

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: P579518

Luminaire Tested: **CST-CA8-480-740-U-T5N-HSS-HM-EX180**

Issue Date: 11/18/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P579518  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2110-429-6)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 11/18/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: CST-CA8-480-740-U-T5N-HSS-HM-EX180  
Description: CELESTEON HIGH MAST LUMINAIRE WITH FIELD INSTALLED SHIELD  
Light Source: (8) 4000K CCT, 70 CRI LEDS  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 48138 lumens  
Efficiency: N/A  
Efficacy: 100.1 lumens/watt  
Luminous Opening: Circular (Dia: 2.08' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B5 - U2 - G4

Input Watts (W): 480.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

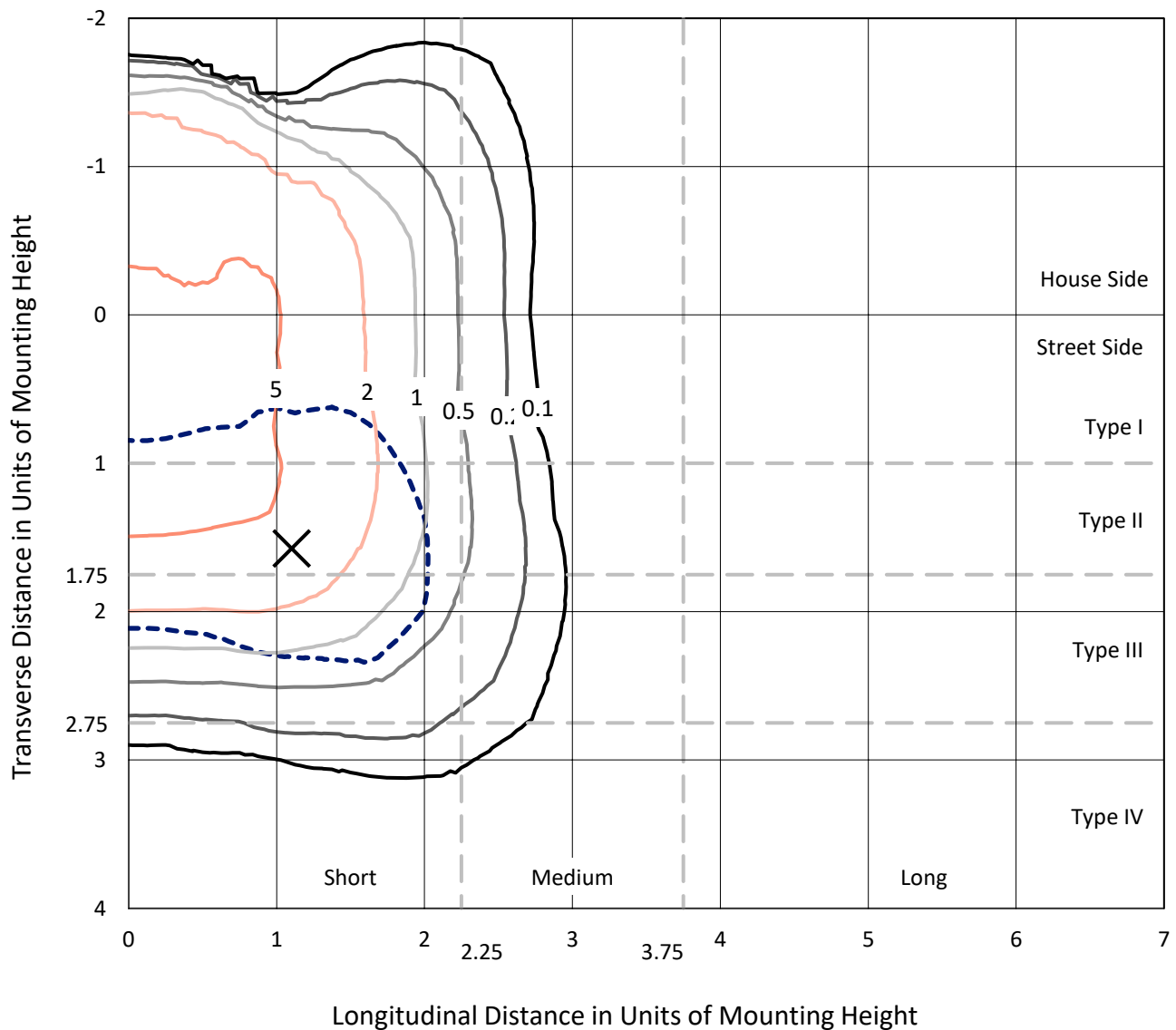


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## Iso-Footcandle Lines of Horizontal Illumination

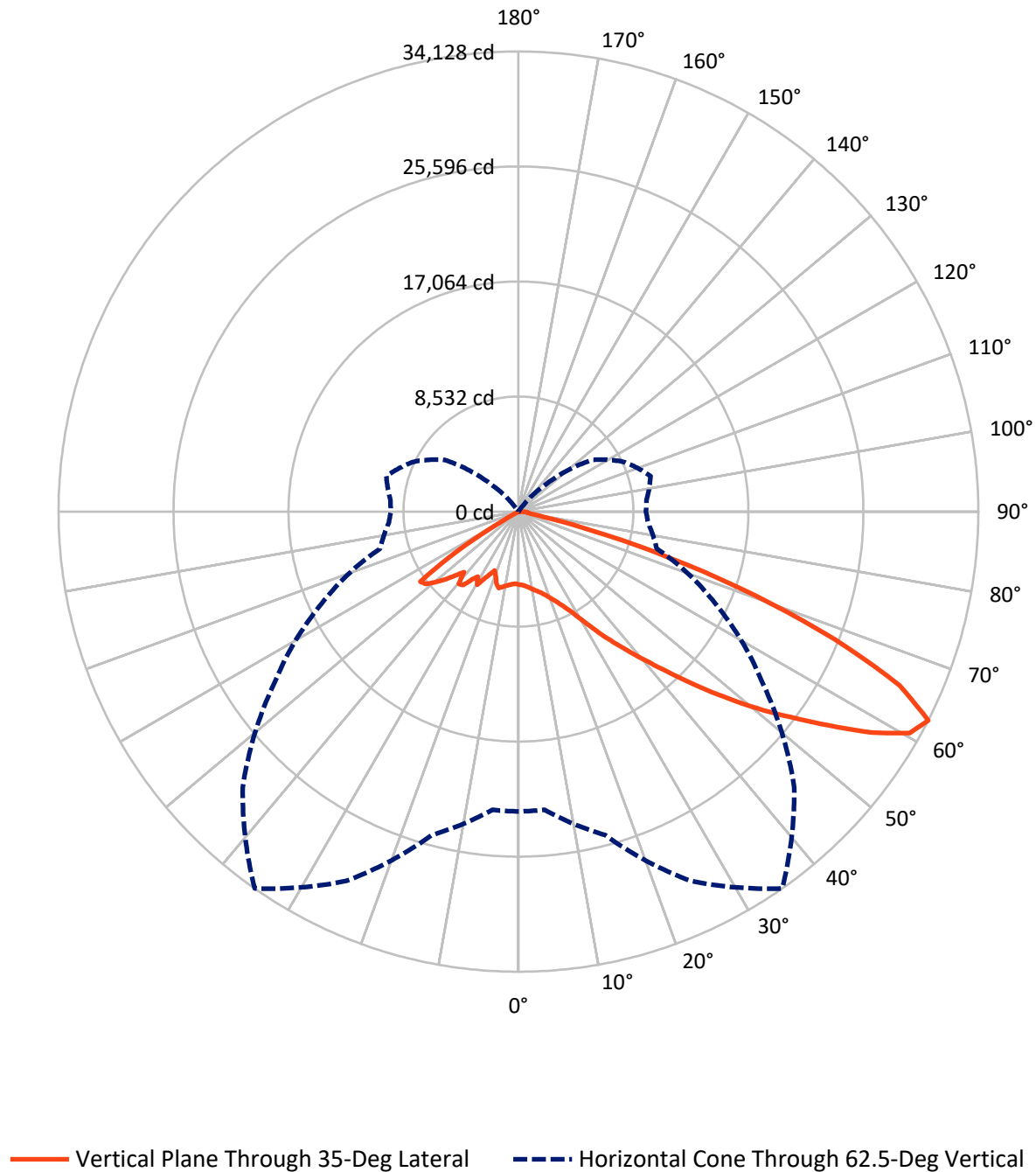
✕ Max cd  
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 8.2 fc  
 Type III - Short - N/A

