8  | 310.0   | 431.9  | 150.1  | 78.3   | 55.5   | 0.0    | 0.0    |
| 80°    | 212.1  | 162.1  | 201.2  | 216.5   | 213.2  | 125.1  | 77.2   | 55.5   | 0.0    | 0.0    |
| 82.5°  | 201.2  | 141.4  | 166.4  | 166.4   | 178.4  | 115.3  | 72.9   | 54.4   | 0.0    | 0.0    |
| 85°    | 151.2  | 99.0   | 111.0  | 143.6   | 128.4  | 81.6   | 53.3   | 43.5   | 0.0    | 0.0    |
| 87.5°  | 57.7   | 35.9   | 43.5   | 45.7    | 37.0   | 18.5   | 4.4    | 4.4    | 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: P579459

CATALOG NUMBER: CST-CA8-230-730-U-T5N-HSS-HM-EX90

**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  |

Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

STREETWORKS

Report Number: SP1-2104-215-6

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

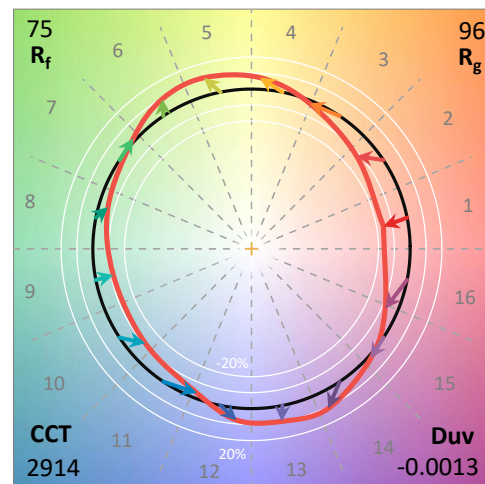
Test Date: 04/22/2021

### 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

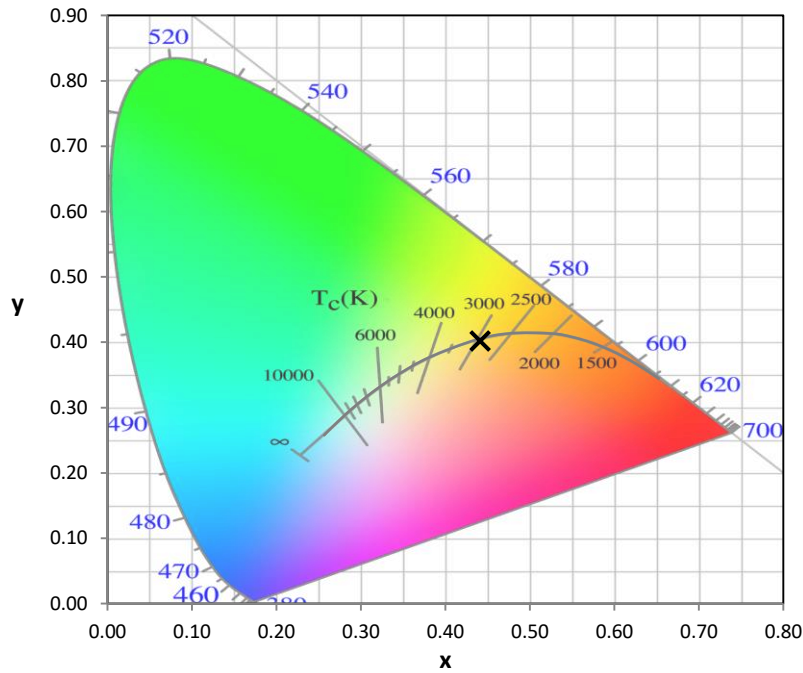
REPORT NUMBER: SP1-2104-215-6

| 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            |

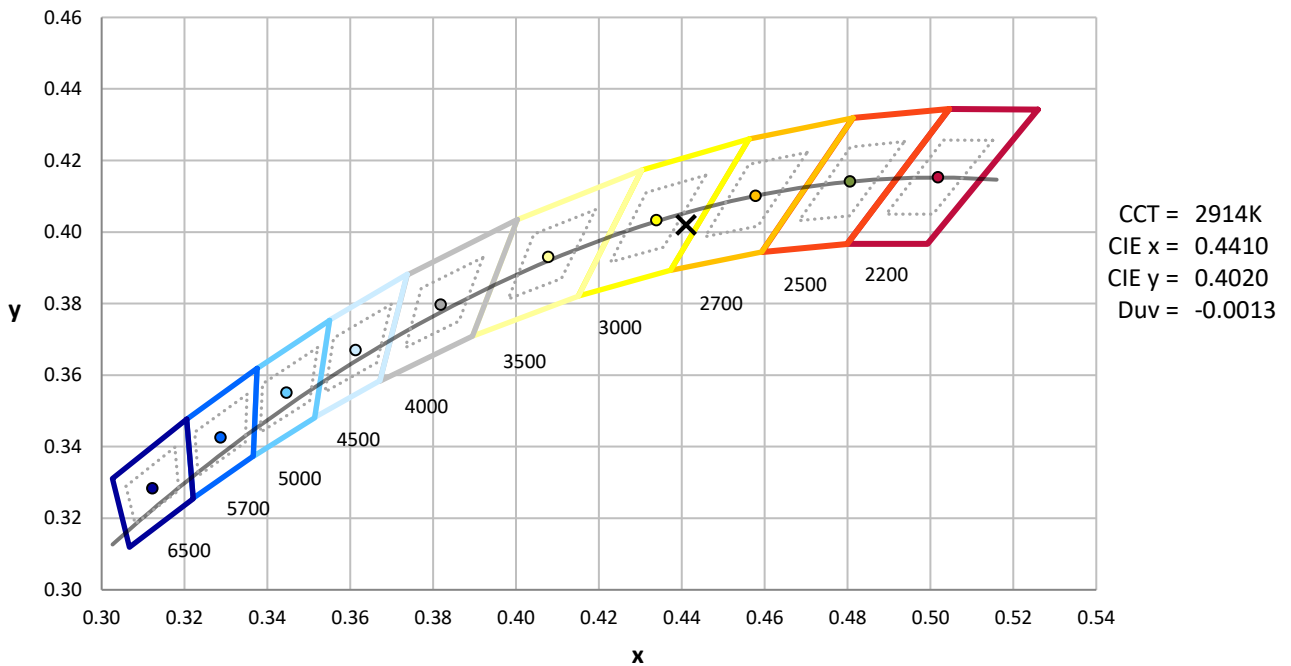


REPORT NUMBER: SP1-2104-215-6

**CIE 1931 Chromaticity Diagram**



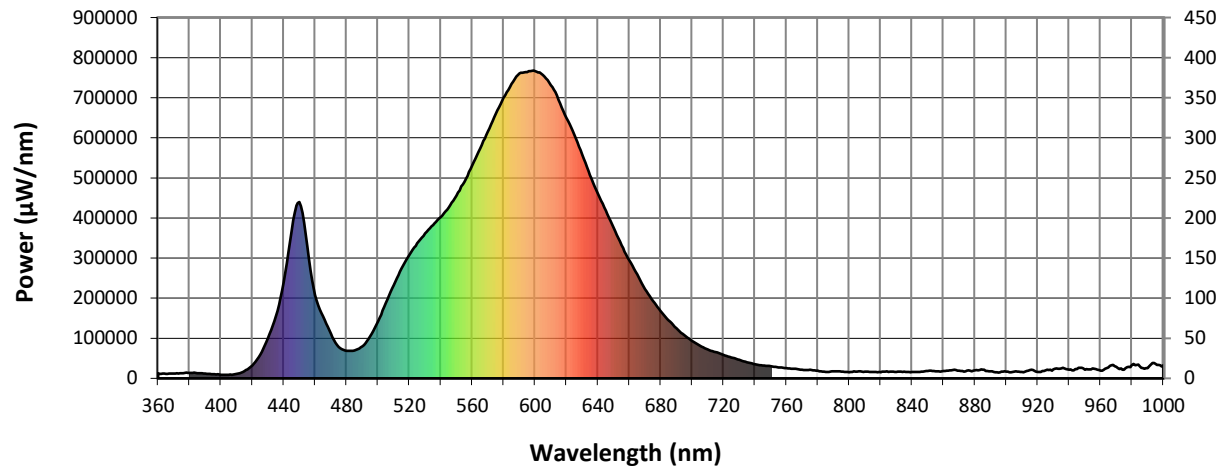
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 3000K 7-step quadrangle

REPORT NUMBER: SP1-2104-215-6

### Photopic Flux vs. Wavelength

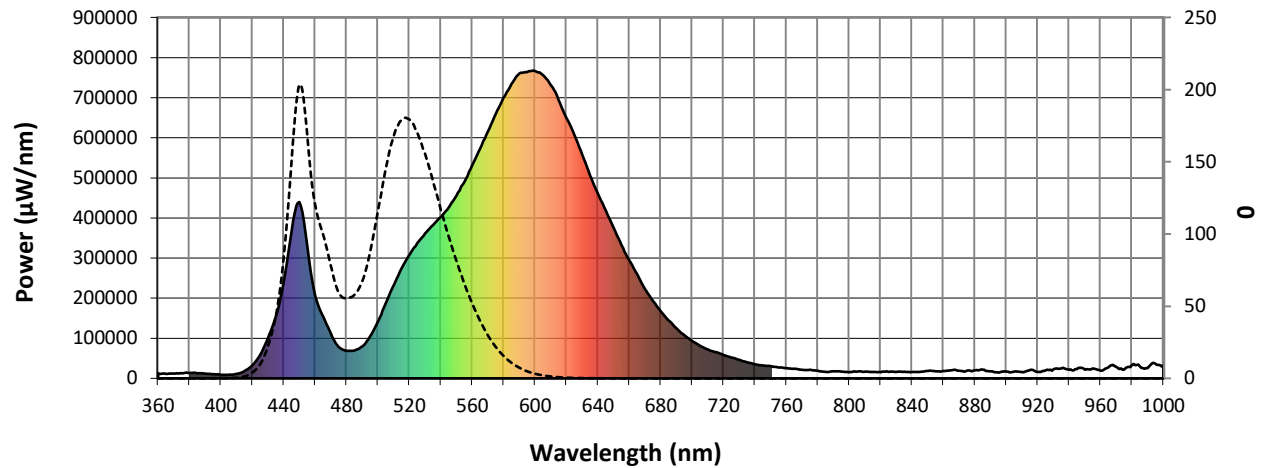


#####

| 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

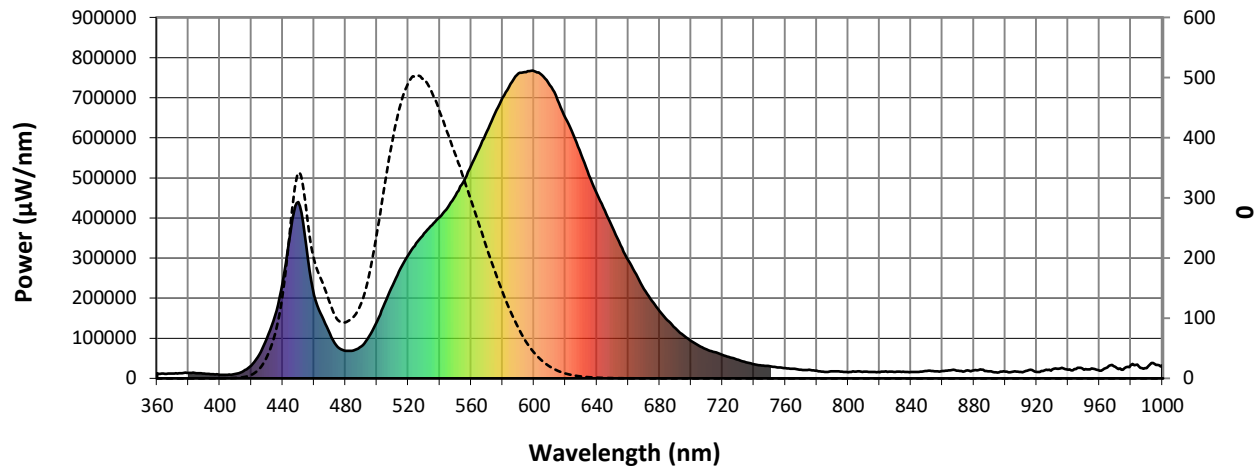

**Scotopic Lumens: 43125.2**
**S/P: 1.19**

| $\lambda$<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