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## Luminous Intensity Polar Plot



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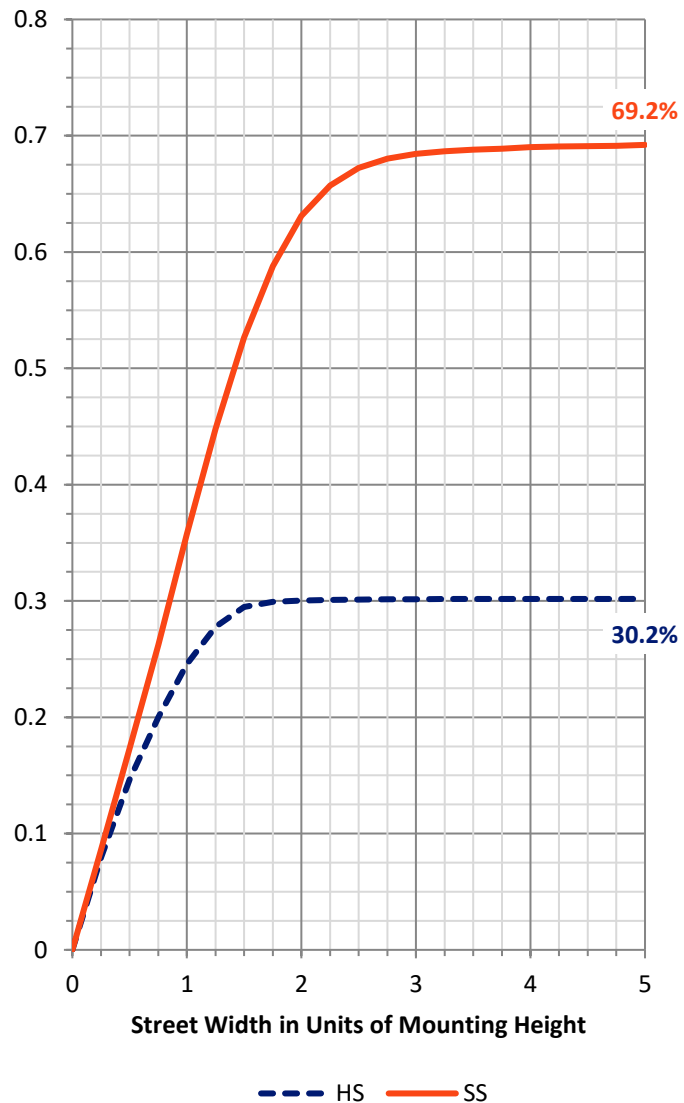
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 14610.0  | 0.0    | 14610.1 |
|                    | % Fixture | 30.4     | 0.0    | 30.4    |
| <b>Street Side</b> | Lumens    | 33486.2  | 41.8   | 33527.9 |
|                    | % Fixture | 69.6     | 0.1    | 69.6    |
| <b>Total</b>       | Lumens    | 48096.2  | 41.8   | 48138.0 |
|                    | % Fixture | 99.9     | 0.1    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 534.9   | 1.1       |
| 10°-20°   | 1716.6  | 3.6       |
| 20°-30°   | 3137.5  | 6.5       |
| 30°-40°   | 5979.1  | 12.4      |
| 40°-50°   | 10262.6 | 21.3      |
| 50°-60°   | 13767.5 | 28.6      |
| 60°-70°   | 10466.0 | 21.7      |
| 70°-80°   | 1981.8  | 4.1       |
| 80°-90°   | 250.2   | 0.5       |
| 90°-100°  | 36.8    | 0.1       |
| 100°-110° | 5.0     | 0.0       |
| 110°-120° | 0.1     | 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°    | 48096.2 | 99.9      |
| 0°-180°   | 48138.0 | 100.0     |

**Coefficient of Utilization**



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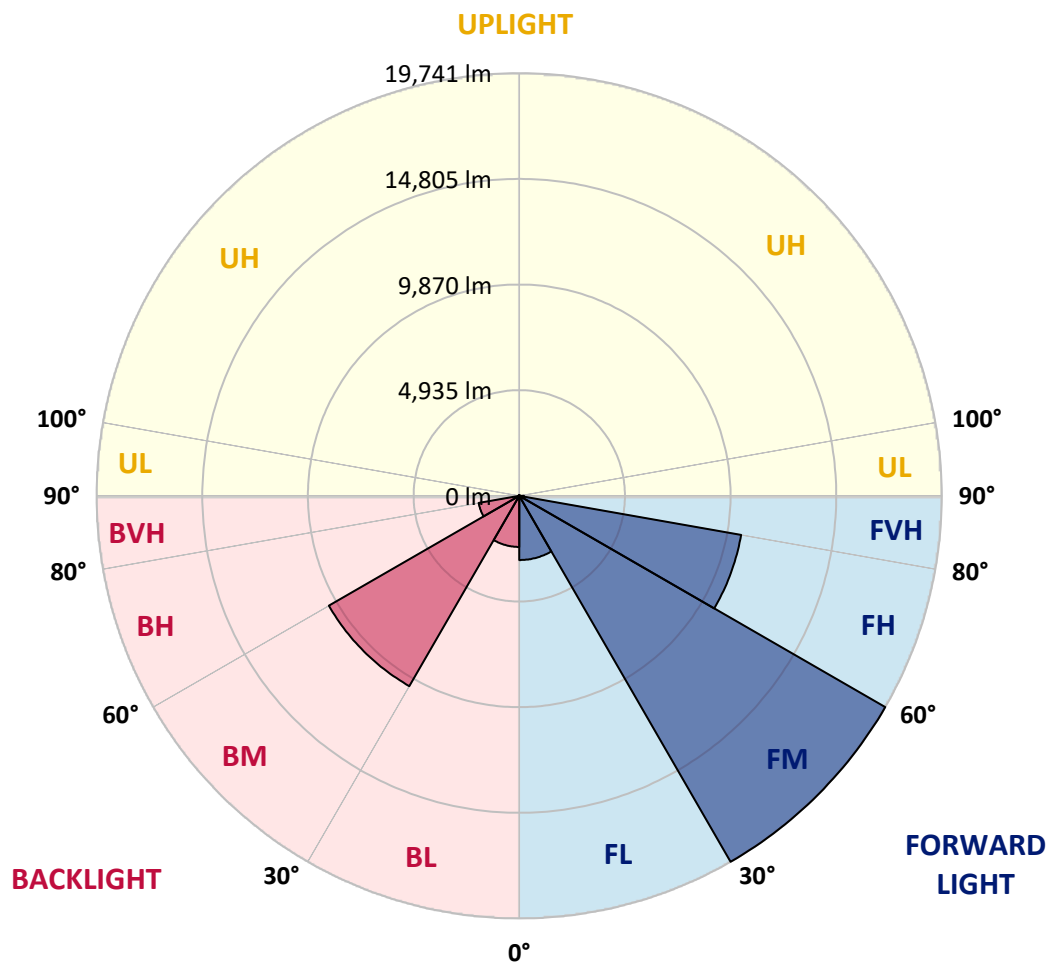
CATALOG NUMBER: CST-CA8-480-740-U-T5N-HSS-HM-EX180