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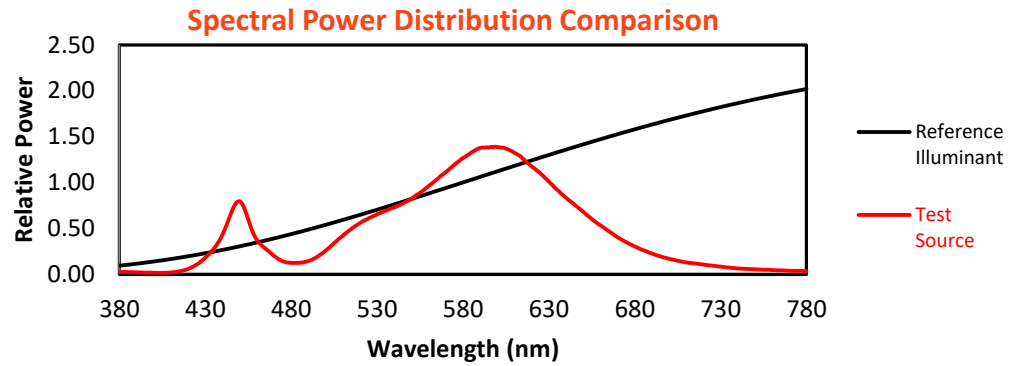
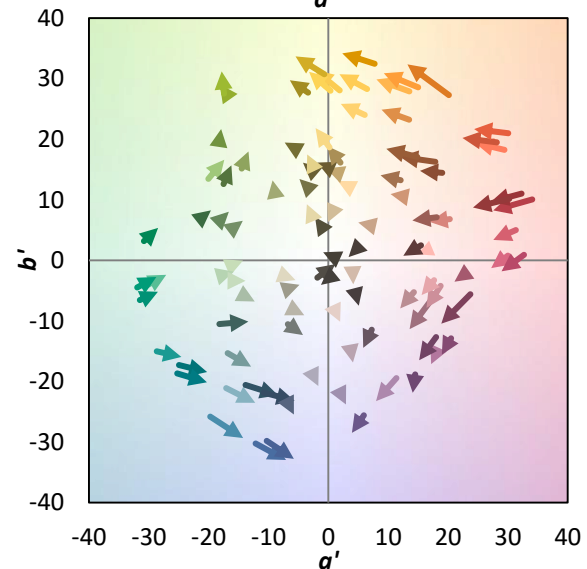
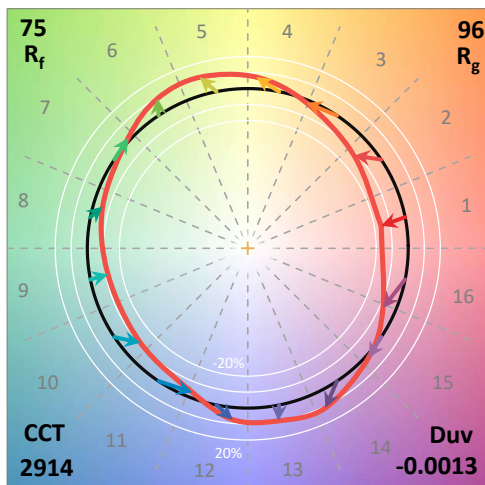
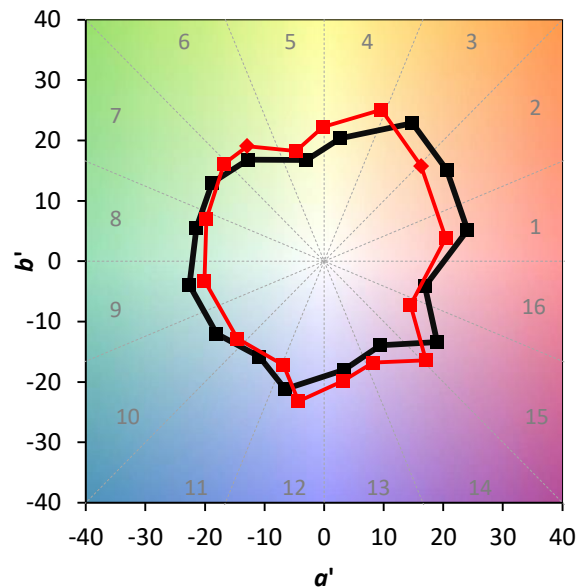
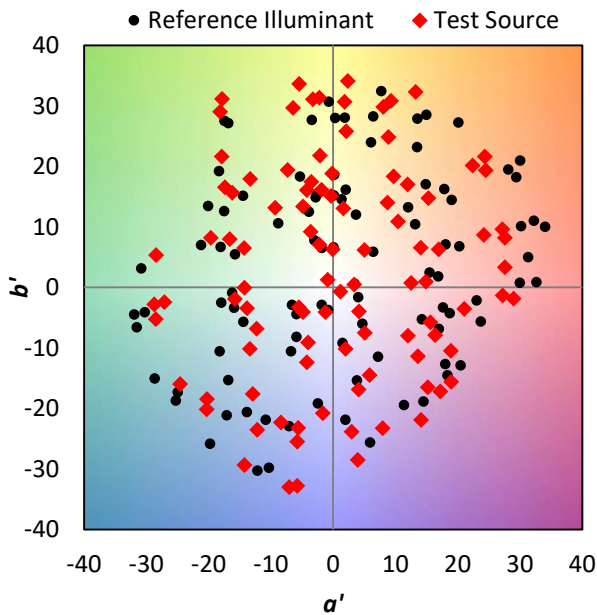
### Melanopic Flux vs. Wavelength