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

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |       |          |
|------|-------------|---------|-----------|-------------------------|-------|----------|
|      |             |         |           | B                       | U     | G        |
| FL   | (0°-30°)    | 3000.8  | 6.2       |                         |       |          |
| FM   | (30°-60°)   | 19740.6 | 41.0      |                         |       |          |
| FH   | (60°-80°)   | 10523.8 | 21.9      |                         |       | G4/12000 |
| FVH  | (80°-90°)   | 220.9   | 0.5       |                         |       | G2/225   |
| BL   | (0°-30°)    | 2388.2  | 5.0       | B3/2500                 |       |          |
| BM   | (30°-60°)   | 10268.6 | 21.3      | B5                      |       |          |
| BH   | (60°-80°)   | 1923.9  | 4.0       | B3/2500                 |       | G3/2500  |
| BVH  | (80°-90°)   | 29.3    | 0.1       |                         |       | G1/100   |
| UL   | (90°-100°)  | 36.8    | 0.1       |                         | U2/50 |          |
| UH   | (100°-180°) | 5.0     | 0.0       |                         | U1/10 |          |

**BUG Rating: B5-U2-G4**

Type III Short



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CATALOG NUMBER: CST-CA8-480-740-U-T5N-HSS-HM-EX180

**CANDELA DISTRIBUTION (FULL):**

|        | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 65°     | 75°     | 85°     | 90°     |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°     | 5420.9  | 5420.9  | 5420.9  | 5420.9  | 5420.9  | 5420.9  | 5420.9  | 5420.9  | 5420.9  | 5420.9  | 5420.9  |
| 2.5°   | 5554.8  | 5514.0  | 5516.2  | 5552.5  | 5448.2  | 5486.7  | 5441.4  | 5486.7  | 5461.8  | 5479.9  | 5489.0  |
| 5°     | 5652.4  | 5611.5  | 5607.0  | 5645.6  | 5557.1  | 5584.3  | 5538.9  | 5570.7  | 5536.7  | 5559.3  | 5559.3  |
| 7.5°   | 5799.9  | 5759.0  | 5745.4  | 5774.9  | 5693.2  | 5713.6  | 5666.0  | 5684.1  | 5645.6  | 5675.1  | 5659.2  |
| 10°    | 5974.6  | 5929.2  | 5913.3  | 5929.2  | 5858.9  | 5870.2  | 5813.5  | 5833.9  | 5777.2  | 5811.2  | 5788.5  |
| 12.5°  | 6160.7  | 6101.7  | 6101.7  | 6115.3  | 6040.4  | 6042.7  | 5990.5  | 6001.8  | 5945.1  | 5981.4  | 5954.2  |
| 15°    | 6362.6  | 6296.8  | 6305.9  | 6319.5  | 6240.1  | 6253.7  | 6199.2  | 6217.4  | 6158.4  | 6194.7  | 6167.5  |
| 17.5°  | 6630.4  | 6560.0  | 6551.0  | 6591.8  | 6516.9  | 6541.9  | 6480.6  | 6503.3  | 6451.1  | 6462.5  | 6448.8  |
| 20°    | 7000.2  | 6911.7  | 6891.3  | 6945.8  | 6861.8  | 6880.0  | 6834.6  | 6880.0  | 6825.5  | 6743.8  | 6514.6  |
| 22.5°  | 7442.7  | 7365.6  | 7331.5  | 7367.8  | 7268.0  | 7299.8  | 7297.5  | 7370.1  | 7220.3  | 6705.3  | 6476.1  |
| 25°    | 8025.9  | 7973.7  | 7907.9  | 7912.4  | 7792.2  | 7839.8  | 7926.0  | 7982.8  | 7345.1  | 6893.6  | 6898.1  |
| 27.5°  | 8804.2  | 8752.0  | 8661.2  | 8627.2  | 8452.5  | 8568.2  | 8702.1  | 8148.4  | 7646.9  | 7762.7  | 7699.1  |
| 30°    | 9798.1  | 9789.0  | 9605.2  | 9546.2  | 9355.6  | 9500.8  | 9385.1  | 8436.6  | 8609.0  | 8770.2  | 8672.6  |
| 32.5°  | 11121.0 | 11057.4 | 10791.9 | 10685.3 | 10485.6 | 10569.6 | 9548.5  | 9412.3  | 9668.7  | 9886.6  | 9784.4  |
| 35°    | 12720.7 | 12527.8 | 12257.8 | 12046.8 | 11699.6 | 11232.1 | 10170.2 | 10435.7 | 10819.2 | 11118.7 | 10624.0 |
| 37.5°  | 14579.1 | 14370.3 | 13948.3 | 13569.3 | 13022.5 | 11565.7 | 11107.3 | 11638.3 | 12119.4 | 11794.9 | 10653.5 |
| 40°    | 16492.0 | 16305.9 | 15908.8 | 15420.9 | 14497.4 | 12600.4 | 12244.2 | 12879.5 | 13426.4 | 11568.0 | 11000.7 |
| 42.5°  | 18391.2 | 18232.4 | 17912.4 | 17431.4 | 16242.4 | 13832.6 | 13489.9 | 14172.9 | 13657.8 | 12010.5 | 11992.3 |
| 45°    | 20306.4 | 20226.9 | 19863.9 | 19453.2 | 18309.5 | 15409.6 | 14885.4 | 15418.7 | 13142.7 | 13070.1 | 13027.0 |
| 47.5°  | 21858.4 | 21872.1 | 21745.0 | 21531.7 | 20515.1 | 17140.9 | 16457.9 | 14876.4 | 13769.0 | 13848.4 | 13868.9 |
| 50°    | 23458.2 | 23356.1 | 23349.3 | 23362.9 | 22938.5 | 19371.5 | 17529.0 | 14631.3 | 14588.2 | 14581.4 | 14563.2 |
| 52.5°  | 24740.2 | 24610.9 | 24878.6 | 25091.9 | 25343.8 | 21860.7 | 17367.8 | 15461.8 | 15214.5 | 15128.2 | 14599.5 |
| 55°    | 25784.0 | 25734.1 | 26169.8 | 26891.3 | 28012.3 | 24497.4 | 18792.9 | 16271.9 | 15777.2 | 13762.2 | 12414.4 |
| 57.5°  | 26417.1 | 26489.7 | 27388.3 | 28806.5 | 30905.4 | 26682.6 | 20451.6 | 17093.3 | 13508.1 | 12121.6 | 12035.4 |
| 60°    | 25205.4 | 25588.9 | 27118.3 | 30231.5 | 33351.5 | 28738.4 | 21686.0 | 17258.9 | 12155.7 | 11413.7 | 11241.2 |
| 62.5°  | 22239.7 | 22203.3 | 24831.0 | 30231.5 | 34127.6 | 28942.6 | 22076.3 | 16085.8 | 10619.5 | 9652.8  | 9460.0  |
| 65°    | 15740.9 | 15836.2 | 18643.1 | 27243.1 | 31089.2 | 26920.8 | 20363.1 | 13676.0 | 8470.6  | 7583.4  | 7322.5  |
| 67.5°  | 9741.3  | 9734.5  | 12482.4 | 20063.6 | 25307.5 | 22539.2 | 17143.2 | 10483.3 | 5879.3  | 5042.0  | 4758.3  |
| 70°    | 3365.1  | 3460.4  | 5613.8  | 11740.4 | 18629.5 | 17658.3 | 12829.6 | 6619.0  | 3099.6  | 2210.1  | 1865.2  |
| 72.5°  | 1338.8  | 1370.5  | 2015.0  | 5234.9  | 11638.3 | 11797.2 | 7796.7  | 3215.3  | 928.1   | 590.0   | 553.7   |
| 75°    | 875.9   | 880.4   | 966.6   | 1890.2  | 5647.8  | 6346.7  | 3621.5  | 923.5   | 431.1   | 394.8   | 385.8   |
| 77.5°  | 755.6   | 757.9   | 803.3   | 957.6   | 1840.3  | 2468.8  | 1030.2  | 546.9   | 360.8   | 324.5   | 315.4   |
| 80°    | 701.2   | 703.4   | 726.1   | 823.7   | 887.2   | 841.8   | 549.1   | 440.2   | 304.1   | 288.2   | 285.9   |
| 82.5°  | 662.6   | 671.7   | 683.0   | 742.0   | 717.0   | 633.1   | 456.1   | 356.3   | 233.7   | 249.6   | 256.4   |
| 85°    | 610.4   | 619.5   | 626.3   | 660.3   | 599.0   | 462.9   | 354.0   | 267.8   | 149.8   | 163.4   | 161.1   |
| 87.5°  | 458.4   | 462.9   | 453.8   | 449.3   | 417.5   | 324.5   | 233.7   | 170.2   | 59.0    | 54.5    | 49.9    |
| 90°    | 220.1   | 217.8   | 208.8   | 192.9   | 167.9   | 131.6   | 97.6    | 54.5    | 25.0    | 11.3    | 4.5     |
| 92.5°  | 174.7   | 172.5   | 167.9   | 152.0   | 131.6   | 97.6    | 70.3    | 38.6    | 22.7    | 9.1     | 2.3     |
| 95°    | 118.0   | 113.5   | 108.9   | 97.6    | 81.7    | 59.0    | 40.8    | 27.2    | 18.2    | 6.8     | 2.3     |
| 97.5°  | 77.2    | 74.9    | 68.1    | 59.0    | 45.4    | 31.8    | 25.0    | 20.4    | 15.9    | 6.8     | 2.3     |
| 100°   | 47.7    | 47.7    | 43.1    | 34.0    | 22.7    | 18.2    | 15.9    | 15.9    | 11.3    | 4.5     | 0.0     |
| 102.5° | 29.5    | 27.2    | 25.0    | 15.9    | 11.3    | 11.3    | 11.3    | 11.3    | 9.1     | 4.5     | 0.0     |
| 105°   | 15.9    | 15.9    | 11.3    | 9.1     | 6.8     | 4.5     | 6.8     | 9.1     | 6.8     | 2.3     | 0.0     |
| 107.5° | 4.5     | 4.5     | 4.5     | 2.3     | 2.3     | 0.0     | 2.3     | 4.5     | 4.5     | 2.3     | 0.0     |
| 110°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 2.3     | 4.5     | 2.3     | 0.0     |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 5°  | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 112.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 115°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 117.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 120°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 122.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 125°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 127.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 132.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 135°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 137.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 142.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 145°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 147.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 152.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 155°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 157.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 162.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 165°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 167.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 172.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 175°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 177.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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**CANDELA DISTRIBUTION (continued):**