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

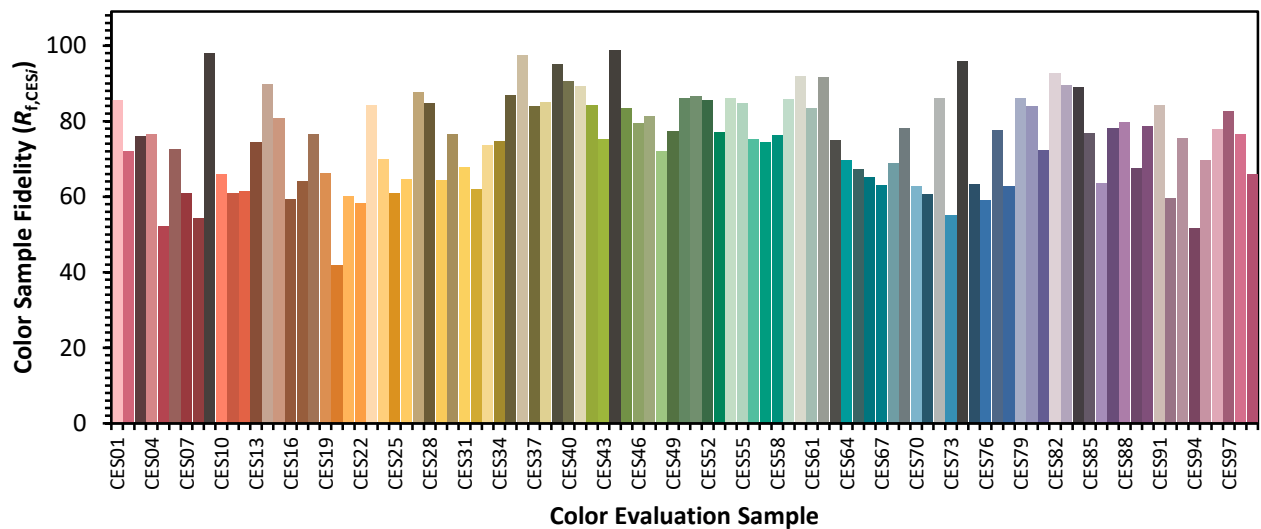
| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 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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