|        | 95°     | 105°    | 115°    | 125°    | 135°    | 145°   | 155°   | 165°    | 175°    | 180°    |
|--------|---------|---------|---------|---------|---------|--------|--------|---------|---------|---------|
| 0°     | 5420.9  | 5420.9  | 5420.9  | 5420.9  | 5420.9  | 5420.9 | 5420.9 | 5420.9  | 5420.9  | 5420.9  |
| 2.5°   | 5477.7  | 5434.5  | 5445.9  | 5402.8  | 5396.0  | 5350.6 | 5427.7 | 5432.3  | 5411.9  | 5434.5  |
| 5°     | 5548.0  | 5495.8  | 5516.2  | 5464.0  | 5455.0  | 5396.0 | 5457.2 | 5450.4  | 5434.5  | 5452.7  |
| 7.5°   | 5647.8  | 5595.7  | 5607.0  | 5545.7  | 5534.4  | 5468.6 | 5527.6 | 5504.9  | 5484.5  | 5509.4  |
| 10°    | 5786.3  | 5727.3  | 5736.3  | 5663.7  | 5654.6  | 5577.5 | 5645.6 | 5611.5  | 5582.0  | 5616.1  |
| 12.5°  | 5956.4  | 5879.3  | 5870.2  | 5793.1  | 5786.3  | 5713.6 | 5784.0 | 5750.0  | 5720.5  | 5774.9  |
| 15°    | 6151.6  | 6049.5  | 6035.9  | 5938.3  | 5926.9  | 5852.1 | 5920.1 | 5870.2  | 5847.5  | 5917.9  |
| 17.5°  | 6412.5  | 6051.7  | 5849.8  | 5706.8  | 5625.2  | 5584.3 | 5706.8 | 5872.5  | 5822.6  | 5824.8  |
| 20°    | 6305.9  | 5917.9  | 5647.8  | 5525.3  | 5436.8  | 5042.0 | 4497.4 | 4654.0  | 4971.6  | 5128.2  |
| 22.5°  | 6274.1  | 6138.0  | 6026.8  | 5820.3  | 4942.1  | 4719.8 | 4751.5 | 4715.2  | 4116.2  | 3887.0  |
| 25°    | 6882.2  | 6725.7  | 6485.1  | 5402.8  | 5148.6  | 5098.7 | 5116.9 | 4490.6  | 4039.0  | 4104.8  |
| 27.5°  | 7660.6  | 7499.4  | 6312.7  | 5706.8  | 5656.9  | 5591.1 | 5232.6 | 4449.7  | 4511.0  | 4574.5  |
| 30°    | 8640.8  | 7794.4  | 6582.7  | 6396.7  | 6303.6  | 6235.5 | 4905.8 | 4969.4  | 5071.5  | 5150.9  |
| 32.5°  | 9596.1  | 7769.5  | 7356.5  | 7125.0  | 7009.3  | 5688.7 | 5543.5 | 5691.0  | 5795.3  | 5856.6  |
| 35°    | 9607.5  | 8659.0  | 8223.3  | 7926.0  | 7190.8  | 6115.3 | 6249.2 | 6496.5  | 6752.9  | 6800.6  |
| 37.5°  | 9868.4  | 9666.5  | 9167.2  | 8792.8  | 5348.3  | 6825.5 | 7120.5 | 7404.1  | 7660.6  | 7676.4  |
| 40°    | 10907.7 | 10689.8 | 10222.4 | 9398.7  | 5906.5  | 6961.7 | 8080.3 | 8400.3  | 8615.9  | 8604.5  |
| 42.5°  | 11944.7 | 11794.9 | 11309.3 | 8352.6  | 6655.3  | 6031.3 | 9087.8 | 9298.9  | 9435.0  | 9530.3  |
| 45°    | 12988.4 | 12838.7 | 11198.1 | 9171.8  | 7547.1  | 6605.4 | 8842.8 | 10038.6 | 10188.4 | 10236.0 |
| 47.5°  | 13803.1 | 13433.2 | 10261.0 | 10258.7 | 8661.2  | 7340.6 | 7302.0 | 10705.7 | 10837.3 | 10803.3 |
| 50°    | 14556.4 | 11992.3 | 11091.5 | 10614.9 | 9813.9  | 8032.7 | 7764.9 | 9008.4  | 11425.0 | 11375.1 |
| 52.5°  | 13244.9 | 11638.3 | 11804.0 | 9655.1  | 10739.7 | 8720.2 | 8286.8 | 8078.1  | 10381.2 | 11717.7 |
| 55°    | 11844.8 | 12071.7 | 12532.4 | 10608.1 | 7792.2  | 8942.6 | 8729.3 | 8314.1  | 7004.8  | 5895.2  |
| 57.5°  | 12087.6 | 12425.7 | 12448.4 | 11490.8 | 8064.5  | 5586.6 | 7154.5 | 6262.8  | 3957.3  | 3966.4  |
| 60°    | 11277.5 | 11717.7 | 9099.2  | 7660.6  | 4336.3  | 1164.1 | 113.5  | 99.8    | 689.8   | 839.6   |
| 62.5°  | 9534.8  | 10147.5 | 8686.2  | 6673.5  | 2781.9  | 43.1   | 11.3   | 2.3     | 0.0     | 0.0     |
| 65°    | 7383.7  | 8121.2  | 7340.6  | 5759.0  | 2468.8  | 13.6   | 0.0    | 0.0     | 0.0     | 0.0     |
| 67.5°  | 4869.5  | 5534.4  | 5577.5  | 4817.3  | 2058.1  | 6.8    | 0.0    | 0.0     | 0.0     | 0.0     |
| 70°    | 2039.9  | 2872.7  | 3471.8  | 3580.7  | 1617.9  | 2.3    | 0.0    | 0.0     | 0.0     | 0.0     |
| 72.5°  | 590.0   | 912.2   | 1670.1  | 2151.1  | 1027.9  | 0.0    | 0.0    | 0.0     | 0.0     | 0.0     |
| 75°    | 392.6   | 419.8   | 483.3   | 968.9   | 512.8   | 0.0    | 0.0    | 0.0     | 0.0     | 0.0     |
| 77.5°  | 324.5   | 331.3   | 276.8   | 265.5   | 147.5   | 0.0    | 0.0    | 0.0     | 0.0     | 0.0     |
| 80°    | 295.0   | 290.4   | 222.4   | 156.6   | 54.5    | 0.0    | 0.0    | 0.0     | 0.0     | 0.0     |
| 82.5°  | 272.3   | 258.7   | 161.1   | 81.7    | 36.3    | 0.0    | 0.0    | 0.0     | 0.0     | 0.0     |
| 85°    | 183.8   | 181.5   | 72.6    | 49.9    | 6.8     | 0.0    | 0.0    | 0.0     | 0.0     | 0.0     |
| 87.5°  | 49.9    | 63.5    | 15.9    | 6.8     | 0.0     | 0.0    | 0.0    | 0.0     | 0.0     | 0.0     |
| 90°    | 0.0     | 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: P579518

CATALOG NUMBER: CST-CA8-480-740-U-T5N-HSS-HM-EX180

**CANDELA DISTRIBUTION (continued):**

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

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

Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

STREETWORKS

Report Number: SP1-2104-215-1

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

Test Date: 04/20/2021

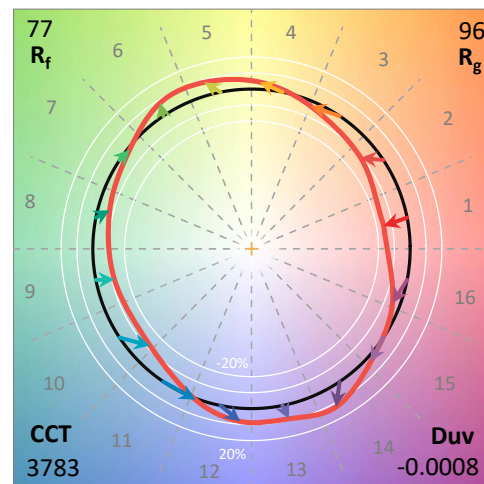
### Test Information

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

230W

### Spectral Parameters

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



### Test Conditions

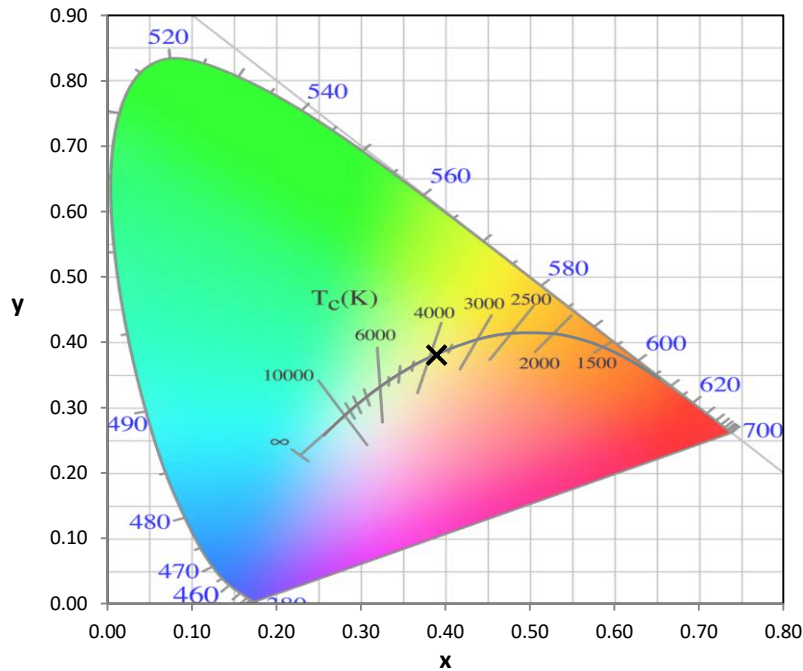
Stabilization Time: 47M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.5/39%  
 Sphere Temperature (°C): 24.0

REPORT NUMBER: SP1-2104-215-1

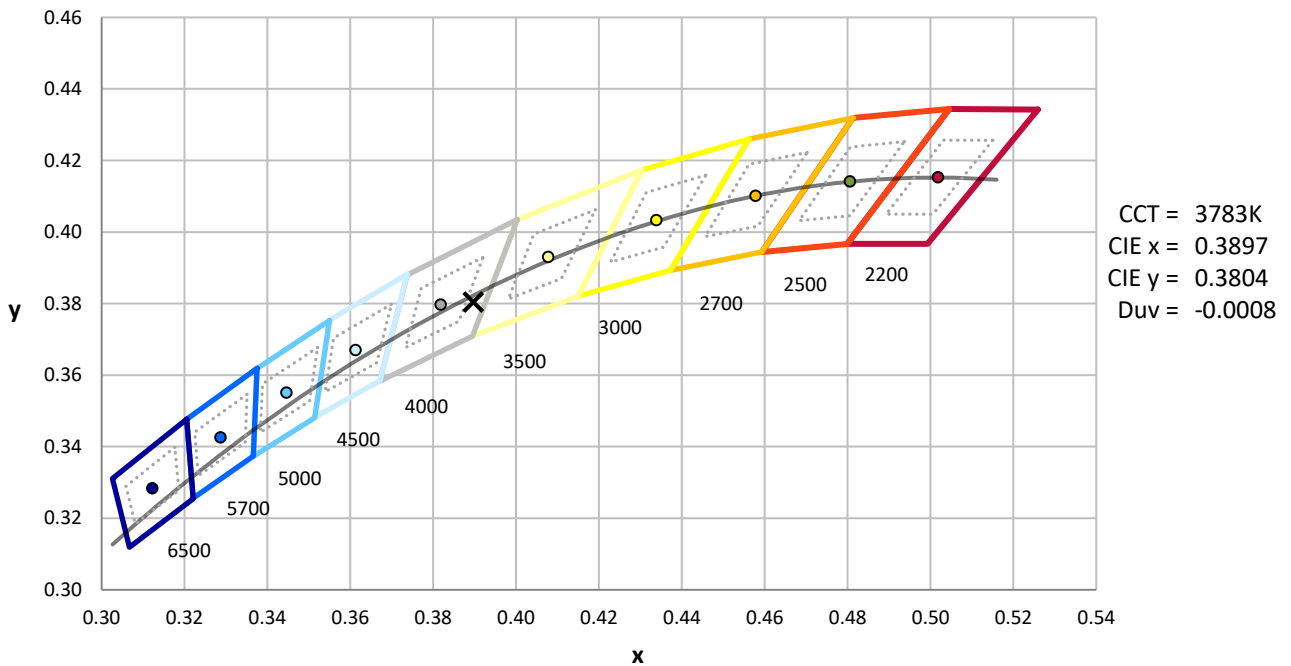
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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