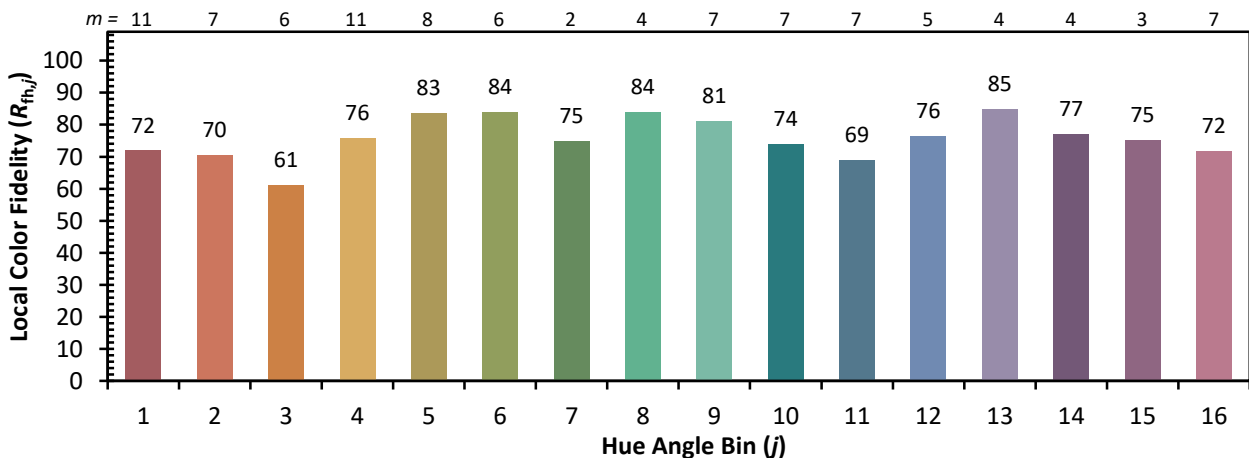
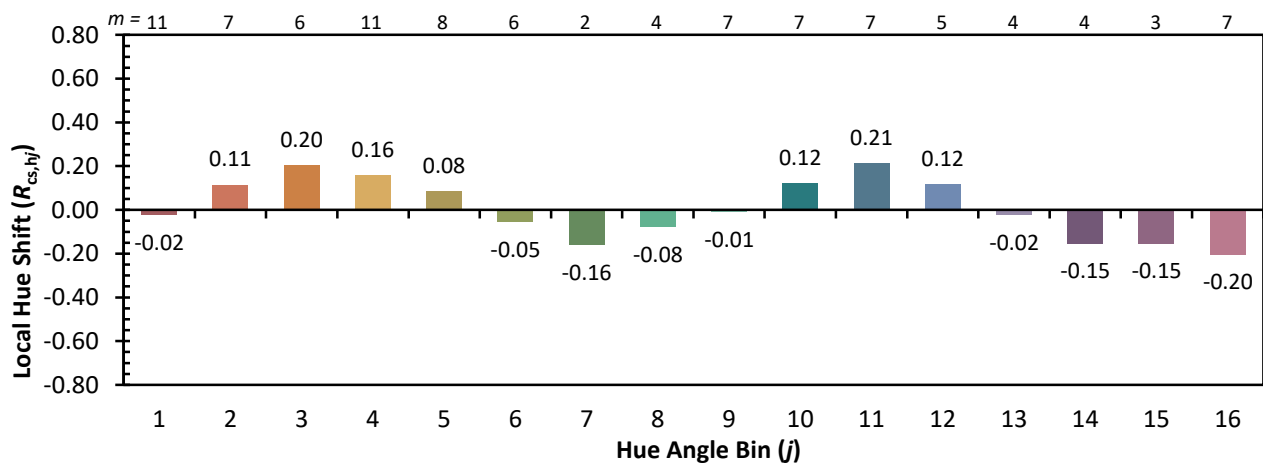
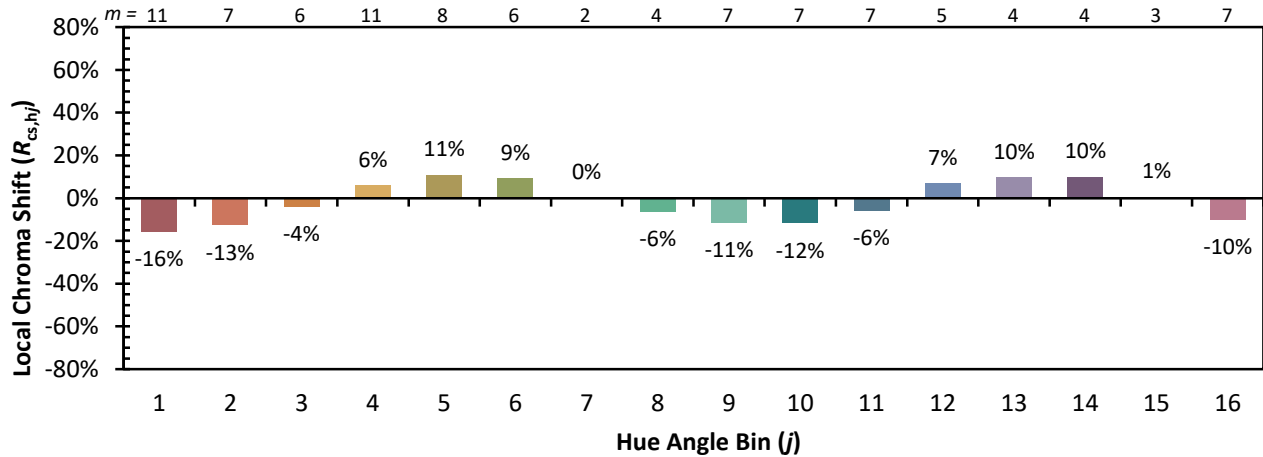
**TM-30-18**
**Summary**
 $R_f = 75.3$   
 $R_g = 95.7$   
 CIE  $R_a = 73.2$   
 $R_g = -27.2$ 