REPORT NUMBER: SP1-2104-215-1

**CIE 1931 Chromaticity Diagram**



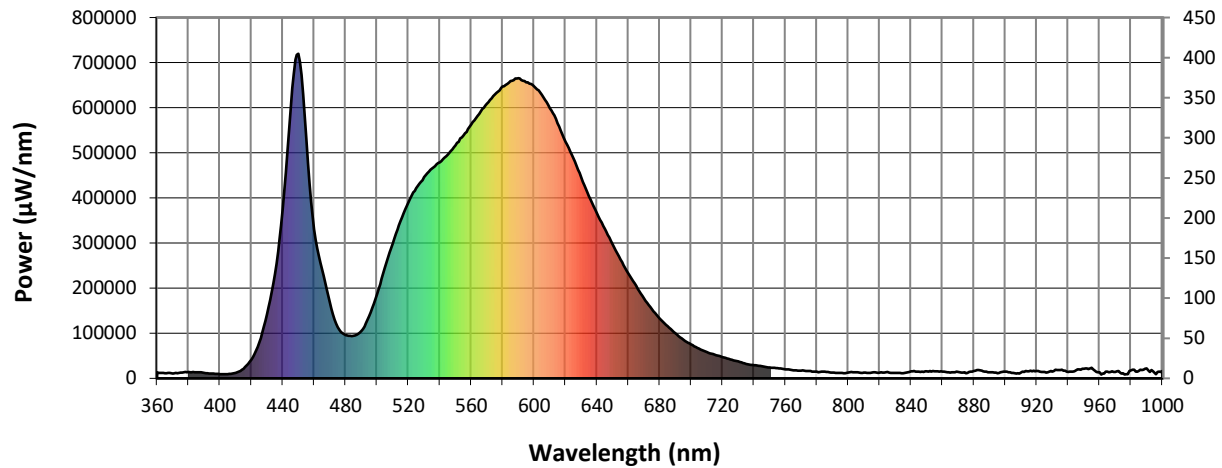
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 4000K 7-step quadrangle

REPORT NUMBER: SP1-2104-215-1

### Photopic Flux vs. Wavelength

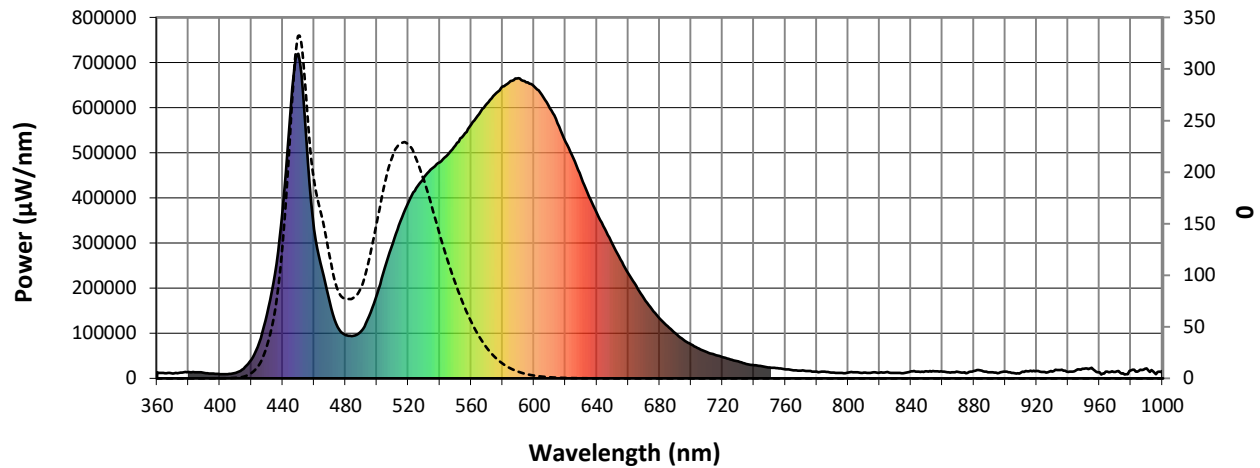


#####

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

REPORT NUMBER: SP1-2104-215-1

### Scotopic Flux vs. Wavelength



Scotopic Lumens: 54268.8

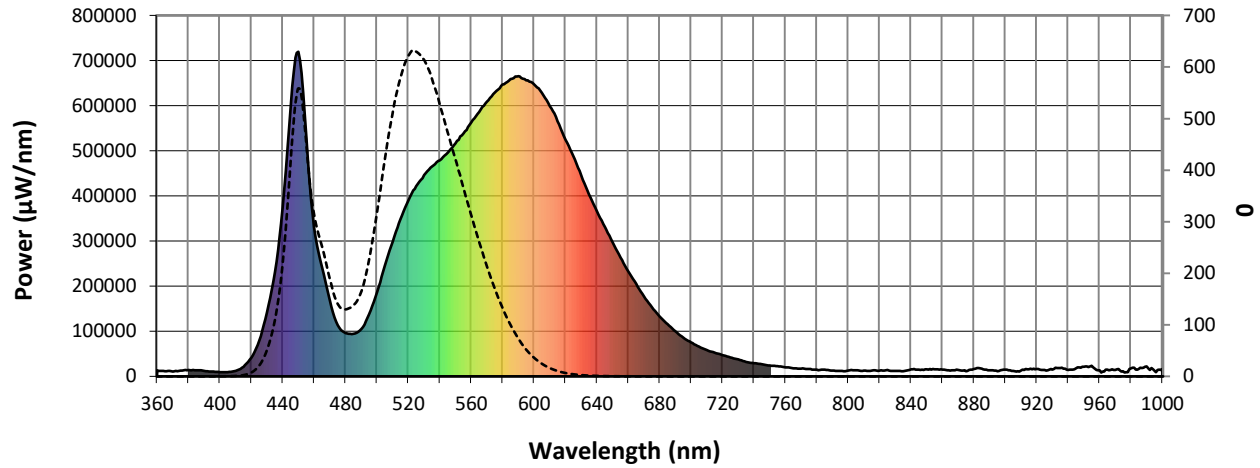
S/P: 1.5

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



REPORT NUMBER: SP1-2104-215-1

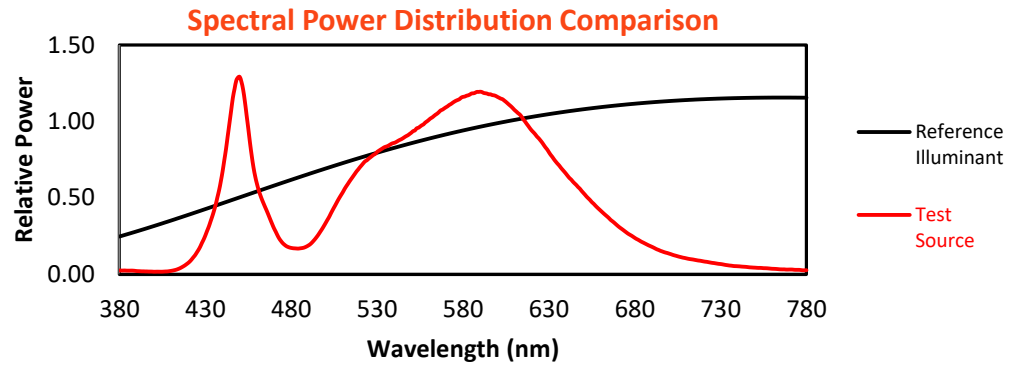
### Melanopic Flux vs. Wavelength


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

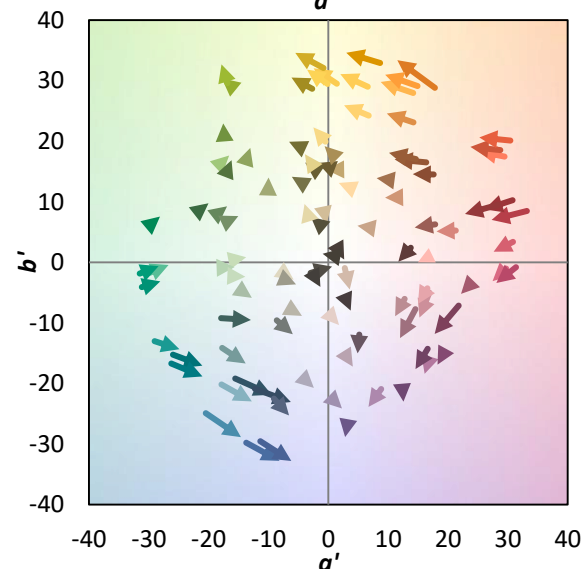
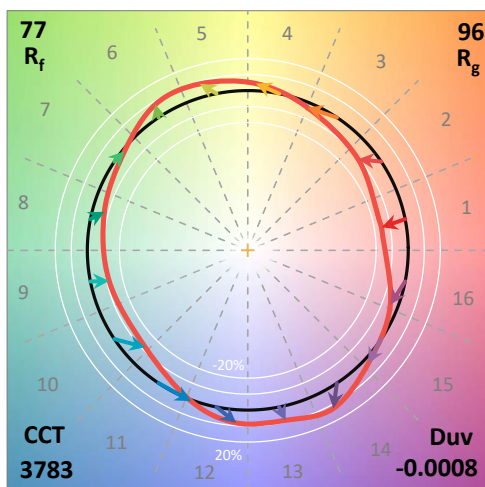
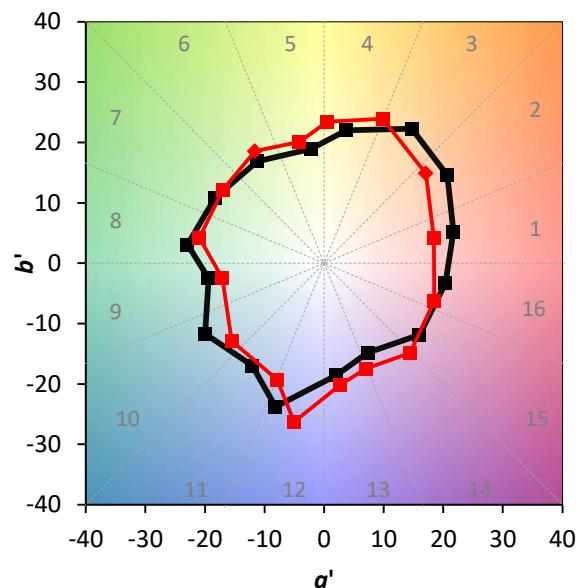
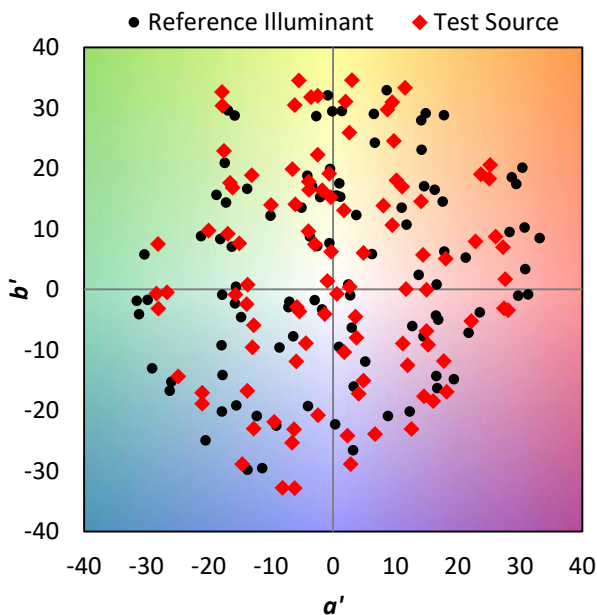
| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------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