**Color Vector Graphics**


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

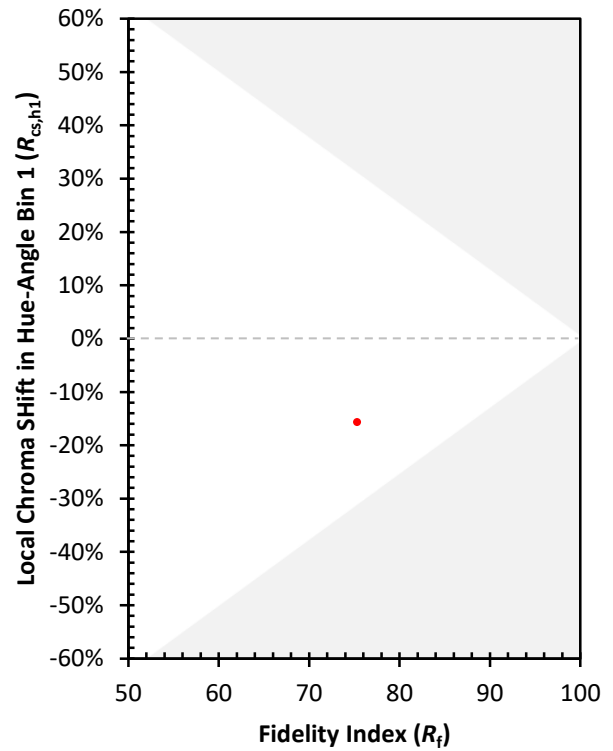
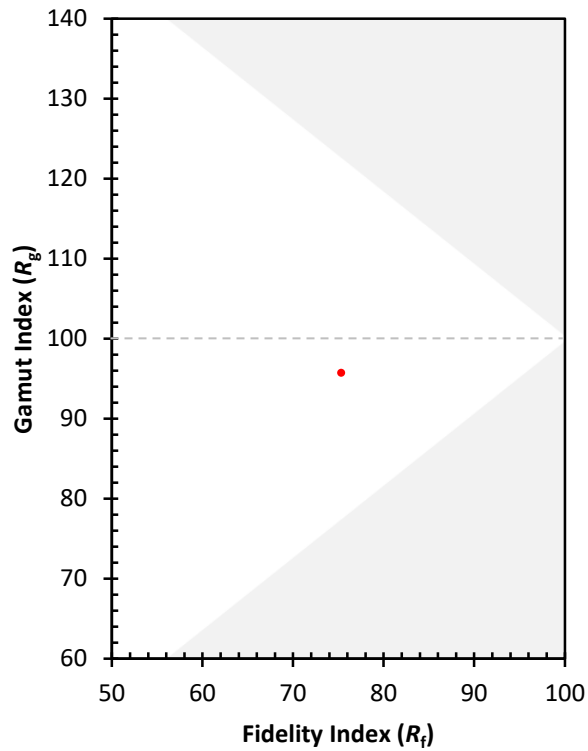
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 65 | CES51 = 87 | CES76 = 59 |
| CES02 = 63 | CES27 = 88 | CES52 = 86 | CES77 = 78 |
| CES03 = 31 | CES28 = 85 | CES53 = 77 | CES78 = 63 |
| CES04 = 71 | CES29 = 64 | CES54 = 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)