### Summary

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

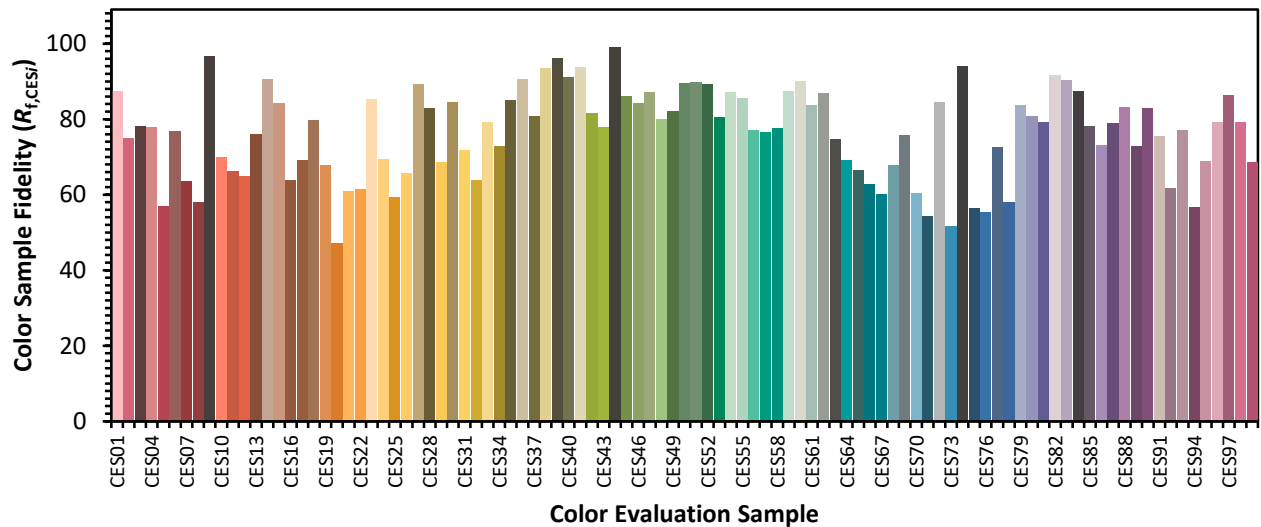


### Color Vector Graphics

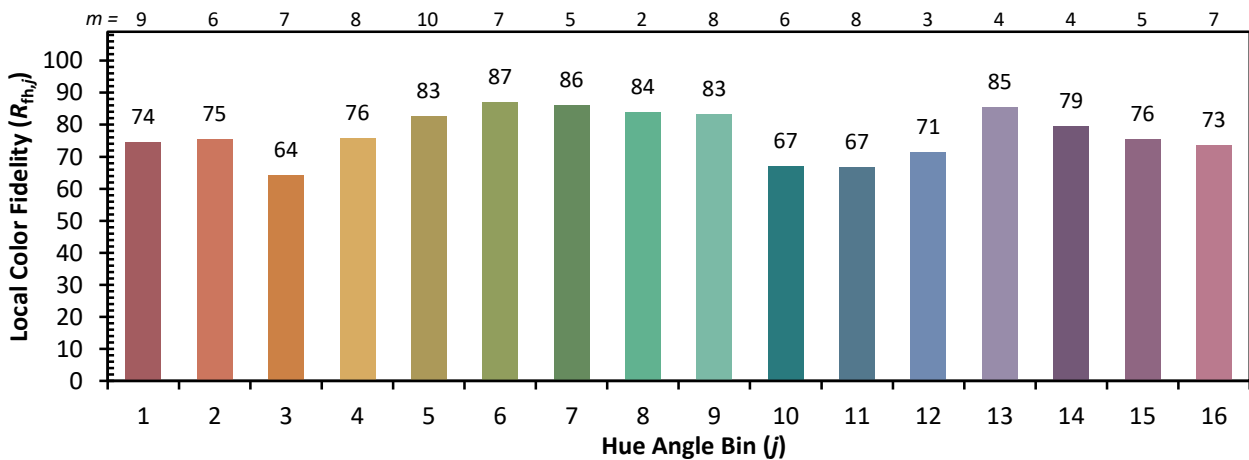
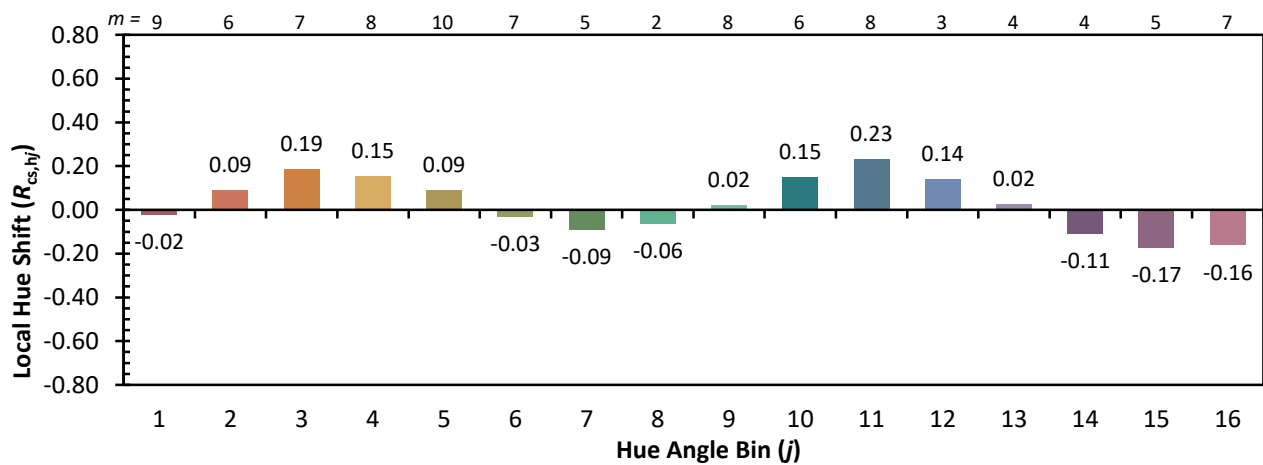
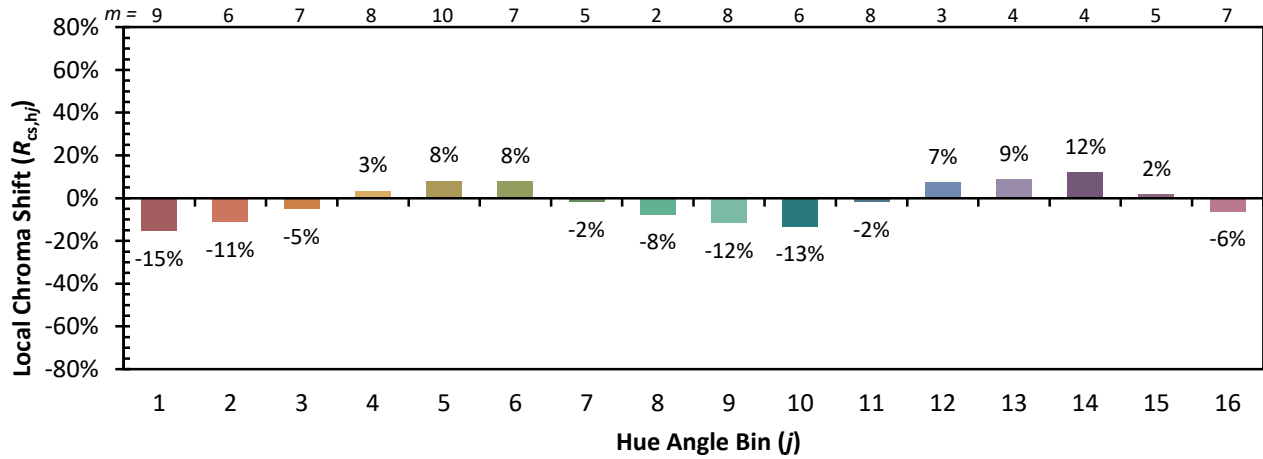


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

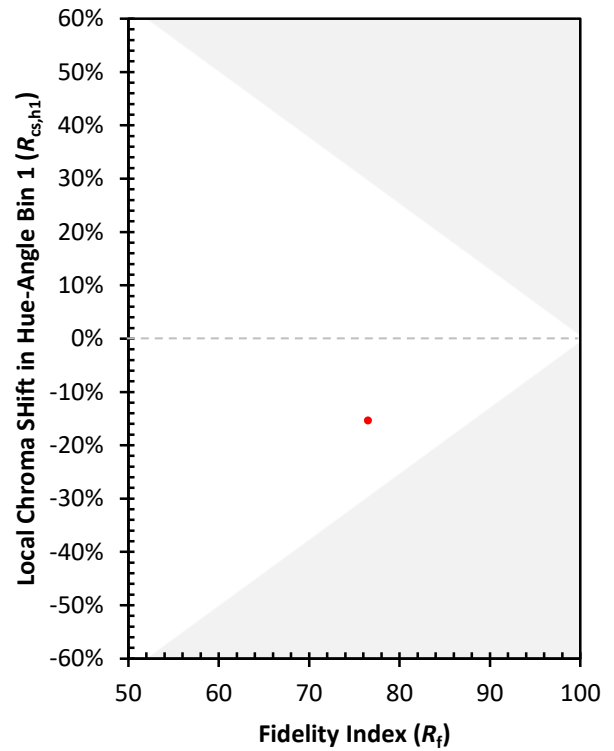
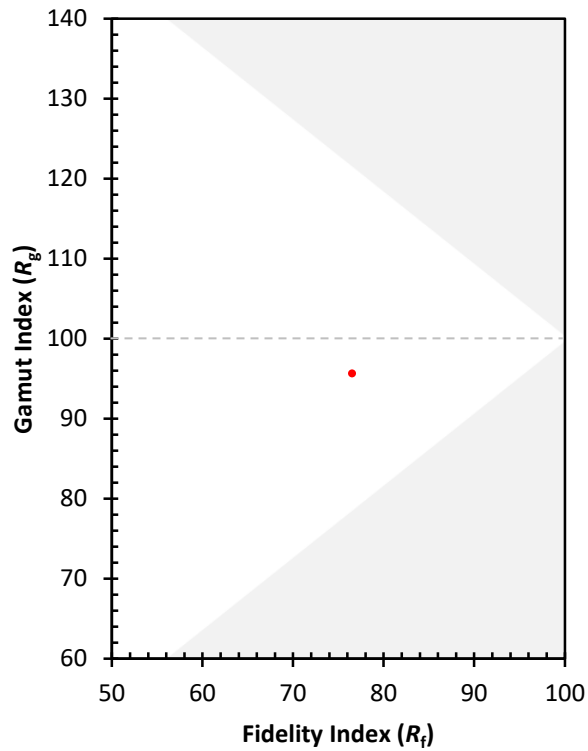
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 66 | CES51 = 90 | CES76 = 56 |
| CES02 = 61 | CES27 = 89 | CES52 = 89 | CES77 = 73 |
| CES03 = 31 | CES28 = 83 | CES53 = 81 | CES78 = 58 |
| CES04 = 70 | CES29 = 69 | CES54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



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)